

Energy Savings Scheme Notice 05/2018

Assessment of M&V Professional Reports

Release date: 14 May 2018



WHAT

This ESS Notice provides guidance about how we review M&V Professional Reports in accordance with the requirements of the Project Impact Assessment with Measurement and Verification (**PIAM&V**) method and the *Energy Savings Scheme Rule of 2009* (**ESS Rule**).



WHY

Measurement & Verification (**M&V**) Professionals must produce an M&V Professional Report with validation and detailed explanatory reasoning for each of the M&V aspects they are required to deem appropriate under clause 7A of the ESS Rule.

Errors in an Accredited Certificate Provider's (**ACP**) energy models or M&V approach that are not identified, either by the ACP or the M&V Professional, can result in ACPs improperly creating energy savings certificates (**ESCs**).

A number of the M&V Professional Reports assessed by IPART to date have not contained sufficient explanatory reasoning to demonstrate that the ACP's energy models and M&V approach meet the requirements of the ESS Rule.



WHO

This notice relates to those professionals and organisations that are involved in the delivery of energy saving activities using the PIAM&V method of the NSW Energy Savings Scheme (**ESS**).



HOW

We assess M&V Professional Reports against the ESS Rule as described in the following pages and the guidance material available from the ESS website at:

www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Project_Impact_Assessment_with_MV



WHAT'S NEXT

To ensure that M&V Professional Reports adequately document that the requirements of the ESS Rule have been addressed, we encourage **ACPs and M&V Professionals to do their own assessment of the M&V Professional Report using the guidance in this document.**

ACPs are ultimately responsible for the quality of the records they obtain to support the claimed energy savings, including the M&V Professional Report. For more information email the ESS Compliance Team at:

ess_compliance@ipart.nsw.gov.au.

We assess M&V Professional Reports against the ESS Rule

The M&V Professional Report should provide sufficient explanation to allow the reader to understand how the M&V approach and the energy models used by ACPs meet the requirements of the ESS Rule, without needing to conduct a detailed review of supporting information, such as the M&V Plan, energy models or the PIAM&V Tool.¹

We review M&V Professional Reports when ACPs submit applications for amendment of their accreditation conditions. Auditors review M&V Professional Reports when conducting audits of ACPs using the PIAM&V method. As outlined in section 5 of the [Guide for M&V Professionals](#),² we also assess the work of approved M&V Professionals to ensure they continue to meet the requirements of the ESS Rule.

How do we assess M&V Professional Reports?

We conduct an objective evaluation of M&V Professional Reports using a risk-based approach and use key criteria and ratings to assess and evaluate errors. We assess the validation provided in the M&V Professional Report to ensure it is accurate, includes sufficient explanatory reasoning, meets the requirements of the ESS Rule and correlates with the information provided by the ACP.

We encourage M&V Professionals to use the [Template – M&V Professional Report](#)³ and respond to all items to ensure they address all relevant requirements. M&V Professionals must ensure that their response to each item:

- ▼ provides a correct validation (ie, validate each M&V aspect with reference to the specific clause requirements)
- ▼ includes sufficient explanatory reasoning (ie, the validation must explain how the requirements have been met)
- ▼ is based on a correct interpretation of the ESS Rule and the requirements under each relevant clause, and
- ▼ is in accordance with the information provided by the ACP (ie, no discrepancies when compared to the ACP's M&V Plan or M&V Report).

We consider that an M&V Professional Report does not meet the required standard if it:

- ▼ incorrectly interprets the ESS Rule,
- ▼ does not provide enough explanation or supporting information, or
- ▼ does not correlate with the information provided by the ACP.

¹ Developed by the NSW Office of Environment and Heritage.

² Available from the ESS website at:
www.ess.nsw.gov.au/Methods_for_calculating_energy_savings/Project_Impact_Assessment_with_MV

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What if the M&V Professional Report does not meet the requirements?

When we determine that an M&V Professional Report does not meet the requirements of the ESS Rule we advise the relevant ACP that the M&V Professional Report does not meet the required standard and allow them an opportunity to correct the issue (eg, by seeking an updated version of the report from the M&V Professional). We also provide feedback to the M&V Professional to facilitate professional learning and development across the sector.

We consider the quality of M&V Professional Reports when assessing the performance of M&V Professionals. M&V Professionals who provide M&V Professional Reports that do not meet ESS requirements, may cease to satisfy the criteria set out in clause 7A.15(a) of the ESS Rule and may have their approval as an M&V Professional withdrawn by IPART.

How do I check if an M&V Professional Report meets the requirements?

We encourage ACPs and M&V Professionals to do their own assessment of the M&V Professional Report using the information presented in the tables below.

- ▼ Table 1 lists the items we review to assess if the M&V Professional Report meets the requirements of the ESS Rule.
- ▼ Table 2 provides examples of responses that we would assess as an error.

ACPs should ensure that the M&V Professional resolves any issues with an M&V Professional Report before it is submitted to IPART or an Auditor. Errors in the M&V Professional Report that are not identified, either by the ACP or the M&V Professional, can result in ACP improperly creating ESCs.

If you have concerns regarding the quality of an M&V Professional Report please contact the ESS Compliance team at: ess_compliance@ipart.nsw.gov.au.

Table 1 M&V Professional Report assessment items

ESS Rule Clause	Item
7A.3 Baseline Energy Model	uses an acceptable energy model type as outlined in clause 7A.2 of the ESS Rule
	is dependent on relevant Independent Variables and Site Constants established by measurements undertaken under normal operating conditions
	has an Effective Range that meets the requirements of clause 7A.8 of the ESS Rule
	is based on a Normal Year established in accordance with clause 7A.7 of the ESS Rule (if forward creating)
	is based on measurements and include an end date that is less than 10 years before the end date of the Measurement Period (if annual creation or top-up)
7A.4 Operating Energy Model	uses an acceptable energy model type as outlined in clause 7A.2 of the ESS Rule
	is dependent on relevant Independent Variables and Site Constants established by measurements undertaken under normal operating conditions
	has an Effective Range that meets the requirements of clause 7A.8 of the ESS Rule

ESS Rule Clause	Item
	is based on a Normal Year established in accordance with clause 7A.7 of the ESS Rule
7A.5 Measurement Procedures	are based on a Measurement Period that meets requirements of clause 7A.5(a)-(b)
	include all Independent Variables that impact the energy consumption of the End User Equipment
	have sufficient frequency of measurements over the Measurement Period to establish normal operating conditions (consider frequency of measurements in respect of power draw, availability of metered energy data and other relevant factors)
	include clear definition and justification for the Measurement Boundary
	record and exclude Non-Routine Events and include appropriate justification
	specify measurement equipment and its associated accuracy/precision and calibration procedures
7A.6 Energy Consumption, Independent Variables and Site Constants	include all Independent Variables and Site Constants relevant to the Implementation for each time period in each Measurement Period
	are based on a clearly defined selection method, which also includes justification for excluded variables
	include a defined procedure for converting measurements to estimates
	have the same frequency for each energy model
7A.7 Normal Year	provides values for each Independent Variable and Site Constant over a full year
	represents a typical year of operation of the End-User Equipment, also including typical future performance
	takes into account actual data, rather than estimates (eg, manufacturing records)
	includes a description of all assumptions and adjustments made to establish it, which should ideally be drawn from actual data from the operating model measurement period
7A.8 Effective Range	is based on the range of measured values for Independent Variables and Site Constants
	considers any measurement periods under which the Implementation could reasonably be expected to increase energy consumption
7A.9 Interactive Energy Savings	consider the interactive effects of all relevant End-User Equipment outside of the measurement boundary
	are not greater than 10% of total electricity savings and gas savings respectively
7A.10 Accuracy Factor	corresponds to the energy model type and relative precision of the energy savings estimate and be in accordance with the confidence levels outlined in Table A23 of the ESS Rule
	or is based on another process approved by IPART
7A.13	is based on a method accepted by IPART

ESS Rule Clause	Item
Persistence Model	estimates the expected lifetime of the End-User Equipment in whole years
	estimates the Decay Factors for each future year within the maximum time period for forward creation
	is publicly accessible
	takes into account the inputs listed in clause 7A.13(c) of the ESS Rule

Table 2 Examples of errors in M&V Professional Reports

ESS Rule clause	M&V Professional Report assessment item	Example responses assessed as an error	Description of error
7A.3	Does the Baseline Energy Model use an acceptable energy model type as outlined in clause 7A.2 of the ESS Rule?	"The Baseline Model was developed using regression analysis and has been validated by the OEH PIAM&V Tool."	Incorrect validation: – The OEH PIAM&V Tool is not a validation tool.
7A.3	Is the Baseline Energy Model dependent on relevant Independent Variables and Site Constants established by measurements undertaken under normal operating conditions?	"The Baseline Model is dependent on the nominated independent variables and site constants."	Insufficient explanation provided: – Are the nominated variables and site constants relevant? – Were measurements taken under normal operating conditions?
7A.3	Does the Baseline Energy Model have an Effective Range that meets the requirements of clause 7A.8 of the ESS Rule?	"The effective range has been correctly considered in accordance with the ESS Rule."	Insufficient explanation provided: – Why is the effective range considered to be in accordance with the ESS Rule?
7A.4	Is the Operating Energy Model dependent on relevant Independent Variables and Site Constants established by measurements undertaken under normal operating conditions?	"The R-squared value of 0.73 is acceptable indicating that the correct independent variable has been selected."	Incorrect validation: – An R-squared value of 0.73 is not validation that measurements have been taken under normal operating conditions.
7A.5	Is there sufficient frequency of measurements over the Measurement Period to establish normal operating conditions?	"The measurement frequency is daily." "The short length of the baseline period has been noted, but the frequency of the measurement intervals means there is still a sufficient volume of data on which to base an analysis."	Incorrect validation: – The frequency or quantity of measurements alone is not validation that they establish normal operating conditions.

ESS Rule clause	M&V Professional Report assessment item	Example responses assessed as an error	Description of error
7A.5	Do the Measurement Procedures include clear definition and justification for the Measurement Boundary?	"The measurements apply to the end user equipment, as documented in the M&V Plan."	No validation provided: – Is this boundary considered appropriate?
7A.5	Do the Measurement Procedures specify measurement equipment and its associated accuracy/precision and calibration procedures?	"The accuracy and calibration procedures for the measuring equipment are detailed in the Boundaries and Variables section of the Office of Environment and Heritage's PIAM&V tool." "The sub meter is not calibrated by the site and they are aware of this as documented."	No validation provided: – Are these procedures appropriate?
7A.7	Does the Normal Year represent a typical year of operation of the End-User Equipment, also including typical future performance?	"The Normal Year is appropriate as under normal operation all equipment operates for 18 hours/day and switches to standby mode for the remainder." "However, all equipment is usually left on 24 hours/day as standby mode was causing electrical faults."	Incorrect validation: – Typical operation of the equipment is 24 hours/day with no standby mode.
7A.7	Does the Normal Year represent a typical year of operation of the End-User Equipment, also including typical future performance?	"The variables reflect operating conditions that are expected to occur over the life of the project as far as can be predicted."	Insufficient explanation provided: – How was a typical year of operation and typical future performance determined?
7A.13	Is the Persistence Model appropriate for the implementation?	"The persistence model in the OEH PIAM&V Tool was used, allowing forward creation of 9.8 years." "The sum of the decay factors is 9.8."	Misinterpretation of the Rule: – The Persistence Model should estimate the expected lifetime of the equipment in whole years, and estimate the Decay Factors for each future year.