



**ENERGY SECURITY BOARD**  
**National Energy Guarantee**  
**TECHNICAL WORKING PAPER**

**Exempt Load for the  
Emissions Reduction Requirement**

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## Executive Summary

- The detailed design of the emissions reduction requirement of the Guarantee requires a mechanism to give effect to the Commonwealth's Government's intention that emissions-intensive trade-exposed (EITE) load be exempt.
- The preferred approach is to spread EITE load across all other non-EITE load, with each market customer's total load being first reduced by any EITE load it supplies in a compliance year. Then, each MWh of a market customer's non-EITE load is scaled up by a factor, so that total market customers' non-EITE load is equal to total load.
- The scaling factor would be calculated after the end of the compliance period, based on the proportion of total system load to non-EITE load for that compliance period.
- The EITE load to be subtracted from the market customer's load would be finalised by the Clean Energy Regulator (CER) after the end of the compliance year but before market customer loads are finalised within the registry by 30 September. The CER intends to provide an online platform to allow liable market customers to track EITE load throughout the compliance year.
- To provide greater certainty for retailers, the scaling factor will be capped at a maximum based on the prior year's proportion of system load to non-EITE load (or based on a best estimate of future EITE load). AEMO will publish how the scaling factor is tracking each week based on the year-to-date proportion of total system load to non-EITE load.
- The principles for exempting EITE load and reallocating targets to non-EITE load should seek to:
  - ensure that EITE loads are not commercially disadvantaged due to the introduction of an emissions reduction requirement
  - facilitate an overall emissions target to be achieved for the Commonwealth
  - keep to a minimum the burden placed on non-EITE load in achieving the emissions intensity target, and
  - ensure retailers are not disadvantaged (or advantaged) by serving EITE load relative to non-EITE load.
- To improve competition, small market customers will be exempt for all or a proportion of their load. The exempt load would be spread amongst other retail load in the same way that the EITE-exempt load is spread amongst non-EITE load, and would be included in the (capped) scaling factor. Under this measure, the first 50,000 MWh of retail load of any market customer would be exempt from the emissions reduction requirement.
- The sum of load under the 50,000 MWh limit will be tracked and regularly reported to the market.

## 1 Introduction

On 20 April 2018, the Energy Security Board (ESB) presented the COAG Energy Council with a high-level design proposal for the National Energy Guarantee (the Guarantee). The COAG Energy Council agreed that the ESB progress the detailed design of the Guarantee for determination by the Council at its August 2018 meeting.

As part of the development process, the ESB convened Technical Working Groups to advise on certain detailed design elements of the Guarantee. The Technical Working Groups were comprised of a broad range of stakeholders with relevant expertise from more than 30 organisations.

The purpose of this paper is to outline options and preferred approaches relating to the emissions reduction requirement under the Guarantee, in particular:

- how the EITE exemptions are factored into the calculation of a market customer's load, and
- how exemptions for small market customers are factored into the calculation of liable load.

The Commonwealth Government's intention is to exempt all electricity used to conduct an EITE activity from the emissions reduction requirement under the Guarantee, consistent with its approach established under the *Renewable Energy (Electricity) Act 2000* (the RET Act), from 2020 onwards.

This paper provides additional detail and context to the [Draft Detailed Design Consultation Paper](#). Interested parties are encouraged to lodge a submission to the consultation by **13 July 2018** for consideration by the ESB prior to the publication of the final design of the Guarantee.

## 2 Overview of High-Level Design

In the February 2018 ESB consultation paper, the Commonwealth Government set out its intention to exempt all electricity used to conduct an EITE activity from the emissions reduction requirement under the Guarantee, consistent with its approach established under the *Renewable Energy (Electricity) Act 2000* (the RET Act) from 2020 onwards.

All EITE activities eligible for exemption under the Renewable Energy Target (RET) could be eligible for an exemption from the emissions reduction requirement under the Guarantee.

EITE businesses could apply to the Clean Energy Regulator (CER) for an exemption under the Guarantee in addition to their application for an exemption certificate under the RET.

The CER could establish a process to calculate the exemption, consistent with the 'electricity use method' under the RET, taking into account any adjustments required to this method, based on differences between the RET and the Guarantee.

The emissions target for non-EITE load would need to be adjusted for the exemptions EITEs receive in order to achieve the overall sector target.

In the April 2018 Update on Commonwealth Design Elements Paper, the Commonwealth Government noted it will need to carefully consider stakeholder feedback about avoiding creating incentives for retailers to choose the most emissions-intensive generation to be exempt from the emissions reduction requirement of the Guarantee. Some stakeholders suggested deeming an emissions intensity rather than allowing retailers to nominate their own.

## 3 EITE exemptions

### 3.1 Options available for adjusting for exempt EITE load

The detailed design of the Guarantee requires a mechanism to make exemptions for emissions-intensive trade-exposed (EITE) load from the emissions reduction requirement. A key component of this design is how to reallocate emissions reduction targets between EITE and non-EITE load.

The principles for exempting EITE load and reallocating targets to non-EITE load should seek to:

- ensure that EITE loads are not commercially disadvantaged due to the introduction of an emissions reduction requirement
- facilitate an overall emissions target to be achieved for the Commonwealth
- keep to a minimum the burden placed on non-EITE load in achieving the emissions intensity target, and
- ensure retailers are not disadvantaged (or advantaged) by serving EITE load relative to non-EITE load.

While it is the intention that all four principles are simultaneously achieved, it is likely that trade-offs will be needed to achieve a workable scheme.

There are two broad approaches for applying the EITE exemption. Both (unavoidably) transfer the responsibility of meeting the target to non-EITE load.

The first approach involves exempting both EITE load and an amount of emissions associated with this load and would require the Commonwealth to take exempt EITE loads into account when setting targets. The second approach involves spreading EITE loads proportionally across non-EITE loads (retail scaling) or across generators (generation scaling).

The ESB considered four approaches for adjusting a retailer's non-EITE emissions intensity. Options 1 and 2 require the Commonwealth to take exempt load into account in setting targets and EITE factors. Options 3 and 4 spread the EITE load proportional across retail or generation respectively.

#### 1. Deduct exempt EITE load and emission

The contribution of emissions and load are deducted against the supplying retailer's total load to determine their adjusted emissions intensity as presented in formula 1.

$$\widehat{EI}_{Retailer} = \frac{Emissions_{Total} - Emissions_{EITE}}{Load_{Total} - Load_{EITE}} \quad \text{(Formula 1)}$$

#### 2. Deemed EITE load against emissions intensity target

Reduce the retailer's emissions intensity via a deemed emissions intensity for the share of the retailer's load ascribed to the EITE as represented by formula 2.

$$\widehat{EI}_{Retailer} = EI_{Retailer} - (EI_{EITE} - EI_{Target}) \times \frac{Load_{EITE}}{Load_{Total}} \text{ (Formula 2)}$$

Where, for formulae 1 and 2:

$\widehat{EI}_{Retailer}$  = The weighted-average emissions per MWh of the retailer with the EITE exemption factored in.

$EI_{Retailer}$  = The emissions per MWh of the retailer used for compliance under the Guarantee, measured across the retailer's full load).

$Emissions_{Total}$  = The total emissions from the retailer's assigned and unassigned load.

$Emissions_{EITE}$  = The emissions from EITE load.

$EI_{EITE}$  = The emissions per MWh from EITE load (EITE emissions factor).

$EI_{Target}$  = The electricity emissions target in that year.

$Load_{Total}$  = The retailer's total electricity load.

$Load_{EITE}$  = The retailer's electricity load supplied to EITE customer/s.

### 3. Spreading EITE load across non-EITE load

Spread exempt EITE load across all non-EITE retailer load without needing to determine the emissions associated with supplying that load. Under this approach, each retailer's total load is first reduced by the EITE load it supplies in a compliance year. Each MWh of a retailer's non-EITE load is then scaled up, so that retailers' non-EITE load is equal to total load in aggregate.

### 4. Generation spreading method

Scaling down the generation such that each generator carries an even proportion of the non-EITE load market share. Similar to Option 3, the retailer's load with financial responsibility for the EITE is reduced by the EITE load that they supply. Then each MWh of a generator's allocation in the market is scaled down by the portion of total system EITE load as a portion of total system load.<sup>1</sup> This would have the effect of increasing the generator's emissions intensity for the purposes of the emissions reduction requirement calculations, as the same number of emissions would be divided by a smaller output figure.

All options ensure that the EITE exemption does not detract from achieving the total emissions intensity target, and all options transfer the responsibility of meeting the emissions targets to non-EITE loads. However, Options 1 and 2 require the Commonwealth to set targets based on a forecast of future EITE load – that is, they would require the Commonwealth to forecast exempt EITE loads and take this forecast of EITE loads into account when setting the targets for the remaining non-EITE loads.

<sup>1</sup> As defined in the *Technical Working Paper on Market Customer Load*.

Options 3 and 4 do not require a forecast of EITE load, nor do they require an up-front adjustment of intensity targets for non-EITE load.

In comparing Options 1 and 2, it is apparent that they both achieve a similar outcome in calculating the emissions allocation for non-EITE load. However, Option 2 (deeming an emissions intensity) provides a simpler calculation. To give effect to this approach, an emissions intensity will need to be assigned to EITE load, deemed by the Commonwealth. As the difference between the EITE's deemed emissions intensity and the emissions target diverge over time, the non-EITE load will be subject to an increasingly higher portion of the burden to achieve Commonwealth's emissions reduction target. This burden will be reflected in more onerous targets being set for market customers to achieve an emissions intensity target for their non-EITE load. Option 1 and 2 may not ensure that retailers are indifferent to serving EITE load as the energy they actually source may have a higher or lower intensity than the deemed factor.

Option 3 and 4 enable a market customer to exempt EITE load from their compliance obligation with the difference in load being swept up through either scaling up the non-EITE load in the case of Option 3 or scaling down the generation under Option 4. These approaches will provide a similar commercial outcome.

Importantly, Options 3 and 4 do not require the Commonwealth to adjust the overall emissions intensity target to accommodate the exempt EITE load. If, when setting targets in advance under Options 1 and 2, the Commonwealth had over-estimated EITE load, it would have set the intensity targets more stringently (lower) than necessary to achieve the overall intensity target. The reverse is also true. Under Options 3 and 4, any unforeseen variation in EITE load is automatically accommodated. Uncertainty about the future can be managed through transparent, regular reporting of EITE load and the scaling factor by AEMO and could be subject to a cap as described in section 3.2 below.

Option 3 is the preferred option. Spreading the EITE load across the non-EITE load strikes the best balance between giving effect to the Commonwealth's intention to exempt EITE load from costs associated with meeting the emissions reduction requirement, not inadvertently placing any additional burden on non-EITE load and enabling the Commonwealth to achieve its emissions reduction target. Scaling retail load aligns more directly to a retailer obligation than scaling generation and is perhaps more intuitive to understand. Scaling generation would introduce an additional complication for retailers and generators entering into contracts to allocate generation and its associated emissions intensity, since the generator's emissions intensity would keep growing over the year as EITE load increased (and would not be known finally until the end of the compliance year) – this is discussed below.

### **3.2 Determining the scaling factor**

The most significant issue to be addressed in scaling non-EITE load is the fact that EITE load cannot be forecast perfectly in advance. Therefore, the final scaling factor to be applied to EITE load is subject to some degree of uncertainty. That said, EITE load has tended to be relatively stable. Factors that could materially change the scaling factor, such as a large new entrant EITE load or the exit of a large EITE load are usually, but not always, flagged well in advance, and tend to be well publicised at the time. The uncertainty over the EITE scaling factor could create difficulties for retailers in setting electricity prices in advance for their customers.

Three options were considered to reduce or eliminate the uncertainty of the scaling factor:

- A. **Fixed ex-ante scaling.** Calculate a fixed scaling factor at the beginning of the year based on the prior year's proportion of total system load to non-EITE load. The scaling factor could include a true-up for the difference the previous year's actual proportion of EITE load and the factor used. (Instead of simply using the previous year's EITE load, a forecast could be used – the same considerations would apply.) This approach has the apparent advantage of a fixed scaling factor that can be set at the start of the compliance year (which would be consistent with other aspects of the design, including the lagged treatment of generator emissions intensities). However, an ex-ante fixed scaling factor has two key disadvantages. First, EITE load could be lower in the compliance year than in the previous year. Non-EITE load would have been scaled up to a total that is larger than actual total load. There will not be enough generation in the registry to allow all market customers to be able to match their liable loads with allocated generation. Some sort of default emissions intensity factor would need to be assigned to cover this 'phantom' EITE load, and even if that were set at zero, it could lead to unfairness among market customers as to where the gap ends up sitting, and how the AER could determine which individual market customers had not complied because of the overall market shortage or for other reasons. Second, if EITE load is higher than in the previous year, then actual generation will be lower than the scaled up non-EITE load. There will be excess generation in the registry compared with total liable loads. This would probably lead to the highest emissions intensity generation remaining unallocated, and in aggregate, the emissions target for that year would be exceeded.
- B. **Scale to actual EITE load.** The scaling factor would be based on the actual proportion of system load to non-EITE load, calculated three months after the end of the compliance period, aligning with when system load is finalised. To help retailers forecast the EITE load factor throughout the compliance period, AEMO could publish how the scaling factor is tracking each week based on the year-to-date proportion of total system load to non-EITE load drawn from CER updates. The initial scaling factor would be based on last year's EITE load and total load, and each settlement run (weekly) AEMO would publish the current scaling factor based on the year to date EITE and total load. Whilst the scaling factor may be volatile early in the year, it would settle down and become less volatile through the year allowing retailers to estimate the likely final scaling factor. In the last month of the year the scaling factor would be resistant to all but the largest perturbations and would be clearly trending to the final scaling factor.
- C. **Scale to actual EITE load subject to a cap.** A hybrid approach could be used, where the scaling factor is based on the approach set out in Option B, but to provide greater certainty for retailers, the factor is capped at a maximum based on the prior year's proportion of system load to non-EITE load to system load (or a best estimate of future EITE load). Regularly, throughout the compliance year, AEMO could also publish the current real-time scaling factor. The scaling factor would not be able to exceed the cap by the end of the compliance period. This approach risks some excess generation remaining in the registry (and the target emissions intensity being breached), but at least provides market customers with an up-front maximum amount by which their non-EITE loads could be scaled up.

Option C is the preferred approach. It seems to balance providing information up-front to market customers to help them manage their obligations, while ensuring that they cannot be placed in an impossible situation of being required to cover load that never eventuated with generation that is not in the registry.

### Preferred approach

- The preferred approach is to spread EITE load across all other non-EITE load (Option 3 above). Each market customer's total load would first be reduced by any EITE load it supplies in a compliance year. Then, each MWh of a market customer's non-EITE load would be scaled up by a factor so that total market customers' non-EITE load is equal to total load.
- The preferred approach for setting the scaling factor is to use actual EITE load in the current year, subject to a cap (Option C above) to provide greater certainty to retailers. The EITE load would be finalised by the CER after the end of the compliance year but before market customer loads are finalised by 30 September. The scaling factor would be calculated three months after the end of the compliance period, based on the proportion of total system load to non-EITE load in the current year. The scaling factor will be capped at a maximum based on the prior year's proportion of system load to non-EITE load (or based on a best estimate of future EITE load). The CER will publish compliance year-to-date EITE load on an online platform so market customers with EITE load can estimate how much EITE load may be subtracted from their liable load when the compliance year is complete and final EITE load figures are published. AEMO will publish how the scaling factor is tracking each week based on the year-to-date proportion of total system load to non-EITE load.

## 4 Small market customer exemptions

### 4.1 Exempt volume

As a measure to help boost competition, small market customers will be exempt for all or a proportion of their load.

Under this measure, the first 50,000 MWh of generation will be exempt from any market customer's load. For a market customer with 50,000 MWh or less load, this would mean they would be fully exempt from the emissions reduction requirement of the Guarantee.

Market customers with load above 50,000 MWh will have proportion of their load exempt which become smaller as the load increases. For example, a market customer with 60,000 MWh would have 10,000 MWh of remaining non-exempt load, whereas a market customer with 1,000,000 MWh would have 950,000 MWh of remaining non-exempt load.

An alternative approach would be to exempt all market customers with 50,000 MWh of load or less from the emissions reduction requirement of the Guarantee. The advantage of this approach is that not all market customers receive an exemption, or an obligation free amount. Instead it would be targeted at only the smaller market customers. The disadvantage of this approach is that it draws a hard-limit on which market customer is exempt. For example, a market customer with 51,000 MWh would fail to meet the threshold and would be required to comply for all its load.

The preferred approach is to exempt the first 50,000 MWh of any market customer's load. However, the ESB is interested in feedback on whether an alternative approach would be more effective.

## 4.2 Determining scaling factor

The exempt market customer load would be spread proportionally across all load, in the same way that the EITE-exempt load is scaled. The timing and process for updating the scaling factor for small market customer exemptions could follow the EITE process exactly, where the final scaling factor would only be determined after the end of the compliance period. AEMO could publish how the scaling factor is tracking each week based on the year-to-date proportion of total system load to non-exempt load, combining both EITE and small market customer exempt load.

Alternatively, there could be a separate scaling process for exempt small market customer load. Retailer load data is available throughout the year, through the settlements process and AEMO could scale the non-exempt load throughout the year based on this data.

The preferred approach is to combine the exemption and scaling processes for EITE and small market customer exempt loads into a single process (including a single up-front cap). However, the ESB is interested in feedback on this approach.

### **Preferred approach**

- Small market customers will be exempt for all or a proportion of their load. The exempt load would be spread amongst other retail load in the same way as the EITE-exempt load and would be included in the (capped) scaling factor. Under this measure, the first 50,000 MWh of retail load of any market customer would be exempt from the emissions reduction requirement of the Guarantee.
- AEMO will publish how the scaling factor is tracking each week based on the year-to-date proportion of total system load to non-EITE load.

## A Abbreviations and defined terms

AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CER	Clean Energy Regulator
COAG	Council of Australian Governments
Compliance period	The twelve-month period across which compliance with the emissions reduction requirement is assessed. The compliance period will align with the financial year.
EITE	Emissions-intensive trade-exposed
ESB	Energy Security Board
Guarantee	National Energy Guarantee
Market customer	NEM customers, which are mostly electricity retailers (note that this is different to the definition of a liable entity for compliance with the reliability requirement under the Guarantee).
MWh	Megawatt-hour
RET	National large-scale renewable energy target currently in place under the <i>Renewable Energy (Electricity) Act 2000</i> (Cth)

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