

# **Monthly Operational Data**

For the month ended 31 August 2016

#### **Highlights for August 2016**



- Average Otahuhu wholesale price for August 2016: \$57/MWh (p3)
- Hydro storage as at 31 August: South Island 127% of mean, North Island 127% of mean (p4)
- Otahuhu futures settlement wholesale price for 3<sup>rd</sup> quarter 2016 (ASX) (p4):
  - As at 14 September: \$61/MWh
  - As at 31 August: \$62/MWh
  - As at 29 July: \$63/MWh

# Wholesale electricity prices



• The average price at Otahuhu (North Island) for August 2016 was \$57/MWh while the average price at Benmore (South Island) was \$48/MWh.



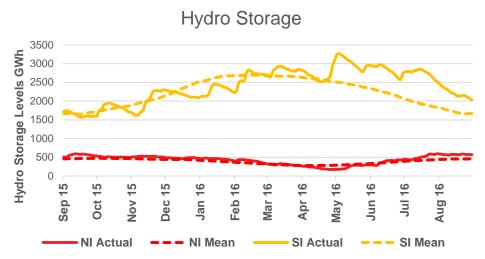
#### Storage levels and wholesale electricity prices

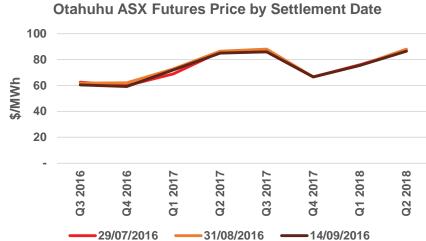


 At 31 August, South Island storage was 127% of mean (31 July: 148%) and North Island storage was 127% of mean (31 July: 119%)

As at 15 September 2016, storage was:

South Island: 121% of meanNorth Island: 124% of mean



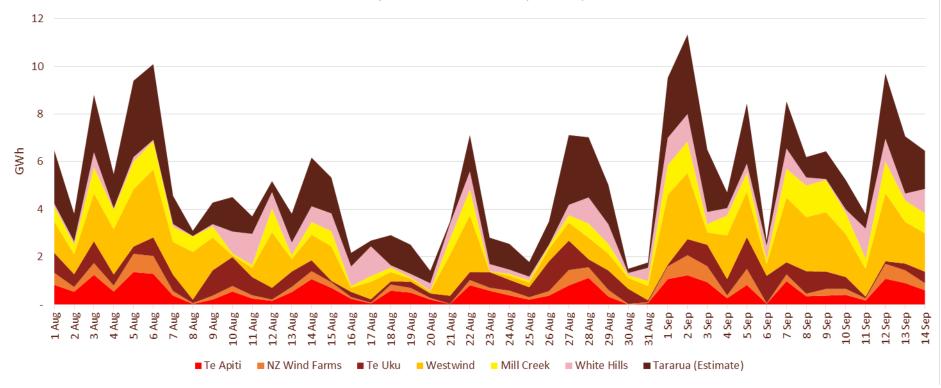




#### Wind generation







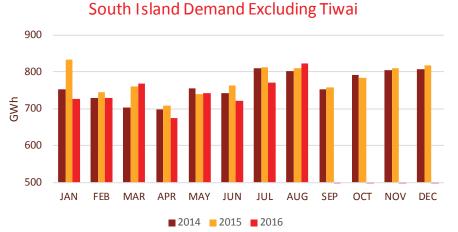
# **Monthly demand comparison**



- NIWA's national climate summary for August 2016 reports:
  - The New Zealand national average temperature in August was 8.3°C (0.5°C above the 1981-2010 average)

Demand	Aug Demand GWh			Growth rate % p.a.		12 months to date GWh			Growth rate % p.a.	
	2016	2015	2014	1 year	2 year	2016	2015	2014	1 year	2 year
North Island	2,269	2,216	2,215	2.4%	1.2%	23,591	23,573	23,238	0.1%	0.8%
South Island excluding Tiwai	822	811	801	1.3%	1.3%	9,131	9,336	8,922	(2.2%)	1.2%
Total	3,091	3,028	3,016	2.1%	1.2%	32,723	32,908	32,160	(0.6%)	0.9%

# 2,500 2,300 1,900 1,700 1,500 JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC



# **Contact Netback, Cost of Energy and LPG Data**



Netback   Mass market electricity sales   GWh   393   404   396   789	August 2015 822 662 171 108
Commercial & industrial electricity sales   GWh   357   334   339   695     Retail gas sales   GWh   72   84   81   153     Steam sales   GWh   69   70   34   103     Total retail sales   GWh   891   892   850   1,740     Average electricity sales price   \$\\$MWh   189,04   191,87   193,48   191,23     Electricity direct pass through costs   \$\\$MWh   (76,35)   (76,50)   (77,64)   (76,99)     Electricity and gas cost to serve   \$\\$MWh   (11,89)   (13,79)   (11,38)   (11,63)     Netback   \$\\$MWh   90,36   90,11   94,64   92,45     Electricity line losses   %   4%   5%   6%   5%     Electricity customer numbers   #   423,500   427,000   425,500     Gas customer numbers   #   423,500   427,000   425,500     Gas customer numbers   #   62,000   61,500   62,000     Cost of energy   Thermal generation   GWh   171   236   148   319     Geothermal generation   GWh   319   339   395   714     Spot market generation   GWh   770   763   779   1,549     CfD sales   GWh   69   7   13   4     GWAP   \$\\$MWh   51,10   52,91   54,36   52,78     LWAP   \$\\$MWh   (55,69)   (55,53)   (62,64)   (59,19)	662 171
Retail gas sales   GWh   72   84   81   153     Steam sales   GWh   69   70   34   103     Total retail sales   GWh   891   892   850   1,740     Average electricity sales price   \$MWh   189,04   191,87   193,48   191,23     Electricity direct pass through costs   \$MWh   (76,35)   (76,50)   (77,64)   (76,99)     Electricity and gas cost to serve   \$MWh   (11,89)   (13,79)   (11,38)   (11,63)     Netback   \$MWh   90,36   90,11   94,64   92,45     Electricity line losses   %   4%   5%   6%   6%   5%     Retail gas sales   PJ   0,3   0,3   0,3   0,3   0,6     Electricity customer numbers   #   423,500   427,000   425,500     Gas customer numbers   #   62,000   61,500   62,000     Cost of energy   Thermal generation   GWh   171   236   148   319     Geothermal generation   GWh   319   339   395   714     Spot market generation   GWh   770   763   779   1,549     CfD sales   GWh   (9)   7   13   4     GWAP   \$MWh   51,10   52,91   54,36   52,78     LWAP   \$MWh   (55,69)   (55,53)   (62,64)   (59,19)	171
Steam sales   GWh   69   70   34   103     Total retail sales   GWh   891   892   850   1,740     Average electricity sales price   \$\frac{5}{MWh}   189.04   191.87   193.48   191.23     Electricity direct pass through costs   \$\frac{5}{MWh}   (76.35)   (76.50)   (77.64)   (76.99)     Electricity and gas cost to serve   \$\frac{5}{MWh}   (11.89)   (13.79)   (11.38)   (11.63)     Netback   \$\frac{5}{MWh}   90.36   90.11   94.64   92.45     Electricity line losses   \frac{6}{6}   49%   55%   6%   5%     Retail gas sales   PJ   0.3   0.3   0.3   0.3   0.6     Electricity customer numbers   # 423,500   427,000   425,500     Gas customer numbers   # 423,500   427,000   425,500     Gas customer numbers   # 62,000   61,500   62,000     Cost of energy   Thermal generation   GWh   171   236   148   319     Geothermal generation   GWh   294   293   293   586     Hydro generation   GWh   319   339   395   714     Spot market generation   GWh   783   868   835   1,619     Spot electricity purchases   GWh   770   763   779   1,549     CfD sales   GWh   (9)   7   13   4     GWAP   \$\frac{5}{MWh}   51.10   52.91   54.36   52.78     LWAP   \$\frac{5}{MWh}   (55.69)   (55.53)   (62.64)   (59.19)	
Total retail sales   GWh   891   892   850   1,740	108
Average electricity sales price \$/MWh 189,04 191.87 193.48 191.23 Electricity direct pass through costs \$/MWh (76.35) (76.50) (77.64) (76.99) Electricity and gas cost to serve \$/MWh (11.89) (13.79) (11.38) (11.63) Netback \$/MWh 90.36 90.11 94.64 92.45 Electricity line losses \$% 4% 5% 6% 5% Retail gas sales PJ 0.3 0.3 0.3 0.3 0.6 Electricity customer numbers \$^1\$ # 423,500 427,000 425,500 Gas customer numbers \$^1\$ # 62,000 61,500 62,000 \$\$\$  Cost of energy Thermal generation GWh 171 236 148 319 Geothermal generation GWh 319 339 395 714 Spot market generation GWh 783 868 835 1,619 Spot electricity purchases GWh 770 763 779 1,549 CfD sales GWAP \$/MWh 51,10 52,91 54.36 52.78 EWAP \$/MWh 51,10 52,91 54.36 52.78 EWAP \$/MWh 55,69) (55.53) (62.64) (59.19)	
Electricity direct pass through costs   \$\mathrm{N}\mathrm{Wh}   \$(76.35)   \$(76.50)   \$(77.64)   \$(76.99)   Electricity and gas cost to serve   \$\mathrm{N}\mathrm{Wh}   \$(11.89)   \$(13.79)   \$(11.38)   \$(11.63)   \$(11	1,763
Electricity and gas cost to serve	192.91
Netback   \$/MWh   90.36   90.11   94.64   92.45     Electricity line losses   %   4%   5%   6%   5%     Retail gas sales   PJ   0.3   0.3   0.3   0.6     Electricity customer numbers   #   423,500   427,000   425,500     Gas customer numbers   #   62,000   61,500   62,000     Cost of energy   Thermal generation   GWh   171   236   148   319     Geothermal generation   GWh   294   293   293   586     Hydro generation   GWh   319   339   395   714     Spot market generation   GWh   783   868   835   1,619     Spot electricity purchases   GWh   770   763   779   1,549     CfD sales   GWh   (9)   7   13   4     GWAP   \$/MWh   51.10   52.91   54.36   52.78     LWAP   \$/MWh   (55.69)   (55.53)   (62.64)   (59.19)	(77.80)
Electricity line losses	(13.28)
Retail gas sales	90.67
Electricity customer numbers <sup>1</sup> # 423,500 427,000 425,500 Gas customer numbers <sup>1</sup> # 62,000 61,500 62,000  Cost of energy Thermal generation GWh 171 236 148 319 Geothermal generation GWh 294 293 293 586 Hydro generation GWh 319 339 395 714 Spot market generation GWh 783 868 835 1,619 Spot electricity purchases GWh 770 763 779 1,549 CfD sales GWAP \$/MWh 51.10 52.91 54.36 52.78 LWAP \$/MWh (55.69) (55.53) (62.64)	6%
Gas customer numbers <sup>1</sup> #         62,000         61,500         62,000           Cost of energy         Thermal generation         GWh         171         236         148         319           Geothermal generation         GWh         294         293         293         586           Hydro generation         GWh         319         339         395         714           Spot market generation         GWh         783         868         835         1,619           Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	0.6
Cost of energy         Thermal generation         GWh         171         236         148         319           Geothermal generation         GWh         294         293         293         586           Hydro generation         GWh         319         339         395         714           Spot market generation         GWh         783         868         835         1,619           Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	
Geothermal generation         GWh         294         293         293         586           Hydro generation         GWh         319         339         395         714           Spot market generation         GWh         783         868         835         1,619           Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	
Hydro generation         GWh         319         339         395         714           Spot market generation         GWh         783         868         835         1,619           Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	467
Spot market generation         GWh         783         868         835         1,619           Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	568
Spot electricity purchases         GWh         770         763         779         1,549           CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	723
CfD sales         GWh         (9)         7         13         4           GWAP         \$/MWh         51.10         52.91         54.36         52.78           LWAP         \$/MWh         (55.69)         (55.53)         (62.64)         (59.19)	1,758
GWAP \$/MWh 51.10 52.91 54.36 52.78 LWAP \$/MWh (55.69) (55.53) (62.64) (59.19)	1,570
LWAP \$/MWh (55.69) (55.53) (62.64)	18
	52.14
LWAP/GWAP % 109% 105% 115% 112%	(55.54)
LWAI / GWAI / 103/0 113/0 112/0	107%
Gas used in internal generation PJ 1.7 2.0 1.4 3.2	4.0
Gas storage net movement <sup>2</sup> PJ (0.5) (0.4) (0.2)	(0.76)
Unit generation cost \$/MWh (33.75) (36.94) (27.93) (30.76)	(36.05)
Cost of energy \$/MWh (33.63) (34.94) (28.00) (30.88)	(35.70)
LPG LPG sales tonnes 7,334 7,158 7,433 14,767	14,835
LPG customer numbers (includes franchises) <sup>1</sup> # 75,500 71,000 76,000	

<sup>&</sup>lt;sup>1</sup> Data has been rounded to the nearest 500 and reflects numbers as at month end.

<sup>&</sup>lt;sup>2</sup> Working volume in Ahuroa gas storage at 30 June 2016 was 10.9PJ, not 11.9 PJ as disclosed in slide 34 of the FY16 results presentation