



EPATEE

Final report

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The EPATEE project consortium

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The EPATEE PROJECT

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Funding programme

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 746265.

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EPATEE partners are either directly involved in policy making and implementation at the national level, or are in direct contacts with the national policy makers and implementers. The development and implementation of energy efficiency policies is well documented in existing NEEAPs. Emphasis is now put on finding out how effective the policies are. EPATEE results can be applied during the “final evaluation” of 2020 energy efficiency policies in the Member States. In addition to this, EPATEE broadened the scope of efficiency policies, looking beyond the current focus on EED and EPBD, which offers a good starting point for any post 2020 policies.

The EPATEE Project at glance

Several barriers limit energy efficiency policy evaluation. This results in a lack of quantitative data, and impedes evidence-based analysis required to distinguish effective from ineffective energy efficiency policies. EPATEE aimed at tackling this problem by raising the interest and capacity of policymakers and implementers. The project provided them both with tools and with practical knowledge to make effective impact evaluation an integral part of the policy cycle.

EPATEE made use of existing evaluation experiences in a range of instruments, such as energy efficiency obligation schemes, regulations, financial incentives and voluntary agreements. Experience sharing was at the core of the project. Lessons learnt from other EU initiatives and good practices in how to successfully evaluate the impact and cost-effectiveness of such energy efficiency policies provided the basis for the development of guidelines and good practice evaluation tools available at www.epatee-toolbox.eu/.

The major focus group of EPATEE was policymakers and policy implementers. Therefore, this group was at the centre of communication activities. Nevertheless, policy evaluation impacts a much larger audience, since many more actors are concerned by the quality and effectiveness of energy efficiency policies.

The project involved key stakeholders over the whole project cycle through interviews, surveys, national and European workshop, webinars and direct support activities. This report provides a summary of the key outcomes and findings of the EPATEE project including the stakeholder work done.

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1 | Main EPATEE findings and achievements

EPATEE (Evaluation Into Practice to Achieve Targets for Energy Efficiency) was a Horizon 2020 funded 30-month project implemented by a consortium of 10 partners from 8 European countries. The main findings and achievements of the project can be summarised as follows:

How to accurately assess the efficiency of a policy?

The EU Directives on energy efficiency such as the Energy Efficiency Directive (EED) or the Energy Performance of Buildings Directive (EPBD) trigger a great variety of policies in EU Member States. But how effective are these policies in achieving energy savings targets? Several barriers limit policy evaluation and thus hinder evidence-based adaptations and continuous improvement of energy efficiency policies. EPATEE aimed at closing gaps in making evaluation an integral part of policy design, by providing practitioners with hands-on support and online tools with interfaces making it easy for users to find resources corresponding to their specific questions.

Engaging and activating policy makers and implementers

EPATEE aimed at raising the capacity of policymakers and implementers for policy evaluation by providing them with tools and practical knowledge. This support is based on the analysis of existing evaluation experiences regarding a range of policy instruments, such as energy efficiency obligation schemes, regulations, financial incentives and voluntary agreements. Lessons learnt from these examples provide the basis for the development of guidelines and good practice evaluation tools.

The tools were not only developed but also presented and discussed with stakeholders in a large number of stakeholder events such as EU and national workshops, webinars and direct support activities. The outputs of these events are available on the EPATEE website epatee.eu/

How and what can we learn from the EPATEE tools for ex-post evaluation?

The Online Toolbox (www.epatee-toolbox.eu/) is the instrument developed by the EPATEE consortium to fulfil its 'tools and capacity building' goal. It provides general guidance on ex-post evaluation of energy efficiency policies as well as support in specific evaluation situations.

Besides that, the Toolbox assists users in finding references of interest in the form of reports, studies or good practice guides via the Knowledge Base and Case Studies and of General Guidance content via its "Evaluation principle and methods" section.

The Online Toolbox thus gathers the access to all the EPATEE resources from a single interface that guides the users according to their questions. It makes it easy for users to navigate among the many resources developed, finding the information they need without being overwhelmed.

After the project

EPATEE aims at continuing the experience sharing about evaluation practices after the end of the project. The project explored possibilities to keep the EPATEE outputs available and accessible via multiple channels. Cooperation with ODYSSEE-MURE, Energy Evaluation Europe and E3P will ensure that the contents of the Online Toolbox and the webinars will remain visible for a longer time.

2 | Organisation of the EPATEE work

The overall approach of EPATEE was based on the concept of European cooperation, creating substantial added value through identification, sharing and adaptation of European effective practices in ex-post policy evaluation. In order to enable policymakers to assess the effectiveness of energy efficiency policies, EPATEE's methodology was based on three steps for assessing the impact of actions on energy consumption:

ASSESS

Policymakers were at the centre of EPATEE. Therefore a first step was to identify key stakeholders all around Europe based on the very strong network of actors in the field of energy efficiency of all project partners. To allow tailor-made and targeted actions, the needs and priorities of key stakeholders were assessed via personal meetings as well as surveys. Based on the findings of this assessment, current ex-post impact evaluation practices were analysed. In doing so, EPATEE realized synergies with other EU projects such as ODYSEEE-MURE, ENSPOL, multEE and the CA EED.

IMPROVE

This phase was designed to lay the ground for improving key stakeholders' capacity for putting evaluation into their energy efficiency policy practice. Lessons learnt from other EU initiatives and good practices in how to successfully evaluate the impacts of energy efficiency policies provided the basis for the development of guidelines and good practice evaluation tools. These resources were integrated into a smart online toolbox that acts as a platform facilitating capacity building and experience sharing. The online toolbox interactively assists its users to pick the right tool and/or find the right information for their specific situation.

ENABLE

The guidance resources that were developed and applied in activities with key stakeholders aimed at raising their capacity. This was done with the help of regular exchanges with stakeholders through meetings, and by conducting targeted peer-learning workshops and webinars for policy makers and implementers. EPATEE provided policymakers with direct support in how to improve ex-post policy impact evaluation and how to sustainably integrate this aspect in the policy cycle. Consequently, resources were allocated to one-on-one support.

In addition to these quality-oriented and targeted scale communication channels, findings were also shared with a broader audience through press releases, newsletters and other means of dissemination such as Twitter.

3 | Dissemination

The EPATEE project concluded a comprehensive dissemination strategy. This strategy complemented the stakeholder consultation and served to assure a successful dissemination of the EPATEE project outcomes and results to the targeted audience.

The general communication tool with the broader public is the EPATEE website www.epatee.eu.

For broader communication 3 press releases – one at the beginning and the end of the project and one at the publication of the EPATEE online toolbox – were prepared and distributed.

5 newsletters informed a broad audience about latest developments in the project, advertised new information available online and invited to peer-learning workshops, surveys, conferences, and webinars. In addition to the distribution lists, press releases and newsletters were shared via Twitter (41 Tweets).

All press releases as well as newsletters are available at epatee.eu/news



Source: twitter.com/epatee_eu

Furthermore all material produced within the project is available from the project website www.epatee.eu. This includes the online toolbox, all reports, presentations as well as proceedings from all workshops.

The EPATEE webinars were all recorded and can be accessed via the project website at epatee.eu/events-webinars.

EPATEE results and tools were also presented at 15 external events of different nature (e.g. international conferences, workshops organised by the European Commission, stakeholders' seminars) and reaching different types of audiences (e.g. evaluation experts, Member States' representatives, private stakeholders). This has ensured a large outreach.

The list of these events and the corresponding presentations can be found on the project website: <https://epatee.eu/events-presentations-dissemination>

The outputs of EPATEE have also raised the interest of researchers and other projects. 11 external quotes of EPATEE in external papers or reports could already be identified:

1. Aldrich, E. L., & Koerner, C. L. (2018). White certificate trading: A dying concept or just making its debut? Part I: Market status and trends. *The Electricity Journal*, 31(3), 52-63. <https://doi.org/10.1016/j.tej.2018.03.002>
2. Aldrich, E. L., & Koerner, C. L. (2018). White certificate trading: A dying concept or just making its debut? Part II: Challenges to trading white certificates. *The Electricity Journal*, 31(4), 41-47. <https://doi.org/10.1016/j.tej.2018.05.006>
3. Dudek, J., Szlagowski-Budacz, P. (2019). The Just Energy Transition Fund - Fostering Energy Transition, Countering Economic Inequality and Boosting EU Legitimacy. Working Paper of the Polish Economic Institute. <http://pie.net.pl/wp-content/uploads/2019/10/PIE-JET-fund.pdf>
4. EeMAP (2019). D5.4: Final report on the correlation between energy efficiency and probability of default. Report of the EeMAP project. https://eemap.energyefficientmortgages.eu/wp-content/uploads/EeMAP_D5.4_EMF-ECBC.pdf
5. Franzò, S., Frattini, F., Cagno, E., & Trianni, A. (2019). A multi-stakeholder analysis of the economic efficiency of industrial energy efficiency policies: Empirical evidence from ten years of the Italian White Certificate Scheme. *Applied energy*, 240, 424-435. <https://doi.org/10.1016/j.apenergy.2019.02.047>
6. Hofman, E., & Oikonomou, V. (2018). Roadmaps monitoring. Report of the Publenef project. <http://publenef-project.eu/wp-content/uploads/2019/01/PUBLENEF-D3.4-final.pdf>
7. InventAir (2018). Report on the energy poverty and air quality status in the Eastern European Countries. Report of the InventAir project. <https://www.inventair-project.eu/images/IA-Status-report.pdf>
8. Kahma, N., Ertiö, T. & Nuotiomäki, A. (2018). Deliverable 6.1 –Segmentation Analysis. Report of the ECO2 (Energy Conscious Consumers) project. <http://eco2project.eu/wp-content/uploads/2018/12/D6.1-Segmentation-Analysis.pdf>
9. Papy, M. (2019). EPATEE – Autour de l'évaluation des politiques d'efficacité énergétique. <https://www.linkedin.com/pulse/epatee-autour-de-l%C3%A9valuation-des-politiques-defficacit%C3%A9-margaux-papy>
10. Wiese, C., Cowart, R., & Rosenow, J. (2019). Auctioning revenues to foster energy efficiency: status quo and future potential within the European emissions trading system. Proceedings of the ECEEE 2019 Summer Study. https://www.ecee.org/library/conference_proceedings/ecee_Summer_Studies/2019/2-whats-next-in-energy-policy/auctioning-revenues-to-foster-energy-efficiency-status-quo-and-future-potential-within-the-european-emissions-trading-system/
11. Zachmann, G., Fredriksson, G., & Claeys, G. (2018). The distributional effects of climate policies. Bruegel. Blueprint Series 29. <http://bruegel.org/wp-content/uploads/2018/11/DistributionalEffectsofClimatePolicies.pdf>

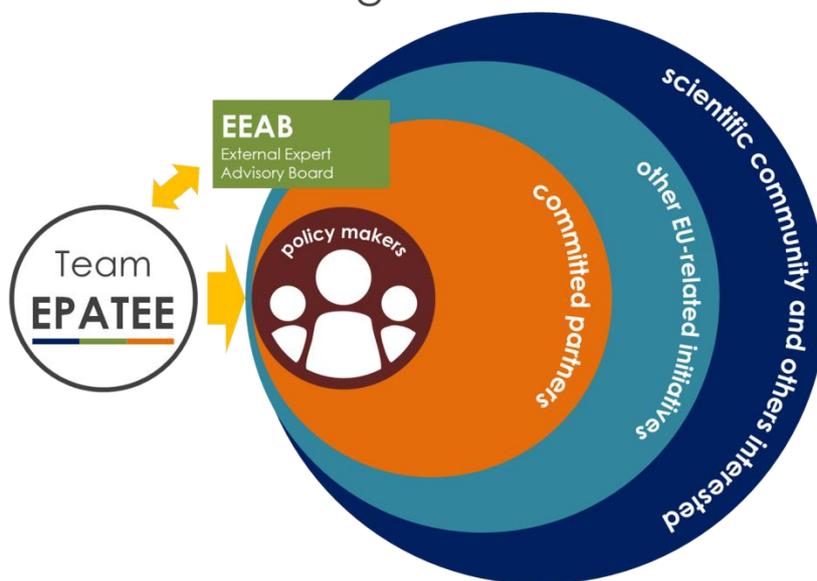
While the EPATEE project was not a research-oriented project in itself, this shows that the outputs of the project have contributed to the development of the knowledge and research in the field of evaluation of energy efficiency policies. The list above is not exhaustive, and based on the feedback about the project, more quotes in the coming years are expected.

4 | Stakeholder work

As mentioned before, policy implementers and evaluators were the main target group of EPATEE. However, from the beginning, the project also approached other stakeholders. Thus communication, dissemination and exploitation of project results addressed all relevant stakeholders:

- Policymakers and policy implementers
- National ministries responsible for energy or energy related issues
- Energy agencies, public funds or research institutions
- Professional bodies and interest organisations (representing industry, energy, SME, NGOs etc.)
- Other EU initiatives and projects as well as EU institutions
- Universities and other scientific organisations
- Special interest media

EPATEE's coverage



The aim of the stakeholder involvement was to develop tailored engagement approaches and implement them to ensure effective engagement of all key stakeholders at the EU and national level. The feedback loops with stakeholders were essential in guiding the development of the EPATEE tools, ensuring that the project covered stakeholders' priorities in a way that is useful to their work.

To achieve this goal the following stakeholder activities were performed

- Interviews with key stakeholders
- Surveys on evaluation practices
- EU peer-learning workshops
- National peer-learning workshops
- Webinars
- Direct support activities

4.1 Interviews and surveys with key stakeholders

The interviews with **30** key stakeholders were performed at the beginning of the project to get qualitative feedback and identify the first needs and priorities for the project activities. The results from these interviews directly fed into the further project activities.

Within the project duration **3** online surveys were conducted to gather additional information and feedback for the project activities.

These two activities provide the project with **131** answers from stakeholders.

The reports summarising the outcomes from the interviews and the surveys can be found here: epatee.eu/reports

A short synthesis of the methodology and results of the interviews and first survey can also be found in the paper presented at the IEPPEC conference in 2018: <https://energy-evaluation.org/wp-content/uploads/2019/06/2018-broc-paper-vienna.pdf>

4.2 Workshops

EPATEE organized two kinds of workshops:

- EU peer-learning workshops
- National peer-learning workshops

The aim of **EPATEE's European Peer-Learning Workshops** was to provide a platform for stakeholders to exchange knowledge and discuss existing practices of the evaluation of energy efficiency policies. The workshops served at achieving one of EPATEE's main targets: to enable user-oriented experience sharing and capacity building. The workshops in the beginning of the project were used to gather inputs and views from stakeholders in order to create tailor-made products of the project. The following workshops were used to disseminate and present in real time the tools developed within the project. Finally all workshops enabled stakeholders to learn from specific evaluation experiences from others, with presentations by experts from public authorities or other organizations involved in evaluations. This type of hand-on feedback was very much appreciated by all participants..

The European Peer-Learning Workshops took place in Paris, Vienna, Rome and Brussels all of them giving different stakeholders the opportunity to get informed and discuss current issues on policy evaluation. The workshops attracted **105** stakeholders in total and **26** persons on average.

The **EPATEE National Peer-Learning Workshops** served at disseminating and discussing the project results on a national level in national languages. 5 such workshops – in France, Germany, Croatia, Lithuania and Finland – were organised during the project. The workshops attracted **149** stakeholders in total and **30** persons on average. In addition a national webinar was organised in Finland.

All outputs of the workshops are available at the EPATEE website at epatee.eu/events-workshops

4.3 Webinars

Two kinds of webinars were organised within the project

- Dissemination webinars
- Experience sharing webinars

The **dissemination webinars** served at showing EPATEE results and focussed on the main tools of the project – knowledge base, case studies and online toolbox.

The **experience sharing webinars** included specific examples of conducted evaluations presented by stakeholders or evaluation experts, and allowed extra time for questions and answers and discussions.

For all webinars, synergies with other initiatives were explored. The EPATEE webinars were all recorded and can be accessed via the project website at epatee.eu/events-webinars. They can also now be found among the resources of the Energy Evaluation website (<https://energy-evaluation.org/resources/?type=webinars#search>), which increases their visibility beyond the life of the project.

4.4 Direct support activities

Some questions on good evaluation practice might not be answered with the help of dissemination activities of the EPATEE project. In order to cater for the specific needs of policymakers and implementers, EPATEE provided them with direct support in preparing for or conducting good policy evaluation. Budget was allocated to enable direct support for preparing and/or analysing evaluations of policies. This allowed enough flexibility to react to customers' needs and develop bespoke solutions.

Even a peer-learning workshop or a webinar leaves participants behind with certain questions that cannot be dealt with on the spot. EPATEE did not want to leave policymakers and implementers there but walked the extra mile with them individually to cater for their specific needs. EPATEE provided them with direct support in preparing for or conducting good policy evaluation.

The support mainly consisted of bilateral collaboration between an expert from the consortium and a stakeholder. The support was provided in addition to other activities already planned in EPATEE, such as workshops and webinars.

An example of such a direct support activity is the students' project conducted with EPATEE. Students of the Nuertingen-Geislingen University prepared a case study on the German KfW Energy-efficient refurbishment programme, categorised eight reports and studies on evaluation according to the criteria defined for the EPATEE Knowledge Base and helped with the improvement of the EPATEE Online Toolbox by testing its functionalities, reporting errors and answering a questionnaire on the contents of the Online Toolbox to ascertain its usability.

Another example is the organisation of a small group meeting, as a complement to the EU workshop in Rome, where public bodies of Denmark, France and UK could exchange in details about their own experiences with the evaluation of EEOS. This happened while ADEME was starting the evaluation of the French EEOS. These exchanges were used directly to overcome difficulties encountered in this type of evaluation.

One output of the direct support activities can be found in one of the presentations made at the EU workshop in Brussels:

https://epatee.eu/system/tdf/05_epatee_eu_linkages_ademevf.pdf?file=1&type=node&id=95&force=1

This direct support activity looked at the linkages between energy-climate EU directives, EU regulations and rules for policy evaluation.

5 | A library of evaluation experiences

5.1 Case studies

The case studies were not selected to provide a sample representative of the evaluation practices in Europe, but to cover the diversity of situations in view of experience sharing. Almost all main types of policy instruments and sectors are thus included in the set of case studies.

One major added value of the case studies is that they include an interview with either the evaluation customer or main evaluator (or both, in some cases). In addition to the systematic analysis of the evaluation methods and data, these interviews provided a rich and hands-on feedback about why evaluations were made, what difficulties were encountered (in the evaluations), and what was learnt about the policies evaluated, their process and results, as well as about the evaluation practices and how to improve them.

In terms of methods to evaluate energy savings, the case studies show that engineering calculations were the most frequently used for regular reviews or monitoring, whereas it was billing analysis for multi-year in-depth ex-post evaluations (together with further analyses of the data from regular reviews). More generally, the choice of evaluation methods is strongly connected to the priority evaluation objectives (e.g., short-term reporting/feedback loop, verification of actual energy savings).

Data about energy savings mostly correspond to gross energy savings (i.e., using a baseline being the energy consumption before implementing actions and not applying any adjustment factors). In the majority of the 23 case studies, factors used to assess net or additional energy savings (free-rider effects, spill-over effects or additionality) were indeed not evaluated or taken into account.

It is noticeable that no example of quantitative assessment of spill-over effects could be found among the 23 case studies. Likewise, information about analyses of market transformation effect was found in only 3 cases. This could therefore be a topic where further investigations could be needed.

In addition to the overview given in part 1, the systematic review of the case studies made it possible to draw lessons learnt for experience sharing, from a more qualitative and practical point of view:

- MESSAGE 01: Evaluation is not a burden, but an opportunity.
- MESSAGE 02: Evaluation priorities depend on who the primary audience is.
- MESSAGE 03: Evaluation helps increasing stakeholders' confidence in the schemes.
- Lessons learnt from 23 evaluations of energy efficiency policies – Volume I
- MESSAGE 04: Monitoring and data collection are essential for making any evaluation possible.
- MESSAGE 05: Selecting the most relevant data to collect is a continuous process.
- MESSAGE 06: Regular review and in-depth ex-post evaluations are complementary.
- MESSAGE 07: The choice of evaluation methods depends on evaluation objectives but also on practical constraints.
- MESSAGE 08: Comparing different methods helps assessing the robustness of the results.
- MESSAGE 09: Evaluating net impacts is a challenge, but essential to assess efficiency of policies.
- MESSAGE 10: Good data is well-documented data.
- MESSAGE 11: Communication about evaluation results can be as important as doing the evaluation.

Feedback from stakeholders highlighted the interest and importance of expanding the scope of evaluation to consider other impacts than energy savings and to look at how the schemes work and why results are achieved or not.

Finally, three key debates were raised along the interviews done for the case studies: independency of evaluation, if it is relevant to assess net energy savings and choosing between results based on estimates and results based on measured or metered data.

Two following reports give more information on the findings of the case studies:

- Report on key findings
- Background report

In addition, three topical case studies were done to analyse more in details three key issues identified as critical along the case studies and exchanges with stakeholders:

- how to assess net energy savings;
- how to compare energy savings based on estimates and energy savings based on measured or metered data;
- how to improve the linkage between monitoring and evaluation.

The topical case studies included a targeted literature review together with examples taken from the other case studies, to illustrate how the issues have been tackled in practice.

Both reports as well as individual and topical case studies are available on the EPATEE website: epatee.eu/case-studies

The case studies are also included in the Online Toolbox.

5.2 Knowledge Base

In the framework of EPATEE, a Knowledge Base was developed and made available in the result section of the EPATEE webpage (www.epatee-lib.eu/). The objective of setting up such a database was to collect and make information available for experience sharing and capacity building, but neither to be representative nor exhaustive. It includes about 258 entries.

The Knowledge Base comprises bibliographic as well as other information about the main features of the studies such as on type of study, type of policy instrument, sectors, geographical scope, language, year of publication, type and objective of evaluation, data collection and calculation methods as well as on the baseline scenarios, normalization and adjustments effects and impacts apart from energy savings. The type of studies comprise empirical (evaluation reports and papers) and analytical (guidelines, methodological and meta-evaluation papers) publications. The priority was on collecting studies about ex-post evaluations done in Europe. However publications from outside Europe or about ex-ante evaluations were also included when relevant.

A large bulk of evaluations comes from the United Kingdom. This is grounded on the fact that in the UK, evaluations of policies have been part of the policy packages for many years and that English was the common language of the project team. Evaluations in other languages were indeed more difficult to find, as they might not be well referenced in search engines or might not be available online at all. There might be strong bias towards known publications, country coverage and language. The residential sector, which typically employs financial or fiscal support measures, is largely presented in

the Knowledge Base. This can be partly explained by the emphasis put on these policies in Member States' energy efficiency strategy. At the opposite, agriculture gets little notice, which is also reflected by the fewer number of policies for this sector in the NEEAPs. Aiming at a sample of studies representative of evaluations done in EU Member States would have required an extensive survey that was not possible within this project. This limitation restricts the possible quantitative conclusions that may be drawn regarding coverage, usage or practice of evaluations. However, a particular attention was paid to gather studies that enable to cover a broad diversity of situations.

All information of the Knowledge Base is also accessible via the EPATEE Online Toolbox (www.epatee-toolbox.eu/). The online search of the Knowledge Base allows searching in both a simple search (Search by categories as indicated) and advanced type of search.

Search by Categories

Year of publication: 1984 — 2017

Language: None selected ▾

Study type: None selected ▾

Type of policy instrument: None selected ▾

Sector: None selected ▾

Geographical scope: None selected ▾

▼ ADVANCED SEARCH

SEARCH CLEAR ALL

Project
EPATEE
 A project to improve the Energy Efficiency policies, by improving their evaluation

Contact
 Fraunhofer Institute for Systems and Innovation Research ISI
 Competence Center Energy Policy and Energy Markets

Information on funding
 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 746265.

The simple search allows searching by type of study, policy instrument, sector and geographical scope. An advanced search is feasible allowing for searching by all criteria as outlined in the section overview of the current content of the Knowledge Base (see figure below).

Multiple selections within a category are possible. That is, a user can search for more than one policy type or sector. In addition, the studies are linked to the more detailed case studies about particular policy evaluations or evaluation methodologies that were elaborated in the EPATEE project.

Search by Categories

Year of publication
1984 2017

Language
None selected ▾

Study type
None selected ▾
 Evaluation report
 Evaluation paper
 Methodological paper
 Meta-evaluation
 Guidelines
None selected ▾

Type of policy instrument
None selected ▾

Sector
None selected ▾

Geographical scope
None selected ▾

Objective of evaluation
None selected ▾

Data Collection
None selected ▾

Calculation method
None selected ▾ ⓘ

Baseline / counterfactual
None selected ▾

Savings data presentation
None selected ▾

Normalisation factors
None selected ▾

Effect adjustments
None selected ▾

Cost data
None selected ▾

Uncertainty analysis
None selected ▾

Other impacts
None selected ▾

Case Study available
None selected ▾

SEARCH CLEAR ALL

Figure 1: Advanced search option in the Knowledge Base

The output of the online search contains all information on the criteria that are selected as well as the title of the study, a short summary in English language, the internet address (if available) and the study as pdf if available and publicly accessible.

A report giving more details on the insights from the work on the Knowledge Base is available on the EPATEE website: epatee.eu/knowledge-base.

An interesting result from the review of the Knowledge Base is that, based on the analysis of the references gathered, it could be identified that evaluation issues tend to be increasingly included in the evaluations done, once guidelines about how to take these issues into account are available. Which supports the general concept of the EPATEE project: the more guidance is available, the better the evaluations.

Another important message from the review of the Knowledge Base is that the level of documentation of the evaluations varies significantly from one case to the other. The lack of documentation decreases the value of the evaluations, as it creates difficulties for the analysis of the results. This can also reduce the transparency of the evaluations, and thereby their credibility. Promoting a better and more systematic documentation of the evaluations is therefore essential.

The Knowledge Base is also part of the Online Toolbox.

5.3 Synthesis from Case Studies and Knowledge Base

EPATEE prepared a synthesis report (epatee.eu/reports) to bring together the learning from the Case Studies and the Knowledge Base. The analysis was conducted by researching coverage of the type of situations found in the outputs, geographical coverage, and frequency of evaluation issues and methods between these two EPATEE products.

The report summarises discussions related to standardisation/harmonisation of evaluation procedures and their feasibility, as well as the content from topical case studies focused on two major evaluation issues: 1) the link between monitoring and evaluation, 2) evaluation of net impacts.

While the Knowledge Base and case studies show a good coverage of Northern and Western Europe countries, more difficulties were encountered to cover the Central and Eastern European region and some of the countries in South-Eastern-Europe. Overall the Knowledge Base and Case Studies provide a good coverage of evaluations related to the different sectors and policy instruments. Cases about financial measures and the residential sector are the most represented ones. At the opposite, it is likely that further references could be needed to support guidance for evaluation of legislative measures and policies in transport. Feedback from stakeholders also pointed the particular difficulties that might be encountered when evaluating complex projects in the industry and services.

About the types of evaluation methods, searches for references for the Knowledge Base were done to cover all the types of methods, whereas the Case Studies were focused on bottom-up methods. When looking at bottom-up methods alone, cases dealing with engineering methods are more frequent than cases about measured or metered energy consumption, both in the Knowledge Base and the Case Studies.

Methods based on measured or metered data need more time to provide results, whereas engineering calculations can be applied directly to data collected along the monitoring of the policy measure. The need to report frequently about energy savings thus often leads to use engineering calculations. At the opposite, when ex-post evaluations include further efforts to evaluate energy savings, one of the main objectives is to assess actual energy savings (i.e. based on measured or metered data). The results from the billing analysis can then be compared to the results of the regular reviews, to improve the data or assumptions used in the engineering calculations.

More generally, the choice of evaluation methods is strongly connected to the priority evaluation objectives. The analysis of the Case Studies also confirmed that there is no “perfect” evaluation method to assess energy savings. All methods have advantages and limitations.

About correction and adjustment factors, performance gaps and pre-bound effects are not well covered in both, the Knowledge Base and the Case Studies, whereas direct rebound effects are more frequently dealt with in the references of the Knowledge Base than in the Case Studies. In the majority of the Case Studies, factors used to assess net or additional energy savings are not taken into account in the energy savings calculations. Consistently, energy savings found in regular reporting are most often gross energy savings. This is a difference with the Knowledge Base that includes a significant number of references dealing with free-rider effects, and to a lesser extent with spill-over effects. No example of quantitative assessment of spill-over effects could be found among the 23 Case Studies.

Interviews and surveys of stakeholders revealed their interest in evaluations looking at impacts other than energy savings. The evaluation of GHG emissions is by far the most frequent other impacts for which information could be found in the Knowledge Base and Case Studies. The distribution of the types of impacts is more balanced in the Case Studies, compared to the higher frequency of macro-economic impacts in the Knowledge Base. This might be partly because the analysis in the Case

Studies enabled to consider more types of impacts, with some of them being included in the single category “macro-economic impacts” in the Knowledge Base.

The review of the Case Studies also made possible to draw practical lessons learnt for experience sharing, from a more qualitative point of view. They were summarized in messages to be considered along the evaluation process.

The analysis of the Knowledge Base and the Case Studies showed that transparency, and therefore documentation, of the evaluation methods and results are essential for enhanced evaluation practices, and above all for a larger and better use of evaluation as a tool to strengthen energy efficiency policies. Such transparency and documentation also imply to have common terminologies, as a basis for shared understanding.

A synthesis about the contents of the Knowledge Base and the case studies can be found in the paper presented at IEPPEC 2018: <https://energy-evaluation.org/wp-content/uploads/2019/06/2018-broc-paper-vienna.pdf>

A synthesis about the main findings from the review of these contents can be found in the paper presented at ECEEE 2019:

https://www.eceee.org/library/conference_proceedings/eceee_Summer_Studies/2019/3-policy-and-governance/sharing-experience-to-spread-evaluation-practices-evaluation-does-help-to-improve-policies/

6 | Guidance for evaluation

Based on the Case Studies, the references in the Knowledge Base and further sources, EPATEE prepared an **Online Toolbox** for good evaluation practices.

The Online Toolbox offers information and guidance for practitioners on integrating evaluation practice in the policy cycle for energy efficiency policies.

The target group are primarily policy makers and evaluators, who are not necessarily experts in the field of evaluations and/or energy efficiency. But also persons with little knowledge in evaluation can get support and information. The online toolbox offers:

- General guidelines and ‘best practice’ examples on energy efficiency policy evaluation
- Guidance on logical steps of an evaluation
- Guidance on evaluation methodologies
- Guidance on different types of impacts
- Practical examples, with references
- do’s and don’ts
- Recommendations per sector, per policy measure, in different countries
- Recommendations and support on energy efficiency policy design
- Further readings

Depending on the issue the user is interested in, the appropriate main category can be chosen.

Evaluation principles & methods	Specific evaluation guidance	Knowledge base & case studies
Select this box if you have questions about evaluation principles, about why and how to plan & prepare evaluations or about cross-cutting issues.	Select this box if you have questions related to the evaluation of a specific combination of policy instrument, sector and/or a certain type of evaluation method.	Select this box if you looking for practical examples or references to additional information.

In the specific evaluation guidance part (green), the user can get detailed support for deciding which energy savings evaluation methods to choose for a specific policy and sector combination. Alternatively the user can research for which purposes a given method is best suited.

Type of policy	Sector	Type of method
<input type="checkbox"/> Legislative/Normative <input type="checkbox"/> Legislative/Informative <input type="checkbox"/> Financial support <input type="checkbox"/> Fiscal/Tariffs <input type="checkbox"/> Information/education <input type="checkbox"/> Voluntary and Cooperative <input type="checkbox"/> Market based instruments	<input type="checkbox"/> Buildings/residential <input type="checkbox"/> Buildings/non-residential <input type="checkbox"/> Households appliances <input type="checkbox"/> Services devices <input type="checkbox"/> Industry/specific <input type="checkbox"/> Industry/general <input type="checkbox"/> Agriculture <input type="checkbox"/> Freight transport <input type="checkbox"/> Passenger transport	<input type="checkbox"/> Measurement <input type="checkbox"/> Deemed savings <input type="checkbox"/> Engineering estimate <input type="checkbox"/> Stock Modelling <input type="checkbox"/> Billing analysis <input type="checkbox"/> Diffusion indicator <input type="checkbox"/> Energy indicator sector <input type="checkbox"/> Energy indicator equipment <input type="checkbox"/> Econometric modelling <input type="checkbox"/> Econometric price elasticity

Doing evaluation is not only about practical (e.g., data collection) or methodological (e.g., defining a baseline) issues. Organizational issues can be as important, and particularly when considering the planning and use of evaluation.

The report **“Guidelines on how to integrate evaluation into the policy cycle”** explores the connections between evaluation and the policy cycle, and how to make evaluation an integral part of policy management. As a starting point, the report briefly reminds why and how doing evaluation can help improve policies, and provide sources for general guidance on how to plan and prepare

evaluations. Then, the concept of policy cycle is introduced, explaining how it can be used to plan and analyse the different phases of policy development, and analysing how evaluation can be related to it. This shows how an integrated approach can be fruitful for both, policy developments and evaluation.

Based on usual ways to describe policy cycle and evaluation process, a simplified joint representation has been developed to illustrate how both processes could interact. This integration does rarely occur naturally, due to barriers. Feedback from stakeholders enabled to characterize and structure these barriers into categories. This framework was then used to present good practices in the form of actions that can be done by persons or units in charge of evaluation within public bodies, to tackle these issues and facilitate the integration of evaluation into the policy cycle.

The report is available on the EPATEE website: epatee.eu/reports

7 | Interactions with other initiatives

EPATEE got in contact with all relevant actions and projects that could benefit from the work done in the project. 4 activities are especially worth mentioning in this context:



The project could inform on its products but also get valuable feedback from policy implementers at two plenary meetings of the Concerted Action EED. Interim results were presented and discussed in March 2018 in Vienna. The final outputs of the project were presented in Zagreb in October 2019. The respective presentations are available on the CA EED website (www.ca-eed.eu).

The second EU peer-learning workshop of EPATEE was organised in conjunction with a stakeholder workshop of the ODYSSEE-MURE project and merged to a joint workshop. With this approach, more stakeholders could be attracted and relations between the two projects could be deepened. Moreover, the ODYSSEE-MURE now includes on its homepage a direct link to the EPATEE website.

ODYSSEE-MURE



The project consortium submitted a number of papers for the IEPPEC conference (now Energy Evaluation Europe) in summer 2018. EPATEE was present at the conference with 5 presentations (epatee.eu/events/epatee-ieppecc-2018-austria)

8 | Outlook

The EPATEE project was finalised in the end of October 2019. However, the dynamic to develop evaluation practices and related experience sharing does not stop. We aim at continuing the experience sharing about evaluation practices after the end of the project.

The EPATEE website will remain available at least until October 2021. The Knowledge Base and the Online Toolbox will continue to be hosted. An alternative access to both tools has also been created as part of the current update of the ODYSSEE-MURE (www.odyssee-mure.eu/) website. This other Horizon 2020 project already has a long history and its website has a large audience, ensuring a renewed visibility for the EPATEE tools and their dissemination.

The EPATEE webinars will continue to be available on YouTube (www.youtube.com/channel/UCO7HQY4G96pEFoFEU5k6EYA). Their descriptions and the presentation files have been included in the resources of the Energy Evaluation website (energy-evaluation.org/resources/). Similarly to ODYSSEE-MURE, this will ensure a renewed visibility for the EPATEE webinars.

Further on, the project is aiming at uploading the Case Studies to E3P, the European Energy Efficiency Platform operated by the JRC (e3p.jrc.ec.europa.eu/).

In parallel, to ensure the availability and visibility of the resources developed by EPATEE, another important point to maintain the dynamic is that other projects or initiatives can offer forums to continue the exchanges and discussions initiated along the EPATEE project:

- The Concerted Action EED (CA EED www.ca-eed.eu/) through its Domain 1 about “Planning, monitoring and verification and savings calculations”
- The ODYSSEE-MURE project that includes a facility about impact evaluations, and organizes workshops and training sessions
- The association Energy Evaluation (formerly IEPPEC energy-evaluation.org/), whose activities are focused on promoting the evaluation of energy efficiency policies: a conference in Europe every two years, a series of webinars jointly organized with Leonardo Energy, a website including the proceedings of the previous conferences and webinars.