D4.5_Detailed plan for Tasks 4.5, 4.6, and 4.7

INTELLIGENT ENERGY – EUROPE II

Energy efficiency and renewable energy in buildings

IEE/12/070

EuroPHit

[Improving the energy performance of step-by-step refurbishment and integration of renewable energies]

Contract N°: SI2.645928

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Technical References

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Abstract

This document represents Deliverable D4.5 for the EuroPHit project. It is part of the Work Package WP4 “Financing step-by-step energy efficient refurbishment” of the project.

The report details how the following tasks will be undertaken and delivered as part of the project:

- Task 4.5 “One stop shop models”
- Task 4.6 “Target group oriented communication services for step-by-step, quality assured, high-energy performance (EnerPHit) refurbishment”
- Task 4.7 “Development of an integrated market incentive programme for step-by-step refurbishment with high-energy performance”

Co-funded by the Intelligent Energy Europe Programme of the European Union

1 Task 4.5

This task is to investigate integrated 'one stop shop' models, where multidisciplinary teams can be assembled that can undertake a complete, or end-to-end, refurbishment solution. Such a solution is likely to cover surveying, design, and finance for refurbishment packages.

The business models for construction teams will include assistance for marketing of an extended market offer with integration of technical competence, quality assurance and financial solutions. Those business models have high impact on attractiveness and implementation of highly energy-efficient refurbishments with the synergistic effects for banks, clients and the environment.

The result of this task is Deliverable D4.8, a guideline which describes possible business models for one-stop-shop models for step-by-step refurbishment.

1.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	**Dates**
Research into the following areas: • Principles of ones-stop-shop models • Projects, studies and publications concerned with one-stop-shop models • Industry opinion of why and how one-stop-shop models could operate	Sep 2014 to Feb 2015
Business model development: • Develop possible one-stop-shop business models • Test developed models with industry stakeholders	Mar 2015 to Jun 2015
Develop guidelines describing suggested business models for one-stop-shop solutions for step-by-step refurbishment.	Jul 2015
Deliver Deliverable D4.8	Aug 2015

Table 1 T4.5 Activity plan

1.2 Activities undertaken

Research is already underway to look at how other projects and mechanisms related to one-stop-shops. Projects being investigated include:

- COHERENO http://www.cohereno.eu/ further detail provided below
- ERACOBUILD http://www.one-stop-shop.org/node/21

- Low Energy Housing Retrofit www.lehr.be
- IEA SHC Task 37: Advanced Housing Renovation with Solar and Conservation http://task37.iea-shc.org/
- Success Families: Piloting models for holistic renovation of single family houses http://successfamilies.vtt.fi/

1.2.1 COHERENO

The EU project "**Co**llaboration for **h**ousing nearly zero **e**nergy **r**enovation", abbreviated to COHERENO, makes a valuable contribution to achieving the EU's energy efficiency and climate protection goals. Nine institutions from five European countries are involved in the project.

By March 2016, they will develop proposals and concepts for promising cross-sector and company business models for high efficiency refurbishment of single-family houses to nearly zero-energy housing. The models are to pave the way for refurbishment from a single source. From financing, consulting and planning, right through to implementation – all parties in the construction process are to be involved.

A major goal of COHERENO is to improve the quality of the construction measures by providing specific support to all stakeholders, thus increasing customer confidence. With these two key aspects, nearly zero-energy houses can gain credibility and acceptance, and win a higher market share.

1.2.1.1 Background

The United Nations Framework Convention on Climate Change forms the basis for international climate policy. It was ratified by 192 nations and entered into force in 1994. The Framework Convention on Climate Change governs international cooperation in research into global warming and the united quest for ways to mitigate climate change and manage its consequences. The 1997 Kyoto Protocol supplements the Framework Convention on Climate Change. It specifies binding reductions in greenhouse gas emissions for the countries which signed it.

The EU's current energy and climate programme is rooted in "Europe 2020: a new European strategy for employment and growth". It also includes the EU's "20-20-20 targets". For example, they require a 20 percent reduction of greenhouse gas emissions compared with 1990, reduction of energy consumption by 20 percent and an increase in the percentage of renewable energy in the energy mix to 20 percent by 2020.

On this basis, the European Commission has launched a variety of support programmes: Intelligent Energy Europe (IEE), Enterprise Europe Network (EEN), Eco-innovation and Marco Polo. The COHERENO project is funded as part of IEE.

Among the described EU energy efficiency goals, refurbishment of existing buildings plays a key role, as it offers particularly significant potential energy savings. The recast EU Directive 2010/31/EU on the energy performance of buildings (EPBD recast) is intended to advance the overall energy efficiency of buildings and building sections. As a result, EU Member States are obliged to specify corresponding minimum requirements for energy efficiency, which are reviewed every five years. The goal of the directive is that as of 01/01/2021, only nearly zero-energy buildings are to be built throughout the EU.

1.2.1.2 Consortium Partners

A total of nine project partners from five European countries are cooperating in energy refurbishment from a single source in the EU COHERENO project. They are research institutes and advisory bodies. They are supported by the European Commission as part of the EU Intelligent Energy Europe programme. TU Delft is coordinating COHERENO.

- Delft University of Technology, Netherlands - The Department OTB of the Faculty of Architecture and the Built Environment seeks to make a visible contribution to society by helping to solve social problems in the field of the built environment.
- Passiefhuis-Platform vzw (PHP), Belgium - Passiefhuis-Platform vzw (PHP) is a Belgian non-profit organization founded in 2002, currently with over 300 members of leading actors from the construction industry: contractors, developers, architects, energy advisors, engineers, and product producers.
- Flemish Institute for Technological Research (VITO), Belgium - VITO is an independent, results-driven research organisation in the Flemish region of Belgium. VITO conducts customer oriented contract research and develops innovative products.
- Austrian Society for Environment and Technology (ÖGUT), Austria - The Austrian Society for Environment and Technology (ÖGUT) is a non-profit organisation, formed as a scientific platform for environment, economy and administration.
- SEGEL Consulting Company, Norway - Segel is a business consulting firm specializing in strategy and business development, internationalization, marketing innovation and project management.
- German Energy Agency (DENA), Germany - The Deutsche Energie-Agentur GmbH (dena) - the German Energy Agency - is the centre of expertise for energy efficiency, renewable energy sources and intelligent energy systems.
- Buildings Performance Institute Europe (BPIE), Belgium - The Buildings Performance Institute Europe (BPIE) is a European not-for-profit think-do-tank, delivering policy analysis, policy advice and implementation support in the field of energy performance in buildings.
- Flemish Constructors Federation (VCB), Belgium - The Flemish Building Confederation (VCB) is the most representative organization for the building industry in Flanders and has more than 10.000 members. The VCB represents.
- SINTEF Building and Infrastructure, Norway - SINTEF is the largest independent research organisation in Scandinavia. It is a non-commercial research foundation with subsidiaries. SINTEF building and infrastructure is a leading international research institute.

1.2.1.3 Target Groups

The EU COHERENO project is comprehensive and focuses on a variety of target groups. It is intended for all stakeholders involved in refurbishment who contribute to satisfaction of house owners throughout the construction process and its results. In order to guarantee consistent high quality of refurbishment to nearly zero-energy buildings, and thus to promote their establishment on the refurbishment market, the COHERENO partners are committed to developing and expanding successful business models. The following partners are involved in this:

- Small and medium enterprises (contractors) - Efforts are undertaken to target an innovator group of contractors, contracting home-owners, acting as the key

responsible actor for the nearly zero-energy building renovation. They can employ other contractors and are important contact points for home-owners.

- Planners (consultants) - Consulting actors consult the home-owners and provide technical specifications, cost calculations, energy saving calculations etc. They can typically include architects, engineers, all kind of advisors, quality assessors, energy performance certificate advisors and providers of passive house certificates. Also actors who inform and advise home-owners on a general basis but do not provide offers including technical specifications and costs are part of this target group. Typically these can be organizations of home-owners, non-profit organisations, material and building products supplier, real estate agents and financial agents.
- Policy makers and financiers - Financing and policy actors can influence volume market development. Banks, grant providers, energy agencies and policy makers on local, regional, national or European level are typically part of this group.

1.2.1.4 Project Outcomes

During the project term, numerous documents will be produced which can help establish existing cooperation methods and develop additional cooperation models. In addition to this, interim results will be summarised and made available to the public. This provides an overview of best practice examples of nearly zero-energy houses in Austria, Belgium, Germany, the Netherlands and Norway. At the same time, interested parties can research tradesmen, planners and consultants involved in the construction process of nearly zero-energy buildings.

2 Task 4.6

This task is split into four different aspects, each of which will be explained in detail below. The four different aspects are:

- 4.6.1. Development of guidelines for financial institutions
- 4.6.2. Solution approaches to the owner-tenant dilemma
- 4.6.3. Solution approaches for Home Owner Associations
- 4.6.4. On-site direct training courses and workshops for interested financial institution and local partners

2.1 4.6.1. Development of guidelines for financial institutions

This purpose of this activity is to develop financing guidelines for energy efficient refurbishment, targeted at financial institutions. The guidelines will include content on Renewable Energy Sources (RES) and special financing models for step-by-step refurbishment.

Based on the findings of the related tasks in Work Package 4 and the experiences gained in Work Packages 2 and 3, the appraisal guidelines (D4.4) will help the financial institutions to create financial mechanisms to fund low energy refurbishment projects. These guidelines will discuss the value of a highly energy efficient refurbishment, and support motivation to create financial offerings that reflect the reduction in potential running costs for the buildings and improved life cycle benefits.

In addition, another aim of these guidelines will be to inform the participants on the importance and relevance of certification and labelling systems when financing or considering refurbishment measures. They will discuss the importance of the tasks and function of energy advisors, provide a risk assessment of refurbishment quality and strategy as well as the impacts of a refurbishment and the beneficial use of renewable energies on the building's value.

Deliverable D4.4 Appraisal guidelines for energy efficient refurbishment (incl. RES) and special financing models for step-by-step refurbishment and recommendations

Type of deliverable: brochure

Language: English

Target group: financial institutions in the partner countries

Month of completion: draft in October 2014 (month 19), final in August 2015 (month 29)

2.1.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	Dates

Research into the following areas: • Principles of successful financing mechanisms • Projects, studies and publications concerned with financing refurbishments • Industry opinion of why and how financial models could operate	Apr 2014 – Jun 2014
Review and draw upon work carried out in Work Packages 2 and 3, in addition to the other tasks in Work Package 4	Jul 2014 – Aug 2014
Develop and deliver draft guidelines (draft D4.4)	Sep 2014 – Oct 2014
Test and refine draft guidelines through consultation with relevant stakeholders	Nov 2014 – Jul 2015
Finalise and deliver guidelines D4.4	Aug 2015

Table 2 T4.6.1 Activity plan

2.1.2 Activities undertaken

The required research has been undertaken and the draft guidelines have been developed. These draft guidelines (D4.4) will be submitted in October 2014.

2.2 4.6.2. Solution approaches to the owner-tenant dilemma

The purpose of this activity is to develop recommendations of approaches and solutions to the owner-tenant dilemma.

In the case of properties which are managed by housing management companies, steps for renovation are only undertaken with great reluctance, especially if the proportion of rented units is very high. Here the yield (profitability from rental) is often of greater importance than better living comfort. Statutory regulation of renovation cycles normally does not include energy efficiency investments.

An investigation, informed by at least 8-10 interviews on the models and experiences that already exist to solve the owner-tenant dilemma, will be carried out and possible improvements will be discussed in the workshops (4.6.4) and finally described in the appraisal guidelines (D4.4).

Experiences in Germany and the German legal framework provide a basis for an alternative approach. Structured Interviews will be held, with consumer protection agencies (e.g., in North Rhine-Westphalia, which employ energy consultants), with housing associations which have long term experiences with high energy efficient refurbishment (e.g., the Housing Association for Civil Servants (Wohnungbaugesellschaft für Beamte) in Frankfurt), with housing owner association (e.g., Haus & Grund), and with tenant organisations (e.g., DMB Mieterschutzverein Frankfurt). The structure for the interviews will be provided through questionnaires. Additional market research will also be carried out to support the task.

Recommendations regarding the owner-tenant dilemma will be included in the final appraisal guidelines (D4.4).

Output O.4.8. Recommendation of approaches and solutions to the owner-tenant dilemma

2.2.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	Dates
Desk research into the owner-tenant dilemma	Apr 2014 – July 2014
Undertake at least 8-10 interviews on the models and experiences of dealing with the owner-tenant dilemma	Aug 2014 – Jan 2015
Include recommendations on the owner-tenant dilemma in the final appraisal guidelines (D4.4)	Feb 2015 – Mar 2015

Table 3 T4.6.2 Activity plan

2.2.2 Activities undertaken

Research has been undertaken and is included in the draft guidelines (D4.4) that will be submitted in October 2014.

2.3 4.6.3. Solution approaches for Home Owner Associations

The purpose of this activity is to develop recommendations of approaches and solutions to the issues surrounding Home Owner Associations

This issue especially concerns apartment blocks, where the privately-owned property of a particular flat is connected to a pro-rata share of the shared property. In the 'new EU Member States' this kind of property is proportionally very high due to the former state-owned housing situation.

Occupants bear financial responsibility for their own special property. Each property owner must pay a share of the costs incurred to manage the common property. Energy efficient renovation and rehabilitation of single units in an apartment block need to include investments in common property, such as the heating system or the outside walls.

The aim of this sub-task is to identify and address such home owner associations in the different partner countries, like the *Liga Asociatiilor de Proprietari Habitat* of Romania (http://www.habitaturban.ro/), involve them in the regional workshops and share the economic and ecological benefits of energy-efficient step-by-step refurbishment measures.

The information needed to undertake this task will be identified during the workshops (4.6.4) with the concerned organisations and the financial institutions in each country. The data and

information gathered will form part of a “factsheet” and “top tips” document that will be circulated to the governing bodies of Home Owner Associations in each participating country for further distribution to their members. It will describe the benefits and opportunities for improved energy efficiency standards and mechanisms for financing the measures. The success will be measured by the number of respective loan applications received by the participating banks. Recommendations regarding the home owner associations will be included in the final appraisal guidelines (D4.4).

Output O.4.9. Recommendation of approaches and solutions to the issues surrounding Home Owner Associations

2.3.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	Dates
Desk research into the issues surrounding Home Owner Associations	Apr 2014 – Aug 2014
Discuss the issues as part of the workshops (4.6.4)	Sep 2014 – Feb 2015
Include recommendations on the owner-tenant dilemma in the final appraisal guidelines (D4.4)	Mar 2015

Table 4 T4.6.3 Activity plan

2.3.2 Activities undertaken

Research has been undertaken and is included in the draft guidelines (D4.4) that will be submitted in October 2014.

2.4 4.6.4. On-site direct training courses and workshops for interested financial institution and local partners

The aim of these on-site training courses and/or workshops will be to inform, to motivate and bring together decision makers within the financial institutions, home owner associations, tenant organisations, local authorities, energy advisors, and property portfolio managers, amongst others.

Depending on the participating local banks and the limitations of the budget, up to 50 workshops (duration 3-4 hours) in the different partner countries are planned (a minimum of two workshops per country would be essential, but in order to obtain a larger multiplier effect more workshops would be desirable). This equates to a minimum of 18 workshops being organised. Depending on the audience, these sessions may range from smaller meetings to sessions with up to 30 participants. In some cases, a small informational session with an influential financial institution is most effective way to achieve the best impact. In total 150

participants attending the workshops are targeted. The goal of this task is to bring financial institutions in the position to offer their own financing product on step-by-step refurbishment to the market.

The aim is not to meet with a small number of loan officers. Whenever the group addressed is small, this will be because the highest level bankers will be addressed. When loan officers are addressed, the groups will be larger.

The workshops will be organised and guided by one specialist from the present work package covering the financial aspect (Georg Kraft of IZN) and one specialist from one of the practical work packages (local EuroPHit project partner) covering the technical aspect. The appraisal and financing guidelines (4.6.1) will be presented, discussed and refined during the workshops.

Output O.4.7 Regional on-site workshops with financial institutions in different partner countries

Deliverable D4.6 Workshop proceedings: agendas, signed participants list, presentations, minutes, etc.

Type of deliverable: list

Language: English

Target group: financial institutions and major building owners in the partner countries

Month of completion: July 2015 (month 28)

2.4.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	**Dates**
Organise workshops and develop related materials	Apr 2014 – Aug 2014
Undertake workshops in partner countries	Sep 2014 – Mar 2015
Include feedback on the financing guidelines in the final appraisal guidelines (D4.4)	Apr 2015
Finalise and deliver report on workshop proceedings (D4.6)	Jul 2015

Table 5 T4.6.4 Activity plan

2.4.2 Activities undertaken

The first workshop has been carried out in London. It was well-attended, with interesting speakers taking part in the session. A ‘blueprint’ for the other workshops has now been developed. Each of the other partner countries is now considering the arrangements for their respective workshops.

3 Task 4.7

Based on the experiences gained on the workshops, recommendations for a market incentive programme will be developed to boost the uptake of high energy efficient step-by-step refurbishment. These recommendations will be incorporated in the final appraisal guidelines (D4.4).

Output O.4.10 Guidelines for integrated market incentive programme for step-by-step refurbishments with high-energy performance

3.1 Activity plan

The following list details the activities that will be undertaken in order to meet the task objectives.

Activities	**Dates**
Research market incentive programmes to boost the uptake of high energy efficient step-by-step refurbishment	Apr 2014 – Aug 2014
Discuss recommendations at workshops (4.6.4)	Sep 2014 – Mar 2015
Include recommendations on market incentive programmes in the final appraisal guidelines (D4.4)	Mar 2015

Table 6 T4.7 Activity plan

3.1.1 Activities undertaken

Research into market incentive programmes has been undertaken and included in the draft guidelines (D4.4) that will be submitted in October 2014.

Summary

This document represents Deliverable D4.5 for the EuroPHit project. It is part of the Work Package WP4 “Financing step-by-step energy efficient refurbishment” of the project.

The report details how the following tasks will be undertaken and delivered as part of the project:

- Task 4.5 “One stop shop models”
- Task 4.6 “Target group oriented communication services for step-by-step, quality assured, high-energy performance (EnerPHit) refurbishment”
- Task 4.7 “Development of an integrated market incentive programme for step-by-step refurbishment with high-energy performance”