

QUESTIONNAIRE REPORT SHEET

iPQ*2CMVP.V2.1



B E Y O N D

S M A R T C I T I E S

AEE'S CERTIFIED MEASUREMENT & VERIFICATION PROFESSIONAL
CMVP EXAM QUESTION BANK

iPQ.No	Correct Answer	Points	Explanation
*2CMVP001	3	10	Answer = 3 Both options 1 and 2 Explanation: • Metering is at the core of M&V. • Without the data collected through metering, M&V is nothing more than guesswork or hocus-pocus.
*2CMVP002	1	10	Answer = 1 Most energy use measurements performed for M&V purposes involve electricity Explanation: The majority of energy usage measurements conducted for the purpose of Measurement and Verification (M&V) predominantly focus on electricity consumption.
*2CMVP003	4	10	Answer = 4 All of the above Explanation: • Periodic M&V reports are prepared to document and communicate the findings of the measurement and verification project using the procedures outlined in the M&V plan. • The frequency and format of these M&V reports must be defined in the M&V plan. • As long as a properly qualified person is in charge of quality assurance oversight, either an independent party or the project developer can verify savings.
*2CMVP004	1	10	Answer = 1 Savings can be verified with adequate certainty. Explanation: An adherent M&V plan will help ensure that the measure or project can realize its maximum potential and that the savings can be verified with adequate certainty.
*2CMVP005	4	10	Answer = 4 All of the above Explanation: Reporting on utility programs can take place at the conclusion of a program cycle, a program year, or the actual implementation of a project.

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*2CMVP006	1	10	Answer = 1 TRUE Explanation: Commissioning is a process that ensures the proper design, installation, functional testing, and operational capability of systems, ensuring that they adhere to the intended design specifications, such as appropriate lighting levels, cooling capacity, and comfortable temperatures.
*2CMVP007	4	10	Answer = 4 All of the above Explanation: Utility program reporting can occur at the end of a program cycle, a program year, or during project implementation. This process typically consists of two main components: A descriptive report outlining relevant customer information, project information, and M&V methodology
*2CMVP008	4	10	Answer = 4 All of the above Explanation: Utility program reporting can occur at the end of a program cycle, a program year, or during project implementation. This process typically consists of two main components: A calculation file containing all relevant raw data, data transformations or corrections, calculations, and explanations
*2CMVP009	4	10	Answer = 4 All of the above Explanation: An M&V plan is central to proper savings determination and the basis for verification. It fundamentally defines how savings will be calculated and should include the following elements: • Estimated baseline performance and associated adjustments • Description of the ECMs and their intended result. • An overview of the intended IPMVP option chosen. • Documentation of post-ECMs and operating data. • Costs of M&V operations and equipment

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*2CMVP010	4	10	Answer = 4 All of the above Explanation: Risks in the M&V context refer to the uncertainty that expected savings will be realized. Risks or uncertainty stem from: • Usage risk (i.e., how many hours the equipment is used) • Performance risk (i.e., equipment is not operating as intended). • Stipulation of the parameter risk (i.e., over/under estimate of some parameters).
*2CMVP011	1	10	Answer = 1 Customer's resources and preferences, and the ESCO's ability to control certain factors. Explanation: The distribution of responsibilities will depend on the customer's resources and preferences and the ESCO's ability to control certain factors.
*2CMVP012	2	10	Answer = 2 False Explanation: By improving the credibility of energy management projects, M&V increases public acceptance of the related emission reduction.
*2CMVP013	1	10	Answer = 1 The M&V Plan Explanation: In general the Project-Specific M&V Plan is developed during EPC contract negotiations. The M&V Plan is the single most important item in an energy and water savings guarantee.

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*2CMVP014	4	10	Answer = 4 All of the above Explanation: The project-specific M&V plan includes • Details of baseline conditions and data collected • What will be verified, and who will conduct the M&V activities? • How energy and cost savings will be calculated • How and why the baseline may be adjusted
*2CMVP015	3	10	Answer = 3 Both options 1 and 2 Explanation: After system start-up and commissioning activities are completed, the M&V acceptance testing activities are implemented.
*2CMVP016	1	10	Answer = 1 TRUE Explanation: "Measurement and Verification" (M&V) is the process of planning, measuring, collecting, and analyzing data for the purpose of verifying and reporting energy savings within an individual facility resulting from the implementation of energy conservation measures (ECMs).
*2CMVP017	1	10	Answer = 1 Process Explanation: "Measurement and Verification" (M&V) is the process of planning, measuring, collecting, and analyzing data for the purpose of verifying and reporting energy savings within an individual facility resulting from the implementation of energy conservation measures (ECMs).

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*2CMVP018	4	10	Answer = 4 All of the above Explanation: The results of the commissioning and M&V activities are usually presented in reports delivered prior to final project acceptance. The post-installation report includes: • Project description and installation verification: list of installed equipment • Documentation of all post-install verification activities and performance measurements conducted. • Performance verification and expected savings for the first year
*2CMVP019	4	10	Answer = 4 All the above Explanation: • Operational verification is an important part of the periodic M&V process. • With proper coordination and planning, M&V activities that provide operational verification of an ECM during the performance period can also support ongoing commissioning activities. • Most forms of M&V require some periodic measurement of operational performance. • In EPC projects, an annual report (unless otherwise specified in the EPC contract, i.e., reports on a quarterly basis) is often required to document annual M&V activities and report verified savings for the year.

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*2CMVP020	4	10	Answer = 4 All of the above Explanation: In EPC projects, an annual report (unless otherwise specified in the EPC contract, i.e., reports on a quarterly basis) is often required to document annual M&V activities and report verified savings for the year. M&V reports for EPC projects typically include the following: • Results or documentation of performance measurements and inspections • Verified savings for the year (energy performance, energy costs, O&M costs, etc.). • Comparison of verified savings with the guaranteed amounts • Details of all analysis and savings calculations, including rates used and any baseline adjustments performed, • A summary of operations and maintenance activities conducted • Details of any performance or O&M issues that require attention
*2CMVP021	3	10	Answer = 3 Both options 1 and 2 Explanation: When M&V activities support a contract—typically an energy savings performance contract—the first step of the CMVP should be to review the contractual arrangement between the parties. The contract should address: • Long-term operational responsibility and risk allocation • Static factor inventory and updates • Schedules for activities and deliverables • Appropriate baseline period and processes for non-routine adjustments

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*2CMVP022	4	10	Answer = 4 All of the above Explanation: Typical Contents of M&V Plans • Executive summary and baseline conditions • Methods, schedule of M&V activities, and reporting • Risk and responsibility matrix:
*2CMVP023	1	10	Answer = 1 TRUE Explanation: According to the IPMVP, "where the firm performing the energy savings determination has more experience than the owner, the owner may seek assistance in reviewing savings reports."
*2CMVP024	3	10	Answer = 3 Both options 1 and 2 Explanation: • A program consists of a series of related energy efficiency projects sponsored by an organization, such as a utility or government agency. • Similarly, a portfolio is a collection of energy efficiency programs sponsored by such an organization, employing various technologies across a range of contexts.
*2CMVP025	3	10	Answer = 3 Both options 1 and 2 Explanation: Evaluation, measurement, and verification (EM&V) refers to program-level or portfolio-level activities rather than project-level activities as in M&V.
*2CMVP026	2	10	Answer = 2 FALSE Explanation: Even so, all parties to an energy savings performance contract (ESPC) must regard the baseline model as sensible or "accurate." This is the basic goal of M&V: that reasonable people can agree that the M&V process has been conducted with sound judgment.

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*2CMVP027	4	10	Answer = 4 All of the above Explanation: • If modifications to M&V plans are required, they tend to be made at the start of a new program cycle. • Program cycle durations can vary across utilities and regulators. • It is important to understand the timing of these cycles to adequately plan for proposed changes to M&V and EM&V plans.
*2CMVP028	3	10	Answer = 3 Both options 1 and 2 Explanation: On the other hand, indirect measurement involves defining a separate measurement through the utilization of a combination of different direct measurement approaches. For instance, the volumetric flow rate can be derived from measurements obtained using a bucket and a stopwatch as the primary instruments.
*2CMVP029	4	10	Answer = 4 All of the above Explanation: Metering systems can be categorized in different ways. They may be either permanent or portable (or temporary). Their abilities for data communication may also set them apart: • Hardline data communication capabilities: data is transmitted through cables directly to an internal server, historian, SCADA, or BMS, • Wireless data communication capabilities: data is uploaded to servers, usually belonging to the meter suppliers. • No data communication capabilities: internal storage or instantaneous readings only.
*2CMVP030	4	10	Answer = 4 All of the above Explanation: Utilities sponsor many energy efficiency programs for several reasons. First, it is typically less expensive to source energy through efficiency measures than through the generation of new energy. According to the American Council for an Energy-Efficient Economy, "utility-sector energy efficiency programs save electricity and natural gas at less than half the cost of new energy supplies."

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*2CMVP031	3	10	Answer = 3 Both options 1 and 2 Explanation: All non-instantaneous metering systems should have backup power and internal data storage to minimize the risk of power or communication loss. Be aware that metering systems with internal data storage but no data communication capabilities have a tendency to lose data after a period of about two weeks.
*2CMVP032	1	10	Answer = 1 Metrologist Explanation: When in doubt, consult the project's metrologist for a better understanding of metering requirements, setup, and conditions. Metrology is a distinct field of specialization, so if you're unsure, don't be afraid to ask for help.
*2CMVP033	3	10	Answer = 3 Both options 1 and 2 Explanation: Princeton University's WordNet lexical database defines a stipulation as "an assumption on which rests the validity or effect of something else." • Double-check the validity of the stipulations. • Obtain agreements about stipulations in writing.
*2CMVP034	1	10	Answer = 1 ISO 9001 and ISO 17020 Explanation: The CMVP should develop a quality management system in accordance with ISO guidelines 9001 and 17020 and use, maintain, and, whenever possible, improve the quality management system.

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*2CMVP035	4	10	Answer = 4 All of the above Explanation: The CMVP should also disclose full credibility assessment results to all relevant stakeholders, obtain agreement on acceptable levels of data credibility, and adhere to applicable M&V guidelines and protocols as well as the methodologies agreed upon for the purposes of the project.
*2CMVP036	3	10	Answer = 3 Both options 1 and 2 Explanation: There are two often confused phases in calibration: • Knowing the error of the measurement instrument, sensor, or logger • Adjusting or fine-tuning the measurement system component to achieve the least amount of error possible (also known as zeroing)
*2CMVP037	1	10	Answer = 1 Accredited meteorologist. Explanation: A meteorologist is an individual with specialized education who uses scientific principles to explain, understand, observe or forecast the earth's atmospheric phenomena and/or how the atmosphere affects the earth and life on the planet.
*2CMVP038	3	10	Answer = 3 Both options 1 and 2 Explanation: • Cost should be a central consideration in virtually any M&V project. • Risk is another important element of a project's context.

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*2CMVP039	4	10	Answer = 4 All of the above Explanation: Only qualified individuals should install, operate, or handle metering systems-and only when permission to perform the work has been obtained. • Each type of metering installation, resource or material being measured, and environment has its own set of safety protocols and requirements. • The CMVP must ensure that these are known, understood, and adhered to. • The CMVP may be held liable for any catastrophic events that occur in the course of M&V activities or in systems with M&V metering installed.
*2CMVP040	4	10	Answer = 4 All of the above Explanation: Savings cannot be directly measured since they represent the absence of energy use. Instead, savings are determined by comparing measured use before and after the implementation of ECMs and making appropriate adjustments for changes in conditions. M&V is very important since it: • Provides accurate feedback over time to ensure savings are sustained and highlights opportunities for improvement. • Aids facility managers in ensuring efficient maintenance and operations. • Documents the financial aspects of energy conservation improvements. • Provides the ability to weigh and reduce the risks of EPCs. • is required when reporting energy savings for regulatory compliance or to participate in emissions trading.

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*2CMVP041	3	10	Answer = 3 Engineers Explanation: Engineers are the target audience for the Certified Measurement and Verification Professional certification.
*2CMVP042	2	10	Answer = 2 Association of Energy Engineers Explanation: The Association of Energy Engineers' Certified Measurement and Verification Professional program has two goals: to identify and honor the most accomplished individuals working in the energy industry's rapidly expanding measurement and verification sector, and to improve the quality of all professionals operating in this sector.
*2CMVP043	1	10	Answer = 1 Efficiency Valuation Organization Explanation: The Efficiency Valuation Organization (EVO) is a unique non-profit entity that is exclusively focused on the development of measurement and verification (M&V) methodologies.
*2CMVP044	1	10	Answer = 1 Certification Explanation: A Certified Measurement & Verification Professional manages or performs internationally recognized energy usage impact measures for energy management activities. They use performance and savings verification in energy savings performance contracts and utility/government incentive programs. Through clear project partner communication, a CMVP can help a company confidently and cost-effectively implement cost-saving activities.

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*2CMVP045	4	10	Answer = 4 All of the above Explanation: IPMVP provides a framework that determines energy and water savings resulting from the implementation of an energy efficiency program. ECMs that the IPMVP covers include • Fuel-saving measures • Water efficiency measures • Load shifting. • Energy reductions through the installation or retrofit of equipment. • Modification of operating procedures
*2CMVP046	1	10	Answer = 1 Professional judgment Explanation: CMVPs are distinguished by their ability to conduct M&V with expert professional judgment.
*2CMVP047	1	10	Answer = 1 2001 Explanation: In 2001, AEE launches the Certified Measurement and Verification Professional (CMVP®) certification.
*2CMVP048	4	10	Answer= 4 All of the above Explanation: The choice of M&V approach depends on various factors, including the type and number of retrofits being made, the complexity of the facility, and the availability of data.
*2CMVP049	2	10	Answer = 2 Continuous metering of the entire chiller (option B) Explanation: Continuous metering of the entire chiller (option B)
*2CMVP050	4	10	Answer = 4 All of the above Explanation: • Validate energy savings. • Validate cost savings. • Validate equipment performance.

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*2CMVP051	1	10	Answer = 1 \$0.04000 per kWh. Explanation: A utility rate is an example of an exact number. If a local power company charges \$0.04 per kWh and Company X uses 725,691.0 kWh in one month, the utility bill would be \$43,541.46, not \$40,000, according to the rounding rule. This is due to the fact that the utility rate is precise; it can be represented as \$0.04000 per kWh.
*2CMVP052	1	10	Answer = 1 Rs.45,00,000 & Rs.75,000 Explanation: Assuming simple interest: Total repayment = $30,00,000 + (10/100 \times 30,00,000 \times 5) = 45,00,000$ Monthly repayment = $45,00,000 / (5 \times 12) = \text{Rs. } 75,000$
*2CMVP053	1	10	Answer = 1 293 kWh Explanation: Baseline energy use(kWh) = $50 \times 90 \times 65 / 1000 = 293 \text{ kWh}$
*2CMVP054	1	10	Answer = 1 To provide a documented methodology based on an international standard that will support audit and verification. Explanation: To provide a documented methodology based on an international standard that will support audit and verification.
*2CMVP055	1	10	Answer = 1 CO₂, CH₄, Explanation: CO₂, CH₄,
*2CMVP056	1	10	Answer = 1 Boost M&V spending by up to \$10,000 annually (or 10% of the savings), Explanation: Boost M&V spending by up to \$10,000 annually (or 10% of the savings),

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*2CMVP057	4	10	Answer = 4 All of the above Explanation: The baseline is a characterization of the energy use and operating conditions during a specified period of time prior to a retrofit. This "specified period of time" is also known as the baseline period. The baseline provides the basis for the development of the baseline model against which an energy conservation measure's actual performance is compared. A baseline should be comprehensive: it should include data relevant to all independent variables, and the baseline period should be of a long enough duration that it is representative of all expected operating conditions.
*2CMVP058	3	10	Answer = 3 6.0 years Explanation: $PB = 32,20,000 / (5,86,000 - 52,000) = 6.0 \text{ years}$
*2CMVP059	1	10	Answer = 1 Option A: Retrofit Isolation with Key Parameter Measurement Explanation: A retrofit isolation approach, where actual generated savings must be verified from short-term data collection, and stipulated factors. It is a simple and low cost approach and is appropriate for less complex measures. This option is based on a combination of measured and estimated factors. Measurements are short-term, periodic, or continuous, and are taken at the component or system level for both the baseline and the retrofit equipment. Measurements should include the key performance parameters that define the energy use of the ECM. Estimated factors are supported by historical or manufacturers' data.
*2CMVP060	2	10	Answer = 2 Renegotiate Explanation: An energy service company (also known as an ESCO) and a client each sign a performance contract before beginning work together. The agreement calls for shared savings over a period of five years. An unusually severe heat wave that occurred during the first summer of operation caused the apparatus to perform significantly worse than was anticipated. The parties need to renegotiate the shared savings for this period which is the result of an adjustment to the baseline.

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*2CMVP061	1	10	Answer = 1 They occur often during the reporting period Explanation: At its core, measurement and verification (M&V) is a process that includes a wide range of measurement, verification, and analysis techniques for quantifying the results of resource efficiency and resource management activities.
*2CMVP062	3	10	Answer = 3 Both Explanation: These practices are documented in several guidelines, including the International Performance Measurement and Verification Protocol (IPMVP) and American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Guideline 14, Measurement of Energy and Demand Savings.^{1, 2} These two guidelines are described below.
*2CMVP063	4	10	Answer = 4 All of the above Explanation: ASHRAE Guideline 14, Measurement of Energy, Demand, and Water Savings, is a reference for calculating energy and demand savings associated with performance contracts using measurements. In addition, it sets forth instrumentation and data management guidelines and describes methods for accounting for uncertainty associated with models and measurements. Guideline 14 does not discuss other issues related to performance contracting. The ASHRAE guideline specifies three engineering approaches to M&V. Compliance with each approach requires that the overall uncertainty of the savings estimates be below prescribed thresholds. The three approaches presented are closely related to and support the options provided in IPMVP, except that Guideline 14 has no parallel approach to IPMVP or FEMP.
*2CMVP064	1	10	Answer = 1 Possible relationships among data points. Explanation: Descriptive statistics involves analyzing data in a dataset in order to describe and offer meaningful information about the data, including possible relationships among data points.

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*2CMVP065	4	10	Answer = 4 All of the above Explanation: Properly applied, M&V can achieve the following: • Allocate risks between the contractor and the customer. • Accurately assess energy savings and the persistence of savings for a project. • Reduce uncertainties to reasonable levels and aid in monitoring equipment performance • Identify additional savings. • Improve operations and maintenance (O&M)
*2CMVP066	1	10	Answer = 1 Energy-consuming systems. Explanation: M&V is the process of quantifying the energy and cost savings resulting from improvements in energy-consuming systems.
*2CMVP067	1	10	Answer =1 Site surveys, metering of energy and independent variables, engineering calculations, and reporting. Explanation: The M&V plan defines how savings will be calculated and specifies any ongoing activities that will occur after equipment installation.
*2CMVP068	1	10	Answer = 1 Occur after equipment installation. Explanation: The M&V plan defines how savings will be calculated and specifies any ongoing activities that will occur after equipment installation.
*2CMVP069	2	10	Answer = 2 Option B: Retrofit Isolation with All Parameter Measurement Explanation: A retrofit isolation or system level approach that requires continuous measurement for long-term savings verification. Methods from Option B are suitable for complex systems with highly externally dependent operating conditions.

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*2CMVP070	1	10	Answer = 1 Surveys, inspections, spot measurements, and short-term metering activities. Explanation: Baseline physical conditions (such as equipment inventory and conditions, occupancy schedule, nameplate data, equipment operating schedules, key energy parameter measurements, current weather data, control strategies, etc.) are determined through surveys, inspections, spot measurements, and short-term metering activities.
*2CMVP071	3	10	Answer = 3 Both options 1 and 2 Explanation: The difference is that commissioning ensures that systems are installed per design criteria and functioning properly, whereas post-installation M&V quantifies how well the systems are working from an energy standpoint in support of the cost savings projections put forth by the ESCO.
*2CMVP072	3	10	Answer = 3 Installed equipment is operational and is delivering the savings that were proposed. Explanation: M&V must be performed at regular intervals to ensure that the installed equipment is operational and is delivering the savings that were proposed.
*2CMVP073	1	10	Answer = 1 Throughout Explanation: More frequent monitoring and/or inspection ensures that the M&V monitoring and reporting systems are working properly and that installed equipment and systems are operating as intended throughout the year, allows fine-tuning of measures throughout the year based on operational feedback, and avoids surprises at the end of the year.

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*2CMVP074	1	10	Answer = 1 \$23000 Explanation: The first system is $500 * 200 * 3500 * 1$. The second system is $500 * 120 * 2000 * 1$. The savings = $35000 - 12000 = \\$23000$
*2CMVP075	2	10	Answer = 2 Continuous commissioning Explanation: The process of continuous commissioning is one that resolves operating issues, improves comfort, and optimizes the use of energy for institutional and commercial buildings and central facilities.
*2CMVP076	2	10	Answer = 2 Environmental regulations, productivity, and quality improvement Explanation: Environmental regulations, productivity, and quality improvement
*2CMVP077	3	10	Answer = 3 A purchasing contract that automatically renews itself unless either contract party notifies the other of the intent to renegotiate Explanation: A purchase agreement that automatically extends itself for another period of time unless one of the parties notifies the other of its intention to renegotiate the terms of the agreement.
*2CMVP078	3	10	Answer = 3 Option C Explanation: Option C: whole facility metering Due to the mixture or combination of many measures to be installed effectively all at once, energy savings are expected to be large (>10%). Other options are technically feasible, but the cost would be prohibitive. The correct answer is 3

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*2CMVP079	3	10	Answer = 3 Option C: Whole-Facility Measurement Explanation: A method of facility-wide verification. Based on actual energy consumption as measured by utility meter(s) and/or regression modeling, savings are calculated. Methods from Option C are suitable for projects with a high degree of interaction between measures and when dedicated utility meters are available for retrofitted equipment or systems. Analysis of baseline and reporting-period energy data determines savings. Energy consumption is correlated with independent variables such as weather and occupancy through regression analysis. This option is rarely used in projects because it requires a detailed inventory of all equipment included in the meter reading, as well as knowledge of equipment use patterns, building occupancy, and other factors affecting energy consumption. It may be suitable for brief durations or when the equipment included in the meter reading is limited or controllable.
*2CMVP080	2	10	Answer = 2 \$0.04365 /kWh Explanation: Cost of electricity= $(10/0.8) * 0.97 * 0.0036 = \\$0.04365$ /kWh
*2CMVP081	1	10	Answer = 1 Measurement of the CO2 level in the building Explanation: Measurement of the CO2 level in the building
*2CMVP082	2	10	Answer = 2 Information pertaining to the project's financing can be found here. Explanation: Relevant details regarding the project's financial aspects can be accessed at this location.

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*2CMVP083	1	10	Answer = 1 Continuous or real-time commissioning Explanation: Continuous Commissioning (CC) is a progressive phase within the building cycle that entails the ongoing process of gathering and analyzing energy data in real-time, facilitated by the utilization of metering equipment or a building automation system.
*2CMVP084	1	10	Answer = 1 Adjust the baseline by performing a non-routine adjustment using the IPMVP tools. Explanation: The baseline can be adjusted through the implementation of a non-routine adjustment utilizing the tools provided by the International Performance Measurement and Verification Protocol (IPMVP).
*2CMVP085	1	10	Answer = 1 Spot measurement (option A) Explanation: Spot measurement (option A)
*2CMVP086	4	10	Answer = 4 All of the above Explanation: • Validate energy savings • Validate cost savings and Mitigate risks with projects • Validate equipment performance

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*2CMVP087	4	10	Answer = 4 All of the above Explanation: The objective of Option B is to calculate savings in a manner similar to Option A, but Option B uses short-term, periodic, or continuous measurement of all parameters needed to calculate energy use. Option B is typically used when any or all of the following conditions apply: • Energy savings values per individual measure are desired. • Interactive effects can be estimated using methods that do not involve long-term measurements. • Independent variables that affect energy use are not complex, excessively difficult, or expensive to monitor. • Operational data on the equipment is available through control systems. • Submeters already exist that record the energy use of the subsystems under consideration.
*2CMVP088	4	10	Answer = 4 All of the above Explanation: • Descriptions of all static factors that have changed • Transparent explanations of how non-routine adjustment values have been determined • Details about the calculations used to arrive at the reported savings values, with reference to valuation methods outlined in the plan
*2CMVP089	4	10	Answer = 4 Option D: Calibrated Computer Simulation Explanation: The proposed approach can be used at both the facility-wide and component-specific levels. Computer simulation software is employed for the purpose of modeling the energy performance of an entire facility or a subset thereof. In order to ensure accuracy and reliability, it is imperative to calibrate models using authentic hourly or monthly billing data obtained directly from the facility.

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*2CMVP090	4	10	Answer = 4 All of the above Explanation: - Measuring avoided energy use (against a "what could have been" energy baseline) - Implementing proper adjustments for factors such as weather, production volume, level of occupancy, etc. within and beyond control. - Accounting for interactive effects (for instance, when implementation of an ECM will have an influence on the energy consumption of other equipment).
*2CMVP091	4	10	Answer = 4 All of the above Explanation: - Remaining consistent with existing standards, other projects, and time. - Ensuring a proper trade-off between rigor (accuracy and confidence) and effort. - Balancing the interests of all involved parties - Aligning with local market specificities
*2CMVP092	3	10	Answer = 3 Both options 1 and 2 Explanation: Given that every empirically derived report involves judgments that not all reporters will make in the same way, the reporting of a project's energy effectiveness should be consistent between: - Different types of energy efficiency projects - Different energy management professionals for any one project. - Different periods of time for the same project - Energy efficiency projects and new energy supply projects

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*2CMVP093	4	10	Answer = 4 All of the above Explanation • Different types of energy efficiency projects • Different periods of time for the same project • Energy efficiency projects and new energy supply projects
*2CMVP094	1	10	Answer = 1 Guidance for measuring the savings produced by energy efficiency initiatives or projects. Explanation: The International Performance Measurement and Verification Protocol ("IPMVP") provides guidance for measuring the savings produced by energy efficiency initiatives or projects.
*2CMVP095	2	10	Answer = 2 Determining the degree to which efficiency measures produce savings Explanation: IPMVP is a compilation of best industry practices for determining the degree to which efficiency measures produce savings.
*2CMVP096	3	10	Answer = 3 Both options 1 and 2 Explanation: • In most cases, utilities, regulators, implementors, and evaluators are all involved in the M&V and EM&V planning processes. • M&V planning usually occurs either at the start of a new utility program or at the start of a new program cycle.

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*2CMVP097	4	10	Answer = 4 All of the above Explanation: Evaluation, measurement, and verification (EM&V) refers to program-level or portfolio-level activities rather than project-level activities as in M&V. Which of the following statements is correct for the above? • In utility program texts, M&V and EM&V play complementary roles. • An M&V plan guides how a project or program will be implemented, whereas an EM&V plan guides how a program or portfolio will be evaluated. • An implementor will be hired to design and/or carry out an M&V plan, and an evaluator will be hired to design and/or carry out the EM&V plan.
*2CMVP098	3	10	Answer = 3 Project-level Explanation: Evaluation, measurement, and verification (EM&V) refers to program-level or portfolio-level activities rather than project-level activities as in M&V.
*2CMVP099	4	10	Answer = 4 All of the above Explanation: • Regulatory and program rules • Relevant guidelines, standards, and protocols • The project's sector: industrial, commercial, institutional, or residential

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*2CMVP100	4	10	Answer = 4 All of the above Explanation: The contract should address: • Long-term operational responsibility and risk allocation • Static factor inventory and updates • Schedules for activities and deliverables • Appropriate baseline period and processes for non-routine adjustments