IPART Independent Pricing and Regulatory Tribunal | NSW

Consultation on PIAM&V Method Requirements (No 2)

Submissions Report

December 2021

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Enquiries

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The Independent Pricing and Regulatory Tribunal (IPART)

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Introduction

In June 2021, IPART updated its *Project Impact Assessment with Measurement & Verification Method Guide* (**PIAM&V Method Guide**)[a] to ensure that guidance on 'Counted Energy Savings' was consistent with the ESS Rule. The PIAM&V Method Guide had previously stated that Energy Savings calculated under a different Recognised Energy Saving Activity could be excluded from PIAM&V Method calculations as Counted Energy Savings, which was not consistent with the ESS Rule. Counted Energy Savings can only be used to account for ESCs created for the same Implementation, not for ESCs created under another RESA (e.g. Deemed Method Implementations).

Due to the long timeframes for some PIAM&V projects, some projects may have commenced based on the earlier guidance in version 4.2 of the PIAM&V Method Guide. This means that an ACP may have commenced projects (**affected projects**) on the assumption that it could exclude Energy Savings calculated under a different RESA as Counted Energy Savings.

The *PIAM&V Method Requirements (No 2)* have been developed to address this situation and to enable ACPs to exclude, from the calculation of Energy Savings for affected projects, energy savings from other Implementations for which ESCs have already been created. In practice this is most likely to occur where the Measurement Boundary for the PIAM&V project is the same as the Site boundary.

The *PIAM&V Method Requirements (No 2)* are additional to the existing Method Requirements and seek to address the affected projects. They are not proposed as an enduring change to how PIAM&V operates. Any enduring changes would be the subject of consultation by the Department of Planning, Industry and Environment (**DPIE**) ahead of the next ESS Rule change.

The *PIAM&V Method Requirements (No 2)* do not aim to increase the accuracy of calculations but operate to reduce the ESC reward where there is reduced confidence that the calculations are representative of the energy savings attributable to the PIAM&V project.

We use many technical and defined terms in this report. These terms are explained in the Glossary.

[a] *Project Impact Assessment with Measurement & Verification Method Guide*, Energy Savings Scheme, June 2021, Version 4.3

Consultation process

On 20 October 2021, we issued the *Draft PIAM&V Method Requirements (No 2)* for consultation, with written submissions due by 8 November 2021. We also sought feedback from interested parties at an M&V workshop held in conjunction with DPIE and the Energy Savings Industry Association (**ESIA**) on 21 October 2021.

We received 3 submissions from ACPs and one from ESIA. No Scheme Participants (the liable entities) or energy consumers made submissions.

Outcomes of consultation - we have amended the proposed Method Requirements in response to the feedback

This report details our consideration of the submissions. Sections 1 to 3 summarise key points from the submissions and section 4 summarises other issues raised.

Having considered the submissions, the Scheme Administrator made the following changes to the draft *PIAM&V Method Requirements (No 2)* when approving a final version:

- extending the date of effect of the PIAM&V Method Requirements (No 2) to projects with an Implementation Date on or before 31 December 2021
- adjusting the Interactive Energy Savings Factor to apply a reduced discount where the other Implementation accounts for less than half of the PIAM&V savings, and has a lesser impact on the accuracy of the calculations
- including approaches to account for Energy Savings due to other Implementations under MBM and PIAM&V within the Measurement Boundary for a PIAM&V Implementation (i.e. not only Deemed Method Implementations).

Key themes from submissions

Generally the submissions expressed dissatisfaction with the Draft PIAM&V Method Requirements (No 2) and the restrictions on their use.

We updated the PIAM&V Method Guide to ensure that guidance on 'Counted Energy Savings' was consistent with the ESS Rule. We acknowledge that the update to our guidance may have affected projects that had already commenced and developed the PIAM&V Method Requirements (No 2) to address the affected projects. They are not proposed as an enduring change to how PIAM&V operates.

Set out below are key themes from the submissions, our analysis and changes we have made to the PIAM&V Method Requirements (No 2).

1 Suggested no time limit on the use of the *PIAM&V Method Requirements (No 2)*

Several submissions raised concerns about the restriction on the use of the *PIAM&V Method Requirements (No 2)* to 2021 vintage ESCs (i.e. Energy Savings taken to have occurred during the 2021 calendar year).

An example was provided of projects that started two years ago that will be 2022 vintage ESCs and so would not be eligible under the draft *PIAM&V Method Requirements (No 2)*.

Some submissions expressed a view that the *PIAM&V Method Requirements (No 2)* should continue to apply for all projects until the next ESS Rule change.

Our analysis - we are extending the date of effect

The proposed changes were not intended to allow ESC claims for all projects affected by correction of the guidance. They were only to address projects commenced prior to the correction where ACPs held a reasonable expectation that ESC creation could occur reliant on the guidance that existed at the time.

We acknowledge that some PIAM&V projects have extended Measurement Periods and that some ACPs may have commenced projects on the reasonable expectation that they could use the former guidance but be unable to register those certificates in 2021. We have decided to change the proposed *PIAM&V Method Requirements (No 2)* to provide ACPs with more time to adapt to the correction to the guidance.

The *PIAM&V Method Requirements (No 2)* will apply to projects with an Implementation Date on or before 31 December 2021. This means that use of the *PIAM&V Method Requirements (No 2)* will not be limited to 2021 vintage ESCs.

We consider that projects implemented on or after 1 January 2022 have sufficient time to adjust the measurement procedures to account for the other energy savings activities in accordance with the ESS Rule. For example, by adjusting the Measurement Boundary through the installation of additional metering. Alternatively, other energy saving activities could be included in the Measurement Boundary and calculated under PIAM&V.

2 The proposed IES Factor imposes too harsh a discount

Some submissions expressed a view that the draft Method Requirements lead to energy savings being subtracted twice in adjusting for energy savings due to other Implementations and that the IES Factor imposed too harsh a discount on the PIAM&V project.

Our analysis – we are adjusting the discount applied by the Interactive Energy Savings Factor

We do not consider that the IES Factor leads to Energy Savings being deducted twice. The Energy Savings due to other Implementations is deducted once. A discount in the form of the IES Factor is then applied to the PIAM&V Energy Savings to account for the reduced accuracy arising from including other Implementations within the Measurement Boundary for the PIAM&V project.

However, we consider there is merit in having a lesser discount where the impact of other Implementations is small and a greater discount where it is large. We have adjusted the IES Factor to apply:

- a reduced discount for Interactive Energy Savings that account for a smaller proportion of the savings within the Measurement Boundary, and
- an increased discount where the Interactive Energy Savings account for the majority of the savings within the Measurement Boundary (i.e. greater than 80%).

In the draft *PIAM&V Method Requirements (No 2)*, the IES Factor was directly proportional to the Energy Savings attributable to the PIAM&V Implementation. For example:

- if the Interactive Energy Savings accounted for 20% of the Energy Savings within the Measurement Boundary, the IES Factor would be 0.8, meaning that ESCs could be created for 80% of the PIAM&V savings, and
- if the Interactive Energy Savings accounted for 80% of the Energy Savings within the Measurement Boundary, the IES Factor would be 0.2, meaning that ESCs could be created for 20% of the PIAM&V savings.

We have removed the IES Factor discount for Interactive Energy Savings less than 20% of the Normal Year Energy Savings and set values for Interactive Energy Savings greater than 20%. For example:

- for Interactive Energy Savings between 20 to 30%, the IES Factor will be set at 0.95, meaning that ESCs could be created for 95% of the PIAM&V savings
- for Interactive Energy Savings between 40 to 50%, the IES Factor will be set at 0.8 meaning that ESCs could be created for 80% of the PIAM&V savings

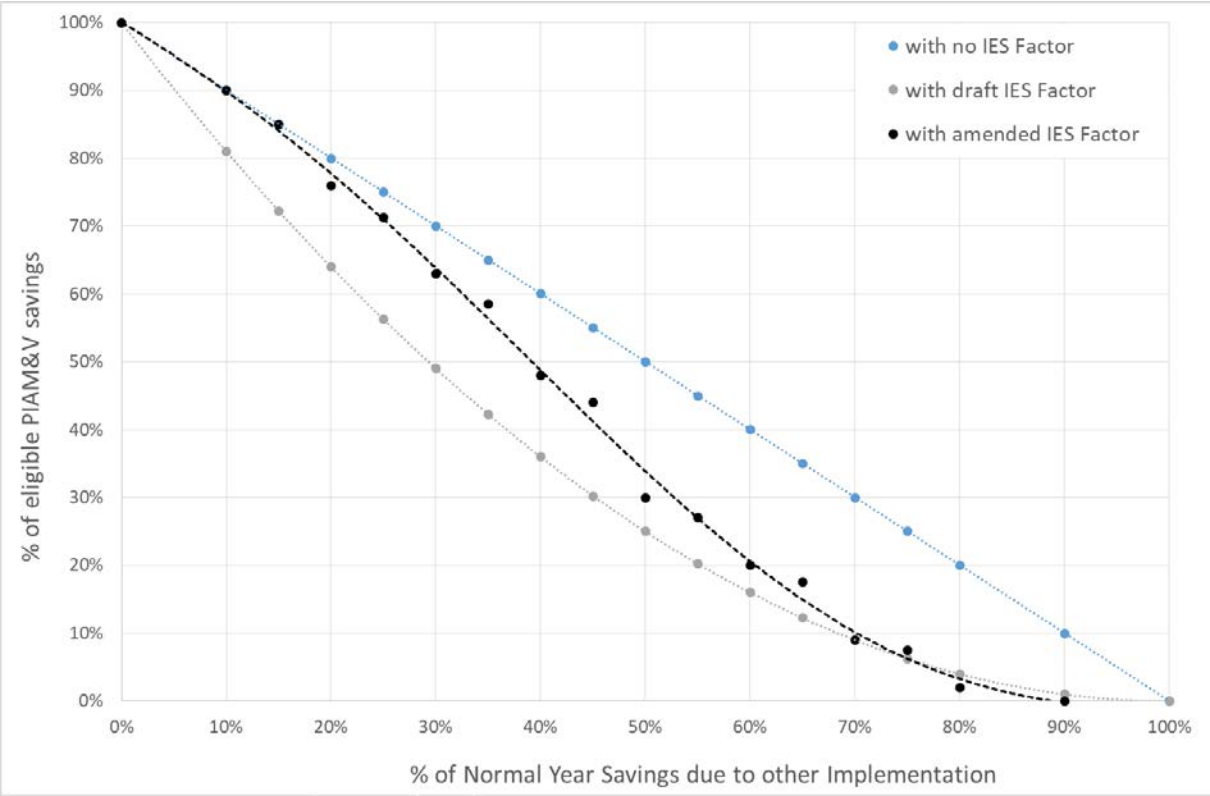
- for Interactive Energy Savings between 80 to 90%, the IES Factor will be set at 0.1, meaning that ESCs could be created for 10% of the PIAM&V savings.

Table 1 and **Figure 1** compare the impact of the draft and amended IES Factor approaches on the amount of eligible PIAM&V savings.

Table 1 Comparison of amended and draft IES Factor on PIAM&V savings

Interactive Energy Savings (% of Normal Year Savings)	Amended IES Factor	% of PIAM&V savings eligible for ESCs	
		Draft IES Factor	Amended IES Factor
0 to < 20%	1.0	100 – 80%	100%
20 to < 30%	0.95	80 – 70%	95%
30 to < 40%	0.9	70 – 60%	90%
40 to < 50%	0.8	60 – 50%	80%
50 to < 60%	0.6	50 – 40%	60%
60 to < 70%	0.5	40 – 30%	50%
70 to < 80%	0.3	30 – 20%	30%
80 to < 90%	0.1	20 – 10%	10%
≥ 90%	0	10 – 0%	0%

Figure 1 Comparison of amended and draft IES Factor on PIAM&V savings



3 Implementations under methods other than the Deemed Method

One submission noted that the draft *Method Requirements (No 2)* only applied to Deemed Method Implementations. This means that Implementations that have been claimed under other methods (e.g. PIAM&V and Metered Baseline Method) would encounter similar eligibility issues.

Our analysis – we are extending use of the Requirements to Implementations under additional calculation methods

We acknowledge that this issue could arise. In response, we propose including approaches to calculate Interactive Energy Savings for Implementations under the Metered Baseline Method and PIAM&V within the Measurement Boundary for a separate PIAM&V Implementation, similar to the approach for Deemed Method Implementations (i.e. estimating the annual savings due to the other Implementations and deducting them from the PIAM&V savings).

4 Other issues raised in submissions

4.1 Proposed approach does not support the public policy case for driving energy savings under the ESS

One submission stated that "good public policy principles will be undermined if an alternative approach is not delivered."

The submission also argued that the proposed approach "does not support the public policy case for driving energy savings for NSW under the ESS" and "focuses on a level of certainty which was not the intention of the scheme."

Our analysis – scope of *PIAM&V Method Requirements (No 2)*

The *PIAM&V Method Requirements (No 2)* are only designed to address those projects commenced under the previous guidance. That is, where an ACP may have reasonably relied on that guidance when commencing a project. They are not proposed as an enduring change to how PIAM&V operates. Any enduring changes would be the subject of consultation by DPIE ahead of the next ESS Rule change.

We acknowledge ACP concerns about how Non-Routine Events are treated under the current ESS Rule and that they are seeking an alternative approach. This matter is not within the scope of this consultation or the powers of the Scheme Administrator to change. We have forwarded all the consultation submissions to DPIE for its consideration.

4.2 Use of whole of site Measurement Boundary (IPMVP Option C)

One submission stated that "IPART needs to reconsider its support for Option C to continue to be a recognised verification option, also when deemed method implementations occur within the measurement boundary."

Our analysis

We acknowledge that Option C is a valid verification option. However, if Deemed Method Implementations (or any other Implementations or ineligible activities) occur within the Measurement Boundary during the Measurement Period, then the ESS Rule sets out that they must be excluded.

Further, as set out in Requirement 5 of the *PIAM&V Method Requirements* published in February 2020:

> *An ACP must ensure that Energy Savings calculated using measurements from a utility meter have occurred as a result of the Implementation.*
>
> …
>
> *Common examples of Implementations to which Requirement 5 relates, include:*
>
> - *Where there are multiple items of equipment measured by the utility meter that are not subject to the Implementation*
> - *Where the measurement boundary encompasses equipment that is not eligible for ESC creation …*
>
> *Where these situations arise … ACPs should carefully consider setting the measurement boundary to ensure that the measured energy consumption is representative of the energy consumption of the EUE that is the subject of the Implementation.*

IPART does not oppose the use of Option C as an M&V technique and consider that it is well-suited for PIAM&V projects that involve the installation of multiple energy savings activities at a site. However, Option C is not suitable for projects where there is a likelihood of significant changes on site or where the M&V process will take an extended period of time, increasing the likelihood of Non-Routine Events occurring during the Measurement Period.

The use of Option C in these circumstances may not meet Requirement 5 of the *PIAM&V Method Requirements*.

Using a whole of site Option C approach inherently carries more risk of Non-Routine Events or Interactive Energy Savings occurring than using retrofit isolation options.

In cases where the energy saving activity involves the installation of a single item of equipment or upgrades to an individual process or system, retrofit isolation techniques may represent a less risky and ultimately less costly alternative.

Further, as noted in the guidance in the IPMVP Core Concepts on selecting an appropriate Measurement Boundary:

> *Savings may be determined for an entire facility or a portion, depending on the ECM [energy conservation measure] characteristics and the purpose of the reporting.*
>
> - *If the purpose of reporting is to verify the **savings from equipment** affected by the savings program, a measurement boundary should be drawn around that equipment and measurement requirements for the equipment within the boundary can then be determined.*
>
> *The approach used is a retrofit isolation option (**Option A or B**). …*
>
> - *If the purpose of reporting is to verify and/or help manage **total facility energy performance**, the meters measuring the supply of energy to the total facility can be used to assess performance and savings. The measurement boundary in this case encompasses the whole facility.*
>
> *The approach used is the Whole-Facility **Option C**. …[b] [emphasis added]*

4.3 It is not clear, under the ESS, when Efficiency Valuation Organisation (EVO) principles are authoritative

One submission stated that "the EVO position statement on Deemed Savings has not been fully embraced by IPART, rather, aspects of the international best practice standards have been cherry picked." However, no examples were provided to illustrate the assertion.

The submission also noted that the ESS has a range of requirements that the IPMVP does not have.

[b] IPMVP Core Concepts, Section 5.1, page 10

Our analysis

We acknowledge that the ESS has additional requirements to the IPMVP and that EVO principles are not authoritative within the framework of the ESS Rule.

However, the EVO guidance is a useful reference in terms of industry practice and the views of the organisation responsible for managing the accreditation of Certified Measurement and Verification Professionals and publishing the IPMVP, upon which PIAM&V is based.

We consider that the ESS Rule contains requirements that are additional to IPMVP because energy consumers and not just purchasers and ACPs have an interest in the integrity of certificate claims.

4.4 What if the other Implementation is implemented during the baseline or operating period?

Two submissions expressed concerns that the *PIAM&V Method Requirements (No 2)* do not resolve situations where the other Implementation is implemented during the Baseline or Operating Measurement Period for the PIAM&V project.

Our analysis

The *PIAM&V Method Requirements (No 2)* may be used if the other Implementation occurs during either the Baseline or Operating Measurement Period for the PIAM&V project.

The ESS Rule sets out that Non-Routine Events are required to be removed from the Measurement Period, this applies whether they occur during the Baseline or Operating Measurement Period.

If the other Implementation is implemented between the end of the Baseline Measurement Period and the start of the Operating Measurement Period it is not a Non-Routine Event but would still need to be accounted for as Interactive Energy Savings.

4.5 Alternative options to account for other Implementations

The submissions suggested alternative options to account for other Implementations under the PIAM&V Method, including:

- use of the IPMVP uncertainty framework
- that ESCs from other Implementations should be deducted from the total to determine the PIAM&V energy savings, and
- use of a binary switch.

We address our consideration of each of these options below.

1. Use of the IPMVP uncertainty framework

Two submissions proposed the use of the IPMVP uncertainty framework as a way of accounting for the reduced accuracy in the PIAM&V savings due to including other Implementations in the Measurement Boundary.

Our analysis

We acknowledge that IPMVP provides relevant guidance on estimating uncertainty and consider that ACPs should take the IPMVP guidance into account when estimating energy savings.

However, while performing an uncertainty analysis in accordance with the IPMVP guidance might be a statistically sound way of addressing the issue, we have favoured a simpler approach which results in a similar outcome to conducting an uncertainty analysis.

We are not suggesting that the approach set out in the *PIAM&V Method Requirements (No 2)* is a preferable way to conduct M&V on an ongoing basis, but consider it offers a reasonable outcome for ACPs that commenced projects that relied on the prevailing guidance.

2. ESCs from other Implementations should be deducted from the total to determine the PIAM&V energy savings

Three submissions suggested simply deducting the ESCs created from other Implementations from the ESCs calculated using PIAM&V.

Our analysis

The proposed approach of deducting previously created ESCs does not meet the requirements of the PIAM&V method in respect of excluding Non-Routine Events. Including Energy Savings attributable to other Implementations within the Measurement Boundary for a PIAM&V project does not enable like-for-like comparison of before and after energy savings scenarios.

3. Use of a binary switch

Two submissions proposed an alternative approach of using a binary switch as an Independent Variable.

Our analysis

Non-Routine Events are defined in the ESS Rule as events which affect energy use, within the chosen Measurement Period, that are not modelled by any Independent Variables or Site Constants.

If the other Implementation is able to be modelled by Independent Variables established in accordance with the ESS Rule and *PIAM&V Method Requirements* then it may not be considered a Non-Routine Event.

However, we note that a change to the operation of the site during the Measurement Period could mean that the measurements of the Independent Variable are not taken under normal operating conditions.

There could also be complications in selecting a binary switch as an Independent Variable in terms of the Effective Range and the Normal Year, as any time periods for which the Independent Variable is outside the Effective Range of either the Baseline Energy Model or Operating Energy Model must be excluded.

We consider the approach set out in the *PIAM&V Method Requirements (No 2)* is simpler and offers a reasonable outcome for ACPs that commenced projects that relied on the prevailing guidance.

Glossary

Term	Definition
Accuracy Factor	**"Accuracy Factor"** has the meaning given to that term in clause 7A.10 of the ESS Rule. Clause 10.1 of the ESS Rule
ACP	Accredited Certificate Provider
Affected projects	Projects that commenced based on the earlier guidance in version 4.2 of the PIAM&V Method Guide (i.e. on the assumption that Energy Savings calculated under a different RESA could be excluded as Counted Energy Savings).
Counted Energy Savings	*Counted Energy Savings* is the: • total Electricity Savings for which Energy Savings Certificates have previously been created for the Implementation in the year *i* if calculating Electricity Savings; or • total Gas Savings for which Energy Savings Certificates have previously been created for the Implementation in the year *i* if calculating Gas Savings. Equations 7A.1 and 7A.3 of the ESS Rule
CMVP	Certified Measurement and Verification Professional
Deemed Method	Deemed Energy Savings Method in clause 9 of the ESS Rule
Deemed Method Implementations	Implementation of a RESA for which ESCs have already been created based on Energy Savings calculated using the Deemed Energy Savings Method
DPIE	Department of Planning, Industry and Environment

Term	Definition
End-User Equipment	**"End-User Equipment"** means electricity or Gas consuming equipment or both, processes, or systems, including the equipment directly consuming electricity or Gas, or both, and other equipment or products that cause, control or influence the consumption of electricity or Gas, or both, and includes (in the context of clause 8.8 of the ESS Rule) a NABERS Building. Clause 10.1 of the ESS Rule
Energy Saver	**"Energy Saver"** means the person who has the right to create Energy Savings Certificates for particular Energy Savings arising from an Implementation of a RESA at a Site, as defined in the relevant calculation method of the ESS Rule. Clause 10.1 of the ESS Rule
Energy Savings	**"Energy Savings"** means the Electricity Savings or Gas Savings or both. Clause 10.1 of the ESS Rule
ESC	Energy Savings Certificate
ESIA	Energy Savings Industry Association
ESS	Energy Savings Scheme
ESS Rule	*Energy Savings Scheme Rule of 2009*
EVO	Efficiency Valuation Organization
Implementation	**"Implementation"** means the delivery of a RESA at a Site … Clause 10.1 of the ESS Rule
Independent Variable	**"Independent Variable"** means a parameter that varies over time, can be measured, and affects the EUE's energy consumption for the purposes of clause 7A of the ESS Rule. Clause 10.1 of the ESS Rule

Term	Definition
Interactive Electricity Savings	**"Interactive Electricity Savings"** means a change in a Site's electricity consumption due to interactions with EUE for which energy consumption is not measured for the purposes of clause 7A. Clause 10.1 of the ESS Rule
Interactive Energy Savings	**"Interactive Energy Savings"** refers to either the Interactive Electricity Savings or the Interactive Gas Savings for the purposes of **Equations 7A.2, 7A.4** or **7A.5** of the ESS Rule. Clause 10.1 of the ESS Rule
Interactive Gas Savings	**"Interactive Gas Savings"** means a change in a Site's Gas consumption due to interactions with EUE for which energy consumption is not measured for the purposes of clause 7A. Clause 10.1 of the ESS Rule
IPMVP	International Performance Measurement and Verification Protocol
Lifetime	**"Lifetime"** means the time period over which Energy Savings will be delivered and for the purposes of Schedules B, C, D, E, and G of the ESS Rule are for reference only, as the relevant time period is already taken into account in the savings factors in those Schedules. Clause 10.1 of the ESS Rule
M&V	Measurement and verification
MBM	Metered Baseline Method (clause 8 of the ESS Rule) • Baseline per unit of output (clause 8.5 of the ESS Rule) • Baseline unaffected by output (clause 8.6 of the ESS Rule) • Normalised baseline (clause 8.7) • NABERS baseline (clause 8.8 of the ESS Rule) • Aggregated Metered Baseline (clause 8.9 of the ESS Rule)

Term	Definition
MBM Implementations	Implementation of a RESA for which ESCs have already been created based on Energy Savings calculated using the Metered Baseline Method
Measurement Boundary	Measurement Boundary means the items of EUE which will have their electricity consumption, Gas consumption, or both, measured in accordance with clause 7A.5(d) of the ESS Rule.
Measurement Period	"**Measurement Period**" means the duration of time over which measurement of energy consumption will be taken for the purposes of calculating the Energy Savings under clause 7, 7A or 8 of the ESS Rule, and defined therein. Clause 10.1 of the ESS Rule
Non-Routine Events	**"Non-Routine Events"** means, for the purposes of clause 7A of the ESS Rule, events which affect energy use, within the chosen Measurement Period, that are not modelled by any Independent Variables or Site Constants. They are required to be removed from the Measurement Period to enable like-for-like comparison of before and after energy savings scenarios. They are typically due to static factors that may include fixed, environmental, operational and maintenance characteristics. Clause 10.1 of the ESS Rule
Normal Year	**"Normal Year"** is a typical year for the operation of the EUE at the Site after the Implementation Date for the purposes of clause 7A of the ESS Rule. Clause 10.1 of the ESS Rule
PIAM	Project Impact Assessment Method (clause 7 of the ESS Rule)
PIAM&V	Project Impact Assessment with Measurement and Verification Method (clause 7A of the ESS Rule)
PIAM&V Implementation	Implementation of a RESA for which ESCs have already been created based on Energy Savings calculated using the PIAM&V Method

Term	Definition
PIAM&V Method Requirements	**"PIAM&V Method Requirement"** means the Project Impact Assessment with Measurement and Verification method requirement and is a requirement Published by the Scheme Administrator under clause 7A.16 of the ESS Rule. Clause 10.1 of the ESS Rule
Regional Network Factor	*Regional Network Factor* is the value from Table A24 of Schedule A to the ESS Rule corresponding to the postcode of the Address of the Site or Sites where the Implementation(s) took place.
RESA	Recognised Energy Saving Activity
Site Constant	**"Site Constant"** means a parameter that varies between Sites, does not vary over time under normal operating conditions, and affects the EUE's energy consumption for the purposes of clause 7A of the ESS Rule. Clause 10.1 of the ESS Rule