Sustainable action for a better tomorrow

The ENA and associated South Island EDBs

South Island EV Journey Charging Project - Report

Final Report

8/05/2025

Revision	Date	Revision Details	Author	Verifier	Approved
1	14/02/25	Draft Report	HOC	DT	RS
2	1/04/25	Final Report	HOC	DT	RS
3	8/05/25	Revised Final Report	HOC	DT	RS

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Executive Summary

Purpose

The New Zealand Government aims to install 10,000 public electric vehicle charging points nationwide by 2030, a target that demands strategic decisions on location and capacity to ensure efficient infrastructure investment. To support this, Electricity Networks Aotearoa (ENA) and South Island EDBs engaged DETA Consulting to develop a location-based light EV journey charger forecast, identifying potential charging sites based on traffic volumes and network capacity.

Outcome

A summary of the additional charging demand and corresponding number of 50 kW chargers needed to satisfy light journey EV charging needs across the South Island in 2030 is shown in Table 1.

Table 1: Summary of 2030 Additional Peak Demand (kW) and Additional 50 kW Chargers Needed at Daily Peak by Region

Region	2030 Peak Additional Capacity Needed (Factoring in 2024 Charging Capacity)	
	Total Additional Demand (kW)	Additonal 50 kW Chargers Needed
Canterbury	2002	45
West Coast	1089	26
Southland	579	15
Otago	484	11
Nelson/Marlborough	408	10
TOTAL	**4561**	**107**

46 locations across the South Island were reviewed, and the ten locations with the highest additional charging demand were compared with the ten locations where there is the most excess charging capacity, as shown in Figure 1.

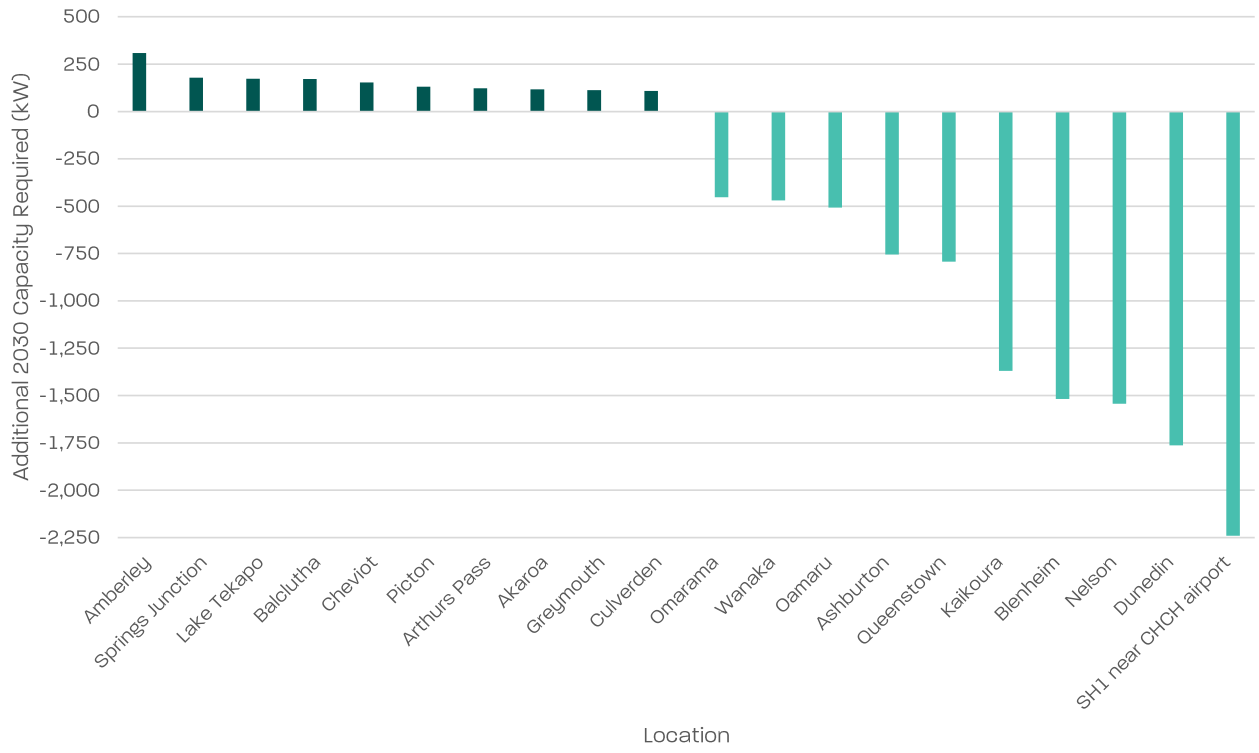


Figure 1: Top Ten Locations with the Highest 2030 90th Percentile Additional Capacity Needed (kW) and the Top Ten Locations with the Lowest Additional Capacity Needed

Insights

- High level connection costs were given for 109 transformers by the EDBs and serve the purpose of giving an indicative cost of approximately +/- $10,000 (as of Dec 2024 to Feb 25) to connect to specified transformers. These costs are just a portion of the overall costs and the total installed costs for chargers are likely to be many times higher.

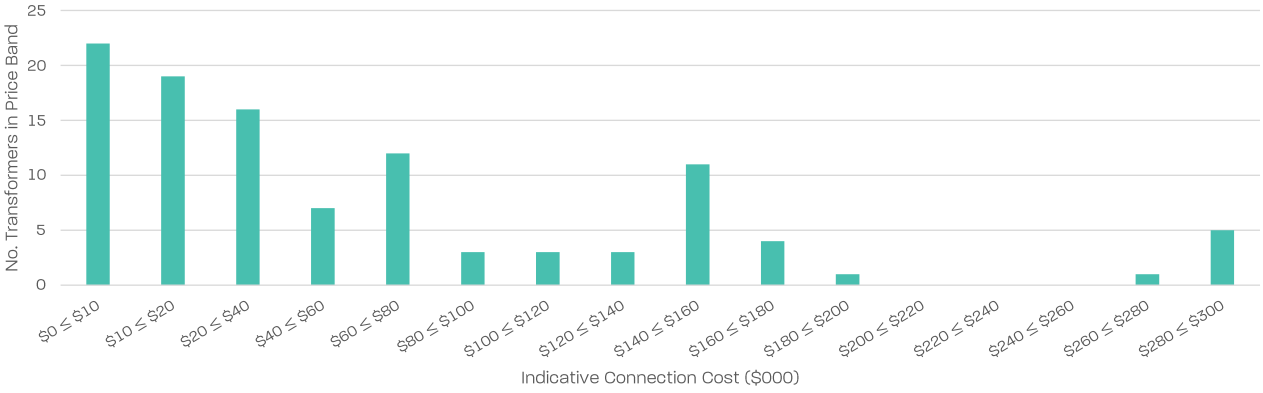


Figure 2: Connection Cost Distribution.

- Highly seasonal locations will be the least economically feasible places to install enough chargers to meet peak demand due to the low Return On Investment (ROI). These are places where funding could be needed to install chargers to meet peak demand.

- It was identified that in some locations the total capacity of existing chargers well exceeded the demand requirements, but these kW were provided by relatively few chargers, resulting in charging bottlenecks. As such, consideration should be given to the number of chargers available in locations, along with the total installed capacity.
- The demand forecast model assumed that 10% of light vehicles in New Zealand will be battery electric by 2030, based on publicly available forecasts. This is believed to be a relatively aggressive, but achievable, growth rate, and should be considered when reading this report. How demand actually progresses will likely be highly influenced by government policies and vehicle pricing.

1. Introduction

1.1 Project Purpose

The New Zealand Government has committed to installing 10,000 public electric vehicle charging points across the country by 2030. Achieving this ambitious target requires thoughtful and informed decisions regarding the location and capacity of charging points to enable efficient investment in infrastructure. To date there has been no detailed analysis to identify suitable locations for these charging points, with respect to both traffic patterns and networks' available electrical capacity.

The Electricity Networks Aotearoa (ENA), alongside the South Island EDBS, engaged with DETA Consulting to carry out a two-stage project with the key output being an EV journey charger map that shows forecasted demand and potential EV charging sites.

Stage 1 consisted of modelling light vehicle journey charging demand at specified locations in 2030 and Stage 2 consisted of engaging with EDBs to gather transformer capacity data and respective indicative connection costing in these locations.

1.2 Stage 1: Modelling

DETA has completed a South Island wide analysis of light vehicle traffic flows using daily NZTA through-traffic data for major traffic routes to identify areas where charge points will be needed to service EV journey charging demand in 2030. Average, peak and 90th percentile traffic flows in each location were analysed to ensure the charging points will cope during peak traffic seasons.

This analysis focuses only on light vehicles (less than 3.5 T) and journey charging needs. This demand forecast does not aim to meet the charging needs of local traffic in the area charging publicly or any drivers using destination charging. Current charging capacity in each location has been removed from the total forecasted demand, however in some circumstances this capacity will be classified as destination charging, rather than journey charging. A separate methodology report details the modelling assumptions and methodology, with supporting appendices.

1.3 Stage 2: Engagement with EDBs

DETA engaged with each EDB to gather transformer capacity data and high-level indicative connection costs to these transformers in locations where capacity may be required in 2030.

1.4 Document purpose

This document collates the data gathered for this project and reports key findings and takeaways of this study of this data.

A summary of each section follows:

- Results:
  - Summary tables for each EDB showing the 2030 demand forecast, transformer capacity data and indicative connection cost for each viable location
  - Summary of New Zealand total charger project cost per kilowatt
  - Comparison of highly seasonal locations vs locations with consistent yearly traffic flows
  - Specification of locations where chargers are most needed.

- Discussion:
  - Sensitivity analysis by increasing turn-in rate and amount battery is charged per charging session
  - Commentary on connection cost data received
  - Key takeaways and findings from study.

- Appendices:
  - Full tables for each EDB including 2030 traffic profiles, Peak/Avg. factors, peak time, as well as location and commentary around transformers and connection cost
  - Detailed tables of how demand was affected by sensitivity analysis scenarios
  - Current charging capacity in each location.

2. Results

2.1 Summary of forecasted demand and chargers needed

The table below shows the total additional charger demand required across the South Island locations to meet the daily peak demand in 2030. It also shows the number of additional 50 kW chargers required to meet this demand, which is the sum of rounding up each location's additional capacity required to the nearest multiple of 50 kW, and dividing by 50 to get the number of extra chargers for each location.

Table 2: Summary of 2030 Demand at Daily Peak and Additional 50 kW Chargers Needed

	2030 Additional Capacity Needed (Factoring in 2024 Charging Capacity)		
	Avg.	Peak	90th
Total demand (kW)	1549	4561	2554
No. additional 50 kW chargers needed	43	107	66

Peak and 90th Percentile Demand

The demand forecast model is based on NZTA 2021 traffic flows around each location. 2021 data was used as this was the most recent complete set of data available. An average daily traffic profile for each location was built by analysing 15-minute interval traffic data over a year from traffic monitoring sites >5 km from town centres in order to minimise impact of local traffic (which would likely use home charging). This corresponded to an average daily charging demand profile. The 2030 average, 90th percentile and peak traffic profiles for each location can be found in Appendix A.

A peak factor was estimated by taking the peak traffic count day in the year over the average daily traffic count for the year. The average daily demand profile was multiplied by this peak factor to get the peak day profile for the location. These peak day profiles were checked against select peak traffic days from NZTA traffic data and correlated well.

A 90th percentile factor was estimated by taking the traffic count on the 90th percentile traffic day and dividing it by the average daily traffic count for the year. The average daily demand profile was multiplied by this 90th percentile factor to get the 90th percentile day profile for the location.

The 90th percentile demand at the location's daily peak time (30-minute slot) is the value that EDBs were requested to size the transformers and connection costs to. The 90th percentile was used to size chargers to ensure the majority of, but not all, demand could be met. This helps to provide a good service while minimising capital costs, thus providing improved economics when compared to installing to cover the absolute peak demand.

Sizing to the 90th percentile means that on 10% of days in the year, the demand will not be met at the daily peak. The length of time that this demand will not be met for on those days is unable

to be determined without analysis of each location and each day, however analysis for the peak day was performed. Dependent on location, the period that the demand will not be met on the peak day using the 90th percentile demand values, varies from half an hour to 8 hours. Factors that this depends on is:

- the shape of the daily profile, as the peak may be flat for several hours, or a spike at a specific time
- the difference between the peak/average factor and the 90th percentile factor as a bigger difference will create a larger demand gap that could span over more time.

Most of the transformer capacity data the EDBs provided exceed both the peak and 90th percentile daily peak demand so if sizing to the peak and above is desired, adequate information has been supplied.

10% EVs in 2030

This study assumes that in 2030, 10% of the light vehicle fleet (LVF) in New Zealand will be battery EVs (BEV). As of Feb 2025, 1.8% of the LVF are BEVs[1]. Due to the current state, 10% appears to be optimistic for 2030, however this is based on publicly available forecasts for NZ. See the accompanying methodology report for more details.

Current Charging Capacity

The current charging capacity (DC chargers 25 kW and over) at each location was subtracted from the total 2030 demand forecast to calculate required additional charging demands. AC charging was excluded from this piece of work as it was assumed that journey charging would only be supplied by DC chargers that can deliver a faster rate of charging than AC.

EDB Summary Tables

The following sections are categorised by EDB, and breaks down the 2030 additional capacity forecast results, the total identified capacity on transformers in each location and the indicative connection cost.

Note that these costs are current high-level estimates that are only valid for the period they were supplied (Dec 24 – Feb 25) and are subject to change as new loads are connected, or surrounding situations change.

Negative numbers, in red font, in these tables indicate that the current charging capacity exceeds the 2030 forecasted demand. For example, if in 2030, 100 kW of charging demand was forecasted for a location, but there was currently 500 kW of charging capacity already there, the additional charging capacity would be shown as -400 kW. Therefore, no capacity was required to be found by EDBs, however some did provide information.

Detailed data tables for each EDB can be found in Appendix A.

[1] https://evdb.nz/ev-stats

2.1.1 Marlborough Lines

Table 3: Marlborough Lines 2030 Charging Data and Network Capacity Data[2]

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Blenheim Township	1725	-1554	-1462	-1518	10%			
Picton Township	75	96	188	132	10%	1	>25kW	>$5,000
						2	>25kW	>$5,000
						3	>25kW	>$5,000
						4	>25kW	>$5,000
						5	>25kW	>$5,000
						6	>25kW	>$55,000

2.1.2 Network Tasman

Table 4: Network Tasman 2030 Charging Data and Network Capacity Data[3]

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Motueka Township	325	-212	-36	-159	10%			
Murchison Township	50	89	358	150	30%	1	59	$80,000
						2	53	$80,000
						3	25	$80,000
						4	72	$80,000
						5	15	$170,000
Richmond Township	200	-112	-19	-44	5%			
Springs Junction Township	0	100	318	156	30%	1	0	$420,000
Takaka Township	50	-12	66	15	10%	1	306	$20,000
						2	165	$20,000
						3	169	$20,000
						4	196	$20,000
						5	108	$20,000
						6	62	$80,000

[2] Please refer to Appendix A.1.1 for more information on the basis and limitations of these cost estimates.
[3] Please refer to Appendix A.2.1 for more information on the basis and limitations of these cost estimates.

2.1.3 Nelson Electricity

Table 5: Nelson Electricity 2030 Charging Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate
		Avg. (kW)	Peak (kW)	90th (kW)	
Nelson Township	1700	-1612	-1519	-1544	5%

2.1.4 Buller Electricity

Table 6: Buller Electricity 2030 Charging Data and Network Capacity Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Westport Township	50	12	42	26	15%	1	85	$3,000
						2	130	$4,500
						3	120	$5,600
						4	75	$4,500
						5	210	$5,600
Karamea Township	25	-12	-6	-9	20%			

2.1.5 Westpower

Table 7: Westpower 2030 Charging Data and Network Capacity Data[4]

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Fox Glacier Township	75	-11	119	19	30%	1	200	$80,000
Reefton Township	25	42	112	75	25%	1	50	$40,000
Greymouth Township	75	80	167	113	15%	1	~150	$30,000
						2	~50	$25,000
						3	~100	$50,000
						4	0	$150,000
						5	~100	$20,000
Hokitika Township	50	-8	29	16	15%	1	75	$20,000
						2	100	$50,000
						3	50	$50,000
						4	100	$100,000
						5	250	$100,000
Punakaiki Township	0	44	97	59	20%	1	75	$30,000
						2	75	$100,000

2.1.6 Mainpower

Table 8: Mainpower 2030 Charging Data and Network Capacity Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Amberley Township	50	230	437	309	15%	1	200	$300,000
						2	0	$300,000
						3	0	$300,000
						4	0	$300,000
Cheviot Township	50	106	235	153	25%	1	0	$300,000
Culverdun Township	50	76	153	108	25%	No data		
						No data		
Kaikoura Township	1600	-1453	-1173	-1370	25%			

[4] Please refer to Appendix A.5.1 for more information on the basis and limitations of these cost estimates.

2.1.7 Orion

Table 9: Orion 2030 Charging Data and Network Capacity Data[5]

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Akaroa Township	0	101	163	117	20%	1	95	$105,000
						2	50	$105,000
						3	-40	$105,000
						4	-50	$75,000
Arthurs Pass Township	50	59	223	122	30%	1	330	$20,000
						2	90	$70,000
						3	50	$70,000
Darfield Township	50	18	37	34	5%	1	130	$20,000
						2	65	$20,000
						3	-50	$60,000
						4	-90	$60,000
Rolleston Township	435	-273	-231	-246	5%			
SH1 near CHCH Airport	2700	-2306	-2193	-2240	5%			

2.1.8 Electricity Ashburton

Table 10: Electricity Ashburton 2030 Charging Data and Network Capacity Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Methven Township	50	1	30	23	10%	1	450	$40,000
						2	0	$40,000
						3	100	$30,000
						4	70	$30,000
						5	90	$30,000
Ashburton Township	1050	-787	-726	-755	10%			

[5] Please refer to Appendix A.7.1 for more information on the basis and limitations of these cost estimates.

2.1.9 Alpine Energy

Table 11: Alpine Energy 2030 Charging Data and Network Capacity Data[6]

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			s	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Fairlie/Geraldine Township	100	-12	139	30	15%	1	New Transformer	150K (500kVA tf)
						2	New Transformer	150K (200kVA tf)
						3	New Transformer	150K (200kVA tf)
Lake Tekapo Township	50	92	211	173	20%	1	New Transformer	150K (200KVA tf + RMU)
						2	New Transformer	150K (200KVA tf + RMU)
						3	New Transformer	150K (200KVA tf + RMU)
						4	New Transformer	150K (200KVA tf + RMU)
						5	New Transformer	150K (200KVA tf + RMU)
Mt Cook Township	50	9	144	52	15%	1	New Transformer	2M (500kVA tf+RMU + 11kV underground cable 2km)
						2	New Transformer	275K (500kVA + RMU)
Twizel Township	150	-36	231	45	15%	1	New Transformer	175K (500kVA tf)
						2	New Transformer	150K (200kVA tf)
						3	New Transformer	150 K (200kVA tf)
Timaru Township	525	-428	-403	-420	5%			

2.1.10 Network Waitaki

Table 12: Network Waitaki 2030 Charging Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate
		Avg. (kW)	Peak (kW)	90th (kW)	
Oamaru Township	630	-532	-471	-507	10%
Omarama Township	660	-525	-224	-453	20%

[6] Please refer to Appendix A.9.1 for more information on the basis and limitations of these cost estimates.

2.1.11 Aurora Energy

Table 13: Aurora Energy 2030 Charging Data and Network Capacity Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Dunedin Township	2000	-1805	-1714	-1764	10%	1	500	$130,000
						2	276	$165,000
						3	0	$125,000
						4	100	$20,000
						5	500	$180,000
Alexandra/Clyde/Cromwell Townships	200	-102	45	-61	15%	1	250	$20,000
						2	50	$20,000
						3	50	$30,000
						4	100	$20,000
						5	100	$20,000
Queenstown Township	850	-817	-782	-793	5%	1	200	$0 connection cost
						2	200	$0 connection cost
						3	250	$30,000
						4	50	$75,000
						5	250	$75,000
Tarras Township	0	65	235	99	10%	1	0	$200,000
Wanaka Township	550	-483	-430	-470	5%	1	250	$25,000
						2	0	$125,000
						3	250	$20,000
						4	100	$30,000
						5	250	$75,000

2.1.12 Powernet

Table 14: Powernet 2030 Charging Data and Network Capacity Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Transformer	Available capacity (kVA)	Indicative connection cost ($)
		Avg. (kW)	Peak (kW)	90th (kW)				
Balclutha Township	50	133	203	172	15%	1	700	$20,000
						2	475	$5,000
						3	400	$10,000
						4	400	$5,000
						5	375	$5,000
Gore Township	50	62	105	82	10%	1	750	$5,000
						2	500	$30,000
						3	450	$5,000
						4	350	$5,000
						5	300	$5,000
Lumsden Township	50	48	73	59	20%	1	125	$30,000
						2	100	$20,000
						3	100	$10,000
						4	75	$55,000
						5	50	$41,000
Te Anau Township	75	7	92	65	20%	1	550	$10,000
						2	475	$20,000
						3	425	$5,000
						4	325	$10,000
						5	325	$5,000
Invercargill Township	75	-8	6	0	5%	1	925	$5,000
						2	800	$5,000
						3	700	$25,000
						4	675	$10,000
						5	675	$5,000

2.1.13 Off-grid

Table 15: Off-Grid 2030 Charging Data

Location	2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate
		Avg. (kW)	Peak (kW)	90th (kW)	
Haast Township	0	41	158	82	30%
Milford Sound	0	92	303	147	30%

2.2 Highly Seasonal Locations

Analysis was carried out using daily traffic counts in the locations of interest in each EDB to compare the peak traffic day in the year with the average traffic day. This was used to show the difference in forecast demand for the busiest day of the year on the road compared to the demand on the average day. The Peak/Average demand ratio was used to compare locations.

In Figure 3, the ten most seasonal locations were compared with the ten least seasonal locations. The average Peak/Average ratio was 2.0. It was found that locations along State Highway 1 tended to have consistent traffic flow throughout the year, as this is an important commuting route with numerous major towns along it. Locations that are popular as holiday destinations or enroute to one tend to be peakier due to influxes of visitors over holiday periods and when the weather is well suited to the area.

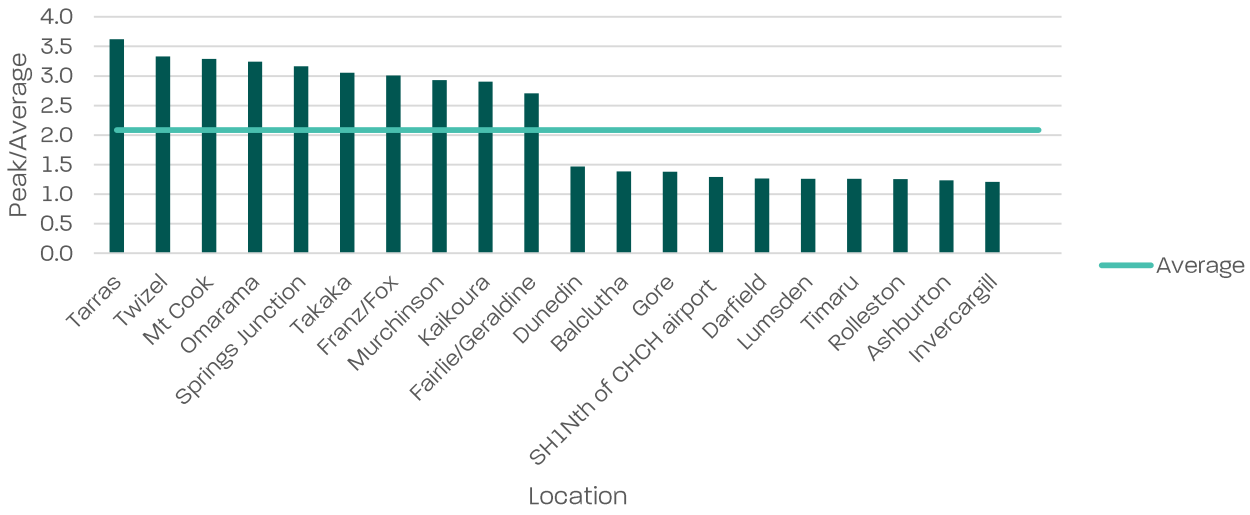


Figure 3: Comparison of the Ten Most Seasonal Locations and the Ten Least Seasonal Locations

2.3 Additional Charging Capacity Required

Following the review of 46 locations across the South Island, the top ten locations where the highest additional 90th percentile charging capacity is needed in 2030 to meet forecasted demand were assessed. These locations are compared with the top ten locations where there is excess charging capacity in 2030, as shown in Figure 4. The locations with excess journey charging capacity are generally larger centres which have considerable destination charging.

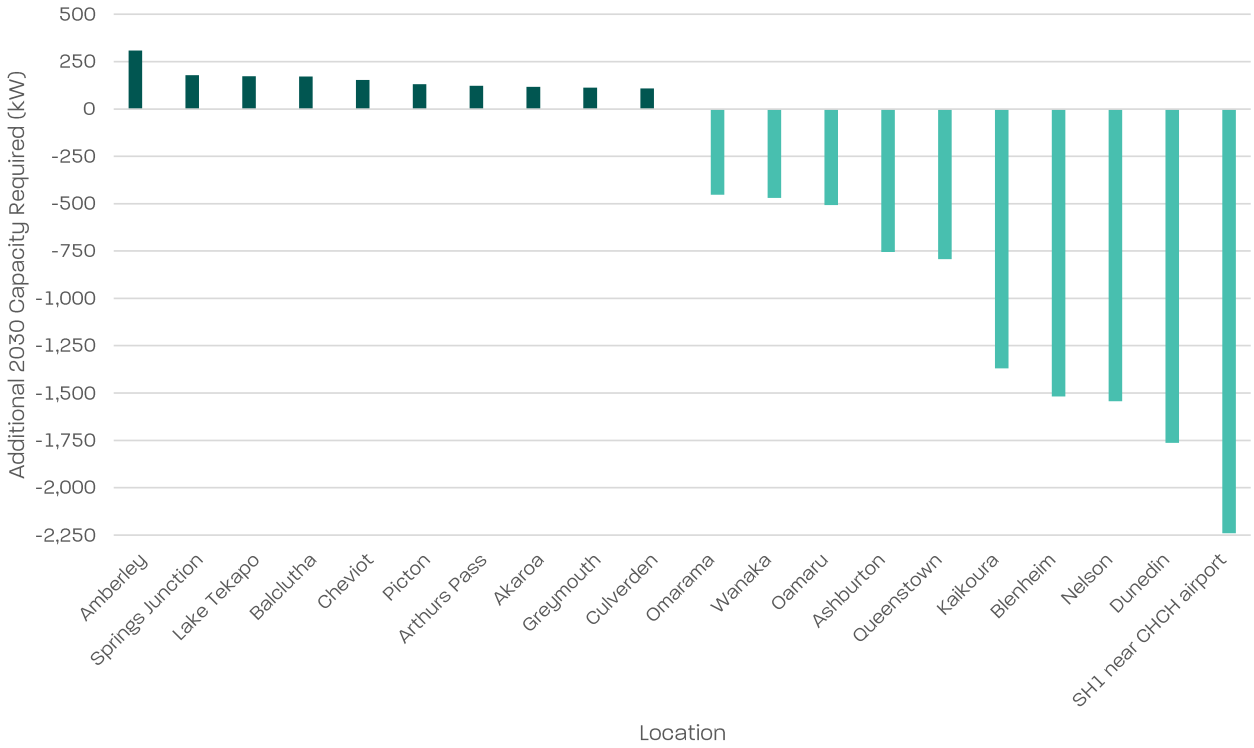


Figure 4: Top Ten Locations with the Highest 2030 90th Percentile Additional Capacity Needed (kW) and the Top Ten Locations with the Lowest Additional Capacity Needed

There are numerous locations around the South Island where there are currently no DC chargers, as listed below:

- Springs Junction[7]
- Akaroa
- Punakaiki
- Haast
- Tarras
- Milford Sound

[7] A charger with limited capacity is being commissioned here at the time of writing.

3. Discussion

3.1 Sensitivity Analysis

A sensitivity analysis was conducted on the turn-in rates and the charge percentage to understand how variations in these factors impact overall charging demand.

The key modelling figures were based on data from existing chargers and monitoring results, however there is scope for these to differ, and if they do, they would likely be higher than those assumed. Therefore, the sensitivity analysis focused on three scenarios where these factors increased:

- Scenario 1: The percentage that vehicles charged their batteries for was increased from 30% to 40%
- Scenario 2: Each turn-in rate was increased by 5%
- Scenario 3: Turn-In rate increased by 5% AND percentage of battery charged increased to 40%

The results of the sensitivity analysis have been compared and split into total 2030 demand (kW) as shown in Figure 5, and number of additional 50 kW chargers required to meet demand as shown in Figure 6.

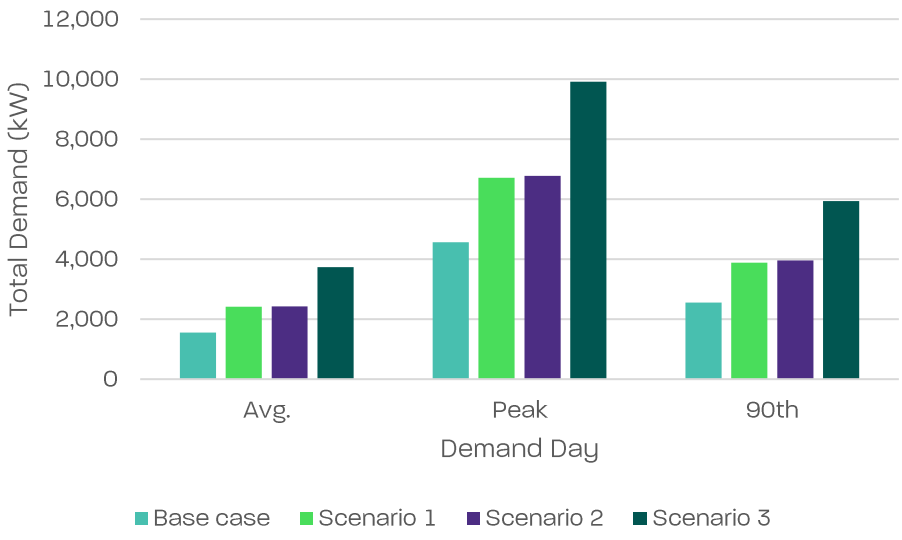


Figure 5: Comparison of the Three Sensitivity Scenarios and the Base Case for Total Demand (kW)

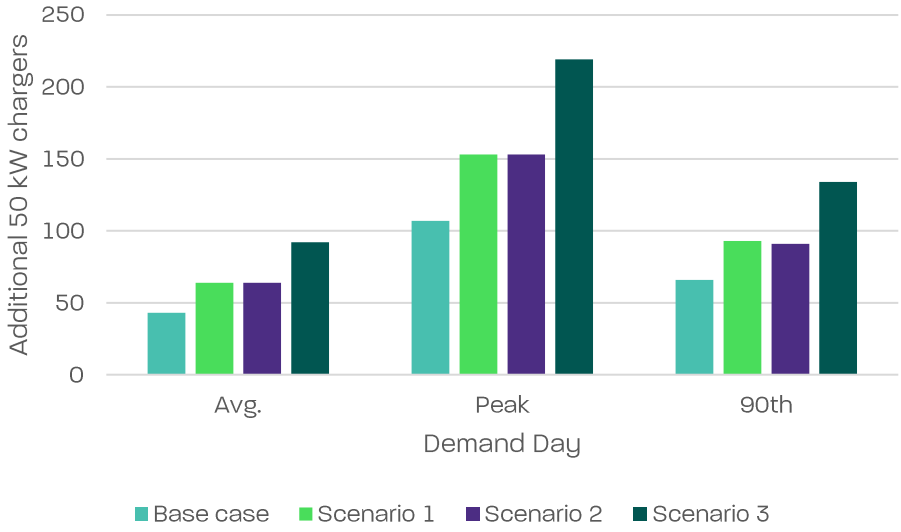


Figure 6: Comparison of the Three Sensitivity Scenarios and the Base Case for Number of Additional 50 kW Chargers Required to Meet 2030 Total Demand

When comparing the four scenarios, it is shown that the base assumptions provide for relatively robust findings, but that increased turn in ratios and battery charging amounts lead to higher demand levels, and therefore more charging requirements.

Further analysis on turn in rates and the percentage of charge increased would be beneficial as technology and vehicle numbers change in the future.

3.2 Connection Cost Distribution

The connection costs provided by EDBs are high level and serve the purpose of giving an indicative cost of approximately +/- $10,000 (as of Dec 2024 to Feb 25) to connect to specified transformers. The costs aim to provide the reader with an order of magnitude value for connection pricing. These costs are just a portion of the overall costs and the total installed costs for chargers are likely to be many times higher. Comments regarding costing for specific transformers as well as general costing information given by various EDBs can be found in Appendix A.

Without a specified charging site which is subject to CPO inquiry, accurate costs cannot be provided due to numerous variables, some of which are listed below:

- EV charger(s) size and required connection capacity
- Charger(s) location
- Ground and area conditions
- Trenching/reinstatement rates
- If additional cables are needed
- Assessments and consents required by other parties.

High level connection costs were given for 109 transformers. These costs were put into bands of $0 ≤ $10,000, <$10,000 ≤ $20,000 and then increasing by increments of $20,000. The distribution of connection costs across these bands is shown in the graph below. Please note

that some of these costs include upgrading of the transformer. This detail can be found in Appendix A.

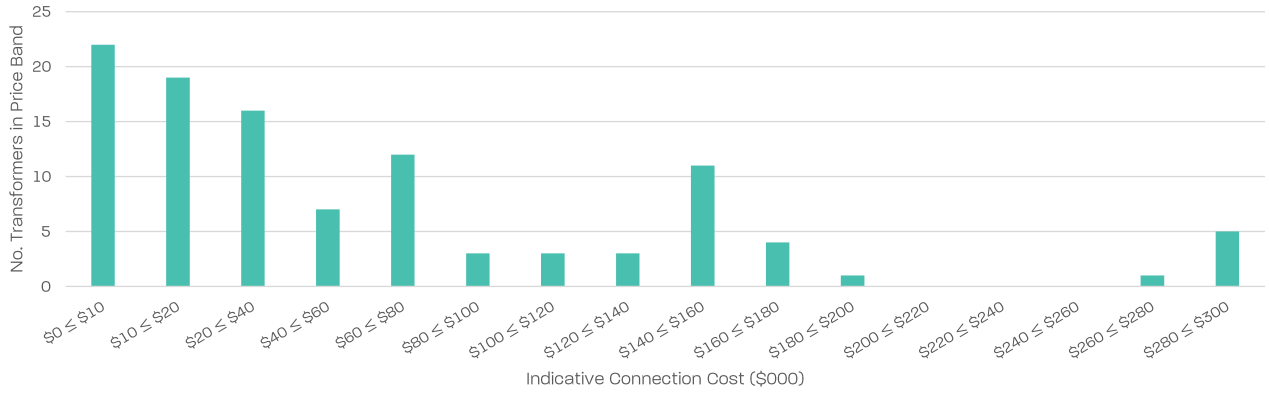


Figure 7: Connection Cost Distribution.

There were two outliers that were not shown on this graph. These were a $420k project in Springs Junction where the Network Department Levy is $293k and $110k for a new ground mounted transformer, and a $2M project in Mt Cook where 2 km of 11kV underground cable and a transformer upgrade is required.

3.3 Other Items

- Highly seasonal locations will be the least economically feasible places to install enough chargers to meet peak demand due to the low Return On Investment (ROI). These are places where funding could be needed to install chargers to meet peak demand.
- Dates of peak days for locations vary however common dates are listed below:
  - 26th-30th of December
  - 1st -3rd of January
  - Day before and day of Good Friday
  - Waitangi/Waitangi Observed days
  - Labour Day weekend
  - Canterbury Anniversary weekend
- This study focuses on forecasting the charging demand in each of the selected locations. It does not aim to provide any recommendations on what type of chargers should be used or the size of each charger.
- It was identified that in some locations the total capacity of existing chargers well exceeded the demand requirements, but these kW were provided by relatively few chargers, resulting in charging bottlenecks. An example of this is Kaikōura, where 1,600 kW of capacity is supplied by only eight chargers. The model shows that there is ample capacity, however customers may leave their vehicles plugged in for longer periods of time, thus taking up a charging space – anecdotally we have heard that this can be an issue. As such, consideration should be given to the number of chargers available in locations, along with the total installed capacity.
- The demand forecast model assumed that 10% of light vehicles in New Zealand will be battery electric based on publicly available forecasts. This is believed to be a relatively

aggressive, but achievable growth rate, and should be considered when reading this report. How demand actually progresses will likely be highly influenced by government policies and vehicle pricing.

- The commitment made by the government to install 10,000 public chargers by 2030 encompasses all public chargers in NZ. This study is focused solely on South Island journey charging, which is just one of the four parts of public charging in New Zealand, with the other three being:
    - North Island journey charging
    - South Island destination charging
    - North Island destination charging
- Peak traffic volumes (and therefore peak charging demand) occur between 12 pm and 5 pm in most locations. This timing falls outside typical network peak times.

Appendix A: Detailed EDB Data Tables

The following subsections of Appendix A details the full set of data associated with each location in each EDB. The information shown for each location is:

- 2030 total forecasted demand (kW) at daily peak for the average, peak and 90th percentile day.
- 2024 DC charging capacity
- 2030 additional capacity needed at daily peak after factoring in the current charging capacity
- Turn-in rate
- Peak/average
- 90th percentile/average
- Time of daily traffic peak
- Transformer name, or if no identification was provided, a numerical placeholder
- Rated capacity of transformer
- Current available capacity on the transformer
- Indicative connection cost to transformer
- Location of transformer (Note: Some EDBs provided street addresses instead of coordinates. DETA used Google Maps to generate coordinates where needed, but their accuracy may vary from the exact location intended by the EDB. However, they provide a good general reference.)
- Additional transformer comments
- Any accompanying information supplied by the EDB

A.1 Marlborough Lines

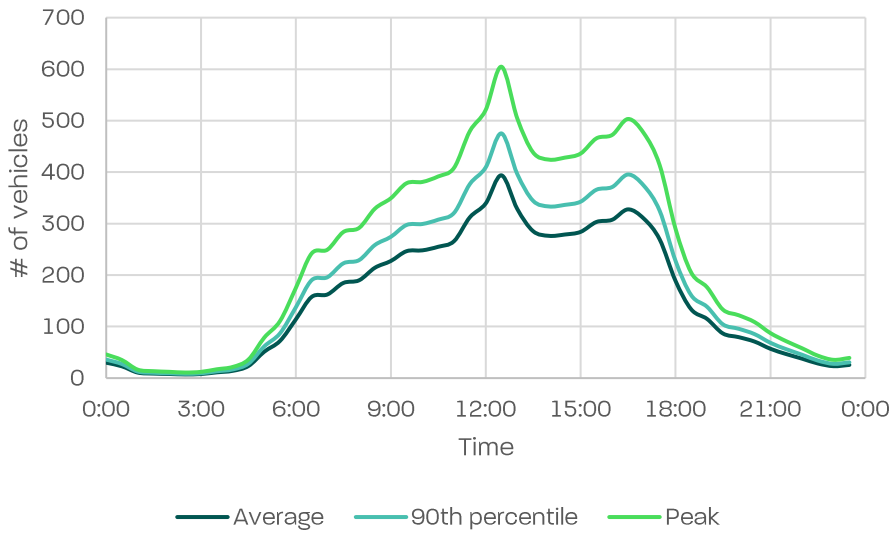
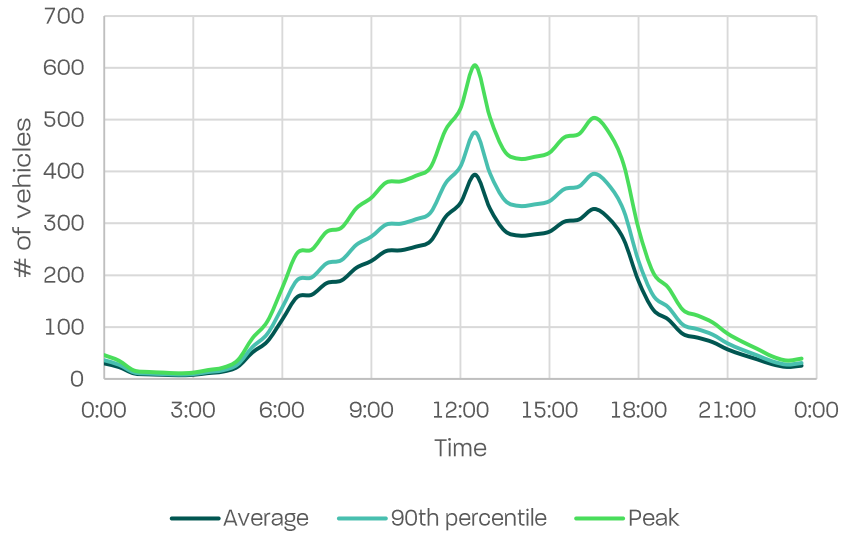
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Blenheim Township	171	263	207	1725	-1554	-1462	-1518	10%	1.54	1.21	12:30:00 PM
Picton Township	171	263	207	75	96	188	132	10%	1.54	1.21	12:30:00 PM

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Blenheim Township						
Picton Township	Sub332013	500	>25kW	>$5,000	-41.29085063781623, 174.00640358131832	The Picton Library has a southern and northern carpark The northern carpark is visible and has access from SH1. The southern carpark is next to the transformer and would provide a shorter (cheaper) connection. There is an existing 500 kVA transformer on High St (Sub332013
	Sub332018	500	>25kW	>$5,000	-41.2895818256081, 174.00592010910094	14 Auckland St. Ports of Marlborough carparks. The Ports of Marlborough offices have a southern and northern carpark. Both have access from SH1. The southern carpark is next to the transformer and would provide a shorter (cheaper) connection. There is an existing 500 kVA transformer on Auckland St (Sub332018
	Sub332021	100	>25kW	>$5,000	-41.28791397996827, 174.00521366703404	Picton iSite Visitor Centre. Picton Foreshore. There is an existing 100 kVA transformer (Sub332021) There is very little capacity in the 100 kVA transformer and the 16mm2 11 kV cable feeding it however the location is attractive with many cars often parked nearby
	Sub332016	500	>25kW	>$5,000	-41.28969602583177, 174.00821993759294	Wellington St Marina carpark. There is an existing 500 kVA transformer at 20 Wellington St in the carpark (Sub332016) This carpark is often full and busy. Drawing traffic from SH1 would divert unnecessary traffic through the often busy Picton centre.
	Sub332010	300	>25kW	>$5,000	-41.291939051095845, 174.00647290403387	101 High St. Existing 75kW charger. There is an existing 300 kVA transformer on Broadway, approximately 85m away (Sub332010). A fuel station may be interested in increasing the capacity of their charging hub
	Sub332018	500	>25kW	>$55,000	-41.28886409504183, 174.00607728966472	42 London Quay. Highly visible corner. There is an existing 500 kVA transformer on Auckland St (Sub332018) approximately 80 m away.

A.1.1 Marlborough Lines Accompanying Information

- By 2030 it is difficult to know what transformer capacity will be left on each transformer however in all six locations there is likely to be 25 kW of capacity available.
- MLL does not typically charge for the equipment cost of a new or upgraded transformer (if the replaced transformer supplies multiple consumers). For all sites except for site 3, the 11 kV feeder supplying the existing transformer is likely to be sufficient to manage the addition of a total of 150 kW of EV charging load in 2030, and therefore a transformer upgrade should be able provide the required capacity up to 150kW in 2030.
- The cost of connection to MLL's network consists of the capital cost to install the connection equipment, plus a development contribution. The total charge is payable before energisation.
    - The cost of the connection to the MLL network for each EV charger location identified varies highly between the sites and depends on the exact charger location that is negotiated with the landowner. Factors impacting cost include distance to existing network, land-use/ground coverage, other underground services in the vicinity, etc.
    - MLL's current capital contribution policy requires that new load pays a development contribution. This is a $/kVA capacity rate applicable to the new load, and reflects that other consumers have funded the existing network asset

A.1.2 Marlborough Lines 2030 Traffic Profiles

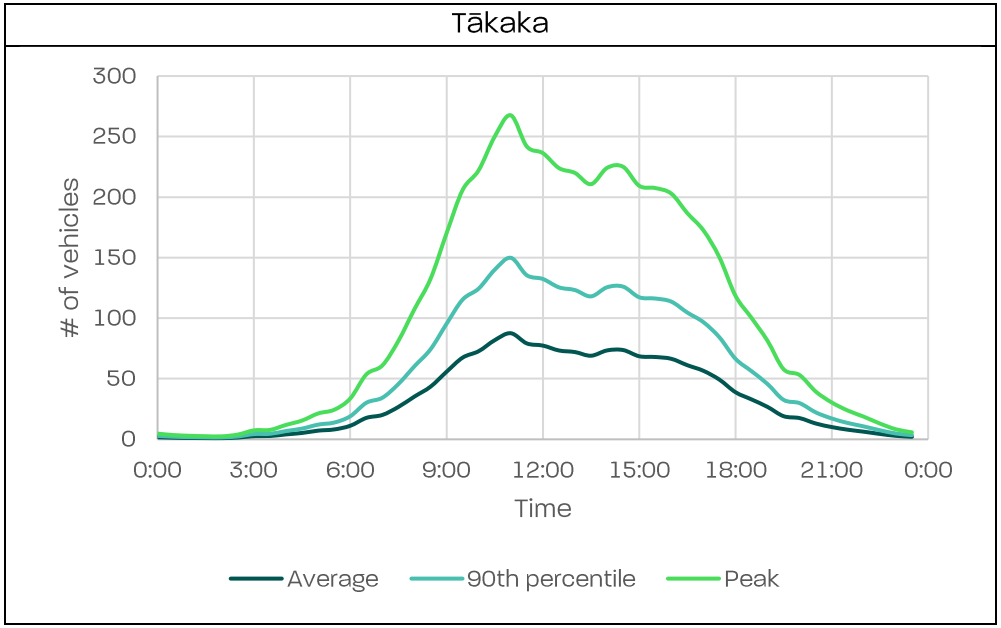
Blenheim	Picton
	

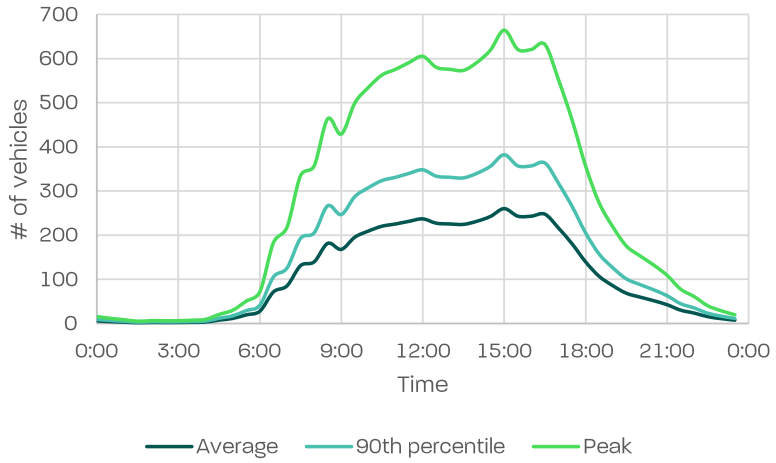
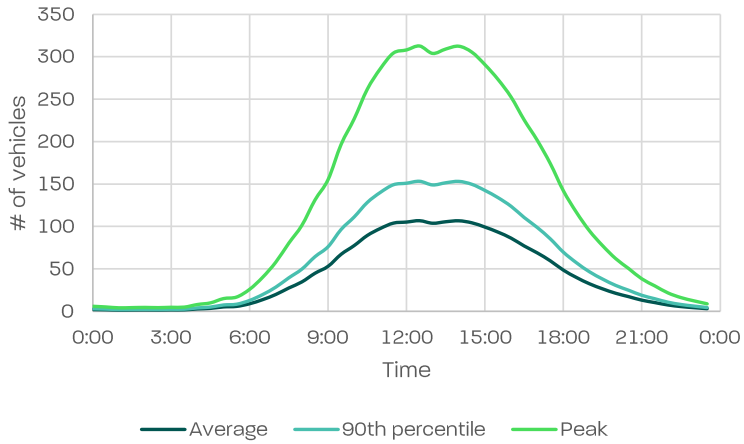
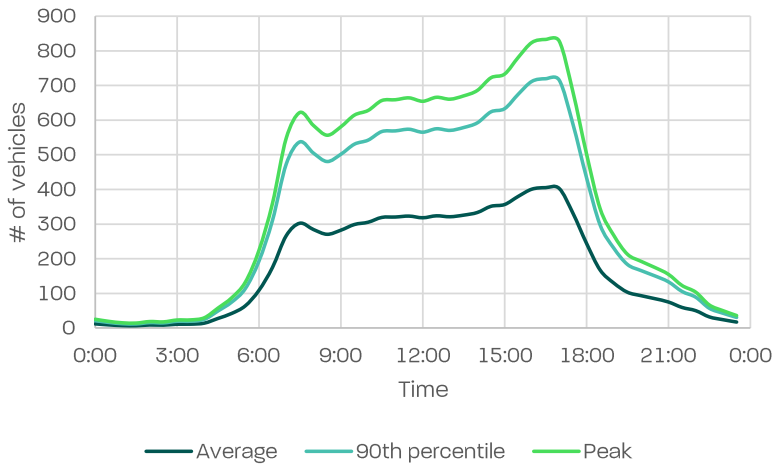
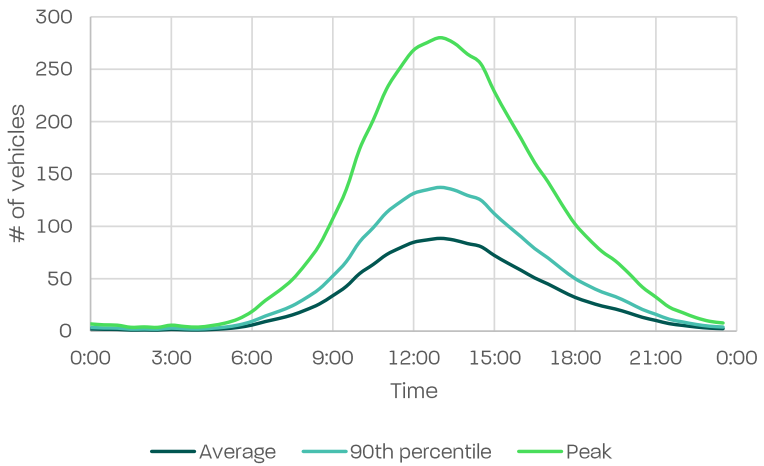
A.2 Network Tasman

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Motueka Township	113	289	166	325	-212	-36	-159	10%	2.56	1.47	3:00:00 pm
Murchison Township	139	408	200	50	89	358	150	30%	2.93	1.43	12:30:00 pm
Richmond Township	88	181	156	200	-112	-19	-44	5%	2.06	1.78	4:30:00 pm
Springs Junction Township	115	365	179	0	115	365	179	30%	3.16	1.55	1:00:00 pm
Takaka Township	38	116	65	50	-12	66	15	10%	3.05	1.71	11:00:00 am

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Motueka Township						
Murchison Township	MUR240	200	59	$80,000	-41.79948762411147, 172.32538290330947	There is a charger located here already. Admin fee circa $350, no Network Department Levy.
	MUR255	100	53	$80,000	-41.800502375527486, 172.32354097927325	Large parking area. Admin feecirca $350, no Network Department Levy.
	MUR161	200	25	$80,000	-41.80129218481603, 172.32536207053747	Very central. Admin fee circa $350, no Network Department Levy.
	MUR196	200	72	$80,000	-41.79999302428495, 172.32784032832583	Limited parking. Admin fee circa $350, no Network Department Levy.
	MUR239	75	15	$170,000	-41.80002204932537, 172.32416066318928	Ground mounted transformer required. Admin fee circa $350, no Network Department Levy.
Richmond Township						
Springs Junction Township			0	$420,000	-42.33401142218633, 172.1823119456102	No Capacity available until HV upgrade. Upgrade forecast cost in the vicinity of $3m. Project not approved for construction at present. For this location an Network Department Levy of $293k for a 200kVA connection will apply. The connection costs will be set by the contractor that the connected party engage but based on recent works will be in the vicinity of $110k for a new groundmounted transformer.
Takaka Township	GB952	500	306	$20,000	-40.861405897953496, 172.80687801566052	A charging company has made enquiry about using this capacity. Admin fee circa $350, no Network Department Levy.
	GB936	300	165	$20,000	-40.86185557395937, 172.8066657262679	Close to Visitor centre - Freshchoice carpark. Admin fee circa $350, no Network Department Levy.
	GB479	300	169	$20,000	-40.85835635945125, 172.80647331685327	Central on main street - close to DOC office. Admin fee circa $350, no Network Department Levy.
	GB937	300	196	$20,000	-40.85995500006779, 172.80749345239383	Behind the main street - parking maybe available. Admin fee circa $350, no Network Department Levy.
	GB544	200	108	$20,000	-40.85956865966476, 172.8062264708423	Central on main street - parking limited. Admin fee circa $350, no Network Department Levy.
	GB545	200	62	$80,000	-40.85977284077141, 172.80560484773025	Middle of commercial area - parking available. Admin fee circa $350, no Network Department Levy.

A.2.1 Network Tasman 2030 Traffic Profiles

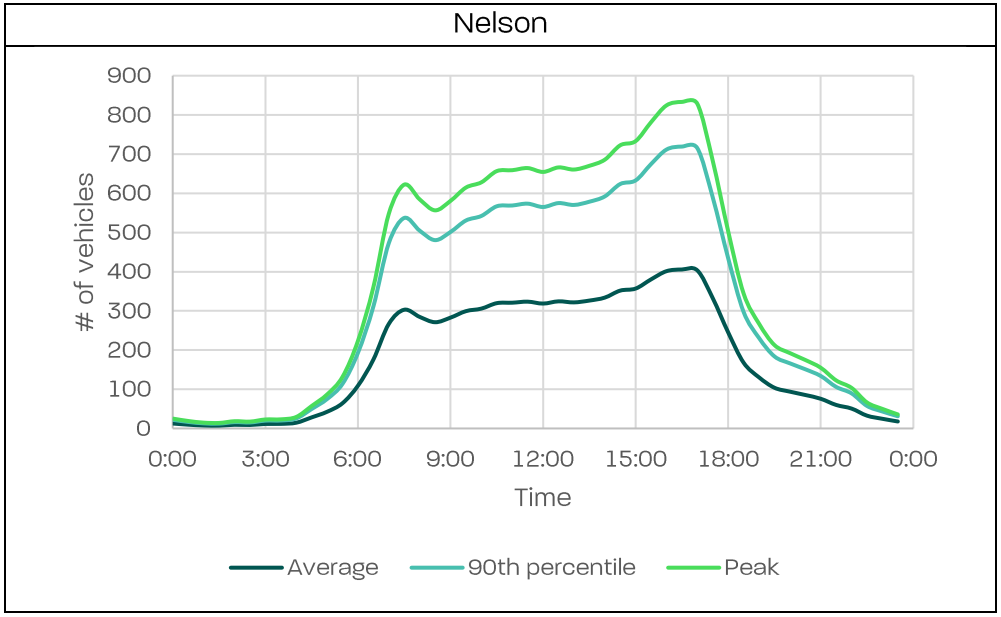


Motueka	Murchison
	
Richmond	**Springs Junction**
	

A.3 Nelson Electricity

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Nelson Township	88	181	156	1700	-1612	-1519	-1544	5%	2.06	1.78	4:30:00 pm

A.3.1 Nelson Electricity 2030 Traffic Profiles

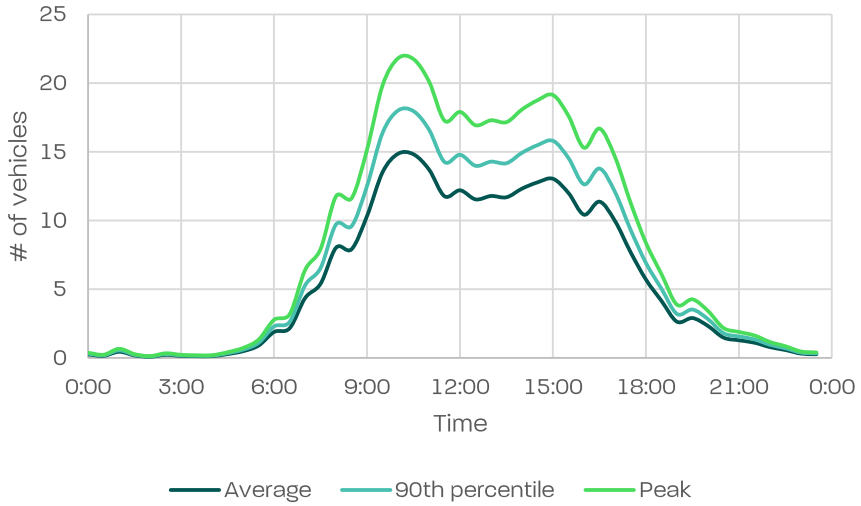
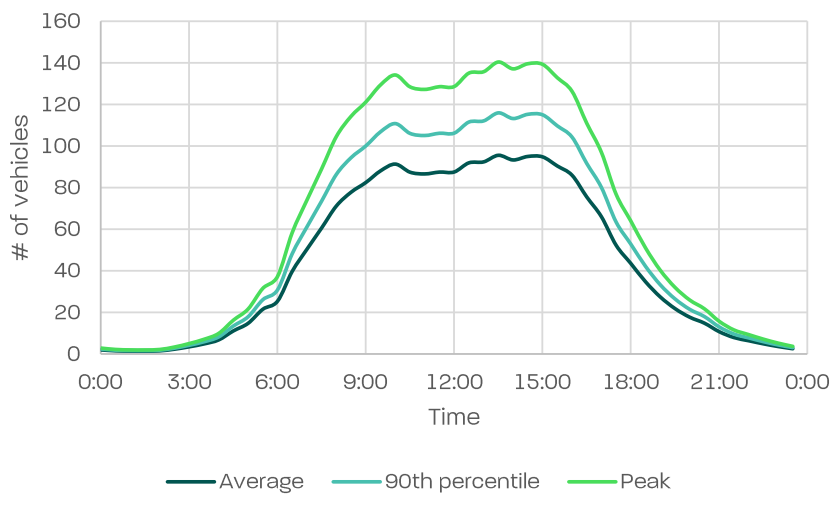


A.4 Buller Electricity

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Westport Township	62	92	76	50	12	42	26	15%	1.47	1.21	10:00:00 am
Karamea Township	13	19	16	25	-12	-6	-9	20%	1.47	1.21	1:30:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Westport Township	S195	500	85	$3,000	-41.75791483129762, 171.59866469545508	Existing EV charging site, New World Carpark
	S466	600	130	$4,500	-41.753270001169746, 171.59866196603838	NBS Theater Carpark
	S143	300	120	$5,600	-41.75596843811688, 171.59911712794087	Palmerston Street
	S511	300	75	$4,500	-41.754251470765794, 171.59999365041324	Victoria Square
	S647	750	210	$5,600	-41.749708032764204, 171.60961888038398	PERC Center
Karamea Township						

A.4.1 Buller Electricity 2030 Traffic Profiles

Karamea	Westport
	

A.5 Westpower

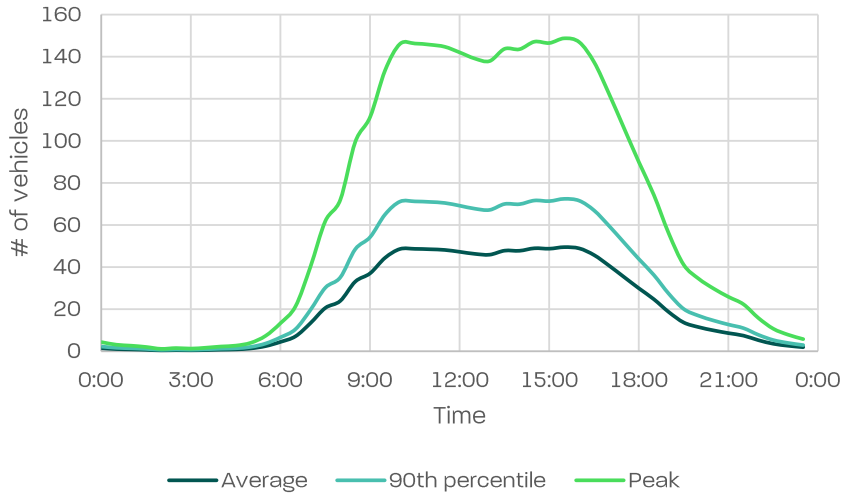
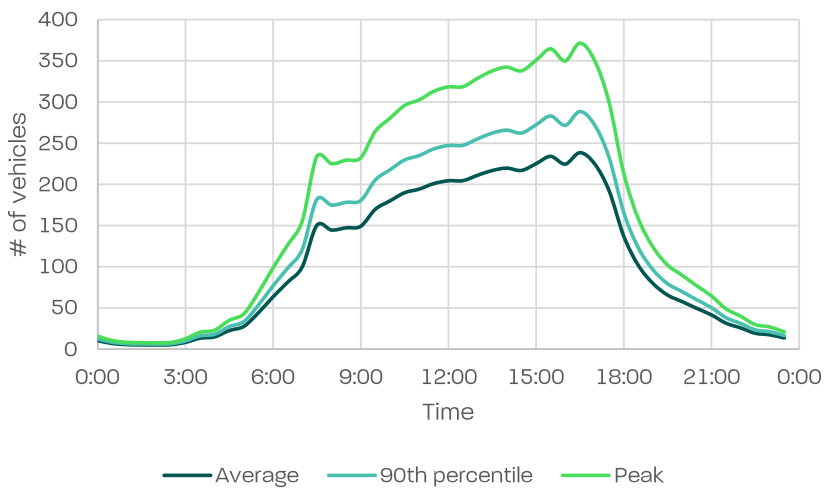
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Fox Glacier Township	64	194	94	75	-11	119	19	30%	3.01	1.47	3:30:00 pm
Reefton Township	67	137	100	25	42	112	75	25%	2.03	1.49	1:30:00 pm
Greymouth Township	155	242	188	75	80	167	113	15%	1.56	1.21	4:30:00 pm
Hokitika Township	42	79	66	50	-8	29	16	15%	1.91	1.58	11:30:00 pm
Punakaiki Township	44	97	59	0	44	97	59	20%	2.20	1.35	3:00:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Fox Glacier Township	s2063 tx:2480	500	200	$80,000	-43.464959385554835, 170.01640814261	Public parking nearby. It would be beneficial to add charging in Fox Glacier as there is currently none, the topology between Franz and Fox is such that it would draw an above average amount of power from an EV.
Reefton Township	S3090 TX:3833	200	50	$40,000	-42.12022938314354, 171.865036511913	New Transformer. Car parking currently avaliable. No other appropraite sites in Reefton, nearby transformers at full load
Greymouth Township	S1988, TX:2345	500	~150	$30,000	-42.44993542669453, 171.21156260113978	Car parking at McDonalds or old Chinese shop for sale, + avaliable capacity
	S5 TX 903	200	~50	$25,000	-42.40049584282934, 171.24729367626057	Just North of Greymouth SH6. Runanga, by the shop car parking avaliable
	S2066 TX:2394	750	~100	$50,000	-42.44913798621505, 171.21401015280372	Countdown parking, EV chargers already at the Warehouse
	S2208 TX 2603	300	0	$150,000	-42.461295066514936, 171.19636743109922	New world car parking. It is currently a 300 kVA Transformer with 0 kVA available, a 500 kVA could be put in its place to make 200 kVA available quite efficiently, the primary costs here would be the trenching and installation of cables through car parks etc.
	S280	500	~100	$20,000	-42.45004032619354, 171.20959532472165	Large Car Park - Greymouth Central CBD. Existing EV charger at opposite end of car park
Hokitika Township	S3087, TX:3900	300	75	$20,000	-42.71502656187546, 170.97220742205428	Public parking, reasonably close to SH6, new transformer so loading unknown
	S1922 TX:2295	750	100	$50,000	-42.71601913248885, 170.96332531552994	New world, just off SH6. Existing EV charger there.
	S595, TX1175	300	50	$50,000	-42.717285842050025, 170.96608306740865	Parking at fuel stations BP-NPD, SH6
	S568 TX3564	500	100	$100,000	-42.719760328966984, 170.9622072670056	Campervan park down gibson quay off SH6. Would need to run new cable fair distance
	S534, TX:3145	1000	250	$100,000	-42.71760501687243, 170.96411813419252	I site hokitkika just off SH6 near town centre. Existing Parking + good location
Punakaiki Township	S118	200	75	$30,000	-42.107338302211005, 171.33653485471876	Township near pub. No parking readily available.
	S2991 TX:2126	300	75	$100,000	-42.11616920579225, 171.33065484572754	DOC next to visitor centre. Only suitable locations in Punakaiki, only car parking area is the visitor centre. Some 50 kW chargers are already being installed in this area.

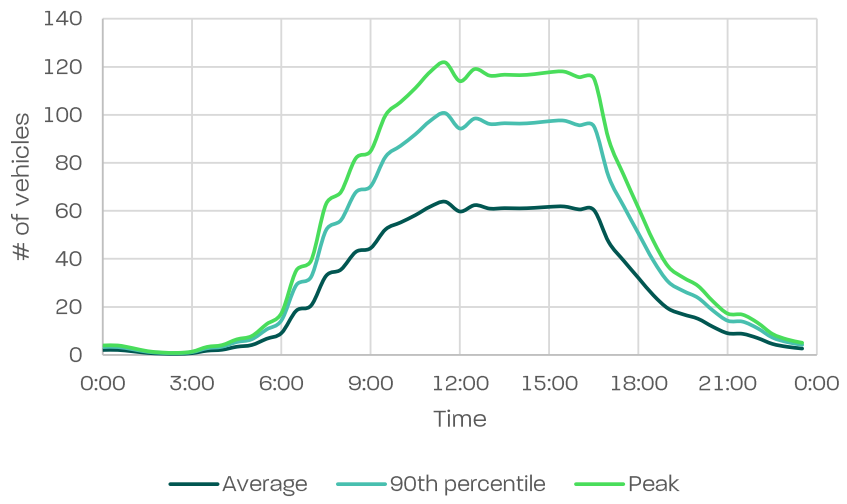
A.5.1 Westpower Accompanying Information

Note that Westpower doesn't usually provide pricing estimates, so these are extremely high level.

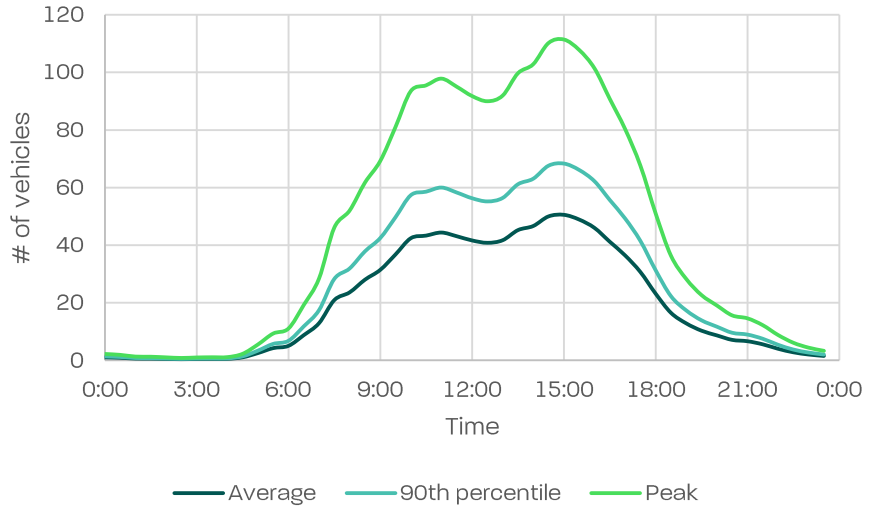
A.5.2 Westpower 2030 Traffic Profiles

Fox Glacier	Greymouth
	

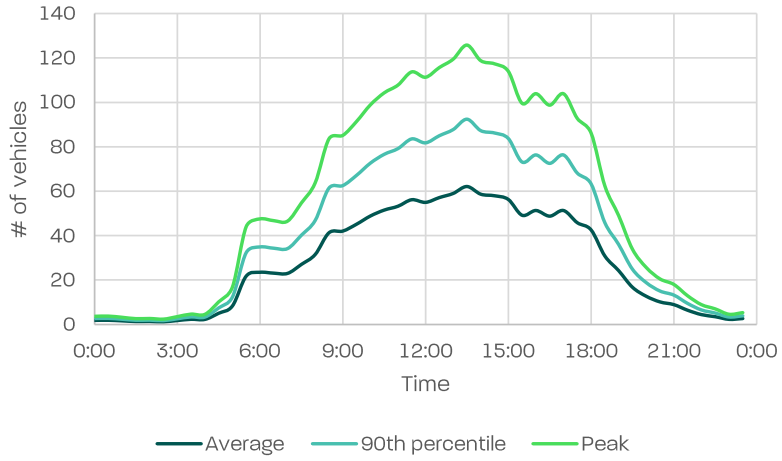
Hokitika



Punakaiki



Reefton



A.6 Mainpower

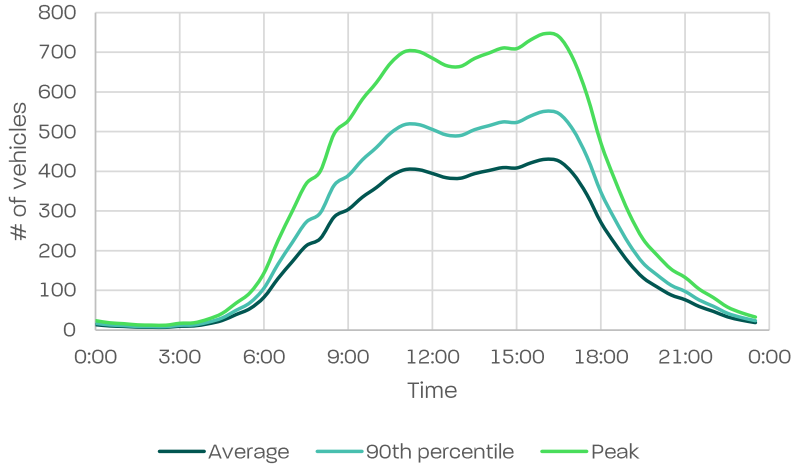
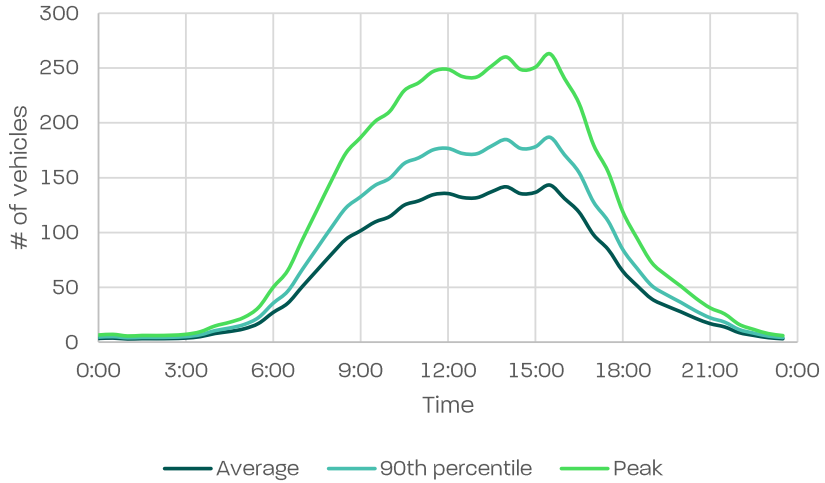
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Amberley Township	280	487	359	50	230	437	309	15%	1.74	1.28	4:00:00 pm
Cheviot Township	156	285	203	50	106	235	153	25%	1.83	1.30	3:30:00 pm
Culverdun Township	126	203	158	50	76	153	108	25%	1.62	1.26	12:00:00 pm
Kaikoura Township	147	427	230	1600	-1453	-1173	-1370	25%	2.90	1.57	3:30:00 pm

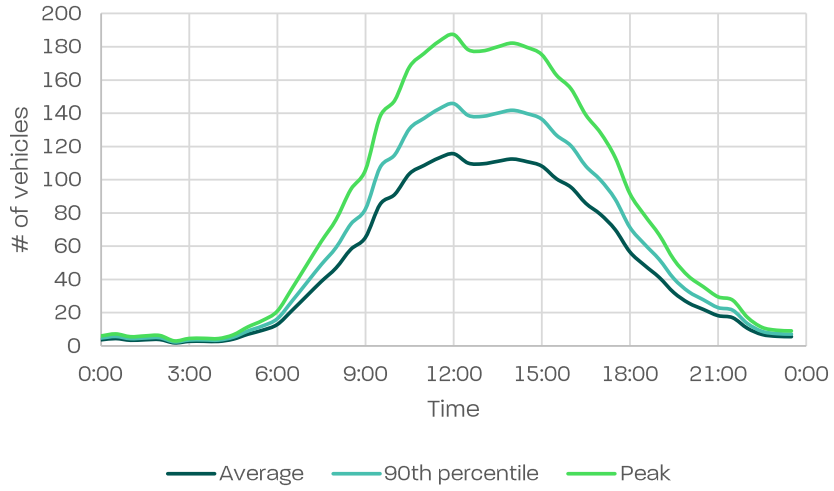
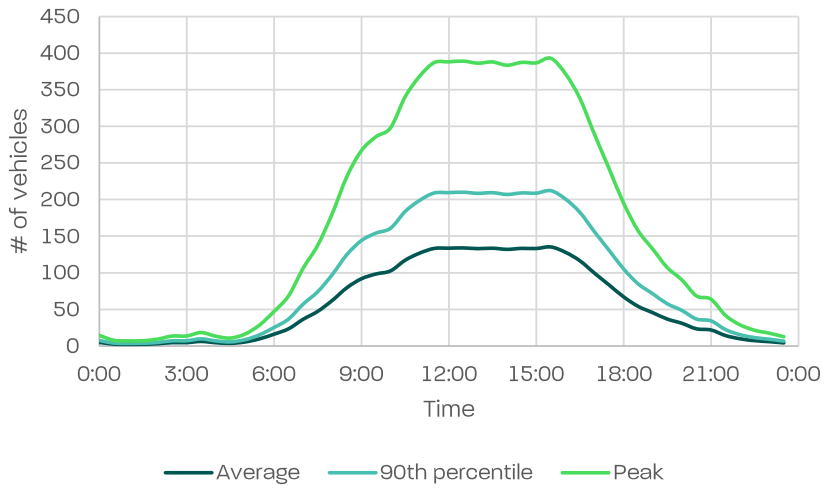
Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Amberley Township	1	500	200	$300,000	-43.15460881345231, 172.7290588122887	3 Dougals Road. Upgrade to minimum 750 kVA required
	2	300	0	$300,000	-43.153151550477894, 172.72844733856397	3 Markham St . Upgrade to minimum 750 kVA required
	3	200	0	$300,000	-43.15159037034583, 172.72853242628943	1 Turners Road. Upgrade to minimum 750 kVA required
	4	300	0	$300,000	-43.15769663446909, 172.7310042185513	4 Amberley Beach Road. Upgrade to minimum 750 kVA required
Cheviot Township	1	300	0	$300,000	-42.81281626716041, 173.27307644347886	4 Seddon St. Upgrade to minimum 500kVA required. Exisiting EV charger location.
Culverdun Township						
Kaikoura Township						

A.6.1 Mainpower Accompanying Information

In most cases, the indicative pricing for connection is $300k for the sites identified. Shifting these from the existing TX sites may incur additional cabling costs.

A.6.2 Mainpower 2030 Traffic Profiles

Amberley	Cheviot
	

Culverdun	Kaikōura
	

A.7 Orion

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Akaroa Township	101	163	117	0	101	163	117	20%	1.62	1.16	11:30:00 am
Arthurs Pass Township	109	273	172	50	59	223	122	30%	2.49	1.57	1:00:00 pm
Darfield Township	68	87	84	50	18	37	34	5%	1.26	1.22	5:00:00 pm
Rolleston Township	162	204	189	435	-273	-231	-246	5%	1.26	1.16	4:30:00 pm
SH1 near CHCH Airport	394	507	460	2700	-2306	-2193	-2240	5%	1.28	1.16	3:30:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Akaroa Township	AK4/111	200	95	$105,000	-43.80355995842953, 172.96752496640528	52 Rue Jolie. Requires TX upgrade, ~100m of trenching to nearest parking
	AK4/103	300	50	$105,000	-43.800599155872725, 172.97032206362186	4 Rue Lavaud. Requires TX upgrade, Limited Parking Nearby, could use carpark on Rue Jolie, likely ~100m of trenching
	AK4/120	300	-40	$105,000	-43.80144974112612, 172.96796397391236	37 Rue Brittan. Requires TX Upgrade, ~100m of trenching to carpark
	AK4/124	200	-50	$75,000	-43.80556342085224, 172.9675244431699	8 Rue Balguerie. Requires TX Upgrade, right beside some car parks and public toilets
Arthurs Pass Township	BE6/30	500	330	$20,000	-42.94174216500997, 171.56292121303287	West Coast Road Public Toilets. Existing EV charger connected to this transformer.
	BE6/5	300	90	$70,000	-42.94001421452254, 171.5619487557012	112 West Coast Road - Main Road. Requires TX Upgrade, 300m from shops
	BE6/12	200	50	$70,000	-42.93676736249313, 171.56086197613922	136 West Coast Road. Requires TX Upgrade, 600m from shops
Darfield Township	HK7/187	300	130	$20,000	-43.48911223541459, 172.1075557068709	72 South Terrace, Public Toilets. Has an existing charger here, in a four square car park
	HK7/81	300	65	$20,000	-43.49059750048777, 172.1176039937476	21 Mathias St, Beside Darfield Library. Slightly off main road, could trench to the highway at additional cost
	HK7/101	200	-50	$60,000	-43.49017441121704, 172.11433748165507	17 South Terrace. Highway Parking, will need a transformer upgrade
	HK7/84	300	-90	$60,000	-43.48993313729605, 172.1105168112613	41 South Terrace. Highway Parking, will need a transformer upgrade
Rolleston Township						
SH1 near CHCH Airport						

A.7.1 Orion Accompanying Information

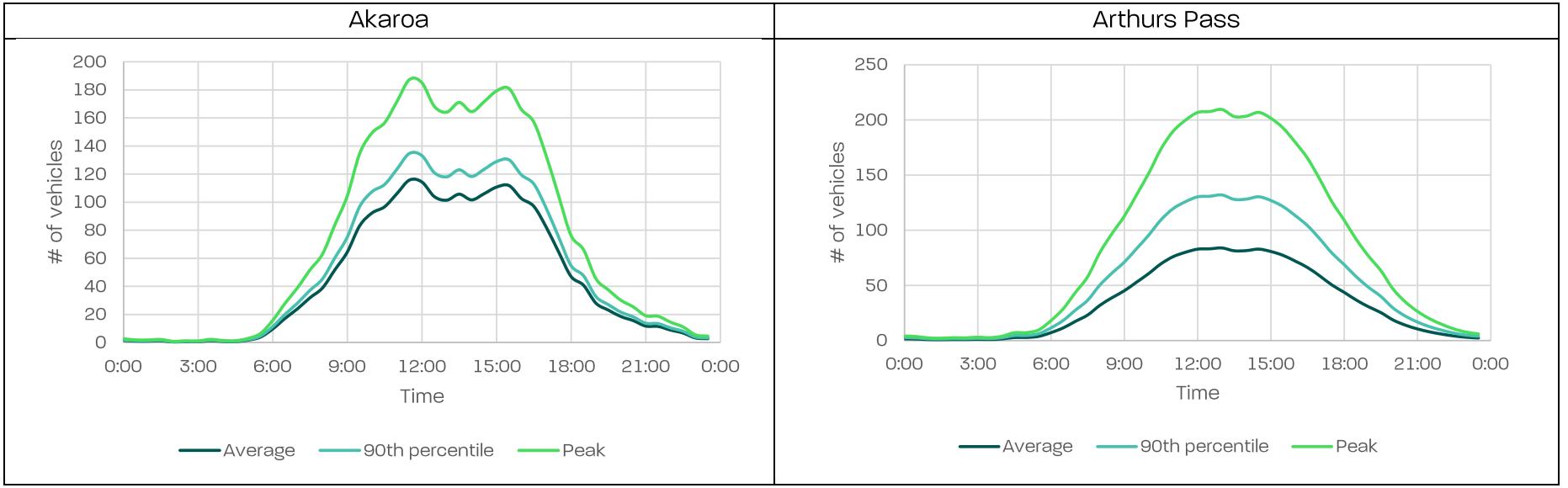
Note 1: Indicative costs for the jobs involving a transformer upgrade include Orion's contributions, total project cost is higher and our current contribution policy may change in the future. Presently we contribute the cost of the transformer and up to 40% of the cost of the works related to the TX upgrade.

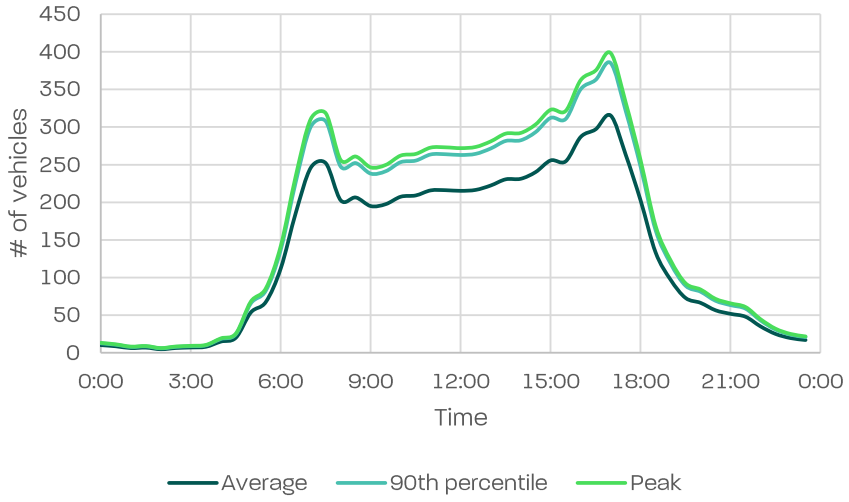
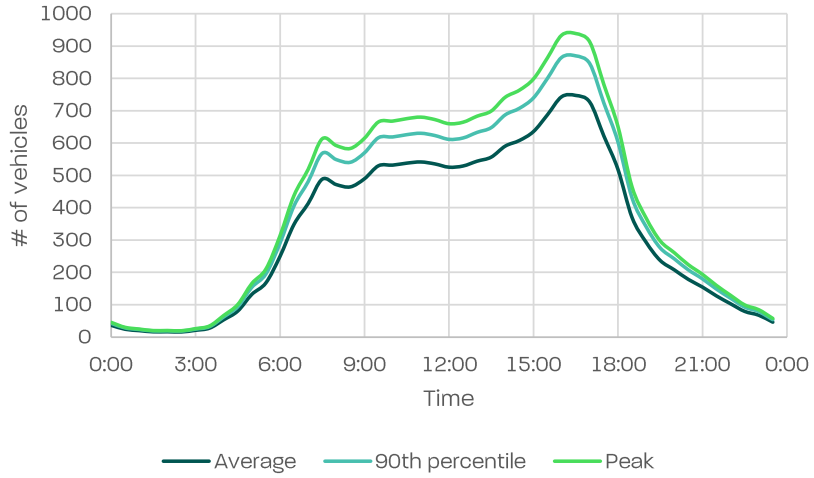
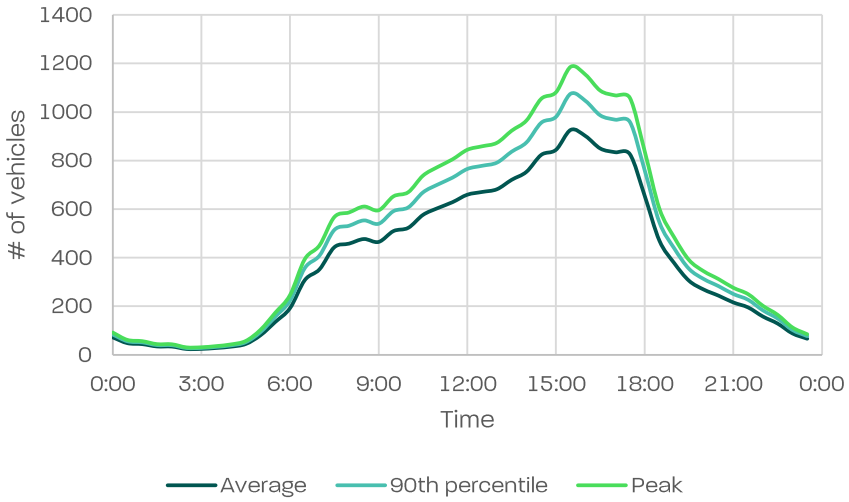
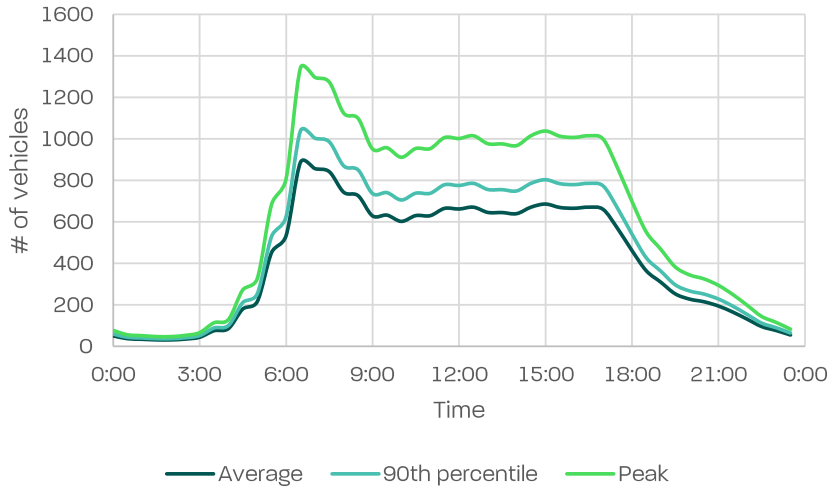
Note 2: We have budgeted $300 per meter for trenching/reinstatement. This is a highly variable rate and can get to $500 per meter depending on the area/ground conditions.

Note 3: The difference in cost between accommodating peak times vs 90th percentile is not material.

Note 4: All of Akaroa's sites are near archaeological areas and may require additional work to account for this. The reports and approvals from local Iwi can take up to 3 months and can cost around $5000.

A.7.2 Orion 2030 Traffic Profiles



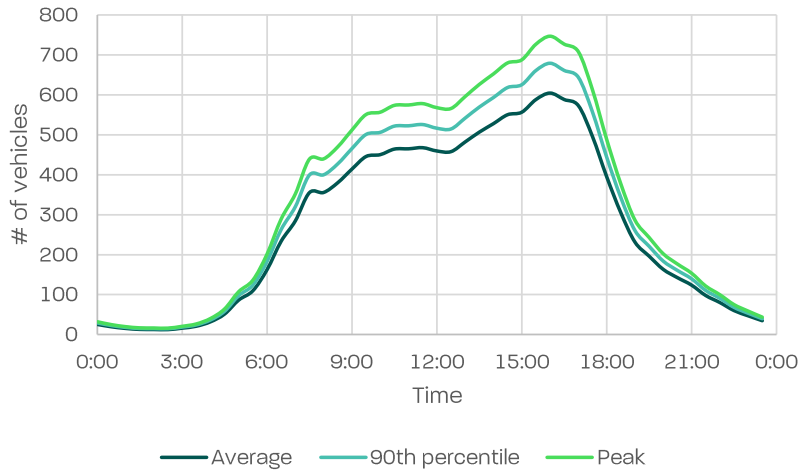
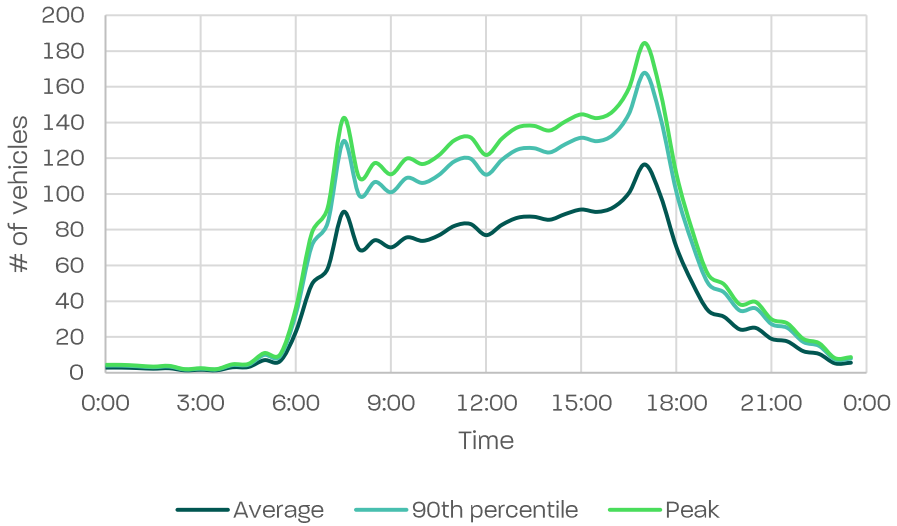
Darfield	Rolleston
	
SH1 Nth of CHCH airport- Dec	**SH1 Nth of CHCH airport- Inc**
	

A.8 Electricity Ashburton

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Ashburton Township	263	324	295	1050	-787	-726	-755	10%	1.24	1.12	4:00:00 pm
Methven Township	51	80	73	50	1	30	23	10%	1.58	1.44	5:00:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Ashburton Township						
Methven Township	1	750	450	$40,000	-43.633239144376645, 171.64569962475866	The Mall 8 MVN. Middle of shops, ideal location based on 200m cabling
	2	300	0	$40,000	-43.63191705822741, 171.6454069890041	Forest Dr 56 MVN. Middle of shops. Need to upgrade transformer
	3	300	100	$30,000	-43.633313226013925, 171.6434822071651	Alington St 22 MVN . 100m walk to shops based off 100m cabling
	4	300	70	$30,000	-43.63327947739448, 171.64705296301142	Main st 112 - A MVN. Dubliner, bike park, 200m to shops based off 100m cabling
	5	250	90	$30,000	-43.63304285791704, 171.64817683177088	Methven Chertsey Rd 3 MVN. 100m walk to shops, blue pub etc

A.8.1 Electricity Ashburton 2030 Traffic Profiles

Ashburton	Methven
	

A.9 Alpine Energy

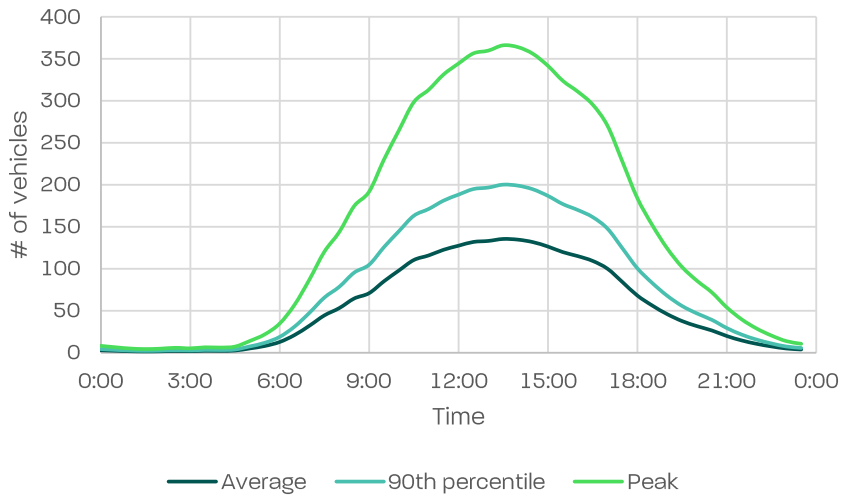
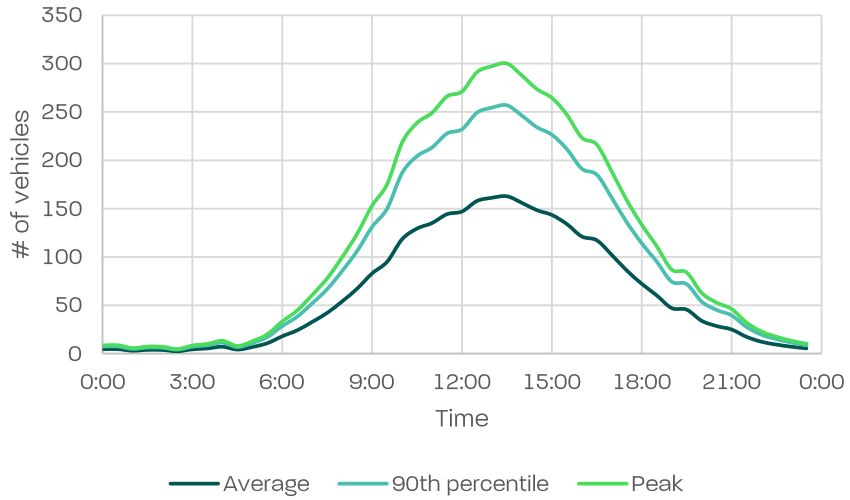
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Fairlie/Geraldine Township	88	239	130	100	-12	139	30	15%	2.70	1.48	1:30:00 pm
Lake Tekapo Township	142	261	223	50	92	211	173	20%	1.84	1.58	1:30:00 pm
Mt Cook Township	59	194	102	50	9	144	55	15%	3.29	1.72	10:30:00 am
Timaru Township	97	122	105	525	-428	-403	-420	5%	1.26	1.09	3:30:00 pm
Twizel Township	114	380	195	150	-36	231	45	15%	3.33	1.71	1:00:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Fairlie/Geraldine Township	1	New Tranformer	New Tranformer	150K (500kVA tf)	-44.09359270113851, 171.24239464912208	Near Cox street. An initial inquiry for an EV charger has been conducted at this location, and the job is currently being processed
	2	New Tranformer	New Tranformer	150K (200kVA tf)	-44.06560832735666, 171.37360789453115	Rangitata. An initial inquiry for an EV charger has been conducted at this location
	3	New Tranformer	New Tranformer	150K (200kVA tf)	-44.100670002950174, 170.8295297581756	Fairlie Car park. A public charger is already available at this location, which is a car park. Additional space is available to accommodate another charger.
Lake Tekapo Township	1	New Tranformer	New Tranformer	150K (200KVA tf + RMU)	-44.002879886488266, 170.45465583554412	148 Twzl Tek Hwy. An initial inquiry was conducted for a petrol station and an EV charger at this location (in the TEK-TWZ Highway)
	2	New Tranformer	New Tranformer	150K (200KVA tf + RMU)	-44.00164444070125, 170.47207922306706	Lakeside. A carpark
	3	New Tranformer	New Tranformer	150K (200KVA tf + RMU)	-43.99925697126783, 170.46304774868014	Lakeside. A carpark
	4	New Tranformer	New Tranformer	150K (200KVA tf + RMU)	-44.00374974285009, 170.47259165710318	Peppers. A CPO has already conducted an initial inquiry for this location.
	5	New Tranformer	New Tranformer	150K (200KVA tf + RMU)	-44.00714447574637, 170.49105807687974	Hamilton Drive. A CPO has already conducted an initial inquiry for this location.
Mt Cook Township	1	New Transformer	New Transformer	2M (500kVA tf+RMU + 11kV underground cable 2km)	-43.7188527010199, 170.09338750784482	Hooker Valley carpark
	2	New Transformer	New Transformer	275K (500kVA + RMU)	-43.91430814058671, 170.12225072642366	Glentanner campground . Please note that this is a private land
Timaru Township						
Twizel Township	1	New Tranformer	New Tranformer	175K (500kVA tf)	-44.25955891255569, 170.10275002647202	Ruataniwha road. A CPO has already conducted an initial inquiry for this location.
	2	New Tranformer	New Tranformer	150K (200kVA tf)	-44.256105483564646, 170.10089135367716	Mackenzie drive. A public charger is already available at this location, which is a car park. Additional space is available to accommodate another charger.
	3	New Tranformer	New Tranformer	150 K (200kVA tf)	-44.2748396231118, 170.06006224209062	Max Smith Drive. Please note that this is a private land near Rowing complex

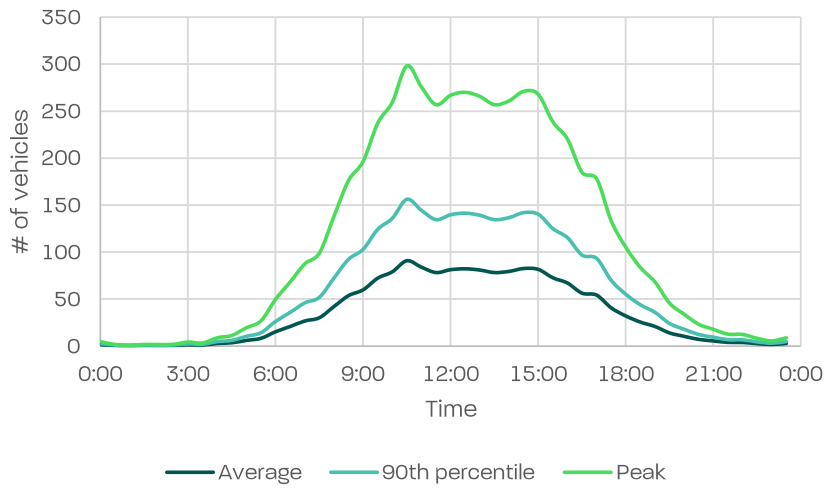
A.9.1 Alpine Energy Accompanying Information

Alpine has identified several feasible locations among the requested sites that are suitable for implementing EV chargers, following EECA guidelines and considering the availability of medium voltage in our network to minimize connection costs.
However, most of these locations do not have nearby transformers, and where transformers are present, they lack the additional capacity required to support EV charging. In addition, we prefer to connect high-capacity EV chargers to the network via a separate transformer. Therefore, the indicative connection cost includes the cost of installing new transformers as well
While the request is for low-cost connection options, it is important to note that the Mt Cook area is one of the most popular tourist destinations in New Zealand, attracting approximately 1 million visitors annually. Given this high level of tourism, we believe the current capacity (50kW) will likely fall short of future demand. Therefore, we have identified and included some feasible locations as a proposal for implementing additional EV chargers to meet the anticipated demand in this area

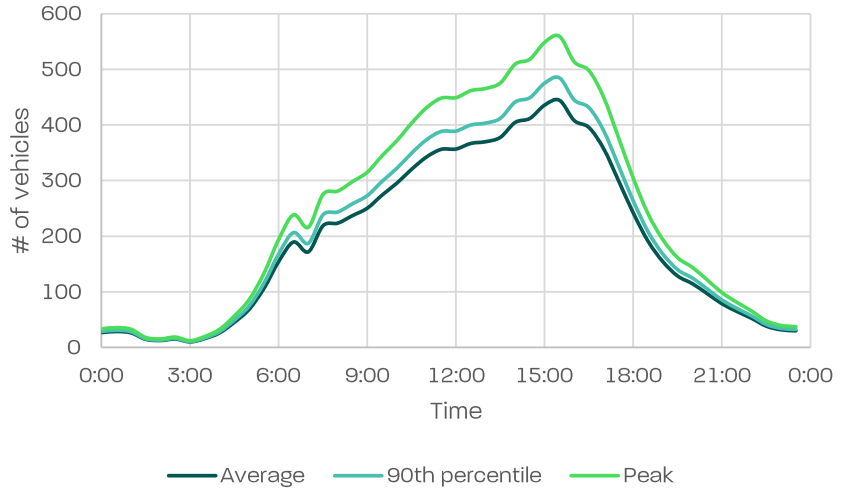
A.9.2 Alpine Energy 2030 Traffic Profiles

Fairlie/Geraldine	Lake Tekapo
	

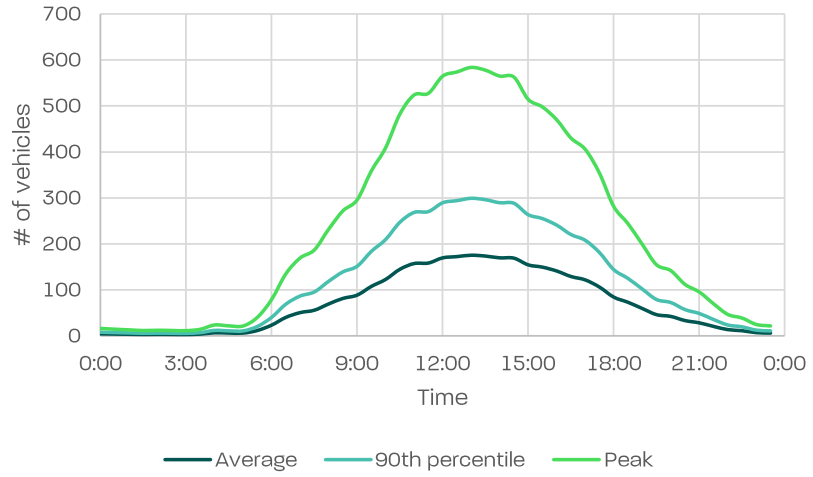
Mt Cook



Timaru



Twizel

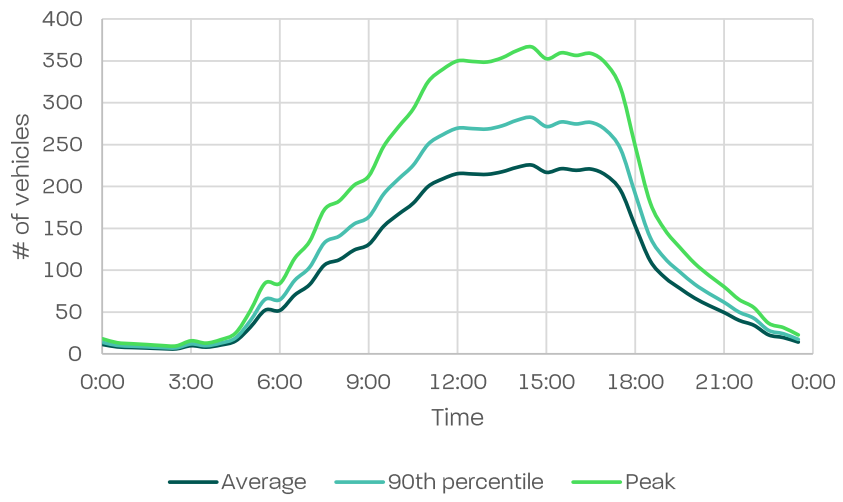


A.10 Network Waitaki

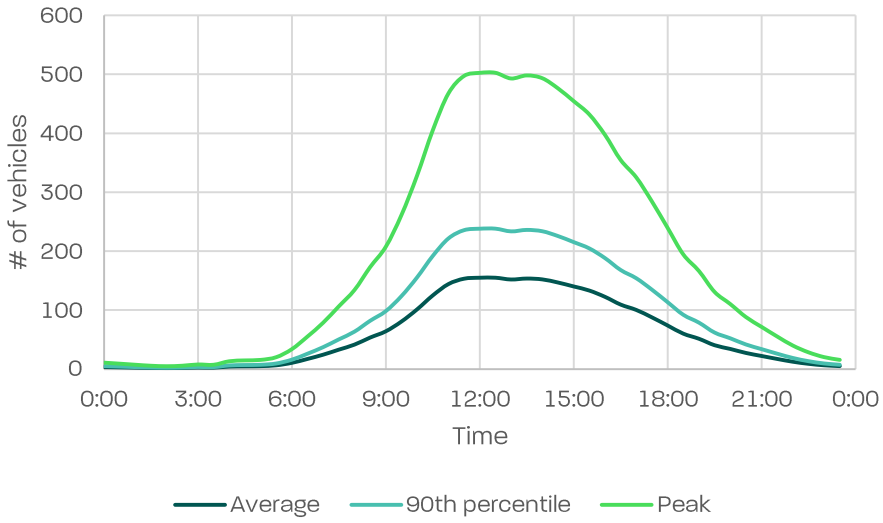
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Oamaru Township	98	159	123	630	-532	-471	-507	10%	1.63	1.25	2:30:00 pm
Omarama Township	135	436	207	660	-525	-224	-453	20%	3.24	1.53	12:30:00 pm

A.10.1 Network Waitaki 2030 Traffic Profiles

Oamaru



Omarama



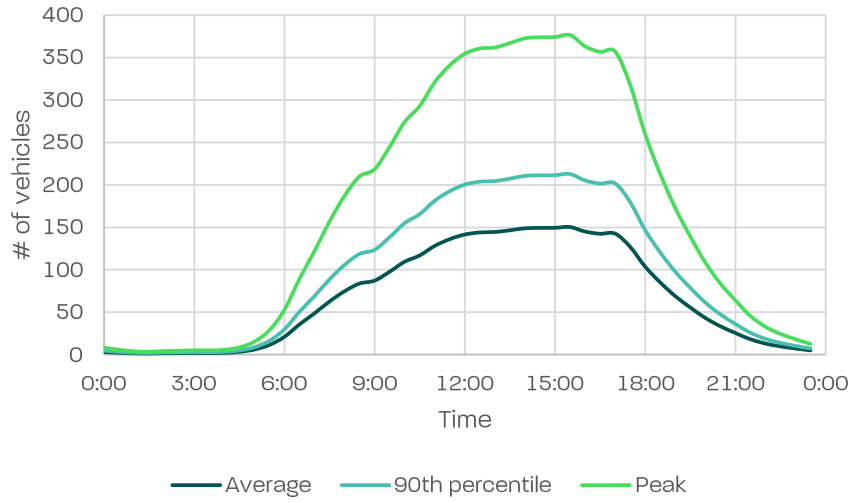
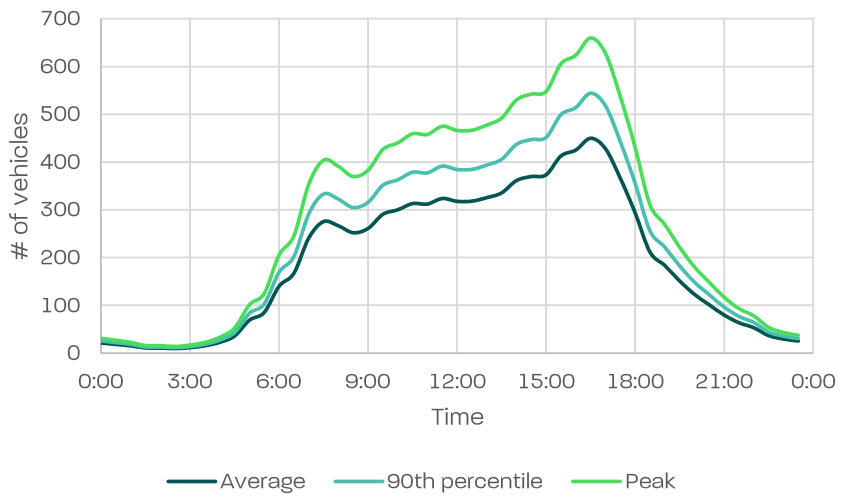
A.11 Aurora Energy

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Dunedin Township	195	286	236	2000	-1805	-1714	-1764	10%	1.47	1.21	4:30:00 pm
Alexandra/Clyde/Cromwell Townships	98	245	139	200	-102	45	-61	15%	2.51	1.42	3:30:00 pm
Queenstown Township	33	68	57	850	-817	-782	-793	5%	2.08	1.76	5:00:00 pm
Tarras Township	65	235	99	0	65	235	99	10%	3.62	1.53	11:30:00 pm
Wanaka Township	67	120	80	550	-483	-430	-470	5%	1.79	1.19	5:00:00 pm

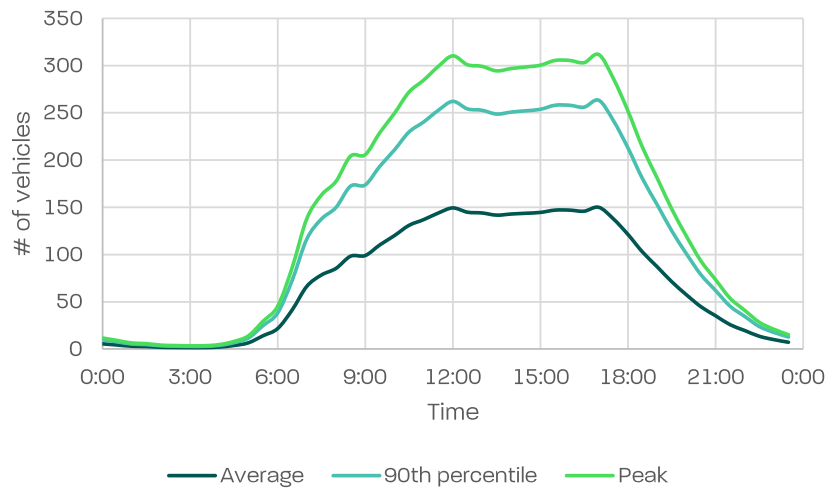
Location	Substation Site Name	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments and Status
Dunedin Township	351 Andersons Bay Rd , Dunedin	500	500	$130,000	-45.8925014956017, 170.5033521121001	Andersons Bay Rd. Z Station (Red-Phase HV) Contracted CFR - TBA
	3 Quarry Rd, Mosgiel (SH-87)	500	276	$165,000	-45.886354718605254, 170.3542749772815	Quarry Rd, Mosgiel. Z Station (LV Connection) Proposed March 2025
	Bombay St 1	300	0	$125,000	-45.87656073180259, 170.5087413987125	Cnr Thomas Burns / Bombay St. Located next to DN Railway Stn. In-service, needs Upgraded
	Burns St No1, Mosgiel	300	100	$20,000	-45.885329069535956, 170.3537695636751	Burns St, Mosgiel. Proposed DCC Park & Ride Carpark. In-service, needs Upgraded
	Cameron St 2	500	500	$180,000	-45.89189294079666, 170.49893004720866	Pak'N'Save Carpark, Sth DN. Proposed charging Site by a CPO. Contracted CFR - TBA

Alexandra/Clyde/Cromwell Townships	AA22	750	250	$20,000	-45.256103616315706, 169.3944765725097	Thompson St. Adjacent to current charging site. Planned Upgrade FY25
	AA7	500	50	$20,000	-45.24953361503779, 169.3869284608035	Moa St. Adjacent to New World Carpark. In-service
	AC112	200	50	$30,000	-45.185894377593165, 169.31667528943223	Cnr Lodge Ln / Holloway St. Adjacent to Public Toilets & CBD. In service.
	CC80	500	100	$20,000	-45.0360413803381, 169.19276694032874	Elspeth St. Adjacent to Mitre 10 / Nichols Carpark. In service.
	CC49	500	100	$20,000	-45.037622143451784, 169.19635802080327	Waenga Dr. Carpark at Cromwell Gardens. In-service
Queenstown Township	WQ163	750	200	Investigation Req	-45.031727261351385, 168.658156373261	Man St - Carparking Building. Tenant Supply Upgrade or ex MSB. In-service
	WQ146	1000	200	Investigation Req	-45.03242857014316, 168.66192088994933	Church St - Carparking Building. Tenant Supply Upgrade or ex MSB. In-service
	WQ21	500	250	$30,000	-45.03734609604103, 168.66210859182755	Botanical Gardens. Carpark. In-service
	WQ192	150	50	$75,000	-45.0279859063897, 168.66023902458838	QLDC Carpark. Carpark - LV extn required. In-service, needs Upgraded
	WF196	750	250	$75,000	-45.011667975221755, 168.74260591644398	Kmart Carpark, Frankton. Carpark - LV Board & LV extn required. In-service, needs Upgraded
Tarras Township	UT38	100	0	$200,000	-44.83697949074615, 169.41164031124066	2810 Tarras/Cromwell Rd (SH8). Upgrade to 500kVA. In-service, needs Upgraded
Wanaka Township	UW319	750kVA	250	$25,000	-44.69732740057241, 169.15876913338414	Sir Cliff Screggs Dr. Txfr located At Mitre 10 Mega. Available as of Dec2024
	UW239	150kVA	0	$125,000	-44.697098884619784, 169.13436325863654	Dungavon St - Carpark Opposite. Upgrade Txfr for adjacent Carpark. In-service, needs Upgraded
	UW317	500kVA	250	$20,000	-44.70161764195507, 169.15399389912474	3 Grace Wright Dr. High School Supply. Available as of Dec2024
	UW316	500kVA	100	$30,000	-44.701424163690774, 169.15417243796279	41 Sir Tim Wallis Dr. Aquatic Centre, Not recommended. In-service, needs Upgraded
	UW7	750kVA	250	$75,000	-44.69569063078423, 169.13587241518576	Dunmore St. Upgrade option to adjacent Carpark. In-service, needs Upgraded

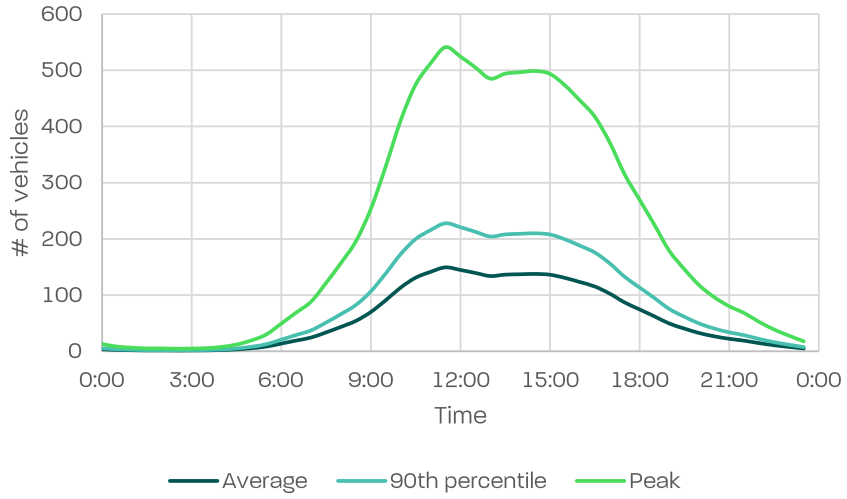
A.11.1 Aurora Energy 2030 Traffic Profiles

Alexandra/Clyde/Cromwell	Dunedin
	

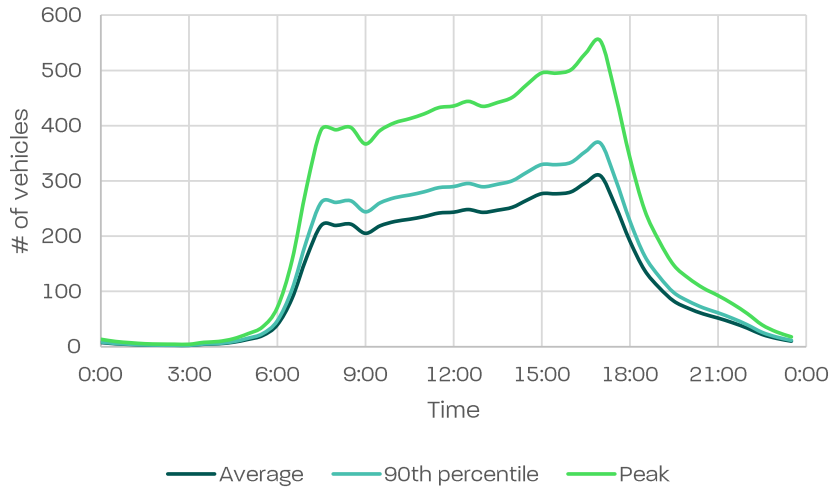
Queenstown



Tarras



Wanaka



A.12 Powernet

Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Balclutha Township	**183**	253	222	50	133	203	172	15%	1.39	1.21	4:30:00 pm
Gore Township	**112**	155	132	50	62	105	82	10%	1.38	1.18	4:30:00 pm
Lumsden Township	**98**	123	109	50	48	73	59	20%	1.26	1.12	5:00:00 pm
Te Anau Township	**82**	167	140	75	7	92	65	20%	2.03	1.70	10:30:00 am
Invercargill Township	**67**	81	75	75	-8	6	0	5%	1.21	1.12	5:00:00 pm

Location	Transformer	Rated capacity (kVA)	Available capacity (kVA)	Indicative connection cost ($)	Location	Comments
Balclutha Township	1	750	700	$20,000	-46.232597946555835, 169.74169758440522	36, Barnego Road, Balclutha, Clutha District, Otago, 9230, New Zealand. Possible location: Mckweon's Balclutha
	2	750	475	$5,000	-46.2371978915677, 169.73820318335987	Charlotte Street, Balclutha, Clutha District, Otago, 9230, New Zealand. Possible location: Exisitng charging site already, Warehouse Parking
	3	500	400	$10,000	-46.23915070560693, 169.7386855326819	Rusticus, John Street, Balclutha, Clutha District, Otago, 9230, New Zealand. Possible location: Carpark near Balclutha Bookshop
	4	500	400	$5,000	-46.231450750500684, 169.74815974924178	17, Yarmouth Street, Balclutha, Clutha District, Otago, 9230, New Zealand. Possible location: On street parking by park
	5	500	375	$5,000	-46.23900110056353, 169.735873586974	88, Clyde Street, Balclutha, Clutha District, Otago, 9230, New Zealand. Possible location: On street parking by Balclutha Honda

Gore Township	1	1000	750	$5,000	-46.10003494380353, 168.9429970693971	9, Irk Street, Jacobs Town, Gore, Gore District, Southland, 9740, New Zealand. Possible location: Carpark
	2	750	500	$30,000	-46.11495370447617, 168.92929499735797	1, Pourakino Place, West Gore, Gore, Gore District, Southland, 9710, New Zealand. Possible location: Best place likely to be on-street parking, transformer located by Norana Bulbs Limited warehouse
	3	500	450	$5,000	-46.10196749859337, 168.94338575164483	Domino's, Bowler Avenue, Jacobs Town, Gore, Gore District, Southland, 9740, New Zealand. Possible location: Carpark
	4	500	350	$5,000	-46.1026926600482, 168.9412616724038	Gore Public Library, 10C, Ardwick Street, Jacobs Town, Gore, Gore District, Southland, 9740, New Zealand. Possible location: Carpark
	5	500	300	$5,000	-46.100123399830075, 168.94591055678353	Mersey Lane, Jacobs Town, Gore, Gore District, Southland, 9740, New Zealand. Possible location: Carpark
Lumsden Township	1	200	125	$30,000	-45.73672493546387, 168.44284466353537	8, Hill Road, Lumsden, Northern Community, Southland District, Southland, 9730, New Zealand. Possible location: Empty lot by Lumsden community centre
	2	200	100	$20,000	-45.738388570493534, 168.44312282354116	164, Flora Road, Lumsden, Northern Community, Southland District, Southland, 9730, New Zealand. Possible location: Parking area by Royal Mail Hotel
	3	200	100	$10,000	-45.73722228243827, 168.44183423808715	140, Flora Road, Lumsden, Northern Community, Southland District, Southland, 9730, New Zealand. Possible location: Parking by Lumsden Lotto & Dairy
	4	200	75	$55,000	-45.74122511887965, 168.4452614057973	24, Laura Street, Lumsden, Northern Community, Southland District, Southland, 9730, New Zealand. Possible location: Residential area, requires TX upgrade
	5	100	50	$41,000	-45.73632631771375, 168.4413823678345	120, Flora Road, Lumsden, Northern Community, Southland District, Southland, 9730, New Zealand. Possible location: RD Petroleum, requires TX upgrade
Te Anau Township	1	750	550	$10,000	-45.41803479030138, 167.71371888258332	Distinction Te Anau Hotel & Villas, Harrison Court, Te Anau, Fiordland Community, Southland District, Southland, 9600, New Zealand. Possible location: Distinction Hotel Car Park
	2	500	475	$20,000	-45.41521745891053, 167.733683525584	91, Sandy Brown Road, Te Anau, Fiordland Community, Southland District, Southland, 9679, New Zealand. Possible location: Safer Parking Car Park
	3	500	425	$5,000	-45.417381015852655, 167.71884144948336	Glow Worm Restaurant, Mokoroa Street, Te Anau, Fiordland Community, Southland District, Southland, 9600, New Zealand. Possible location: Glow Worm Restaurant Car Park
	4	500	325	$10,000	-45.41462446797533, 167.71498983962596	FreshChoice, 5, Milford Crescent, Te Anau, Fiordland Community, Southland District, Southland, 9600, New Zealand. Possible location: Fresh Choice Te Anau Car Park
	5	500	325	$5,000	-45.41452769992777, 167.7159631180917	1, The Lane, Te Anau, Fiordland Community, Southland District, Southland, 9600, New Zealand. Possible location: Car Park by The Lane
Invercargill Township	1	1000	925	$5,000	-46.418922817420494, 168.35007741806754	1/38, Teviot Street, Appleby, Invercargill City, Southland, 9812, New Zealand. Possible location: Car Park near Blue River Dairy (Cnr Teviot & Nith)
	2	1000	800	$5,000	-46.41951836449023, 168.35038611088927	111, Nith Street, Appleby, Invercargill City, Southland, 9812, New Zealand. Possible location: On Street Parking along Ettrick
	3	1000	700	$25,000	-46.415349033623826, 168.36275458373368	50, Elles Road, Richmond, Invercargill City, Southland, 9812, New Zealand. Possible location: Mitre 10 & Harvey Norman Car Park
	4	750	675	$10,000	-46.40886386308688, 168.34599618058718	Bed, Bath & Beyond, Leven Street, Avenal, Invercargill City, Southland, 9810, New Zealand. Possible location: Car Park
	5	1000	675	$5,000	-46.41134688242964, 168.34762073326135	55, Dee Street, Invercargill CBD, Avenal, Invercargill City, Southland, 9810, New Zealand. Possible location: On street parking along Dee St

A.12.1 Powernet accompanying information

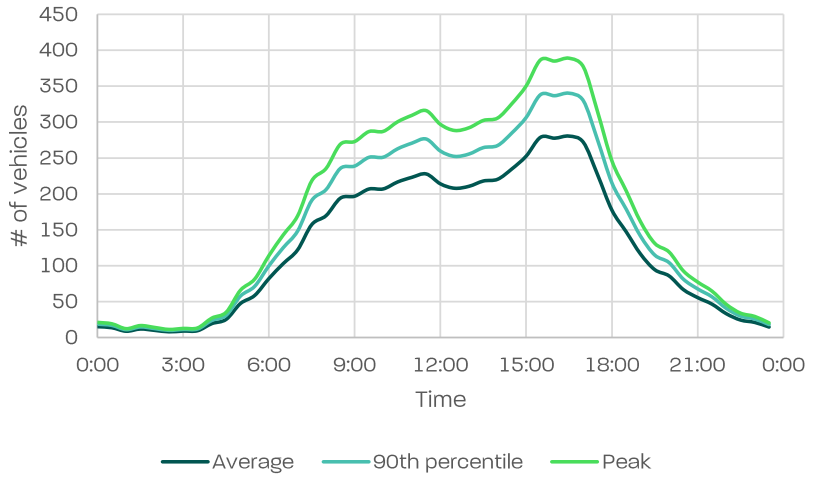
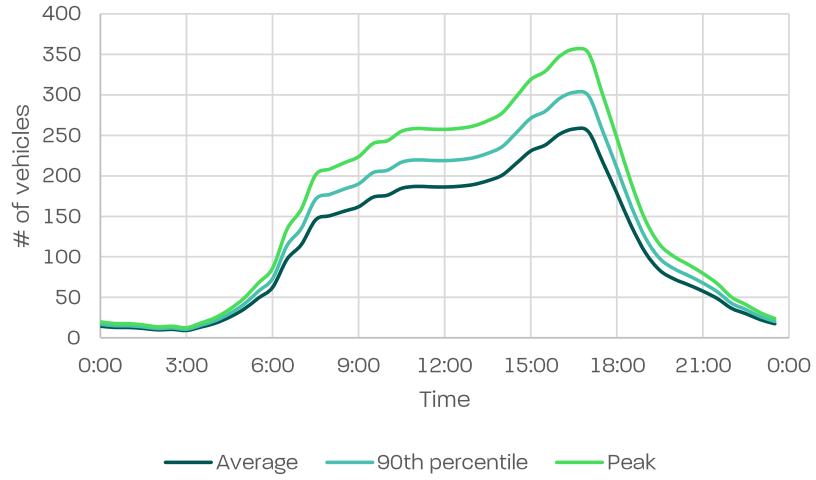
Note 1: The standard application fee is $127.

Note 2: Trenching and reinstatement costs will range from $100 to $450 depending on the surface.

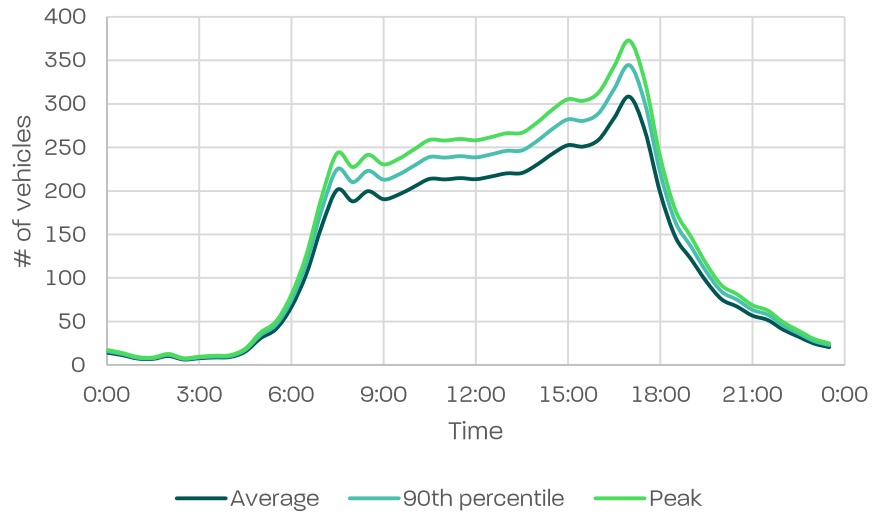
Note 3: Indicative costs are high level desktop estimates and only accounts for the change of the transformer and trenching. An assessment of the site and any existing equipment will be required to provide better cost estimate. There may be additional costs e.g. conductors and equipment needed, traffic management, assessments and consents required by other parties.

Project manager note: Terminating cables, accessing the start and finish points etc have **not** been included in the per metre. Also, the high-level costing quoted above can still vary wildly depending on certain variables. It should be treated with care and only used as a high-level estimate.

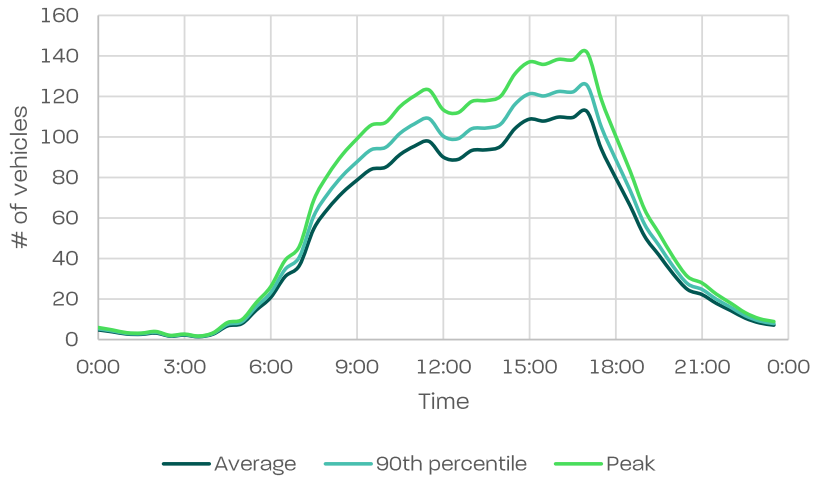
A.12.2 Powernet 2030 Traffic Profiles

Balclutha	Gore
	

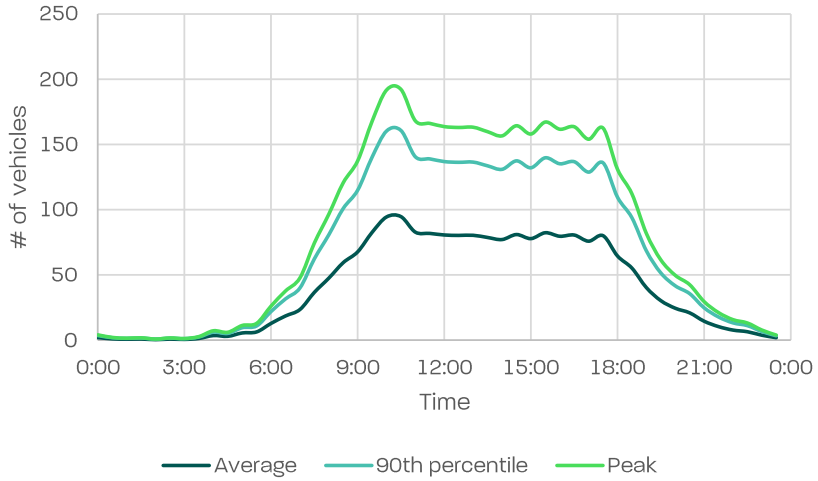
Invercargill



Lumsden



Te Anau

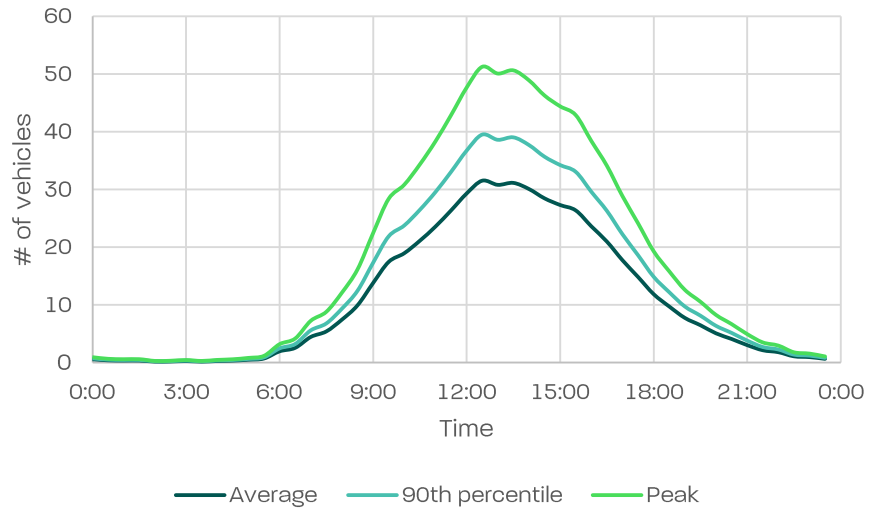


A.13 Off-Grid

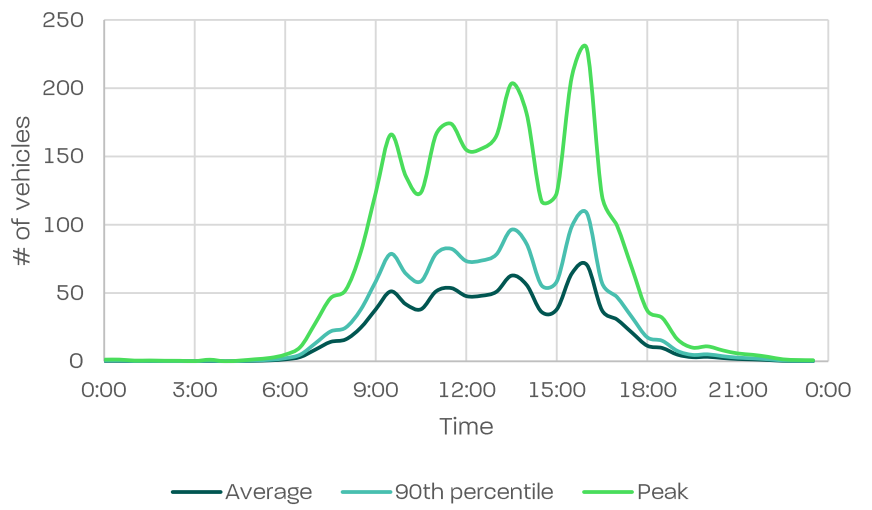
Location	2030 Total Forecasted Demand at Daily Peak			2024 DC Charging Capacity (kW)	2030 Additional Capacity Needed at Daily Peak			Turn-in rate	Peak / Avg	90th / Avg	Daily Peak Time
	Avg (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)				
Haast Township	41	158	82	0	41	158	82	30%	3.85	1.98	12:30:00 pm
Milford Sound Township	92	303	147	0	92	303	147	30%	3.30	1.60	4:00:00 pm

A.13.1 Off-grid 2030 Traffic Profiles

Haast



Milford



Appendix B: Sensitivity Analysis

B.14 Original Turn-in Rate and Battery Charge

EDB	Location	2030 Total Forecasted Demand			2024 Charging Capacity (kW)	2030 Additional Capacity Needed			Turn In Rate
		Avg. (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)	
1. Marlborough Lines	Blenheim	171	263	207	1,725	-1,554	-1,462	-1,518	10%
1. Marlborough Lines	Picton	171	263	207	75	96	188	132	10%
2. Network Tasman	Motueka	113	289	166	325	-212	-36	-159	10%
2. Network Tasman	Murchison	70	204	100	50	20	154	50	15%
2. Network Tasman	Nelson	88	181	156	1,700	-1,612	-1,519	-1,544	5%
2. Network Tasman	Richmond	88	181	156	200	-112	-19	-44	5%
2. Network Tasman	Springs Junction	115	365	179	0	115	365	179	30%
2. Network Tasman	Takaka	38	116	65	50	-12	66	15	10%
3. Buller Electricity	Karamea	13	19	16	25	-12	-6	-9	20%
3. Buller Electricity	Westport	62	92	76	50	12	42	26	15%
4. Westpower	Franz/Fox	64	194	94	75	-11	119	19	30%
4. Westpower	Greymouth	155	242	188	75	80	167	113	15%
4. Westpower	Hokitika	42	79	66	50	-8	29	16	15%
4. Westpower	Punakaiki	44	97	59	0	44	97	59	20%
4. Westpower	Reefton	67	137	100	25	42	112	75	25%
5. Mainpower	Amberley	280	487	359	50	230	437	309	15%
5. Mainpower	Cheviot	156	285	203	50	106	235	153	25%
5. Mainpower	Culverden	126	203	158	50	76	153	108	25%
5. Mainpower	Kaikoura	147	427	230	1,600	-1,453	-1,173	-1,370	25%
6. Orion	Akaroa	101	163	117	0	101	163	117	20%
6. Orion	Arthurs Pass	109	273	172	50	59	223	122	30%
6. Orion	Darfield	68	87	84	50	18	37	34	5%
6. Orion	Rolleston	162	204	189	435	-273	-231	-246	5%
6. Orion	SH1Nth of CHCH airport - De	201	258	234	1,350	-1,149	-1,092	-1,116	5%
6. Orion	SH1Nth of CHCH airport - Inc	193	249	226	1,350	-1,157	-1,101	-1,124	5%
7. EA Networks	Ashburton	263	324	295	1,050	-787	-726	-755	10%
7. EA Networks	Methven	51	80	73	50	1	30	23	10%
8. Alpine	Fairlie/Geraldine	88	239	130	100	-12	139	30	15%
8. Alpine	Lake Tekapo	142	261	223	50	92	211	173	20%
8. Alpine	Mt Cook	59	194	102	50	9	144	52	15%
8. Alpine	Timaru	97	122	105	525	-428	-403	-420	5%
8. Alpine	Twizel	114	380	195	150	-36	230	45	15%
9. Network Waitaki	Oamaru	98	159	123	630	-532	-471	-507	10%
9. Network Waitaki	Omarama	135	436	207	660	-525	-224	-453	20%
10. Aurora	Alexandra/Clyde/Cromwell	98	245	139	200	-102	45	-61	15%
10. Aurora	Dunedin	195	286	236	2,000	-1,805	-1,714	-1,764	10%
10. Aurora	Queenstown	33	68	57	850	-817	-782	-793	5%
10. Aurora	Tarras	65	235	99	0	65	235	99	10%
10. Aurora	Wanaka	67	120	80	550	-483	-430	-470	5%
11. PowerNet	Balclutha	183	253	222	50	133	203	172	15%
11. PowerNet	Gore	112	155	132	50	62	105	82	10%
11. PowerNet	Invercargill	67	81	75	75	-8	6	-0	5%
11. PowerNet	Lumsden	98	123	109	50	48	73	59	20%
11. PowerNet	Te Anau	82	167	140	75	7	92	65	20%
12. Off Grid	Haast	41	158	82	0	41	158	82	30%
12. Off Grid	Milford	92	303	147	0	92	303	147	30%

B.15 Scenario 1: 40% Battery Charge

EDB	Location	2030 Total Forecasted Demand			2024 Charging Capacity (kW)	2030 Additional Capacity Needed			Turn In Rate
		Avg. (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)	
1. Marlborough Lines	Blenheim	228	350	275	1,725	-1,497	-1,375	-1,450	10%
1. Marlborough Lines	Picton	228	350	275	75	153	275	200	10%
2. Network Tasman	Motueka	151	385	221	325	-174	60	-104	10%
2. Network Tasman	Murchison	93	272	133	50	43	222	83	15%
2. Network Tasman	Nelson	117	241	208	1,700	-1,583	-1,459	-1,492	5%
2. Network Tasman	Richmond	117	241	208	200	-83	41	8	5%
2. Network Tasman	Springs Junction	154	487	238	0	154	487	238	30%
2. Network Tasman	Takaka	51	155	87	50	1	105	37	10%
3. Buller Electricity	Karamea	17	25	21	25	-8	0	-4	20%
3. Buller Electricity	Westport	83	122	101	50	33	72	51	15%
4. Westpower	Franz/Fox	86	258	126	75	11	183	51	30%
4. Westpower	Greymouth	207	323	251	75	132	248	176	15%
4. Westpower	Hokitika	55	106	88	50	5	56	38	15%
4. Westpower	Punakaiki	59	129	79	0	59	129	79	20%
4. Westpower	Reefton	90	182	134	25	65	157	109	25%
5. Mainpower	Amberley	374	649	479	50	324	599	429	15%
5. Mainpower	Cheviot	208	381	271	50	158	331	221	25%
5. Mainpower	Culverden	167	271	211	50	117	221	161	25%
5. Mainpower	Kaikoura	196	569	307	1,600	-1,404	-1,031	-1,293	25%
6. Orion	Akaroa	134	217	156	0	134	217	156	20%
6. Orion	Arthurs Pass	146	364	229	50	96	314	179	30%
6. Orion	Darfield	91	115	112	50	41	65	62	5%
6. Orion	Rolleston	216	272	252	435	-219	-163	-183	5%
6. Orion	SH1Nth of CHCH airport - De	268	344	312	1,350	-1,082	-1,006	-1,038	5%
6. Orion	SH1Nth of CHCH airport - Inc	257	332	301	1,350	-1,093	-1,018	-1,049	5%
7. EA Networks	Ashburton	350	432	393	1,050	-700	-618	-657	10%
7. EA Networks	Methven	67	107	97	50	17	57	47	10%
8. Alpine	Fairlie/Geraldine	118	318	174	100	18	218	74	15%
8. Alpine	Lake Tekapo	189	348	297	50	139	298	247	20%
8. Alpine	Mt Cook	79	259	136	50	29	209	86	15%
8. Alpine	Timaru	129	162	140	525	-396	-363	-385	5%
8. Alpine	Twizel	152	507	260	150	2	357	110	15%
9. Network Waitaki	Oamaru	131	212	164	630	-499	-418	-466	10%
9. Network Waitaki	Omarama	180	582	276	660	-480	-78	-384	20%
10. Aurora	Alexandra/Clyde/Cromwell	131	327	185	200	-69	127	-15	15%
10. Aurora	Dunedin	261	382	315	2,000	-1,739	-1,618	-1,685	10%
10. Aurora	Queenstown	43	90	76	850	-807	-760	-774	5%
10. Aurora	Tarras	87	313	132	0	87	313	132	10%
10. Aurora	Wanaka	90	160	107	550	-460	-390	-443	5%
11. PowerNet	Balclutha	244	338	295	50	194	288	245	15%
11. PowerNet	Gore	149	206	176	50	99	156	126	10%
11. PowerNet	Invercargill	89	108	100	75	14	33	25	5%
11. PowerNet	Lumsden	130	164	145	50	80	114	95	20%
11. PowerNet	Te Anau	110	223	186	75	35	148	111	20%
12. Off Grid	Haast	55	211	109	0	55	211	109	30%
12. Off Grid	Milford	123	405	196	0	123	405	196	30%

B.16 Scenario 2: 5% Increase in Turn-in Rate

EDB	Location	2030 Total Forecasted Demand			2024 Charging Capacity (kW)	2030 Additional Capacity Needed			Turn In Rate
		Avg. (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)	
1. Marlborough Lines	Blenheim	257	394	310	1,725	-1,468	-1,331	-1,415	15%
1. Marlborough Lines	Picton	257	394	310	75	182	319	235	15%
2. Network Tasman	Motueka	169	433	249	325	-156	108	-76	15%
2. Network Tasman	Murchison	93	272	133	50	43	222	83	20%
2. Network Tasman	Nelson	176	362	313	1,700	-1,524	-1,338	-1,387	10%
2. Network Tasman	Richmond	176	362	313	200	-24	162	113	10%
2. Network Tasman	Springs Junction	135	426	209	0	135	426	209	35%
2. Network Tasman	Takaka	57	174	98	50	7	124	48	15%
3. Buller Electricity	Karamea	16	24	20	25	-9	-1	-5	25%
3. Buller Electricity	Westport	83	122	101	50	33	72	51	20%
4. Westpower	Franz/Fox	75	226	110	75	0	151	35	35%
4. Westpower	Greymouth	207	323	251	75	132	248	176	20%
4. Westpower	Hokitika	55	106	88	50	5	56	38	20%
4. Westpower	Punakaiki	55	121	74	0	55	121	74	25%
4. Westpower	Reefton	81	164	120	25	56	139	95	30%
5. Mainpower	Amberley	374	649	479	50	324	599	429	20%
5. Mainpower	Cheviot	187	343	244	50	137	293	194	30%
5. Mainpower	Culverden	151	244	190	50	101	194	140	30%
5. Mainpower	Kaikoura	176	512	277	1,600	-1,424	-1,088	-1,323	30%
6. Orion	Akaroa	126	203	146	0	126	203	146	25%
6. Orion	Arthurs Pass	128	318	201	50	78	268	151	35%
6. Orion	Darfield	137	173	167	50	87	123	117	10%
6. Orion	Rolleston	325	408	378	435	-110	-27	-57	10%
6. Orion	SH1Nth of CHCH airport - De	403	516	467	1,350	-947	-834	-883	10%
6. Orion	SH1Nth of CHCH airport - Inc	386	498	452	1,350	-964	-852	-898	10%
7. EA Networks	Ashburton	394	486	443	1,050	-656	-564	-607	15%
7. EA Networks	Methven	76	120	109	50	26	70	59	15%
8. Alpine	Fairlie/Geraldine	118	318	174	100	18	218	74	20%
8. Alpine	Lake Tekapo	177	326	279	50	127	276	229	25%
8. Alpine	Mt Cook	79	259	136	50	29	209	86	20%
8. Alpine	Timaru	193	243	211	525	-332	-282	-314	10%
8. Alpine	Twizel	152	507	260	150	2	357	110	20%
9. Network Waitaki	Oamaru	147	239	184	630	-483	-391	-446	15%
9. Network Waitaki	Omarama	168	546	258	660	-492	-114	-402	25%
10. Aurora	Alexandra/Clyde/Cromwell	131	327	185	200	-69	127	-15	20%
10. Aurora	Dunedin	293	430	354	2,000	-1,707	-1,570	-1,646	15%
10. Aurora	Queenstown	65	135	114	850	-785	-715	-736	10%
10. Aurora	Tarras	97	353	148	0	97	353	148	15%
10. Aurora	Wanaka	134	240	160	550	-416	-310	-390	10%
11. PowerNet	Balclutha	244	338	295	50	194	288	245	20%
11. PowerNet	Gore	168	232	198	50	118	182	148	15%
11. PowerNet	Invercargill	134	162	150	75	59	87	75	10%
11. PowerNet	Lumsden	122	154	136	50	72	104	86	25%
11. PowerNet	Te Anau	103	209	174	75	28	134	99	25%
12. Off Grid	Haast	48	185	95	0	48	185	95	35%
12. Off Grid	Milford	107	354	171	0	107	354	171	35%

B.17 Scenario 3: 40% Battery Charge AND 5% Increase in Turn-in Rate

EDB	Location	2030 Total Forecasted Demand			2024 Charging Capacity (kW)	2030 Additional Capacity Needed			Turn In Rate
		Avg. (kW)	Peak (kW)	90th (kW)		Avg. (kW)	Peak (kW)	90th (kW)	
1. Marlborough Lines	Blenheim	342	525	413	1,725	-1,383	-1,200	-1,312	15%
1. Marlborough Lines	Picton	342	525	413	75	267	450	338	15%
2. Network Tasman	Motueka	226	577	332	325	-99	252	7	15%
2. Network Tasman	Murchison	124	362	177	50	74	312	127	20%
2. Network Tasman	Nelson	235	483	417	1,700	-1,465	-1,217	-1,283	10%
2. Network Tasman	Richmond	235	483	417	200	35	283	217	10%
2. Network Tasman	Springs Junction	180	568	278	0	180	568	278	35%
2. Network Tasman	Takaka	76	233	130	50	26	183	80	15%
3. Buller Electricity	Karamea	22	32	26	25	-3	7	1	25%
3. Buller Electricity	Westport	111	163	134	50	61	113	84	20%
4. Westpower	Franz/Fox	100	302	147	75	25	227	72	35%
4. Westpower	Greymouth	276	430	334	75	201	355	259	20%
4. Westpower	Hokitika	74	141	117	50	24	91	67	20%
4. Westpower	Punakaiki	73	161	99	0	73	161	99	25%
4. Westpower	Reefton	108	219	161	25	83	194	136	30%
5. Mainpower	Amberley	498	865	639	50	448	815	589	20%
5. Mainpower	Cheviot	249	457	325	50	199	407	275	30%
5. Mainpower	Culverden	201	325	253	50	151	275	203	30%
5. Mainpower	Kaikoura	235	683	369	1,600	-1,365	-917	-1,231	30%
6. Orion	Akaroa	168	271	195	0	168	271	195	25%
6. Orion	Arthurs Pass	170	424	268	50	120	374	218	35%
6. Orion	Darfield	183	231	223	50	133	181	173	10%
6. Orion	Rolleston	433	544	504	435	-2	109	69	10%
6. Orion	SH1Nth of CHCH airport - De	537	688	623	1,350	-813	-662	-727	10%
6. Orion	SH1Nth of CHCH airport - Inc	514	665	602	1,350	-836	-685	-748	10%
7. EA Networks	Ashburton	525	649	590	1,050	-525	-401	-460	15%
7. EA Networks	Methven	101	160	146	50	51	110	96	15%
8. Alpine	Fairlie/Geraldine	157	424	232	100	57	324	132	20%
8. Alpine	Lake Tekapo	236	435	372	50	186	385	322	25%
8. Alpine	Mt Cook	105	345	181	50	55	295	131	20%
8. Alpine	Timaru	258	324	281	525	-267	-201	-244	10%
8. Alpine	Twizel	203	676	346	150	53	526	196	20%
9. Network Waitaki	Oamaru	196	319	245	630	-434	-311	-385	15%
9. Network Waitaki	Omarama	225	727	345	660	-435	67	-315	25%
10. Aurora	Alexandra/Clyde/Cromwell	174	436	247	200	-26	236	47	20%
10. Aurora	Dunedin	391	573	472	2,000	-1,609	-1,427	-1,528	15%
10. Aurora	Queenstown	87	181	152	850	-763	-669	-698	10%
10. Aurora	Tarras	130	470	198	0	130	470	198	15%
10. Aurora	Wanaka	179	321	213	550	-371	-229	-337	10%
11. PowerNet	Balclutha	325	451	394	50	275	401	344	20%
11. PowerNet	Gore	224	310	263	50	174	260	213	15%
11. PowerNet	Invercargill	179	216	199	75	104	141	124	10%
11. PowerNet	Lumsden	163	205	182	50	113	155	132	25%
11. PowerNet	Te Anau	137	278	233	75	62	203	158	25%
12. Off Grid	Haast	64	246	127	0	64	246	127	35%
12. Off Grid	Milford	143	472	229	0	143	472	229	35%

Appendix C: Current Charging Capacity

EDB name	Location of interest	Current journey chargers (50 kW or over) or if <50 but only chargers then have shown	Address of journey chargers	Current capacity at each charging site (kW)	Current capacity in area of interest (kW)	Owner
Marlborough Lines	Picton	DC, 75, CHAdeMO - Status: Operative DC, 75, Type 2 CCS - Status: Operative	101 High Street, Picton 7220	75	75	Z Energy
	Blenheim	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	2226 State Highway 1, Blenheim 7202, NZ	50	1725	ChargeNet NZ
		3x DC, 150, Type 2 CCS - Status: Operative 1x DC, 50, CHAdeMO - Status: Operative	1 Westwood Avenue, Blenheim 7271, NZ	300		ChargeNet NZ
		5x DC, 150, Type 2 CCS - Status: Operative 1x DC, 50, CHAdeMO - Status: Operative	Park Terrace, Blenheim 7201	450		Marlborough Lines Ltd
		DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Inoperative	Cnr Kinross and Redwood Streets, Blenheim 7201, NZ	25		The Warehouse Ltd
		DC, 62.5, CHAdeMO - Status: Operative DC, 150, Type 2 CCS - Status: Inoperative	14 Main Street, Central,. Blenheim, 7201, NZ	150		bp charge
		3 Superchargers Up to 250kW max	2 Park Terrace Blenheim, Marlborough 7201	750		Tesla
Nelson Elecrtricity	Nelson	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	75 Vanguard St, Nelson 7010, NZ	50	1700	ChargeNet NZ
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	81 Trafalgar Street, Nelson 7010, NZ	50		Network Tasman Ltd
		DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	49 Saxton Road, 7011 Nelso	25		Meridian Energy Limited
		DC, 62.5, CHAdeMO - Status: Operative DC, 75, Type 2 CCS - Status: Inoperative	14 Main Street, Central,. Blenheim, 7201, NZ	75		bp charge
		6 Superchargers Up to 250kW max	99 Quarantine Road Nelson, Nelson 7020	1500		Tesla

Network Tasman	Richmond	2x DC, 75, CHAdeMO - Status: Operative 2x DC, 75, Type 2 CCS - Status: Operative	177 Queen Street, Richmond, 7020, Nelson	150	200	bp charge
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	280 Queen Street, Richmond 7020, NZ	50		Network Tasman Ltd
	Murchison	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	Fairfax St, Murchison 7007, NZ	50	50	ChargeNet NZ
	Motueka	2x DC, 150, Type 2 CCS - Status: Operative 2x DC, 50, CHAdeMO - Status: Operative	271 High Street, Motueka 7120	300	300	ChargeNet NZ
		DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Inoperative	270 High St, Motueka 7120, NZ	25		The Warehouse Ltd
	Springs Junction			0	0	
	Takaka	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	16 Willow Street, Golden Bay 7110, NZ	50	50	Network Tasman Ltd
Buller Electricity	Karamea	DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	103 Bridge Street, Karamea 7893, NZ	25	25	ChargeNet NZ
	Westport	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Inoperative	5 Adderley Street, Westport 7825, NZ	50	50	ChargeNet NZ
Westpower	Reefton	DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	47 Broadway, Reefton 7830, NZ	25	25	ChargeNet NZ
	Greymouth	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	13 Tarapuhi Street, Greymouth 7805	50	75	ChargeNet NZ
		DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operativ	174 Mawhera Quay, Greymouth 7805, NZ	25		The Warehouse Ltd
	Hokitika	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	116 Revell Street, Hokitika 7810, NZ	50	50	ChargeNet NZ
	Franz/Fox	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	63 Cron Street, Franz Joseph Glacier 7886	75	75	ChargeNet NZ
	Punakaiki			0	0	

MainPower NZ	Kaikoura	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	124-128 Beach Rd, Kaikōura 7300, NZ	50	1600	ChargeNet NZ
		6 Superchargers Up to 250kW max	105 Beach Rd Kaikōura, Canterbury 7300	1500		Tesla
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	51 West End, Kaikōura 7300	50		ChargeNet NZ
	Cheviot	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	4 Seddon St, Cheviot 7310, NZ	50	50	ChargeNet NZ
	Amberley	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	123 Carters Rd, Amberley 7410, NZ	50	50	ChargeNet NZ
	Culverden	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	27A Mountain View Rd, Culverden 7392	50	50	ChargeNet NZ
Orion New Zealand	Arthurs Pass	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	80 State Highway 73, Arthurs Pass 7875	50	50	ChargeNet NZ
	Akaroa	Only 4x AC, 22			0	Orion New Zealand Ltd
	Darfield	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	33 South Terrace, Darfield 7510	50	50	ChargeNet NZ
	SH1 near Airport	DC, 150, CHAdeMO - Status: Inoperative DC, 150, Type 2 CCS - Status: Inoperative DC, 150, CHAdeMO - Status: Inoperative DC, 150, Type 2 CCS - Status: Inoperative	530 Sawyers Arms Road, Bishopdale, Christchurch 8051	300	2700	Z Energy
		200 kW CCS	Z russley	225		Z Energy
		2 x 300 kW	800 Harewood Rd, Harewood, Christchurch 8051, NZ	600		Charge Net NZ
		6 Superchargers Up to 250kW max	418 Main South Road Hornby, Canterbury 8441	1500		Tesla
		DC, 75, CHAdeMO - Status: Operative DC, 75, Type 2 CCS - Status: Operative	661 Russley Road, Harewood Christchurch, Canterbury 8051,	75		bp charge
	Rolleston	DC, 75, CHAdeMO - Status: Operative DC, 75, Type 2 CCS - Status: Operative	1705 Main South Road Rolleston, Canterbury 8042,	75	435	bp charge
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	92 Rolleston Drive, Rolleston 7614	50		Orion New Zealand Ltd
		2x DC, 25, CHAdeMO - Status: Operative 2x DC, 25, Type 2 CCS - Status: Operativ	174 Mawhera Quay, Greymouth 7805, NZ	50		The Warehouse Ltd
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 180, Type 2 CCS - Status: Operative DC, 180, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status:	4 Brookside Road, Rolleston 7614	260		Z Energy

EA Networks	Ashburton	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	109 West Street, Ashburton 7700	50	1050	Electricity Ashburton Ltd
		DC, 150, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 150, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative	35 Moore Street, Ashburton 7700	300		ChargeNet NZ
		2 x 150 kW	358 West Street, Ashburton 7700	300		bp charge
		DC, 50, CHAdeMO - Status: Operative	141 West Street, Ashburton 7700	400		Z Energy
	Rakaia	DC, 150, Type 2 CCS - Status: Operative	41 Bridge Street, Rakaia 7710	50	50	Electricity Ashburton Ltd
	Methven	DC, 50, CHAdeMO - Status: Operative	160 Main St, Methven 7730	50	50	Electricity Ashburton Ltd
Alpine Energy	Fairlie/Geraldine	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	14 Geraldine-Fairlie Hwy, Geraldine 7930	50	100	Alpine Energy Limited
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status:	Opposite 53 Main St, Fairlie 7925	50		Alpine Energy Limited
	Timaru	4x DC, 200, Type 2 CCS - Status: Inoperative	62 Theodosia Street, Timaru 7910	225	750	Z Energy
		DC, 75, CHAdeMO - Status: Operative DC, 75, Type 2 CCS - Status: Operative	193 Evans Street Waimataitai, Canterbury 7910,	75		bp charge
		6 Superchargers Up to 125kW max	223 Hilton Highway, Washdyke Timaru 7910	375		Tesla
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	98 Evans St, Timaru 7910	75		ChargeNet NZ
	Twizel	DC, 150, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative	Opposite 64 MacKenzie Drive, Twizel 7901	150	150	Alpine Energy Limited
	Mt Cook	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	105 Bowen Drive, Mt Cook National Park 7999	50	50	Alpine Energy Limited
	Lake Tekapo	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	State Highway 8, Tekapo 7999	50	50	Alpine Energy Limited

Network Waitaki	Oamaru	DC, 50, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 180, Type 2 CCS - Status: Operative DC, 180, Type 2 CCS - Status: Operative DC, 180, Type 2 CCS - Status: Operative	1B Wansbeck St, Ōamaru 9400	410	630	Network Waitaki Ltd
		AC, 43, Type 2 Tethered - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 120, Type 2 CCS - Status: Operative DC, 120, Type 2 CCS - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative	3 Eden Street, Ōamaru 9400	220		Network Waitaki Ltd
	Omamara	4 Superchargers Up to 125kW max	29 Omarama Ave, Main Omarama Twizel Highway Omarama 9448	250	660	Tesla
		4x DC, 180, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	2 Sutherland Road, Ōmārama 9412	410		Network Waitaki Ltd

Aurora	Wanaka	DC, 50, CHAdeMO - Status: Inoperative DC, 50, Type 2 CCS - Status: Operative	42 Ardmore St, Wanaka 9305	50	550	ChargeNet NZ
		DC, 50, CHAdeMO DC, 50, Type 2 CCS 3 x 150 kW CCS2	135 Sir Tim Wallis Drive, Wanaka 9305	500		ChargeNet NZ
	Alexandra/Clyde/Cromwell	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	9 Thompson St, Alexandra 9320	50	50	ChargeNet NZ
		DC, 50, CHAdeMO - Status: Inoperative DC, 50, Type 2 CCS - Status: Operative	2A The Mall, Cromwell 9310	50	150	ChargeNet NZ
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	8 Elspeth Street, Cromwell 9310	100		ChargeNet NZ
	Queenstown	DC, 50, CHAdeMO - Status: Operative DC, 50, CHAdeMO - Status: Inoperative 2x DC, 50, Type 2 CCS - Status: Operative	9 Athol St, Queenstown 9300, NZ	100	850	ChargeNet NZ
		3x DC, 50, CHAdeMO - Status: Operative 3x DC, 150, Type 2 CCS - Status: Operative	19 Grant Road, Queenstown 9300	450		ChargeNet NZ
		4 Superchargers Up to 125kW max	Hawthorne Dr, Frankton Queenstown 9300	250		Tesla
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	302 Hawthorne Drive, Queenstown 9300	50		ChargeNet NZ
	Dunedin	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	75 Saint David Street, Dunedin 9016, NZ	50	2000	ChargeNet NZ
		DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC,25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	Water St, Dunedin 9016, NZ	75		ChargeNet NZ
		DC, 150, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative DC, 150, Type 2 CCS - Status: Operative DC, 50, CHAdeMO - Status: Operative	95E Hanover Street, Dunedin 9016	300		ChargeNet NZ
		6 Superchargers Up to 250kW max	49 Timaru Street Dunedin, Otago 9012	1500		Tesla
		DC, 50, CHAdeMO - Status: Inoperative DC, 50, Type 2 CCS - Status: Operative	64 Hillside Rd, Dunedin 9012, NZ	25		The Warehouse Ltd
		DC, 50, CHAdeMO - Status: Inoperative DC, 50, Type 2 CCS - Status: Operative	86 Hillside Rd, Dunedin 9012	50		ChargeNet NZ
	Tarras			0	0	

Powernet	Balclutha	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	23 Charlotte Street, Balclutha 9230	50	50	ChargeNet NZ
	Te Anau	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	6 Mokonui Street, Te Anau 9600	75	75	ChargeNet NZ
	Gore	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	4 Irk St, Gore 9710	50	50	ChargeNet NZ
	Lumsden	DC, 50, CHAdeMO - Status: Operative DC, 50, Type 2 CCS - Status: Operative	14 Diana St, Lumsden 9730, NZ	50	50	ChargeNet NZ
	Invercargill	DC, 50, CHAdeMO - Status: Inoperative DC, 50, Type 2 CCS - Status: Operative	116 Esk Street, Invercargill 9810	50	75	ChargeNet NZ
		DC, 25, CHAdeMO - Status: Operative DC, 25, Type 2 CCS - Status: Operative	70 Leven St, Invercargill 9810, NZ	25		The Warehouse Ltd