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(Grant Agreement No 957670)**

D2.6. Report on user engagement and co-creation activities

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1 Executive summary

The main objective of this report is to describe the user engagement and co-creation activities that were accomplished during all three phases with consumers. We have used many different methods to engage and involve consumers such as questionnaires, interviews, presentations, workshops, etc. with a single goal to co-create and validate the iFLEX piloting solution. In total we have targeted more than 30.000 consumers, got feedback from around 2000 respondents and more actively engaged around 1000 consumers in the pilots.

The work involving user engagement and co-creation was carried out in different tasks in WP2, WP5 and WP7 where we also used the most of results and feedback gathered from consumers. Through the whole project consumers, as a main stakeholders, were at the centre of our work. Their feedback was very valuable and influenced many deliverables. Together with consumers we have reached all project KPIs related to consumers' engagement and co-creation.

The activities and results of user engagement and co-creation are summarized in this document whereas specific details are described in deliverables D7.5, D7.6 and D7.7.

2 Introduction

2.1 Purpose, context and scope

The purpose of this deliverable is to present a joint report on user engagement and co-creation activities that have been executed across different work packages. The report is focusing on activities and outcomes that were crucial in gaining needed understanding of user perspectives, drivers, motivations and concrete business and technical requirements of pilot users.

There are also specific project KPIs related to user engagement and co-creation. The report is presenting relevant KPIs along with target values, achieved values of KPIs and methodology being used to calculate them.

2.2 Content and structure

The deliverable is structured as follows:

- Chapter 3: Overview of User engagement and co-creation framework and plan – short summary of the framework and plan that was set-up at the beginning of the project and was used to streamline efforts and activities on user engagement and co-creation.
- Chapter 4: KPIs on user engagement and co-creation – an overview of relevant KPIs to user engagement and co-creation, including target values, achieved values and methodology being used to calculate KPIs.
- Chapter 5: Overall engagement and co-creation journey for pilot user – a presentation what was the most common journey of pilot users in iFLEX project, starting from formal conditions towards concrete workshops and interviews.
- Chapter 6: Pilot specific user engagement and co-creation activities – for each of three iFLEX pilots the report is presenting: pilot users and strategies used for their engagement, overview of the most relevant activities and outcomes, and the final results reached at the end of phase 3.
- Chapter 7: Understanding consumer engagement dynamics in the context of the iFLEX Project – presenting and discussing current situation and impact of energy sector transformation on consumers.
- Chapter 8: Conclusion

3 Overview of User engagement and co-creation framework and plan

3.1 Process

This chapter provides a short overview of user engagement and co-creation process across the different work packages of the project. The process is explained in details in deliverable D2.2 User engagement and co-creation framework and plan.

The user engagement in the co-creation process is divided into three phases, each consisting of several agile co-creation iterations and following the project’s three develop phases.

The goal of the first phase was to co-create and validate a minimum viable product (MVP) of the iFLEX Framework and application-specific iFLEX Assistants (month 14) and deploy them into a pre-pilot consisting of few selected users in order to collect feedback and validate against the functional requirements. In the second phase, the feedback from Phase 1 was utilized to improve the iFLEX Framework with new functionality and better user experience. At the end of this phase (month 30), the improved iFLEX Framework and Assistants developed on top of the framework have been validated with small-scale pilots. In the third phase, some missing functionality was added, and the focus was then on fine-tuning the quality of service (QoS) and user experience based on the Phase 2 feedback. At this phase the pilots were also scaled up in order to collect feedback and validate the Final iFLEX Assistants in large-scale (end of project).

The agile development approach was applied in phases 1-3 to engage end-users and enable other stakeholders to participate and contribute to the co-creation process. The key idea in the agile development methodology is having short development cycles, and thus many entry points for stakeholder input.

Process: The iteration starts by creating specifications of the services to be developed, piloted, and evaluated in the project. These services include new services to be designed and developed in the project, as well as, existing services provided by the iFLEX industrial partners, which will be enhanced with the iFLEX Assistants.

The project adopted a user experience design approach:

- analyse the end users’ motivations for adopting iFLEX solutions, differentiating between values, views, and task related perceptions,
- end user evaluation of the functionalities including content specification
- end user evaluation of usability issues.

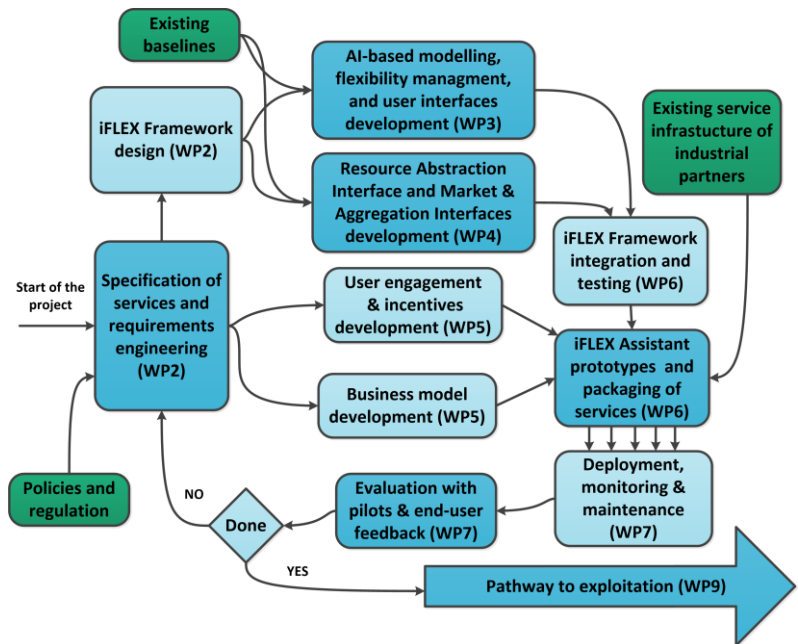


Figure 1: Agile methodology for co-design, development and validation

This work was carried out in different tasks in WP2, WP5 and WP7. Based on the service specifications (documented as use cases), technical and business requirements were engineered for guiding the development in WP2-WP5. In particular, the technical requirements were guiding the design and specification of the iFLEX Assistant architecture (WP2) and necessary subcomponents developed in WP3 and WP4. The components were then integrated into a common iFLEX Framework in WP6.

In parallel to the technical development, user engagement strategies, incentives, and business models were developed in WP5 and services utilizing the application-specific iFLEX Assistant components were deployed (WP7) to the pilot sites for monitoring and validation purposes.

3.2 Initial plan in the 3 pilot clusters

The iFLEX Framework was demonstrated and validated in three different pilot clusters with their own focus areas. In this context, application-specific iFLEX Assistants were developed by using the iFLEX Framework modules. The initial plan and set-up of pilot clusters (consumers, prosumers) is shown in the next table. More details are provided in deliverable D2.2 User engagement and co-creation framework and plan.

Table 1: Summary of pilot clusters

Cluster Type	Focus	Energy Vectors	Type of Loads	Production & Storage	Consumer Types	Building Types
Greek	Integration of smart homes into the grid. RES and DSF aggregation (VPP) for energy market operation.	Electricity , heat	smart devices, water heaters	PVs	Residential	Subset of 200 households
Slovenian	Integration of high share of RES; efficient operation of the power grid. Aggregation of flexibility for peak reduction and RES integration.	Electricity	home appliances, industrial loads	PVs, small HPP	Residential Industrial	100 homes & small enterprises
Finnish	Holistic energy mngt; Local aggregation at apartment building and district levels. Link with INTERRFACE for DSO/TSO DR markets.	Electricity , district heating, waste heat	heat pumps, lighting, freezers & coolers, appliances	Thermal mass of the building as heat storage	Residential Commercial	Block of apartments & supermarket

To streamline the efforts and activities in user engagement and co-creation the project team agreed at the beginning of the project on detailed plan, documented in D2.2 User engagement and co-creation framework and plan. Here a short summary, all details can be found in deliverable D2.2.

Table 2: WP2 user engagement and co-creation plan

WP	Activity
WP2 User-centric service and system design	2.1 Services and user experience design
	2.2 Requirements engineering <ul style="list-style-type: none"> Subtask 2.2.1: Functional requirements
	2.2 Requirements engineering <ul style="list-style-type: none"> Subtask 2.2.3: Security requirements
	2.2 Requirements engineering <ul style="list-style-type: none"> Subtask 2.2.4: Business requirements
	2.2 Requirements engineering <ul style="list-style-type: none"> Subtask 2.2.5: Socio-economic requirements
	2.3 iFLEX Framework architecture design

Table 3: WP5 user engagement and co-creation plan

WP	Activity
WP5 Consumer eng., incentive mech. & eco. sustainability	5.1 Analysis of markets & obstacles to innovation
	5.2 Business model development

	5.3 Incentive mechanisms & consumer engagement
	5.4 Economic analysis and sustainability tool

Table 4: WP7 user engagement and co-creation plan

WP	Activity
WP7 Piloting and validation	7.1 User recruitment and pilot specifications
	7.2 Operation of pilot clusters
	Subtask 7.2.1 Greek cluster
	Subtask 7.2.2 Slovenian cluster
	Subtask 7.2.3 Finnish cluster

3.3 User engagement and co-creation planning and tracking

While both technological and business research work was progressing, we kept track on all user engagement and co-creation activities in parallel. For each project phase we organised several workshops with project partners to review and adjust plans if needed, having clear project objectives in-front.

The initial plans of pilot clusters, their focus and consumers were slightly adjusted during the project, but still fulfilled to meet project objectives and KPIs. Adjustments were made for two main reasons. The first reason was the real experience with pilot users, the real situation on the field and the capabilities of the pilot users and technology itself (e.g. equipment, communications, and standardization). In other words, the adjustments were made in all pilot clusters due to the readiness of pilot users and technologies for the iFLEX solution in specific pilot cluster. The second reason was the needs of the research work itself in different WPs. During the research some areas and directions were estimated as more promising and the activities were directed there to gain the most knowledge and to deliver the most project results. Due to both main reasons the pilot clusters were adjusted in different ways (e.g. type of consumers, type of devices, number of consumers, technologies etc.), but still meeting the project goals, KPIs, and deliverables. Example: In case we estimated that one technology and/or number of users was not possible or promising in one cluster, we used two tactics, we either slightly changed the focus (e.g. select different technology) or increase some efforts in the other cluster to meet missing targets, vectors, consumers, etc.

Figure 2 below shows a snapshot of the regular user engagement and co-creation plan review meetings with project partners for each phase of the project.

ID	Action	Pilot	Coordinating partner	Planned in month(s)	Comment / Outcome
SLO6	Run promotional campaign for recruiting new pilot users for Phase 3	SLO	ECE	Nov-Jan'23	At the end of phase 2 run the campaign for phase 3.
SLO7	Ongoing recruitment of pilot users in Phase 3	SLO	ECE	Continuous	Based on interest from Phase 2 and based on promotional Campaign, attract and recruit in total 45 active pilot users (all phases together).
SLO8	Collect feedback from pilot users from phase 1, 2 and 3 (via emails, In app questions or Questionnaire). Alternative is workshop with pilot users – not decided yet.	SLO	ECE	Q4 2023	Different questions for pilot users from phase 1, 2 or 3. The feedback will be preferably collected via iFLEX mobile app when it is available for SLO pilot users. ECE and ICOM collaboration. The purpose is to validate work done and to get new ideas and recommendations from pilot users.
SLO9	Presentation of iFLEX on local fair – Celje MOS (related to new pilot users).	SLO	ECE	Q3 2023	The goal is to present the solution to the attendees of the fair an preferably recruit new pilot users.

C – where co-creation takes place

Done
In progress
Late
Not started

Figure 2: Snapshot of a use engagement and co-creation plan under review

4 KPIs on user engagement and co-creation

4.1 KPIs and targets

The Key performance indicators (KPIs) and success criteria for project objectives were defined in Description of the Action (DoA), more specifically in Part B, chapter: 1.1.3 Key performance indicators and success criteria for project objectives. Among 14 KPIs there are 3 specifically dedicated to user engagement and co-creation:

- KPI1 Number of different types of stakeholders contributing to the co-creation process = 6
- KPI6a Number of consumers in the pilots > 600
- KPI6b Number of consumer groups targeted with novel demand response services = 3

Table 5: Detailed description of KPIs

ID	Obj.	Key performance indicator	Target	Validation measures
KPI1	O1	Number of different types of stakeholders contributing to the co-creation process.	6	Number of different stakeholders, including consumers, prosumers, DSOs, retailers, aggregators, technology providers represented and contributing to the co-design of iFLEX Assistant concept.
KPI6a	O6	Number of consumers in the pilots	>600	Total number of consumers/prosumers in the iFLEX pilots.
KPI6b	O6	Number of consumer groups targeted with novel demand response services	3	Total number of different consumer segments that have been engaged with demand response through the pilots.

4.2 KPI validation measures

For each KPI we defined and consolidated a validation measures methodology which defines KPI data and calculations in more details.

KPI1 - Number of different types of stakeholders contributing to the co-creation process.

Definition:

- Type of stakeholder – is defined in D2.2, chapter “2.2 Different types of users (stakeholders) contributing to the co-creation process” as business or individual entity. We have listed following types of stakeholders involved into iFLEX business use cases: consumers, prosumers, DSOs, retailers, aggregators, technology providers. Furthermore, we have involved additional ones: business prosumers (small-medium enterprise), energy community (Finnish pilot), and apartment building management.

Calculation:

- Count number of different types of stakeholders contributing to the co-creation process.

KPI6a - Number of consumers in the pilots

Definition:

- In the iFLEX project we consider both end-consumer or prosumers as a consumer. The minimum requirement, to be counted as iFLEX consumer in the pilot, is:
 - Individual consumer having direct interaction with the iFLEX project during user co-creation sessions/workshops OR

- b. Individual consumer having direct interaction with the iFLEX solution as a pilot user during co-creation sessions or testing or solution validation OR
 - c. Individual consumer being directly or indirectly affected by the iFLEX project or solution as a iFLEX consumer household/family member OR
 - d. Individual consumer being directly or indirectly affected by the iFLEX project or solution as a iFLEX consumer employee (working on same location as main iFLEX business consumer).
- Not counting as an iFLEX consumer:
 - general public who participated in the project's public surveys
 - persons visiting a consumer's household, a company, or a supermarket.

Calculation:

- Sum of Count number of iFLEX consumers in all three pilots.

KPI6b - Number of consumer groups targeted with novel demand response services**Definition:**

- Consumer group is understood as a group of individuals sharing similar characteristics of their home, living situation or residence (e.g. how home owners' responses are different than in rented apartments). The KPI defines a consumer group as different consumer segments that have been engaged with demand response through the pilots. We have defined following consumer groups in the iFLEX: Consumers – Home owners, Consumers – Apartment owners, Consumers – Apartment tenants, Prosumers – Home owners, Home/Apartment manager

Calculation:

- Number of consumer groups targeted with novel demand response services

4.3 KPIs results**4.3.1 KPI1 - Number of different types of stakeholders contributing to the co-creation process**

The co-creation process was running through all 3 phases of the project. More intensively at the beginning when we were defining solution requirements with stakeholders and again when approaching the end of the project where validation took place. The co-creation process involved 10 types of stakeholders according to the KPI definition. The target value (6) was reached.

Table 6: KPI1 result

KPI	Target value	Achieved value	Target met
KPI1 - Number of different types of stakeholders contributing to the co-creation process.	6	10	YES

The following stakeholder types contributing to the co-creation process that were identified and actively contributing to co-creation process were:

1. household consumers
2. household prosumers
3. DSOs
4. retailers

5. aggregators
6. technology providers
7. business prosumers (small-medium enterprise, Slovenia)
8. business consumers (shop, Finland)
9. energy community – apartment building residents (Finland)
10. apartment building management (Finland)

4.3.2 KPI6a - Number of consumers in the pilots

Our work and results achieved in the iFLEX project were heavily dependent on consumer participation. We have used many different methods to engage and involve consumers such as questionnaires, interviews, presentations, workshops, etc. with a single goal to co-create and validate the iFLEX piloting solution. In a broader picture we have attracted during all 3 phases over 2.000 consumers in the project (e.g. the public questionnaire in 2021 targeted more than 30.000 consumers and received nearly 1.300 responses).

However, for the KPI6a we were focusing on consumers that took part in the pilots in Slovenia, Greece, or Finland (with direct or indirect involvement according to KPI6a definition). Focusing only on pilots and narrowing the criteria for KPI6a we have engaged more than 900 consumers which is above our base target value (600 consumers).

Table 7: KPI6a results

KPI	Target value	Achieved value	Target met
KPI6a - Number of consumers in the pilots	>600	990	YES

Concrete numbers per type of consumer involvement and per pilot are presented in the next table (status at the end of phase 3).

Table 8: Results per type of consumer involvement per pilot

KPI*	FIN Pilot	SLO Pilot	GRE Pilot
1. Individual consumer having direct interaction with iFLEX project during user co-creation workshops	/	15	30
2. Individual consumer having direct interaction with iFLEX solution as a pilot user during co-creation sessions or testing or solution validation	9	42	75
3. Individual consumer being directly or indirectly affected by iFLEX project or solution as a iFLEX consumer household member or apartment resident	134	63	105
4. Individual consumer being directly or indirectly affected by iFLEX project or solution as a iFLEX business consumer employee (working on same location as main iFLEX business consumer).	1	516	/
Total per pilot	144	636	210
Grand total		990	

*In case individual would fit into more categories, **he/she is counted only once** in a category where engagement, co-creation or interaction was more intense.

It is important to notice that we took special care for data privacy while engaging consumers into iFLEX activities. Users who were involved more intensively in testing and validation procedures and therefore their

data was more exposed (although it was pseudonymised) signed informed consent forms. At the beginning of the project and also iteratively at each phase, we revised the DPIA for each pilot as necessary to address all possible risks related to data privacy.

4.3.3 KPI6b - Number of consumer groups targeted with novel demand response services

The iFLEX project, aiming to deliver research results on demand response services and validate pilot solution with consumers, targeted 6 consumer groups. Consumer groups were defined according to KPI definition and according to 3 consumer properties:

1. The ownership of the property/house/apartment (owned, rented)
2. Residential or Business consumer
3. Consumer or Prosumer

The target KPI6b value was reached.

Table 9: KPI6b results

KPI	Target value	Achieved value	Target met
KPI6b - Number of consumer groups targeted with novel demand response services	3	6	YES

We have defined following consumer groups in the iFLEX pilots that were targeted with novel demand response services:

1. Residential Consumers – House owners (owned property)
2. Residential Consumers – Apartment owners (owned property)
3. Residential Consumers – Apartment residents (rented property)
4. Residential Prosumers – House owners
5. Business Consumer – commercial or industrial
6. Business Prosumer – commercial or industrial

5 Overall engagement and co-creation journey for pilot users

Engaging pilot users in a project is always a very challenging task which among others requires careful consideration of matching the project's progress with specific end-user activities. In iFLEX, we therefore developed a detailed engagement and co-creation journey for pilot users where each step was carefully planned and executed:

1. Pilot consumer pre-selection, criteria
2. Recruitment procedures (Campaigns, Presentations, register off-line/on-line, DPIA, informed consents)
3. Consumer engagement (Presentations, Leaflet, Video, Incentives)
4. Co-creation (Workshop, Interview, Questionnaire)
5. Incentives mechanisms (rewards, discount, free of charge service...)
6. Solution validation with consumers (Satisfaction, Acceptance)
7. Compliance report
8. Post-project support planning

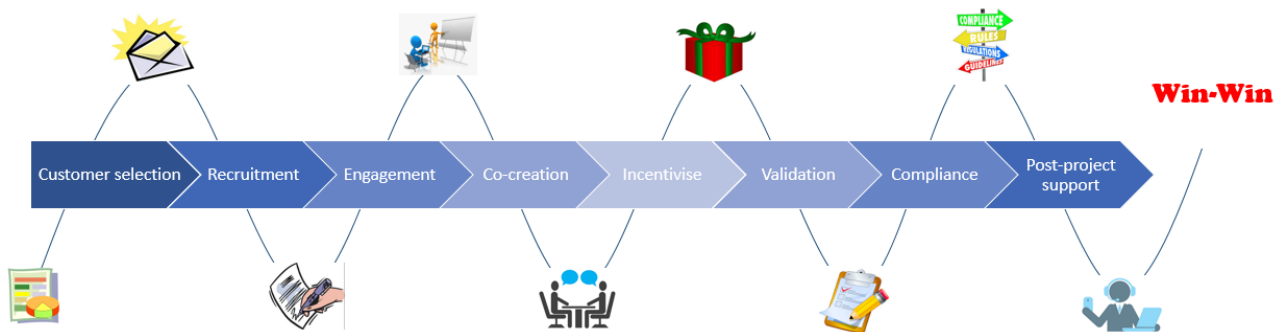


Figure 3: The user engagement and co-creation journey in iFLEX

During the co-creation sessions we have focused on 3 key areas of co-creation as presented in Figure 4: i) Business model and iFLEX use-cases, ii) iFLEX incentives mechanism, and iii) iFLEX mobile application (iFLEX Assistant).

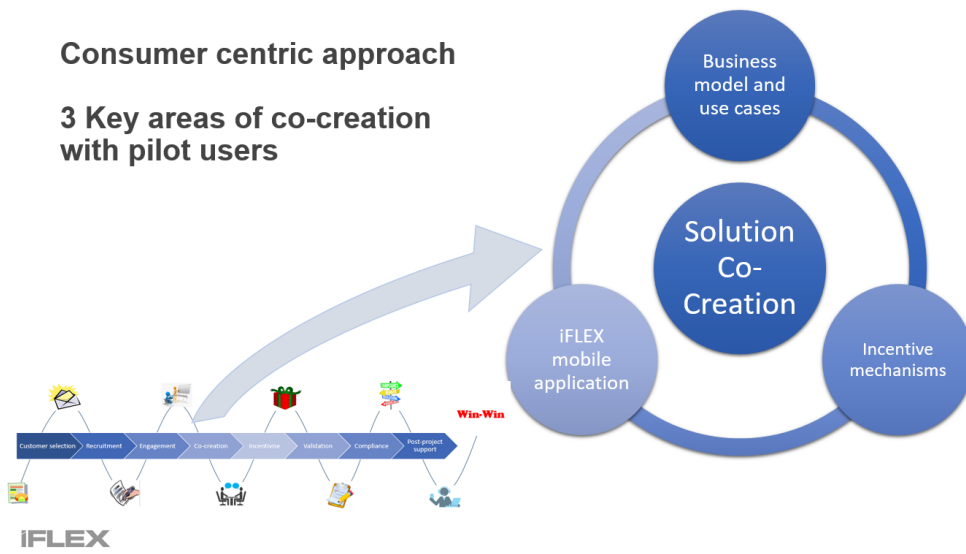


Figure 4: 3 key areas of co-creation

6 Pilot specific consumer engagement and co-creation activities

This chapter summarizes the consumer engagement and co-creation activities for each of the 3 pilots. It describes strategies used to engage consumers and gives an overview of activities that were accomplished with consumers. For each activity accomplished we provide the reference to a project outcome or deliverable where the knowledge and insights from consumers was used.

The chapter is a summarized presentation of user engagement activities and co-creation. All details and results are described in the deliverables: D7.5 Pre-pilot deployment and validation, D7.6 Small-scale pilot deployment and validation, and D7.7 Large-scale pilot deployment and validation.

6.1 Finnish pilot

6.1.1 Pilot users and strategies for engagement and co-creation

Table 10 below presents consumer groups that were engaged in the pilot and were involved into co-creation activities. For each consumer group there is a short information about engagement strategies (column 2) used and possible rewards for participation (column 3).

Table 10: Consumer groups engaged in the Finnish pilot

Consumer groups targeted	Strategies of engagement	Incentives and rewards
Consumers – Apartment residents (rented property, mid-term contracts)	<ul style="list-style-type: none"> • Direct mailing with iFLEX project information • Direct mailing with invitation to actively join the project • Public Web site information available • In-App information for residents • Surveys 	iPhone Gift card
Building owners and building management company in supermarket pilot	Weekly meetings between VTT, Arina (supermarket owner) and Caverion (building manager)	-

6.1.2 Overview of activities and outcomes

Table 11 below describes the user engagement and co-creation activities in the Finnish pilot.

Table 11: User engagement and co-creation activities in the Finnish pilot

Activity name	Short description of activity	Consumer group	Results documented in
Recruiting pilot users – phase 1	Inviting residents to register	Apartment residents (rented property)	D7.5
Recruiting pilot users – phase 2	Inviting residents to register	Apartment residents (rented property)	D7.6
Recruiting pilot users – phase 3	Inviting residents to register	Apartment residents (rented property)	D7.7
General Public survey	Questionnaire and analysis; General public survey on personal preferences, energy habits, iFLEX app and incentives	FIN General public	D7.5
Apartment building feedback survey - Validation	Questionnaire about the experiences and comfort of apartment building residents, analysis	Apartment residents (rented property)	D7.7
Connecting Making-City pilot with iFlex assistant	In phase 3, pilot from Making city project (supermarket) was added to as other Finnish pilot buildings	Building owners and building management company in supermarket pilot	D7.7

6.2 Slovenian pilot

6.2.1 Pilot users and strategies for engagement and co-creation

Table 12 below presents consumer groups that were engaged in the pilot and were involved into co-creation activities. For each consumer group there is a short information about engagement strategies (column 2) used and possible rewards for participation (column 3).

Table 12: Consumer groups engaged in the Slovenian pilot

Consumer groups targeted	Strategies of engagement	Incentives and rewards
Consumers – House owners (owned property)	<ul style="list-style-type: none"> Direct mailing from pilot host customer base with iFLEX project information and invitation Individual phone calls and personal contacts (friendly users) Invitation to workshop with info materials 	<ul style="list-style-type: none"> Credit in amount of 3€ per monthly bill for electrical energy Possibility to buy products at the WebShop with discounted price of 20 €
Prosumers – House owners	<ul style="list-style-type: none"> Direct mailing from pilot host customer base with iFLEX project information and invitation Individual phone calls and personal contacts (friendly users) Invitation to workshop with info materials 	<ul style="list-style-type: none"> Credit in amount of 3€ per monthly bill for electrical energy Possibility to buy products at the WebShop with discounted price of 20 €
Employees of ECE	Direct contacts through ECE workshops	
Business Prosumers – Small industrial...	Every small industrial individual who has purchased solar power plant, heat pump or EV charging station from ECE company has received a personal invitation to the iFLEX project.	At the level of small industrial consumers, the focus was on optimizing the charging of electric vehicles based on the contracted power with the electricity distributor. The benefits were evident in the optimal charging regime for multiple electric vehicles, resulting in a reduction in the power demand at the distribution connection point. Optimization has led to a reduction in grid fees
Business Prosumers – Large industrial	Every large industrial individual who has purchased a large solar power plant or heat pump from ECE company has received a personal invitation to the iFLEX project.	Users were provided with access to real-time monitoring of electricity production and consumption. The majority of users monitored their consumption and, based on the acquired data, conducted energy audits, leading to improvements in the energy efficiency of their premises and consequently reducing electricity consumption

6.2.2 Overview of activities and outcomes

Table 13 below describes the user engagement and co-creation activities in the Slovenian pilot.

Table 13 User engagement and co-creation activities in the Slovenian pilot

Activity name	Short description	Consumer group	Results documented in
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Recruiting pilot users – phase 1	Presenting the project and inviting employees of ECE on personal basis	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) ECE employees 	D7.5
Recruiting pilot users – phase 2	Inviting and recruiting consumers and prosumers from ECE customer base that are suitable for the 2 nd phase piloting (e.g. having heat pump, EV, PV power plant)	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) 	D7.6
Recruiting pilot users – phase 3	Recruiting new users and installing equipment (HEMS) at pilot users premises	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) 	D7.7
Inviting business consumers and prosumers	In phase 2 and 3 SLO pilot invited industry and commercial businesses to join the project and to test the iFLEX pilot solution, equipment and business concepts	<ul style="list-style-type: none"> Business prosumers (small and large businesses) 	D7.7
General Public survey	Questionnaire and analysis; General public survey on personal preferences, energy habits, iFLEX app and incentives	<ul style="list-style-type: none"> SLO General public 	D7.5
iFLEX app usability test	Presentation, Questionnaire + Interview about iFLEX app (initial version)	<ul style="list-style-type: none"> SLO pilot users 	D7.5
WS with consumers in the pilot	Presentation, workshop, questionnaire, analysis. Workshop focusing on 3 topics: business use cases, using iFLEX app, incentives and rewards	<ul style="list-style-type: none"> SLO consumers from pilot region, potential pilot users 	D7.6
Final interview with pilot users - Validation	Pilot users that were involved into final validation activities and testing were interviewed. Each interview having specific questions for their situation and validation scenarios (e.g. heat pump owners, solar power plant owners)	<ul style="list-style-type: none"> SLO consumers from pilot region – pilot users 	D7.7

6.3 Greek pilot

6.3.1 Pilot users and strategies for engagement and co-creation

Table 14 below Bellow table presents consumer groups that were engaged in the pilot and were involved into co-creation activities. For each consumer group there is a short information about engagement strategies (column 2) used and possible rewards for participation (column 3).

Table 14: Consumer groups engaged in the Greek pilot

Consumer groups targeted	Strategies of engagement	Incentives and rewards
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Consumers – House owners (owned property)	Direct mailing from pilot host customer base with iFLEX project information and invitation Individual phone calls and personal contacts (friendly users) Invitation to workshop with info material.	Users were provided with smart monitoring equipment (smart meters) and access to visualisations (dashboards + mobile app) of the real-time and historical data as an incentive to participate. Participation in the various DR campaigns is rewarded with a point system corresponding to a prize game
Consumers – Apartment owners (owned property)	Direct mailing from pilot host customer base with iFLEX project information and invitation Individual phone calls and personal contacts (friendly users) Invitation to workshop with info material.	Users were provided with smart monitoring equipment (smart meters) and access to visualisations (dashboards + mobile app) of the real-time and historical data as an incentive to participate. Participation in the various DR campaigns is rewarded with a point system corresponding to a prize game. Smart plugs were given as prizes.
Employees of HERON	In person meetings for the recruitment of prospective iFLEX participants. Use of intranet communications (MS Yammer) and newsletter for recruitment and presentation of iFLEX and Smart Monitoring and residential DR services. Consultation with HR for privacy and GDPR issues.	In addition to measures aimed towards the non-employees, smart plugs were given for rewards as direct incentives. Smart plugs expanded iFLEX monitoring capabilities, and while not directly available for DR, they provided incentives for employees to participate in iFLEX due the insights they generated on their consumption.

6.3.2 Overview of activities and outcomes

Table 15 below describes the user engagement and co-creation activities in the Greek pilot.

Table 15 User engagement and co-creation activities in the Greek pilot

Activity name	Short description	Consumer group	Results documented in
Recruiting pilot users – phase 1	Presenting the project and inviting employees of HERON on personal basis	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) HERON employees 	D7.5
Recruiting pilot users – phase 2	Inviting and recruiting consumers and prosumers from HERON customer base that are suitable for the 2 nd phase piloting (e.g. electric boiler, having digital power meter, possibility for smart plugs)	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) 	D7.6
Recruiting pilot users – phase 3	Recruiting new users and installing equipment (digital smart plugs) at pilot users premises	<ul style="list-style-type: none"> Residential Prosumers – House owners Residential Consumers – House owners (owned property) 	D7.7

General Public survey	Questionnaire and analysis; General public survey on personal preferences, energy habits, iFLEX app and incentives	<ul style="list-style-type: none"> GRE General public 	D7.5
iFLEX app usability test	Presentation, Questionnaire + Interview about iFLEX app (initial version)	<ul style="list-style-type: none"> GRE pilot users 	D7.5
iFLEX assistant usability test and incentives communication	2 nd round of usability tests with GRE consumers in pilot region, incentives communication and collecting feedback. Presentation and questionnaire used to collect feedback	<ul style="list-style-type: none"> GRE consumers in pilot region, Students at AUEB 	D7.6
iFLEX assistant and Energy App survey - Validation	Questionnaire and analysis of a survey on the iFLEX assistant and mobile app main features (monitoring, DR, remote control, recommendations, and targets)	<ul style="list-style-type: none"> GRE consumers 	D7.7

7 Conclusion

User engagement and co-creation activities, presented in this joint report, required detailed planning and coordination that was mainly done within WP2. There were many pilot specific circumstances and also differences within consumer groups that were taken into account when planning and coordinating. On one side we were putting efforts of user engagement and co-creation to reach specific project KPIs, but on the other side activities were planned in a way the end results – the developed solution and the whole framework behind – would meet specific consumer needs.

With all work done on user engagement and co-creation we have learned valuable lessons that were built into project results, deliverables. We are proud that we reached all KPIs related to user engagement and co-creation, but at the same time we are aware that work doesn't end here. To bring solutions like iFLEX to live, a lot more work with consumers is awaiting, many more communication, knowledge and trust building. There is no solution for consumers without consumers.

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