D3.5 – SUPER-HEERO WEB-PLATFORM

Main Author(s): Niccolo' Elia Sovico (E2C), Paolo Alberico Fiori (E2C), Thomas Messervey (R2M)

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Deliverable responsible	E2C	**Contact person**	Niccolo' Elia Sovico Niccolo.sovico@ener2crowd.com

Deliverable Contributors				
	Name	**Org**	**Role / Title**	**E-mail**
Author(s)	Niccolo' Elia Sovico	E2C	Project partner	Niccolo.sovico@ener2crowd.com
	Paolo Alberico Fiori	E2C	Project partner	paoloalberico@ener2crowd.com
Contributors	Cristina Barbero	R2M	Project Coordinator	cristina.barbero@r2msolution.com
	Thomas Messervey	R2M	Project Coordinator	thomas.messervey@r2msolution.com
Reviewer(s)	Thomas Messervey	R2M	Project Coordinator	thomas.messervey@r2msolution.com
	Daniela Cadena	Zero-E	WP Leader	dcadena@zeroe-engineering.com

Document History			
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20/06/2022	0.1	First draft	First draft creation, structure, and content.
11/11/2022	0.2	Second draft	Second draft after internal quality review
01/03/2023	0.3	portal	Portal launched online
12/05/2023	1.0	Final	Version for submission to the EC portal

TABLE OF CONTENTS

Terms, definitions, and abbreviated terms

Acronym	Definition
DoA	Description of Action
EaaS	Efficiency-as-a-Service
EE	Energy Efficiency
EPC	Energy Performance Contract
ESCO	Energy Service Companies
IP	Intellectual Property
IPR	Intellectual Property Rights
KER	Key Exploitable Results
ROI	Return of Investment
M	Project Month
SWOT	Strengths, Weaknesses, Opportunities and Threats
TRL	Technology Readiness Level
WP	Work Package

Executive Summary

This document is the SUPER-HEERO (contract no. 894404) formalizes the completion of the Super Heero crowdlending platform available at www.super-heero.com. The best place to discover this platform will always be online as the platform will evolve and grow across time as the number of projects, users and stakeholders within the ecosystem grow.

SUPER-HEERO has developed **Europe's first and only crowdlending platform** dedicated to energy efficiency renovations supported by shoppers. This is the project's primary Key Exploitable Result (KER) and the business model and strategies for replication are built first around this single energy point platform.

The platform supports the main objective of the Super-Heero project which has been to develop an innovative financing scheme to connect supermarkets, their staff and their shoppers in a new way for energy efficiency renovations that combined crowdlending, performance contracting and as a service contractual models. The single energy point crowdlending platform (www.super-heero.com) was developed and validated via project pilot activities involving non-consortium partners (crowd investors, a supermarket chain and a technology provider). This is to say that the project went "live" and that Version 0 of the SUPER-HEERO platform and its most basic functionalities was commercialized. A licensing agreement for ownership of the platform is purchased and the domain is secured. The brand and image is established and a first set of SUPER-HEERO crowdvestors are earning returns on their investment and already awaiting new projects.

This document outlines several factors surrounding the design, maintenance, vision and upkeep of the platform across time. The platform is proprietary in that it is jointly owned and managed by R2M and Ener2Crowd. The platform is however open and available as a tool for all organisations (supermarkets, ESCOs, technology providers) to learn, shape and design projects that connect organizations to user bases to finance EE interventions that include crowdlending as part of project financing. In doing so, barriers for the implementation of projects are reduced, brand loyalty is increased and the community at large is more likely to carry forward with sustainability and social investing concepts at home or in other areas of their lives.

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1. Introduction: Context and Key Concepts

1.1. Context of WP3

The main objectives of the work package 3 are:

- To define strategies for awaken general public awareness about energy savings, environmental impact of the production of energy, among others,
- To define (in Task 3.2) and implement (in Task 3.4) the crowdfunding platform and its linkages to loyalty and reward programs for supermarket's clients, which should be attractive and promote proactivity.
- To setup advertising campaigns for client's awareness about the Energy savings in supermarkets and define strategies to influence relevant costumer's groups to achieve a wide dissemination.

1.2. Objectives of Task 3.4: Web-platform and reward system implementation at Pilot Sites

This task co-designs, develops and implements a crowdfunding platform dedicated to supermarkets and retail points (e.g. where shoppers, shops and communities can be connected). The platform leverages the IP, backend, investor network and regulatory footprint of the Ener2Crowd crowdfunding platform. The platform is then used to support the first project pilot activities.

The task has worked deeply with WP2 to set up projects, with WP4 to assess projects and WP5 to communicate projects. Special treatment has been given to the reward campaign, user experience for new registrants and serving as the face of the project for the crowdvestors.

This deliverable is dedicated to the platform. Other deliverables are dedicated to the rewards program and implementation of the first project pilots.

1.3. Approach & Methodology

The project's innovative financing scheme consists of engaging citizens with the opportunity to participate in EE renovation projects via crowdlending. All EE interventions have a ROI and that ROI can be centralized on select or few actors (ESCO + supermarket) or that ROI can be shared with a wider audience (ESCO + Supermarket + Crowd). It can be the case that access to financing unblocks, accelerates or makes possible an EE intervention and it can also be the case that financing is not the main driver, but instead engagement and partnering with the community is the desired outcome. In both cases, a web platform, compliant with EU regulations on crowdlending is required to present

projects, register participants, collect funds, transfer funds to the project developer, collect payments from the project developer and to redistribute funds to crowdvestors across time (principle plus interest).

To realize its web platform, Super-Heero partnered with and built upon the already existing crowdlending platform www.ener2crowd using a white label approach (Ener2Crowd backend with Super-Heero front end). In doing so, Super-Heero reduced its development time and effort substantially, built upon a validated result, and ensured compliance with regulations. In addition, Super-Heero gained access to the Ener2Crowd pool of investors and conversely, Super Heero projects will contribute to the Ener2Crowd pool of investors. Building and investor base ensures that projects placed on the platform can be financed with confidence causing the entire ecosystem to grow faster.

1.4. Platform identify and positioning

Ener2Crowd currently supports three white labels. ENEL (involving the crowd in its renewable energy projects, Renantis doing the same and Super Heero). Super Heero is unique in its approach to create a triple win between supermarkets, citizens and territories, each being third parties and the platform being available to any stakeholders who would like to use the Super-Heero approach.

Platform	Objective
Ener2crowd	Crowdlending EE projects of various types to promote greenvesting and sustainability projects at large (typically ESCOs)
Super Heero	Crowdlending EE projects of organizations with member bases empowering them to grow brand loyalty (Supermarkets, Retail, commercial shopping centres, hotels, sport facilities)
Enel	Crowdlending select ENEL projects
Renantis	Crowdlending select Renantis projects

2. Description of the Super Heero platform

The platform developed consists in a separate white label solution vertical for the Super-Heero project. On the Super-Heero platform, users will be able to invest in the specific projects of supermarkets promoted directly by the supermarket brand or project proponent/developer (ESCO). The platform can be viewed at www.super-heero.com.

The landing page and platform overall is consistent with the Super Heero branding and visual identity packets, the homepage captures KPIs to date in the platform along with an explanation of what Super Heero is about and a series of tabs are available to guide the user through available projects, how it works and how to invest.

2.1. Web development platform

The platform consists of different IT development languages and it is connected to different providers:

- Relational MYSQL Database: The relational structure consists of tables of personal data, associated with each other through relational tables and additional log tables, such as email queues, wallet history, and transactions;

- Backend: PHP with the use of Composer for plugin installation;
- Frontend: Html5, Css3, and supporting libraries such as Bootstrap;
- Infrastructure: LINODE Cloud machine where the source code and database are installed.

Process Flow:

- Investor: After registering and completing all registration stages, including Number Verification, Personal Information Input, Document Submission, Contract Acceptance, and Wallet Opening, the user can invest in desired projects. In the dashboard, they can view a table of their investments, their performance, and can withdraw from or deposit into their wallet to perform operations.
- Proposer: After being added by the Backoffice and having active projects, the proposer can access their reserved area to check the status of their projects. They will receive reminder emails for instalment payments and the need to top-up their wallet.

Third-Party Providers:

- Integration with Lemoway: For wallet management, investments, and installment payments, we interface with Lemoway by calling their APIs through SOAP services.
- Integration with Claudio: For integration with external services such as SendingBlue, Effatta, and the MySQL database, we make REST API calls.
- Integration with Services: In order to integrate environmental points, the server exposes REST APIs to map new partners. Once authenticated, these partners can use the APIs to add/subtract internal environmental points within the system.

The project proposed on the Superheero platform can be reached from the app which has this features:
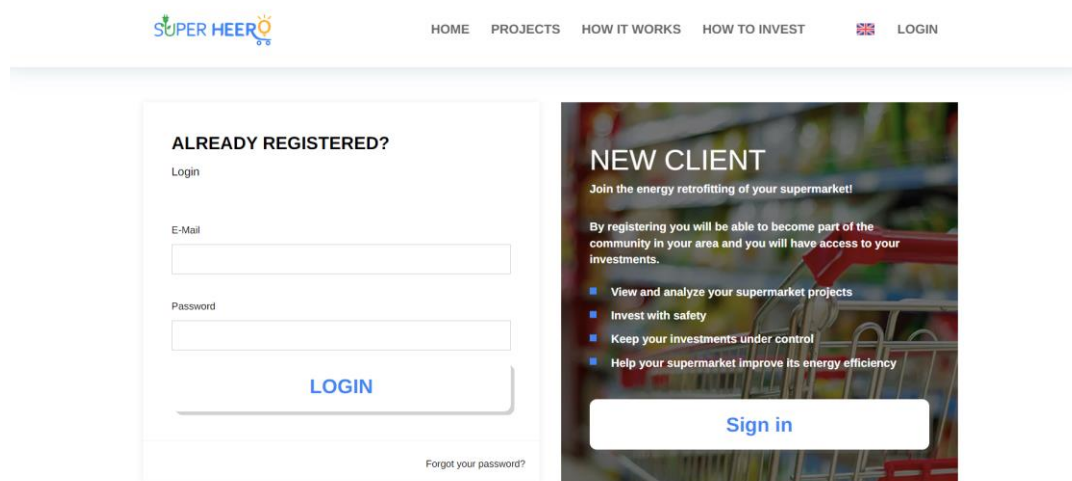
- Database: Same as the WEB;
- Backend: Same as the WEB;
- Frontend: Ionic Capacitor for building Android and iOS platforms;
- Infrastructure: Same as the WEB. The apps are available on both app stores;
- Process Flow: Same as the web;
- Third-Party Providers: None at the moment.

2.2. Process flow for an investor

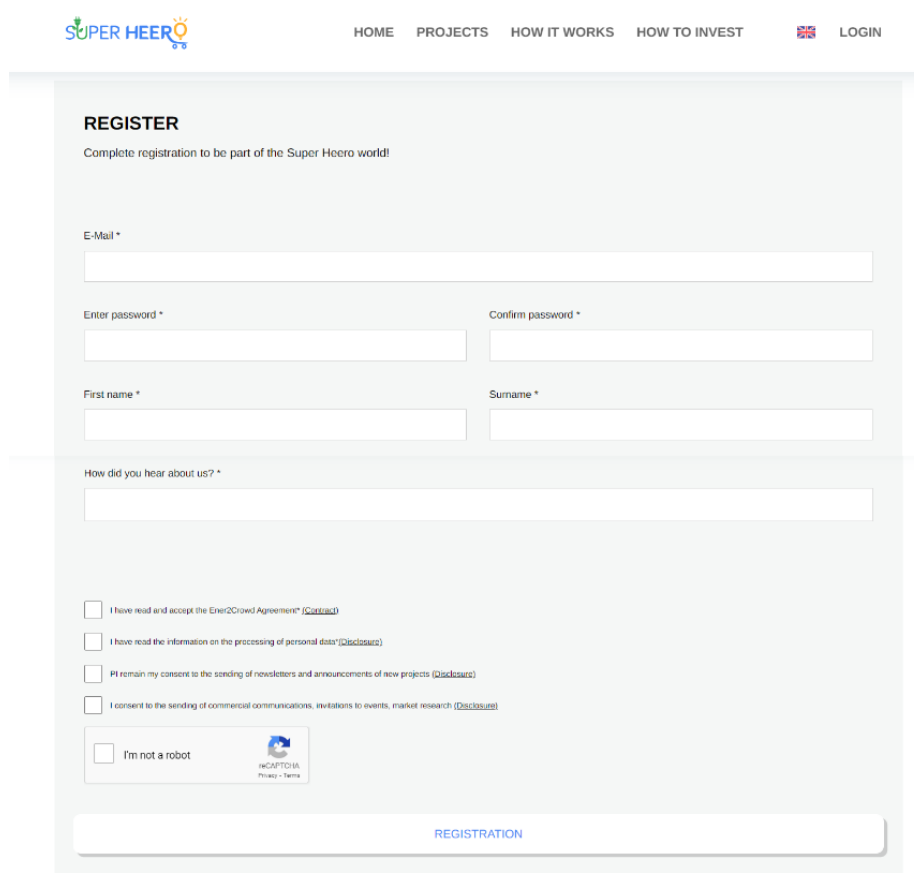The platform can be reached from this web site: https://www.super-heero.com/en/home

It is in three different languages: Italian, Spanish and English

To proceed with registration on the Super Heero platform, you must click on LOG IN, in the upper right-hand bar at the top of the page.

Once on this page, you must select the "Register" option, as a New Customer.

You will then be redirected to a page where you must fill in all the fields and give your consent to the first two conditions (the other two are optional).

An email will then be sent to the address indicated, with a link inside that you must click on to activate your profile.

You will then have to log in again and will be redirected to the Ener2Crowd platform to complete your registration.

The first step is to provide your cell phone number so that you can receive a code through SMS and complete the authentication phase.

Next, you have to choose the type of investor, whether legal person or individual person. If an individual person, you only need to enter your own personal data; in case of a legal person, you also need to enter the company's data, such as VAT Number and Tax Residence.

The individual person, on the following screen, must enter the address of his or her residence.

One must then, next, view and accept the Service Contract.

In the last step of registration, it is necessary to upload one's Identity Document and, in the case of a legal entity, also the Company's legal documents.

Once the validation step is completed, you can reload your Wallet and proceed to invest.

Recharging can be done by credit card or by bank transfer: with a credit card, crediting is practically immediate and it is sufficient to select the amount and enter your card information; with a bank transfer, on the other hand, it is necessary to enter the IBAN and the reason indicated and the amount will be credited within two or three working days.

Add Funds

CreditCard
Maximum amount 499 & euro; (zero commissions) *

Bank Transfer
For any amount (zero commissions)

* NOTE: It may happen that the recharge by credit card is not successful. In this case the bank usually blocks the transaction because the recipient of the payment (LemonWay) is unusual. If the credit card recharge is not successful, please contact your bank to unblock the transaction.
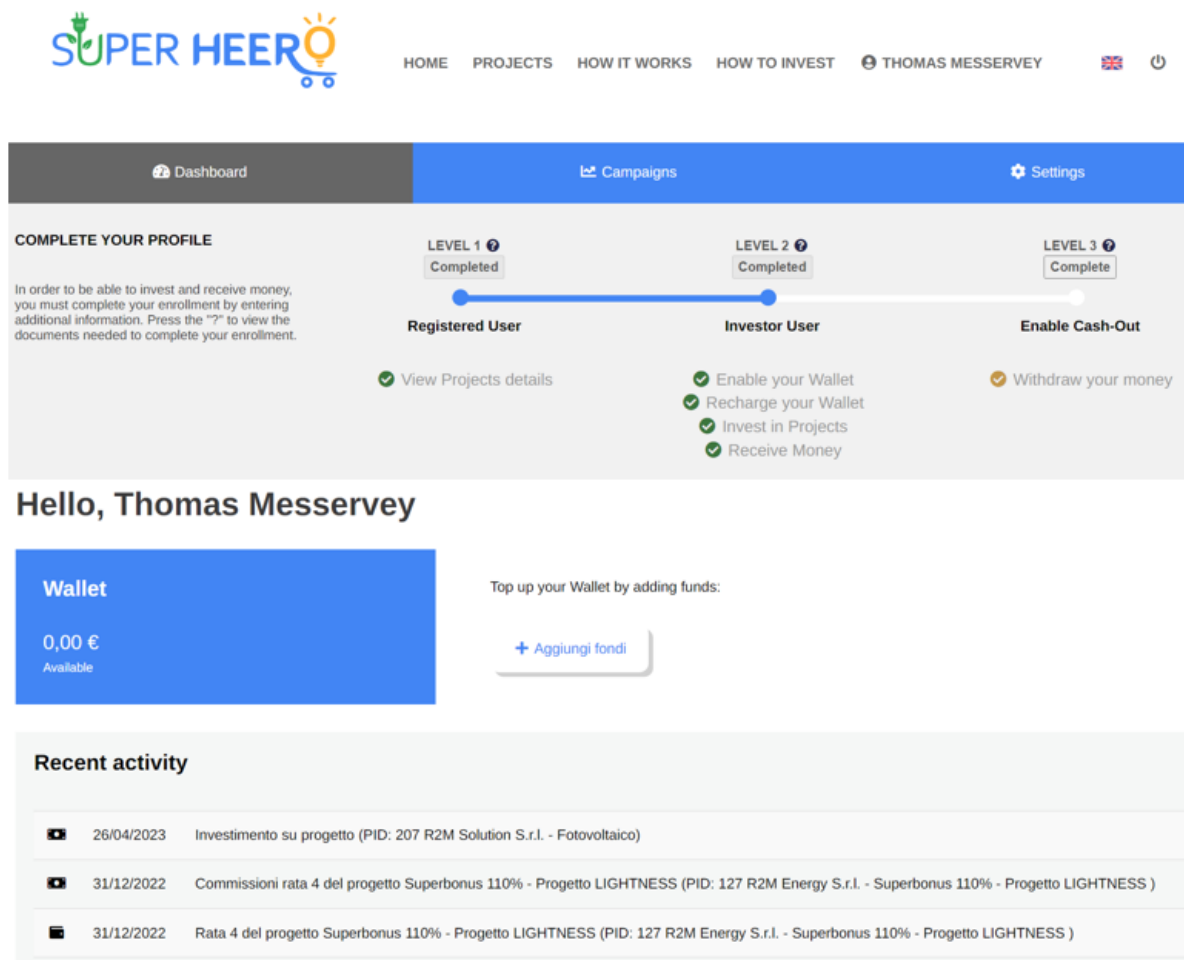
Once the funds are on the Wallet, you can proceed with the investment: in the "PROJECTS" section of the site, or even on the homepage, you can select the desired crowdfunding campaign.
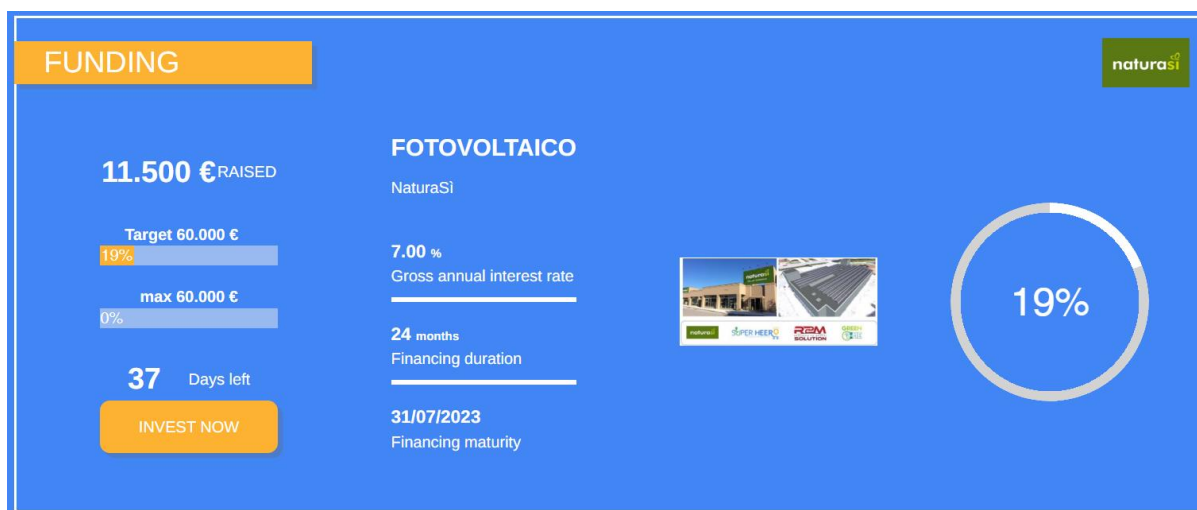
By clicking on "INVEST NOW," it is possible to select the amount to be invested; an email will then be sent with a link inside to click on, which will refer to the page to confirm the investment.

Once you accept the proposed conditions, and click on the button at the bottom of the page, the investment will be concluded; you do not need to take any other action, you only need to wait for a new email confirming the success of the operation.

In the private area, the user can monitor his investments across time with clear view of the returns and the Financial Agreement with the Proponent.

2.3. Process flow for a project / proponent

Project proponents are invited to contact the Super-Heero platform at info@super-heero.com or are likely introduced to the concept at capacity building events / marketing activities. Not all projects can be financed as a series of background checks and financial checks must be conducted and passed.

To place a project on the platform, contracts must be in place between the proponent, suppliers, and the project owner (e.g. supermarket). These contracts are submitted for validation, checks are made on the involved parties and the project is given a GO/NO GO assessment and an "ENERSCORE" which represents a global rating of all project data (technical, financial, and management). Projects can be funded up to 70% via crowdlending. Part of the overall model is to ensure that not all liquidity is provided by the crowd.

Once a project has attained a GO and ENERSCORE, a project campaign is designed resulting on the platform in a project page. The project page provides all data related to the project, its structure,

documentation on the involved company and details about the campaign organizational and payment structure.

Rendimento annuo (fino al)	Durata dell'investimento	Enerscore	Investimento minimo/massimo
7.00%	**24 mesi**	**A**	**100 / 5.000 €**

Benefici ambientali

90 MWh/anno	39 tCO2/anno	3.879 alberi
di energia rinnovabile	evitate in atmosfera	Equivalenti piantumati

❶ IL PROGETTO	▤ IL PROPONENTE	🏛 DATI FINANZIARI	▤ BENEFICI AMBIENTALI	▤ DOCUMENTI
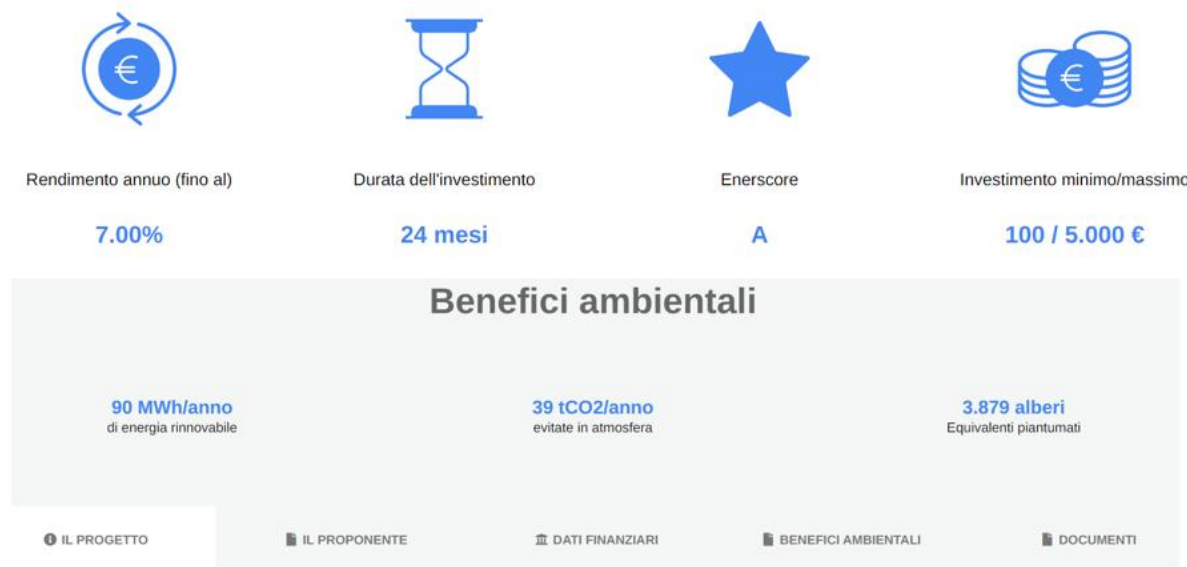
3. The third party provider and legal framework

3.1. Lemonway

It is the payment institution supervised and authorized by the Bank of France which guarantees the security of payments between Investors and Proponents.

Lemonway is the provider for all the payments of the platform and for the KYC of the users.

Link: https://www.lemonway.com/en/

3.2. A Payment Institution

On the 1st of March 2010, Legislative Decree No. 11 of 27 January 2010 implemented the European directive 2007/64 / EC relating to payment services in the internal market (Payment service directive - PSD) which regulates for the first time the payment services sector and introduces the Payment Institutions. With this measure, barriers to the entrance of new operators into the payment systems market are eliminated.

The foreign payment institution, authorized to exercise in a country of the European Union, has the right to request the so-called European passport, which designates the EU countries in which it intends to operate. Therefore, it will be able to operate in these countries on the basis of mutual recognition principles, as if it were a national payment institution.

The lending crowdfunding activity must necessarily refer to a supervised entity, namely (in addition to banks):

- **Payment Institutions**
- **Electronic Money Institutions**
- **Financial Intermediaries on the basis of the art. 106 of the TUB**

3.3. The Agent of a Payment Institution

Article 128 quater of the TUB, at number 6, deals with identifying a specific figure of Agent in financial activity, the Agent of a Payment Institute. The subject (natural person or company), registered in the special section of the list of agents in financial activity kept by the O.A.M, is an agent in the payment services. (Crf. Infra), which only promotes and concludes contracts relating to the provision of payment services on the direct mandate of Payment Institutions. With the aforementioned Legislative Decree No. 141/2010, agents who carry out their activity on behalf of Community payment or electronic money institutions are subject to the sector regulations of the country in which the intermediary in charge has obtained the authorization (home country control).

Ener2Crowd will act with a direct mandate from the Lemon Way Payment Institute. Lemon Way is a French Payment Institute, authorized by the ACPR - Banque de France, with the number 16568.

3.4. The relationship between Ener2Crowd and Lemonway

Ener2Crowd has a Contract with Lemon Way according to which Lemon Way will provide ewallets to Users, in addition to carrying out anti-money laundering checks.

3.5. The anti-money laundering discipline

The new anti-money laundering legislation, which has been active since 31 March 2018, is constituted by Legislative Decree no. 21 November 2007, no. 231, Implementation of Directive 2005/60 / EC concerning the prevention of the use of the financial system for the purpose of money laundering and terrorist financing, and by Directive 2006/70 / EC which lays down implementing measures, as amended from Legislative Decree 25 May 2017, n. 90.

When registering on the portal, Lemon Way will take care of the checks for anti-money laundering purposes.

3.6. The e-wallet

The term eWallet indicates the digital wallet, owned by each natural or legal person registered on the platform, which must be recharged in order to carry out any money transaction. The upload can take place either by SEPA transfer or by credit card. Lemon Way will "transform" this transfer or payment into digital money that can be spent on the Ener2Crowd platform. When the cash-out is requested, Lemon Way will empty the wallet and make a transfer to the recipient's account.

3.7. The contractual model

There are many contracts between the parties.

The Loan Agreement

The Loan Agreement is constitued by:

- General Conditions

- Particular Conditions which possess essential elements of the contract

    - Remuneration of the Loan

    - Duration of the Loan

    - Other clauses about the specific Project

This Loan Agreement is a purpose loan: the Proposer commits to use the funds received by the Investor exactly as foreseen in the Project illustrated in the offer to the public and not to divert them for other purposes.

As for the Investor, this Loan Agreement is officiated by adhesion when:

a) the Investor accepts the offer to the public through the portal www.ener2crowd.it indicating the investment he wants to make;

b) the Investor makes the electronical payment of the amount invested in his Payment Account.

The Service Agreement with Users

This contract governs the provision of services by ENER2CROWD, through the lending crowdfunding platform called http://www.ENER2CROWD.it (the Platform), in favor of the subject (Customer) who wants to make investments in peer to peer loans; this means that each Customer, by accessing the Portal:

- can evaluate the published Projects;
- can make investments in the form of peer to peer financing;
- can manage the investments made on the Platform

The investment takes place through the direct loan to the subject requesting it (the Proposer) and not to ENER2CROWD. The service is reserved for subjects not under prudential supervision and / or not operating in the banking, financial, securities, insurance and social security sectors (for example, banks, intermediaries pursuant to art.106 of the Consolidated Banking Act, etc.).

The Service Agreement with Proponents

This contract relates to lending crowdfunding services provided through the online Platform for the conclusion of peer to peer loans, i.e. directly between the Proposer and a plurality of third party investors, individuals or companies, for the realization of the Project.

ENER2CROWD reserves the right, at its sole discretion, to refuse the publication of the Project or to suspend the campaign if this is not compatible with the image or reputation of ENER2CROWD, ontologically or due to the methods of presentation to the public, pursuing the interest of potential investors and the linearity, correctness, homogeneity and correspondence of the investment proposals presented to ENER2CROWD's corporate strategic project.

This contract also regulates the economic relationship between Ener2Crowd and the proposing company.
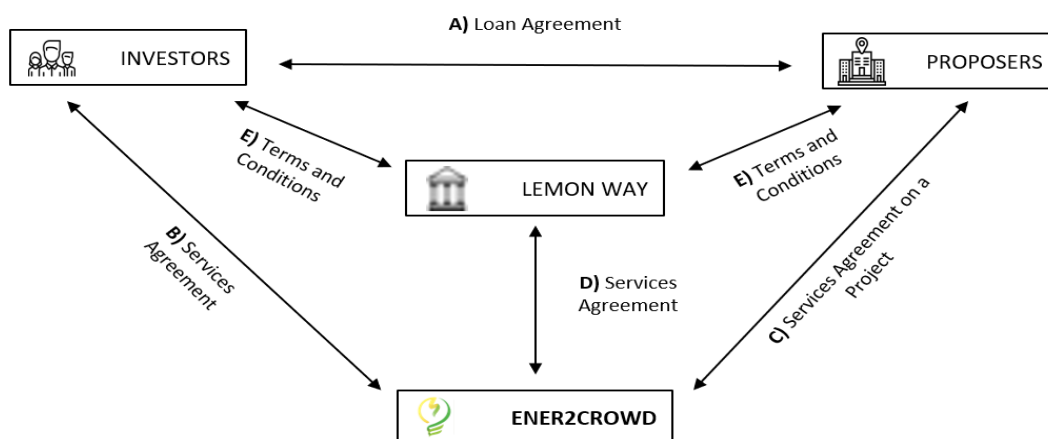
3.8. Evolving Regulatory Landscape

We must consider that a new European Regulation for crowdfunding had been approved by the European Commission in 2021 and we were in the transitional / adoption phase at the national levels.

Law reference:

- Regulation (EU) 2020/1503 of the European Parliament and of the Council of 7 October 2020 on European crowdfunding service providers for business, and amending Regulation (EU) 2017/1129 and Directive (EU) 2019/1937 (link)

For this reason, the platform will have to be updated before November 2023 for the adjustment to the crowdfunding European regulation which impacts the process for registering investors into the platform and associated checks/documentation/paperwork.

4. Maintenance and next steps

4.1. Maintenance

What has been attained in during the Super-Heero project is a solid first start, but is not a final steady state / it is anticipated there will be updates and upgrades the platform across time. One issue is languages. Currently, the platform is available in English, Spanish and Italian. However, the project pages do not have the same level of detail for each language and it is not yet decided if this is necessary long term. Maintenance or development of the backend engine is reserved for Ener2Crowd as one good-intentioned change on registration or payment processes can have deep implications across series of routines and cross linkages where mistakes must be prevented. Work on the front end will be jointly conducted by R2M and E2C.

4.2. Next Steps

Work on the platform at the moment is focused on the user experience for the pilot and early stage project campaigns. As such, project pages get the most attention. Over time, it will be necessary to make the platform also a tool for attracting new project developers to the platform and making their user experience better. Linkages to the capacity building webpage and EU project webpage are to be further detailed and a better explanation of how the ecosystem webpages each connect together provided. In November, adaptation to the new regulations will be required. In the impending future (Italy is delayed in ratifying the internationalization of crowdlending platforms and closure is expected in the next months), the platform will be able to operate in Spain and first projects in Spain can be developed and promoted.

It is also a direct objective within the Super Heero project to point toward other sectors that can benefit from the Super Heero approach. Other sectors include retail points, commercial shopping centers, hotels, restaurants and energy communities. Once work consolidates and the ecosystem of supermarkets is ignited, focus will then transition to other sectors.

5. Conclusions

This document has reported on various aspects of the Super Heero crowdlending platform. It's job is to make possible the innovative financing scheme developed in the Super Heero Project by allowing citizens to open accounts, deposit funds, select campaigns to invest in and participate in the financing of energy efficiency projects in supermarkets and other organizations where they are member or of which they take a particular interest. On the other side of investors are projects. Those projects need to be received, assessed, and then be presented to investors if deemed appropriate for funding within the Super Heero ecosystem. Then, the work of the platform happens, funds are received, funds are transferred to the project, and then funds plus interest are collected across time and returned to the investors. In the interim, projects are promoted and the investor community are curated for future projects.

This deliverable has documented the vision, approach, methodology, platform structure, investor user journey, project developer journey, payment provider, legal framework, maintenance and future steps for the Super Heero platform. The best place to learn about the platform will always be directly live at www.super-heero.com.