ENERGY EVALUATION EUROPE CONFERENCE 2025
Show me the Evidence: Evaluation as the Decision Maker's Best Resource
www.energy-evaluation.org
25 SEP - 26 SEP 2025
frizzforum BERLIN
Organised by energie wächter

Enhancing the Impact of EU Energy Saving Obligations through Independent EM&V

A. Gal, Econoler (agal@econoler.com), P. Lemoine, Econoler

EXTENDED ABSTRACT

This research highlights the importance of robust, independent evaluation, measurement, and verification (EM&V) in improving the effectiveness of energy saving obligations (ESOs) under the European (EU) Energy Efficiency Directive (EED). Drawing on international examples, the study demonstrates how structured EM&V can validate energy savings, enhance accountability, and guide better policy and investment decisions. It recommends standardised protocols, independent assessments, and greater transparency to ensure that EU energy efficiency (EE) targets are both credible and impactful.

Introduction / background

The Green Deal requires a massive scaling-up of EE investment for the EU. The EED is one major policy instrument guiding this investment. Article 7 of the EED mandates ESOs of Member States whereby energy suppliers and distributors achieve 1.49% annual energy use savings from all sectors starting in 2023 and 1.90% from 2031 onward. These savings can be achieved through ESOs or alternative policy measures, such as taxes, grant, voluntary agreements, and regulations.[1]

This leads to a major challenge to accurately validate energy saved from ESOs and related measures to ensure EED objectives are achieved. Recent experiences exemplify this challenge. In France, the Court of Auditors found that reported savings under the Energy Efficiency Certificate scheme were overstated by at least 30% in 2022–2023.[2] Similarly, Germany's energy renovation initiatives, despite paying EUR 18 billion annually in subsidies, have failed to yield expected savings.[3] These cases underline the need for systematic, independent EM&V to validate energy savings and refine programme design.

Lessons from global leaders in EE programme design and evaluation offer valuable insights for improving the performance of ESOs and related EE initiatives in the EU.

To outline the principles of a robust framework for EM&V of ESOs and related EE measures in the EU, the research for this presentation draws from international best practice examples.

Methodology

Desk research combined with the Authors' professional experience is used to identify common themes and best practices, followed by the development of a high-level framework for transposing these learnings to the EU.

The research covers impact evaluations, which assess realized energy savings, and process evaluations, which refine program implementation.

[1] Official Journal of the European Union (2023). Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast).

[2] Cour des comptes (2024) LES CERTIFICATS D'ÉCONOMIES D'ÉNERGIE : un dispositif à réformer car complexe et coûteux pour des résultats incertains. Communication à la commission des finances, de l'économie générale et du contrôle budgétaire de l'Assemblée nationale.

[3] EURACTIV (2024). Germany's building renovation policy has 'failed', housing sector says.

Results

EM&V can strengthen the impact of EE measures in the EU by measuring results, identifying variances from optimal performance, and providing recommendations to increase market update, savings, and cost-effectiveness. Examples from five jurisdictions are shown in Table 1.

Table 1. Value added of EM&V to EE initiatives in five jurisdictions.

Jurisdiction	Scheme/Framework	Value added of EM&V
Australia	Energy Savings Scheme	Identifies underperforming measures; informs regulatory adjustment [4]
California, U.S.	EM&V protocols	Refines savings calculations; enables continual programme improvement [5]
Denmark	Energy Savings Obligation scheme	Independent audits ensure targets are met, increasing accountability[6]
Ontario, Canada	Independent Electricity System Operator evaluation framework	Evaluation guides investment decisions; promotes effective programme continuation[7]
United Kingdom	Energy Company Obligation (ECO) scheme	Evaluations lead to policy refinements and improved reporting accuracy [8]

Transversal EM&V guidelines were also researched including the International Performance Measurement and Verification Protocol (IPMVP) [9] and The Uniform Methods Project (UMP).[10]

Recommendations to integrate EM&V in European EE measures

To strengthen the effectiveness of EU energy efficiency measures, the following is recommended:

- Mandate independent evaluations of ESOs though tender process for third-party evaluator.
- Use harmonised EM&V protocols across Member States to improve consistency and credibility.
- Dedicate a portion of ESOs and EE programme budgets (e.g. 3%-5%) to evaluation activities on annual basis. Impact evaluation is generally developed each year. For process and market evaluation, generally, the timeframe is each 2 to 3 years.
- Ensure transparency by publishing evaluation findings.
- Require measurement of additionality.
- Require ESO administrators to act on evaluation recommendations.

Embedding these practices will enhance the reliability of reported savings, support informed decision-making, and increase the overall impact of energy efficiency investments in the EU.

[4] New South Wales Government (2025). Energy Savings Scheme.
[5] California Public Utilities Commission (2006). California Energy Efficiency Evaluation Protocols: Technical, Methodological, and Reporting Requirements for Evaluation Professionals.
[6] Beacon et al (2019). Energy Efficiency Obligation Scheme in Denmark: Study.
[7] The IESO (2025). Energy Efficiency: Evaluation, Measurement and Verification.
[8] Department for Business, Energy and Industrial Strategy of the United Kingdom (2022). Energy Company Obligation: Policy Guidance for obligated suppliers, manufacturers and installers on applying for Innovation Measures, Alternative Methodology and Data Light Measures.
[9] Efficiency Valuation Organization (2025). International Performance Measurement and Verification Protocol
[10] U.S. Department of Energy (2025). Uniform Methods Project: Determining Energy Efficiency Savings for Specific Measures.