



# FINAL REPORT

**Authors:** Georg Vogt (EMP), Tatiana Novikova (EMP), Karolina Junak (KAPE)



**Tuning EPC and SRI instruments  
to deliver full potential**



## TABLE OF CONTENTS

|                                                           |          |
|-----------------------------------------------------------|----------|
| <b>Executive Summary .....</b>                            | <b>3</b> |
| <b>Desk research: Good practice collection .....</b>      | <b>4</b> |
| <b>Analysis of status quo: stakeholder survey .....</b>   | <b>4</b> |
| <b>Define the problem and objectives .....</b>            | <b>5</b> |
| <b>Development of policy options.....</b>                 | <b>7</b> |
| <b>Analyse the impacts with a clear methodology .....</b> | <b>8</b> |
| <b>Next steps and continuation of our spirit .....</b>    | <b>9</b> |

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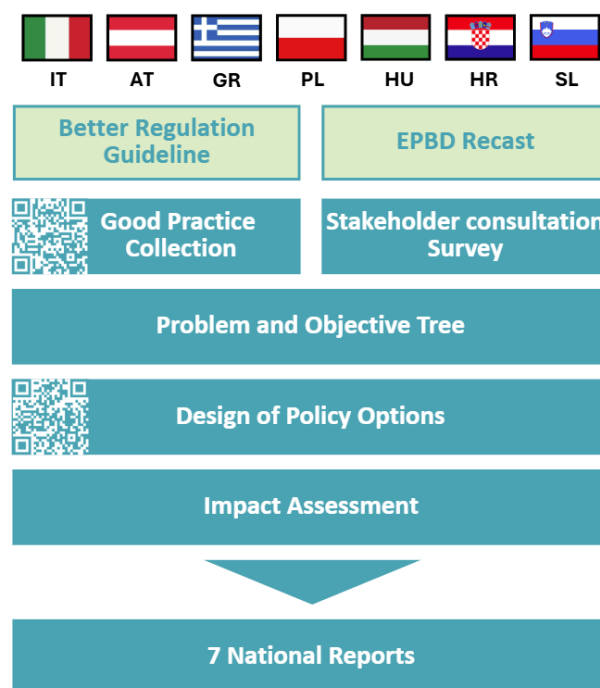
## Executive Summary

In the tunES project **seven National Energy Agencies** analysed the best possible implementation of the revised EPBD covering EPCs, BRPs and SRIs. The core goals are to overcome national problems and maximise energy efficiency gains from these instruments, while minimising administrative burdens and transaction costs for stakeholders.

tunES utilises the European Union's '[Better Regulation Guideline](#)' (BRG) which is used by the European Commission to prepare and reason legislative and regulatory proposals. The [BRG Toolbox](#) is a collection of 69 tools which has been iterated and improved over almost two decades. The guiding principles are designed to ensure evidence-based policy-making, involvement of all relevant stakeholders, and simpler, better legislation that avoids unnecessary burdens.

This LIFE project deploys the 'Impact Assessment' (IA) method in a simplified and tailored form for national-level use. The capacity building effort with seven assessments running in parallel enabled seven energy agencies - Austria (AEA), Croatia (EHIP), Greece (CRES), Hungary (EMI), Italy (ENEA), Poland (KAPE) and Slovenia (JSI) - to exchange at each step with the support of four research partners (UNICAS, DTU, LUT) lead by experienced BRG experts from EMPIRICA.

The outcome is **seven national reports** for their respective national ministries serving as the basis to prepare national legislation. The reports cover a problem analysis with



problem tree, objective tree, the design of policy options (based on available best practice), the description of the baseline (i.e. the status quo of the instruments), the qualitative assessment on significant impact areas, the quantitative analysis of effectiveness and efficiency, multi-criteria analysis and the recommendation of the preferred option. The annexes describe the data collected from stakeholders through survey, interviews and workshops, as well as the underlying model and core references. Whether or not the report will be published is decided on national level.

All tools developed for the project are [publicly available](#) enabling any national energy agency to replicate the analysis.

The following sections provide more detail on the method and results.

## Desk research: Good practice collection

Any policy changes should consider already available good practice across Member States and those developed in recent Horizon 2020 and LIFE projects. Our **good practice collection** identified, described and iterated already successful or currently tested practices on EPC and SRI design, deployment and implementation.

We **collected 83 practices** with some support of the community (the editable version remains available, including through the Next Gen EPC cluster) covering 18 EU projects. Each practice is linked to at least one of the following building blocks:

- **Understanding EPC** collects practices on how the EPC itself, or linked results can be better understood by all involved stakeholders.
- **Upgrading EPC** collects practices on improving and optimising EPC methodology, generation process or indicators.
- **Databases and Tools** collects practices on (existing or new) data infrastructure and tools requiring central or federated data management.
- **SRI Development and Deployment** collects practices implementing SRI calculation methodology and the necessary processes as well as linked use cases.
- **Integration of Instruments** collects practices that integrate EPC and SRI and/or achieve harmonisation, efficiency and interoperability across EPC, SRI and other tools.

## Analysis of status quo: stakeholder survey

Whilst energy agencies are well familiar with the instruments, there may be differences in the assessment or incomplete understanding of the drivers. Therefore, BRG requires to conduct a large-scale, open consultation with affected stakeholders.

The tunES project conducted a **survey** and **interviews** across seven EU countries from April to August 2024 to evaluate the current state of Energy Performance Certificates and the Smart Readiness Indicators. The **detailed report is publicly available** and provides an analysis of the collected data, identifying challenges, opportunities, and regional differences in the implementation of these energy efficiency tools.

### Key findings:

1. **EPC understanding and standardisation:** While EPCs are widely recognised as important, concerns remain about their accuracy, user-friendliness, and quality of the underlying data. There is a need for standardisation and methodological improvements, particularly to make EPCs more understandable and valuable to end users.
2. **Dynamic data and methodological improvements:** Introducing dynamic data-based and calculation-based EPCs could significantly improve the accuracy and relevance of energy performance assessments. However, adopting these advanced methods faces challenges, including technical difficulties and the need for updated regulations.
3. **National databases:** There is strong support for creating comprehensive national databases that include all EPCs and the data used to develop them. These databases would enhance transparency, improve quality control, and provide valuable resources for future EPC development.
4. **SRI awareness and integration:** Although SRIs are less familiar to stakeholders, they are seen as having significant potential to drive the uptake of smart technologies and

improve energy efficiency. The report recommends setting a minimum SRI value for new buildings and integrating SRI calculations into existing EPC processes to simplify implementation.

5. **Regional differences:** The survey revealed significant regional differences in confidence towards the current EPC methodology. Countries such as Hungary and Slovenia showed greater confidence in their EPC frameworks, while Poland and Italy identified several areas for improvement. This suggests that a better understanding of EPC processes correlates with a reduced perceived need for upgrades.
6. **Leveraging best practices:** Successful practices identified in certain countries should be adopted to develop a more harmonised and effective EPC and SRI methodology across the EU. This includes adopting best practices in professional training, data management, and public communication.
7. **Challenges in integration:** The integration of EPCs and SRIs presents both opportunities and challenges. While the benefits of this integration are widely recognised, concerns about methodological complexity, data privacy, and adequacy of existing infrastructure must be addressed to ensure its successful implementation.

## Define the problem and objectives

Policy makers are to solve existing problems rather than “just” making legislation. Thus, the root causes of the current national EPC implementation problems and the foreseeable challenges of SRI and BRP require a dedicated analysis before the measure itself can be designed.

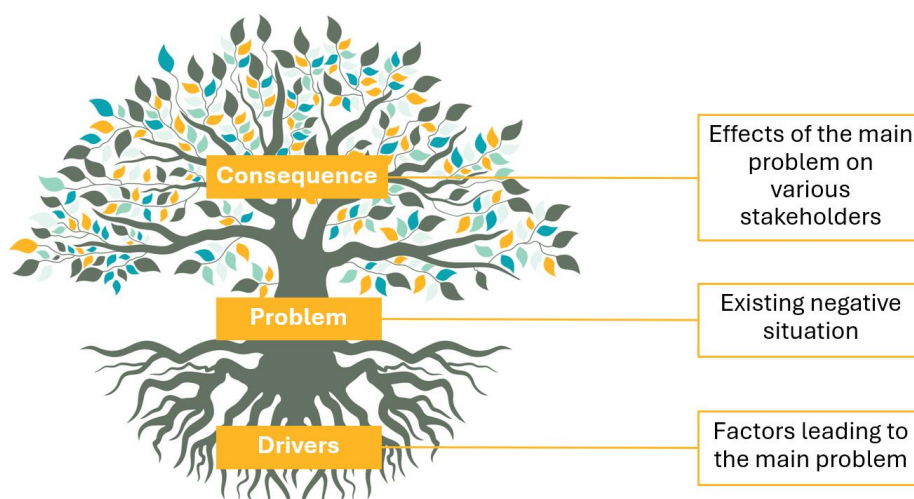
### Problem Tree

This tool visually maps out the main problem, its causes (drivers), and its consequences, following the approach outlined in Better Regulation Toolbox Tool #13. This tool helps to ensure that the scope of the problem is understood by considering potential causes and effects in the policy-making process.

The first step in a series of analytical approaches to resolve policy issues in their respective countries was for each energy agency to fill out its Problem Tree. The problem identification process followed Tool #13, in which agencies described the current situation and key challenges affecting EPC implementation. They also estimated the scale of these issues based on regional statistics.

The identification of the drivers was essential, as the policy measures aim to

Figure 1. Problem Tree

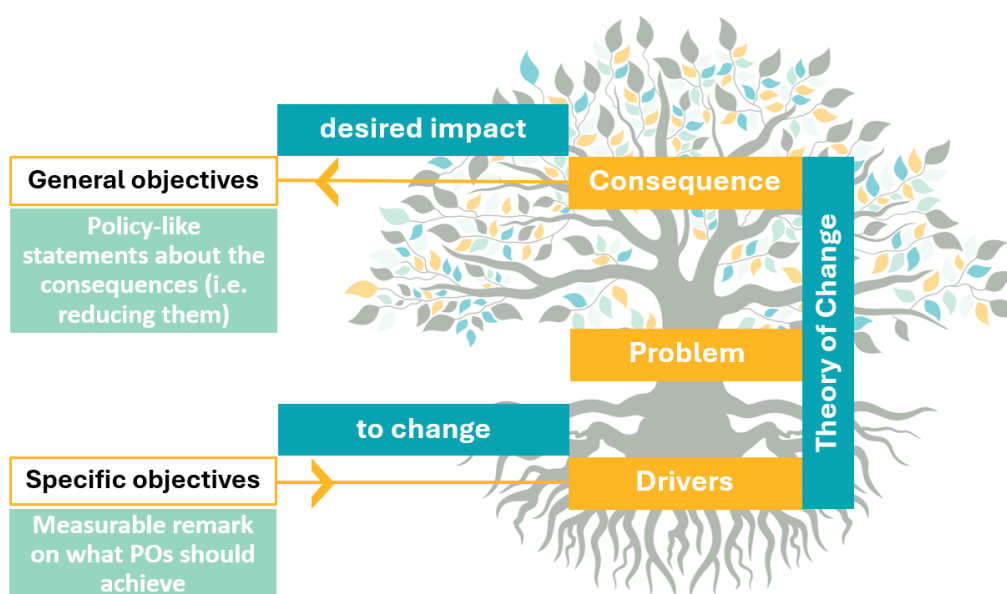


address them, which will ultimately affect the problem and its consequences. Following the BRG guidance, the agencies examined regulatory inconsistencies, technological limitations, and varying levels of stakeholder awareness, as well as external factors such as economic trends and technological advancements, which could influence the development of the problem.

## Objective Tree

The Objective Tree converts the identified problems and their drivers into specific and measurable goals, in line with the principles set out in Better Regulation Toolbox Tool #15: 'How to Set Objectives'. The objectives are derived directly from the problem analysis and are classified into general objectives (aligned with broader EU goals) and specific objectives (addressing the key drivers of the identified problems).

Figure 2. Objective Tree



The use of Tool #15 ensures that these objectives are precise, measurable, and time-bound, following the S.M.A.R.T. criteria:

- Specific - clearly defined
- Measurable – able to be quantified to measure progress
- Achievable - realistic and properly justified
- Relevant - linked directly to the Drivers identified in the Problem Tree
- Time-Bound - objectives within a specific timeframe to measure progress.

## Development of policy options

Once it is clear what needs to change, policy measures can be selected and organised into bundles called policy options. Multiple policy options should be designed so that they can be assessed for their respective impacts. Ideally, the policy options are sorted in order of ambition for achieving the objectives, starting with basic, over advanced to comprehensive.

Figure 3. Policy Option design

| Baseline         | PO1 (Basic)                                        | PO2 (Advanced)                                                            | PO3 (Comprehensive)                                           |
|------------------|----------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------|
| No interventions | Basic Measures -                                   | Advanced Measures + Some Basic Measures                                   | Comprehensive Measures + Advanced/Basic Measures              |
|                  | Simplest form of intervention with minimal changes | More significant changes involving regulatory and non-regulatory measures | Extensive interventions with significant regulatory overhauls |
|                  | Less intrusive, low cost, limited resources        | More comprehensive, higher costs, robust intervention                     | Highly ambitious, resource-intensive, coordinated actions     |

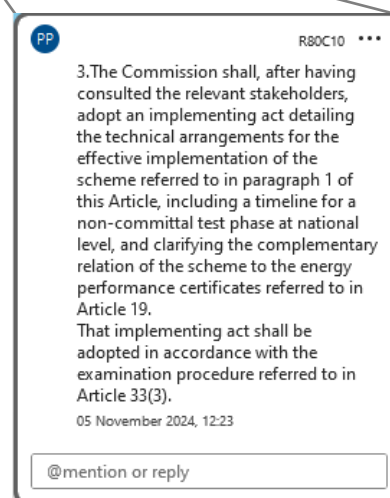
Given the analysis of tunES co-initiated with the release of the EPBD recast, the tunES project adopted the original approach and developed a publicly accessible [policy-measure selection tool](#) based on the changes to the EPBD. The design served multiple functions:

- Clearly identifying the baseline and thus demonstrating compliance with the EPBD recast;
- Providing the original legal text with references to existing guideline documents;
- Selection of up to five policy options with clear transparency on their differences across sections and articles.

Figure 4. Policy Option Selection tool

| Pillar     | Measure                                                                     | EPBD            | Baseline | P01 | P02.1 | P03.1 | Reject |
|------------|-----------------------------------------------------------------------------|-----------------|----------|-----|-------|-------|--------|
| Uptake-SRI | Participate in National Testing Phases for SRI                              | Art 15(2) - v   |          |     |       |       |        |
| Uptake-SRI | Participate in a Non-Committal National Test Phase for SRI                  | Art 15(3) - v   |          |     |       |       |        |
| Uptake-SRI | Clarify the Complementary Role of SRI in Relation to Energy Performance C   | Art 15(3) - v   |          |     |       |       |        |
| Uptake-SRI | Conduct awareness campaigns to help building owners and occupants und       | Art 15, R56 - v |          |     |       |       |        |
| Uptake-SRI | Engage stakeholders in the co-creation of SRI assessment tools and service- |                 |          |     |       |       |        |
| Uptake-SRI | Establish stakeholder dialogue to support SRI-related public funding schen- |                 |          |     |       |       |        |

The reference to the specific articles and original legal text is provided in comments in the EPBD column for better understanding of a policy measure and easier reference.



## Analyse the impacts with a clear methodology

The developed policy options need to be assessed. The final choice is to be based on the best available evidence free of biases. A common bias is that doing the ‘minimum’ required by EU directives is the cheapest option for any given Member States. Experience shows that this is not correct as some optional measures may solve existing inefficiencies.

A rigid and transparent methodology consisting of several steps is developed to analyse the key impacts of the policy options.

### Theory of Change

At the basis lies the [theory of change](#) (BRG Tool #32) which is based on the most recent research available on how policy can influence the behaviour of stakeholders regarding building performance, in particular energy efficiency and renewable energy measures.

The policy option influences the following factors to achieve the specific objectives identified for resolving the causes identified in the Problem Tree:

- **Access to information, awareness and understanding:** making EPC data accessible and available to both individual users and multipliers;
- **Accuracy of EPC:** improving the transparency and accuracy of EPC data;
- **Trust in EPC by individual building owners and multipliers:** enhancing reliability of the EPC process and data;
- **Efficiency (business and authorities):** improving the efficiency of administrative support and policymaking in energy efficiency sphere;
- **Integration of SRI:** implementation of SRI and integration with other systems and tools.

In combination these factors increase both the ability and the willingness to act. This makes the following desired actions more likely. Thus, the factors influence the behaviour of stakeholders, individual building owners, and multipliers (eligible parties, such as financial institutions, aggregators, energy suppliers and energy services providers):

- **Deeper renovation:** building owners and multipliers are motivated for processing deep renovations;
- **Additional renovation:** building owners and multipliers recognise the effectiveness of additional renovations;
- **Renewable energy sources and storage:** ensured higher rate of RES installation and usage.

### Cost-benefit Analysis (CBA)

The theory of change is implemented in the cost-benefit analysis tool which models the **effectiveness** (e.g. energy savings, emission reductions) and **efficiency** (i.e. costs and benefits for all stakeholders) as outlined in BRG Tool #63. The model provides data which can be used to assess to which degree each policy option achieves the foreseen objectives. The CBA is implemented as an Excel tool which energy agencies and ministries can request free of charge.



## Qualitative Assessment

The qualitative assessment (BRG tools #30 and 36) is based on several data sources. These include stakeholder consultations, national workshops, survey, interviews, and desk research. The impact areas assessed include **economic**, **environmental**, and **social** impacts constituting:

- Efficiency of public authorities and businesses which also include administrative burden;
- Energy savings and resulting savings in cost of energy;
- Employment level;
- Health and wellbeing.

## Multi-criteria Analysis

Multi-Criteria analysis is used to consider different policy options that go beyond economic measures and involve both quantitative and qualitative data structures as set out in BRG tool #62. The approach involves comparing these alternatives based on pre-defined dimensions, objectives, and criteria. Aside from **efficiency** and **effectiveness**, it considers **coherence** (i.e. how well each policy options corresponds with other related legislation) and **proportionality** assessing the extent to which each policy option is limited to what is necessary to achieve the objectives (i.e. ensuring it does not affect any stakeholder unduly). The findings of these assessments are translated into scores to enable the policy options to be compared.

## Roll-out pathway

Once the preferred policy option had been identified, the energy agencies designed a roll-out pathway **planning all the steps** to enact the option. They collected and described the required actions, providing estimated timings for the implementation of the policy option. This structured approach simplifies the policy-making process, providing policymakers with a practical roadmap to anticipate challenges and adjust measures when necessary.

## Next steps and continuation of our spirit

All energy agencies have successfully adopted this structurally complex and intellectually challenging approach. The national reports are to be finalised in September and will be presented at a final event in Zagreb. So far, all seven national ministries have expressed an interest in participating. The project hopes that the national ministries will utilise the gathered evidence and reasoning to propose the best possible legislation and use the data to prepare their justification for the selected interest. Energy agencies will continue to collect evidence, including collecting any which may modify the assumptions stated in the report in order to continue designing policy which promotes an unbiased and truly ideal policy for society.

All tools developed for the project are [publicly available](#) and can also be shared upon request, enabling any national energy agency to replicate the analysis.

### Involved in the project:

**AEA:** Manuela Chriti, Naghmeh Altmann, Nicole Hartl

**CRES:** Effie Korma, Elpida Polychroni, Andreas Androutsopoulos

**EIHP:** Marko Bišćan, Ilja Drmač, Denis Dergestin

**EMI:** Károly Matolcsy, Anita Terjék, Viola Kelemen

**ENEA:** Alessandro Lorenzo Palma, Luca La Notte, Alessandra Gugliandolo

**JSI:** Boris Sucic, Goran Matešić

**KAPE:** Karolina Junak, Piotr Zdanowski

**EMPIRICA:** Georg Vogt, Tatiana Novikova, Sai Vinay Guntamukkala

**DTU:** Rune Korsholm Andersen, Luca Zaniboni

**LUT:** Tomasz Cholewa, Martyna Bocian, Amelia Staszowska

**UNICAS:** Laura Canale, Giorgio Ficco, Elisa Caracci

### Energy Agencies:



### Technical Support Team:



### More information at:

- [tunES@empirica.com](mailto:tunES@empirica.com)
- Website: [tunES-project.eu](http://tunES-project.eu)
- LinkedIn: [tunES-project](https://www.linkedin.com/company/tunES-project)



This project has received funding from the European Union's funding instrument for the environment and climate action (LIFE programme) under grant agreement No 101120926.