



Efficiency
Valuation
Organization

*Certified Energy Savings Verifier (**CESV**)
New Solution to Global M&V Gap*

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*Long-Standing Barriers to Implementing an Energy Efficiency Projects (**EEP**)*

- Facility Owners (Gate Keepers!)
- No '*Commercially-Attractive*' financing
- Limited confidence in savings estimates and the ability to measure & verify them
- Small and complex transactions with no '*silver bullet*' solution to '*scale-ability*'
- Markets with subsidized energy rates and/or very limited project-based Technical, Financial and Development capacity

EEP Barriers with Facility Owners

- In many commercial buildings, utilities are paid by tenants versus owners of inefficient equipment
- In many industrial companies, EEPs viewed as *Infrastructure investments* (***don't fix unless broken***)
- Little confidence in savings being realized or measured
- EEP financing reduces core business funding capacity
- EEPs cannot compete with internal capital for 'Core Business' investment hurdle rates (~1 year)
- Benefits too small to justify inherent complexities and 'perceived' potential operating risks of EEPs

Limited Confidence in EE Savings

- Limited confidence caused by low knowledge, prior bad experience, and complexities in the calculation and Measurement & Verification (**M&V**) of savings
- A huge M&V capacity gap exists GLOBALLY of not properly measuring and verifying EE savings at all 3 major levels: Policy, Program and Project.
- Clean energy funds and EE Certificate markets must have way to verify estimated and achieved savings
- The M&V Gap is primarily caused by a lack of experts who have the capability to develop/evaluate M&V plans or energy savings calculations

What is M&V

- M&V is the *Meter of EE*
- M & V is the process of using “measurements” to reliably determine savings created within a facility by an Energy Efficiency Project (**EEP**).
- The primary objective of M&V is to reduce performance risk to an acceptable level
- Required to calculate achieved energy savings with any degree of accuracy/reliability

Complexities of Measuring EE Savings



- Savings cannot be measured (like kWh's)
- Savings are determined by analyzing measured energy use versus an '*Energy Baseline*':
 - is the critical component of M&V
 - affected by many factors that may occur during the performance period and require adjustment

Efficiency Valuation Organization (EVO)

<http://www.evo-world.org/>

EVO is a 20-yr. non-profit organization that owns and manages the globally-recognized *International Performance Measurement & Verification Protocol* (“**IPMVP**”)

- **VISION**: create a world that has confidence in energy efficiency as a reliable and sustainable energy resource
- **MISSION**: ensure that the savings and impact of energy efficiency and sustainability projects are accurately measured and verified

What is IPMVP?

- IPMVP is a document of long-standing, globally-recognized generally accepted M&V principles
- Developed in 1996 by an international energy engineering–based committee to reduce uncertainty in measuring & verifying End-Use energy savings
- Provides a “**framework**” of “**definitions**” and “**guidelines**” on methodologies for assessing and measuring energy savings of EEPs

IPMVP Benefits



- Provides internationally-accepted guidelines for EE savings M&V Plans
- Standardizes terminology and approaches for EE engineers to develop ‘transparent’ M&V Plans that reduce risks for Hosts, Investors and LFIs.

Solution to EE Project M&V Gap

Solution is not more protocols!!

- The current CMVP program by EVO/AEE certifies that individuals have a fundamental understanding of M&V principals and concepts
- A much higher level of M&V professionals need to be trained and certified in the marketplace as having the capability to prepare or evaluate M&V plans and verify EE savings estimates

*New EVO Training/Certification Program Certified Energy Savings Verifier (**CESV**)*

- CESV is a new high-grade professional M&V certification to be provided by EVO and a local certifying body to individual engineers who are qualified to certify M&V Plans and the estimated and achieved savings of EEPs
- CESV will be similar to a CPA (Certified Public Accountant) certification
- CESVs will be recognized as individuals who are technically competent to provide an independent evaluation and certification of EEP savings.

CESV Capabilities

- CESVs must have the capability to evaluate and certify that an EEP's:
 - Pre-Installed energy savings estimate is materially correct
 - Pre-Installed M&V Plan complies with the generally accepted principals of IPMVP and other recognized M&V standards and best practices
 - Post-installed energy savings have been calculated according to the certified Pre-Installed M&V plan and that they materially reflect the actual savings achieved