

Bulletin no. 16



Commercial and Industrial Demand Savings (PIAM&V DM) activities

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Key Messages:

- ► This Bulletin relates to the Retailer Energy Productivity Scheme (REPS) Commercial and Industrial Demand Savings (Project Impact Assessment with Measurement & Verification [PIAM&V DM]) (CD1) activities undertaken from 1 January 2021 and outlines the minimum compliance obligations and the minimum reporting and evidence requirements.
- ► This Bulletin provides guidance and clarification only and must be read in conjunction with the minimum activity specification for CD1, the General Specifications and the REPS Code. Words defined in the CD1 activity specification which are used in this Bulletin have the same meaning in the REPS Bulletin no.16 as in the CD1 activity specification.
- In accordance with the CD1 activity specifications, the Essential Services Commission of South Australia (Commission) has specified:
 - o a calculator that allows for data retention and calculation validation, and
 - o the accreditation framework for Measurement and Verification Professionals under REPS.

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1 Activity description

Commercial and Industrial Demand Savings activities involve an upgrade to the energy efficiency of Commercial or Industrial equipment that results in energy savings, as calculated in accordance with the CD1 activity specification. This activity uses a measurement and verification (M&V) approach called the project impact assessment with measurement and verification (PIAM&V) method to calculate eligible energy savings. PIAM&V is a flexible approach that can be applied to many different upgrade activities.

2 CD1 compliance tool

The activity eligibility requirements of the CD1 activity specifications require the use of a calculator that allows for data retention and calculation validation that is approved by the Commission¹. A REPS-specific persistence model has been developed and included in the CD1 compliance tool to assist with calculating the forward creation of energy productivity. The CD1 Compliance Tool uses standardised persistence and decay factors by upgrade type and user generated outputs from project specific regression analysis. The CD1 Compliance Tool with instructions is published on the summary page of REPS Bulletin no.16 - Commercial and Industrial Demand Savings (PIAM&V DM) activities (REPS Bulletin no.16).

3 Measurement & Verification Professionals

The CD1 activity specification requires the obligated retailer to retain records prepared by a Measurement and Verification Professional (**M&V Professional**) in accordance with the requirements of the REPS Code.

The M&V Professional is an independent party that is accredited to assess and verify M&V calculations and processes. The M&V Professional understands the engineering of the equipment and the project that delivers the energy savings. They also understand the International Performance Measurement and Verification Protocol (IPMVP) best practice and how to comply with the requirements of the PIAM&V method.

The Commission has established and maintains the REPS panel of approved and accredited M&V Professionals for the purposes of the CD1 activity. The directory of M&V Professionals approved by the Commission is available to view on the Commission's website. These M&V Professionals can be engaged for projects involving the end user equipment and energy model types for which the M&V Professionals are approved.

3.1 Apply to become an approved M&V Professional

The CD1 activity specification requires a M&V professional accredited under a framework approved by the Commission.

To apply, a completed M&V Professional Application Form and supporting documents should be emailed to: reps@escosa.sa.gov.au

The M&V Professional Application Form provides information about how to apply to be assessed and accredited as a M&V Professional for the CD1 activity. The M&V Professional application form is published on the summary page of REPS Bulletin no.16.

3.1.1 Application assessment criteria

Once the application has been accepted as submitted, it will be assessed on the following criteria:

- ► Approval under other state-based schemes
- Training and experience
- Impartiality, and
- ▶ Compliance history (where active in other state-based schemes).

See clause 3.7 of the CD1 activity specification - https://www.energymining.sa.gov.au/_data/assets/pdf_file/0006/376071/REPS-specification-CD1.pdf

3.2 M&V professional performance monitoring

The Commission regularly audits activities delivered under the REPS scheme and this will include the work of approved M&V Professionals. The purpose of these audits is to ensure that M&V Professionals have performed satisfactorily, continue to be compliant and satisfy the criteria of the CD1 activity specification, REPS Bulletin no.16, and the REPS Code.

The Commission monitors M&V Professionals compliance with the CD1 activity specification, REPS Bulletin no.16, and the REPS Code with:

- targeted audits on M&V Professionals compliance systems to ensure compliance with the CD1 activity specification, REPS Bulletin no. 16, and REPS Code, and
- targeted audits on identified areas of risk for non-compliance or where specific issues are brought to the Commission's attention.

The Commission, as Administrator of the REPS, has the necessary functions and powers for the collection of information to perform and inform compliance audits. The Commission may request documentation and reports from auditors, retailers, and the M&V Professional for assessment.

3.3 Revoking M&V professional's REPS Accreditation

The Commission may revoke a M&V Professional's REPS accreditation if it is identified that the M&V Professional is non-compliant and ceases to satisfy the criteria outlined in the CD1 activity specification, REPS Bulletin no.16, or the REPS Code.

Prior to a decision to revoke the accreditation of an M&V Professional, a written notice will be provided to the person advising them that the Commission is considering revoking their accreditation. The Commission will consider any information provided by the M&V Professional in response to this notice before deciding whether to revoke their REPS accreditation.

If an M&V Professional's approval is withdrawn, the M&V Professional will not be able to re-apply for REPS accreditation a period of three months or within the specified period as detailed by the Commission.

4 Evidence requirements

This section provides the minimum evidentiary requirements for obliged retailers under the REPS activity CD1. These requirements have been derived from the CD1 activity specification published by the Minister.

Please note – in accordance with the specification:

- Installation of lighting is not an eligible Activity. Normalised Energy Savings credited for lighting upgrades using another specification within the measurement boundary for the Activity are treated as Counted Energy Savings for this Activity.
- Installation of solar PV is not an eligible Activity. If the measurement boundary for the Activity includes solar PV, the Measurement and Verification Professional must ensure that the Normalised Energy Savings do not benefit from increased solar PV generation.
- ▶ The Normalised REPS Gigajoules for this Activity must not exceed 100,000 GJ.

4.1 Documentation

The minimum activity requirements are set out in the CD1 activity specification, gazetted by the Minister. In addition, the REPS Code outlines the minimum requirements for REPS activity records. The following documents should be retained to assist in satisfying those requirements.

4.1.1 M&V Professional report

The M&V Professional must prepare a report that deems all calculations and parameters in both the M&V plan and M&V report (refer to 4.1.5 and 4.1.6 respectively for details) appropriate, as well as sighting the installer and customer declarations (refer to 4.1.2 and 4.1.3 respectively). The M&V Professional should provide a written justification for the following specific areas:

- Parameters used when measuring energy consumption, independent variables, site constraints
- ▶ Baseline Energy Model
- Operating Energy Model
- Normal Year energy savings and measured energy savings must exclude any time periods for which any of the measured independent variables are less than 95% of the minimum or greater than 105% of the maximum of the effective range of the independent variable (for either the baseline of operating calculations, or where the site constraints are not their standard value)
- Normal Year
- ▶ Effective Range
- Counted energy savings
 - Ensure any energy savings that have been credited in previous years or as a separate activity for any
 equipment within the measurement boundary have been treated as counted energy savings
- Use of the persistence model (including the individual inputs) and calculation of forward creation; ensure the period of forward creation does not exceed the lifetime of the equipment or 10 years
- Ensure normal energy savings have been calculated using an ESCOSA approved calculator or a statistical calculation program with all input/output data, calculation settings and program version recorded and retained (i.e., scripts, procedures, spreadsheets used in calculation)
- ► Check normal energy savings calculation, by fuel
- If customer has declared a lighting upgrade has occurred during either the baseline or operating measurement periods, ensure any energy savings from lighting have been accounted for in the calculation as 'counted savings'
- If the customer has declared solar PV generation has been installed, ensure any energy savings from the solar PV generation have been accounted for in the calculation as counted savings, and
- Credit calculation.

4.1.2 Installer declaration

This information must be collected in addition to any other information specified in the REPS Code and the CD1 activity specification, as gazetted by the Minister and published on the Commission's website. The installer declaration must include the following:

- Company name
- ► ABN
- Registered address
- Installer's name and contact details and occupational licence (including identification of trade licence number)
- ► Clearly state the date the activity was implemented
- ▶ State the expected lifetime of the equipment/products installed
- Provide geotagged photographs before the implementation (including existing equipment)
- Provide the information/instructions for all new product/equipment installed
- ▶ Provide onsite geotagged photographs of all new product/equipment installed
- ▶ Declare that electrical wiring complies with the latest AS/NZS wiring rules
- Declare that all products or equipment installed comply with the relevant Australian standard(s)
- Declare the activity has been certified in accordance with any relevant code(s) of practice and relevant legislation applying to the activity (including licensing, registration, statutory approval, certification, health, safety, environmental or waste disposal requirements)
- ▶ Declare the installation meets a satisfactory quality level
- Declare that products or equipment removed has been removed in accordance with the Environment Protection Policy 2010 under the *Environment Protection Act 1993*.
- ► Invoice with project details
- Signed and dated

4.1.3 Customer declaration

This information must be collected in addition to any other information specified in the REPS Code and the CD1 activity specification, as gazetted by the Minister and published on the Commission's website. The customer declaration must include the following:

- Company name
- ► ABN
- Registered address
- Authorised representative name, title, phone number (if consent received from customer) and email (optional)
- ► Installer company name and ABN
- ► Site address where project was implemented
- ▶ Electronic copies of electricity (and gas if applicable) bills for the last year
- Project description
- ► Date of project implementation
- Declare whether lighting upgrades have occurred since the activity was implemented

- ▶ Declare whether solar PV upgrades have occurred during the baseline or operating period
- If solar PV upgrades have occurred, customer should provide separate metering data on electricity generation and consumption
- Declare any plans to undertake any activities onsite that would affect operating conditions or energy use
- Declare the project does not result in a change to production or service levels at the site address
- ▶ Declare the installation meets satisfactory quality and safety levels
- Signed and dated

4.1.4 Credits calculator and persistence model

The CD1 activity specification requires that:

- ▶ The calculations used to determine Normalised Energy Savings must be:
 - recorded using a calculator approved by the Commission that allows for data retention and calculation validation, or
 - recorded using a statistical calculation program, with all input and output data, calculation programming settings, and the program version used recorded and retained. This includes (but is not limited to) any scripts, procedures, spreadsheets, or other programs used to calculate savings.

Additionally, productivity credit calculations, using the "normal year" option require the use of a persistence model that estimates the expected lifetime of Activity equipment in years, and the Decay Factor for each year.

Both must also be reviewed and deemed appropriate by the M&V professional.

At a minimum, a calculator should include:

- Normalised Energy Saving or Measured Energy Savings calculations based on the outputs of the baseline and operating energy models, consistent with the M&V Report, and
- Persistence model and decay factors.

4.1.5 M&V plan

An M&V plan is completed before the project is implemented and provides details on the implementation site, project, and energy measurement details. Completing a pre-implementation plan ensures all data required to determine energy savings will be available for the M&V Professional to verify the following:

- ▶ Retailer contact details
- Site details:
 - Individual site details
 - Total energy summary by fuel and state the measurement period
 - Meter details
 - Energy consumption trends
- Project details:
 - Description of the chosen energy productivity activity
 - M&V design (i.e. PIAM&V)
 - Measurement boundary
 - Energy consumption
 - Independent variables
 - Site constraints

- Excluded variables
- Data sources (e.g. where weather data was sourced)

4.1.6 M&V report

An M&V report is prepared after the project implementation and summarises the energy savings outcomes. It should provide details of the calculation models used, including all parameters and assumptions made in the calculations such as the following:

- ▶ State the 'Normal Year' for the project and justify this decision
- ▶ State the 'Effective Range' for the project and justify this decision
- Provide justification for the operating cycle (measurement period) chosen
- ► Baseline energy model
 - Provide details of the regression analysis used
 - Provide a chart of the baseline energy model, showing the predicted energy consumption against actual energy consumption
 - Provide a justification of the model's suitability
 - Provide a justification of the choices made regarding the baseline energy model
- Operating energy model
 - Provide details of the regression analysis used
 - Provide a chart of the operating energy model, showing the predicted energy consumption against actual energy consumption
 - Provide a justification of the model's suitability
 - Provide a justification of the choices made regarding the operating energy model
- If using forward creation, provide the persistence model used with each input (decay factor, accuracy factor, counted savings) clearly provided with a justification for each choice
- Provide the equation used to calculate normal energy savings, by fuel
- Provide underlying raw and transformed data used to support the calculations in format that can be readily reviewed and replicated

5 Additional Information

The following references are for general guidance only. For information on what to include and requirements for a M&V report and M&V plan, refer to:

NSW Energy Savings Scheme (ESS) PIAM&V Method Guide

Victorian Energy Upgrades Scheme (VEU) M&V Method Activity Guide

International Performance Measurement and Verification Protocol (IPMVP) Volume 1

Appendix One – Evidence requirements

This section provides the evidence required to demonstrate compliance with each clause of the CD1 activity specification gazetted by the Minister.

Before Implementation

The evidence to be collected before the implementation of a commercial demand savings activity is listed in Table 1. Please note, clause references in the tables below relate to the CD1 activity specification.

Table 1: CD1 compliance assurance process with evidentiary requirements, before activity implementation

Activity eligibility requirements	Specification requirement	Evidence requirements
Activity Description: Site (clause 2)	The Activity involves an upgrade to the energy efficiency of Commercial or Industrial equipment that results in energy savings as calculated in accordance with this specification.	▶ Provide the Delivery Point Identifier (DPID) issued by Australia Post. Eligibility for a premises is based on this unique DPID. In the absence of a DPID, appropriate signed declarations prepared in accordance with REPS Bulletin no. 4 – Address without a delivery point identifier must be provided to the Commission in accordance with REPS Bulletin no. 15 – Provision of signed declarations to the Commission. If the address does not meet the criteria listed in REPS Bulletin no. 4 an application can be made to the Commission to use a Compliance Declaration (refer to section 1.1.3 in REPS Bulletin no. 13 for details).
Equipment in working order (clause 3.1)	The existing equipment must be in working order at time of the Baseline Energy Model measurements.	▶ Installer declaration (refer to 4.1.2 for details), including geotagged photos of existing equipment.
Calculations deemed appropriate (clause 3.2)	All calculations must be deemed appropriate by an M&V Professional.	► M&V Professional report (refer to 4.1.1 for details).

Activity eligibility requirements	Specification requirement	Evidence requirements
Baseline energy model (clause 3.3)	The baseline energy model must be dependent on Independent Variables and Site Constants (where relevant) that are established by measurements taken under normal operating conditions.	► M&V Professional report (refer to 4.1.1 for details).
	The baseline energy model must have a measurement period that spans at least one full operating cycle, from maximum energy use to minimum.	► M&V Professional report that deems the chosen operating cycle appropriate and why. If the operating cycle is less than 12 months, include relevant evidence of how the selected period includes a full range of operating conditions.
	The baseline energy model must fairly represent the operating conditions of a normal cycle.	► M&V Professional report (refer to 4.1.1 for details).
	The baseline energy model must be no more than 3 years earlier than the end date of the Measurement Period.	► M&V Professional report (refer to 4.1.1 for details).
	The baseline energy model must have an end date that occurs before the Activity is implemented.	► M&V Professional report (refer to 4.1.1 for details).
	The baseline energy model must be deemed appropriate by a M&V Professional, with their written explanatory reasoning provided.	► M&V Professional report (refer to 4.1.1 for details).
Operating energy model (clause 3.4)	The operating energy model must be dependent on Independent Variables and Site Constants (where relevant) that are established by measurements taken under normal operating conditions.	► M&V Professional report (refer to 4.1.1 for details).
	The operating energy model must have a Measurement Period that spans at least one full operating cycle, from maximum energy use to minimum.	► M&V Professional report that deems the chosen operating cycle appropriate, and why. If the operating cycle is less than 12 months, include relevant evidence of how the selected period includes a full range of operating conditions.

Activity eligibility requirements	Specification requirement	Evidence requirements
	The operating energy model must estimate annual energy consumption based on a Normal Year.	► M&V Professional report (refer to 4.1.1 for details).
	The operating energy model must have a start date that occurs after the Activity is implemented.	► M&V Professional report (refer to 4.1.1 for details).
	The operating energy model must be deemed appropriate by a M&V Professional, with their written explanatory reasoning provided.	► M&V Professional report (refer to 4.1.1 for details).
Energy savings measurement (clause 3.5)	Normal Year Energy Savings and Measured Energy Savings must exclude any time periods for which any of the measured Independent Variables are less than 95 per cent of the minimum or greater than 105 per cent of the maximum of the Effective Range of that independent Variable for either the baseline energy model or operating energy model; or where the Site Constants are not their standard value.	► M&V Professional report (refer to 4.1.1 for details).
Forward creation (clause 3.6)	The maximum time period for forward creation is either: if a Persistence Model is used, a period not exceeding the expected lifetime of the Equipment in whole years, as determined by that Persistence Model; and not more than 10 years after the Implementation Date.	 Credits calculator and persistence model Installer declaration on expected lifetime of the equipment/products (refer to 4.1.2 for details). M&V Professional report includes verification of the persistence model calculation (refer to 4.1.1 for details).

Activity eligibility requirements	Specification requirement	Evidence requirements
Approved energy savings calculator	The calculations used to determine Normalised Energy Savings must be:	► M&V Professional report (refer to 4.1.1 for details).
(clause 3.7)	recorded using a calculator approved by ESCOSA (that allows for data retention and calculation validation); or	
	recorded using a statistical calculation program, with all input and output data, calculation programming settings, and the program version used recorded and retained. This includes (but is not limited to) any scripts, procedures, spreadsheets, or other programs used to calculate savings.	
Multiple activities (clause 3.8)	Multiple Activities may be conducted at a single premises. Normalised Energy Savings that have been credited in previous years or as a separate Activity for any equipment within the measurement boundary of the Activity are treated as Counted Energy Savings for this Activity.	► M&V Professional report (refer to 4.1.1 for details).
Eligible activities (clause 3.9)	Normalised Energy Sayings credited for lighting ungrades using	Customer declaration stating that no lighting upgrades have occurred or are planned to be implemented (refer to 4.1.3 for details).
		If lighting upgrades have occurred or are planned, the M&V Professional report must verify that any energy savings from lighting upgrades have been subtracted as Counted Energy Savings.
Eligible activities (clause 3.10)	specification of the measurement boundary for the Activity	Customer declaration stating that no solar PV installations have occurred or are planned to be implemented (refer to 4.1.3 for details).
		If solar PV has been installed or is planned, separate metering data on energy generation and consumption must be provided.
		If solar PV has been installed or is planned, the M&V Professional report must verify that any energy savings from a solar PV installation have been subtracted as Counted Energy Savings.

Activity eligibility requirements	Specification requirement	Evidence requirements
Gigajoules cap (clause 3.11)	The Normalised REPS Gigajoules for this Activity must not exceed 100,000 GJ.	► For each Activity reported, both the claimable energy savings (up to 100,000GJ per premises) and gross energy savings (total delivered through the REPS) must be reported in the CD1 Compliance Tool.

During Implementation

Table 2 explains the evidence that should be collected during commercial demand savings activity implementation. Please note, clause references in the tables below relate to the CD1 activity specification.

Table 2: CD1 compliance assurance process with evidentiary requirements, during activity implementation

Activity eligibility requirements	Specification requirement	Evidence requirement
Warranty (clause 4.1)	New equipment must come with a minimum 2-years replacement warranty.	► Provide warranty.
Accepted products (clause 4.2)	Comply with applicable Australian Standards.	Installer declaration (refer to 4.1.2 for details).Equipment information and instructions.
Electrical installations (clause 5.1)	Must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor.	► Installer registration information.
	Any electrical installations related to the Activity must be performed by a licensed electrical worker under the supervision of a licensed electrical contractor. Any electric wiring must comply with the latest AS/NZS 3000 wiring rules.	► Installer declaration (refer to 4.1.2 for details).
Certification (clause 5.2)	The Activity must be completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the Activity, including any licensing, registration, statutory approval, Activity certification, health, safety, environmental or waste disposal requirement.	► Installer declaration (refer to 4.1.2 for details).
Removed equipment (clause 5.3)	All removed equipment must be removed in accordance with the Environment Protection (Waste to Resources) Policy 2010 under the Environment Protection Act 1993. No dangerous materials can be disposed of in a landfill, instead it must be disposed of responsively.	► Installer declaration (refer to 4.1.2 for details).

After Implementation

Evidence that must be retained after commercial demand savings activity implementation is listed in table 3. Please note, clause references in the tables below relate to the CD1 activity specification.

Table 3: CD1 compliance assurance process with evidentiary requirements, after activity implementation

Reporting requirements	Specification requirement	Evidence requirement
Site name (clause 6.1)	Retain record of site name.	► ASIC registered name and ABN of the customer, consistent with the Customer Declaration, and invoice for the upgrade.
Site address (clause 6.2)	Retain record of site address.	▶ Provide the Delivery Point Identifier (DPID) issued by Australia Post. Eligibility for a premises is based on this unique DPID. In the absence of a DPID, appropriate signed declarations prepared in accordance with REPS Bulletin no. 4 – Address without a delivery point identifier must be provided to the Commission in accordance with REPS Bulletin no. 15 – Provision of signed declarations to the Commission. If the address does not meet the criteria listed in REPS Bulletin no. 4 an application can be made to the Commission to use a Compliance Declaration (refer to section 1.1.3 in REPS Bulletin no. 13 for details).
Classification of premises (clause 6.3)	Retain record of classification of premises in accordance with Australian and NZ Standard Classification (ANZSIC) codes at the divisional level.	➤ ABS divisional level ANZSIC code of the customer listed customer reported under site name.
Date of activity (clause 6.4)	Retain record of date of activity.	► Installer declaration (refer to 4.1.2 for details).
Explanatory reasoning (clause 6.5)	Retain explanatory reasoning by a M&V Professional that confirms that the M&V approach taken to calculate Normalised Energy Savings for the Activity is appropriate, in accordance with the requirements of the Activity Eligibility Requirements in this specification.	► M&V Professional report (refer to 4.1.1 for details).
Measurement and verification plan (clause 6.6)	Retain record of M&V plan for the Activity developed prior to the Date of Activity.	► M&V plan (refer to 4.1.5 for details).

Energy saved (clause 6.7)	Energy saved calculated in accordance with the activity energy saving requirements in this specification, including a copy of data and assumptions used, and where relevant, input and output data, programming settings, and completed version of the calculator used. Calculations must be presented in a format specified by ESCOSA, if relevant.	► M&V Professional report (refer to 4.1.1 for details).
Activity energy savings (clause 7)	The Normalised REPS Gigajoules achieved from undertaking this activity is equal to either: a) Normal Year Energy Savings; or b) Measured Energy Savings.	► M&V Professional report (refer to 4.1.1 for details).