

EXPLORING METHODOLOGIES AND CONCEPTS FOR THE IMPLEMENTATION OF NEW ENERGY PERFORMANCE CERTIFICATES FEATURES FOR BETTER DATA HANDLING FINANCING OPTIONS

JUNE 2021



Project Acronym	X-tendo
Project Name	eXTENDING the energy performance assessment and certification schemes via a mOdular approach
Project Coordinator	Technische Universität Wien
Project Duration	2019 - 2022
Website	https://x-tendo.eu/

Deliverable No.	D4.4
Dissemination Level	
Work Package	WP4
Lead beneficiary	Technische Universität Wien
Contributing beneficiary(ies)	
Author(s)	Iná Maia and Lukas Kranzl (TUW) , Zsolt Toth and Jonathan Volt (BPIE), Cláudia Monteiro and Rui Fragoso (ADENE),
Co-author(s)	Kalle Virkus (TREA), George Koras, Lena Lampro and Elpida Polychroni (CRES)
Reviewed by	Casper Thielsen (DEA)
Date	June, 2021

Preliminary version

This document is a preliminary version. It will be further adapted in the coming months through the findings of the test phase of the project.

Legal Notice

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither EASME nor the European Commission is responsible for any use that may be made of the information contained therein

All rights reserved; no part of this publication may be translated, reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of the publisher. Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. The quotation of those designations in whatever way does not imply the conclusion that the use of those designations is legal without the consent of the owner of the trademark.

TABLE OF CONTENT

TABLE OF CONTENT	3
EXECUTIVE SUMMARY	4
1 Introduction	5
2 Financing options	7
2.1 Introduction	7
2.2 Proposed Methodology	7
2.3 Implementation of the proposed methodology	11
REFERENCES	12



EXECUTIVE SUMMARY

The X-tendo project is developing a framework of ten “next-generation EPC features”, aiming to improve compliance, usability and reliability of the EPC. These features are divided in two categories, innovative indicators and innovative data handling.

This report describes the methodologies and concepts for the technical implementation of each innovative data handling feature - **EPC databases, building logbooks, enhanced recommendations, financing options and one-stop shops**. It also presents more in detail how the developed methodologies will be country specific implemented in the X-tendo target countries.

The present report builds on past projects activities. And, upcoming project activities include the technical implementation with excel spread and programming code, providing guidelines to handle with the tools as well as, the testing of the present methodology, in each implementing country. Below, the series of previous project reports are listed, which present complementary information to the present one:

1. [Introductory reports of the 10 innovative EPC features](#) (Deliverable 2.3)
2. [Description of implementing partners' user needs and detailed technical specifications regarding features on handling and user of EPC data](#) (Deliverable 4.2)
3. Summary of implementing partners' user needs and detailed technical specifications (Deliverable 4.3)
4. Tools, concepts (country-specific for the Logbook feature) and guidelines for features Enhanced recommendations and EPC Database) (Deliverable 4.5)

Beyond that, the described the methodologies and concepts for the technical implementation methodology will be technically implemented and tested during the forthcoming stages of the project. The complete material will be online accessible in the X-tendo Toolbox.

This document is the revised version of the report completed in April 2021.

1 INTRODUCTION

EPCs are the most widely available information documents on building energy performance across Europe. They have the potential to be used as more than just an informative document, as they have the potential to provide market participants with relevant information to assess, benchmark and improve the building's energy performance. Besides the information included in each document, the usage of these information and data handling are becoming more and more important. The recent [Renovation Wave Communication](#) published by the European Commission in October 2020 reinforced the importance of the existing EPC frameworks to improve the data gathering, storage and overall quality of EPCs.

In this context, the five X-tendo EPC features **EPC databases, building logbooks, enhanced recommendations, financing options and one-stop shops** play a relevant role, targeting to improve the way EPC data is being handled and used for different objectives and targeted stakeholders. The main objectives of the features are summarized below. The present document describes in detail the methodologies and concepts for the technical implementation of each feature: EPC databases ([Chapter 2](#)), logbook ([Chapter 3](#)), enhanced recommendations ([Chapter 4](#)), Financing options (Chapter 5) and one-stop-shops ([Chapter 6](#)).

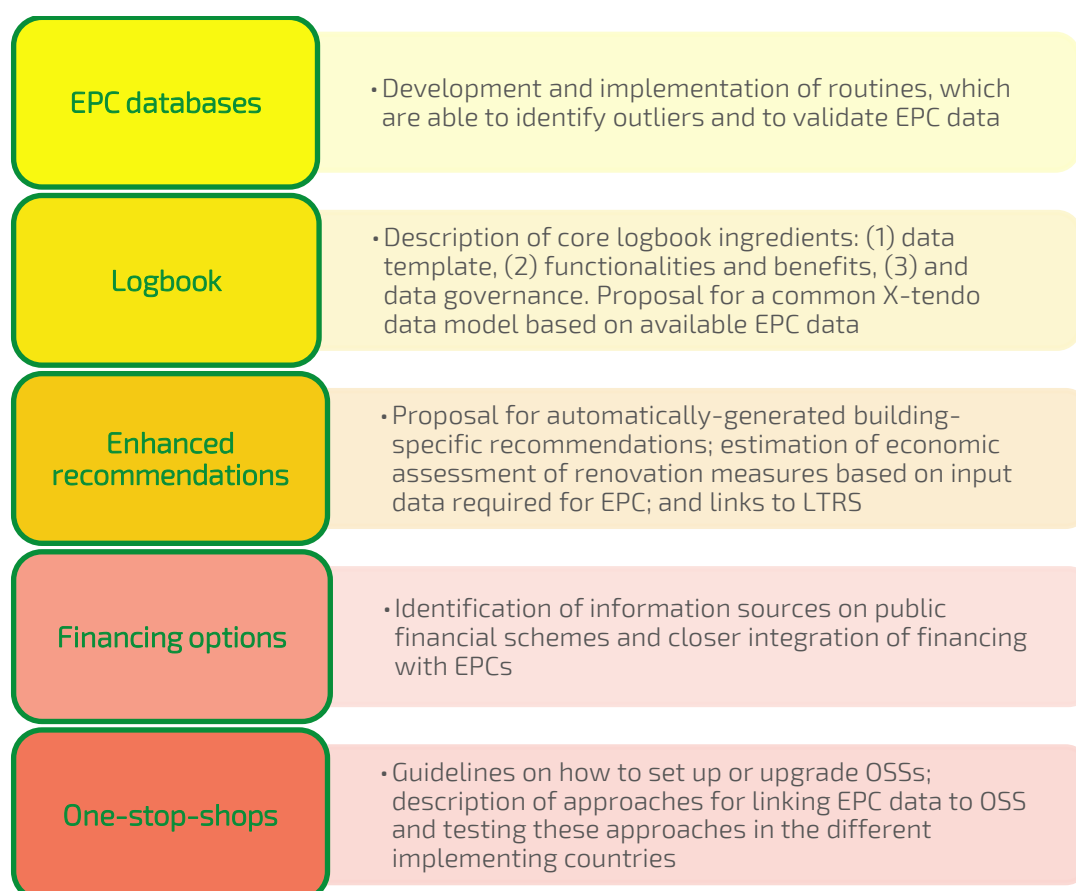


Figure 1: X-tendo methodology for features EPC Databases, Logbook, Enhanced recommendations, Financing options and One-stop-shops

The methodology will be tested in different X-tendo target countries, as showed in the table below.

Table 1: Implementing and expert countries per features

	 EPC databases	 Building Logbooks	 Enhanced Recommendations	 Financing Options	 One Stop Shops
Feature lead	TU Wien	BPIE	TU Wien	ADENE	ADENE
Austria, EAST			Expert		
Denmark, DEA	Implementer		Implementer	Implementer	Implementer
Estonia, TREA		Implementer			
Greece, CRES	Implementer	Implementer			
Italy, ENEA	Implementer				
Poland, NAPE			Implementer	Expert	
Portugal, ADENE		Expert /		Implementer	Expert
		Implementer			
Romania, AAECR				Implementer	Implementer
UK, EST	Expert		Implementer		Implementer

2 FINANCING OPTIONS

2.1 Introduction

To meet the climate objectives of the European Union and support the transition to a clean energy system, there is a need to further unlock public and private financing and boost the energy renovations in buildings. EPCs and related buildings data play a key role to access to preferential financial instruments. EPCs can provide a market benchmark and clear eligibility criteria, as well as support financing decision-making and risk assessment. Furthermore, the provision of sources of information on financial support alongside with the EPC recommendations can help to persuade building users to undertake a renovation and will push the energy efficiency renovation market information sources on public financial schemes. Linking this feature to existing EPC frameworks, will help to overcome some existing barriers in the market between the financing institutions and the end-users, as well as increase the implementation rate success of the existing financing schemes and will contribute to buildings renovation wave, in particularly in the residential sector.

2.2 Proposed Methodology

Feature 9 – Financing options methodology intends to identify information sources on public financial schemes that can be provided alongside the EPCs and explore how financing schemes can be more closely integrated with these, providing guidelines on approaches and mechanisms to achieve this goal. The outcome dedicated to public authorities will be guidance on how to link EPC schemes with financial instruments, which could be easily applied by the countries involved, either fully or running partially at least 2 of the 3 modules (**Error! Reference source not found.**): **Financing schemes portfolio** (mandatory, since it is crucial to have an overview of the available financing schemes in order to be able to proceed), **How to link EPCs to financing** (mandatory, since fostering synergies through EPCs is one of the goals of X-tendo project) and **How to communicate financing** (optional, since the focus is on developing a unique platform, which depends on the level of maturity and digitalization of EPC databases and financing platform in each country).

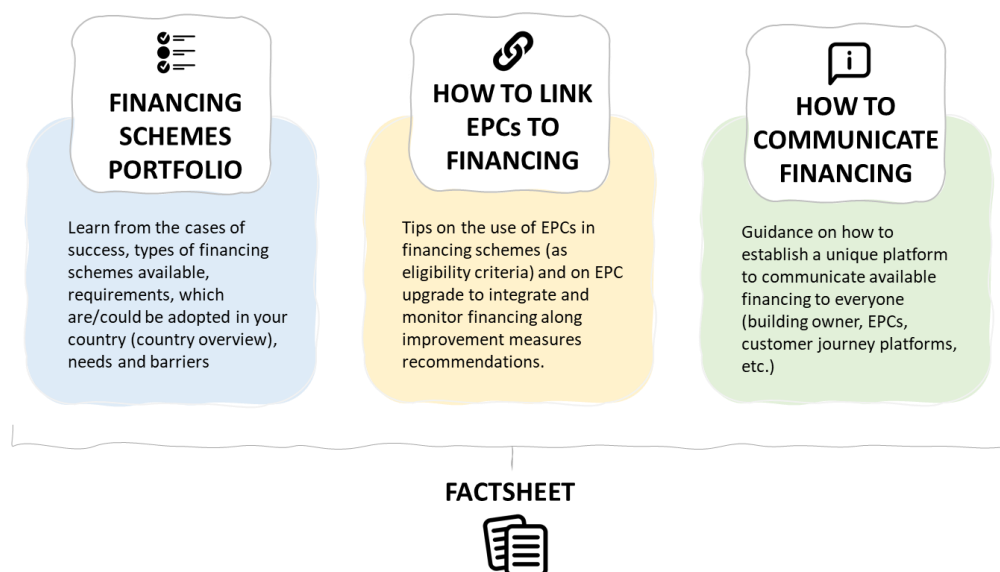


Figure 2 - Overview of Feature 9 - Financing Options methodology

Financing Schemes Portfolio

In the X-tendo project, we will identify information sources on public financial schemes that can be provided alongside the EPC. Therefore, the following actions should be taken:

- ① List the types¹ of mechanisms and available financing, including:
 - Access requirements (identify also if EPC is one requirement);
 - Type, focus and target audience;
 - Financing conditions;
 - Type of data used to underwrite and monitor the financing mechanisms;
 - Stakeholders involved, budget and timeframe;
 - Available database and information.
- ① Map the needs and barriers faced by financial institutions (SWOT Analysis).

Expected outcomes to integrate in the factsheet

- ① Financing Scheme types & description (Portfolio)
- ① Needs & Barriers
- ① Best Practices in the use of financing related to EPC
- ① Data needed to support financing schemes (EPCs and other)

¹ Identifying in which category integrates: Traditional well-established, Tested and growing in the market, New and innovative

How to Link EPCs to Financing

Additionally, we will explore how financing schemes can be more closely integrated with EPCs, namely by considering the identification of available financing options, the link of EPC data with financial options, as well as effective communication with building owners/users. Therefore, the following actions should be taken:

- ⊙ Identify needed data from EPC for financing schemes (eligibility criteria);
- ⊙ Identify which kind of information is available in EPC (financing related);
- ⊙ Assess the level of interoperability between EPCs and other data sources;
- ⊙ Detail how the improvement measures are evaluated and documented, including which type of data is recorded and their scope;
- ⊙ Assess the suitability of methodologies used in the evaluation of energy performance of buildings for financing eligibility;
- ⊙ Identify recommendations on the use of EPCs and data in financing schemes (eligibility criteria and how to present financial options and indicators).

Expected outcomes to integrate in the factsheet

- ⊙ Recommendations on the use of EPCs in financing schemes:
 - Data on EPCs used as eligibility criteria (relating with the type of financing scheme and economic indicators)
 - Identification of databases to link with EPCs (interoperability opportunities and data sharing)
- ⊙ Recommendations on EPC upgrade:
 - Improvement needs and access to finance (methodological review need)
 - Financial information presentation available in the EPCs
 - Automatic link of the recommendation measures to specific available financing schemes (e.g. Digital EPC)
 - EPC as a tool to document effective implementation (monitoring)

How to communicate Financing

Finally, centralize the existing financing mechanisms resulting from the country portfolio (stage 1) and the requirements to link these to EPC data (stage 2) in a unique platform can be a great opportunity to make this information useful and easily available to everyone. Therefore, the following actions should be taken:

- ⊙ List the type of mechanisms available and their digital address (from country portfolio);
- ⊙ List the eligibility criteria based on EPCs (from link EPC to financing);
- ⊙ Assess/identify the level of interoperability with financing platforms (from link EPC to financing);
- ⊙ Assess/identify the level of interoperability with other platforms (EPCs, one-stop-shops, renovation passports, etc.);

- ⦿ Create a platform governance & ownership plan to keep the platform updated.

Expected outcomes to integrate in the factsheet

- ⦿ Recommendations on how to setup a unique platform with all available financing mechanisms:
 - Data structure, maintenance, interoperability needs, etc.
 - Link to existing financing schemes and strategic/economic plans (country overview)
- ⦿ Link of the recommendation needs identified in the EPC to financing schemes (e.g. digital EPC)
- ⦿ Link of financing schemes to other platforms (one-stop-shop, renovation passports, etc.)

Regardless of the guidance given by the factsheet, there will always be important challenges that need to be overcome when setting-up this methodology. Similarly, there will also be several benefits resulting from it. Figure 3 summarizes some of these challenges identified by the implementing partners under the X-tendo project as well as some of the benefits boosted by implementing this methodology.

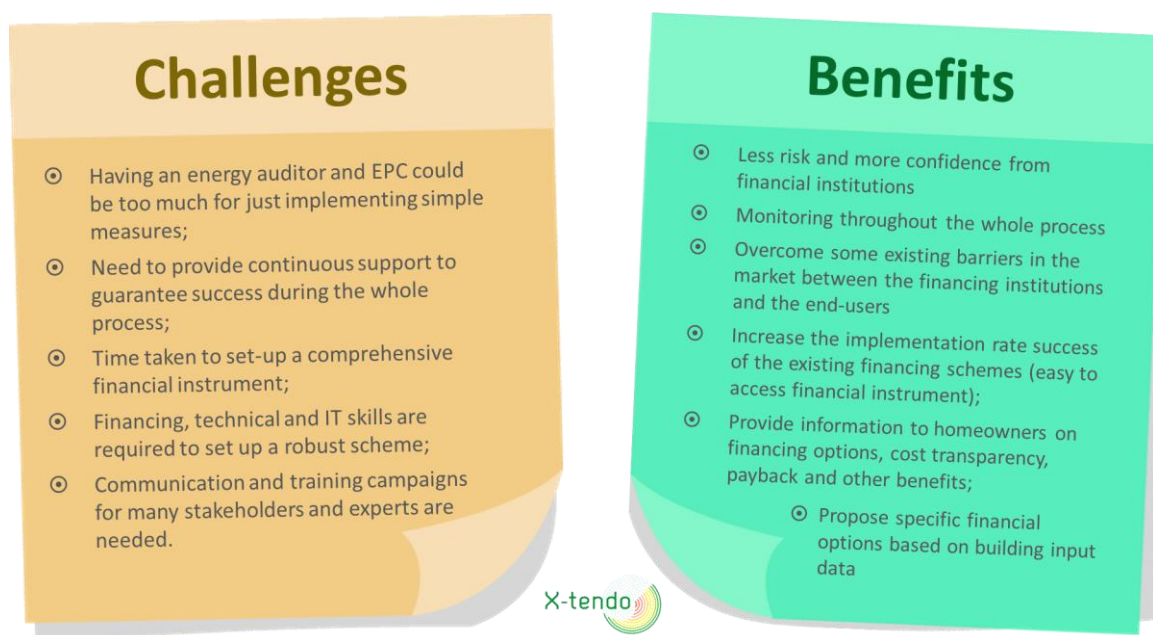


Figure 3: Main challenges and benefits of Financing options methodology implementation

2.3 Implementation of the proposed methodology

In general, the methodology can be applied for all implementing countries considering the testing that suits better their country specificity and context.

Table 2 presents the country specific implementation of the proposed methodology.

Table 2: Summary of X-tendo activity per implementing country

	Portugal	Denmark	Romania
Financing Schemes Portfolio	Country Portfolio	Country Portfolio	Country Portfolio
Link EPC to Financing	Link of EPCs with existing financing scheme	Recommendations on EPC upgrade	Link of EPCs with energy audits for financing
Communicate Financing	Interoperability of EPC database with the financing scheme platform	Link between financial opportunities and renovation projects	-

The focus of this feature testing along the implementing partners was on how to link EPCs to financing in order to deliver recommendations on the use of EPC in financing schemes (as eligibility criteria) but also on EPC upgrade to integrate and monitor financing along improvement measures recommendations.

Portugal (ADENE) will be potentially testing the link of EPC with an existing financing scheme (Fundo Ambiental – “Environmental Fund”) (still to be decided as this instrument is currently being designed), namely by evaluating the first year call implementation and how to advance on future calls setup and monitoring, including technical assistance closely related with the EPC and how to interoperate the EPC database with the financing scheme platform. To achieve this goal, a workshop with relevant stakeholders will be taken under this feature, as well as technical meetings with the financing scheme team.

Denmark (DEA) will be developing an analysis based on interviews that follow homeowners from the initial phase up to the part where recommendation gets performed. The interview will focus on homeowners, who have received a better home report. The purpose will be to discover financial barriers and opportunities in the planning process of energy renovations.

Romania (AAECR) will be testing the link of EPCs (calculated performance) with energy audits for financing, namely by calculating theoretical and real energy savings coupled with realistic economic efficiency indicators for recommended measures since most of the financing schemes available in Romania are conditioned by the existence of an energy audit report.

REFERENCES

- [1] DIN V 18599-2, 2011. Teil2_ Nutzenergiebedarf für Heizen und Kühlen von Gebäudezonen.pdf.
- [2] DIN V 18599-9, 2011. 2011_Teil 9_ End- und Primärenergiebedarf von stromproduzierenden Anlagen.pdf.
- [3] Invert/EE-Lab [WWW Document], 2021. URL <https://invert.at/> (accessed 6.28.20).
- [4] ÖNORM B 8110-4:2011 07 15 - Lesesaal - Austrian Standards [WWW Document], 2011. URL https://lesesaal.austrian-standards.at/action/de/private/details/396775/OENORM_B_8110-4_2011_07_15 (accessed 4.6.21).



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 845958.