

New Zealand Energy

ASX New Zealand Energy Products Fact Sheet | Version 2 - January 2024

ASX's New Zealand Energy product suite covers futures and average rate options at the New Zealand nodes of Benmore Base and Otahuhu.

New Zealand Electricity Market

The New Zealand (NZ) electricity market is overseen and regulated by the New Zealand Electricity Authority and is owned and operated by Transpower. It is a wholesale spot market, priced in half-hourly intervals.

The market is divided into two regions: the North Island and the South Island. North Island generation is a mix of renewable and non-renewable energy and the South Island generation is comprised of renewable energy generation only (Hydro and Wind).

ASX NZ Electricity Contracts Products:

- > Base Load Monthly Futures
- > Base Load Calendar Quarter Futures
- > Peak Load Calendar Quarter Futures
- > Base Load Calendar Quarter Average Rate Options

Benefits of trading ASX New Zealand Energy

- Transparency of Price Discovery ASX provides forward price transparency with futures prices looking forward 3 years, as well as historical End of Day Settlement Prices (EDSP). Access NZ prices at ASX Energy.
- Cash settled ASX futures and average rate options over New Zealand energy products are cash settled against the wholesale electricity market spot prices. No electricity derivatives involve the physical delivery of energy.
- Range of products 39+ futures and options contracts available across each of the New Zealand electricity nodes (Benmore and Otahuhu)
- > Renewable energy Renewable energy generation is extensive across the New Zealand Electricity market, with the New Zealand government targeting 100% renewable energy generation by 2030.

Opportunities for generators and retailers:

- Manage price risk protect your business against price fluctuations and take greater control of the prices you receive or pay.
- Manage counterparty credit risk trade on a market that is centrally cleared, with daily margin collection which helps ensure participants meet their obligations.
- Market maker arrangements ASX offers market making incentives to promote liquidity in the electricity market.

Opportunities for speculators and traders:

- Unique Alpha New Zealand electricity derivatives have an alpha that is almost completely uncorrelated with other financial markets.
- > Market Making daily market making ensures liquidity in the New Zealand market.

For more information on ASX's New Zealand Energy products, please visit <u>ASX Energy</u>, <u>ASX's Website</u> or contact the ASX Energy Team.



Industry Information Sessions

ASX provides New Zealand Energy Industry Information sessions to help you understand our New Zealand energy market and ASX derivatives products.



Energy Market Data

ASX's online <u>energy market data centre</u> lets you access a central source of pricing data to identify market trends, liquidity and forward curve movements.



ASX24

ASX New Zealand Energy Products can be accessed through the ASX24 Market via a registered Clearing Participant. For more information on accessing ASX24, please contact ASX's Energy team.



Data Vendor Access Codes

Base Load Electricity

	Otahuhu	Benmore
MONTH FUTURES		
ASX Trade24 Code	ED	EH
Bloomberg	BXBA COMDTY	BXEA COMDTY
Refinitiv	0#NED:	O#NEH:
QUARTER FUTURES		
ASX Trade24 Code	EA	EE
Bloomberg	BEAA COMDTY	BEEA COMDTY
Refinitiv	O#NEA:	O#NEE:
STRIPS		
ASX Trade24 Code	EB	EF
Bloomberg	BHBA COMDTY	BBEA COMDTY
Refinitiv	O#NEAY:	O#NEEY:
QUARTER FUTURES	Otahuhu	Benmore
QUARTER FUTURES		
ASX Trade24 Code	EC	EG
Bloomberg	BTBA COMDTY	BLEA COMDTY
Refinitiv	O#NEO:	0#NEG:
Electricity Options		
	Otahuhu	Benmore
AVERAGE RATE OPTIONS OVER BASE LOAD CALENDAR O	QUARTER FUTURES	
ASX Trade24 Code	EA	EE
Bloomberg	BEAA COMDTY OMON	BEEA COMDTY OMON
Refinitiv	0#2NEAmy+	0#2NEEmy+
CALENDAR YEAR BASE LOAD ELECTRICITY STRIP OPTION	S	
ASX Trade24 Code	EB	EF
Bloomberg	BHBA COMDTY OMON	BBEA COMDTY OMON
	BIIBA COMBIT OMON	222/100/112/110/110/11



Contract Specifications for Australian Electricity

Individual contract specifications can be found in <u>Schedule 1 of the ASX24 Operating Rules</u>.

Please note that individual contract specifications do change from time to time and this document is not a substitute for the <u>ASX24 Operating Rules</u>. In the case of any discrepancies, the ASX24 Operating Rules apply.

ASX New Zealand Electricity – Benmore Base Load Monthly Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Benmore grid reference point.
Contract Unit:	0.1 MW of electrical energy per hour for the Benmore grid reference point in New Zealand on a base load profile from 00:00 hours to 24:00 hours (New Zealand time) across all days for the duration of the Contract Month.
	For example: the size (in Megawatt hours) of each contract month will vary depending on the number of days and base load hours within the month, as follows:
	 A 28 day contract month will equate to 67.2 Megawatt hours; A 29 day contract month will equate to 69.6 Megawatt hours; A 30 day contract month will equate to 72.0 Megawatt hours; A 31 day contract month will equate to 74.4 Megawatt hours.
Price Quotation:	Prices are quoted in New Zealand dollars (NZD) per Megawatt hour.
Contract Months:	January, February, March, April, May, June, July, August, September, October, November, December, such that sufficient calendar months are always available for market participants to trade the next seven to nine calendar months.
Commodity Code:	EH = Benmore Base Load Monthly Electricity Futures
Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per MWh
Tick Size:	 Tick size for a \$0.05/MWh price fluctuation: a 67.2 MWh contract month has a tick size of \$3.36 a 69.6 MWh contract month has a tick size of \$3.48 a 72.0 MWh contract month has a tick size of \$3.60 a 74.4 MWh contract month has a tick size of \$3.72
Trading Hours:	10.30am - 4.00pm ¹
Last Trading Day:	Last Business Day (in New Zealand) in the Calendar Month
Cash Settlement Day:	The Cash Settlement Day of the Contract shall be the fourth Business Day (in New Zealand) after the expiry of the Final Trading Day.
Cash Settlement Price:	The Cash Settlement Price is calculated by taking the arithmetic average of the Wholesale Electricity Market base load spot prices on a half hourly basis over the contract month, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after expiry of the Contract and shall be later confirmed on the third Business Day after expiry.
Cash Settlement Process:	Upon the fourth Business Day after the expiry of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day of the contract month. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the contract month shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.



Cash Settlement Value:

The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying contract month.

ASX New Zealand Electricity – Benmore Base Load Calendar Quarter Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Benmore grid reference point.
Contract Unit:	0.1 MW of electrical energy per hour for the Benmore grid reference point in New Zealand over the period of a calendar quarter. The base load period is defined as the period from 00:00 hours Monday and 24:00 hours Sunday (New Zealand time) over the duration of the Contract Quarter.
	For example: the size (in Megawatt hours) of each contract quarter will vary depending on the number of days and base load hours within the quarter, as follows:
	 A 90 day contract quarter will equate to 216.0 Megawatt hours; A 91 day contract quarter will equate to 218.4 Megawatt hours; A 92 day contract quarter will equate to 220.8 Megawatt hours.
Price Quotation:	Prices are quoted in New Zealand dollars (NZD) per Megawatt hour.
Contract Months:	March, June, September, December such that sufficient calendar quarters are always available for market participants to trade up to the next 3 calendar years.
Commodity Code:	 EE = Benmore Base Load Quarter Electricity Futures EF = Benmore Base Load Electricity Strip Products
Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per MWh
Trading Hours:	10:30am – 4:00pm ¹
Tick Size:	Tick size for a \$0.05/MWh price fluctuation:
	 a 216.0 MWh contract quarter has a tick size of \$10.80 a 218.4 MWh contract quarter has a tick size of \$10.92 a 220.8 MWh contract quarter has a tick size of \$11.04
Last Trading Day:	Last Business Day (in New Zealand) in the Calendar Quarter
Cash Settlement Day:	The Cash Settlement Day of the Contract shall be the fourth Business Day (in New Zealand) after the expiry of the Contract Quarter.
Cash Settlement Price:	The Cash Settlement Price is calculated by taking the arithmetic average of the base load spot prices on a half hourly basis over the Contract Quarter, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after the Last Trading Day of the Contract and shall be later confirmed on the third Business Day after the Last Trading Day.
Cash Settlement Process:	Upon the fourth Business Day after the Last Trading Day of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day after the Last Trading Day of the Contract Quarter. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the Contract Quarter shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.
Cash Settlement Value:	The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying Contract Quarter.

¹ Trading hours: New Zealand Time.

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ASX New Zealand Electricity – Benmore Peak Load Calendar Quarter Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Benmore grid reference point.	
Contract Unit:	0.1 Megawatt of electrical energy per hour based on a peak load profile. Where the peak load profile is defined as the Wholesale Electricity Pool Market peak load period from 07:00am hours to 10:00pm hours Monday to Friday (excluding Public holidays and any other days determined by ASX) over the duration of the Contract Quarter.	
	For example: the size (in Megawatt hours) of each contract quarter will vary depending on the number of peak days and peak hours within the quarter, as follows:	
	 A 58 day contract quarter will equate to 87.0 Megawatt hours; A 59 day contract quarter will equate to 88.5 Megawatt hours; A 60 day contract quarter will equate to 90.0 Megawatt hours; A 61 day contract quarter will equate to 91.5 Megawatt hours; A 62 day contract quarter will equate to 93.0 Megawatt hours; A 63 day contract quarter will equate to 94.5 Megawatt hours; A 65 day contract quarter will equate to 97.5 Megawatt hours; A 66 day contract quarter will equate to 99.0 Megawatt hours; 	
Price Quotation:	Prices are quoted in New Zealand dollars per Megawatt hour.	
Contract Months:	March/June/September/December, such that sufficient Calendar Quarters are always available for market participants to trade the next three Calendar Years	
Commodity Code:	EG: Benmore Peak Load Electricity Futures	
Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per Megawatt hour.	
Trading Hours:	10:30am – 4:00pm ¹	
Tick Size:	 Tick sizes under a NZD \$0.05/MWh price fluctuation: A 87.0 MWh contract month has a tick size of \$4.35; A 93.0 MWh contract month has a tick size of \$4.65; A 99.0 MWh contract month has a tick size of \$4.95. 	
Last Trading Day:	The last Business Day (in New Zealand) of the Contract Quarter.	
Cash Settlement Day:	The fourth Business Day (in New Zealand) following the Final Trading Day.	
Cash Settlement Price:	The Cash Settlement Price is calculated by taking the arithmetic average of the Wholesale Electricity Market peak load spot prices on a half hourly basis over the Contract Quarter, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after expiry of the Contract and shall be later confirmed on the third Business Day after expiry.	
Cash Settlement Process:	Upon the fourth Business Day after the expiry of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day of the Contract Quarter. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the Contract Quarter shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.	
Cash Settlement Value:	The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying Contract Quarter.	

¹ Trading hours: New Zealand Time.



ASX New Zealand Electricity – Benmore Base Load Calendar Quarter Average Rate Options

Description:	Average Rate Options over Base Load Calendar Quarter Electricity Futures
Underlying Commodity:	Base Load Calendar Quarter Electricity Futures Contract
Contract Quarters:	March, June, September, December, minimum of 6 calendar quarters ahead.
Commodity Code:	EE: Benmore
Price Quotation:	Prices are quoted in New Zealand dollars per Megawatt hour.
Minimum Price Movement:	Minimum price fluctuation is NZ\$0.01 per Megawatt hour.
Trading Hours:	10:30am – 4:00pm ¹
Exercise Prices:	New Exercise Prices are created as the underlying Benmore Base Load Electricity Futures Contract moves, at intervals of NZ\$1.00 per MWh then NZ\$5.00 per MWh from 2 October 2023.
Contract Expiry:	4:00pm NZST on the last business day, in New Zealand, of the Calendar Quarter (as per the underlying futures contract)
Declaration Date:	The day and time at which the final Settlement Price of the underlying Base Load Calendar Quarter Electricity Futures Contract is declared.
Reference Price for Option Exercise:	In accordance with the final Settlement Price of the underlying futures contract as determined on the Third Business Day after the Final Trading Day.
Method of Option Exercise:	On the Third Business Day after the Final Trading Day all in-the-money options are automatically exercised into the underlying futures contract and cash settled. Final time for lodgement of a Deny Automatic Exercise Request is 12:30pm New Zealand time on the Final Trading Day. Time for lodgement of an Exercise Request for any Option Contract is any Trading Day up to 12:30pm New Zealand time.

ASX New Zealand Electricity – Otahuhu Base Load Monthly Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Otahuhu grid reference point.	
Contract Unit:	0.1 MW of electrical energy per hour for the Otahuhu grid reference point in New Zealand over the period of a calendar quarter. The base load period is defined as the period from 00:00 hours Monday and 24:00 hours Sunday (New Zealand time) over the duration of the Contract Month.	
	For example: the size (in Megawatt hours) of each contract month will vary depending on the number of days and base load hours within the month, as follows:	
	 A 28 day contract month will equate to 67.2 Megawatt hours; A 29 day contract month will equate to 69.6 Megawatt hours; A 30 day contract month will equate to 72.0 Megawatt hours; A 31 day contract month will equate to 74.4 Megawatt hours. 	
Price Quotation:	Prices are quoted in New Zealand dollars (NZD) per Megawatt hour.	
Contract Months:	January, February, March, April, May, June, July, August, September, October, November, December, such that sufficient calendar months are always available for market participants to trade the next seven to nine calendar months.	
Commodity Code:	ED: Otahuhu Base Load Month Electricity Futures	



Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per MWh
Tick Size:	Tick size for a \$0.05/MWh price fluctuation:
	 a 67.2 MWh contract month has a tick size of \$3.36 a 69.6 MWh contract month has a tick size of \$3.48 a 72.0 MWh contract month has a tick size of \$3.60 a 74.4 MWh contract month has a tick size of \$3.72
Trading Hours:	10.30am - 4.00pm ¹
Last Trading Day:	Last Business Day (in New Zealand) of the Settlement Month
Cash Settlement Day:	The Cash Settlement Day of the Contract shall be the fourth Business Day (in New Zealand) following the Final Trading Day.
Cash Settlement Price:	The Cash Settlement Price is calculated by taking the arithmetic average of the Wholesale Electricity Market base load spot prices on a half hourly basis over the contract month, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after expiry of the Contract and shall be later confirmed on the third Business Day after expiry.
Cash Settlement Process:	Upon the fourth Business Day after the expiry of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day of the contract month. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the contract month shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.
Cash Settlement Value:	The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying contract month.

¹ Trading hours: New Zealand Time.

ASX New Zealand Electricity – Otahuhu Base Load Quarterly Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Otahuhu grid reference point.
Contract Unit:	0.1 MW of electrical energy per hour for the Otahuhu grid reference point in New Zealand over the period of a calendar quarter. The base load period is defined as the period from 00:00 hours Monday and 24:00 hours Sunday (New Zealand time) over the duration of the Contract Quarter.
	For example: the size (in Megawatt hours) of each contract quarter will vary depending on the number of days and base load hours within the quarter, as follows:
	 A 90 day contract quarter will equate to 216.0 Megawatt hours; A 91 day contract quarter will equate to 218.4 Megawatt hours; A 92 day contract quarter will equate to 220.8 Megawatt hours.
Price Quotation:	Prices are quoted in New Zealand dollars (NZD) per Megawatt hour.
Contract Months:	March, June, September, December such that sufficient quarter months are always available for market participants to trade up to the next 3 calendar years.
Commodity Code:	 EA: Otahuhu Base Load Quarter Electricity Futures EB: Otahuhu Base Load Electricity Strip Products
Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per MWh



Tick size for a \$0.05/MWh price fluctuation:
 a 216.0 MWh contract quarter has a tick size of \$10.80 a 218.4 MWh contract quarter has a tick size of \$10.92 a 220.8 MWh contract quarter has a tick size of \$11.04
10.30am - 4.00pm ¹
Last Business Day (in New Zealand) in the Calendar Quarter
The Cash Settlement Day of the Contract shall be the fourth Business Day (in New Zealand) after the expiry of the Contract Quarter.
The Cash Settlement Price is calculated by taking the arithmetic average of the base load spot prices on a half hourly basis over the Contract Quarter, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after the Last Trading Day of the Contract and shall be later confirmed on the third Business Day after the Last Trading Day.
Upon the fourth Business Day after the Last Trading Day of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day after the Last Trading Day of the Contract Quarter. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the Contract Quarter shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.
The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying Contract Quarter.

¹ Trading hours: New Zealand Time.

ASX New Zealand Electricity – Otahuhu Peak Load Calendar Quarter Futures

Underlying Commodity:	Electrical energy bought and sold in the New Zealand Electricity Market conducted by NZX Limited (NZX), or its successor, for the Otahuhu grid reference point.
Contract Unit:	0.1 Megawatt of electrical energy per hour based on a peak load profile. The peak load profile is defined as the period from 07:00 hours to 22:00 hours Monday to Friday (excluding Public holidays and any other days as determined by ASX) over the duration of the Contract Quarter.
	For example: the size (in Megawatt hours) of each contract quarter will vary depending on the number of peak days and peak hours within the quarter, as follows:
	 A 58 day contract quarter will equate to 87.0 Megawatt hours; A 59 day contract quarter will equate to 88.5 Megawatt hours; A 60 day contract quarter will equate to 90.0 Megawatt hours; A 61 day contract quarter will equate to 91.5 Megawatt hours; A 62 day contract quarter will equate to 93.0 Megawatt hours; A 63 day contract quarter will equate to 94.5 Megawatt hours; A 65 day contract quarter will equate to 97.5 Megawatt hours; A 66 day contract quarter will equate to 99.0 Megawatt hours;
Price Quotation:	Prices are quoted in New Zealand dollars per Megawatt hour.
Contract Months:	March/June/September/December, such that sufficient Calendar Quarters are always available for market participants to trade the next three Calendar Years
Commodity Code:	EC: Otahuhu Peak Load Electricity Futures



Minimum Price Movement:	Minimum price fluctuations of NZ\$0.05 per Megawatt hour.
Tick Size:	Tick sizes under a NZD \$0.05/MWh price fluctuation:
	 A 87.0 MWh contract month has a tick size of \$4.35;
	 A 93.0 MWh contract month has a tick size of \$4.65;
	 A 99.0 MWh contract month has a tick size of \$4.95.
Trading Hours:	10:30am – 4:00pm ¹
Last Trading Day:	The last Business Day (in New Zealand) of the Contract Quarter.
Cash Settlement Day:	The fourth Business Day (in New Zealand) after the expiry of the Contract Quarter.
Cash Settlement Price:	The Cash Settlement Price is calculated by taking the arithmetic average of the Wholesale Electricity Market peak load spot prices on a half hourly basis over the Contract Quarter, rounded to the nearest cent. A provisional Cash Settlement Price will be declared on the first Business Day after expiry of the Contract and shall be later confirmed on the third Business Day after expiry.
Cash Settlement Process:	Upon the fourth Business Day after the expiry of the Contract, the Contract will be cash settled at the Cash Settlement Price confirmed on the third business day of the Contract Quarter. The final settlement price is rounded to the nearest cent. All bought and sold contracts in existence as at the close of trading in the Contract Quarter shall be settled by the ASX Clear (Futures) at the Cash Settlement Price.
Cash Settlement Value:	The Cash Settlement Value is the Cash Settlement Price multiplied by the number of Megawatt hours (MWh) in the underlying Contract Quarter.

¹ Trading hours: New Zealand Time.

ASX New Zealand Electricity – Otahuhu Base Load Calendar Quarter Average Rate Options

Description:	Average Rate Options over Base Load Calendar Quarter Electricity Futures
Underlying Commodity:	Base Load Calendar Quarter Electricity Futures Contract
Contract Quarters:	March, June, September, December, minimum of 6 calendar quarters ahead.
Commodity Code:	EA: Otahuhu
Price Quotation:	Prices are quoted in New Zealand dollars per Megawatt hour.
Minimum Price Movement:	Minimum price fluctuation is NZ\$0.01 per Megawatt hour.
Trading Hours:	10:30am – 4:00pm ¹
Exercise Prices:	New Exercise Prices are created as the underlying Benmore Base Load Electricity Futures Contract moves, at intervals of NZ\$1.00 per MWh then NZ\$5.00 per MWh from 2 October 2023.
Contract Expiry:	4:00pm NZST on the last business day, in New Zealand, of the Calendar Quarter (as per the underlying futures contract)
Declaration Date:	The day and time at which the final Settlement Price of the underlying Base Load Calendar Quarter Electricity Futures Contract is declared.
Reference Price for Option Exercise:	In accordance with the final Settlement Price of the underlying futures contract as determined on the Third Business Day after the Final Trading Day.



Method of Option Exercise:

On the Third Business Day after the Final Trading Day all in-the-money options are automatically exercised into the underlying futures contract and cash settled. . Final time for lodgement of a Deny Automatic Exercise Request is 12:30pm New Zealand time on the Final Trading Day. Time for lodgement of an Exercise Request for any Option Contract is any Trading Day up to 12:30pm New Zealand time.

1 Trading hours: New Zealand Time.

Further enquiries:

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