FEEdBACk®

Fostering Energy Efficiency and BehAvioural Change through ICT

WP7 – Dissemination and exploitation of results

Project Communication

Dissemination and Exploitation Plan

D7.2

The FEEdBACk Consortium
2017

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Laura Martinez (DEXMA)	15/05/2018	Minor revision of the text.
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FEEdBACK

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❯ EXECUTIVE SUMMARY

The second deliverable of WP7, which goal is to disseminate and promote the knowledge, technical solutions and results achieved during the project, is the Dissemination and Exploitation plan.

This deliverable is divided into eight chapters: introduction, dissemination plan, integrated communication campaigns, targeted stakeholders, KPIs defined, impact assessment (month 1 to 6), exploitation plan and conclusion.

The dissemination plan chapter is divided into five subchapters that correspond to the five structural communication tools that will be used to communicate the FEEdBACk project to our targeted audiences. The communication tools that will be used and the communication actions related to these tools are:

- Advertising (communication actions: logo, flyers, posters, leaflets and videos);
- Public Relations (communication actions: press release and press kit);
- Events and Experiences (communication actions: events organised by other entities, events organised by the FEEdBACk consortium and demonstrator kit)
- Digital Marketing (communication actions: website and social media channels);
- Direct Marketing (communication actions: contacts database and newsletters)

The goal of the integrated communications campaigns' chapter is to establish communication campaigns with an integrated marketing approach based on the different dissemination tools described in the dissemination plan chapter. This chapter is divided into three sub-chapters:

- 1st communication campaign in which the goal is to inform the stakeholders of the project about it and that will be implemented from November 2017 until December 2018. The communication tools used in this campaign are: advertising, digital marketing, public relations, events and experiences and direct marketing. The communication actions associated to each one of these tools are described in sub-chapters of chapter 3.1.;
- 2nd communication campaign has two main objectives: 1) to engage the local communities involved in the demo areas with the gamification platform and 2) to start reaching stakeholders, such as the energy efficiency network (players in this area that are not included in the other stakeholders' cluster, such as energy efficiency associations), industry, aggregators, retailers, DSOs, ESCOs or restricted external partners, promoting the main innovations that are being developed in the project. The implementation of the second communication campaign should start in January 2019 and end in December 2019. The communication tools used in this campaign are: digital marketing, public relations, events and experiences and direct marketing. The communication actions associated to each one of these tools are described in sub-chapter 3.2.;
- 3rd communication campaign will be implemented from January 2020 until the end of the project (October 2020) and will be important to target the stakeholders involved more directly in the exploitation plan. The communication tools used in this campaign are: events and experiences, direct marketing, public relations and digital marketing. The communication actions associated to each one of these tools are described in sub-chapter 3.3.

Chapter 4 of this deliverable corresponds to the targeted stakeholders. Even though all of the targeted stakeholders have already been identified in each one of the communication actions, chapter 4 gathers all of them. Eleven groups of stakeholders are considered: final consumers (SH1), Local residents and player community (SH2), building managers (SH3), local authorities & national governments (SH4), academic institution (SH5), industry, aggregators, retailers, DSOs and ESCOs (SH6), EU Community (EU organisations, other EU projects or agencies) (SH7), energy efficiency network (SH8), restricted external partners (SH9), media (SH10) and Advisory board (SH11).

There are KPIs that were defined to each of one the communication tools presented in this deliverable. Chapter 5 summarizes all of the 24 KPIs considered for the dissemination activity:

The results in terms of these KPIs that have been obtained from month 1 until month 6 are presented in chapter 6 in different sub-chapters, according to the communication tools they are related to.

Chapter 7 of this deliverable corresponds to the exploitation plan. It should be highlighted that this is a working document and that the final IPR distribution will be agreed among partners in future deliverables, as the project moves forward with its technological developments. Despite that fact, the FEEdBACk consortium has already identified twenty-one exploitable results. A first description of each one of these results containing the main objectives, innovation, intellectual property prospects or the exploitation strategy, has been produced.

This deliverable ends with chapter 8 (conclusion) that summarizes the main results obtained in the first six months of the project and gives an overview of the next steps, until deliverable 7.3. "Follow up on dissemination and exploitation of results" that is scheduled for month 18.

1. INTRODUCTION

This deliverable is a report that will detail the main strategies for disseminating the project and the exploitation plan. This is a six-month report, therefore it will present the major guidelines for these two topics, but it is not a final version since there will be two more updates on this document in months 18 (D7.3. "Follow up on dissemination and exploitation of results) and 36 (D7.4. "Final report on dissemination and exploitation of results").

The dissemination objectives and activities will follow a marketing communication approach. For that reason, it is important to start this by report by defining some of the concepts that will be mentioned in this deliverable.

"Marketing communications are the means by which firms attempt to inform, persuade and remind consumers – directly and indirectly – about the products and brands they sell" (Keller & Kotler, 2012)[1][1]. Different authors divide in different categories the communication tools that are part of the marketing communications mix. In this deliverable, we will follow Keller and Kotler's approach (2012)[1] that divided the marketing communications mix in eight major modes of communication: advertising, sales promotion, events and experiences, public relations and publicity, direct marketing, interactive marketing, word-of-mouth marketing and personal selling.

Six of the eight tools listed above will be part of FEEdBACk project dissemination strategy – advertising, events and experiences, public relations and publicity, direct marketing, interactive marketing and word-of-mouth marketing. Each one of these communication tools will be briefly described, according to Keller and Kotler's definitions, in the "dissemination activities" chapter. These modes of communication, the actions that will be implemented, the audience to which they are targeted, the implementation dates and the respective key performance indicators (KPIs) will also be detailed in this chapter.

However, it is important to highlight that the "marketing communication activities must be integrated to deliver a consistent message and achieve the strategic positioning" (Keller & Kotler, 2012)[1].

Besides the dissemination plan, a first version of the exploitation plan will also be presented in this deliverable. This exploitation plan works as an assessment for the potential commercial exploitation of the main results from the project. Since we are still at an initial stage of the project, the level of detail of the exploitable results will be limited compared to the subsequent versions that will be submitted in months 18 and 36. It should be highlighted that this is a working document and that the final IPR distribution will be agreed among partners in future deliverables, as the project moves forward with its technological developments.

2. DISSEMINATION PLAN

Different target groups and dissemination channels will be used according to the different communication tools defined to disseminate this project. Even though different target groups will be identified for to different communication instruments, the effort of communicating the project in an integrated way is the main goal of this plan. "Changes in communication technology and instant access to information through tools such as the Internet and social media (online communication among interdependent and interconnected networks of organizations, people, and communities) explain one of the reasons why integrated marketing communications have become so important" (*Principles of Marketing*, 2015)[2] .

This Chapter is divided into five sub-chapters - advertising, events and experiences, public relations, direct marketing and digital marketing - that correspond to the five structural communication tools that will be used to communicate the FEEdBACk project to our targeted audiences.

2.1 ADVERTISING

"Advertising is defined as any paid form of non-personal communication about an organization, product, service, or idea (…)" (Belch & Belch, 2006)[3].

Several communication materials have already been produced to advertise the project in a more institutional way. These materials are listed and explained, in an individual way, in the following sub-chapters.

The first material that needed to be defined before the launch of the others was the project logo.

2.1.1 THE PROJECT LOGO

A first version of the logo was presented in Porto kick-off meeting, on November 2017. The partners have given some inputs, mostly regarding the colours and a final version has been distributed to all partners. FEEdBACk's logo is presented in the figure below.

FIGURE 1 – PROJECT LOGO

2.1.2 PROJECT FLYER

A project flyer has also been produced as an initial and brief presentation of the project. The **objective** is that the **partners can distribute them to stakeholders** identified as strategic ones, such as **Industry, DSOs, ESCOs, regulators, local authorities & national governments, building managers, local residents,**

academic institutions, energy efficiency networks or EU Community and other projects, **during**, for example, **meetings or events**. The contents of the flyer are a general description of the project, the main outputs, partners, duration, financing and contacts.

FIGURE 2 – PROJECT FLYER

2.1.3 PROJECT POSTER

Two versions of a project poster have been produced and distributed to all partners. During the project it is expected that the partners **participate in events**, such as **fairs** or **public presentations**, **which goal is to promote the FEEdBACk project**. The **target groups** are the same as the ones written above: **Industry, DSOs, ESCOs, regulators, local authorities & national governments, building managers, local residents, academic institutions, energy efficiency networks and EU Community and other projects.** For that reason, a poster has been created with information about the project's motivation, framework, demonstrators, gamification platform, partners, duration, financing and contacts. The difference between the two versions stands only in their design and are shown in the following figures.
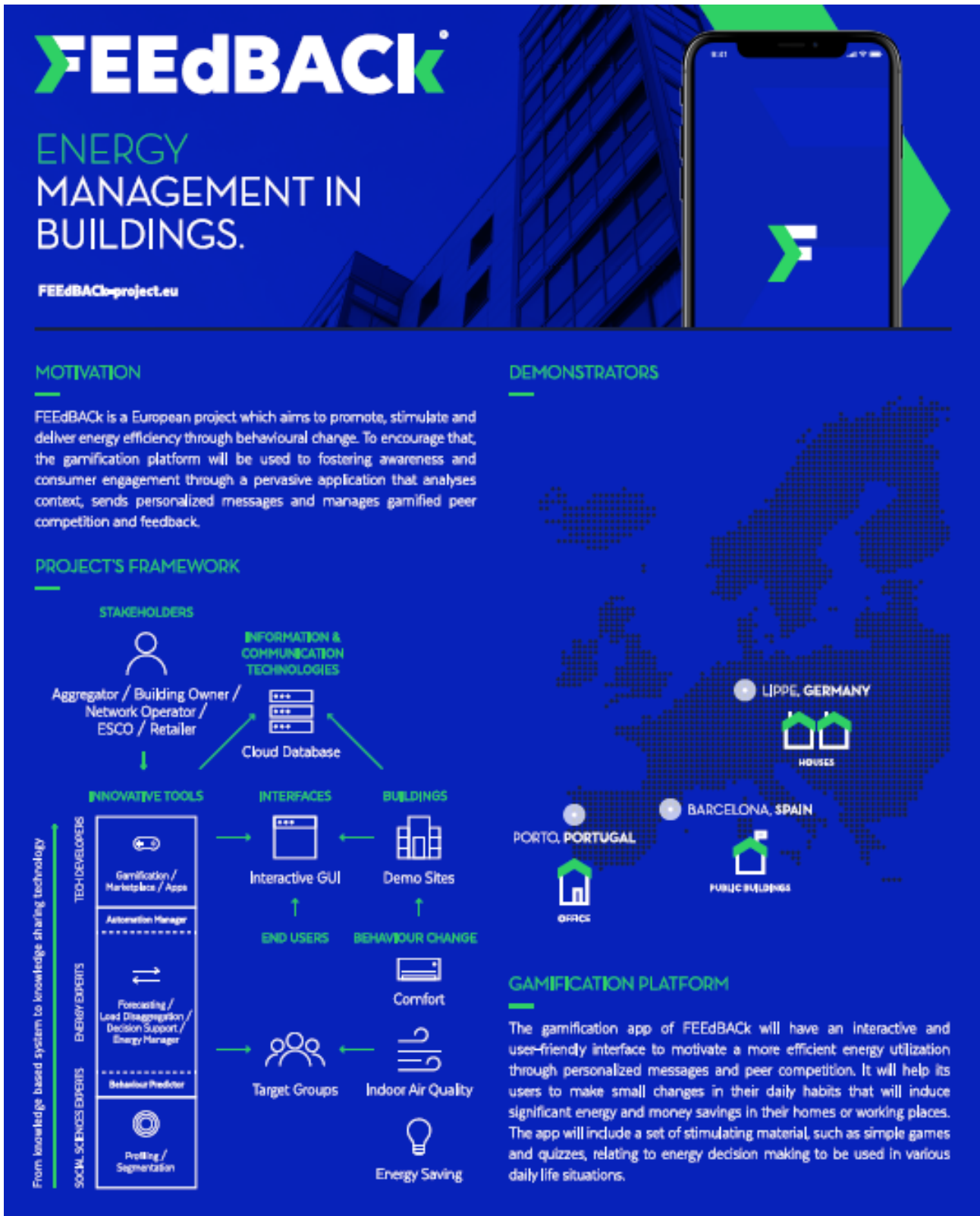
FIGURE 3 – PROJECT POSTER (VERSION 1)
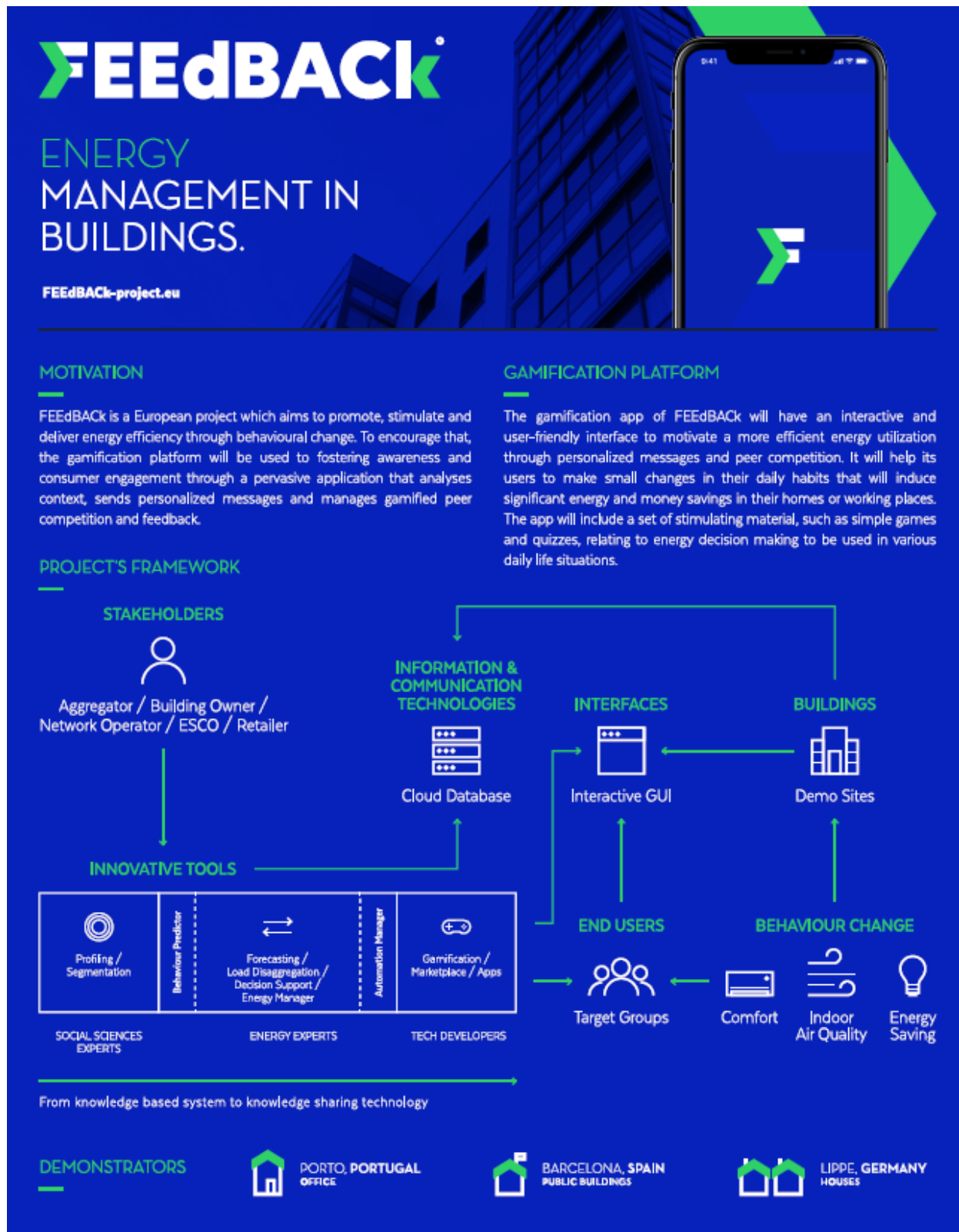
FIGURE 4 – PROJECT POSTER (VERSION 2)

2.1.4 LEAFLETS

Two types of leaflets have been produced: one for the project and another for the demo sites (this one having three different versions, one for each demonstration area: Portugal, Spain and Germany).

The project leaflet, shown in the figure 5, has information about the general context of the project, main outputs, the three demonstrators, the gamification platform, partners, funding and contacts. The **goal of this leaflet is the same as the flyer and the poster**. Again, it is expected from the partners that they **provide information about the project to their strategic stakeholders** (already mentioned above). Besides the English version of the leaflet, a Portuguese, German, Spanish and Catalan versions will be available, since it is another communication vehicle to reach consumers in the demonstration areas.

The gamification app of FEEdBACk will have an interactive and user-friendly interface to motivate a more efficient energy utilization through personalized messages and peer competition. It will help its users to make small changes in their daily habits that will induce significant energy and money savings in their homes or working places.

The app will include a set of stimulating material, such as simple games and quizzes, relating to energy decision making to be used in various daily life situations. Attractive dashboards will be developed so that users can compare in a straightforward manner, using animated and graphical techniques, their own energy efficiency performance with their peers. The users will also have the possibility to share their accomplishments on their social networks.

FIGURE 5 – PROJECT LEAFLET, ENGLISH VERSION

The specific leaflets about each of the three demo areas will also be available in English and the corresponding native language. The structure of the leaflets similar, the big differences stand in the specifications of each of the demonstration areas. An example corresponding to the Spanish demo (Catalan version) is shown in the figure 6.

EL PILOT DEL PRAT - BARCELONA.

Jugant per promoure l'eficiència energètica intel·ligent en 10 edificis públics d'El Prat de Llobregat.

Esportiu
- Centre esportiu Sagnier
- Centre esportiu Estruch

Educació
- Escola d'adults Terra Baixa
- Escola d'oficis Delta del Llobregat
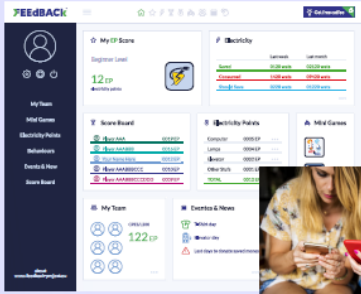
Cultura
- Centre cultural Cèntric
- Centre cultural La Capsa
- Centre Cívic Jardins de la Pau

Oficines
- Oficines, c/ Centre 26-30
- Oficines c/Major 2-4
- Oficines del Centre de Promoció Econòmica

MONITORATGE ENERGÈTIC I DE CONFORT.

MESURADORS:
- Electricitat, gas i aigua.
- Aire acondicionat i il·luminació.

SENSORS:
- Temperatura i humitat.
- Concentració de CO_2.

PLATAFORMA DE GAMIFICACIÓ.
Per promoure el canvi de comportament.

- Interfície interactiva i fàcil d'utilitzar
- Desafiaments entre seus companys i col·legues
- Missatges personalitzats i consells
- Premis a les millors actuacions periòdiques
- Jocs interessants i qüestionaris
- Compartint resultats a les xarxes socials
- Panells de rendiment i gràfics

PERQUÈ HI HAURIA DE PARTICIPAR?

- Per divertir-se mentre aprèn com reduir el consum d'energia i fins i tot com reduir les seves factures d'energia de la llar.
- Per ajudar-nos a entendre les seves necessitats com a usuaris dels edificis públics.
- Per contribuir a la millora de rendiment dels edificis públics.
- Per formar part d'un projecte europeu innovador.

ELS OBJECTIUS ESPECÍFICS DE BARCELONA.

ESTALVI D'ENERGIA
12%.

COMPORTAMENT:
70% dels usuaris registrats a la plataforma de gamificació. Freqüència d'entrada mitjana de 3 cops per setmana.

CONFORT:
80% d'usuaris satisfets amb els nivells de temperatura i d'humitat interior.

QUALITAT DE L'AIRE INTERIOR:
CO_2: 1000-1200 ppm en el 95% de les zones ocupades.

POSAR-SE EN CONTACTE.

- www.feedback-project.eu
- info@feedback-project.eu
- www.facebook.com/feedbackh2020
- https://twitter.com/FEEdBACkH2020
- https://www.linkedin.com/company/-feedback-project/

FIGURE 6 – BARCELONA DEMO LEAFLET, CATALAN VERSION

2.1.5 VIDEO

The **institutional video** created for the FEEdBACk project **aims at informing and engaging users around the two main concepts of the project: energy efficiency and gamification.**

In this sense, in the video there is a fusion between real behaviours of energetic consumption and a game's mock-up. In other words, as representative images of efficient energy behaviours appear, the scores' bar (designed as an energy efficiency bar) turns greener. The characters on the video can win or lose lives (icons of planets), too.

It is possible to observe if the characters are doing a correct or incorrect action by the messages that appear on a mobile phone – a simulation of the FEEdBACk application.

The meaning of these images is also completed by some textual information about the project: objectives, context, demonstration areas and consortium.

Industry, DSOs, ESCOs, regulators, local authorities & national governments, building managers, local residents, academic institutions, energy efficiency networks, media, EU Community and other projects are the **targeted stakeholders** that the FEEdBACk project wants to reach with this communication action.
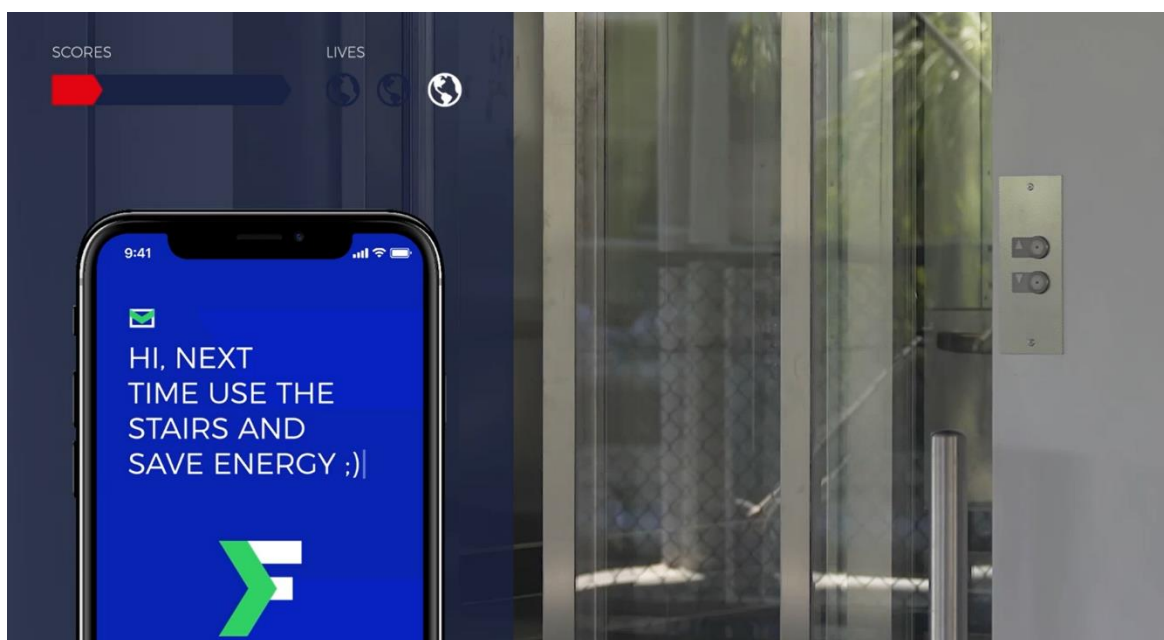
FIGURE 7 – PROJECT PRESENTATION VIDEO FRAME EXAMPLE

The video is available on Youtube: https://www.youtube.com/watch?v=hlaG7b8kHaI

2.2 PUBLIC RELATIONS

"(…) a variety of programs directed internally to employees of the company or externally to consumers, other firms, the government, and the media to promote a company's image or its individual product communications" (Keller & Kotler, 2012)[1].

The Press Release and the Press Kit are the communication instruments used in this chapter.

2.2.1 PRESS RELEASE

One of the **target** stakeholders to reach within the FEEdBACk project is the **media**. **The importance of a good media coverage to gain credibility, acceptance and knowledge about the project is very high** in such a wide and competitor market such as the energy efficiency one. **Through the media, we are able to spread our goals and vision to other stakeholders (local authorities & national governments, international authorities, academic institutions, industry, utility companies, local residents, building managers, EU community and energy efficiency network).**

There is a need of establishing metrics to quantify the impact of the press releases. Regarding this communication tool, three Key Performance Indicators (KPIs) were defined:

- The number of Press Releases released to the media – at least 3 during the entire project;
- The number of news pieces published on the media – at least 30 during the entire project;
- The number of online news based on the press release published on online platforms, such as the partners or other stakeholder's website – at least 20 during the entire project.

A first Press Release about the FEEdBACk project has been disseminated to the media in the month 4 (February 2018). A copy of the Press Release is presented in the figures below.

FEEdBACk

AT HOME OR AT WORK

WHAT IF WE COULD SAVE ENERGY JUST BY USING A MOBILE APP?

WITH A BUDGET OF €2,3M, FEEdBACk IS THE EUROPEAN PROJECT THAT IS GOING TO DEVELOP ENERGY EFFICIENCY SOLUTIONS UNTIL 2020

Would you change your behaviour regarding energy if you had a mobile app to help you? This is one of the main goals of FEEdBACk, an H2020 project, that is going to develop energy efficiency solutions until 2020.

Eight organizations from seven European countries (Portugal, Netherlands, Switzerland, Spain, United Kingdom, Denmark and Germany) are working together to promote, stimulate and deliver energy efficiency through behavioural change.

How? By encouraging a more efficient energy utilization and a more responsible consumer behaviour through a gamification platform that will be used to motivate behavioural change.

"The gamification app of FEEdBACk will have an interactive and user-friendly interface to motivate a more efficient energy utilization through personalized messages and peer competition. It will help its users to make small changes in their daily habits that will induce significant energy and money savings in their homes or working places", explains Filipe Joel Soares, INESC TEC senior researcher and leader of the FEEdBACk project.

The app will include a set of stimulating material, such as simple games and quizzes, relating to energy decision making to be used in various daily life situations. Attractive dashboards will be developed so that users can compare in a straightforward manner, using animated and graphical techniques, their own energy efficiency performance with their peers. The users will also have the possibility to share their accomplishments on their social networks.

Where? In three demonstration areas – Portugal, Spain and Germany – that will focus on three distinct environments. The Portuguese demonstrator will be the building of INESC TEC, the Spanish demonstration area encompasses a number of public buildings in the municipality of El Prat in Barcelona and the German demonstrator consists of a residential area located in Lippe.

However, consumer's behavioural change will not only be promoted in these demonstration areas. Activities, such as awareness campaigns on the social media channels or on the project's website, will be

INESCTEC   TUDelft   EPFL   DEXMA   LIME TOOLS   IN-JET   Lippezukunft   ERF

FIGURE 8 – 1ST PRESS RELEASE (PAGE 1)

promoted to the Portuguese, Spanish, English, and German consumers, outside the demonstration areas, to try to encourage a behavioural change regarding energy efficiency goals.

INESC TEC (Portugal), Technische Universiteit Delft (Netherlands), École Polytechnique Federale de Lausanne (Switzerland), Dexma Sensors (Spain), Limetools (United Kingdom), In-Jet (Denmark), Kreis Lippe Der Landrat (Germany) and Estudi Ramon Folch I Associats (Spain) are the partners of the FEEdBACK project, that will have until 2020 a budget of €2.3M to invest in these solutions.

For more information, please visit: www.feedback-project.eu

FEEdBACk project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768935.

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Porto, 6 February 2018

FIGURE 9 – 1ST PRESS RELEASE (PAGE 2)

However, the strategy to release information to the media will be detailed in chapter 3 "Integrated Marketing Communication Campaigns" and the current results of the KPIs that have been defined will be detailed in chapter 5 "KPIs – results status".

2.2.2 PRESS KIT

Apart from the Press Release, a Press Kit has been produced and uploaded on the project's website and to send to the journalists, whenever they ask for information about the project.

Since it is not expected to introduce the project in every communication done to the media, the **Press Kit** also **works as a general guideline with key information about FEEdBACk in order to support the journalist while he/she is writing the news piece**.

An English version of the Press Kit has been shared with the consortium. Since every partner is responsible for sending information to their national media there may be a need of translating the Press Kit to their native languages.

FEEdBACk

FEEdBACk

Duration: 01.11.2017 – 31.10.2010
Investment: € 2.3 million

WHAT IS FEEDBACK?

FEEdBACk is a European project which aims to promote, stimulate and deliver energy efficiency through behavioural change. To encourage that, the gamification platform will be used to fostering awareness and consumer engagement through a pervasive application that analyses context, sends personalized messages and manages gamified peer competition and feedback.

DEMO-SITES.

Three demonstrators will be used at the European level - Portugal, Spain and Germany - focusing on three distinct environments and type of buildings.

Porto - Portugal
Office
Oceanic climate

Barcelona - Spain
Public buildings
Mediterranean climate

Lippe - Germany
Dwellings
Continental climate

PARTNERS.

The consortium is composed of 8 partners based in 7 different countries – Portugal, the Netherlands, Switzerland, Spain, the United Kingdom, Denmark and Germany.

Headed by INESC TEC, the project also has the participation of the Technische Universiteit Delft (Netherlands), Ecole Polytechnique Federale de Lausanne (Switzerland), DEXMA Sensors SL (Spain), Limetools LTD (United Kingdom), IN-JET APS (Denmark), Kreis Lippe der Landrat (Germany) and Estudi Ramon Folch i Associats SL (Spain).

INESCTEC   LimeTOOLS   Lippezukunft

TUDelft   DEXMA   IN-JeT   ERF

www.feedback-project.eu
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www.facebook.com/feedbackh2020

https://twitter.com/FEEdBACkH2020
https://www.linkedin.com/company/-feedback-project/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768935

FIGURE 10 – PRESS KIT (ENGLISH VERSION)

2.3 EVENTS AND EXPERIENCES

"Many firms are creating their own events and experiences to create consumer and media interest and involvement" (Keller & Kotler, 2012)[1].

Two types of events can occur within the FEEdBACk project: events organised by other entities or institutions (conferences, EU events, workshops, etc.) or events organised by the consortium.

2.3.1 EVENTS ORGANISED BY OTHER ENTITIES

Participating in events organised by other entities and the submission of scientific publications and papers is not only an obligation as an innovation action project, but also **a way to obtain scientific reputation among stakeholders such as the academic institutions, energy efficiency network or the EU community and other projects**.

There is a need of defining KPIs to the different activities involved in this chapter:

- Participation in conferences, workshops or EU events: at least 5 during the entire project;
- Publications in scientific and non-scientific journals (open access publications): at least 5 during the entire project.

A more detailed description about the events organised by other entities will be presented on the sub-chapter 6.2.1.

2.3.2 EVENTS ORGANISED BY THE FEEDBACK CONSORTIUM

The organisation of events targeting relevant stakeholders, such as the demo communities (local residents and building managers) and interested parties (industry, DSOs, Aggregators, Regulators, etc.) in the FEEdBACk solution, is important to guarantee the success of the goals of the project.

The KPI defined in this chapter is:

- Number of events organised by the FEEdBACk consortium: at least 5 during the entire project.

A more detailed description about events organised by the consortium will be presented on the sub-chapter 6.2.2.

2.3.3 DEMONSTRATOR KIT

Even though events organised for the demo community fit the "events" chapter, the FEEdBACk project has a "**demonstrator kit**" prepared **to be distributed whenever some event targeted directly to the local community is organised**. This demonstrator kit is composed by some of the materials already described in the advertising chapter, such as the flyer, project leaflet and demo leaflet, but also by some merchandising material, such as pins, pens and computer stickers.
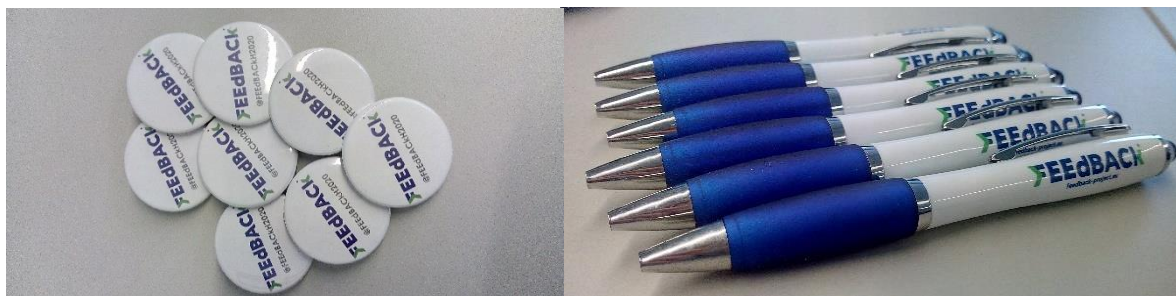
FIGURE 11 – MERCHANDISING MATERIAL (PINS AND PENS)

2.4 DIGITAL MARKETING

Under the framework of WP7, one of the communication media defined as the base for dissemination activities is the Internet. This communication tool involves, inevitably, the management of a website and social networks, which makes the interaction between people and companies/ brands/ projects more and more frequent.

In recent years digital media platforms have revolutionized marketing, offering new ways to reach, inform, engage, sell to, learn about, and provide service to customers (Lamberton & Stephen, 2016) [4].

2.4.1 WEBSITE

FEEdBACk project's website has already been described in detail in D7.1 – "Project website", submitted in month three. The FEEdBACk's **website** will be **one of the main communication tools used in this project**. Not only because we have defined unique strategies targeted to specific audiences to be disseminated throughout the website, but also because it will also **aggregate most of the other tools used to communicate with our target audience during the project, such as news feeds, Press Releases, scientific publications, newsletters or public deliverables**.

Four different groups have been defined as the target audience of our website:

- EU community (EU organisations, other EU projects or agencies), aggregators, retailers, ESCO and network operators;
- Individuals who are interested in the energy area in general and in topics related to energy efficiency in particular;
- The player community;
- The restricted external partners.

The contents targeted to each of these groups will not be all available since the launch of the website, because some of them depend on tasks from other WPs.

The topics target to the first two groups (consortium/EU partners and the general public) will have content since the launch of the website, even though the type of content will evolve during the project.

The six menus of the website compose the subjects targeted to the first group (consortium/EU partners): about, consortium, work packages, demos, news & events and dissemination material.

An independent page entitled "What do you know about energy efficiency?" is targeted to the second group, the general public. This target involves all the consumers who have interest in the energy efficiency topic and are committed to promoting a more efficient behaviour. The contents will be available in three phases:

- **1st phase** (since the launch of the website) – informative texts about energy efficiency with saving tips to create and raise consumer awareness about the benefits of energy efficiency;
- **2nd phase** (second semester of 2018) – player cinema that will show on-demand video diaries and player opinion video blogs made by the players;
- **3rd phase (**2019) – generic game with questions about energy efficiency to help people to change their perceptions and to promote behaviour changes.

Another independent page entitled "A whole immersive world of energy saving currently being built by our player communities… coming soon" is targeted to the third group, the player community. The architecture for this page includes: homepage, four sub-chapters (community profile, game narrative, current player status and player blog), player cinema and player support area. This page will only be available during the second semester of 2018, since we need to wait until some of the tasks of WP2 are finished, such as the profile characterization and segmentation, in order to have reliable contents.

The last target group, the restricted external partners, will only have an independent page during the first semester of 2019, after the digital marketplace and gamification are fully developed. This page will require a registration field, because only users with access will be authorized to contribute in the collaborative community.

Four KPIs have been defined to analyse the impact of the website as an effective communication tool:

- Number of views of the website;
- Number of games played;
- Number of participations in the player community per country;
- Number of downloads of material from the website until the end of the project, which needs to be, at least, 5000.

The website is online and available at www.feedback-project.eu.
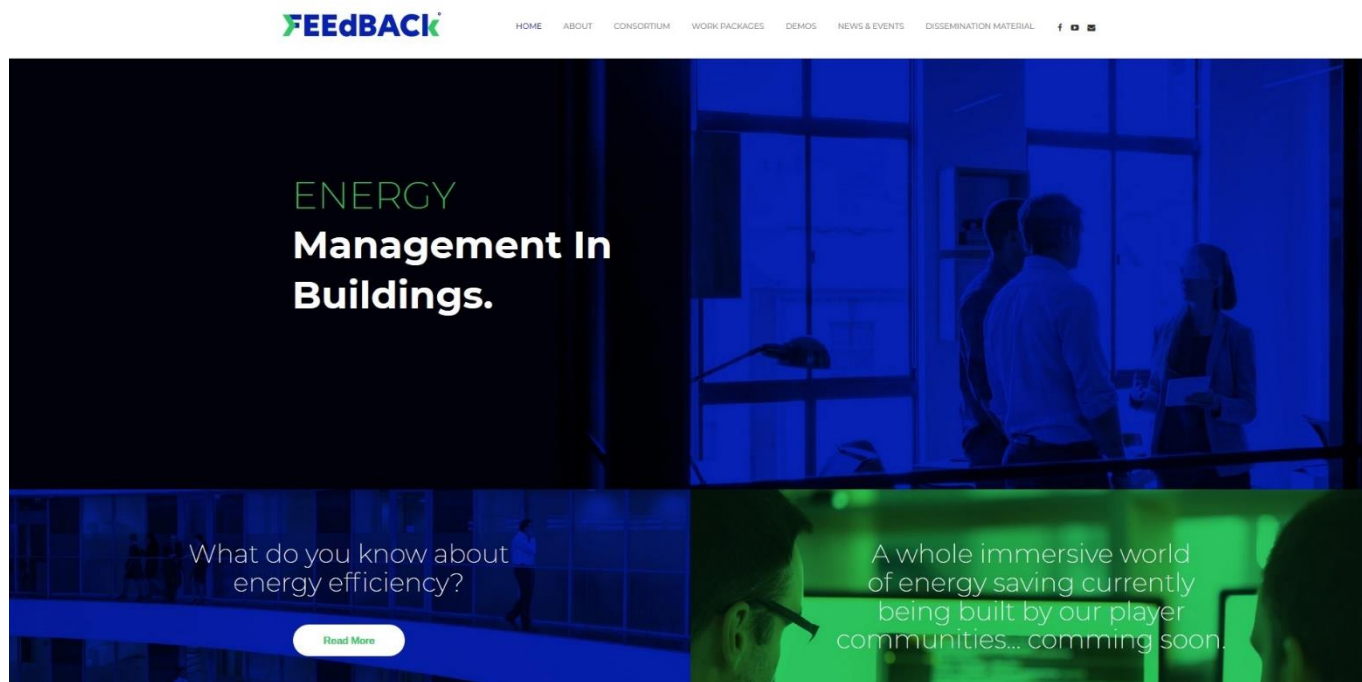
FIGURE 12 – WEBSITE'S HOMEPAGE

In addition, INESC TEC (as WP7 leader) commits to sending a monthly report to all partners, informing them about the insights observed on the website and the results established in the KPIs.

2.4.2 SOCIAL MEDIA CHANNELS

As established between all partners, the FEEdBACk project will be present on Facebook, Twitter, LinkedIn and YouTube, each one with a different purpose and different targets. Considering the wide potential of online tools, we aim at reaching different kinds of users – individuals, companies and EU institutions – informing, educating and engaging them around FEEdBACk and its values.

As shown below, there's a strategy behind each social network, depending on the target and the communication purpose:

TABLE I – SOCIAL MEDIA CHANNELS STRATEGY

	Facebook	Twitter	LinkedIn	YouTube
TARGET	Consumers, local residents, building managers	EU community and other projects	Industry, Retailers, Aggregators, DSOs, ESCOs, building managers	Consumers, Local residents, EU community and other projects, Industry, Retailers, Aggregators, DSOs, ESCOs, building managers
PURPOSE	Advocacy	Influence	Influence	Engage
STRATEGY	Premium access to build advocacy with the audience. Simple and attractive language.	Direct engagement with influencers. Short sentences, able to quickly attract attention.	Leverage skills and expertise data for influence and involve professionals. Longer and more descriptive phrases.	Videos segmented in four chapters: (1) institutional videos; (2) videos posted on other social networks or on the website (multiplatform contents); (3) gamification (games in order to achieve the energy efficiency; (4) Clipping (TV, radio and online reports).

Different types of contents will be part of the social media strategy:

a) Visual identity
b) "About" information
c) Headings
d) Current publications

a) Visual Identity

The visual identity was the first step of the social networks' implementation. It was designed in order to promote an integrative and coherent communication. The idea was to "match" with the visual identity designed to the website, that started from a previous work of branding (mentioned in sub-chapter 2.1.1). The following figure shows the definitive version of the logo, considering its possible variations – taking into account the background in which it can be inserted.

White Background	Blue Background	Dark blue background	Monochromatic version (black)	Monochromatic version (white)
FEEdBACk	**FEEdBACk**	**FEEdBACk**	**FEEdBACk**	**FEEdBACk**
	(Current social networks' profile picture)			

FIGURE 13 – LOGO'S VARIATIONS

The second column corresponds to the current **social networks' profile picture**. Since people are not yet familiar with the project's logo, it is important to reinforce the visual identity by communicating it in a single way. Therefore, once we were using the colour scheme of the second image for the website, it is important to keep it during the first step of all online communication tools. However, it may change in the future.

To complement that, some templates were created in order to reinforce the visual identity in the posts as can be seen in the figure below.

	Posts **without images on background** (ex:. quotes, curiosities, tips…)	Posts **with images on background**
Template		

Example	

FIGURE 14 – SOCIAL MEDIA CHANNELS TEMPLATES

There are common elements between the above images:

- **Arrows in the images' footer**: at a later stage (with the increasing of project's awareness), these arrows should communicate the project by itself. It is therefore important that they are present from the outset in the dissemination materials. The logo can only be represented by this symbol (first column).
- **Blue mask**: blue was the chosen colour to communicate the project, on which some green notes should stand out. In this sense, it cannot be forgotten during the visual communication. FEEdBACk's colours:
  - Blue (#0722bf)
  - Dark blue (#16143c)
  - Green (#2fd565)
- **Frame:** some lines, superimposed on the images' upper corners intend to communicate the general message of the project: energy. These can take distinct colours (the ones mentioned in the topic below) depending on its background's image; however, it should not be a mandatory element, otherwise the main content may be impaired.
- **Logo in a monochromatic version**
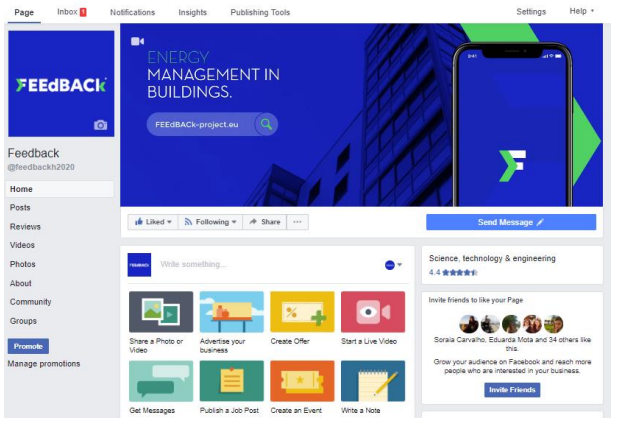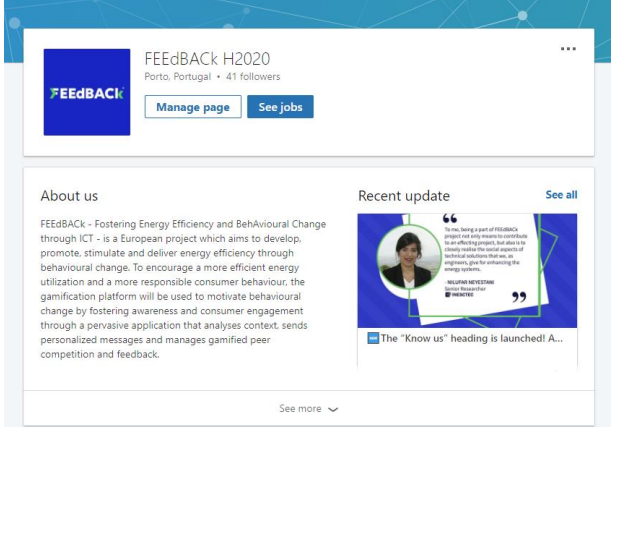
Whenever possible, the images assume the 1:1 ratio (1080px x 1080px) on Facebook and Twitter publication. In turn, LinkedIn recommends using a 1.91:1 aspect ratio, preferably 1200 pixels wide by 627 pixels tall. However, it is not always possible, so that the dimensions can be adapted to the content in question.

Regarding the fonts used, it is expected to repeat the ones that were chosen on the website: (1) Montserrat for the titles; (2) Arimo for the texts. Besides that, for footers (the ones with #), the Aleo font was used.

b) About

After defining the visual identity that would guide the social networks' management, four different accounts were created: Facebook, Twitter, LinkedIn and YouTube. To accomplish that, it became necessary to fill in some mandatory fields in all social networks, as shown in the table below.

TABLE II – SOCIAL MEDIA CHANNELS' "ABOUT" DATA

Social Network	About	Screen overview
Facebook	FEEdBACk is a European project which aims to develop, integrate and test new technologies linked to the energy area and to apply them in order to promote energy efficiency by changing the behaviour of building users.	
Twitter	The core objective of FEEdBACk is to promote, stimulate and deliver energy efficiency through behavioural change	
LinkedIn	FEEdBACk - Fostering Energy Efficiency and BehAvioural Change through ICT - is a European project, which aims at developing, promoting, stimulating and delivering energy efficiency through behavioural change. To encourage a more efficient energy utilization and a more responsible consumer behaviour, the gamification platform will be used to motivate behavioural change by fostering awareness and consumer engagement through a pervasive application that analyses context, sends personalized messages and manages gamified peer competition and feedback.	

YouTube	Feedback-project.eu	
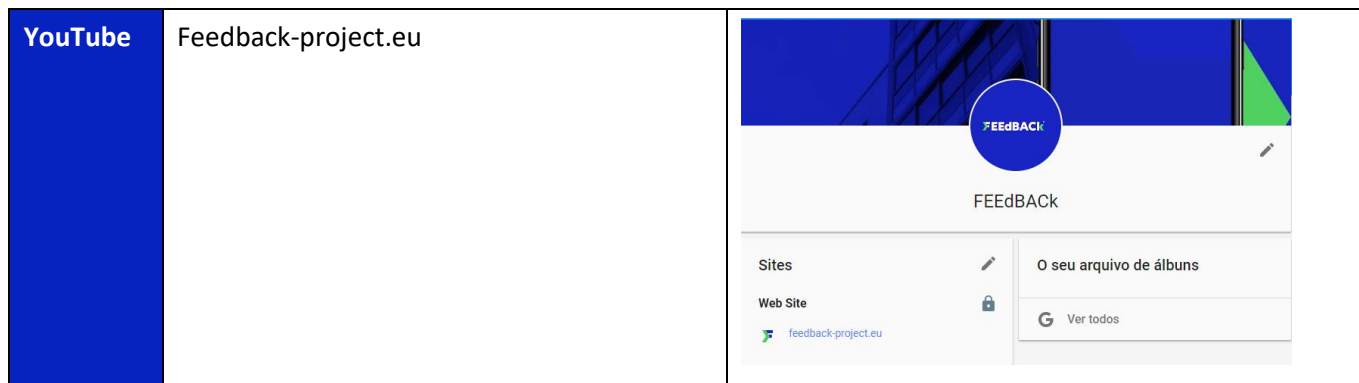
All the platforms' username is @feedbackh2020.

c) Headings

In order to make social networks more dynamic, organized and with relevant content we created five headings:

- **"Know us"** - The consortium presentation
  - **Goal:** to inform and involve different partners.
  - **What is it?** This heading consists on the communication of the project's partners through an image where their representatives answer the following questions: "What does it mean to be a part of FEEdBACk?"; "Why have you embraced project FEEdBACk?". In the text that precedes the image, the partner will be presented in a descriptive way.
- **"Green Curiosity"**
  - **Goal:** to increase the attractiveness of posts through scientific content.
  - **What is it?** In this heading all partners complete the following sentence taking into account their own country and its reality: *"Did you know that in [partner's country] ...?"*. Ex: (INESC TEC): "Did you know that in Portugal 40% of the domestic consumption of electricity is related to the kitchen?"
- **"Green Quote"**
  - **Goal:** to increase the credibility and the attractiveness of the publications.
  - **What is it?** Opinion maker's quotes.
- **"Green Mirror"**
  - **Goal:** to show that the people who are developing the project and those who are integrated throughout the project feel the effectiveness of the given solutions in their personal lives.
  - **What is it?** "Green Mirror" consists on series of short video interviews with partners and end-users in demo-sites about how the FEEdBACk project changed their behaviours.
- **New Month Resolution**
  - **Goal:** to promote the behaviour change.
  - **What is it?** On the first day of each month will be uploaded a resolution related to the energy efficiency: "This month I will...".

d) **Paid Campaigns**

The paid campaigns aim at increasing the reach of publications/ tweets in order to communicate the project's values to a wider community.

The biggest investment will be focused on Facebook because this social network is the one that more widely spread.

- **Facebook:**

Up-to-date news (2018)[5] say that Facebook's algorithm has changed once again. Now, in the words of Mark Zuckerberg, the algorithm favors content published by friends and family to the detriment of brand content. Therefore, it doesn't sound good to FEEdBACk, a "non-personal" page.

According to the news, the organic reach has been declining and it is almost inglorious the effort that many brands make to invest in excellent content that then only have an impact on their near circle of influence.

As such, it must be assumed that Facebook is a pay by default platform. That is, if we want to achieve our goals of increasing project awareness, promoting the sustainable behaviours and the participation on FEEdBACk actions, we will have to set aside a budget to invest in paid campaigns because it is no longer enough to have the right people and produce quality content.

o **How are we going to do that?**

First, we must create relevant content and with high quality. For example, images with a high proportion of text do not use their budget as efficiently and may not even run. In addition to boost publications, the Facebook page will also be a target of a paid campaign.

Second, we have to define the audience. The following table shows the characteristics of the audience defined:

TABLE III – TARGET - FACEBOOK'S PAID CAMPAIGNS

Demographics	- Gender: Men and Women - Ages: 18 - 55
Geographics	- Location: Porto (Portugal), Barcelona (Spain), Lippe (Germany)
Interests	Efficiency energy use, Energy, Environmental Education, Computing, Sustainable development, Sustainability, Renewable energy, Automation, Gamification, Sustainable energy, Sustainable consumption, Technology, Engineering, Electricity or Environmentalism, Planet Education: Higher Education; Field of study: Environmentalism, Technology or Automation

Depending on the publications' content, we can sponsor it targeting different audiences. For example, if we are communicating an event that happens in a specific location, we will just target the population living around that place.

Third, we must define the budget we need to accomplish the strategy. Depending on the importance of the publication to the project as well as its content, the budget spent can change. Thus, it is expected to spend on the promotion of contents on FEEdBACk's Facebook page between 80€ and 130€ per year.

If there is no need to spend the stipulated amount, it can be transferred to the following year.

Considering the changes that challenge the presence of FEEdBACk on Facebook, it is also important to invest on paid content on other social networks. It makes also possible to reach different audiences.

- **Twitter:**

As mentioned above, the FEEdBACk's target through Twitter is composed by EU community.

Twitter Ads objective based campaigns are designed to help people achieve results that drive action and add value to the project. Create campaigns tailored for a variety of business goals, from driving website traffic to increasing brand awareness.

Therefore, we expect to spend on Twitter a total amount between 40€ and 70€. This budget should be greater in the beginning of the strategy.

- **LinkedIn:**

LinkedIn will be the social network used in order to reach the professionals.

The table below segments that audience and shows the characteristics of the target that we aim at reaching.

TABLE IV – TARGET - LINKEDIN'S PAID CAMPAIGNS

Location (required)	Porto (Portugal), Barcelona (Spain), Lippe (Germany)
Company Industry	Engineering, Technology, Environment
Degrees	Bachelor's degree, Master Degree, PhD
Fields of study	Sciences, Maths, Engineering, Technology
Member Age	20-60
Member Gender	Men and Women

After that, we have to sign up to Campaign Manager, a self-service advertising platform, which target messages to unique audiences through three different ways: sponsored content, sponsored InMail and Text Ads. To promote FEEdBACk's LinkedIn account, we have chosen the first one.

Regarding to the campaign costs, we will control these setting budgets (the maximum total amount we want to spend per day). Considering that the minimum costs are 10€ daily budget per campaign, we will spend between 30€ and 50€ through one or two campaigns.

The table below resumes the Paid Campaigns' strategy designed:

TABLE V – TARGET - LINKEDIN'S PAID CAMPAIGNS

3 Social Networks	Facebook	Twitter	LinkedIn
Total Amount (2018)	80€ - 130€/ year	40€ - 70€/ year	30€ - 50€/ year
Different Targets	General Public and Player Community	EU community	Professionals (aggregators, retailers, ESCO and network operators).
Different Goals	Create awareness, engagement and influence in order to change their behaviours.	Create awareness, influence and future partnerships	Influence in order to attract investments, participants and future partnerships.
Different Paid Content	News, events, videos, contests	Informative content; Content that encourages retweet (e.g. contests)	Gamification platform; workshops; conferences; events…

In total, we expect to spend between 200€ and 250€ per year. The variability of these values is justified by the different communication needs that the project may have. For example, in 2018 (the first year of social networks' implementation) there may be a need to invest more money to engage than in 2019.

The impact analysis of the FEEdBACk project on social media will be based on a set of relevant quantitative and qualitative indicators, which must be reachable and realistic. In order to obtain that, a list of 8 KPIs has been defined in this dissemination plan:

- Number of publications (Facebook, Twitter, LinkedIn, YouTube)
- Number of videos published (Facebook, Twitter, YouTube)
- Number of followers (Facebook, Twitter, LinkedIn, YouTube)
- Website traffic generated by social networks (Facebook)
- Range (Facebook)
- Impressions (Twitter, LinkedIn)
- Paid campaigns' results (Facebook, Twitter, LinkedIn, YouTube)
- Number of posts on YouTube and visualisations

In addition, INESC TEC (as the WP7 leader) commits to send a monthly report to all partners, informing them about the insights observed in each social network - Facebook, Twitter and LinkedIn. In that document the following data should be described:

- Monthly publications (number and type of publications);
- Organic and Paid reach and historic of interactions;
- Characterization of the target audience.

Also, whenever a publication is sponsored, INESC TEC will send its report to partners, until the day after the end of the promotion of the post.

2.5 DIRECT MARKETING

The utilization of direct marketing as a communication tool is observed when "organizations communicate directly with target customers to generate a response and/or a transaction. Traditionally, direct marketing has not been considered an element of the promotional mix. However, because it has become such an integral part of the IMC program of many organizations and often involves separate objectives, budgets, and strategies, we view direct marketing as a component of the promotional mix. Direct marketing is much more than direct mail and mail order catalogs. It involves a variety of activities, including database management, direct selling, telemarketing, and direct response ads through direct mail, the Internet, and various broadcast and print media" (Belch & Belch, 2006) [3].

Two related actions will be considered in this sub-chapter: CRM strategy (consortium contacts database) and newsletters.

2.5.1 CRM STRATEGY

A communication strategy is more effective when an identified list of contacts with all target stakeholders exists.

This contacts database assumes the contributions of all of the partners in identifying the targeted stakeholders, such as **building managers, Industry, DSOs, ESCOs, regulators, local authorities & national governments, local residents, academic institutions, energy efficiency networks or EU Community and other projects**.

In the case of the national media that will be target to spread the projects message, the table below summarizes a list of media already identified as strategic per country:

TABLE VI – LIST OF STRATEGIC MEDIA

Media Name	Type of media	Country
Lusa	News Agency	Portugal
Jornal Económico	Economic online media	Portugal
Jornal de Negócios	Economic printed media	Portugal
Vida Económica	Economic printed media	Portugal
Eco	Economic online media	Portugal
Dinheiro Vivo	Economic online media	Portugal
Jornal de Notícias	Generalist printed media	Portugal
Diário de Notícias	Generalist printed media	Portugal
Público	Generalist printed media	Portugal
Jornal I	Generalist printed media	Portugal
Observador	Generalist online media	Portugal
Correio da Manhã	Generalist printed media	Portugal
Expresso	Generalist printed media	Portugal
Sol	Generalist printed media	Portugal
Visão	Generalist magazine	Portugal
Sábado	Generalist magazine	Portugal
RTP	National Television	Portugal
SIC	National Television	Portugal
TVI	National Television	Portugal
Porto Canal	Local Television	Portugal
Antena 1	National Radio	Portugal
TSF	National Radio	Portugal
Rádio Renascença	National Radio	Portugal
Exame Informática	Magazine + Television Program dedicated to technology subjects	Portugal

PC Guia	Magazine dedicated to technology subjects	Portugal
Sapo Tek	Online media dedicated to technology subjects	Portugal
Ambiente Magazine	Magazine dedicated to environmental subjects	Portugal
Ambiente Online	Online media dedicated to environmental subjects	Portugal
Renováveis Magazine	Magazine dedicated to energy subjects	Portugal
Edifícios e Energia	Magazine dedicated to energy subjects	Portugal
Magazine el Prat	Local Magazine	Spain
Radio El Prat	Local Radio	Spain
El Prat TV	Local online TV	Spain
Sostenible	Regional magazine about sustainability	Spain
Lippische Landes-Zeitung	Local newspaper	Germany
Lippe Aktuell	Local newspaper	Germany
Radio Lippe	Local radio channel	Germany
WDR	Local TV channel	Germany
The Guardian	National newspaper	United Kingdom

2.5.2 NEWSLETTERS

Based on the contacts database mentioned above it is expected to **send regularly to the strategic stakeholders' information on the project's developments in a newsletter format**.
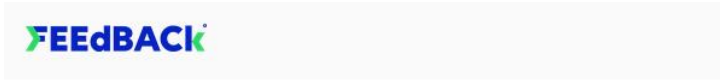
A Customer Relationship Marketing (CRM) platform named MailChimp is being used to send the newsletters. This platform allows to insert a segmented list of contacts and monitor the results of the deliveries.

Regarding the newsletters, the KPIs defined are:

- Number of newsletters sent
- Successful deliveries

- Total opens
- Click per unique opens
- Total clicks

FIGURE 15 – 1ST NEWSLETTERS

3. INTEGRATED COMMUNICATIONS CAMPAIGNS

The purpose of this chapter is to establish communication campaigns with an integrated marketing approach based on the different dissemination tools described in chapter 2.

This chapter will be divided in three sub-chapters: 1st communication campaign, 2nd communication campaign and 3rd communication campaign. The goal and implementation time for each campaign will be described. In addition, the communication actions that will be used in each campaigns will be summarized in a table. Then, a proposed calendar for the execution of the actions will be presented.

3.1 1ST COMMUNICATION CAMPAIGN

The goal of the first communication campaign is to inform all the stakeholders already described above about the existence of the FEEdBACk project. Besides, it is important to begin involving the demo community at this stage, giving them information about the project, so that they are already aware and fully committed when the platform gamification is ready to be installed.

The implementation time of this campaign will occur from November 2017 until December 2018.

The communication tools used in this campaign and the respective actions are presented below:

TABLE VII – 1ST INTEGRATED COMMUNICATION CAMPAIGN

Communication tool	Communication action
Advertising	Creation of the logo.
	Development of several communication materials to be sent to the key stakeholders, such as flyers, leaflets and posters.
	Creation and dissemination of an institutional video.
Digital Marketing	Creation of a project website.
	Social media channels: creation and contents update of four project accounts on Facebook, Twitter, LinkedIn and Youtube (paid campaigns)
Public Relations	Press Release dissemination (even though the version of the press release sent to the partners was written in English, each country is free to adapt the press release to their own language and disseminate it to a list of journalists of their interest. The order of the paragraphs can be changed according to the journalistic criteria of each country, but the main message presented in the Press Release cannot be changed).
	Press Kit creation.

Events and Experiences	Events organised by the consortium – events will be organised in the demo areas with the local community in order to present the project.
	Creation of a demonstrator kit.
Direct Marketing	Contacts database creation and updates.
	Creation and dissemination of 4 newsletters.

The actions for the first communication campaign are summarized in the following calendar:

TABLE VIII – 1ST COMMUNICATION CAMPAIGN CALENDAR

1st Com. Campaign actions	2017		2018											
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Set	Oct	Nov	Dec
Advertising	Logo Creation		Flyers, Leaflets, Poster, Power Point Presentation and Institutional Video creation and dissemination											
Digital Marketing			Project website launch Facebook, Twitter, LinkedIn and YouTube creation		Continuous update and contents creation on the digital media platforms. Paid campaigns on the social media channels.						Project website – player cinema to be implemented on the "What do you know about energy efficiency page?"			
Public Relations				1st Press Release Press kit	News pieces production.									
Events and experiences				Demo kit	1st event targeted to the demo Porto site	Period to organize the 1st event targeted to Barcelona's and Lippe's local community involved in the project.								
Direct Marketing				1st Newsl.	Beginning of the creation of the contacts database		2nd Newsl				3rd Newsl			4th Newsl

3.2 2ND COMMUNICATION CAMPAIGN

A first approach to the local communities involved in the demo areas will be done in the first communication campaign but engaging them with the gamification platform is the main objective of the second communication campaign. Additionally, after having the gamification platform ready it is important to start reaching stakeholders, such as the energy efficiency network, industry, aggregators, retailers, DSOs, ESCOs or restricted external partners, with the main innovations that are being developed in the project.

The implementation of the second communication campaign should start in January 2019 and end in December 2019.

The communication tools used in this campaign and the respective actions are presented below:

TABLE IX – 2ND INTEGRATED COMMUNICATION CAMPAIGN

Communication tool	Communication action
Digital Marketing	Creation of the website page "A whole immersive world of energy saving currently being built by our player communities" – after some tasks of WP2 are finished
	Creation of the website page "Do you want to create a new app? You can earn money for each download! Register here and get access to more information and data" - after the digital marketplace and gamification approach have been fully developed.
	Creation of games on the website page "What do you know about energy efficiency?"
	Contents creation and weekly updates on the project social media channels (paid campaigns)
	News pieces, dissemination material and events continuous updated on the project website
Public Relations	Second Press Release launch informing about the gamification platform existence
Events and Experiences	Events organised by others – participation in events related to the energy sector, for example, the Sustainable Energy Week
	Events organised by the consortium – workshops with the demo communities to explained them how the platform works
Direct Marketing	E-mail invitation – each host needs to stablish the list of contacts they want to invite to the events organised by the consortium
	Creation and dissemination of 4 newsletters.

The actions for the second communication campaign are summarized in the following calendar:

TABLE X – 2ND COMMUNICATION CAMPAIGN CALENDAR

2nd Com. Campaign actions	2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Set	Oct	Nov	Dec
Digital Marketing	Creation of the website page "Do you want to create a new app? (…)" Creation of games on the website page "What do you know about energy efficiency?" Contents creation and weekly updates on the project social media channels News pieces, dissemination material and events continuous updated on the project website						Creation of the website page "A whole immersive world of energy saving currently being built by our player communities" Contents creation and weekly updates on the project social media channels (paid campaigns) News pieces, dissemination material and events continuous updated on the project website					
Public Relations	Second Press Release launch informing about the gamification platform existence											
Events and Experiences	Workshops with the demo communities to explained them how the platform works						Participation in events related to the energy sector, for example, the Sustainable Energy Week					
Direct Marketing	E-mail invitation to the workshops with the demo communities											
			5th Newsl.			6th Newsl.			7th Newsl.			8th Newsl.

3.3 3RD COMMUNICATION CAMPAIGN

In the final year of the project it is important to target the stakeholders involved more directly in the exploitation plan. Within the scope of the FEEdBACk project, several results are expected to be exploited in the market. For that reason, the last communication campaign should address stakeholders, such as industry, aggregators, retailers, DSOs, ESCOs, energy efficiency network and local authorities & national governments, in order to present them the results in which they might be interested to obtain.

The third communication campaign will be implemented from January 2020 until the end of the project, in October 2020.

The communication tools used in this campaign and the respective actions are presented below:

TABLE XI – 3RD INTEGRATED COMMUNICATION CAMPAIGN

Communication tool	Communication action
Events and Experiences	Organisation of the "FEEdBACk day" event – this event might include presentations and results demonstration
	Organisation of the "FEEdBACk final event"
Direct marketing	E-mail invitation to the "FEEdBACk day" event and to the "FEEdBACk final event"
	Creation and dissemination of 4 newsletters
Public Relations	Press Release to the media about the "FEEdBACk day" event and another one to the "FEEdBACk final event"
Digital Marketing	Contents creation and weekly updates on the project social media channels (paid campaigns)
	News pieces, dissemination material and events continuous updated on the project website

The actions for the third communication campaign are summarized in the following calendar:

TABLE XII – 3RD COMMUNICATION CAMPAIGN CALENDAR

3rd Com. Campaign actions	2020									
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Set**	**Oct**
Events and Experiences					FEEdBACk day event					FEEdBACk final event
Direct Marketing		E-mail invitation to the FEEdBACk day event					E-mail invitation to the FEEdBACk final event			
Press Release				Press Release					Press Release	
Digital Marketing	Contents creation and weekly updates on the project social media channels (paid campaigns) + News pieces, dissemination material and events continuous updated on the project website									

4. TARGETED STAKEHOLDERS

Even though all the targeted stakeholders have already been identified in each one of the communication actions, it is important to group the key stakeholders in clusters and list them in one specific chapter.

I. SH1 – Final Consumers
II. SH2 – Local residents and player community
III. SH3 – Building managers
IV. SH4 – Local authorities & national governments
V. SH5 – Academic Institutions
VI. SH6 – Industry, Aggregators, Retailers, DSOs and ESCOs
VII. SH7 – EU Community (EU organisations, other EU projects or agencies)
VIII. SH8 – Energy efficiency network (energy efficiency associations, etc.)
IX. SH9 – Restricted External Partners
X. SH10 - Media
XI. SH11 – Advisory Board

5. KPIS DEFINED

A list of all of the KPIs defined along the document is presented in order to summarize it.

The KPIs defined regarding dissemination activity are 24:

- The number of press releases released to the media – at least 3 during the entire project
- The number of news pieces published on the media – at least 30 during the entire project
- The number of online news based on the press release published on online platforms, such as the partners or other stakeholder's website – at least 20 during the entire project
- Participation in conferences, workshops or EU events: at least 5 during the entire project
- Publications in scientific and non-scientific journals (open access publications): at least 5 during the entire project
- Number of events organised by the FEEdBACk consortium: at least 5 during the entire project
- Number of views of the website
- Number of games played on the website
- Number of participations in the player community per country on the website
- Number of downloads of material from the website until the end of the project, which needs to be, at least, 5000
- Number of publications (Facebook, Twitter, LinkedIn, Youtube)
- Number of videos published (Facebook, Twitter, Youtube)
- Number of followers (Facebook, Twitter, LinkedIn, Youtube)
- Website traffic generated by social networks (Facebook)
- Range (Facebook)
- Impressions (Twitter, LinkedIn)
- Paid campaigns' results (Facebook, Twitter, LinkedIn, Youtube)
- Number of posts on YouTube and visualisations
- Number of newsletters sent
- Successful deliveries of the newsletters
- Total opens of the newsletters
- Click per unique opens of the newsletters
- Total clicks of the newsletters

6. IMPACT ASSESSMENT (MONTH 1 TO 6)

The KPIs results that have been obtained from month 1 until month 6 (i.e. from November 2017 to April 2018) will be presented in different in a summary table, according to the communication tools they are related to.

Communication tool	Communication Action	KPI defined	Result achieved	Correspondent Annex
Public Relations	Press Release	At least 3three during the entire project	1	Annex 1
	Number of news pieces published in the media	At least 30 during the entire project	28	Annex 2
	Number of news pieces published on online platforms	At least 20 during the entire project	8	Annex 3
Events and Experiences	Events organized by other entities	At least 5 during the entire project	3	Annex 4
	Events organized by the consortium	At least 5 during the entire project	3	Annex 5
Digital Marketing	Website	Number of unique visitor on the website	981	Annex 6
		Number of sessions on the website	1162	
		Number of page views of the website	5846	
		Number of downloads of material from the website until the end of the project, which needs to be, at least, 5.000.	29	
		Number of publications (Facebook, Twitter, LinkedIn)	97 posts (34 on Facebook; 35 on Twitter, 22 on LinkedIn)	
		Number of videos published (Facebook, Twitter, YouTube)	29 (13 on Facebook, 9 on Twitter, 7 on Youtube)	

	Social media channels	Number of followers (Facebook, Twitter, LinkedIn, YouTube)	329 (233 on Facebook, 50 on Twitter, 44 on LinkedIn and 2 on Youtube)	Annex 7
		Website traffic generated by Facebook	5	
		Range (Facebook)	151 (average)	
		Impressions (Twitter and LinkedIn)	30.5k on Twitter and 12.9 on LinkedIn	
		Paid campaigns' results (Facebook, Twitter, LinkedIn, YouTube)	Facebook – reached 717 people	
		Number of posts on YouTube and visualizations	42 views	
Direct Marketing	Newsletter	Number of newsletter sent	1	Annex 8
		Successful deliveries of the newsletters	62	
		Total opens of the newsletters	178	
		Click per unique opens of the newsletters	31.8%	
		Total clicks of the newsletters	14	

7. EXPLOITATION PLAN

An exploitation plan is defined in this chapter that summarizes the strategies of the FEEdBACk partners and the concrete actions relating to the exploitation of the project's main results.

It should be noted that, as for the dissemination plan, the exploitation plan is a living document. This means that during the lifespan of the project, it will evolve and become more precise and substantial, defining the necessary steps to fully exploit the generated results. It is foreseen that at least two revised versions will be produced – D7.3 Follow up on dissemination and exploitation of results in month 18 and D7.4 Final report on dissemination and exploitation of results in month 36. By then it will be possible to detail specific issues such as the market analysis, the prospects of the costs and revenues or the main competitors.

Of course that each FEEdBACk partner is directed by its own (confidential) organisational strategy and business plans after the project ends. Nevertheless, in the scope of the FEEdBACk project it is expected that the exploitation strategy defined works as a facilitator to the individual or joint exploitation of some of the outcomes of the project.

Concerning the exploitation of the project's results, the FEEdBACk consortium includes mainly two different types of partners: from industry and from academy / research.

Due to their intrinsic nature, DEXMA and LiMETOOLS as consortium partners are the natural vehicle for the industrial exploitation of some of the main results. Obviously, their exploitation plan must be in line with the overall goals of the company and mid to long term prospects.

LiMETOOLS already has a user market of 97 financial institutions and direct sales links to 12 multinationals and their energy management teams. In addition, LiMETOOLS and DEXMA are now working together to promote other products that have been previously developed. The appropriate commercial outputs from the project will be made available to both existing and new customers via the LiMETOOLS sales network.

Concerning DEXMA, as SME specialist on Energy Management SW development, the idea is to use the already existing Pipedrive of DEXMA's customers composed of more than 250 partners (Utilities, Energy Services Companies, Utilities, etc.) as main exploitation channel of the FEEdBACk's project outcomes via their product DEXCell Energy Manager. The improved version of already existing DEXMA's Digital Marketplace that is going to be updated within WP4 will display all the suite of apps (i.e. Occupancy forecast, Net load forecasting, Load disaggregation, Automation manager, etc.) that will be made available to DEXMA's customers (property and facility managers that handle a portfolio of commercial buildings).

IN-JET, due to their specific area of action, rely more on intangible results that derive from the experience and expertise generated from the tasks developed in FEEdBACk especially concerning behaviour change methodologies related to energy usage but not only.

The partners from research / academy (INESC TEC, TU Delft and EPFL) rely primarily on the knowledge generated that is usually exploited through dedicated publications to high-impact scientific journals and peer-reviewed conferences. Advanced training will also be sought, building on the experience gathered in the project. However, the possibility of exploiting commercially some of the products developed and enable an effective technology transfer to the industry particularly in the energy efficiency sector is also carefully considered.

Firstly, the initial approach to Intellectual Property Rights (IPR) within FEEdBACk is described in sub-chapter 7.1.

Then, the primary objectives for the exploitation plan are presented in sub-chapter 7.2. Finally, the main exploitable results are described in sub-chapter 7.3. In order to organize these results in a common and more standardized way, a template was created and distributed to all FEEdBACk partners to fill in regarding the exploitable results they foresee to develop in the FEEdBACk project. These forms are included in the twenty-one sections of sub-chapter 7.3.

Moreover, regulatory and policy recommendations are also presented in sub-chapter 7.4, even though they are still at an early stage of development, taking into consideration that the project is at its initial stage.

Finally, a summary of the main exploitable results foreseen in the FEEdBACk project is presented in sub-chapter 7.5.

7.1 INTELLECTUAL PROPERTY RIGHTS – INITIAL APPROACH

The definition of the Intellectual Property Rights (IPR) concerning the project's results is currently being discussed among all the partners in the FEEdBACk consortium. As a first basis for this plan, we will initially assume that the joint IP will be divided according to the effort of each partner involved in the development of the result, unless otherwise stated. At such an initial stage of development, the effort is defined according to the person-month defined in the Grant Agreement and according to what was set in the Consortium Agreement. This is, however, a preliminary approach, thus subject to a future revision.

7.2 OBJECTIVES OF THE EXPLOITATION PLAN

The objectives of the exploitation plan are therefore the following:
- Identify and describe the exploitable assets to be used for alignment with internal strategies and plans;
- Assess the individual exploitation potential of these products;
- Set up individual business development tools, e.g. business model canvas, integrated with the generic business models developed in the project.

In this document, the first two objectives are addressed. In the following deliverables of WP7, the remaining objective will be explored.

7.3 EXPLOITABLE RESULTS

Twenty-three exploitable results will be considered in this chapter and are presented in the following sub-chapters.

7.3.1 BEHAVIOUR PREDICTOR

Results Description	
Name of result	Behaviour Predictor
Type of result	Application (SW)
Partners responsibility	INESC TEC, EPFL, LiMETOOLS, IN-JET
Summary description	The Behaviour Predictor is an application that aims at evaluating users' reactions to the stimulus sent by the gamification platform. With the continuous operation of the gamification platform and the increasing amount of data available, the Behaviour Predictor is expected to provide increasingly accurate forecasts of the users' behaviour when a stimulus is sent. This will allow targeting of messaging that maximises relevance and builds continued commitment to goal achievement.
Main innovation	It has been proven challenging to predict what will motivate energy end users to want to reduce their overall energy consumption, rather than subsequently redeploying the savings to increased consumption elsewhere giving no net gain in energy reduction. As such, value-based reward systems need to be continuously changing, which means that it is necessary to better understand what motivational goals individuals and groups might have for being more energy efficient.
	The main innovation of the Behaviour Predictor is its ability to assess the acceptance of a given action by an individual / group of users in face of specific stimuli towards energy efficient behaviours in a flexible and robust way that evolves over time.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector, government bodies and regulators.

7.3.2 NET LOAD FORECASTING

Results Description	
Name of result	Net load forecasting
Type of result	Application (SW)
Partners responsibility	INESC TEC
Summary description	The Net Load Forecasting application is capable of forecasting the net load of buildings for a predefined time horizon (e.g. 24 hours). This application combines two separate forecasting algorithms for: a) Photovoltaic (PV) power production; b) Electric power consumption. The forecasting algorithms take into account weather data as well as time factors such as the day of the week.
Main innovation	The main innovation of the Net Load forecasting algorithm is the application to buildings systems.
Expected TRL	A TRL of 8 is expected at the end of the project.
Exploitation strategy	Evaluation of commercial exploitation via e.g. technology transfer and software licensing to an industrial partner; or e.g. sub-licensing the software modules to a partner taking over the exploitation of the results.
Application areas	Companies operating in the energy sector.

7.3.3 DIGITAL MARKETPLACE

Results Description	
Name of result	Digital marketplace
Type of result	Application (SW)
Partners responsibility	DEXMA, LiMETOOLS, Kreis Lippe, ERF
Summary description	The digital market place will be a technological ecosystem that takes advantage of FEEdBACk's infrastructures and tools showing the user a set of apps that will allow to save energy and promote behaviour change. It will rely 100% on

	DEXMA's cloud-based Building Energy Management System (BEMS) which already provides an Energy Apps Market to its customers. This Digital Marketplace will be used to extend DEXCell Energy Manager capabilities in terms of energy efficiency enabling the installation of FEEdBACk tools developed in WP3 in the form of applications (or apps).
Main innovation	The main innovation of this marketplace will be the fact that it will be a user friendly digital platform developed to enable making available to third parties data from anonymized users, metering and sensors from the demonstrators in order to support the development of new applications and the design of new business models.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector.

7.3.4 ENERGY MANAGER

Results Description	
Name of result	Energy Manager
Type of result	Application (SW)
Partners responsibility	INESC TEC, LiMETOOLS, TU Delft, DEXMA
Summary description	The Energy manager is an application that will use an interactive GUI to aid interested stakeholders in managing simultaneously the gamification platform and the controllable devices available in individual buildings or blocks of buildings. It will help stakeholders to optimize "when and at which rate" energy is to be buffered and consumed, which will allow maximizing energy savings by reducing peak load, maximizing local renewable energy consumption and achieve a more efficient use of the flexible resources available. This application will be a central piece of the integrated platform for energy efficiency as it will interact with almost all the other applications developed.
Main innovation	The main innovation of this app will be the fact that it will be a unified ICT-based application that merges automation features with social engagement through gamification and behaviour modification, in order to maximize energy efficiency,

	cost reduction and end-user participation and reward. It could also explore and enable sharing between different buildings of technical knowledge and behavioural indicators of users. This ability to network technical management across portfolios of buildings is recognised as being desirable but has been difficult to produce to date.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector.

7.3.5 LOAD DISAGGREGATION

Results Description	
Name of result	Load Disaggregation Apps
Type of result	Two Apps (SW): one for tertiary buildings (developed by DEXMA) and one for residential buildings (developed by EPFL)
Partners responsibility	DEXMA (App for tertiary buildings) & EPFL (App for residential buildings)
Summary description	The Load Disaggregation application aims at estimating the existing appliances (sub-consumptions) in the buildings, and the respective load diagrams, directly through sub-metering or indirectly through load disaggregation techniques using natural gas and electricity consumption historical data. • To calculate the sub-consumptions of the building and provide information to Energy Manager App that can be used to increase energy efficiency in the building. • Supply knowledge of existing equipment and individual load diagrams to automation manager to perform an optimized load dispatch to maximize energy savings.
Main innovation	The load disaggregation for some of the buildings can be obtained through the existing sub-metering installed in the building. This load disaggregation app for residential buildings will use the aggregated energy consumption, the sub-metering as well as additional information about the building to produce disaggregated energy consumption of high accuracy.

	The load disaggregation app for tertiary buildings will be able to conduct load disaggregation of tertiary buildings with no sub-metering installed. Using the active energy consumption, key features of the site and weather data, the app will classify the building into one of the pre-defined sub-sectors of tertiary buildings, and compute the load disaggregation.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	The disaggregation of load disaggregation apps will be exploited through vending on the Digital Marketplace Application developed in FEEdBACk (enhanced version of DEXMA´s Apps market).
Application areas	Companies operating in the energy sector.

7.3.6 USER PROFILING

Results Description	
Name of result	User Profiling
Type of result	Application (SW)
Partners responsibility	DEXMA, LiMETOOLS & IN-JET
Summary description	The main objectives of this application are: - Assigning unique user profiles to the end-users, which is performed based on i) information obtained through an interactive quiz conducted with the end user, ii) defined profiles of end-users, and iii) defined motivational drivers. - Identifying characteristics of the end-user.
Main innovation	To effectively target end-users with the appropriate stimuli for behavioural change, a two-step segmentation process first consisting of User Profiling and then User Segmentation will be carried out. The main innovation of the User Profiling is defining unique user profiles for end-users which are linked to a motivational driver. Linking the profiles to motivational drivers is key to applying the appropriate stimuli for behavioural change. In addition, the User Profiling App will identify characteristics of the user which will be used as inputs for the second step of the segmentation process.

Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector.

7.3.7 USER SEGMENTATION

Results Description	
Name of result	User Segmentation
Type of result	Application (SW)
Partners responsibility	DEXMA, TU Delft, LiMETOOLS & IN-JET
Summary description	The main objective is the clustering of groups of users with similar characteristics so that tailor-made actions can be designed for each group to maximise their engagement with the project. Greater engagement with end-users, will increase the prospects for behaviour change towards energy efficiency.
Main innovation	To effectively target end-users with the appropriate stimuli for behavioural change, a two-step segmentation process first consisting of User Profiling and then User Segmentation will be carried out.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector.

7.3.8 BUILDINGS@WORK (B@W)

Results Description	
Name of result	Buildings@Work (B@W)
Type of result	A suite of six Self-Directed e-Learning & Data Capture Tools. These programmes will form the basis of the activities in the Lippe and Barcelona public buildings research sites.
Partners responsibility	LiMETOOLS
Summary description	B@W will offer six short e-Learning tools that are designed to support energy users of all types in changing their habits and save energy in a series of localised interpretations that suits their situation. We may also supply 'nudge' reminders on the mobile phone throughout a longer period after the initial training to ensure the habit change becomes permanent and natural
Main innovation	Evidence suggests that most commercial organisations approach energy saving as a mechanical challenge. B@W works in conjunction with technical software solutions to address the occupiers of the buildings…the people, who have an unfortunate habit of overriding or ignoring the automated requirements of system management. This combination of gamification; the use of broadcast drama, comedy and documentary within e-Learning materials and the modular approach to personalised energy saving makes B@W a highly innovative suite of tools.
Expected TRL	A TRL of 8 is expected at the end of the project, as many of the techniques LiMETOOLS will use are already in commercial operation in a wide range of products.
Exploitation strategy	Evaluation of commercial exploitation will be managed by DEXMA and LiMETOOLS own commercial sales departments, who between them have strong market penetration.
Application areas	Companies operating in the energy sector and multinational companies operating in other sectors.

7.3.9 THE HUMAN FACTOR (THF)

Results Description	
Name of result	The Human Factor (THF)
Type of result	Self-Directed e-Learning & Data Capture Campaign Tool. This forms the basis of the office workers test programme based in Porto and offices in Barcelona sites.
Partners responsibility	LiMETOOLS, INESC TEC
Summary description	THF will offer commercial organisations a 'one-stop-shop' application that delivers seven outcomes: 1. Increased knowledge capacity and energy awareness of all employees. 2. Facilitation of a localised interpretation of techniques that will save energy at their work place 3. Prioritisation of their activities to maximise early effectiveness 4. Conversion of these actions from one-off techniques to a holistic process of behaviour change 5. Supply of 'nudge' reminders throughout a longer period after the initial training to ensure the habit change becomes permanent and natural 6. Capture of user data to enable quick assessment of ROI and organisational capacity growth 7. THF supplies campaigning tools to the organisation's management that help introduce and create a 'team game' approach to the campaign
Main innovation	Evidence suggests that most commercial organisations approach energy saving as a mechanical challenge. THF works in conjunction with technical software solutions to address the occupiers of the buildings…the people, who have an unfortunate habit of overriding or ignoring the automated requirements of system management. This combination of gamification; the use of broadcast drama and documentary within e-Learning materials and the use of psychological 'nudge' techniques makes THF a highly innovative approach to organisational energy management.
Expected TRL	A TRL of 8 is expected at the end of the project, as many of the techniques LiMETOOLS will use are already in commercial operation in a wide range of products.
Exploitation strategy	Evaluation of commercial exploitation will be managed by DEXMA and LiMETOOLS own commercial sales departments, who between them have strong market penetration. Where appropriate, DEXMA will receive a % of the license

	fee to cover their distribution and client management. This will be calculated on the scale of the sale and will not relate in any way to the value of the IP.
Application areas	Companies operating in the energy sector and multinational companies operating in other sectors.

7.3.10 ICT-BASED PLATFORM FOR ENERGY EFFICIENCY

Results Description	
Name of result	ICT-based platform for Energy Efficiency
Type of result	Methodology to implement an ICT-based platform to foster energy efficiency in residential, services and public buildings
Partners responsibility	INESC TEC, DEXMA, LiMETOOLS, EPFL, IN-JET, TUDelft, ERF, KREIS LIPPE
Summary description	The main objectives of the methodology to implement an ICT-based platform to foster energy efficiency are: • Optimize the utilization of the resources available in individual buildings or blocks of buildings • Provide decision support to building managers • Provide tailor-made feedback to end users about their performance regarding energy utilization and savings • Induce behaviour change of end-users to maximize energy savings without compromising comfort levels
Main innovation	The major innovation of this methodology is the specification of an integrated platform that integrates cutting-edge ICT systems to relate energy use and data collection to not only optimise the usage of energy-related automated devices but also raising awareness of consumers and their behaviour into the potential energy use models and range of built environments. The platform will enable collecting user data and define baselines in a variety of built environment setting to provide a starting point against which ambitious behavioural interventions can be designed and tested, triggering the understanding of the potential available for energy savings and detecting which specific behavioural patterns are more likely to enable the greatest sustained energy savings in the long-run.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.

Application areas	Companies operating in the energy sector and multinational companies operating in other sectors.

7.3.11 GAMIFICATION PLATFORM

Results Description	
Name of result	Gamification platform
Type of result	Software platform (SW) + multimedia contents
Partners responsibility	INESC TEC, LiMETOOLS
Summary description	The gamification platform will provide support for a gamification framework that will drive behaviour change towards more effective use of energy in any organization. The platform will incorporate a set of gamified activities, a multimedia narrative, a set of games and a competition to foster the adoption of new behaviours. This platform integrates with other components of the project, particularly with the energy management system and the pervasive app.
Main innovation	The main innovation of this platform will be the conjunction of the gamification design and a stimulating narrative, together with a pervasive app that captures the behaviours of the users, to analyse the energy consumption and define the behaviours that can promote energy savings.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector and multinational companies operating in other sectors.

7.3.12 PERVASIVE APP

Results Description	
Name of result	Pervasive App
Type of result	Application (SW)
Partners responsibility	INESC TEC

Summary description	The pervasive app is a software that runs in mobile devices and personal computers and monitors the behaviour of the users in order to integrate with the results of the energy management system. This way the system will be able to predict the optimal behaviour for each user and notify the user at the most appropriate moment. It also works as a frontend for the gamification platform and as a framework for institutional communication.
Main innovation	The main innovation of this pervasive app is the use of choreographies that add semantic information to the information captured from the users. This will enable a better forecasting and also a more effective behaviour change.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright) or by creating a spin-off company with the partners that own the IP.
Application areas	Companies operating in the energy sector and multinational companies operating in other sectors.

7.3.13 MULTI-SENSOR UNIT

Results Description	
Name of result	Multi-sensor unit
Type of result	Development of a lightweight, independent, reliable and cost-effective solution that gathers and stores comfort related data.
Partners responsibility	INESC TEC
Summary description	The multi-sensor unit aims at: - Reading Temperature, Humidity, CO2 levels and Light intensity. - Storing information in a database. - Having a low energy consumption. - Having low maintenance. - Being cost-effective. - Being easy to install and configure.
Main innovation	Development of a versatile and plug-and-play solution that only needs power and internet connection to operate in order to avoid the high cost (gateway dependent) solutions that already exist in the market.
Expected TRL	A TRL of 8 is expected at the end of the project.

Exploitation strategy	Evaluation of exploitation via e.g. an external vendor or by creating a spin-off company with the partners that own the IP.
Application areas	Building monitoring solution that can be installed in all the types of buildings.

7.3.14 OCCUPANCY FORECASTING

Results Description	
Name of result	Occupancy forecasting application
Type of result	Application (SW)
Partners responsibility	EPFL
Summary description	Occupancy prediction application is supposed to provide support to other applications by indicating the occupancy in the building. The app will be based on both: inference from the sensors data and inference of occupants' schedules. App will provide occupancy forecasts for the next N hours with different levels of detail: starting from simple binary classification of occupied and not occupied, up to people count.
Main innovation	The app will require minimum available information to deduce occupancy in the building such electrical consumption data. However, the performance of the app can be enhanced if the app user is able to supply additional sensor information, such as environmental data. The application is designed in the way that it can predict occupancy for both tertiary and residential buildings.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of commercial exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright). EPFL foresees exploitation of the scientific methods at the core of the app through knowledge transfer to third parties as well as for other research purposes.
Application areas	Companies operating in the energy sector.

7.3.15 AUTOMATION MANAGER

Results Description	
Name of result	Automation manager application
Type of result	Application (SW)
Partners responsibility	EPFL
Summary description	Automation manager app is a way to communicate with controllable loads. It produces automation commands towards specific loads either based on optimization strategy or based on the incoming request from users. The app will be equipped with a feedback loop in order to always perform an optimal command dispatch and execution.
Main innovation	The main innovation is the development of a user behaviour aware automation manager. This automation manager should take into account user request and behaviour for optimal execution.
Expected TRL	A TRL of 7 is expected at the end of the project.
Exploitation strategy	Evaluation of commercial exploitation via e.g. an external vendor, or by licensing the software module to a partner for exploitation of the results (protected through copyright). EPFL foresees exploitation of the scientific methods at the core of the app through knowledge transfer to third parties as well as for other research purposes.
Application areas	Companies operating in the energy sector.

7.3.16 DATASETS

Results Description	
Name of result	Datasets
Type of result	Datasets of the following categories: • Behavioural • Environment Envelope / Site characterization • User Gaming Profile / Segmentation • Indoor Air Quality (Temperature, Humidity, CO_2) • Load Disaggregation • Occupancy

	• Automation management • Energy Saving • Consumption (Water, Gas, Electricity)
Results Responsibility	INESC TEC, LiMETOOLS, TU Delft, IN-JET, EPFL, Kreis Lippe, DEXMA, ERF
Summary description	The datasets related with the characterization of the demonstrators are created from onsite visits, buildings plants, and construction materials documents'. Users' related datasets will be created through data obtained from online surveys and behavioural data collected through the pervasive app. Energy and water consumption, as well as comfort levels datasets will be gathered from measurement and sensoring devices and the metering or sub-metering infrastructures already installed in the demonstrators.
Main innovation	These datasets enable the detailed characterization of end users' behaviour regarding energy consumption and savings. They can also be used to measure in an accurate manner the behavioural change of end users.
Expected TRL	N/A
Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	Research related with energy performance of different types of buildings, energy management, human behaviour forecasting and comfort

7.3.17 OPTIMISATION

Results Description	
Name of result	Optimisation
Type of result	Methodologies / algorithms
Results Responsibility	EPFL
Summary description	Optimisation of the building energy usage taking into account user comfort, user request and user behavioural changes.
Main innovation	Potential to use behavioural change and demand side management for optimal building energy management.
Expected TRL	TRL 4

Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	Energy management in buildings, smart grids

7.3.18 MACHINE LEARNING

Results Description	
Name of result	Machine learning / deep learning
Type of result	Methodologies / algorithms
Results Responsibility	INESC TEC, DEXMA and EPFL
Summary description	Several machine learning techniques are used to define the behaviour, assess the behaviour change and analyse datasets in FEEdBACk. These techniques are applied to various time series of historical data collected/measured through the project duration. Innovative artificial intelligence techniques to deal with time series and correlate several different input variables (such as electrical consumption or environmental variables) in order to define clusters that incorporate patterns of events (pattern recognition). Deep learning methods specifically are used considering the amount of data that are available in FEEdBACk.
Main innovation	- Multivariate studies of affecting factors on energy consumption; - Determining behaviour through measured variables; - Disaggregate electricity load curves; - Identifying occupancy.
Expected TRL	The expected TRL is 3.
Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	Smart grids, energy management in buildings, behavioural demand response programs design and pricing

7.3.19 DATA MINING

Results Description	
Name of result	Data mining
Type of result	Methodologies / algorithms
Results Responsibility	INESC TEC, EPFL
Summary description	New methodologies are used in FEEdBACk based on advanced data mining algorithms able to analyse large amounts of data from buildings including measurements and other external variables (namely, environmental) and derive specific indicators and identify significant events and patterns of behaviours.
Main innovation	- Occurrence analysis of predefined behaviours in the incoming datasets; - Predicting the behaviours in response to specific affecting factor (stimuli).
Expected TRL	The expected TRL is 3.
Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	Smart grids, energy management in buildings, behaviour prediction, energy estimation

7.3.20 DYNAMIC DATABASE CREATION AND MANAGEMENT

Results Description	
Name of result	Dynamic database creation and management
Type of result	The results obtained in the creation and management of large volumes of data translates into Big Data management techniques, involving data collection, standardization, analysis, visualization, transfer and privacy, with a special emphasis in data storage.
Results Responsibility	INESC TEC
Summary description	The development of the FEEdBACk ICT-based platform for energy efficiency requires the creation and management of dynamic databases, as a new electrical equipment, end user or even other buildings may be integrated in the platform at any time.

	A new methodology for dynamic database design will be developed, which allows defining how static/dynamic information should be stored and enables the straightforward integration of new data entries.
	Furthermore, the methodology also allows defining who has access to which datasets to prevent unauthorised utilization of sensitive or personal data and ensure that adequate data privacy principles are adequately implemented.
Main innovation	The main innovation of this methodology is the flexibility provided by capability of expanding the database without major difficulties in terms of new hardware required or new data entries.
Expected TRL	A TRL of 4 is expected at the end of the project.
Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	The knowledge gained in terms of dynamic databases creation and management can be used in all the contexts related with Big Data collection, storage and management, such as the Internet of Things (IoT).

7.3.21 SENSORS/GATEWAYS/SERVERS INTEROPERABILITY

Results Description	
Name of result	Sensors/gateways/servers interoperability
Type of result	The development of the multi-sensor unit allowed acquiring knowledge in low-level programming language, database protocols, sensor calibration, PCB design, 3D modelling, custom case design, 3D printing and data storage. Additionally, the integration of all the modules in the multi-sensor unit and sending and storing the collected data into the database will allow developing skills related with devices interoperability and data protocols.
Results Responsibility	INESC TEC
Summary description	A low-cost unit that gathers and sends data to the project's database will be developed.
	Due to its low price, it allows for more units to be installed in the field and therefore establishes a more precise base line and presents users with a more realistic and up-to-date data.
Main innovation	Creation of a lightweight algorithm for the multi-sensor unit microprocessor that is efficient, reliable and at the same time has good performance in terms of its energy usage in order to increase battery life. Selection and implementation of

	adequate data protocols to enable interoperability between the multi-sensor units in the three demonstrators and the FEEdBACk databases.
Expected TRL	N/A
Exploitation Strategy	Evaluation of exploitation via e.g. patents, trade secret or copyright.
Application areas	This structure, created under the FEEdBACK environment, can be used in every new project that has to do with energy efficiency, indoor air quality and improving comfort levels.

7.4 REGULATORY AND POLICY RECOMMENDATIONS

This sub-chapter consists of a compilation of guidelines and overall recommendations for policy makers and regulators.

Feeding from the expected results of the FEEdBACk project, significant advances are to be achieved that should be translated into the form of recommendations that will be useful for defining new policies related not only to energy efficiency in buildings (both residential and services buildings) but also defining guidelines that can be used for implementing new measures towards the standardization and interoperability of ICT used in the context of energy efficiency improvement.

New knowledge generated based on an efficient and comprehensive monitoring of human behaviour in terms of energy usage that can be applied to the definition of new policies and incentives may be passed to either national or EU legislation as well as guidelines that can be useful for regulators.

These recommendations will have importance to the following stakeholders: government bodies, regulators, policy makers, and companies operating in the energy sector.

7.5 SUMMARY OF THE EXPLOITABLE RESULTS OF THE FEEDBACK PROJECT

Name of the result	Type of result	TRL level	Responsible partners
Behaviour Predictor	Application (SW)	7	INESC TEC, EPFL, LiMETOOLS, IN-JET
Net load forecasting	Application (SW)	8	INESC TEC
Digital Marketplace	Application (SW)	7	DEXMA, LiMETOOLS, Kreis Lippe, ERF

Energy Manager	Application (SW)	7	INESC TEC, LiMETOOLS, TU Delft, DEXMA
Load disaggregation apps	Two Apps (SW)	7	DEXMA & EPFL
User Profiling	Application (SW)	7	DEXMA, LiMETOOLS & IN-JET
User Segmentation	Application (SW)	7	DEXMA, TU Delft, LiMETOOLS & IN-JET
Buildings@Work (B@W)	Suite of six Self-Directed e-Learning & Data Capture Tools	8	LiMETOOLS
The Human Factor (THF)	Self-Directed e-Learning & Data Capture Tools	8	LiMETOOLS, INESC TEC
ICT-based platform for energy efficiency	Methodology to implement an ICT-based platform to foster energy efficiency in residential, services and public buildings	7	INESC TEC, DEXMA, LiMETOOLS, EPFL, IN-JET, TUDelft, ERF, KREIS LIPPE
Gamification platform	Software platform (SW) + multimedia contents	7	INESC TEC, LiMETOOLS
Pervasive App	Application (SW)	7	INESC TEC
Multi-sensor unit	Development of a lightweight, independent, reliable and cost-effective solution that gathers and stores comfort related data	8	INESC TEC
Occupancy forecasting application	Application (SW)	7	EPFL
Automation manager application	Application (SW)	7	EPFL
Datasets	Datasets of the following categories: Behavioural, Environment Envelope /	N/A	INESC TEC, LiMETOOLS, TU Delft,

	Site characterization, User Gaming Profile / Segmentation, Indoor Air Quality (Temperature, Humidity, CO_2), Load Disaggregation, Occupancy, Automation management, Energy Saving, Consumption (Water, Gas, Electricity)		IN-JET, EPFL, Kreis Lippe, DEXMA, ERF
Optimisation	Methodologies/algorithms	4	EPFL
Machine Learning	Methodologies / algorithms	3	INESC TEC, DEXMA and EPFL
Data mining	Methodologies / algorithms	3	INESC TEC and EPFL
Dynamic database creation and management	The results obtained in the creation and management of large volumes of data translates into Big Data management techniques, involving data collection, standardization, analysis, visualization, transfer and privacy, with a special emphasis in data storage	4	INESC TEC
Sensors/ gateways/ servers interoperability	The development of the multi-sensor unit allowed acquiring knowledge in low-level programming language (micropython), database protocols, sensor calibration, PCB design, SolidWorks 3D modelling, custom case design, 3D printing and data storage. Additionally, the integration of all the modules in the multi-sensor unit and sending and storing the collected data into the database allowed developing skills related with devices interoperability and data protocols.	N/A	INESC TEC

8. CONCLUSION

This deliverable aimed at defining a dissemination and exploitation strategy for the FEEdBACk project. Being submitted at month 6, there are deviation risks associated mainly with the exploitation plan, but also with the dissemination one.

Nevertheless, goals, strategies, target stakeholders and KPIs have been defined in rigours way taking into consideration the overall objectives and potential of the project.

Regarding the dissemination plan, the results achieved so far are very positive:

- Public relations: so far, 28 news pieces have been published in the media and eight on online platforms about the FEEdBACk project. It is expected that these results may increase once all of the partners start to disseminate the project to their strategic channels;
- Events: in the first 6 months of the project, members of the consortium already participated in three events organised by other entities and the consortium has already organised three events;
- Digital marketing: In general, the results obtained through FEEdBACk social networks are good. Since the presence in social networks was only started in January (two months after the project's kick-off), it stands out as positive: frequency and number of publications; dynamism in the format of publications; number of followers (except for Youtube). However, in addition to improve what is already positive, we intend to focus on solving the identified gaps: (1) audience with a strong concentration in Portugal; (2) lack of traffic generated between social networks and the website;
- Direct marketing: Regarding the direct marketing strategy, we aim at reinforcing the results of the first newsletter, sending a second one this month. We also expect to repeat this dissemination activity every three months.

Concerning the exploitation plan, at such an early stage of the project it is still difficult to provide a lot of details on the results. It should be highlighted that this is a working document and that the final IPR distribution will be agreed among partners in future deliverables, as the project moves forward with its technological developments.

Despite that fact, the FEEdBACk consortium has already identified twenty-one exploitable results. A first description of each one of these results containing the main objectives, innovation, intellectual property prospects or the exploitation strategy, has been produced.

In month 18, we are expecting to submit a draft of individual business development tools, for example a business model canvas. This draft would already provide some information about the market conditions, potential competitors, technology benchmarks, exploitation and promotion strategies and actions.

Finally, two more deliverables related to the dissemination and exploitation plans are expected to be submitted:

- Follow up on dissemination and exploitation of results in month 18;
- Final report on dissemination and exploitation of results in month 36.

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[6] FEEdBACk Grant Agreement number 768935.

[7] FEEdBACk Deliverable 7.1. – Project website.

❯ LIST OF FIGURES

❯ LIST OF TABLES

ABBREVIATIONS AND ACRONYMS

AAV	Advertising Automatic Value
DSCO	Distribution System Operator
EU	European Union
ESCO	Energy Service Company
IT	Information Technology
KPI	Key Performance Indicator
NEWSL.	Newsletter
PR	Press Release
PX	Pixels
SH	Stakeholder
WP	Work Package

Annex I. **PUBLIC RELATIONS IMPACT ASSESSMENT (PRESS RELEASE KPI)**

I.   **KPI1 -** <u>The number of Press Releases released to the media – at least 3 during the entire project</u>

One Press Release has already been sent to the media. A copy of the English version is presented in sub-chapter 2.2.1. The English version of the press release was distributed to the consortium, fitting the goals defined in the 1st communication campaign. However, the idea is that each partner adapts it (language, order of the paragraphs, etc.) according to the journalistic criteria of their country and disseminates it to a list of journalists of their interest, as long as the main message is not changed.

INESC TEC adapted the Press Release according to the Portuguese journalistic criteria and released it to the media.

FEEdBACk

EM CASA OU NO TRABALHO

E SE PUDESSEMOS POUPAR ENERGIA ATRAVÉS DE UMA APP MÓVEL?

COM €2.3M ATÉ 2020, O FEEDBACK É UM PROJETO EUROPEU QUE
VAI DESENVOLVER SOLUÇÕES LIGADAS À EFICIÊNCIA ENERGÉTICA

Mudava o seu comportamento energético se existisse uma aplicação móvel ou um jogo interativo capaz de o ajudar? Este é um dos grandes objetivos do FEEdBACk, um projeto europeu que até 2020 vai desenvolver soluções ligadas à eficiência energética.

É Portugal quem lidera este projeto de €2,3M, financiado ao abrigo do programa de investigação e inovação da Comissão Europeia Horizon 2020, através do Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência (INESC TEC), onde está a ser instalada uma das três áreas de demonstração do projeto.

Ao todo, são oito instituições de sete países europeus (Portugal, Holanda, Suíça, Espanha, Reino Unido, Dinamarca e Alemanha) que estão a trabalhar para promover, estimular e produzir uma energia mais eficiente através de mudanças comportamentais. É precisamente para motivar uma mudança comportamental por parte dos consumidores que está a ser desenvolvida uma plataforma de gamificação.

"Estamos a trabalhar numa aplicação móvel, cuja interface será interativa e amigável, para motivar uma utilização mais eficiente da energia através de mensagens personalizadas e competição entre pares. A ideia é que esta aplicação ajude a que sejam feitas pequenas alterações nos hábitos diários que, por sua vez, conduzam a poupanças energéticas e financeiras grandes quer nas casas dos consumidores quer nos locais de trabalho", explica Filipe Joel Soares, investigador sénior do Centro de Sistemas de Energia do INESC TEC e responsável pelo projeto.

Jogos ou questionários relacionados com tomadas de decisão do dia a dia relativamente a comportamentos energeticamente eficientes são algumas das funcionalidades que a *app* vai incluir. Estão também a ser desenvolvidos painéis de jogo onde os utilizadores podem comparar o seu desempenho energético com o dos seus pares e até partilhá-los nas redes sociais.

Estes conceitos vão, numa primeira fase, ser todos testados em três áreas de demonstração: Portugal (edifício do INESC TEC), Espanha (vários edifícios no Município de El Prat, em Barcelona) e Alemanha (zona residencial localizada em Lippe).

No entanto, as mudanças comportamentais não vão ser apenas promovidas nas áreas de demonstração. Atividades, tais como campanhas de sensibilização nas redes sociais ou no website no projeto, vão ser

promovidas juntos dos vários consumidores dos países que compõem o consórcio para encorajar uma mudança de hábitos relacionada com a eficiência energética.

INESC TEC (Portugal), Technische Universiteit Delft (Holanda), École Polytechnique Federale de Lausanne (Suíça), Dexma Sensors (Espanha), Limetools (Reino Unido), In-Jet (Dinamarca), Kreis Lippe Der Landrat (Alemanha) and Estudi Ramon Folch I Associats (Espanha) são as instituições que fazem parte do projeto FEEdBACk.

Mais informações estão disponíveis em: www.feedback-project.eu

O projeto FEEdBACk é financiado ao abrigo do programa de investigação e desenvolvimento da União Europeia Horizon 2020 com o acordo número 768935.

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Porto, 6 de fevereiro 2018

Annex II. PUBLIC RELATIONS IMPACT ASSESSMENT (NEWS PIECE ON THE MEDIA KPI)

KPI2 – <u>The number of news pieces published on the media – at least 30 during the entire project</u>

The dissemination of the Press Release in the Portuguese media resulted in 28 news pieces. A table with all of the news pieces that have been published will be presented below. The table includes the title of the new pieces, the name of the media, the Automatic Adverting Value (AAV)[1], the media type, a link to access the news piece and the date of publication

News pieces title	Media name	AAV	Media Type	Link	Date
E se pudéssemos poupar energia através de uma APP móvel?	Ambiente Magazine	121€	Portuguese digital media (specialised in environmental subjects)	http://www.ambientemagazine.com/e-se-pudessemos-poupar-energia-atraves-de-uma-app-movel/	06-02-2018
Portugal lidera projeto europeu de eficiência energética	ComputerWorld	226€	Portuguese digital media (specialised in technology subjects)	https://www.computerworld.com.pt/2018/02/06/portugal-lidera-projectos-europeu-de-eficiencia-energetica/	06-02-2018
Porto em projeto europeu para criar 'app' que estimule poupança de energia	Diário de Notícias	4.500€	Portuguese newspaper	https://www.dn.pt/lusa/interior/porto-em-projeto-europeu-para-criar-app-que-estimule-poupanca-de-energia-9101075.html	06-02-2018
E se pudéssemos poupar energia através de uma app?	Green Savers	1.056€	Portuguese digital media (specialised in environmental subjects)	https://greensavers.sapo.pt/e-se-pudessemos-poupar-energia-atraves-de-uma-app/	06-02-2018
Porto em projeto europeu para criar 'app' que estimule	O Jogo	10.254€	Portuguese newspaper	https://www.ojogo.pt/extra/lusa/interior/porto-em-projeto-europeu-para-criar-app-que-estimule-poupanca-de-energia-9101078.html	06-02-2018

[1] Advertising Automatic Value (AAV) is a measure used in the public relations industry to 'measure' the impact from media coverage whenever a PR campaign is launched. AAV measures what the equivalent amount of money that would cost the coverage if it were paid as an advertisement.

poupança de energia					
Porto em projeto europeu para criar 'app' que estimule poupança de energia	Jornal de Notícias	11.184 €	Portuguese newspaper	https://www.jn.pt/lusa/interior/porto-em-projeto-europeu-para-criar-app-que-estimule-poupanca-de-energia-9101077.html	06-02-2018
Porto em projeto europeu para criar app que estimule poupança de energia	Notícias ao Minuto	5.593€	Portuguese digital media	https://www.noticiasaominuto.com/tech/952360/porto-em-projeto-europeu-para-criar-app-que-estimule-poupanca-de-energia	06-02-2018
Portugal lidera desenvolvimento de app para poupança de energia	PT Jornal	2.413€	Portuguese digital media	http://ptjornal.com/portugal-lidera-desenvolvimento-app-poupanca-energia-237708	06-02-2018
Aprender a poupar energia com uma app made in Portugal	Público	21.798 €	Portuguese newspaper	https://www.publico.pt/2018/02/06/tecnologia/noticia/porto-em-projecto-europeu-para-criar-app-que-estimule-poupanca-de-energia-1802181	06-02-2018
E se uma aplicação móvel te ajudasse a poupar energia?	P3	2.047€	Portuguese digital media	http://p3.publico.pt/actualidade/ambiente/25489/e-se-uma-aplicacao-movel-te-ajudasse-poupar-energia	06-02-2018
Porto em projeto europeu para criar 'app' que estimule poupança de energia	TSF	2.487€	Portuguese radio	https://www.tsf.pt/lusa/interior/porto-em-projeto-europeu-para-criar-app-que-estimule-poupanca-de-energia-9101076.html	06-02-2018
INESC TEC lidera projeto para criar app para poupar energia	Viva!Porto	143€	Portuguese magazine	http://www.viva-porto.pt/Geral/inesc-tec-lidera-projeto-para-criar-app-para-poupar-energia.html	07-02-2018
FEEdBACk: A eficiência energética na palma da mão	JPN	296€	Portuguese digital media	https://jpn.up.pt/2018/02/07/inesc-tec-aplicacao-poupar-energia/	07-02-2018
E se o seu telemóvel o ensinasse a poupar energia?	Edifícios e Energia	109€	Portuguese digital media	http://www.edificioseenergia.pt/pt/noticia/feedbackapp-0702	07-02-2018

			(specialised in environmental subjects)		
Portugal lidera projeto para criar app que poupa energia	Dinheiro Vivo	6.000€	Portuguese digital media	https://www.dinheirovivo.pt/economia/1146303/	07-02-2018
App FEEdBACk	Renascença	2.778€	Portuguese radio	https://www.youtube.com/watch?v=vqqvd0kEZsc&feature=youtu.be	07-02-2018
No Porto faz-se FEEdBACk para poupar energia	Time Out Porto	1.448€	Portuguese Magazine	https://www.timeout.pt/porto/pt/noticias/no-porto-faz-se-feedback-para-poupar-energia-020718	08-02-2018
Uma app com "mão" portuguesa pode ajudar a poupar na conta da luz	Sapo Tek	2.554€	Portuguese Digital media	https://tek.sapo.pt/mobile/apps/artigos/uma-app-com-mao-portuguesa-pode-ajudar-a-poupar-na-conta-da-luz	08-02-2018
FEEdBACk : a app que vai promover a utilização mais eficiente de energia	Revista O instalador	101€	Portuguese Digital media	http://oinstalador.com/noticia/id/707/FEEdBACk-a-app-que-vai-promover-a-utilizacao-mais-eficiente-de-energia	08-02-2018
E se pudéssemos poupar energia através de uma app móvel?	Beira News	133€	Portuguese local media	https://beiranews.pt/2018/02/e-se-pudessemos-poupar-energia-atraves-de-uma-app-movel	08-02-2018
FEEdBACk: projeto europeu ligado à eficiência energética é liderado por Portugal	Ver Portugal	121€	Portuguese Digital media	https://www.verportugal.net/vp/pt/022018/ElectronicaInformatica/10186/FEEdBACk-projeto-europeu-ligado-%C3%A0-efici%C3%AAncia-energ%C3%A9tica-%C3%A9-liderado-por-Portugal.htm	09-02-2018
Portugal lidera projeto europeu de eficiência energética	Ntech.news	103€	Portuguese digital media (specialised in technology subjects)	https://www.ntech.news/portugal-lidera-projeto-europeu-de-eficiencia-energetica/	12-02-2018
Esta app vai ajudá-lo a poupar energia	E-konomista	7.262€	Portuguese Digital media	http://www.e-konomista.pt/noticia/app-poupar-energia/	14-02-2018

Poupar energia através de uma app móvel	Electricista online	110€	Portuguese digital media (specialised in energy subjects)	http://www.oelectricista.pt/2018/02/20/poupar-energia-atraves-app-movel/	20-02-2018
FEEdBACk: a app que vai promover a utilização mais eficiente de energia	Revista O Instalador	413€	Portuguese magazine	https://ibb.co/kxYh7H	01-03-2018
Jogos que ensinam a poupar	Jornal de Notícias	12 790 €	Portuguese newspaper	http://feedback-project.eu/dissemination-material/media--3/clipping-6	04-03-2018
Sete ideias geniais dos cientistas e investigadores do Porto	Time Out	1 456€	Portuguese magazine	https://www.timeout.pt/porto/pt/noticias/sete-ideias-geniais-dos-cientistas-e-investigadores-do-porto-030918	09-03-2018

The total AAV obtained in this media campaign resulted in 97.496€.

Some news pieces' examples are presented in the figures below.

Annex III. **PUBLIC RELATIONS IMPACT ASSESSMENT (ONLINE PLATFORMS KPI)**

KPI3 – The number of online news based on the Press Release published on online platforms, such as the partners or other stakeholder's website – at least 20 during the entire project.

ERF and DEXMA shared the Press Release information on their websites. Additionally, INESC TEC has published two news in its newsletter and another one in the institution's website. INESC TEC has also sent information to Porto City Hall and Porto's University Portal News.

Eight online news have been published about the FEEdBACk project until month 6.

A summary table with the online news results is presented below.

Online platforms	Link	Date	Country
INESC TEC's monthly newsletter	http://bip.inesctec.pt/183/noticia-tc03.html	June 2017	Portugal
INESC TEC's monthly newsletter	http://bip.inesctec.pt/187/noticia-tc01.html	November 2017	Portugal
INESC TEC's website	https://www.inesctec.pt/pt/press-releases/e-se-pudessemos-poupar-energia-atraves-de-uma-app-movel	February 2018	Portugal
Porto City Hall website	http://www.porto.pt/noticias/investigador-do-porto-lidera-projeto-europeu-de-criacao-de-uma-app-que-estimule-a-poupanca-de-energia	February 2018	Portugal
Porto's University Portal News	https://noticias.up.pt/e-se-pudessemos-poupar-energia-atraves-de-uma-app-movel/	February 2018	Portugal
DEXMA Website	https://www.dexma.com/es/gamificacion-para-eficiencia-energetica-feedback/	February 2018	Spain
ERF Website	http://www.erf.cat/es/actualitat/feedback-proyecto-h2020-de-promocion-del-cambio-de-habitos-para-el-ahorro-energetico	February 2018	Spain
ERF Website	http://www.erf.cat/ca/actualitat/feedback-projecte-h2020-de-promocio-del-canvi-dhabits-lestalvi-energetic-traves-de	February 2018	Spain

Annex IV. **EVENTS AND EXPERIENCES (EVENTS ORGANISED BY OTHER PARTNER KPI)**

FEEdBACk partners have been in two conferences and one EU Event. In total, the project participated in three events organised by other partners in the first 6 months.

- **European NILM (Non-Intrusive Load Monitoring) workshop**

The aim of this conference series was to serve as a meeting point where all European researchers working on energy disaggregation in both industry and academia could network, share research and exchange ideas.

The event took place in London on 6th and 7th November. Oriel Serch and Juan Fernández, from DEXMA, presented the FEEdBACk project, in general, and the Work Package 3, in particular, at this workshop.

EUROPEAN NILM

- **H2020 Coordinator's Day**

The "H2020 Coordinator's Day" took place at the Charlemagne building, in Brussels, on 20th November. Filipe Soares and André Madureira, from INESC TEC, were at the event representing the FEEdBACk project.

This invitation-only event was organised by the European Commission as an information session for Grant Coordinators, so they could learn legal aspects, business processes and IT tools used to prepare grant amendments and reports, with particular attention to the financial aspects and eligibility of costs.

ANDRÉ MADUREIRA (ON THE LEFT) AND FILIPE SOARES (ON THE RIGHT) AT "H2020 COORDINATOR'S DAY"

- **ICT for Energy Efficiency**

The "ICT for Energy Efficiency" took place at Brussels, in Belgium, on 27th February. Filipe Soares and André Madureira, from INESC TEC, represented the FEEdBACk project.

The participation of the project leader in this conference had a double objective. First, INESC TEC learnt from past projects in the same or related calls and discussed common problems and solutions. Second, but not least, it made known the FEEdBACk project's approach.

PARTICIPANTS OF THE "ICT FOR ENERGY EFFICIENCY" EVENT

Annex V. **EVENTS AND EXPERIENCES (EVENTS ORGANISED BY THE CONSORTIUM KPI)**

The three events organised by the consortium up to now aimed at knowing the buildings of two of the demonstration areas (Barcelona and Porto) and engaging the building users (Porto) around the project.

- **FEEdBACk and AnyPLACE Workshop**

On 21st February, the European projects FEEdBACk and AnyPLACE combined synergies in a Workshop for Community and City Sustainability.

This workshop was held in Lippe, Germany, and its main goal was to engage and motivate the demo participants in the Lippe demo by letting them get to know the project and ask questions. In addition, this workshop also had as purpose to discuss and solve technical issues to operationalize the Lippe demo for instance regarding sensors installation.

INESC TEC, KREIS LIPPE, EPFL and TU Delft were the attendees from FEEdBACk of this physical meeting, which was an essential step to kick of the demonstration activities in the Lippe demo.

LIPPE'S DEMO AREA

- **Barcelona demo visit**

On 6th March, FEEdBACk partners were in Barcelona for the visit to the El Prat demo site. This visit also counted with the participation of some of the building managers. In this sense, this event had two main objectives: (1) make known to the consortium some of the buildings that are included in the Spanish demonstrator; (2) involve the building managers in the project. This second point is especially important because building managers will be the fixed users of the FEEdBACk's app in Barcelona's demo-site.

BARCELONA DEMO VISIT

- **Porto Demo visit and workshop on user engagement**

On 21st and 22nd March, FEEdBACk's partners were in Porto to visit INESC TEC's demonstration area. Besides that, a workshop on user engagement was also organised.

This event aimed at presenting the Portuguese demo area to the consortium as well as engaging the building's users around the project. This workshop was one of the strategies used in order to recruit participants in Porto's demo-site (INESC TEC).

WORKSHOP ON USER ENGAGEMENT IN PORTO

Annex VI. **DIGITAL MARKETING (WEBSITE - KPIS)**

The project's website is available at www.feedback-project.eu and it was launched on 31st January 2018.

Since then, the following results, regarding the KPIs defined, have been observed:

KPI - Number of unique visitor on the website

In total, 981 users visited the website. February (the first month with the website implemented) was the month with best results (326 users, 320 new users). The figure below shows that evolution.
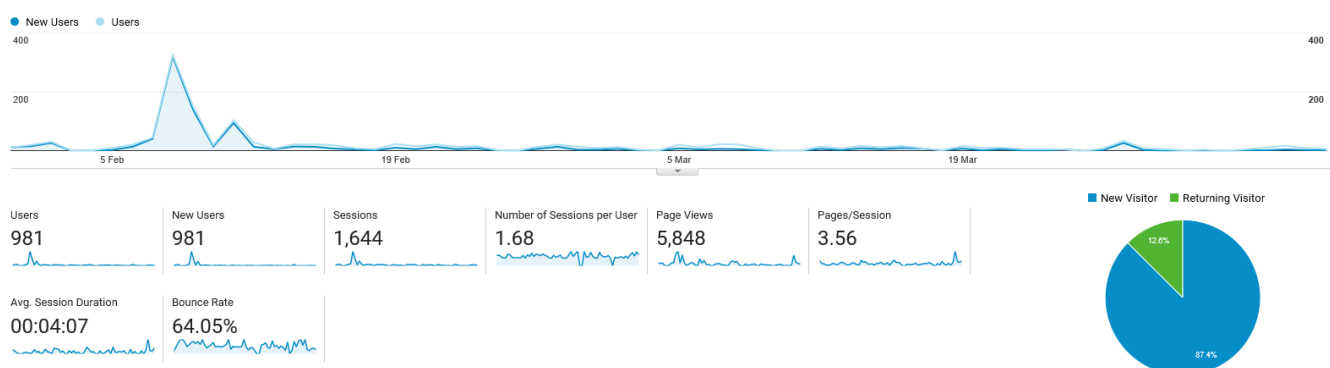
WEBSITE (USERS VS. NEW USERS)

KPI - Number of sessions on the website

The "sessions" parameter corresponds to the period time a user is actively engaged with the website. All usage data (Screen Views, Events, etc.) is associated with a session.

From the end of January until now there have been 1 162 sessions, with about 13% of users repeating the action more than once.

The highest number of sessions was recorded on 3rd February (338 sessions). Since then, there has been a decline of this value.

Each session had an average duration of 4'7".

The figure below shows this evolution.
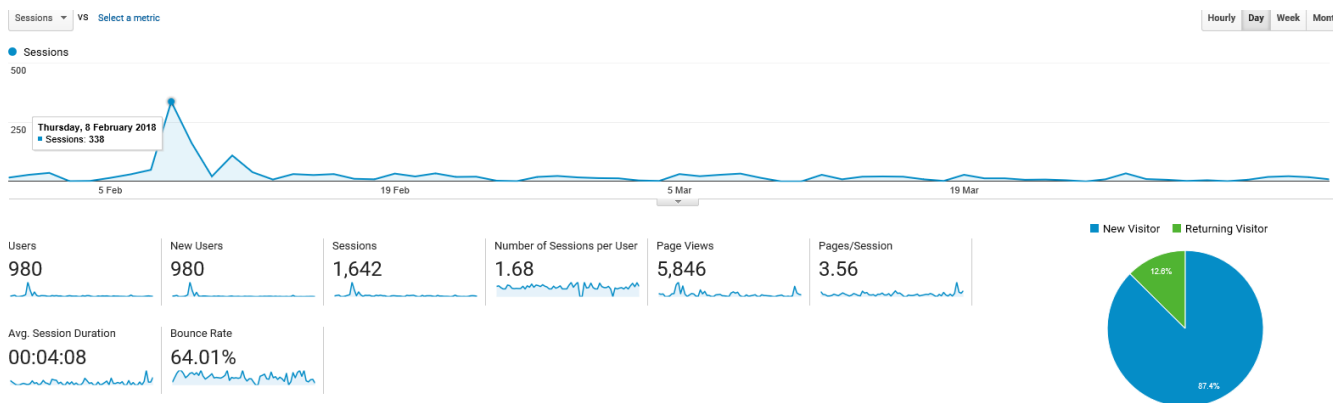
WEBSITE (NUMBER OF SESSIONS)

KPI: Number of page views of the website

From the website implementation until now 5846 page views have been registered. About 50% of this number corresponds to unique page views, as shown in the table below.

Page Views	Unique Page Views	Avg. Time on Page	Entrances	Bounce Rate	% Exit
5,846	2,893	00:01:37	1,642	64.01%	28.09%
% of Total: 100.00% (5,846)	% of Total: 100.00% (2,893)	Avg for View: 00:01:37 (0.00%)	% of Total: 100.00% (1,642)	Avg for View: 64.01% (0.00%)	Avg for View: 28.09% (0.00%)

WEBSITE (PAGE VIEWS' OVERVIEW)

Although there is an oscillation of page views over the months, there is also a negative trend. The first weeks of February registered the highest values of page views, as shown in the figure below.
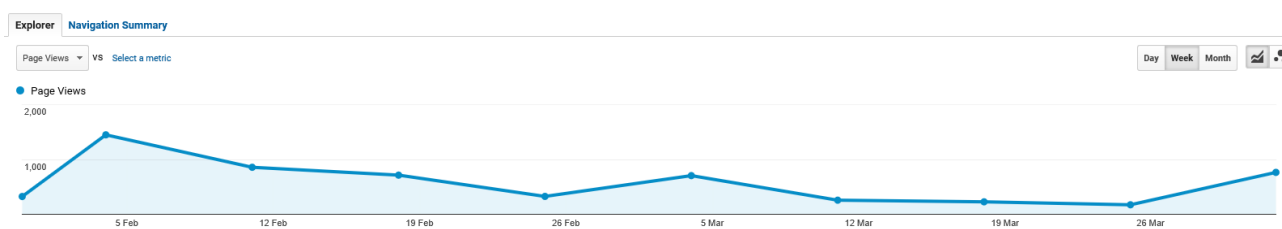
WEBSITE - PAGE VIEWS PER WEEK

KPI: Number of downloads of material from the website until the end of the project, which needs to be, at least, 5.000.

Some communication materials (Press Release, Press Kit flyers, leaflets, poster, etc.) as well as deliverables were uploaded on the website. So far 29 downloads have been made.

Annex VII. DIGITAL MARKETING (SOCIAL MEDIA CHANNELS KPIS)

This chapter aims at presenting the results of four FEEdBACk's social networks: Facebook, Twitter, LinkedIn and YouTube.

The impact of each one will be analysed since the first day of its implementation:

- Facebook, Twitter and LinkedIn: 10th January, 2018
- YouTube: 08th February, 2018

KPI - Number of publications (Facebook, Twitter, LinkedIn)

In total, 97 posts were published in the social networks of the project, taking advantage of the potential of each channel: 34 posts on Facebook; 35 posts on Twitter; 22 posts on LinkedIn.

KPI - Number of videos published (Facebook, Twitter, Youtube)

Usually, video is one of the formats with the best range on social networks. In this sense, 13 videos were published on Facebook and 9 videos on twitter. We are not considering the links to Youtube, which has 7 videos uploaded. This social network is organised by three main playlists for now: "Institutional videos" (1 video); "On the news" (1 video) and "Social Networks' videos" (5 videos).

KPI - Number of followers (Facebook, Twitter, LinkedIn, Youtube)

The more followers FEEdBACk can bring to its online pages, the better we can present its ideas, attract participants in the demonstration areas and promote behaviour change. To date, Facebook is the social network with the highest number of followers (233), followed by Twitter (50 followers) and LinkedIn (44 followers). YouTube is the social network with the fewest number of followers (4 subscribers). This can be explained by two reasons: (1) YouTube was the last social network to be created; (2) YouTube acts as a repository of shared videos on other social networks. In this sense, YouTube is a social network that supports the other channels of online communication.

The table below aggregates these numbers.

Number of followers/ subscribers			
Facebook	**Twitter**	**LinkedIn**	**YouTube**
233 follows	Followers 50	44 total followers of all time	SUBSCRIBERS 4

SOCIAL NETWORKS - FOLLOWERS/ SUBSCRIBERS

KPI - Website traffic generated by Facebook:

One of the main objectives of being present on Facebook is the FEEdBACk website's promotion. In this sense, until now, five website's visitors reached that platform through Facebook on the following days:
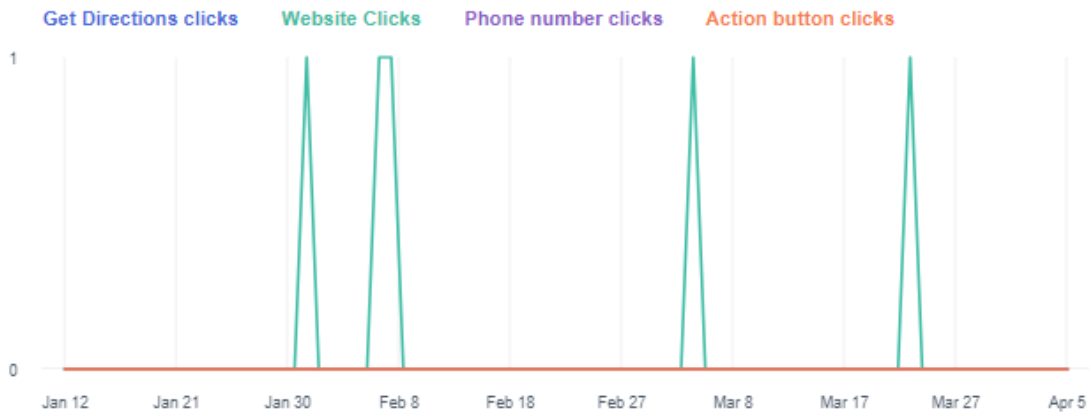

FACEBOOK (WEBSITE CLICKS SINCE JANUARY UNTIL APRIL 2018)

The website clicks can happen in two ways: (1) by clicking in the link inserted on the page with information about the project; (2) by clicking in the link inserted in the post created in order to promote the website.

KPI - Range (Facebook)

Before the first paid campaign (more details will be present on KPI7's description) started on Facebook on 6th April, posts had an average range of 151 as shown below.
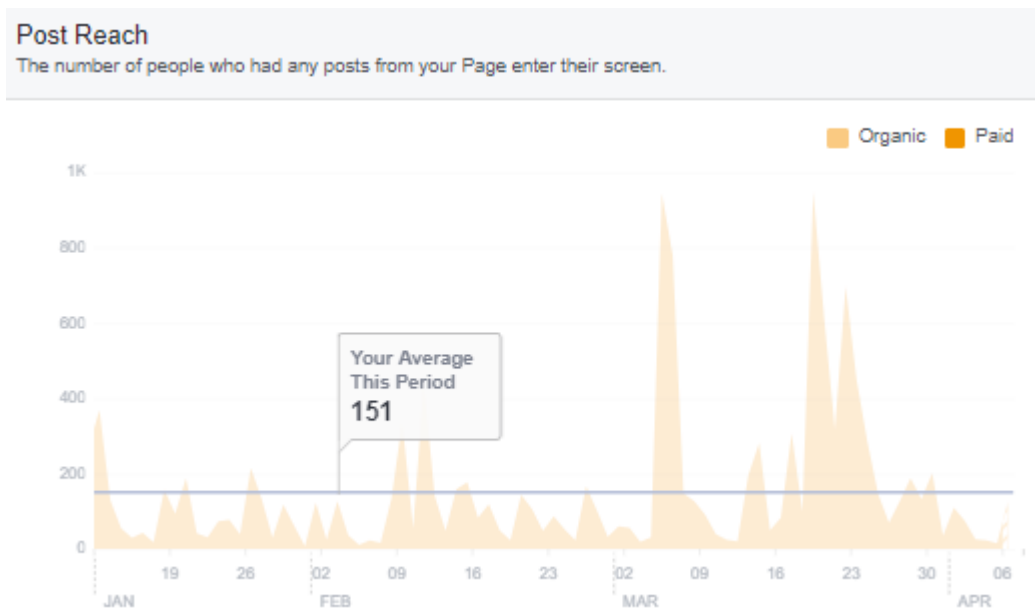
FACEBOOK AVERAGE RANGE (BEFORE THE PAID CAMPAIGN)

Since the paid campaign has not as main purpose to reach people who have already liked Facebook's post and page, it was expected a reasonable result on paid post reach. Thus, in the figure below we can observe higher results in organic post reach than in the paid one (for example, on 19th Mach – Father's day post).
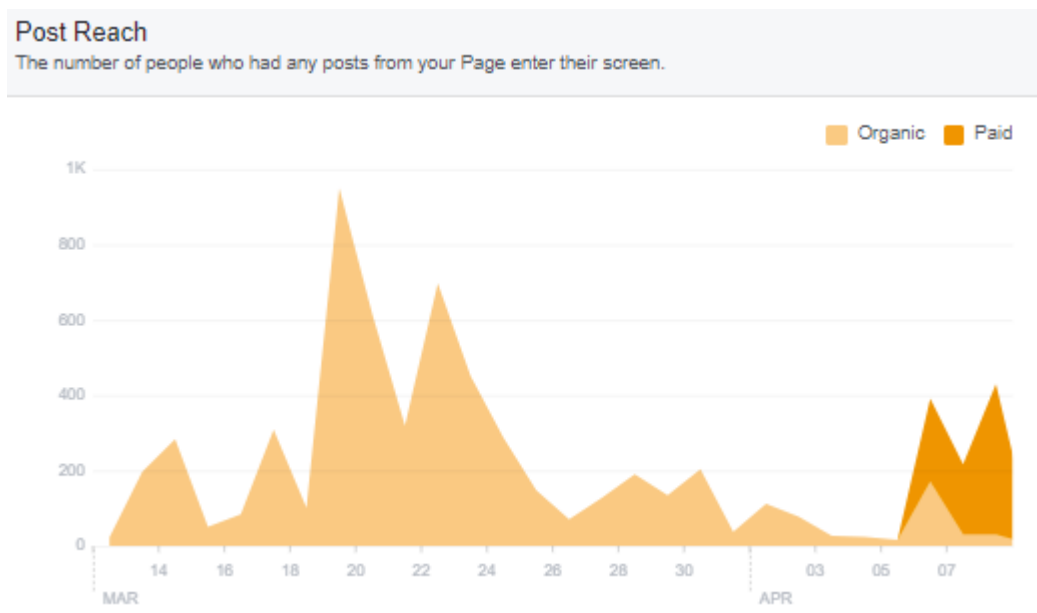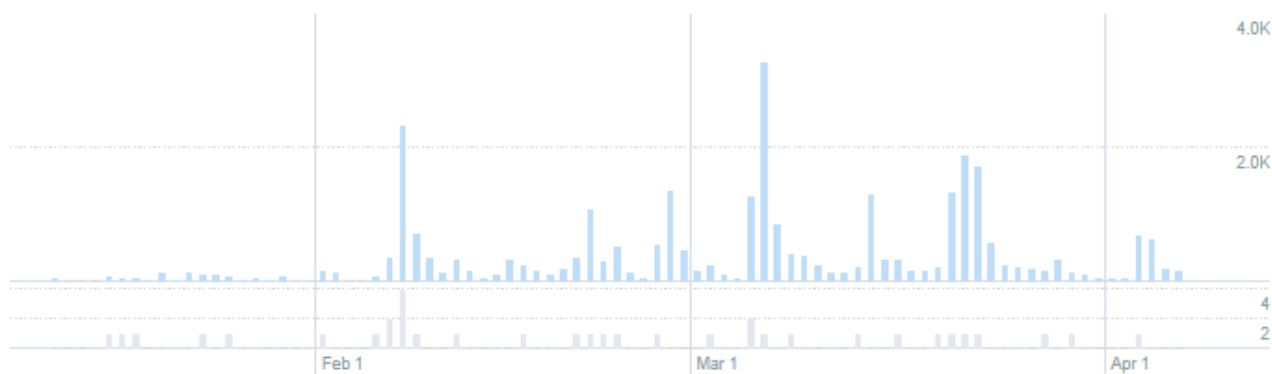

FACEBOOK POST REACH OVERVIEW (MARCH – APRIL 2018)

Considering the specific period of the campaign actuation, the organic reach was not as high as the paid one.

KPI - Impressions (Twitter, LinkedIn)

"Impressions" is an indicator of the number of times users saw a tweet (on Twitter) or a post (on LinkedIn).

Until now, FEEdBACk tweets earned 30.5 k impressions, as shown below.

TWITTER (IMPRESSIONS)

In turn, LinkedIn earned a total of 12.9 k impressions. The figure below shows that the number of impressions per day is variable constant, depending on the moment the contents are published.
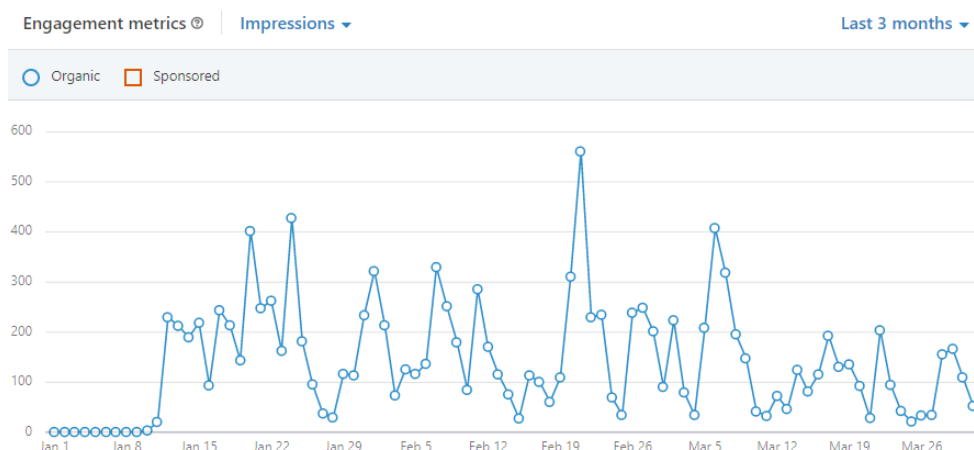
LINKEDIN (IMPRESSIONS)

KPI - <u>Paid campaigns' results (Facebook, Twitter, LinkedIn, Youtube)</u>

So far, only one paid campaign was made on social networks. It started on 6th April (2018) and finished on 09th April (2018), corresponding to an investment of 4€ per day.

The campaign was focused on the Facebook page and had as a main goal to increase the number of followers. This action answers to the communication strategy for this first step: create awareness.

The promotion was made by the new institutional video of the project with the following description: "WHAT IF WE COULD SAVE ENERGY JUST BY USING AN APP? Follow us to know more! #H2020EE"

The following image refers to the filters chosen. Since the goal was to reach new users, it excluded people who had already liked FEEdBACk's page.

**FACEBOOK PAID CAMPAIGN FILTERS' SUMMARY**

The results show that campaign reached 717 people. Of these users, 35 were converted into new followers of the page, as shown below.

FACEBOOK PAID CAMPAGN RESULTS' OVERVIEW

On average, the video was viewed for 3 seconds by 149 people.

Since our campaign's target was people with age between 18 and 55 years old, it was expected that the video reached the ones of that age group. Men with 34-35 were the most target with this paid campaign. However, this campaign reached more women than men (but no significant difference).
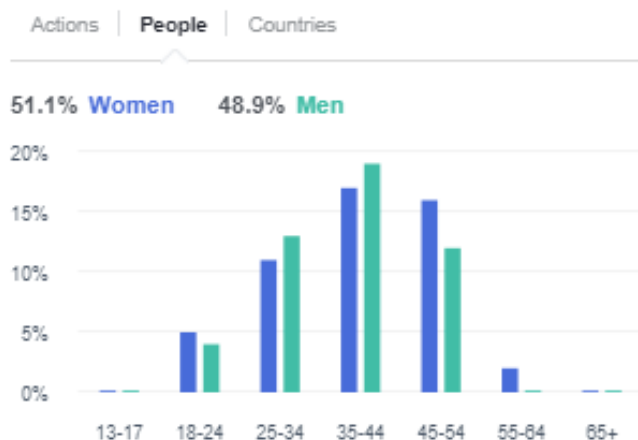
FACEBOOK PAID CAMPAIGN (PEOPLE REACHED)

Although the three countries in the demonstration areas were defined as target audience, Germany's users were not reached. This can be explained by the fact that Lippe is a small town. This factor, coupled with the education filter (Higher education) can justify the lack of range in this city. Portugal was the country with the greatest scope.
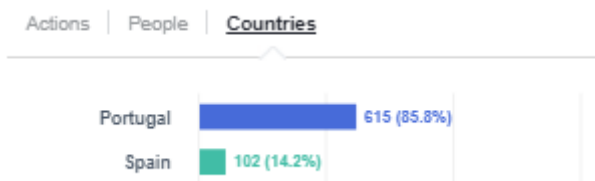
FACEBOOK PAID CAMPAIGN (COUNTRIES REACHED)

KPI – <u>Number of posts on YouTube and visualisations</u>

At the moment there are three active playlists on YouTube: (1) "Institutional videos"; (2) "On the news"; "Social Networks' videos". The following figure compares the results obtained in the three playlists considering the number of videos published, the number of visualizations and the viewing time of each playlists.
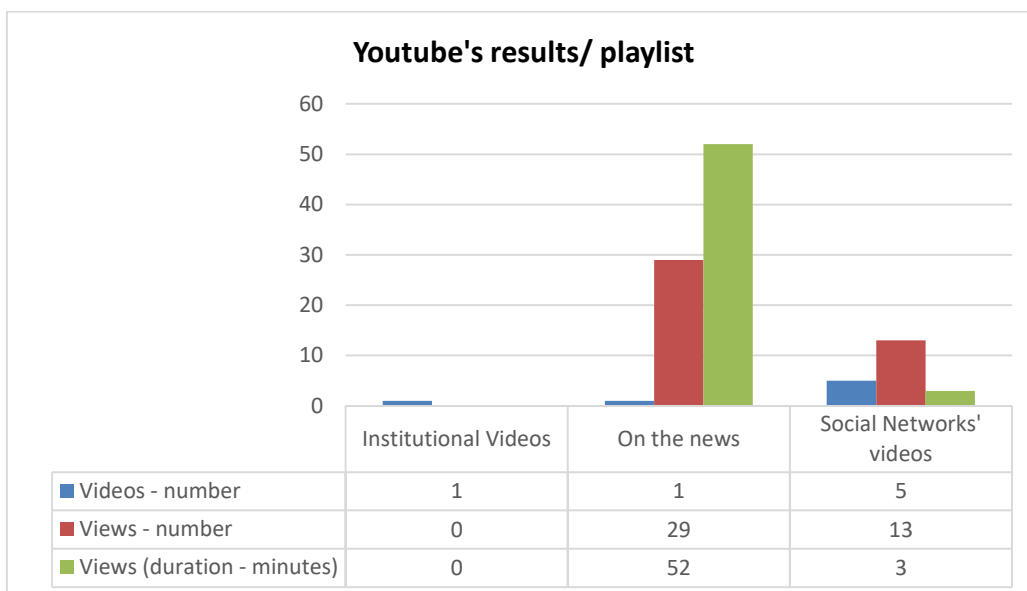
YOUTUBE'S RESULTS/ PLAYLIST

It should be noted that the institutional video was only inserted on 9th April, 2018.

In total, the YouTube channel of FEEdBACk recorded 42 views with a duration of 55 minutes. That is, an average viewing time of 1 minute and 18 seconds was recorded.

Annex VIII. **DIRECT MARKETING (NEWSLETTER KPIS)**

In the first six months of the project, only one newsletter was launched (19th February).

The table below shows the results observed, taking into consideration the KPIs previously defined, after its sending:

KPI	Result
KPI1 - Number of newsletters sent	1
KPI2 - Successful deliveries of the newsletters	62
KPI3 - Total opens of the newsletters	178
KPI4 - Click per unique opens of the newsletters	31.8%
KPI5 - Total clicks of the newsletters	14

NEWSLETTER RESULTS