

A Decision Support Tool to Prioritise Energy Interventions in Public Buildings

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About PrioritEE

PrioritEE (2017-2019) (<https://prioritee.interreg-med.eu>) was an INTERREG MED project to strengthen the policy making and strategic planning competences of local and regional public authorities in the energy management of public buildings in five Mediterranean countries: Italy, Portugal, Spain, Greece and Croatia.

This aim is pursued, among other routes, by improving the knowledge of the energy status of local buildings by developing a dynamic and collective toolbox aimed at identifying the optimal set of measures to reduce energy consumption, upgrade the efficiency of buildings and foster appropriate energy consumption behaviours. The same objective is currently pursued in the ongoing Interreg MED PrioritEE PLUS (2021-2022) project, capitalisation of the PrioritEE project, in which the key component of the PrioritEE Toolbox, the Decision Support Tool (DST), is improved and transferred through a structured capacity building program to local authorities in new territories in Italy, Portugal and Spain.

Decision Support Tool (DST)

The main instrument developed and used by PrioritEE is the Decision Support Tool. The Decision Support Tool (<https://dst.thorium.software/>), Figure 1, is an online based tool created in the course of the PrioritEE INTERREG MED project (and improved through its follow-up project PrioritEE PLUS) with the aim of helping local and regional authorities in relatively quick and easy evaluation of potential energy (and financial) savings by applying energy efficiency measures and evaluation the potential for integration of renewable energy sources in public buildings.

The Decision Support Tool can be viewed as quick, lightweight means of assessing the energy performance of a building or a set of buildings, and of ranking the effect of several potential energy-efficiency measures. It thus shares some common aims with Energy Performance Certificates, but the use of the Decision Support Tool requires less of a specialised knowledge.

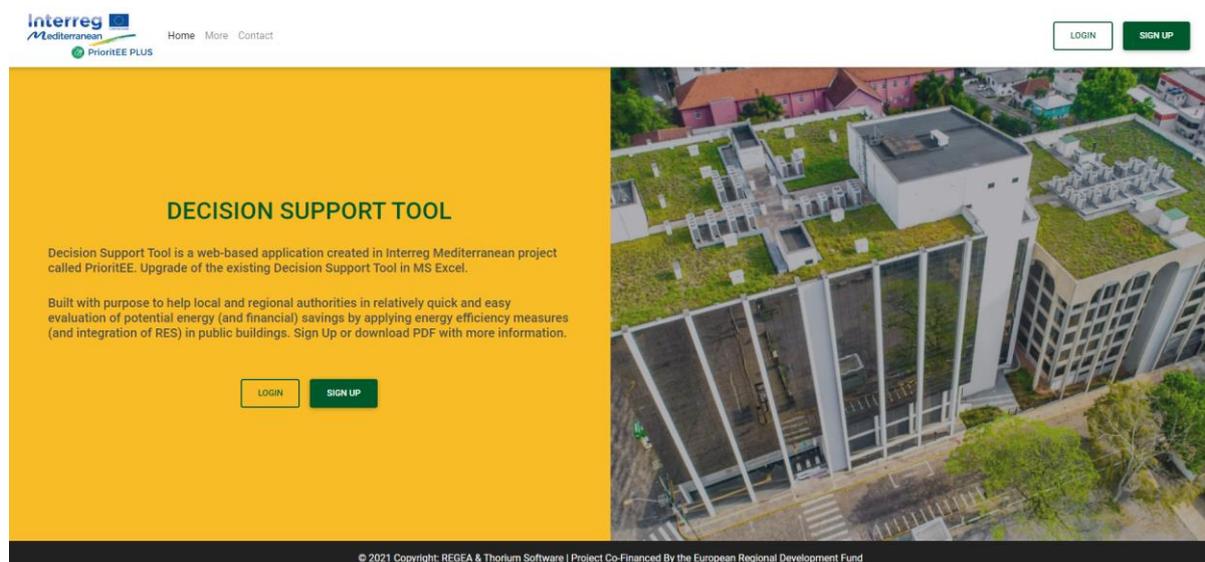


Figure 1 Homepage of PrioritEE Decision Support Tool (<https://dst.thorium.software/>)

Energy efficiency measures, as well as renewable energy sources are the key solutions for public buildings in their aims to reduce greenhouse gas emissions and increase their financial sustainability in terms of operation costs. Although these measures are in focus of many European Directives in last decade, there are still several constantly present barriers which hinder the decarbonisation in the building sector. Apart from lack of financial resources, usually complex legislative framework, and lack of technical know-how for proper energy management, the main barrier often lays down in managing diverse building stocks and a constant need for proper renovation pathway. Public authorities often have a significant number of buildings under their jurisdiction and various levels of information for those. Usually, even if the energy certificates exist, those are not utilized to their maximum impact.

That is why the Decision Support Tool has been created with the aim to assess current building stock energy performance, evaluate different efficiency and renewable interventions, and compare, rank, and prioritize technical options through a set of key performance indicators¹. Through relatively easy steps, users can insert accurate information about their buildings (if available from energy certificates) or use created database of different building typology and related characteristics, all with the aim of establishing the current state of the building and identifying the potential for improvements.

While results can be monitored for a single building and exported (Figure 2), users can cluster their buildings in “Benchmarking” section to evaluate their total (joint) impact in terms of energy consumption, but also in evaluation of energy renovation measures. In that way, this interactive online tool can aim for providing a “light version” of energy certificate for selected building or act as very basic energy management system where users can store information and take advantage of map overview and different table and graphical results. A light version of energy certificate actually aims to provide basic necessary information for users in an understandable way, bringing technical and financial parameters closer to public management authorities.

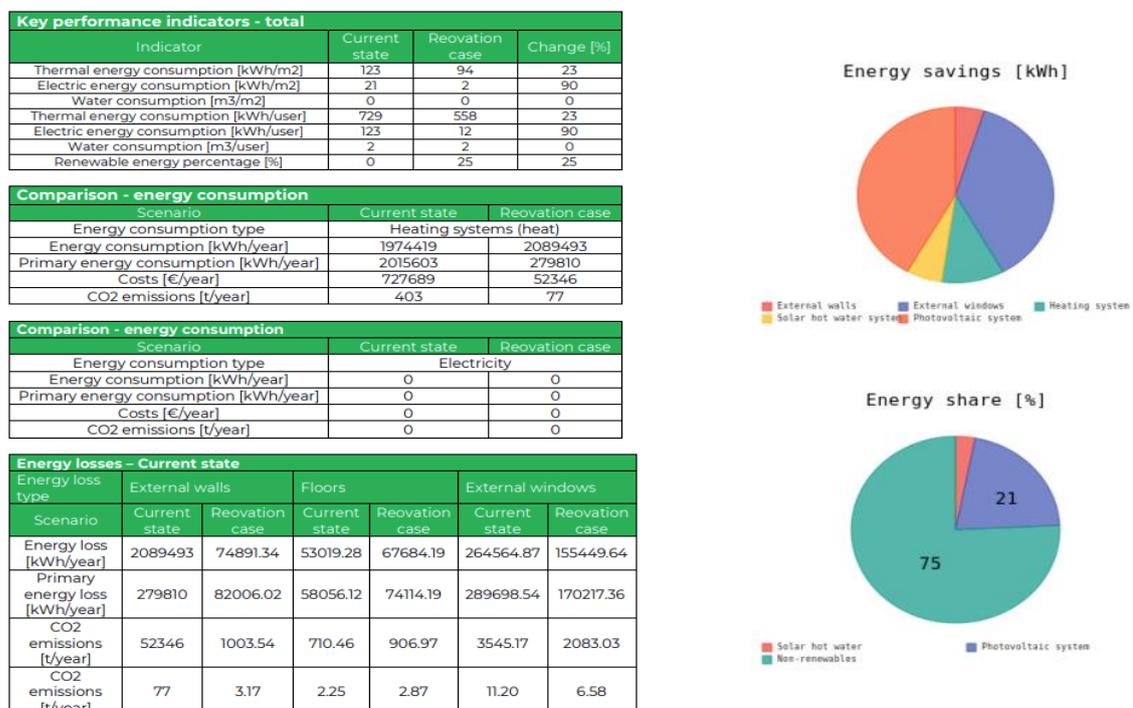


Figure 2 Insights from PrioritEE DST export for a single building (Source: REGEA)

¹ Source: M. Salvia et al., RSER 135(2021), 110106. <https://doi.org/10.1016/j.rser.2020.110106>

The Decision Support Tool has been created among project partners for different levels of users - including energy managers, energy planners, and decision-makers and is completely free of use alongside with very detailed tutorial materials which is available in five languages: Italian, Spanish, Portuguese, Greek and Croatian (and soon in French). Through continuous collaboration of project partners and inclusion of other potential partners, the DST has been significantly improved in its interactivity and user-friendliness through several iterations, while developers of calculation methodology are preparing the ground for mayor overhaul of calculations with the aim of unlocking the full potential of human centred energy performance certification tools.