

Measurement and Verification

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Measurement and verification establishes how an energy or carbon saving will be tested against a defensible baseline. It accounts for changes in production, weather, occupancy and other operating conditions rather than treating a simple bill comparison as proof.

Our Certified Measurement and Verification Professionals (CMVP) can help you develop an effective metering scope and a measurement and verification (M&V;) plan with accurate modelling to ensure the savings can be accounted for with rigor and transparency in the impact report.

Regular schedule

Accountability

Motivation

5 hours per month per site access to phone support from any member of the Northmore Gordon team

Any topic

Any time

48 hours turnaround

Regular schedule

In-person, 1 day per month per site

Gather data

Discuss opportunities with teams

Attend meetings as required

Monthly progress report

Attend meetings as required

Monthly improvement score per site

Related pages

M&V; for efficiency

M&V; for carbon

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What is Measurement and Verification (M&V;) as described by Northmore Gordon?

Measurement and Verification (M&V;) is the process of accurately measuring and verifying energy and carbon savings from projects such as energy efficiency upgrades, fuel switches, or multi-ECM

upgrades within an Energy Performance Contract (EPC). Our Certified Measurement and Verification Professionals (CMVP) help develop an effective metering scope and an M&V; plan with accurate modelling so savings can be accounted for with rigor and transparency in the impact report. M&V; determines the effect of an energy improvement by establishing what energy use would have been without the intervention under comparable conditions, with savings calculated as the difference between actual post-project consumption and this counterfactual baseline.

Why can't you just compare two electricity bills to prove energy savings?

Comparing two electricity bills is not sufficient evidence of genuine energy savings because bills can fall for many reasons unrelated to equipment improvements — such as declining production, shorter operating hours, changing weather conditions, or fluctuating energy prices. M&V; separates these variables from the actual effect of the energy improvement being claimed, distinguishing real savings from coincidental changes in operating conditions. An electricity bill alone cannot explain which factors caused the change, making it an incomplete basis for verifying project outcomes.

What are the six core components of an M&V; brief?

The six core components are: (1) Purpose – clarifying whether the evidence is for internal evaluation, an investment contract, regulatory reporting, or a certificate scheme; (2) Boundary – identifying the equipment, meters, energy streams and interactions in scope; (3) Baseline – establishing representative pre-project conditions and how operating condition changes will be treated; (4) Measurement – specifying instruments, measurement intervals, quality checks and data-access responsibilities; (5) Implementation Record – documenting what was installed, when commissioned, and other changes during the project; and (6) Reporting – presenting calculations, uncertainty ranges, adjustments and exceptions in detail for a competent reviewer to validate.

How should measurement planning be timed within an energy project?

Government guidance emphasises that early measurement planning is critical, particularly where outcomes will require verification. Measurement and verification should be planned while baseline data can still be obtained and before meaningful commitments lock in project boundaries. Starting measurement planning immediately before installation can make the intended analysis difficult or impossible, especially for projects with seasonal or variable operations that require representative complete operating cycles. Raising both funding and measurement questions during project scoping helps preserve evidence and funding options.

What is the relationship between M&V; and energy management systems?

Measurement and Verification (M&V;) confirms that energy management changes achieve their intended outcomes by comparing actual performance against baseline conditions. Energy management is a structured approach that includes leadership, policy, objectives, responsibilities and ongoing improvement through assessments and monitoring. M&V; serves as the verification mechanism within energy management, enabling organisations to document actual impact and demonstrate accountability. After implementing an energy improvement, performance checking verifies whether completed work produces intended outcomes and identifies discrepancies from forecasts, closing the loop between planning and actual results.

What role does M&V; play in certificate schemes like NSW ESS and Victorian Energy Upgrades?

Under NSW Energy Savings Scheme, Project Impact Assessment with Measurement and Verification (PIAM&V;) is a specific project-based pathway requiring an approved independent M&V; professional to deem the baseline measurement procedures appropriate before implementation. In Victorian Energy Upgrades, measurement and verification is one of two project-based methods available, using pre- and post-upgrade energy information to assess project performance. Each scheme has distinct rules and specifications; M&V; analysis prepared for one purpose should not be assumed to satisfy another. The

appropriate M&V; approach must be confirmed early to ensure the right evidence is collected and proper boundaries are established.

What measurement and metering decisions should be made before installation?

Before metering installation, data responsibilities must be established, including ownership, access protocols, how missing periods and data anomalies will be detected, and whether readings represent interval energy, cumulative register values or power measurements. Record meter identifiers, relevant commissioning dates and the source of any generation or export information. The metering measurement period must match the operating cycle to ensure representative data collection. Assign responsibility for identifying data gaps promptly. These decisions should be documented in a metering plan that specifies instruments, intervals, quality checks and responsibilities for data access to support reliable verification after project implementation.

What supporting services does Northmore Gordon provide for M&V; projects?

We advertise measurement and verification services including project-boundary selection, baseline modelling, savings calculation and reporting. We also offer metering planning services that establish reliable interval data for sites lacking such measurements, and supplies moreData, a supporting platform for energy and water data, performance analysis and reporting. Our Certified Measurement and Verification Professionals (CMVPs) help develop an effective metering scope and M&V; plan with accurate modelling. For client engagement, the appropriate entity, professional and activity scope should be confirmed for scheme-specific work and to ensure accreditation meets the applicable method requirements.

How should three different outputs from energy projects be kept distinct?

Three outputs should remain separate: (1) Engineering estimate – a modelled expectation before or during project design; (2) Verified energy result – an outcome under the agreed M&V; approach and period; and (3) Certificate result – a quantity accepted or issued under the relevant scheme process. An analysis prepared for one purpose (such as internal performance) should not be assumed to satisfy another (such as a certificate scheme). In NSW, PIAM&V; is a specific ESS pathway; in Victoria, project-based activities have their own rules and specifications. Keeping these outputs distinct prevents confusion between feasibility forecasts, actual measured performance and scheme-recognised savings.