



wel come to
BEYOND SMART CITIES

BEYOND
SMART CITIES



FUNCTIONALITY OF THE MEASUREMENT AND VERIFICATION SPECIALIST

ONLINE PROFESSIONAL COURSES LED BY THE WORLD'S TOP SPECIALISTS

ONLINE TRAINING BY KRISHNAJI PAWAR

LEARN.BEYONDSMARTCITIES.IN

BEYOND

SMART CITIES

MODULE

4

Practical Considerations for M&V

KRISHNAJI PAWAR - CEO & FOUNDER

LEED AP(BD+C), GSAS CGP, GCP, ISO 14001

WWW.BEYONDSMARTCITIES.IN





FUNCTIONALITY OF THE MEASUREMENT AND VERIFICATION SPECIALIST

Measurement and Verification (M&V) is a crucial process in energy efficiency projects, providing a framework to quantify and validate the effectiveness of energy-saving measures. It bridges the gap between theoretical benefits and practical realities of an energy project, fostering trust among stakeholders like program administrators, investors, and end-users.

Learning Objectives

- Introduction and Course Outline
- Contexts and Concepts: The M&V Specialist's Function
- Standards of Practice
- Practical Considerations for M&V
- Physical and statistical models
- System boundary in M&V
- Baseline: Additional Considerations
- Special Baseline Considerations for Utility Programs
- Implementing the baseline model and data from the reporting period
- Granularity and load shapes
- Using Statistics to Communicate Uncertainty



INTRODUCTION

- M&V evaluates the effectiveness of energy efficiency measures and other energy-saving initiatives.
- It bridges the theoretical benefits of an energy project with the practical realities of its execution.
- Accurate realization, verification, and reporting of energy savings through the M&V process fosters trust among stakeholders.
- Without proper M&V, the actual performance of energy-saving projects can remain uncertain, leading to mistrust among stakeholders and reduced future investments in energy efficiency.
- The International Performance Measurement and Verification Protocol (IPMVP) is the most recognized protocol for the M&V process.
- Key components of M&V include baseline establishment, measurement techniques, verification process, and reporting and documentation.
- Challenges in M&V include limited access to historical energy usage data, measurement errors, and changing operational conditions.
- M&V is a fundamental aspect of energy efficiency projects, providing the framework to quantify, verify, and report energy savings.

MEASUREMENT AND VERIFICATION (M&V) PRACTICAL CONSIDERATIONS

- M&V is crucial in assessing the effectiveness of energy efficiency projects and interventions.
- The primary objective is to provide an accurate estimate of the savings produced by these interventions.
- M&V employs various methodologies that rely on the concept of the counterfactual, a scenario that estimates what would have occurred in the absence of the intervention.



IMPLEMENTING THE COUNTERFACTUAL



- The counterfactual method is a fundamental concept in M&V, establishing the basis for determining the impacts of an energy efficiency project.
- The method requires establishing and adjusting a baseline model of energy use for a given facility, representing what the energy consumption would have been in the absence of the energy efficiency measures.
- The counterfactual aids in distinguishing actual outcomes from what would have occurred in the absence of the intervention.

ESTABLISHING CAUSALITY FIRST

- It is paramount in M&V to establish causality, considering potential confounding variables.
- M&V frameworks often utilize statistical methods such as regression analysis, propensity score matching, or randomized control trials (RCTs) to strengthen the causal inference.

Longitudinal and Cross-Sectional Studies

- Longitudinal studies track the same subjects over time, allowing researchers to observe changes and establish causal relationships more effectively.
- Cross-sectional studies assess multiple subjects at a single point in time, but are generally less effective at establishing causality



TERMINOLOGY



- Key terms in M&V include the baseline, savings, and verification.
- The pre/post methodology entails measuring conditions before and after an intervention, but without a clear counterfactual comparison, pre/post evaluations may lead to misleading conclusions about the intervention's impact.

CONTACT US



+91 6363032722



info@beyondsmartcities.in



learn.beyondsmartcities.in



#55,HMR Layout ,Bengaluru ,India



THANK YOU

