

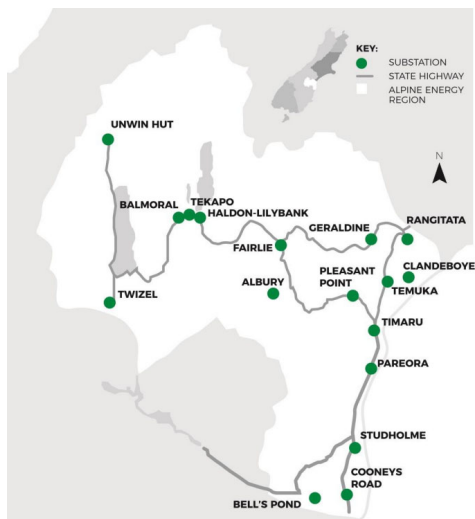
# Load Forecasting



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## Alpine Energy Limited (AEL)



- ▶ South Canterbury Region
- ▶ Seven Grid Exit Points (GXP)
- ▶ Biggest GXP Timaru
- ▶ Smallest GXP Twizel

Description: AEL region

Source: [https://www.alpineenergy.co.nz/\\_data/assets/pdf\\_file/0018/8541/ALPINE-ENERGY-AMP-2019.pdf](https://www.alpineenergy.co.nz/_data/assets/pdf_file/0018/8541/ALPINE-ENERGY-AMP-2019.pdf)

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## How AEL does load forecasting



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## Databases

- ▶ New Connections database
- ▶ Regional Capacity Capability Database (RCCD)



- ▶ SCADA historical data

**Survalent.**

- ▶ Transpower historical data



**TRANSPower**

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## Regional Capacity Capability Database (RCCD)

Stations	Limit 1				Voltage	Rating
	Start point	End Point	Description	BPD Region		
BPD_GXP	110 kV Bus	11 kV Bus	Current Transformer-CT482-Other Equipment		110.00	34.29
BPD	110 kV Bus	11 kV Bus	Circuit Breaker-CB36-Relay SEL 3515-6		11.22	15.55
CB11_Waihao Downs	BPD11 CB	Cable Joint	Cable-3-1/400mm <sup>2</sup> AL XLPE		11.22	6.96
CB12_Ikawai	BPD12 CB	Cable Joint	Cable-3c 300mm <sup>2</sup> AL XLPE MDPE		11.22	6.59
CB13_Waikakahi	BPD13 CB	Cable Joint	Cable-3c 300mm <sup>2</sup> AL XLPE MDPE		11.22	6.59
CB14_Tawai/Waihuna	W636 ABS	-	OH Line-JAGUAR		11.22	7.52
CB522_CNR	CNR642	-	Circuit Breaker-CNR642		33.00	17.15

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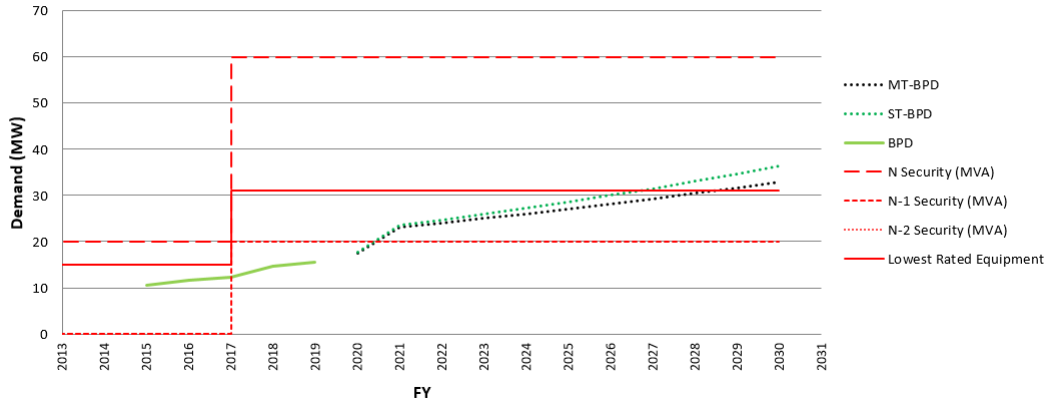
## AEL demand Forecasting FY19/20

Term	BPD GXP
Short-Term Linear Slope	1.067
Short-Term Linear Intercept	-2139.23
Short-Term Annual Growth Rate	7.54%
Medium-Term Linear Slope	1.228
Medium-Term Linear Intercept	-2465.20
Medium-Term Annual Growth Rate	8.68%
N Security (MVA)	60.00
N-1 Security (MVA)	20.00
N-2 Security (MVA)	
Other Equipment Limit (MVA)	68.59
Lowest Rated Equipment	Current Transformer-CT482-Other Equipment
Upgrade Scheduled	
Upgrade Year	
N Security (MVA)	
N-1 Security (MVA)	
N-2 Security (MVA)	
Other Equipment Limit (MVA)	
Lowest Rated Equipment	
Years Term	10
FY	MT-BPD_GXP
2016	10.75
2017	11.67
2018	13.67
2019	14.15
2020	17.23
2021	23.46
2022	24.69
2023	25.92
2024	27.14
2025	28.37
2026	29.60
2027	30.83
2028	32.06
2029	33.28
2030	34.51

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# AEL demand forecasting

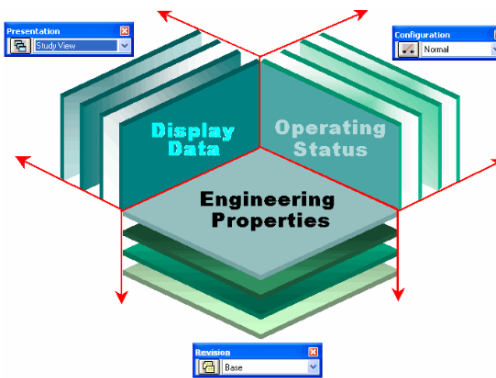
BPD Zone Sub Demand Forecast



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## How AEL uses ETAP® ?

- ▶ 3-D database
- ▶ Scenario wizard
- ▶ 4th D

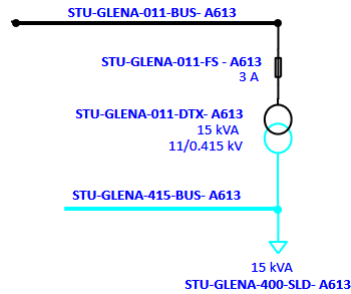


Description: ETAP®  
Source: <https://etap.com/>

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## How AEL uses ETAP®?

- ▶ Naming convention



- ▶ Capture alerts
- ▶ Feed the results into the Network Development Plan (NDP)

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## Looking forward in load forecasting

- ▶ Peer reviewed process
- ▶ Improved data handling
- ▶ Reduced time on data cleansing



Description: Big data image

Source: <http://eduardomagrani.com/en/we-are-big-data-new-technologies-and-personal-data-management/>

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## Where to next?



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Thank you for your time



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