



SUPER i

D5.6 Post-Action Sustainability Plan

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1. Technical references

Project Acronym	SUPER-i
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- * PU = Public
- PP = Restricted to other programme participants (including the Commission Services)
- RE = Restricted to a group specified by the consortium (including the Commission Services)
- CO = Confidential, only for members of the consortium (including the Commission Services)

v	Date	Beneficiaries	Track changes
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Acronyms

Public-private partnership	PPPs
Key Exploitable Result	KER
Intellectual Property	IP
Intellectual Property Rights	IPR
European Commission	EC
European Union	EU
Energy-efficient	EE
Photovoltaics	PV
Net Present Value	NPV
Social Housing	SH
Energy Service Company	ESCO
Smart City Marketplace	SCM
Search Engine Optimization	SEO
Communication and dissemination	C&D

3. Summary

The following report presents “D5.6 Post-Action Sustainability Plan”, consisting of the outcome of the Sub-task “5.6.3 Post-action sustainability plan”, dedicated to the development of exploitation and sustainability strategies for results identified in the project. The objective is to ensure the utilisation of the outputs after the conclusion of the project, by all the stakeholders involved.

This report is organised in the following manner:

- SUPER Introduction and exploitation approach (Chapter 1): Describes the report’s scope and objective, and methodological approach. In SUPER-i, the elaboration of the Post-action Sustainability plan follows the 1) Identification of exploitable results; 2) Assessment of partners' exploitation pathways, and 3) Elaboration of the Post-Action Sustainability Plan.
- Key Results (Chapter 2): This chapter presents the project’s key results (i.e *SUPER-i Portal*, *Investment Pipelines (case studies)*, *Financial solutions (PPPs)*, *Data and empirical studies*, *Super-I guidebook*) and the sustainability strategies to maximise the impact of results beyond the project’s end. These include the utilisation of results for partners’ activities and operations, adoption of learnings derived from the project case studies (especially in the case of the social housings), and leveraging of results for policymaking purposes and advocacy. In addition, this chapter also deals with IP ownership and protection over the project’s results. Knowledge and know-how generated will be protected with soft IP forms (i.e confidential information, or copyrights in the case of scientific publications). SUPER-i is an initiative that aims at fostering open sharing of its outcomes and having an impact on the larger social housing sector, and most results are considered “open”.
- Conclusions: final remarks on SUPER-i exploitation and sustainability strategies.



4. Introduction

The current report presents “D5.6 Post-Action Sustainability Plan”. The document details the vision of project partners around the project’s Key Exploitable Results (KERs), and describes the partners’ strategies to exploit results and ensure their availability after the project’s conclusion.

In SUPER-i, sustainability and exploitation activities are covered under the sub-task 5.6.3 “post-action sustainability plan”, aimed at identifying the value generated in the project (i.e., KERs), and providing strategies for their utilisation beyond the project duration.

As defined by the EC, a result consists of “any output of the action such as data, knowledge, or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights”. As such, a KER is a result that has been selected and prioritised due to its high potential to be “exploited” – i.e., to be used by partners to generate business and commercial opportunities, support policymaking, or serve as an input for research, academic activities, etc.

The SUPER-i project addresses the issue of energy efficiency in the social housing sector to assist and support the European Commission to implement the European Green Deal. It contributes to generating substantial investments in energy efficiency within the social housing sector in two folds: 1) by establishing a direct dialogue, at the local government level, between financial institutions, other private investors, and social housing managers while also involving ESCOs; and 2) by collecting relevant data on EE investments, helping to develop efficient financial schemes.

In this perspective, the following outcomes are considered in the scope of sub-task 5.6.3:

- SUPER-i Key results: these comprise the main assets of the project, i.e., *SUPER-i portal, Case studies (investment pipelines), Financial solutions, and other Data and empirical studies*.
- Other results: this includes results that have been developed by one or more project partners during the project and that are considered independently for exploitation pathways. Such results comprise methodologies, recommendations, data, and relevant expertise in the energy efficiency sector developed in the project and that will add value to partners' activities.

The first release of SUPER-i Post-Action Sustainability Plan (D5.6) has a major focus on the key results of the project. Other results generated by one or more partners will be monitored during the project execution and will be dealt with within the final Post-Action Sustainability Plan in M36.



1.1. Methodological approach

To ensure the exploitation and sustainability of the key outputs of the project, SUPER-i exploitation approach is comprehensive in scope, covering all types of results (from tangible outputs such as the SUPER-I portal to knowledge and lessons learned derived from project activities). It covers every possible exploitation pathway (i.e., inform policy making, knowledge transfer, or service development).

The exploitation process adopts a three-step approach:

- 1) *Identification of exploitable results*: it includes the mapping of the project's exploitable results, the assessment of the IP and IPRs, and a preliminary collection of inputs for the exploitation and sustainability of results. This step was done through an “*Exploitation and Sustainability questionnaire*” administered to all of the consortium partners.
- 2) *Assessment of partners' exploitation pathways*: This step concerns the validation and analysis of results and strategies collected in step 1. Activities in this phase aimed at assessing and further discussing results and strategies with each of the project's partners. Two exploitation and sustainability workshops were held in order to agree upon the strategy to further utilise the SUPER-I key results.
- 3) *Elaboration of the Post-Action Sustainability Plan*: Based on all the inputs collected and discussions held with project partners, the “*D5.6 Post-Action Sustainability Plan*” is drafted and presented in this report. It is the result of collaborative work among all partners, describing the preliminary strategy to exploit results and ensure their utilisation after the conclusion of the project.

The post-action sustainability plan described in D5.6 covers the following aspects:

- **Result Description**: Definition of results and their value propositions (i.e., the impact of KERs, of the benefits that it offers).
- **IP owner and IPRs**: indicate the owners of the foreground generated in the project and the applicable measures to protect the results.
- **Target users**: this section describes the target groups for each of the results addressed.
- **Impact**: defines the impact of the results outside the project boundaries, in particular, for the stakeholders in the EE renovation and social housing sector.
- **Exploitation and sustainability strategy**: it describes the partners' strategies to use and maintain the project's results over the long term, ensuring that the benefits continue to be realised by stakeholders, including policymakers, social housing companies, and financial actors. Exploitation strategies include the use of results for further research and scientific



D5.3 - Interim report on D&C activities and their impacts

purposes, as well as for dissemination, policy recommendations, and, when applicable, the development of consulting services.

D5.6 Post-Action Sustainability Plan provides an initial assessment of the project's key results and sustainability strategies and will be updated to account for the project's progress and presented in the final release of the post-action sustainability plan to be released by the end of the project (M36). The final report will further detail sustainability strategies and provide specific exploitation roadmaps when applicable.



5. Key Results

1.2. Introduction

This section deals with the key exploitable results of the SUPER-I project, including the *SUPER-I Portal*, *the investment pipelines (case studies)*, *financial solutions*, as well as other valuable *data and empirical studies*.

The aim is to define a clear exploitation and sustainability strategy for the aforementioned results, to maximise their impact beyond the project. To achieve this goal, consortium partners will act together to promote the dissemination and uptake of the results among different stakeholders and across EU geographical areas.

This chapter provides a preliminary overview of the SUPER-i sustainability plan. It describes the project’s key results, the target segment and value-added, and the strategy to maintain results available after the project’s conclusion and to enable and foster third-party exploitation. The initial strategies described in D5.6 will be further advanced and fine-tuned in the final release of the Post-Action Sustainability Plan.

1.3. List of results

The following table summarises the key joint exploitable results of the project:

Figure 1 SUPER-i Key Exploitable Results

Ker n.	Key Results	Access	IP Owner	IPR
1	SUPER-i portal	Restricted	All partners	Copyrights
2	Case studies (investment pipelines)	Open	All partners	Copyrights in publications, confidential information
3	Financial solutions	Open	All partners	Copyrights in publications, confidential information
4	Data and empirical studies	Open	All partners	Copyrights in publications, confidential information
5	SUPER-I Guidebook	Open	All partners	Copyrights



1.4. IP and IPRs

Clearly defining the Foreground Intellectual Property (IP) and reaching a consensus among IP owners on how joint results will be further exploited are crucial steps for designing impactful exploitation and sustainability strategies, along with the evaluation of the proper protection measures and accessibility. Together with the project partners, in SUPER-i, IP is monitored along the entire exploitation process to clearly define the rights over results, and identify the most suitable protection measures.

To this regard, SUPER-i KERs include a set of outcomes of different natures (i.e Online Portal, financial solutions, applicable learnings, and data) that can be exploited in manifold ways. These results can be individual results (generated by each partner, individually), as well as joint results (generated by two or more partners that share the final ownership over the result, i.e., joint foreground IP).

Overall, the IP ownership of the project's results is considered both in terms of background and foreground IP. The Background IP includes the information already owned by the partners, used for the development of the result, being defined as:

“Any data, know-how and/or information, whatever its form or nature (tangible or intangible) - including any rights such as intellectual property rights - which are needed to carry out the project or exploit its results.”

All provisions related to the management of pre-existing know-how and issues related to confidentiality are laid down in detail in the Consortium Agreement. Following the terms of the CA, consortium partners bringing background IP retain full ownership of the assets. At the current stage, no issues regarding IP background emerged during the execution of the project and formulation of exploitation & sustainability strategies for the results.

In addition to having a clear view of the Background IP, defining the Foreground Intellectual Property (i.e., final ownership of IP) is key for the exploitation of results. The foreground IP includes intellectual property arising from the research and development undertaken within SUPER-i project, including:

“Any tangible or intangible output of the action (such as data, knowledge, and information, whatever their form or nature, whether or not they can be protected), which are generated in the action, as well as any attached rights, including intellectual property rights. It includes intellectual property rights (e.g., copyrights, industrial designs, patents, plant variety rights), similar forms of protection (e.g., rights for databases) and unprotected know-how (e.g., confidential material)”.



The definition of foreground ownership over project's developments clarifies who is entitled to directly exploit or allow third parties to exploit the individual or joint results after the project's end. For the individual results, ownership of the foreground IP will rest with the party generating it. If beneficiaries have jointly generated results, results will be jointly owned by the beneficiaries, which are entitled to exploit them following the terms established in the CA.

1.4.1. Protection of Foreground IP

The IP foreground generated in SUPER-i (*SUPER-i Portal, the investment pipelines (case studies), financial solutions, as well as other valuable data and empirical studies*) have been jointly developed, receiving the contribution of several partners. Therefore, all contributing partners will have IP foreground ownership. Due to the nature of the key results, no registered measures are foreseen.

The SUPER-i digital platform and publications with open access may be protected by copyright, which gives the creators exclusive rights over their works and allows them to control how their works are used, reproduced, and distributed.

The data and sensitive information with a restricted nature (derived from case studies and financial solutions) may be treated as protected by confidentiality measures.

It is important to note that being SUPER-i an initiative that aims at fostering open sharing of its outcomes and have an impact on the larger social housing sector, most results are considered "open", meaning that they are accessible and can be leveraged by third parties, and therefore will be protected with soft IP measures (copyrights).

1.5. SUPER-i Portal

1.5.1. Result Description

The SUPER-i Portal consists of the "SUPER-i e-Room" and the project website (<https://SUPER-i-project.eu/>), which are the key enablers of the project's objectives.

The website contains project information and acts as the key online communication channel for sharing relevant information and public deliverables of the project. The SUPER-i e-Room, on the other side, acts as an "observatory" for completed and new social housing projects demanding funding and financial schemes (i.e., project pipeline). Its highly modular structure allows capturing various data from SUPER-i social housing projects but also external databases such as Eurostat or DEEP.



Currently, the e-Room makes available energy poverty indicators organised into “primary indicators” and “secondary indicators”. Relevant tables and charts linked to the indicators are shown using the “Eurostat Energy data” and the “Eurostat Income and Living Conditions” datasets of the SUPER-i partner countries.

1.5.2. Target users

The SUPER-i portal acts as an information centre for a broad range of stakeholders, including public authorities/housing organisations managing social housing, citizens, private investors, financial institutions, and industry players (especially ESCOs) who share the goal of implementing EE investments in social housing. These stakeholders will make use of the SUPER-i portal for different purposes:

- *For ESCOs*, the portal will support the validation of their own business models and provide trusted references when selling social housing projects to social housing companies and investors.
- *Investors* will use the portal for risk reduction in the due diligence of EE social housing projects.
- *Research centres* will gather input for their current and future research needs.
- *For Social housing companies*, the portal will support the selection of the most suitable EE investment opportunities, supporting funds search through evidence-based examples.
- *Citizens* will be able to access tangible examples which can be used in discussions about the real/perceived impact of EE measures (e.g., such as comfort increase).

1.5.3. Exploitation & Sustainability strategy

The SUPER-i portal aims to become the European reference point for enterprises, stakeholders, and institutional and private investors active in the social housing sector. Aligned with this mission, the SUPER-i portal will serve as the key channel for partners and external stakeholders to access relevant data and information produced in the SUPER-i project, and to offer their services through the platform.

The exploitation of the SUPER-i Portal will be ensured by its continued utilisation in the scope of the new SUPERSHINE project, which is co-financed by the programme Horizon Europe, and counts on the participation of most SUPER-i partners (APRE, EEIP, UoY, CIRCE, EGC, TENDER, HE, BL, ATER, ELE, BL). Like SUPER-i, SUPERSHINE will address the issue of energy poverty and energy refurbishment in social housing.



The uptake of the portal by this new EU-funded project will provide the key sustainability pillars for the platform (i.e hosting and maintenance requirements, administration, data storage, and backup, as well as other data security requirements of the platform). The new SUPERSHINE portal will be built as an extension of the SUPER-I portal and will make available the relevant data generated in the project. It will be extended to include a “One-Stop-Shop” and support the launch of the SUPERSHINE crowdfunding campaign.

The e-Room will be further upscaled, making use of its proven technical capacity (especially the modularity approach), enabling the extension of the database scope. The new SUPERSHINE e-Room will re-use, whenever possible, the interfaces, analytics, and reporting functionalities of the SUPER-i e-Room. Possible corrective actions regarding technical measures and functionalities will also be implemented. Specifications regarding the new content, functionalities, processes, and access rights will be further discussed under the activities of the SUPERSHINE project.

The exploitation and sustainability of the SUPER-i Portal will be ensured with the collaboration of all project partners. Partners’ specific plans to use results, their roles, and contribution to the exploitation & sustainability of joint results are summarised below:

Figure 2 Partners’ role and strategy – SUPER-i Portal

Partner name	Partners’ exploitation
HE	<ul style="list-style-type: none"> - Housing Europe will leverage its network within the “SHAPE-EU Affordable Housing Consortium” to promote the platform. The consortium supports public, social, and cooperative housing providers, public authorities, and SMEs to deliver social and affordable housing district renovations.
ATER	<ul style="list-style-type: none"> - ATER will use the platform to set up new partnerships and find new collaborations and opportunities for EE investment and refurbishment projects.
EEIP	<ul style="list-style-type: none"> - EEIP will use the portal to showcase the results of EE investments to potential adopters, as part of EEIP work operating as an energy transition information platform. Furthermore, EEIP will consider upscaling and leveraging the portal in terms of data availability, reached audience, functionalities, and other sectors (to be done also in the scope of the SUPERSHINE project). The possible integration of the e-room into the EEIP platform or other project partner platforms will be assessed as part of the SUPERSHINE exploitation work.



	<ul style="list-style-type: none"> – Additionally, EEI, as part of the Advisory Board of the EU Smart City Marketplace (SCM), will evaluate the option to send or exchange case studies with the SCM to leverage the city and investor reach of the SCM.
UoY	<ul style="list-style-type: none"> – The University of York will contribute to further leverage/upscale the platform in the scope of the SUPERSHINE project (in terms of data availability, reached audience, functionalities, and expansion towards other sectors). In addition, UoY will use the portal to showcase the results of EE investments to potential stakeholders.
APRE	<ul style="list-style-type: none"> – APRE, as SUPER-i partner and SUPERSHINE coordinator, will use the platform to scale the SUPER-i model, reaching new potential users/audiences and APRE members interested in the sector. APRE will set up new partnerships, and find new collaborations and opportunities aiming at tackling energy poverty in the Social Housing sector.
EGC	<ul style="list-style-type: none"> – EGC will leverage the platform to set up new partnerships, and find new collaborations and opportunities.

1.5.4. Impact

The SUPER-i Portal functions as a meeting point for all the stakeholders involved in the whole life cycle of the building and acts as a facilitator of decision-making for all of them. Through the portal, interested external parties can engage with key SUPER-i stakeholders to support their own EE investments in social housing projects. Furthermore, the e-Room datasets and analytics allow external stakeholders to assess the value and improve their own projects.

The portal will further support the replication of the most suitable/successful cases, contributing to the growth of EE investment in social housing markets. For social housing federations and organisations, the SUPER-i Portal may be used to learn concrete lessons and advice on financing renovation based on tested models.

1.6. Investment pipelines (case studies)



1.6.1. Result Description

In the scope of the SUPER-i project, pipelines of financially diversified investments in energy efficiency focused on the social housing sector are set up in 3 partner countries: Italy, Slovenia, and Denmark. These pipelines form the project's "case studies", where specifically tailored financing schemes, products, and solutions are applied, actively involving ESCOs and structuring ePPPs operations.

The investment pipelines were ideated to cover different types of energy efficiency measures, and ranges of budgets and sizes (reflecting variations in the number of buildings and their size, and the depth of interventions considered). These case studies also include countries with different climatic conditions (covering projects from Denmark, with its colder climate and larger requirement for heating - leading to a high benefit from retrofit measures - to Italy, with a warmer climate and smaller heating requirement).

These diverse investment pipelines allow widely applicable learnings to be gained, which can be generalised and applied to other projects in the partner countries and in the EU.

For instance, the applicable learning in Denmark has a main focus on ESCO financing as an important and flexible financing source for retrofitting energy-saving measures and installation of PV with ESCO guarantees of energy savings. This is a necessary additional financing source supplementary to the existing financing arrangements not covering the actual needs for flexible and "faster track" financing arrangements for retrofitting energy-saving measures and PV.

The evaluation of the investment pipelines and lessons learned will be documented in project deliverables, including "*D3.13 Final report on pilot project pipelines and investment*".

1.6.2. Target users

Learnings derived from the case studies are useful for social housing providers (i.e public, cooperative and social housing companies, local authorities) interested in implementing renovation, which will learn about the concrete experience from the case studies, including good practice as well as barriers and obstacles, which can support and guide their own renovation endeavours. In particular:

- *Social housing companies* and pension funds can leverage the case studies on different investment pipelines to inform their decision-making process and develop effective energy refurbishment strategies. Social Housing will use these results to identify the most cost-effective interventions for their particular situation, as well as the most appropriate



technology solutions. They will also help social housing companies to prioritise investments and provide insights into the long-term costs and benefits of different interventions.

- ESCOs can improve their energy efficiency services and help their clients to achieve their sustainability goals.
- *State-owned social housing*, like social housing companies, will have access to cost-benefit and profitability analyses that can inform their future projects.
- Occupants of Social Housing will better understand the potential benefits of energy refurbishment and take action to improve energy efficiency in their homes.
- *For-profit institutional investors, financial players, and social housing construction/consultancy companies* can leverage learnings from case studies to make informed decisions about investing in energy efficiency projects in social housing, understand the potential return on investments, identify high-performing energy refurbishment strategies, and evaluate risks, and identify opportunities for collaboration.

1.6.3. Exploitation & Sustainability strategy

In the first stage, the results of the SUPER-i case studies (applicable learnings derived from the investment pipelines investigated) will be extended to the housing stock of all the SUPER-i partnerships and, more in general, to the EU social housing stock within the Housing Europe partners.

Overall, the investment pipelines investigated will be used to:

- 1) Support external stakeholders across Europe in their EE refurbishment endeavours. This will be done by i) leveraging the SUPER-I portal as the main channel for disseminating the relevant information to a large stakeholder basis and ii) Partners specific C&D channels and efforts (i.e., participation in events, conferences, fairs, networks) as well as publications.
- 2) Inform projects carried out by project partners (especially the social housing companies, who can upscale the case studies to cover further buildings or launch new projects, such as BL, and ATER Trieste).

In particular, for Denmark, the SUPER-i case studies' results will be extended to all Danish Social Housing Companies first of all through SUPER-i partner, BL, (National Danish Association of Social housing Companies) through the organisation's information channels (newsletter, seminars) within and after the SUPER-i's project period.

In Italy, ATER will facilitate the replication of the SUPER-i model and the exploitation of the project results in the regional, national, and European context. For Italy, the SUPER-i case studies' results will be extended to a national context through the Italian Social Housing Companies' engagement



and to a European level through the SH companies’ participation in European projects and partnerships.

Moreover, the ATER and APRE participation, through their active member network, in SUPER-i and SUPERSHINE projects, will be crucial to bringing attention to the importance of tackling the energy poverty issue through concrete actions (e.g., renovation buildings) starting from the Social Housing stock.

Further replication plans will be shared in *D4.4 Report on replication activities*. Partner-specific contributions and strategies to promote the uptake of learnings derived from the case studies are provided below:

Figure 3 Partners’ role and strategy – Investment pipelines

Partner name	Partners’ exploitation
HE	<ul style="list-style-type: none"> - Results will be used by HE to inform its members (and potential members) of the SUPER-I outcomes and impacts, to promote the replication of investments with positive strong impacts in the increase of well-being and quality of living for the social housing tenants. As the European Federation of Public, Cooperative & Social Housing, Housing Europe (HE) brings together a network of 46 national and regional federations, gathering 43.000 housing providers in 25 different countries.
ATER	<ul style="list-style-type: none"> - Learnings from case studies will be exploited and used to set up recovery and financing plans for the ATER building ownership, with application to building recovery interventions similar to those proposed as a pilot case in the project. ATER owns about 1500 buildings, 150 of which are immediately affected by the types of intervention analysed within the project activities. - Moreover, the project results will be applicable to the building recovery interventions of the other 3 Social Housing Agencies in their Region, with which ATER Trieste works very closely, as they are controlled by the same public body (Regione FVG) and subject to the same rules and goals.
EGC	<ul style="list-style-type: none"> - EGC will promote the uptake of similar investment pipelines for other EE renovation projects. Activities will include: i) Showcasing the case studies guidelines, lessons learned, and relative data to the target stakeholders/ Direct contacts with target stakeholders/potential users relevant for EGC; ii) Proposing the investment pipelines to possible investors/social housing companies, and ESCOs; iii) Replication of the case studies that are relevant for EGC; iv) Presenting the results to policymakers/Organizing workshops to advise policymakers to improve the regulation of EE investments in social housing; and v) Presenting the outcomes in scientific conferences.



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UoY	<ul style="list-style-type: none"> - UoY will promote further research and continue improving and fine tuning of the case studies focusing in particular on developing innovative financial models to support the implementation of energy efficiency and increased usage of renewable energy sources in buildings. - UoY will participate in similar projects and replicate the case studies in other settings - Liaising with key stakeholders (policymakers, investors, ESCOs, social housing companies, etc.) - Participate in future funded projects
BL	<ul style="list-style-type: none"> - BL will promote the uptake of similar investment pipelines for other EE renovation projects. Activities will include: i) Showcasing of the case studies guidelines, lessons learnt, and relative data to the target stakeholders/ Direct contacts with target stakeholders/potential users relevant for BL; ii) Proposing the investment pipelines to possible investors/social housing companies, and ESCOs; iii) Replication of the case studies that are relevant for BL; iv) Presenting the results to policymakers/Organizing workshops to advise policymakers to improve the regulation of EE investments in social housing; and v) Presenting the outcomes in scientific conferences.
HFROS	<ul style="list-style-type: none"> - HFROS will promote the lessons learnt/guidelines to influence policymakers and improve the regulatory framework around EE renovation in social housing and also use the knowledge in their own future similar EE projects.
EEIP	<ul style="list-style-type: none"> - EEIP will support the promotion of the investment pipeline through the integration into EEIP communication activities including the use of its AI-based tools such as automated translation (NL, IT, FR, DE, ESP, POR), summarise, recommendation engine, and language-specific SEO. Tailored EEIP communication channels will be used to further increase the reach such as dedicated Twitter channels (@EEIPBuildings, @EEFinancing) and a monthly newsletter (Finance, Smart Cities & Buildings).
APRE	<ul style="list-style-type: none"> - APRE will support the exploitation of the investment pipeline through its participation in new funded projects in which it could be possible to scale up SUPER-i and SUPERSHINE models. Moreover, during the various advocacy activities in which APRE is involved, it will promote all the lessons learnt with the aim to influence its members, policymakers, citizens, and civil society.
CIRCE	<ul style="list-style-type: none"> - CIRCE will leverage the knowledge and experience gained to improve service delivery in future public and private projects.
Tender	<ul style="list-style-type: none"> - Tender will replicate the investment pipeline's structure and best practices in its own financial portfolio (as investment opportunities). - It will identify a standard programme for evaluating the marginality of energy efficiency investments within an ad-hoc financial vehicle creation.



1.6.4. Impact

The investment pipelines investigated in the SUPER-I project cover a wide range of retrofitting projects (in terms of retrofit extension and cost intensity), making them applicable in diverse settings across Europe.

The pipelines demonstrate the validity of interventions addressing energy consumption and costs, contributing to the improvement of the comfort and habitability of the residents. Furthermore, it supports the reduction of the environmental impact and improves the social impact through the involved stakeholders in the whole life cycle of the building. In particular, the results of the case studies evaluation are expected to:

- Increase Local financing institutions' involvement in EE renovation projects in social housing (through profitability analysis);
- Improve understanding between public authorities and private participants (through risk allocation analysis);
- Encourage EE renovations in other sectors such as Hospitals, Traffic, infrastructure, etc. (through the environmental impact analysis);
- Help solving the energy poverty-related issues in the pilots.

1.7. Financial solutions (PPPs)

1.7.1. Result Description

This result comprises the development of innovative financing tools and best practices in order to support social housing organisations, local governments, and ESCOs, so that they are able to cost-effectively uptake energy-efficiency refurbishments along their complete value chain.

In the scope of the SUPER-i project, financial institutions, local authorities, and social housing organisations are directly involved in the design of PPPs and the shaping of their main characteristics for energy efficiency refurbishments through the organisation of national roundtables and the setting up of the SUPER-i Portal. The innovative, operational financing schemes are tested by SUPER-i partners in each pilot. Three main forms of PPPs are analysed:

- 1) **Dedicated credit lines:** include credit lines established by a public entity (such as a government agency and/or donor organisation) to enable financing of EE projects by a private-sector organisation (i.e bank or financial institution).



- 2) **Risk-sharing facilities:** partial risk or partial credit guarantee programmes established by a public entity (such as a government agency and/or donor organisation) to reduce the risk of EE project financing to the private sector (by sharing the risk through a guarantee mechanism), thereby enabling increased private sector lending to EE projects.
- 3) **Energy saving performance contracts (ESPCs):** public-sector initiatives, in the form of legislation or regulation, established by one or more government agencies to facilitate the implementation of energy performance-based contracts, via Energy Service Companies (ESCOs), to improve EE in the public sector using private-sector financing. This is an umbrella term for different contractual relationships between energy-service providers and clients (i.e., *Guaranteed Savings contracts, Shared Savings contracts, 'First Out' contracts, Energy Supply Contracting contracts, or 'Chauffage'*).

The comprehensive analysis of the above-mentioned innovative financial solutions will be documented in “D1.4 Recommendations on innovative financial instruments for EE renovations.”

The above-mentioned financial instruments are directly applied to the data provided by the SUPER-i pilots (Denmark, Italy and Slovenia) in order to provide specifically tailored financial solutions on the basis of the Energy Efficient (EE) technologies planned for each building. This analysis will support the SUPER-i pilots when raising funds for the actual implementation of the EE refurbishment.

1.7.2. Target users

The main potential beneficiaries of SUPER-i innovative financing tools include:

- Social housing companies (to access additional funding for their housing projects, while also leveraging private sector expertise to achieve greater efficiency in the delivery of housing services).
- Pension funds and other financial players (new financial solutions can create new business opportunities for financial players, help them diversify investments, and improve the social impact of their investments).
- ESCOs (PPP financing tools can provide ESCOs with access to funding for energy renovation projects).

1.7.3. Exploitation & Sustainability strategy

The financial solutions investigated in SUPER-i will be exploited by partners in various ways, comprising dissemination and promotion of such solutions to interested stakeholders, to foster the adoption of such financial solutions by the private investors. They will also be used for



academic and policy-making purposes. Therefore, the exploitation of this result can be summarised as follows:

1. Along with the investment pipelines, the innovative financing solutions may be replicated in other countries (also within the scope of other EU projects, such as SUPERSHINE). Key information will be disseminated through the project channels, and further cooperation with pilots will be done to further inspire the adoption of specific financial solutions by other interested parties in the countries. In this regard, recommendations will be drafted to guide the usage of the financial models and investment pipelines in funding processes.
2. From the financial partners (e.g., Tender Capital), the aim will be the creation of a portfolio of alternative investments, which will be also pushed to their financial partners and clients.
3. Scientific exploitation will be pursued through publications in peer reviewed journals and showcasing results in conferences. In addition, further enhancements will be considered, for example with the calculation of the *green premium* associated with EE investment in social housing. For each building within the SUPER-i pilot, the planned EE interventions will be ranked on the basis of the technological feasibility, energy savings, environmental impact and risk adjusted returns. Other features that need to be added are the calculation of (country-specific) fiscal benefits and avoided fees, which can increase even further the attractiveness of this kind of renovation.
4. The result will be used to inform policy making. In particular, HFROS can leverage its direct connection with the Slovenian Ministries to promote policy-making.

Figure 4 Partners’ role and strategy – Financial solutions

Partner short name	Partners’ exploitation
HE	<ul style="list-style-type: none"> - HE will encourage use of financial instruments to enable social housing companies to renovate their buildings. This could be done by bringing in the SUPER-i model in a new working group on financing HE is establishing with Housing Europe members and external partners (including EIB/COEB), and by linking up the financial solutions from SUPER-i with the ongoing work on financing that is happening within the SHAPE-EU Affordable Housing Consortium.
ATER	<ul style="list-style-type: none"> - ATER will consider innovative financial solutions in the refurbishment projects in the social housing buildings owned by the Agency.



D5.3 - Interim report on D&C activities and their impacts

APRE	<ul style="list-style-type: none"> - The increased know-how in innovative financial tools in energy-related topics will enhance the possibility to provide a better service to the network members facilitating new cooperation opportunities in National and EU public-funded projects. APRE will also leverage its increased communication role in the network in which it is involved (i.e., EEN).
EGC	<ul style="list-style-type: none"> - The results are to be disseminated to members of the European Green Cities Network and are to be used in renovation projects in Denmark. - In addition, in cooperation with BL (DK association of social housing companies) to promote ESCO financing of building energy retrofitting measures through information and capacity-building activities. - In cooperation with BL to involve DK pension funds in the financing of building energy retrofitting measures, including aggregator function together with ESCO partners. - Perform further research, participate in funded projects, and publish scientific papers/articles.
UoY	<ul style="list-style-type: none"> - The University of York will use the financial instruments to finance further EE renovation projects (SUPERSHINE); - Use the financial instruments to enable social housing companies to renovate their buildings by proving a general know-how that can be adapted to other social housing buildings across Europe; - Perform further research, participate in funded projects, and publish scientific papers/articles.
BL	<ul style="list-style-type: none"> - BL expects to make use of the funding schemes and investment pipelines to attract capital (currently, ESCOs are evaluating the project's financial case, but the ultimate goal would be to mobilise pension funds to invest in similar projects).
HFROS	<ul style="list-style-type: none"> - HFROS will promote financial solutions of EE refurbishment and use the financial instruments in its own financial portfolio and also use the financial instruments to finance further EE renovation projects and lowering costs, spreading, and combining different financial solutions, optimising financial consequences.
EEIP	<ul style="list-style-type: none"> - EEIP will support the promotion of financial tools through the integration into EEIP communication activities including use of its AI-based tools such as automated translation (NL, IT, FR, DE, ESP, POR), summariser, recommendation engine and language-specific SEO. Tailored EEIP communication channels will be used to further increase the reach such as



	dedicated Twitter channels (@EEIPBuildings, @EEFinancing) and a monthly newsletter (Finance, Smart Cities & Buildings).
CIRCE	<ul style="list-style-type: none"> - CIRCE will use the portal to showcase the results of EE investments to potential adopters; contribute to upscale the portal, and leverage the platform to get potential clients, set up new partnerships, find new collaborations, and opportunities.
Tender	<ul style="list-style-type: none"> - Tender will use the financial instruments in its own financial portfolio (as investment opportunities). - Use the financial instruments to finance further EE renovation projects. - Use the financial instruments to enable social housing companies to renovate their buildings. - Identify a standard programme for evaluating the marginality of energy efficiency investments within an ad-hoc financial vehicle creation.

1.7.4. Impact

SUPER-i innovative financing schemes are operational and ready to support the financing of EE refurbishment in the social housing sector. These new schemes meet the growing need for private finance in energy efficiency investments and contribute to reducing energy poverty. Supported by the financial instrument analysis, stakeholders can identify appropriate financial instruments for different EE renovation projects based on economic, environmental, and energy-related indicators.

1.8. Data and empirical studies assessing the impact of EE investment financial access and regulation.

1.8.1. Result Description

This result comprises all data and empirical studies obtained in the preparation activities and rollout of the investment pipelines. This data is mostly handled by the UoY, and comprises financial data provided by each pilot, including investment costs, building costs, refurbishment costs, expenses, operating and maintenance costs, funding sources-related data, and Energy Efficient technologies-related data. The data is analysed and used for the elaboration of a comprehensive evaluation analysis to investigate the financial impact of Energy Efficiency projects in each pilot. The evaluation methodology consists of:

- Cost-benefit analysis for the CO2 emissions and energy savings.
- Levelized cost of energy.



- Risk impact and allocation.
- Profitability analysis (Net Present Value, Discounted Cash Flow, Return on Investment, and Internal Rate of Return)
- Risk-Return trade-off analysis

1.8.2. Target users

Data and studies developed in SUPER-i will be highly valuable for academic institutions, research institutes, policymakers, and the industry (ESCOs, investors, financial institutions).

1.8.3. Exploitation & Sustainability strategy

Data and empirical studies generated in the project will be used by partners for:

- 1) Academic/scientific purposes; to carry out further research, embed in academic activities and training, etc.).
- 2) Commercial exploitation; for the enhancement or launch of services.
- 3) Enable uptake of insights across the EU through C&D activities.
- 4) Upon request, the collected data and findings will be shared with municipalities and research institutions.

The table below presents the partners’ specific intentions to use data and research output of the project in their own activities. Plans include both research-oriented and commercial leverage.

Figure 5 Partners’ role and strategy – Data and empirical studies

Partner name	Partners’ exploitation
HE	<ul style="list-style-type: none"> - Use the data to validate and promote EE investments, particularly vis-à-vis EU institutions and financing institutions. Include the data/findings in Housing Europe published reports such as the State of Housing in Europe report in 2023. - Participate in further funded projects leveraging the result.
CIRCE	<ul style="list-style-type: none"> - Build a framework for EE project evaluation, to be further leveraged to provide services. - Publish scientific papers on the topic. - Participate in further funded projects leveraging the result. - Publish the article and disseminate it to continue contributing to the scientific community and improving the position and knowledge in the sector.
UoY	<ul style="list-style-type: none"> - Use the data to validate and promote EE investments.



D5.3 - Interim report on D&C activities and their impacts

	<ul style="list-style-type: none"> - Build a framework for EE project evaluation, to be further leveraged to provide services. - Publish scientific papers on the topic. - Participate in further funded projects leveraging the result.
EGC	<ul style="list-style-type: none"> - Use the data to validate and promote EE investments (attract customers/investors) relevant for EGC. - Build a framework for EE projects evaluation, to be further leveraged to provide services relevant for EGC.
HFROS	<ul style="list-style-type: none"> - HFROS will promote EE refurbishment, presenting the outcomes in scientific conferences and also presenting the results to policymakers to improve the regulation of EE investments in social housing.
ATER	<ul style="list-style-type: none"> - ATER will use the data to validate and promote future investments.
EEIP	<ul style="list-style-type: none"> - EEIP will support the promotion of data and empirical studies through the integration into EEIP communication activities including the use of its AI-based tools such as automated translation (NL, IT, FR, DE, ESP, POR), summariser, recommendation engine and language specific SEO. Tailored EEIP communication channels will be used to further increase the reach such as dedicated Twitter channels (@EEIPBuildings, @EEFinancing) and a monthly newsletter (Finance, Smart Cities & Buildings).
APRE	<ul style="list-style-type: none"> - APRE will support the promotion/exploitation of SUPER-i data and empirical studies, in particular, through their integration into APRE social media; APRE newsletter, and; APRE Magazine. Through its communication channels, APRE will reach various stakeholders interested in the EE refurbishment, in tackling energy poverty, and in the SH sector.
BL	<ul style="list-style-type: none"> - Replication of the data collection and analysis approach in other EE renovation projects. - Liaising with key stakeholders (e.g., policymakers, investors, ESCOs, social housing companies, etc.) to ensure the availability of the data also to third parties, and engage new data contributors, external to the project.
CIRCE	<ul style="list-style-type: none"> - CIRCE will leverage the data for knowledge purposes. It expects to publish an article and disseminate it to continue contributing to the scientific community and improving the position and knowledge in the sector.

1.8.4. Impact

Different data and analysis produced in the SUPER-I project will contribute to assessing the financial impact of Energy Efficiency projects, and support data-driven decision-making.



1.9. SUPER-i guidebook

1.9.1.1. Description

The SUPER-i guidebook is a collection of possible solutions to financially support EE refurbishment in SHs with a focus on PPPs. In particular, financial solutions have been presented after conducting Regional Roundtables in the three pilot countries: Denmark, Italy, and Slovenia. The main Roundtables objectives were to 1) build a first network of relevant stakeholders around the issues of SH building EE requalification and 2) to explore the main financial barriers to investments in EE requalification in the SH context, as well as the main funding sources used in the different contexts to support the refurbishment with a particular focus on PPPs solutions.

1.9.1.2. Target users

SUPER-i guidebook will be used by project partners as input for their own work addressing the energy renovation in social housing.

1.9.1.3. Exploitation & Sustainability Strategy

The guidebook (described in “D1.1 SUPER-i Final guidebook) serves as a capacity building supporting at the European level, the communication, dissemination, and exploitation activities.

The table below presents the partners’ specific intentions to use the result in their own activities. Plans include both research-oriented and commercial leverage.

Figure 6 Partners’ role and strategy – Data and empirical studies

Partner name	Partners’ exploitation
APRE	<ul style="list-style-type: none"> - APRE will use this result to increase awareness of the energy poverty issue by exploiting its network. Moreover, it could deliver training courses on the importance of the social housing EE, in the context of the APRE function and work: - Training. - Information and assistance on R&I, in particular concerning APRE members.
EGC	<ul style="list-style-type: none"> - EGC will use the results for promoting financing of building retrofitting energy-saving measures and PV systems concerning EGC’s Danish and European networks with targeted information activities.



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HFROS	<ul style="list-style-type: none">- Liaising with key stakeholders (e.g., policymakers, investors, ESCOs, social housing companies, etc.) to ensure the availability of the data also to third parties, and engage new data contributors, external to the project.
EEIP	<ul style="list-style-type: none">- EEIP will support the promotion of the SUPER-i guidebook through the integration into EEIP communication activities including the use of its AI-based tools such as automated translation (NL, IT, FR, DE, ESP, POR), summariser, recommendation engine, and language-specific SEO.- Tailored EEIP communication channels will be used to further increase the reach such as dedicated Twitter channels (@EEIPBuildings, @EEFinancing) and a monthly newsletter (Finance, Smart Cities & Buildings).

1.9.1.4. Impact

Beneficiaries will include investors and financial players: 1) invest more on energy requalification; 2) support citizens in getting investments and 3) support advocacy to increase awareness on the financial instruments currently accessible.



6. Conclusions

The SUPER-i Portal and other results generated by this project have significant potential to drive progress in the field of energy efficiency renovations in social housing. By providing a comprehensive platform that can be used by a variety of stakeholders, including ESCOs, investors, social housing companies, and citizens, the SUPER-i Platform can facilitate collaboration and enable more efficient and effective EE renovations.

The financial tools developed and applied to the buildings within the SUPER-i pilots as part of this project, such as Public-Private Partnerships, can help address the challenges of financing EE renovations in social housing. These tools can benefit both investors and state-owned social housing, making it more attractive for them to invest in EE renovations and thus driving progress towards more sustainable and energy-efficient housing while tackling the issue of energy poverty.

The case studies tested in this project provide valuable insights into the best energy renovation measures that can be taken to achieve the greatest impact in social housing. These case studies can inform future decisions about how to prioritise and allocate resources for EE renovations.

Finally, the data and empirical studies generated by this project can help assess the impact of EE investment, financial access, and regulation in the social housing sector. This information can be used to guide policy decisions and improve access to financing for EE renovations in social housing.

Overall, the results of this project represent a significant contribution to the field of EE renovations in social housing, providing valuable tools and insights that can drive progress toward a more sustainable and energy-efficient future. By leveraging these results and continuing to build on them, SUPER-i partners will maximise their impact, support the EE renovations, and have a long-lasting contribution.

