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# **Efficiency Value Organization**

## **The importance of M&V**

### **The role of an IEEFP**

By

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# M&V?

# EE Barriers

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Knowledge

Design and implementation capacity

Uncertainty about project results

Financing

# Uncertainty?

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Stakeholders in any projects wants to have a way to evaluate the technical and financial benefit of their investments

# What is M&V?

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“Measurement & Verification (M&V) is the process of using measurements to reliably determine actual saving created within an individual facility by an energy efficiency improvement program.”

# Measure Savings?

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- Savings are the absence of energy use.
- We can *not* measure what we do not have.
- We do *not* ‘measure’ savings!
  
- We *do* measure energy use.
- We *analyze* measured energy use to **determine** savings.

# Purposes of M&V

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1. Verify the savings generated by a project
2. Improve design, operations and maintenance
3. Account for variances from the utility budget
4. Educate facility users about their energy consumption
5. Increase the chance of EE project success
6. Use as a basis for financial transactions
7. Support evaluation of efficiency programs

Ultimately, M&V reduces EE projects risks

# ← The M&V Spectrum →

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## No M&V

- No extra cost (more left to spend on retrofits)
- Most EE retrofits since 1975
- Low cost M&V without the M, just the V

## Full M&V

- Support financial transactions
- Maximize short term savings
- Increase sustainability of savings
- Justify further investments in EE projects
- Provide support for program evaluation



**EVO**

# ABOUT EVO

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Efficiency Valuation Organization (EVO)

[www.evo-world.org](http://www.evo-world.org)

- International non-profit corporation
- Led by volunteers around the world

# EVO

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- **Vision**

A global marketplace that correctly values the efficient use of natural resources and utilizes end-use efficiency options as a viable alternative to supply options

- **Mission**

To develop and promote the use of standardized protocols, methods and tools to quantify and manage the performance risks and benefits associated with end-use energy efficiency, renewable energy, and water efficiency business transactions

# EVO

- **Protocols**
  - IPMVP, IEEFP
- **Training, Certification**
  - Also joint with the Association of Energy Engineers
- **Building Community, Promoting Efficiency**
  - Subscriber services through [www.evo-world.org](http://www.evo-world.org): industry newsletter, discussion forums, library, discounts, pre-release access to public documents
  - World wide partnerships for communication, training and development





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# **International Performance Measurement and Verification Protocol**

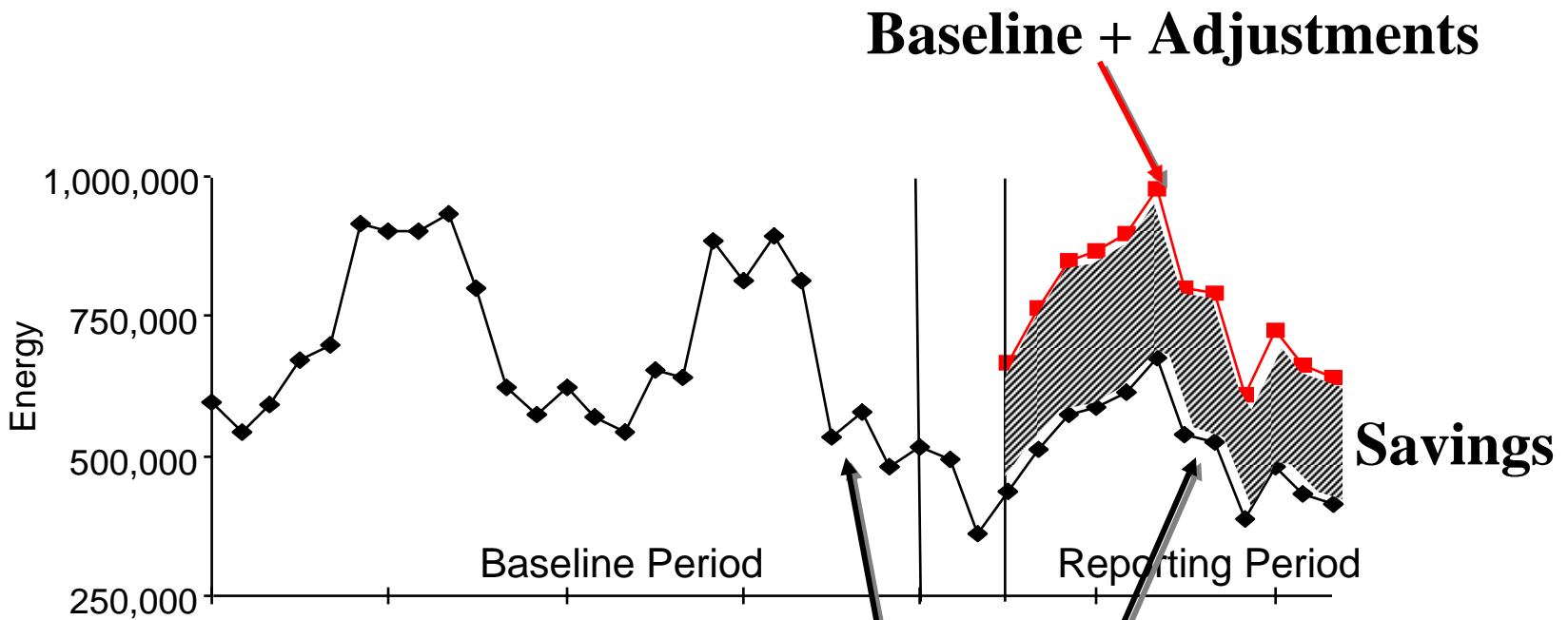
## **IPMVP**

# IPMVP - Overview

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- Presents a **framework** and **defines terms** used in determining ‘savings’ after implementation of a project.
- Specifies the topics to be addressed in an **M&V Plan** for a specific project.
- **Allows flexibility** in creating M&V Plans, while adhering to the principles of: **accuracy, completeness, conservativeness, consistency, relevance and transparency.**

# A Notional Baseline



**Metered Energy**

# Two Basic Methods

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## Whole Facility Method:

Measures **all** effects in the facility:

- Retrofits AND other changes (intended and **un**intended)
- Often uses the utility meter
- Adjustments can be complex

## Retrofit Isolation Method:

Measures the effect of the retrofit, **only**

- Savings are unaffected by changes beyond the measurement boundary
- Usually needs a new meter
- Adjustments can be simple

# IPMVP - Benefits

- Updates the definition of the state of the M&V art through constant evolution of the protocol.
- Defines standard approaches to verify “savings,” to reassure facility owners and projects stakeholders.
- Provides guidance on the trade-off between measurement “accuracy” and measurement cost.
- Helps parties to create transparent, repeatable performance contract terms and emission trades regarding savings settlement.
- Legitimizes ESCO projects through international recognition of an approved methodology to determine savings for payments



# **International Energy Efficiency Financing Protocol**

**IEEFP**

# The Issue

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Most LFIs  
see too many barriers  
to be interested to develop/organize  
adapted EE product lines.

# EVO SOLUTION

## IEEFP

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- Creates procedures/guidelines for evaluating and assessing benefits/risks of financing EE projects
- Creates sustainable lending infrastructure capacities at a “grassroots” level to develop a “commodity” approach for EE projects

Focuses on the “Savings Value” of EE projects for loan repayment and credit capacity review

# EVO SOLUTION

## IEEFP

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- Provides Minimum Criteria for EE projects lending ratios/terms and use of “proven” technologies
- Develops generic terms and conditions to be included in various financing agreements
- (Savings M&V, Commissioning, Warranties)
- Develops and mandates use of standardized savings protocols based on “IPMVP”
- Creates training manuals, workshop materials and case studies for LFIs



**“PERMANENT”**

**Funded under  
EU Intelligent Energy for Europe**

# PERMANENT

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The Acronym stands for

Performance Risk Management for  
Energy efficiency projects through Training

# PERMANENT Stated Objective

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To enhance the rate of investment in EE projects in

- Bulgaria
- Croatia
- Czech Republic
- Poland
- Romania

by addressing the fear of EE permanence.

# PERMANENT Plan

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To educate financiers, project developers and energy users about:

- How EE projects can be demonstrated to have PERMANENT results; and
- How that PERMANENCE breaks the distrust barrier.

# Markets & People

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## Markets:

- Industrial
- commercial (e.g. office, retail)
- multiple residential
- institutional (e.g. education, health care)
- and government (e.g. office, military, etc).

## People:

- Managers
- financiers and technical personnel
- ESCOs, consulting engineers, banks and insurance companies.

# Method

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- Adapt widely accepted guidelines (IPMVP and IEEFP) to local conditions. Add them to the library of Efficiency Valuation Organization (EVO), for life after PERMANENT.
- Train instructors and customize EVO's training materials.
- Promote and run awareness and training sessions.

# Target Results

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- Recognition amongst energy users, financiers and emerging ESCOs of the need for, and how to evaluate (M&V) and finance EE projects
- Improved quality of M&V of end user projects;
- Improved capacity of EE project evaluations for investing;

**Reduce EE projects risks**

# Target “Indicators”

- 2,000 persons directly exposed to M&V capacity building sessions and 1,200 copies of the adapted IPMVP distributed in 6 languages.
- 1,000 end users will be trained and more will be made aware of the techniques for managing performance risks in guaranteed savings projects.
- 100 European and international institutions and professional bodies and authorities informed about the project through 7 Newsletters.
- 2-3,000 institutions in total receive the 7 Newsletters.
- At least 5 events in each country, i.e. 25 events with audience of about 70 – 100 persons (2,000 informed).
- 20-30 qualified trainers created.
- International conference organised for at least 100 professionals and other EU energy performance projects.

# Partner Roles in Targeted Countries

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- Bulgaria: EEE and EnEffect
- Czech Republic: Enviros
- Croatia: HEP-ESCO
- Poland: FEWE
- Romania: EnergoECO

## **Roles:**

- identify local customizations
- provide potential instructors to be trained
- promote and deliver local awareness and training activities.



# Conclusion

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- EVO is looking to collaborate with UNECE efforts in the context of the FEEI initiative
- All material developed by EVO is free and up for use

Visit EVO website  
[www.evo-world.org](http://www.evo-world.org)

Contact us for any needs and the development  
of potential collaboration  
at the project or country level



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# THANK YOU

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