2022 review of the Minimum Weekly Amount payable by retailers during an Offical Conservation Campaign

Decision paper

25 April 2023

ELECTRICITY AUTHORITY
TE MANA HIKO

Executive summary

In conjunction with the system operator, the Authority regularly monitors and assesses the security of supply to ensure participants have the information and incentives needed for the electricity system to operate efficiently and help ensure the lights stay on.

As part of that regime, if the storage in the main hydroelectricity lakes falls to very low levels, the system operator is required to call an official conservation campaign (OCC). The last time New Zealand needed an OCC was in 2008. OCCs are one of the key tools that enable the system operator to manage security of supply emergencies. If an OCC is called, the system operator will ask New Zealanders to voluntarily reduce their electricity usage.

The Electricity Industry Participation Code (Code) requires electricity retailers to have a customer compensation scheme (CCS). The CCS requires retailers to pay their qualifying customers financial compensation for their reduction in electricity usage if the system operator has commenced an OCC. This compensation takes the form of a payment that must be at least the minimum weekly amount (MWA) per week.

The Code requires that the Authority determines the MWA, and that the Authority reviews the amount after each OCC ends and at least once every three years. The Authority last reviewed the MWA in 2019, where it determined that it should remain at $10.50.

In November 2022, the Authority reviewed the MWA to ensure we comply with the triennial requirement in the Code. This review looked at the input data and methodology used to calculate the MWAs in previous reviews. Various inputs into the existing calculation were reviewed, including the average electricity consumption increase during winter, the estimated average savings rate during an OCC, and the estimated value of savings to a retailer during an OCC.

In December 2022, the Authority sought independent review of the methodology the Authority used to calculate the new MWA. This was provided by Concept Consulting Limited in 2023, who confirmed that the methodology used was robust, reasonable, and able to be replicated.

Authority's decision

Based on the updated input data from the review, the Authority has decided to increase the MWA to $12.00 per week per ICP, to take effect 1 August 2023.

The Authority has decided to approve the proposed increase to the MWA under clause 9.25 of the Code because this will promote its statutory objective of "promoting competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers." The Authority also considers this increase to meet its additional objective of protecting the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers.

This paper sets out the decision by the Authority to increase the MWA, outlining the workings and assumptions used when deciding the increase to the MWA and how the Authority decided on $12.00 as the new MWA.

Contents

1 Background to the Authority's decision

Qualifying customers are compensated during an OCC

1.1 The Code requires electricity retailers to have a customer compensation scheme (CCS) that will pay their qualifying customers at least the MWA per week as financial compensation if the system operator has commenced an official conservation campaign (OCC).

1.2 A customer qualifies if the ICP was not vacant or disconnected and they use more than 3,000 kWh a year, have a category one or two metering installation (most residential and small business consumers) and do not purchase all their electricity at spot prices.

1.3 Consumers on spot price linked contracts are excluded from the scheme as they have a direct price-signalled incentive to reduce consumption, and their retailer has no cost savings as the spot price during an OCC is passed through to the consumer.

1.4 The Code specifies a default CCS that all retailers must offer. The MWA is a component of the default CCS. The Code also permits retailers to develop additional CCSs. A qualifying customer has the option of choosing between the default CCS and any additional CCS their retailer offers.

1.5 Requiring retailers to offer compensation for their customers' electricity savings during an OCC reduces the likelihood of OCCs by:

(a) incentivizing retailers to manage spot price risk appropriately - through appropriate hedges – to avoid an OCC (and therefore avoid paying compensation); and

(b) incentivising generators to invest in last-resort dry-year generation (to fulfil their hedge obligations).

1.6 The MWA is based on the average estimated rates of consumption, electricity saved, and the value of those savings to retailers. It is designed to be approximately cost-neutral to retailers in that compensation is roughly the same value as the benefit a retailer would obtain from lower spot prices resulting from reduced demand and reduced purchases during an OCC.

The Authority reviews the MWA every three years

1.7 Under clause 9.25 of the Code, the Authority must review the MWA after each OCC and at least once every three years.

1.8 The current MWA came into effect on 1 April 2011. The Authority reviewed the MWA in December 2013, December 2016, and December 2019. In all three instances the Authority determined that the MWA should remain at $10.50.

1.9 The Code requires that, in determining the MWA, the Authority must consider:

(a) the estimated value of the savings the Authority expects all qualifying customers will achieve during an OCC; and

(b) any other factors the Authority considers relevant.

2 The Authority reviewed the MWA in November 2022

2.1 The Authority has reviewed the data and methodology used to calculate the MWA. Note that the following three inputs to the MWA calculation were reviewed for the calculation of the MWA for 2022:

(a) *Estimated average electricity consumption increase during winter* – the percentage increase for both residential and commercial customers during this period.

(b) *Estimated average savings rate of residential and commercial consumers during an OCC* – based on the savings achieved by previous electricity conservation campaigns.

(c) *Estimated value of savings to a retailer during an OCC* – calculated as the difference between the average spot price they would normally pay, and the assumed embedded energy cost.

Estimated average electricity consumption increase during winter

2.2 The estimated average electricity consumption increase during winter is the percentage increase in electricity consumption (in kWh / week) for both residential and commercial customers during the winter quarter. This value is estimated using consumption data published by MBIE.

2.3 The estimated average electricity consumption of qualifying customers during the winter quarter is **249 kWh per ICP per week**. This estimate uses the most up-to-date published data from MBIE on residential and commercial electricity consumption, which is for the 12 months ending 31 December 2022.

2.4 For the 2022 review of the MWA, the Authority has calculated the percentage increase in consumption during the winter quarters (data reported for September) compared to the average consumption, over the last 36 quarters (since March 2014)[1]. This is displayed below:

Table 1: Estimated average electricity consumption during winter calculations

	Average of all quarters	Average of winter quarters (Sep)	Average percentage increase (2022)	Average percentage increase (2019)
Residential	3,174.34 GWh	4,094.95 GWh	**29.00%**	37.5%
Commercial	2,347.55 GWh	2,520.24 GWh	**7.36%**	9.5%

2.5 A decrease in the winter consumption between 2019 to 2022 is reasonable given the generally higher use of energy efficient lighting and space heating, and the higher thermal efficiency of rental homes brought about by the Healthy Homes standards.

Estimated average savings rate of residential and commercial consumers during an OCC

2.6 The estimated average savings rate is based on the savings achieved by the electricity conservation campaigns that occurred in 2001 and 2003.

2.7 The Authority has used the average of the reduction in demand across those two years as an estimation of savings rates during an official conservation campaign, this being **7.8%.** This is the same estimate that has been used in all reviews of the MWA since its inception in 2011.

[1] Prior to the June quarter 2013, retail sales information was collected annually.

2.8 Notably, while an electricity conservation campaign occurred in 2008, the electricity savings rate under that campaign has been excluded from the calculation of the average as an estimate. This is because the 2008 conservation campaign is not considered to be a good point of reference for a reduction in electricity consumption, as by 2008 there was general dissatisfaction amongst electricity consumers with frequent calls for uncompensated electricity savings efforts. This resulted in the 2008 conservation campaign being largely ignored by customers.

Table 2: Combined savings rate result

Year	Effect of conservation campaigns on electricity demand			
	North Island	South Island	New Zealand (demand weighted average)	
2001	5.4% drop	12.6% drop	7.6% drop	**7.8% drop**
2003	8.5% drop	7.0% drop	8.1% drop	

Estimated value of savings to a retailer during an OCC

2.9 The estimated value of savings to a retailer from its customers saving electricity during an OCC is calculated as the difference between:

- the assumed avoided spot electricity price that retailers would pay during an OCC, and
- the assumed embedded energy cost within retailers fixed price variable volume (FPVV) electricity tariffs.

The assumed avoided spot price

2.10 For the 2022 review of the MWA, the Authority has used the average of half hourly spot prices for each month in 2022 when the Whirinaki power station ran at and offered above its short-run marginal cost (SRMC) to estimate the avoided spot price.

2.11 Given that Whirinaki is mostly offered to manage peaks in demand as a last resort generator, the spot price when Whirinaki runs serves as a reasonable indication of the potential spot price during scarcity situations when all non-hydro generation is being run to conserve hydro storage – such as those that might occur during an OCC.

2.12 The Authority has used the spot price when Whirinaki is offering above its estimated SRMC to exclude situations where Whirinaki was offered at a low price due to its owner providing generation for its portfolio management. The Authority has chosen to take the average of half-hourly spot prices over the month to match how we calculate the costs for our SRMC estimations.

2.13 In 2022, the daily-weighted average of the average monthly spot price was $724.59 / MWh when Whirinaki ran at and offered at above its estimated SRMC. The Authority has

therefore used **$724.59 / MWh** as the assumed avoided spot price value in the calculation of the MWA.

The assumed embedded energy cost

2.14 For the 2022 review of the MWA, to estimate the embedded energy cost in retail tariffs the Authority has used the average internal transfer price for electricity (ITP), as benchmarked by the Authority, as an estimation of the cost of electricity.

2.15 The Authority believes the average ITP is an appropriate measure to base the assumed cost of the energy component of retailers' prices as ITP is a retail-level data set that is simple and based on contemporary costs disclosed by major participants, as well as being representative of the cost of electricity for nearly 85 per cent of the electricity market.

2.16 The average of these benchmarked ITPs for the most recent available year (2021/22) is **$103.79**. The Authority has therefore used **$103.79 / MWh** as the assumed embedded energy cost value in the calculation of the MWA.

3 The raw estimate of the updated MWA is $12.05

3.1 Based on the updated input data outlined above, the estimated MWA compensation value is **$12.05 per week per ICP**. This is an increase of $1.55 from the previous MWA of $10.50.

3.2 An outline of the changes to input data following the review of the MWA is below:

Table 3: Changes to input values following 2022 review of the MWA.

	2022	2019
Consumption (GWh/year)	13027 (residential) 9387 (commercial)	12551 (residential) 9556 (commercial)
Estimated electricity consumption increase in winter	29.00 (residential) 7.36% (commercial)	37.5% (residential) 9.5% (commercial)
Estimated savings rate	7.8%	7.8%
Estimated avoided spot price	$724.59	$610
Assumed embedded energy cost	$103.79	$110

4 The Authority sought independent review of the updated methodology

4.1 Given the changes to the methodology used to calculate the MWA, the Authority sought independent confirmation that the analysis used to calculate the new MWA was robust and reasonable.

4.2 The Authority engaged Concept Consulting to conduct a high-level review of the methodology used by the Authority to calculate the MWA and to confirm whether the analysis used to calculate the values was sound.

4.3 Concept consulting provided feedback to the Authority on the methodology used to calculate the new MWA and has confirmed that the approach used to calculate the new

MWA is robust and reasonable. Concept also recreated the calculations using the same inputs and obtained the same result.

5 The Authority has increased the MWA to $12.00

5.1 An adjustment to the MWA is warranted given that it has not changed since its inception in 2010 and the 2022 calculation shows a benefit to retailers during an OCC of $12.05. Additionally, an increase in the MWA is likely to reflect increasing spot prices and tightening gas supply over the last 12 years.

5.2 The Authority has chosen to round the MWA to $12.00 from the raw estimate of $12.05 because:

(a) A well-rounded number is both easier to communicate to consumers and more convenient for retailer's administrative purposes.

(b) It is consistent with the design principle that the CCS is simple and easy to communicate used to calculate previous MWAs.

(c) Rounding the MWA up from the raw estimate of $12.05 would not be appropriate given:

(i) this would represent an increase of nearly $2.00 per ICP per week, which is a substantial increase from the previous value of $10.50.

(ii) forward prices have come down over the last several months, indicating that the market is not expecting a continuation of the observed increase in fuel/carbon prices to lead to consistently higher wholesale prices.

5.3 The Authority also considers this cost to effectively balance the competing incentives of the MWA, while remaining reasonably cost neutral for retailers.

6 The proposed changes promote the Authority's statutory objectives

Net gains in reliable supply, and no material effect on competition, are expected

6.1 The Authority has decided to approve the proposed increase to the MWA under clause 9.25 of the Code because this will promote its statutory objective of "promoting competition in, reliably supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers."

6.2 The Authority also considers this increase to meet is additional objective of protecting the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers.

6.3 Requiring retailers to compensate their customers for the electricity savings during an OCC has two important incentive effects:

(a) It reduces the likelihood of OCCs by placing an incentive on retailers to manage spot price risk appropriately (such as through financial or physical hedges) in order to avoid paying compensation.

(b) It encourages consumers to conserve energy should an OCC be called, through compensation payments.

6.4 The proposed increase to the MWA will enhance these incentives by further encouraging retailers to hedge appropriately while also increasing the incentive on consumers to save should an OCC occur. This will have the benefit of enhancing the security of supply of electricity generally, as well as during any potential future OCC.

The new MWA will take effect from 1 August 2023

6.5 The Code requires that, following a review of the MWA, the Authority gives participants at least three months' notice if it determines a new MWA.

6.6 This decision paper serves as the notice required under the Code. Therefore, the new MWA will take effect from **1 August 2023.**