

Appendix A Grid Owner's High Voltage Bus Limits

Station	Station Code	HV Bus	Nominal HV Voltage	HV max alarm level (kV)	HV min alarm level (kV)
Albany	ALB	ALB220	220	237.8	198
Albury	ABY	ABY110	110	121	99
Ashburton	ASB	ASB220	220	242	198
Balclutha	BAL	BAL110	110	113.7	105.3
Blenheim	BLN	BLN110	110	116.5	107.2
Bombay	BOB	BOB110	110	115.8	106.8
Bream Bay	BRB	BRB220	220	237.6	198
Bromley	BRY	BRY220	220	232.3	210.1
Brunswick	BRK	BRK220	220	237.1	220.8
Brydone	BDE	BDE110	110	118.8	99
Cambridge	CBG	CBG110	110	120.2	99
Carrington Street	CST	CST110	110	117.3	107.3
Castle Hill	CLH	CLH66	66	69.3	62.9
Central Park	CPK	CPK110	110	118	99
Dannevirke	DVK	DVK110	110	119.9	99
Edendale	EDN	EDN110	110	115.8	106
Edgecumbe	EDG	EDG220	220	232	212.6
Fernhill	FHL	FHL110	110	116.1	106.6
Frankton	FKN	FKN110	110	118.5	99
Glenbrook	GLN	GLN220	220	237.6	198
Gore	GOR	GOR110	110	116	106.5
Gracefield	GFD	GFD110	110	118.6	99
Greytown	GYT	GYT110	110	118.6	99
Halfway Bush	HWB	HWB110	110	116	106.1
Halfway Bush	HWB	HWB220	220	231.4	210.3
Hamilton	HAM	HAM110	110	118.6	99
Hamilton	HAM	HAM220	220	237.4	198
Hangatiki	HTI	HTI110	110	116.3	106.9
Hawera	HWA	HWA110	110	116.1	105.8
Haywards	HAY	HAY110	110	116.1	105.3
Henderson	HEN	HEN220	220	236.9	198
Hepburn Road	HEP	HEP110	110	114.5	109.7
Hinuera	HIN	HIN110	110	115.9	108.6
Huirangi	HUI	HUI110	110	116.4	106.1
Kaikohe	KOE	KOE110	110	115.7	106.1
Kaitaia	KTA	KTA110	110	116.1	108.2
Kaiwharawhara	KWA	KWA110	110	118.4	99
Kawerau	KAW	KAW110	110	119.8	99
Kawerau	KAW	KAW220	220	236.8	198
Kensington	KEN	KEN110	110	115.8	105.9
Kikiwa	KIK	KIK220	220	242	198.2
Kinleith	KIN	KIN110	110	115.6	105.1
Linton	LTN	LTN220	220	238.1	198

Notes:

1. The voltage limits are based on the predicted MW and PF for the customers Point of Connection, as agreed with the Customers
2. The HV min alarm limit is the higher of the summer and winter minimum figures, and the HV max alarm limit is the lower of the summer and winter maximum figures

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Mangahao	MHO	MHO110	110	116.5	108.6
Mangamaire	MGM	MGM110	110	118.5	99
Mangere	MNG	MNG 110	110	118.9	99
Marton	MTN	MTN110	110	115.8	105.3
Masterton	MST	MST110	110	116.4	106.6
Mataroa	MTR	MTR110	110	115.8	105.2
Maungatapere	MPE	MPE110	110	115.6	105.6
Maungaturoto	MTO	MTO110	110	118.5	99
Melling	MLG	MLG110	110	115.5	105.2
Meremere	MER	MER110	110	115.6	105.1
Motunui	MNI	MNI110	110	118.4	99
Motupipi	MPI	MPI66	66	69.3	63.4
Mt Maunganui	MTM	MTM110	110	112.6	105.8
Mt Roskill	ROS	ROS110	110	118.9	99
Murchison	MCH	MCH110	110	119.6	99
Naseby	NSY	NSY220	220	237	216.7
National Park	NPK	NPK110	110	115.6	104.9
North Makarewa	NMA	NMA220	220	237	198
Oamaru	OAM	OAM110	110	118.7	99
Ohakune	OKN	OKN110	110	120.3	99
Ongarue	ONG	ONG110	110	117.1	105.7
Opunake	OPK	OPK110	110	118.4	99
Owhata	OWH	OWH110	110	119.3	99
Pakuranga	PAK	PAK110	110	115.6	106.1
Palmerston	PAL	PAL110	110	119.4	103.6
Paraparaumu	PRM	PRM110	110	119.3	99
Pauatahanui	PNI	PNI110	110	116.3	107
Penrose	PEN	PEN220	220	238.9	198
Redclyffe	RDF	RDF110	110	116.1	107.2
Rotorua	ROT	ROT110	110	118.8	99
South Dunedin	SDN	SDN220	220	236.8	198
Stoke	STK	STK220	220	231.8	213.3
Stratford	SFD	SFD110	110	116.2	106.3
Studholme	STU	STU110	110	119.6	99
Takanini	TAK	TAK220	220	237.6	198
Tangiwai	TNG	TNG220	220	237	198
Tauranga	TGA	TGA110	110	112.8	105.8
Te Awamutu	TMU	TMU110	110	120.4	99
Te Matai	TMI	TMI110	110	116.2	107.9
Temuka	TMK	TMK110	110	118.8	99
Timaru	TIM	TIM110	110	120.2	99
Tiwai	TWI	TWI220	220	228	213
Tokaanu	TKU	TKU220	220	236.9	216.3
Tuai	TUI	TUI110	110	120.2	99
Twizel	TWZ	TWZ220	220	237	214.9
Upper Hutt	UHT	UHT110	110	115.5	105.4
Waihou	WHU	WHU110	110	116.2	106.5
Waikino	WKO	WKO110	110	115.7	105.3
Waimangaroa	WMG	WMG110	110	118.4	99

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Waipawa	WPW	WPW110	110	116.5	107.3
Wairakei	WRK	WRK220	220	236.7	214.8
Wairoa	WRA	WRA110	110	120.7	99
Wanganui	WGN	WGN110	110	116.3	107.1
Waverley	WVY	WVY110	110	120.8	99
Wellsford	WEL	WEL110	110	115.5	105.2
Western Road	WES	WES110	110	115.6	106.1
Westport	WPT	WPT110	110	119.7	99
Whakatu	WTU	WTU220	220	237.5	198
Whirinaki	WHI	WHI220	220	239.4	198
Wilton	WIL	WIL220	220	237.1	198
Wiri	WIR	WIR110	110	115.8	106
Woodville	WDV	WDV110	110	121	99.6

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