



**CONCERTED ACTION  
ENERGY SERVICES  
DIRECTIVE**



# Measurement and verification, IPMVP and other approaches

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**Core theme 4  
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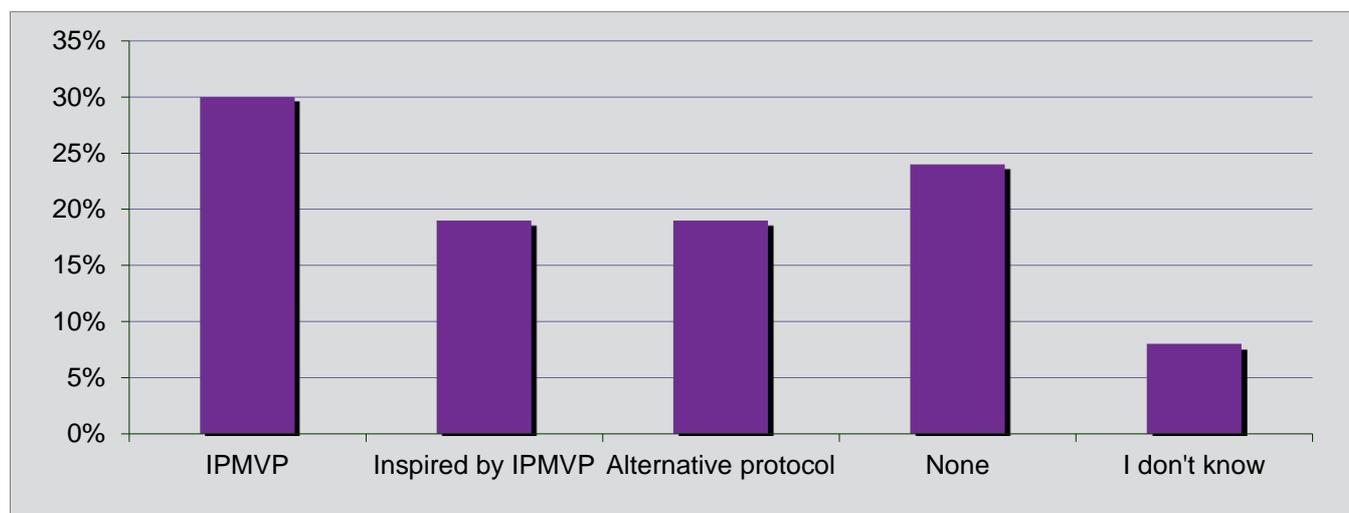
The measurement of energy savings is much more complex than measuring the production of energy (e.g. electricity generated from a cogeneration or renewable plant), because it involves not only the measurement of one or more parameters, but also comparison with the situation before the changes were implemented (e.g. implementation of an energy efficiency improvement), and usually some adjustments. This measurement allows us to evaluate the results of energy efficiency measures (from a single household measure to a policy) and to manage them. The complexity of this measurement is one of the barriers to energy efficiency, especially if dealing with payback time, affordability, etc. It becomes even more of a concern when the payment for the energy service is linked to the energy/economic savings achieved, as with energy performance contracting (EPC).

In order to evaluate energy services providers' approaches to measurement and verification, a questionnaire was distributed to organisations dealing with energy services across Europe (energy services companies, facilitators, services companies not offering performance contracting, etc.). An open question on measurement and verification, not restricted to energy services, was also circulated to the participants to the Concerted Action of Energy Services Directive.

The results from 100 questionnaires show a variety of performance based contracts in place across Europe. Energy performance contracts are the most common, followed by supply contracts with efficiency/performance clauses. Supply contracts are almost as common as the latter, while contracts complying with EN 15900 are far less common. A measurement and verification protocol is present in almost 70% of the organisations (from single firms to multinational groups with branches in many Member States) and the International Performance Measurement and Verification protocol (IPMVP) is used in almost half of these cases.

The IPMVP was developed at the end of the nineties in the USA to support ESCOs dealing with performance based contracts. In a number of countries it is considered the de facto standard practice for measurement and verification, but it is not so prevalent in Europe (see Figure 1). IPMVP is used in the Eastern European countries as a result of the PERMANENT project, with partners from BG, HR, CZ, PL and RO. In one of these Member States the use of the IPMVP is obligated by law, in others IPMVP has been adopted by the ESCOs or, at least, the project has increased the spread of energy performance contracting.

**Figure 1: Measurement and verification protocol utilised**



One of the advantages of a standardised measurement and verification protocol at country or European level is linked to financing. Financial institutions tend to evaluate an investment in energy efficiency as a standard asset. Proof of this is the fact that, at the moment, an energy efficiency project asset class does not exist. Evaluation of energy efficiency investments seldom considers the constancy of cash flow guaranteed by the contract with the energy service provider. A more standardised approach to energy efficiency projects could help to change the way investments are evaluated, and a key element of this is a sound measurement and verification plan. A well implemented and maintained plan, shared with the client, strengthens trust and helps to reduce and manage risks, including the risk of litigation. Another instrument aimed at financial institutions is the International Energy Efficiency Financing Protocol (IEEFP), published in 2009. This was used in the PERMANENT project to train employees of financial institutions.

The participants' responses confirm that obligations to use measurement and verification exist in only a few Member States, in most cases with reference to the IPMVP. The most widespread practice seems to be a non-binding reference to measurement and verification (in many cases IPMVP) in the model contract/contract

guidelines for the public sector, and, when we consider 'work in progress', it seems likely that this will remain the case in the near future.

IE provided another interesting application of measurement and verification as a requisite for energy efficiency programmes, grants for energy efficiency measures, and energy efficiency targets for the public sector. This has the potential not only to enhance programme results, but also to diffuse the culture of measurement and verification for all measures and sectors (including small organisations), creating a more favourable environment for the diffusion of energy efficiency services with performance clauses.

### **Added value**

Data was gathered from energy services providers via a questionnaire sent out across Europe. Some information, including some from outside Europe, was collected during an informal session organised at the ECEEE Industrial Summer study. Good practice and interesting initiatives on measurement and verification in different Member States were gathered from the participants of the Concerted Action that are participants of the PERMANENT project and/or involved in the work of standardisation groups at European and international level dealing with measurement and verification in various fields.

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The Concerted Action for the Energy Services Directive II (CA ESD II) was launched by Intelligent Energy Europe (IEE) in May 2011 to provide a structured framework for the exchange of information between the 29 Member States during their implementation of the Energy Services Directive (ESD).

For further information please visit [www.esd-ca.eu](http://www.esd-ca.eu) or contact the CA ESD Coordinator Lucinda Maclagan at [lucinda.maclagan@agentschapnl.nl](mailto:lucinda.maclagan@agentschapnl.nl)

