



Deliverable due date: M40 – March 2020

## D6.12 Social Acceptance Campaign at local and district level

WP6. Task 6.3

# Transition of EU cities towards a new concept of Smart Life and Economy

Project Acronym		mySMARTLife	
Project Title		Transition of EU cities towards a new concept of Smart Life and Economy	
Project Duration		1 <sup>st</sup> December 2016 – 30 <sup>th</sup> November 2021 (60 Months)	
Deliverable		D6.12 Social Acceptance Campaign at local and district level	
Diss. Level		Public	
Status		Working	
		Verified by other WPs	
		Final version	
Due date		M40 31/03/2020 FINAL	
Work Package		WP6	
Lead beneficiary		NBK	
Contributing beneficiary(ies)		NBK, CAR, SEZ, TEC, HCU, BYD, RIJ, PAL, NAN, HAM, HEL, FVH	
Task description		<p>D6.12 Social Acceptance Campaign at local and district level</p> <p>In WP1 under “smart people” concept key elements have been studied and activities proposed, with the aim to success in the transformation process. Replicating interventions must count with the social support and therefore the selection of interventions out of Task 6.1 and Task 6.2 need to be corroborated by a wide acceptance. This task, T6.3, will implement these guiding rules by disseminating and gathering citizen feedback about the replication plan. Citizen engagement in each follower city will be fostered via dedicated disseminating events to present the replication plans using understandable media like 3D modelling. Feedback gathered in these events will be key for the final content and implementation of the replication plans.</p>	
Date	Version	Author	Comment
11/12/2019	0.1	A.HENON (NBK), G. KAISER (SEZ)	ToC
8/01/2020	0.2	A. HENON (NBK) A. QUIJANO (CAR)	Update ToC, Definition of partners contribution

20/01/2020	0.3	A. QUIJANO (CAR)	Approach of the deliverable, Description of the social acceptance evaluation
18/01/2020	0.4	A. QUIJANO, R. LOPEZ (CAR) M. ALONSO (PAL)	Description of the social acceptance campaigns to be carried out in Palencia
24/03/2020	0.9	A. HENON (NBK)	Description of the social campaigns to be carried out in Bydgoszcz, Experience gained from Helsinki
27/03/2020	0.10	A. HENON (NBK)	Consolidated version
31/03/2020	0.11	A. HENON (NBK)	Final version
31/03/2020	1	A. QUIJANO, R. LÓPEZ (CAR)	Review

### Copyright notices

©2017 mySMARTLife Consortium Partners. All rights reserved. mySMARTLife is a HORIZON2020 Project supported by the European Commission under contract No.731297. For more information on the project, its partners and contributors, please see the mySMARTLife website ([www.mysmartlife.eu](http://www.mysmartlife.eu)). You are permitted to copy and distribute verbatim copies of this document, containing this copyright notice, but modifying this document is not allowed. All contents are reserved by default and may not be disclosed to third parties without the written consent of the mySMARTLife partners, except as mandated by the European Commission contract, for reviewing and dissemination purposes. All trademarks and other rights on third party products mentioned in this document are acknowledged and owned by the respective holders. The information contained in this document represents the views of mySMARTLife members as of the date they are published. The mySMARTLife consortium does not guarantee that any information contained herein is error-free, or up-to-date, nor makes warranties, express, implied, or statutory, by publishing this document.

## Table of Content

1. Executive Summary.....	8
2. Introduction .....	9
2.1 Purpose and Target.....	9
2.2 Contributions of partners .....	9
2.3 Relation to other activities in the project .....	10
3. Social acceptance in the context of Smart Cities .....	11
3.1 Guidelines to increase social acceptance based on dissemination and communication activities (short-long term).....	12
3.2 Evaluation of social acceptance in the context of Smart Cities.....	17
4. Experiences from LH in promoting social acceptance .....	20
4.1 Nantes experience .....	20
4.2 Hamburg experience .....	24
4.3 Helsinki experience .....	26
5. Replication plans for Palencia, Bydgoszcz, Rijeka.....	29
5.1 Replication plan in Palencia .....	32
5.1.1 Description of the replication actions .....	32
5.1.2 Implementation replication actions detail .....	34
5.2 Replication plan in Bydgoszcz.....	35
5.2.1 Description of the replication actions .....	35
5.2.2 Implementation replication actions detail .....	36
5.3 Replication plan in Rijeka (RIJ) .....	37
5.3.1 Description of the replication actions .....	37
5.3.2 Implementation replication actions detail .....	38
6. Social campaigns in Follower Cities focusing on replication plans .....	39
6.1 Social acceptance campaign in Palencia.....	43

6.1.1	District Heating with biomass in public and private buildings .....	43
6.1.2	Electric Vehicles for municipal services fleet .....	46
6.1.3	Smart Citizen Platform for all municipal services .....	48
6.1.4	Energy Monitoring of public buildings .....	50
6.2	Social acceptance campaign in Bydgoszcz .....	51
6.2.1	E-mobility (E-buses, public charging, EV).....	51
6.2.2	PV in public buildings .....	54
6.2.3	Smart lighting system.....	55
6.3	Social acceptance campaign in Rijeka.....	56
6.3.1	Smart Public Lighting .....	56
6.3.2	Smart metering and smart data management .....	58
6.3.3	RES integration – PV panels: energy storage and sharing .....	60
7.	Conclusions .....	62
8.	References .....	64

## Figures and tables

Figure 1 Engagement process in mySMARTLife .....	15
Figure 2 General principle of citizen involvement in decision-making process .....	23
Figure 3. Methodological approach of the Advanced Integrated Urban Planning in mySMARTLife project.....	30
Table 1: Abbreviations and Acronyms .....	7
Table 2: Contribution of partners .....	9
Table 3: Relation to other activities in the project .....	10
Table 4: Indicators of social acceptance (Option 1) .....	17
Table 5: Indicators of social acceptance (Option 2) .....	19
Table 6: Smart Actions considered for the follower cities in the studies of WP6 .....	31
Table 7: Smart Actions considered for the follower cities in replication plans .....	32
Table 8: Questionnaire to guide the setup of the social campaign strategy.....	39
Table 9: Typologies of social campaigns.....	40
Table 10: Timeline for district heating campaign in Palencia .....	45
Table 11: Timeline for EV campaign in Palencia.....	47
Table 12: Timeline for smart citizen platform campaign in Palencia .....	49

## Abbreviations and Acronyms

**Table 1: Abbreviations and Acronyms**

Acronym	Description
API	Application Program Interface
DH	District Heating
DHW	Domestic Hot Water
DoA	Description of Action
EDUSI	Integrated Sustainable Urban Development Strategy (Spanish acronym)
EV	Electrical Vehicles
ERDF	European Regional Development Funds
ESCO	Energy Service Company
FC	Follower City
GHG	Greenhouse Gas
GIS	Geographic Information System
ICT	Information and Communication Technology
ITS	Intelligent Transport System
LHC	Lighthouse City
RES	Renewable Energy Source
SEAP	Sustainable Energy Action Plan
WP	Work Package
mySMARTLife	Transition of EU cities towards a new concept of Smart Life and Economy

# 1. Executive Summary

This deliverable aims at making the most of the lessons learned from the social acceptance initiatives developed in the cities of Nantes, Hamburg and Helsinki (then referred to as lighthouse cities), in order to enable the cities of Palencia, Bydgoszcz and Rijeka (then referred to as follower cities), to define their own social acceptance strategy and campaigns. These campaigns will be adapted to the smart actions defined in their replication plans. These plans, already proposed as first versions in deliverables D6.8, D6.9, and D6.10, will be improved before the end of the project. The social acceptance campaigns feedback will then be a key element to precise the definition and implementation conditions of the actions.

All along mySMARTLife project, the cities of Nantes, Hamburg, and Helsinki have both developed smart actions and at the same time related social acceptance campaigns. The experience and lessons learnt is of vast interest for any other city willing to implement similar smart actions.

First this deliverable proposes methodological guidelines to define social acceptance initiatives linked to the development of a smart action (section 3).

Then the lighthouse cities (Nantes, Hamburg, Helsinki) share their lessons learnt on especially representative smart actions (section 4).

Section 5 provides as a reminder a short description of the smart actions included in the replication plans of Palencia, Bydgoszcz and Rijeka.

Finally social acceptance campaigns adapted to the actions of the follower cities are proposed in section 6. The results from these campaigns will be an important input for the finalization of the replication plans of the follower cities by the end of the project.

Please note that in this deliverable we will often use the expression “social acceptance” for ease of reference. Actually behind this expression various concepts can hide, which differ noticeably, for instance: information, acceptance, or participation. Each of these terms correspond to a different level of involvement of the society stakeholders. The “social acceptance” strategy developed in mySMARTLife aims precisely at deepening the involvement of the stakeholders: the more involved are the citizens in the decision making and implementation of a smart action, the more likely is the acceptance to be successful. To meet the “Smart People” concept of the project, the adopted approach will generally be informing, consulting, involving, and collaborating with citizens.

## 2. Introduction

### 2.1 Purpose and Target

Technologies that are technically and economically feasible in a given context may not be successfully implemented due to social resistance. Public opposition could delay or obstruct the implementation of sustainable technologies and measures due to lack of awareness of the technology and their benefits. Thus, the methodology applied in mySMARTLife to design a replication plan includes the communication of the actions considered to a wide audience in order to corroborate the citizens' opinion.

This deliverable deals with:

- Compilation of lessons learnt from the lighthouse cities in the communication and dissemination of the mySMARTLife actions to help follower in their effort to communicate their replication plan to the citizens.
- The design of the strategy to be implemented by the follower cities for the communication and dissemination of the actions that are included in the replication plan to the citizens.
- The definition of the methodology to evaluate the feedback of the citizens regarding the actions presented.

### 2.2 Contributions of partners

The following table depicts the main contributions from participant partners in the development of this deliverable.

**Table 2: Contribution of partners**

Participant short name	Contributions
NBK	Overall task leadership. Support to Bydgoszcz and Rijeka
CAR	Structure of the deliverable. Support to the development of the deliverable and the social acceptance campaigns in Palencia. Final review of deliverable
NAN/ENG, HEL, HAM	Experience sharing form social acceptance actions in lighthouse cities
PAL, BYD, RIJ	Development of social acceptance campaigns in follower cities

SEZ, HCU, FVH	Proposed methodology for replication and social acceptance in follower cities, based on experience sharing and adaptation of methodology developed in other work packages and deliverables
TEC	Support to Rijeka and Bydgoszcz in designing their social acceptance campaign

### 2.3 Relation to other activities in the project

This deliverable takes part of the methodology designed in WP6 to define the most suitable actions for the follower cities. Previous studies and deliverables that are connected to D6.12 are reported in table below.

**Table 3: Relation to other activities in the project**

Deliverable Number	Contributions
D6.1, D6.2, D6.3	The deliverable deals with the description of the FC cities as well as an analysis of the city context through a PESTEL to evaluate the benefits and difficulties to implement the solutions selected in each city
D6.5	Analysis of the energy demand of the building stock at city level as well as in specific areas defined by the cities
D6.6	Analysis of the energy demand for each follower city for the next 10-20 years is evaluated in this deliverable. Specific scenarios were estimated with different smart actions included in replication plans
D6.7	This deliverable includes the economic impacts of the actions in the FC and their regions evaluated through a techno-economic analysis of the interventions in the whole value-chain
D6.8, D6.9, D6.10	These deliverables corresponded with the replication plans of the actions in each city. Final version will be concluded at M50 and must incorporate the feedback obtained from the social campaigns performed in each city
D6.13	This report delivers an investment plan to implement the interventions defined in the replication plans.
D.1.1	Report on social acceptance campaigns at local and district level focusing on campaigns in the three Lighthouse Cities
D.1.2.	Analysis on the key issues for social awareness and acceptance focusing on the interventions in the three Lighthouse Cities
D5.1	This deliverable includes the methodology to evaluate demo actions which is the basis for the evaluation of the replication actions in FC

## 3. Social acceptance in the context of Smart Cities

Citizens are key in the implementation of innovative solutions in the cities since the execution of projects can be blocked if there exists a social opposition. This is usually linked with a lack of information and awareness; hence, it is essential to provide a good communication of the benefits that bring the execution of innovative solutions in smart cities. In fact, it is demonstrated that the acceptance level of citizens increases as the level of engagement increases.

A close link exists among the local dissemination and communication activities, as described in the three local social acceptance campaigns (D1.1), and the overall dissemination and communication activities within mySMARTLife.

Below we are outlining the various steps to be considered in a successful dissemination and communication campaign aiming at increasing social acceptance.

### 1. Consideration of communication levels

Dissemination and communication activities take place at different levels i.e. European level, national level and regional as well as local level. For the communication on a local level local organisations need to successfully involve their existing network to media and stakeholders.

### 2. Communication & Dissemination: what is the difference?

When using the terms communication and dissemination, a common understanding of these words needs to be ensured. **Communication** is understood as spreading general information about EIP-SCC to the general public and a wider audience. The language level is quite general with only few specific technical or scientific terms so that it will be understood by a broad audience. **Dissemination** is understood as transferring technical/scientific information to a professional audience. Different to just being informed, the dissemination target group is able to utilize the information, such as taking the newly acquired knowledge up into their own work. The language is rather specific, including technical terminology.

### 3. Define your stakeholders and messages

As a first step, it is important to identify the target audience to whom communication and dissemination activities should be targeted. Some stakeholder groups to be reached by social awareness campaign might be:

- Citizens (different age groups).
- Societal groups such as youth groups, groups for the elderly.
- Businesses (start-ups, SMEs, industry, companies, corporates...).
- Financial Institutes/Private financiers/Public Funding.

- Research Organisations/Universities.

#### 4. What are the tools?

Specifically chosen tools and activities will be used to inform social acceptance campaign, its activities, its diverse offers and the benefits it delivers to ensure a tailor-made approach.

#### 5. Plan your activities

For successful dissemination and communication activities, a set of carefully selected tools targeted towards a specific audience with clear tailored messages and with a specific goal in mind needs to be selected. For example, social media allows reaching out to a variety of different stakeholders with targeted messages by making use of specific hashtags and by tagging respective followers.

Several principles are crucial for a successful campaign:

- **Informing citizens** – use traditional communication tools such as leaflets, flyers or choose more conversation method such as group meetings, roadshows.
- **Consulting citizens** – inform citizens and also get their feedback, giving them the opportunity to feed directly into the process.
- **Involving citizens** – involve either active or passive such as above mentioned print materials, social media or actively through competitions, awards etc.
- **Collaborate with citizens** – include citizens from the outset of your planned activity which will lead to the last point.
- **Empower citizens** – by empowering citizens they will own develop ownership of the relevant campaign and share the aims and ambitions for their city / town.

### 3.1 Guidelines to increase social acceptance based on dissemination and communication activities (short-long term)

- *How do we raise social awareness and acceptance with regard to the implementation of the interventions in a smart city project?*

The Horizon 2020 funded smart city project mySMARTLife is very ambitious with its more than 150 interventions implemented in the lighthouse cities Nantes, Hamburg and Helsinki. The interventions in the Lighthouse Cities based in the field of **energy, mobility** and **ICT** cover a wide range of projects from retrofitting measures to autonomous driving and electric bikes to various online-based activities.

An analysis of the individual acceptance journey for each intervention based on the process of design, delivery and implementation of each action and on who has influence in the acceptance journey (individual / household, local community / town stakeholders and national / regional policies or

stakeholders) at what point of the implementation process. We call these **influence levels micro** (individual / household), **meso** (local community / town stakeholders) and **macro** (national / regional policies and / or stakeholders) – this is based on the deliverable D1.2: Key Issues for Social Awareness and Acceptance WP1, Task 1.1.

Based on these two categories we have developed three types of acceptance journeys – the **binary** (inflexible), the **semi-flexible** and the **flexible acceptance journey**.

By looking at each of the individual case studies under the lens of the acceptance journey concept – we advise when actions should be taken towards whom so social acceptance can be leveraged the best (**intervention points** or **engagement points**).

We believe it is useful for all the actors in a smart city project to better understand the underlying structure of their interventions and through their understanding adapt the process of community engagement. This will allow for an increase in social acceptance and bring us one-step closer to the smart city we all aim for.

So what have we learnt and what are our main conclusions when it comes to raising social awareness and acceptance with regard to the interventions implemented in mySMARTLife?

One of the first lessons learnt is that **by analysing the individual acceptance journey** for each intervention based on the phases of design, delivery and implementation of each action and on **who has influence during the acceptance journey** (individual / household, local community / town stakeholders and national / regional policies or stakeholders) **intervention points** can clearly be defined.

Assuming that the increase of influence that the user has will lead to an increase in acceptance as such it is important to **include the user as early as possible in the design and delivery phase** of the interventions. This means in fact that the engagement process regarding an individual intervention needs to start as early as possible.

Successful acceptance and engagement with interventions is usually ensured when **citizens / users are engaged in the outset** i.e. when it comes to the design of the intervention.

We have also demonstrated that this can be difficult when it comes to large-scale infrastructure measures. There is a need across all smart city projects to increase the influence of users at the town / community level and also to allow users views and perceptions influence national and regional levels. Users must be heard and be able to influence interventions – to increase social acceptance.

A separate assessment of social acceptance campaigns (see Deliverable D1.1) provides an overview of the planned social awareness and communication activities in the three mySMARTLife Lighthouse

Cities **Nantes, Hamburg and Helsinki**. The cities describe how they intend to inform on the local project activities, to raise social awareness and to activate citizens and key local actors.

As the concept of “**Smart People**” is in the focus of the mySMARTLife activities, involving the citizens in the urban transformation process is a key issue for reaching the social acceptance of the project activities. In the three Lighthouse Cities, special attention is therefore put on informing the citizens (both of the city and the demo areas) on the project activities, but the local communication activities do also go beyond the mere local area.

Within the deliverable, each of the three Lighthouse Cities describes their **local campaigns**, the **key actors** carrying out the activities, the different **communication instruments** used, the **target groups** of the activities, the main activities foreseen and their **planned timeline** as well as the goals, objectives and **expected impact** of these measures.

The deliverable provides a good overview and insight into the different campaigns planned within each Lighthouse City, the key target groups of the activities, stakeholders and partners involved and the timeline foreseen. Each city is putting a special focus on reaching and involving their citizens, both on a city level as well as the inhabitants of the demonstration areas – a crucial step in the implementation of the local demonstration activities.

All cities have designed broad strategies on how to reach the different stakeholders on different levels and with different instruments. As each city is different and the actions foreseen are very diverse, **each city follows an individually designed approach**. While the activities in Nantes are quite broad and cover both global information activities and specific citizen engagement and involvement activities, Hamburg is putting a special focus on the collaboration with different local stakeholders and institutional partners, apart from collaboration with the local citizens. Helsinki has foreseen some more specific actions, such as a special communication and citizen collaboration focus on its mobility activities and co-creation workshops in a zoo.

By the implementation of the activities, general aims and objectives are aimed at by all three cities, such as making the project well known within the cities, achieving acceptance of the local mySMARTLife activities, namely among the citizens directly affected by the measures, and ensuring exchange and co-creation together with the citizens and main stakeholders. Each city has additionally named specific targets, depending on the specific communication and dissemination activities foreseen.

In general the engagement process followed by Lighthouse Cities is illustrated below:



**Figure 1: Engagement process in mySMARTLife**

- *How can we evaluate the effectiveness of public participation tools used to raise social awareness and acceptance with regard to the implementation of the interventions in a smart city project?*

There is a growing attention for greater social acceptance in establishing innovative interventions, such as in the mySMARTLife model areas, by means of a variety of tools and instruments of direct public involvement and citizen engagement in different policy fields. These tools focus on facilitating communication, and the interpretation of different individual visions and collective problems (Montagna 2011). In this sense, public campaigns should develop their communication strategies based on a certain degree of citizen involvement in order to gather their opinions and interests. In fact, campaigns can be understood as “a package of measures used to ‘enable’, ‘engage’ and ‘encourage’ people towards a change, e.g. behavioural, technological” (Scharp, Giorgi & Wilson 2010: 256).

Rowe and Frewer (2000) explore the evaluation of methods for public participation that aim to include the public in science and technology policy making, at least to the level of gathering their opinions. The authors propose a comprehensive set of criteria for evaluating the effectiveness of public participation tools or mechanisms, also within the scope of raising social acceptance.

Based on these and other relevant literature sources, the following list of criteria has been developed to maximise social acceptance through citizen engagement in decision-making processes. These criteria provide an appropriate basis for evaluation of mySMARTLife efforts.

### **Representativeness**

In order to raise the social acceptance of any intervention in a given geographical area, the target or affected social group(s) should carefully be considered. In any case, this group resp. these groups should comprise a broadly representative sample of the population of the affected area (Rowe & Frewer 2000). This criterion is important to identify the various affected social groups, prior, during and after the implementation phase, carefully considering aspects such as education, gender, age, cultural background etc. However, the target group(s) should include a relative distribution of points of view to avoid that that only a limited number of affected communities is involved and their opinion is seen as the dominant one.

### **Early involvement**

The affected social group(s) by any intervention in a given geographical area should be considered and involved as early as possible in the process and as far as it is reasonably practical, e.g., it may not be reasonable to have public participation in highly technical issues (Rowe & Frewer 2000).

### **Transparency**

Any intervention in a given geographical area should ensure that the process is transparent so that the affected social group(s) is/are informed on what is going on and how decisions are being made. This may involve provision of information on various aspects, such as the manner of the selection of public engagement in the process or the way how decisions are reached (Rowe & Frewer 2000). Providing for a transparent and comprehensive approach in communication can also enhance the trust between users and service providers (when this implied by the intervention). The general public should be informed on the structure of the process (i.e. the various steps till the activation of the measure) and the goal of the process. Transparency is the basis for a legitimate decision making process, reliability on the results, and thus increases also the chances for a broader social acceptance.

### **Resource accessibility**

In the process participants should have access to the appropriate resources for reaching the goal. These resources are related to:

- The type of quality of information that is at disposal of the participants: the information vehiculated during the preparation of the campaign and the quality of the same used during the campaign should assure the comprehension of the technology to the target users (Moffet 1996).
- The type of stakeholders addressed: these should include representatives from industry, public administration, research, and civil society (quadruple-helix principle - Leydesdorff 2012). The mix of these types will assure a share between a broad spectrum of interests. In addition, having different backgrounds on board helps providing targeted information for different population targets.
- The amount of time invested in the preparation of the campaign (see also last criterion of this list) and in the period in which the campaign is active.

The sum of these 'ingredients' increases the chances of reaching a broader spectrum of the representativeness of social groups and therefore increasing the level of public acceptance.

### **Cost-effectiveness**

The social campaigns proceeding should be balanced between cost and time invested in relation to the benefits obtained, i.e. the desirable level of social acceptance of the technology. Benefits can be in terms of an economic profit (developer), but also in terms of social welfare (user). The concept of effectiveness is also strictly related to the time issue. A long-lasting process might generate suspicion

and mistrust in the outcome (see for instance Askvik, Jamil & Tek Nath Dhakal 2011 and Yang 2005) and therefore have negative impact on the level of social acceptance.

### 3.2 Evaluation of social acceptance in the context of Smart Cities

In order to know the success of a social acceptance campaign, it has to tackle aspects previously described as follow:

- **Representativeness:** this factor of success of the social campaign can be measured through quantitative evaluation tools (e.g. statistics on the profile of events participants).
- **Early involvement:** the satisfaction related to the stage when the citizen has been involved can be measured through questionnaires.
- **Transparency:** gathering feedback from the citizens about if they feel having been informed enough or not about the action can be a good way to assess if the campaign has been transparent enough. It can be closely linked to the moment of their involvement in the social acceptance campaign.
- **Resource accessibility:** similarly it is possible to measure if the accessibility is relevant with the ambition of the action by gathering feedback from the participants (e.g. through questionnaires).
- **Cost-effectiveness:** part of the benefits, such as the social welfare, can only be evaluated through specific evaluation tools (e.g. questionnaires, surveys).

Thus, in order to evaluate the social acceptance campaign designed in follower cities, it is important to assess to which extent the dissemination and communication actions implemented in the cities are successful and meet the targets of the “Smart People” concept. In every city an evaluation framework has to be selected in order to gather and evaluate the impact of the social acceptance initiatives.

Different alternatives are possible here. We present here two main options to evaluate the social acceptance. The first one is more qualitative and focuses on gathering the people’s thoughts/opinions. The second option is more quantitative and intends to obtain a quantitative value that represents the interest of citizens in a topic.

#### - Option 1:

Here the objective of the evaluation is focused on the perception of the replication plans actions collected from the citizens involved in the social campaign. This is measured through indicators described as in the following table.

**Table 4: Indicators of social acceptance (Option 1)**

Indicator	Further description of the indicator	Unit
Degree of satisfaction/acceptance with the solution	<ul style="list-style-type: none"> <li>- Satisfaction with the technical solution (<i>perceived adequateness, perceived benefit, perceived usefulness, perceived ease of use, aesthetical solution, etc.</i>)</li> <li>- Satisfaction with the economic solution (<i>cost, financial scheme, economic benefit</i>)</li> </ul>	% 5 point Likert scale
Citizens' perception	<ul style="list-style-type: none"> <li>- Interviewed profile</li> <li>- Divergence of interest</li> <li>- Resistance to change</li> <li>- Perception on amount of information received</li> <li>- Perception on involvement in decision-making</li> </ul>	% 5 point Likert scale

The opinion of target audience can be collected through different means:

- *A questionnaire.* This method is the most convenient for gathering information from a large number of people but has as disadvantage not having the control if the questions are understood in the intended way. Depend on the number and type of target audience and the type of social campaign, these questionnaires can be distributed through an online tool, mail or paper. The best option is to share as part of an event where the replication plan is presented, then discussed and then citizens fill in the questionnaire.
- *Individual interviews* are a suitable approach if questions are only targeted at a few selected key persons. An interview offers the possibility to gather in-depth information with a qualitative character, being an appropriate tool to discover the motivations and attitudes of the interviewees. They are suitable when it is not easy to involve a high number of people in questionnaires or if it is hard to arrange a focus group interview for practical reasons. This type of procedure usually takes about one hour and requires the experience and training of an expert.
- *Focus groups* is a special kind of interview. With this approach, the discussions are in small groups, consisting of different stakeholders/citizens which are guided by an expert. In this way, a large amount of qualitative data and different opinions can be gathered. Its development requires the management of an expert in the field and takes about half a day. Focus groups are very successful, though they require being aware of how to choose the members of the group (to make sure that the sample is representative).

- **Option 2:**

Here the objective of the evaluation is to measure the citizens' interest in a topic according to the number of people reached in the social campaign performed. This is typically measured through the type of indicators presented in the following table.

**Table 5: Indicators of social acceptance (Option 2)**

Indicator	Further description of the indicator	Unit
Number of people reached	--	Number
Range of people from diverse social background reached	Social background: Age, Nationality, Level of education, etc.	%

Depending on the sample size and interview format used, the data collected will be analysed and transformed through specific statistical mechanisms. Respondent profile will be detailed analysed in order to understand better the results obtained.

## 4. Experiences from LH in promoting social acceptance

Social acceptance is to be considered as a pre-requisite for any city transformation, uptake and replication of innovation. This section deals with the experiences bring from LH cities in the deployment of smart people concept, in the communication and dissemination of mySMARTLife actions as well as in the process of the implementation of demo actions.

During mySMARTLife, the lighthouse cities (Nantes, Hamburg, Helsinki) have acquired experience, allowing them to help the follower cities (Bydgoszcz, Palencia, Rijeka) in the development of a strategy at city level and in the implementation of specific measures addressed to increase the awareness of citizens in innovative solutions. This way, these shining examples will enable new Smart Cities to get the support of citizens for the adoption and implementation of the municipality decisions.

This section shows the experience gathered form the lighthouse cities and more precisely:

- Description of the strategy and action plan implemented to involve citizens in urban transformation and to disseminate & communicate mySMARTLife actions (actions performed, channels/tools used, etc.)
- Recommendations taking into account the key findings of the measures applied (e.g. key information to be communicated, key actors, target audience to be addressed, time issues, etc.)

### 4.1 Nantes experience

Nantes Métropole organized a **Great Debate on Energy transition where citizens, stakeholders and the public administration discussed** solutions to create a shared roadmap with 33 commitments. This roadmap was officially adopted in February 2018 and is now being implemented. Some of the 33 commitments are being carried out as part of the mySMARTLife project. It is very important for Nantes Métropole to include citizens and stakeholders in a majority of urban projects. This allows a better understanding of what is needed in both their daily lives and in their businesses. Participation in the projects can only be strengthened by communication and concerted action involving all stakeholders.

The "Ile de Nantes" (Island of Nantes) is one of the eleven districts of Nantes and the demonstration area that concentrates most of the planned activities of mySMARTLife: 4.9 km long and 1 km wide, located in the centre of the city of Nantes, the two branches of the Loire River define the island's boundaries. Main actions in Nantes demonstrator include:

- **Energy actions:** Digital boiler, energy retrofitting of multi-owner residential buildings and individual houses, organic power plant, power plant on private and public buildings, citizen solar power plant, development of district heating and smart lightning.
- **ICT actions:** Single desk for energy retrofitting, development of an extension of Nantes' urban platform, solar cadaster, smart data on mobility, energy data lab initiative, and decision-making tool.
- **Mobility actions:** 22 units of a new 24 meters e-Bus, opportunity charging points for e-Buses, charging points for e-vehicles (cars and bicycles), call for projects for urban logistics, platform for companies for greener vehicles.

In order to develop citizen acceptance of urban transformation actions, Nantes Métropole decided to inform them through various means. A website has been developed on which a description of a certain number of the project's actions can be found. Major actions of Nantes' demonstrator such as the e-Busway, retrofitting of condominiums support to retrofitting (monprojetrenov) have had specific and reinforced communication including direct meeting with citizens and beneficiaries, information panels in the streets and reinforced communication on website, videos created, etc. A mapping of the actions carried out within the framework of mySMARTLife is also being developed so that citizens can quickly find out about the urban transformation projects that concern them.

As part of the mySMARTLife project, Nantes Metropole, together with the other partners of the local consortium, has set up projects that can be replicated in many European cities, including Rijeka, Bydgoszcz and Palencia:

- **Renovation of individual houses**

This action carried out by ENGIE requires major work to be conducted on individual houses. In order to be able to carry it out, an official communication had to be carried out. Letters jointly signed by the vice-president of Nantes Metropole in charge of energy and a director of ENGIE were handed over to nearly 20,000 inhabitants of Nantes Metropole. Information was given on Nantes Metropole dedicated platform for monprojetrenov. As the public administration is a guarantee of credibility for the citizens, this has enabled easy contact between Engie, a private company, and the inhabitants wishing to renovate their homes. Credible communication is therefore the first step in gaining acceptance for urban transformations. Nantes Metropole is seen here as a trusted third party.

- **The single desk for the renovation of buildings: Mon Projet Renov.**

For this mySMARTLife action, Nantes Metropole wished to integrate users (citizens) from the very beginning of the project design. They have been testing the beta version of the platform and all

expectations and problems can be formulated. Satisfaction was also measured by anonymous questionnaires completed by users. The local professionals such as building companies, architects, design offices or local associations were also involved in the assessment of the web platform so that all the stakeholders involved may express their opinion on it. This collective evaluation on the first version of monprojetrenov initiative results made it possible to improve the platform so that it could be adapted and extended to the entire population of Nantes Metropole. Following all this feedback, a new version was developed and integrated into the official Nantes Metropole website. The support provided by the Metropole has been facilitated through the development of an E service. This allows citizens to better access the system and makes it more adapted to their needs.

- **Autonomous shuttle bus**

Early communication is important in the context of experiments on public spaces. As this experiment of an autonomous shuttle in general traffic was taking place in an industrial zone, communication was mainly aimed at companies that passed on from Nantes Metropole by sending emails, but also by putting up posters and kakemono on the route sites. It was also necessary to adapt the zone and reduce its speed. As these developments have concrete implications on road management and citizens, Nantes Metropole wished to join forces with local residents to ensure that the measures taken were the right ones, such as limiting illegal parking or reducing the speed limit. The analysis of social acceptance is also important in the logic of replication. Nantes Metropole, together with Cerema, has therefore launched an in depth study of the social acceptability of the autonomous shuttle by other road users as well as users. Through communication designed for the projects tested and realised in advance, it is possible to anticipate problems of acceptability that could be perceived. However, the technical problems resulting from the development of pilot projects may reduce the social acceptability of some of them. For the autonomous shuttle, the feedback from the study carried out among users, road users and supervisors, shows that the autonomous shuttle would be accepted if it were on a dedicated lane.

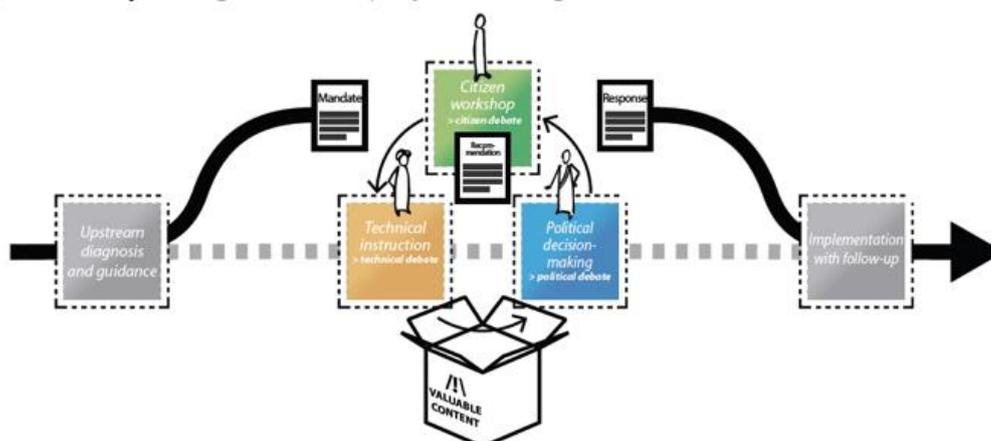
All three projects show that **direct and targeted communication is essential to get people to accept changes**. It must be adapted to each project and be accompanied, whenever possible, by physical mediation. Nantes Metropole, as a local authority, is a trusted third-party between businesses and citizens. It is therefore important that communication goes also through the public administration; this gives additional credibility to the projects. The information about the financing support by the European Union also gives more strength to the projects and inhabitants, who can then better understand the seriousness of the approach.

It is also important to involve users; it is through **participation in the design or evaluation of mySMARTLife projects** that we see greater acceptance. The evidence, through the 200 projects

implemented during the last years by Nantes Metropole, with participation of citizens, shows that the more projects are developed with citizens, the more they are accepted.

This is why Nantes' citizen dialogue ensures that the **majority of projects are discussed and co-produced with citizens**. Half of Nantes' public and metropolitan policies are brought to life in an open and collaborative mode through a continuous dialogue and are developed in collaboration with citizens, associations and/or experts brought together regularly in dedicated committees moderated by the City; Citizen dialogue is considered as a public investment, with dedicated resources. For example, €600,000 per year invested in engineering for setting up great debates (€1 per year, per inhabitant), in addition to dedicated budgets for citizen dialogue in each project led by the city. Half of Nantes' public policies are developed in collaboration with citizens, associations and experts brought together regularly in dedicated committees facilitated by the municipality.

### In practice | Dialogue-driven project management



**Figure 2: General principle of citizen involvement in decision-making process**

A wide range of innovative methods are used in those committees: **citizen assessment, public hearings, nudge workshops...** but they all mean implementing actions towards objectives that are discussed and shared. The public interest is built on the back of the range of viewpoints and in a continuing dialogue between elected officials, stakeholders, technical experts and citizens. Two unprecedented public policies were developed thanks to “City at Night” and “Street workout and public space sport practices” policies. Both policies responded to emerging users' needs and practices that remained unanswered until now.

Within the framework of mySMARTLife, it is therefore important for follower cities to involve citizens and stakeholders in the different phases of project development. They can contribute to the design, be

testers and even evaluators. The actions must also have concrete and measurable benefits in order to justify the cost and the choice.

## 4.2 Hamburg experience

The **Climate Plan Hamburg** aims to promote low energy districts and sustainable mobility at city level in Hamburg. The plan incorporates climate change protection and climate change adaption. The target for 2050 is to reduce Hamburg's CO<sub>2</sub>-emissions at least by 80% (reference year is 1990). Intermediate targets are 50% by 2030 and 2 Mio tons of CO<sub>2</sub> less than in 2012. The climate plan has so called four strategic clusters: Urban transformation (urban/ quarter development), green economy, public sector as role model, climate communication. They incorporate several action fields: urban development, energy, buildings, mobility, economy, consumption and waste management, flood protection at coasts and inland waterways, water management, protection of nature and soil, human health, infrastructure, catastrophe protection and prevention, education, and research.

Another instrument which is closely linked to the mySMARTLife Project is the so-called "**Energiefachplan**". Very early on in the project it became apparent, that a more CO<sub>2</sub> neutral heat and energy supply will be an important issue for future urban development, but that there are still no sufficient planning instruments for this in the City of Hamburg. Therefore, the Hamburg project team intensively dealt with these framework conditions and discussed them with the Hamburg Ministry for Energy and Environment (BUE), which developed in 2019 with the "Energiefachplan" (sectoral planning for energy) a new planning tool, which targeting these problems.

Based on the climate plan, the City of Hamburg started **strengthening the link between city wide goals of climate protection and local district development**, e.g. life and housing, using the behaviour and routines of the citizens as a starting point. Within mySMARTLife in Bergedorf, but also in within other districts Hamburg has used formats such as **public events** and **household surveys** for this purpose. In those consecutive processes, discussions in central fields of action, like household energy, mobility and waste management took place with the aim of taking a look at people's everyday routines: In the area of household energy, the focus was primarily on the use of various energy sources (gas, oil, district heating, renewable energies), insulation standards for buildings (existing and new buildings) and energy saving potential through usage behaviour. In the area of mobility, the focus laid on the infrastructural framework conditions in connection with increased use of, for example, public transport, bicycles, car-sharing services and e-mobility. The results obtained in the participation platforms are fed back in a further process with experts from the field and incorporated into sustainable scenarios that can make a contribution on the way to the Climate Smart City Hamburg.



Several fields of action define the perimeter of application of smart actions in Hamburg: The heart of the mySMARTLife smart actions lays within the **district of Bergedorf**. In Bergedorf-Süd, several old buildings are being **renovated** and also renewed in terms of energy. Along the Schleusengraben, around 1,500 **new residential units** are being built. The houses are being developed into "**smart homes**" that record their energy consumption digitally, thus enabling optimal management, control and resource efficiency. Concerning the **mobility actions**, e-busses are being deployed. The charging infrastructure for this is being set up at the local transport provider and project partner VHH. One of the most visible elements of "mySMARTLife" will be **intelligent street lighting**.

To encounter the respective stakeholders and citizens in all fields of action, the mySMARTLife toolbox, a specific approach for the **activation, information, citizen and institutional engagement**, tailored to interest of the different stakeholders, has been developed. Different levels of citizen involvement, **from information and dialogue to participation** where implemented in several formats. Various methods were employed: **Study tours** through the project area – with the focus on the Bergedorf-Süd project area and the retrofitting projects took place, as well as different participation formats and the mySMARTLife-**Talks lecture series** and **exhibitions**. For stakeholders with professional interest the so-called Innovation Network Bergedorf held regularly meetings. The topics of these Innovation Network meetings were design innovation, sustainable mobility and sustainable energy.

From Hamburg experience, we learned that the **motivation for civic participation can be very different and is determined by the respective individual**. A communication sent to 350 house-owners to raise attention was drawn to the established consultation offer for energetic retrofitting. In addition, information on current funding programs was added. The response to this action was quite low.

Regular consultation services were held in the borough of Bergedorf in order to raise consumer awareness of environmentally friendly usage behaviour and to promote concrete advice to house owners.

This shows how **retrofitting plans in particular should involve citizens as well as policy stakeholders** for backup and on an equal level. Contact has to be established with the department responsible for the approval of building projects, in order to gain knowledge of retrofitting or replacement projects. In addition, this department advises investors at an early stage on the possibilities of construction, (use) change and construction facilities, and could therefore point out parallel to the consulting services within the mySMARTLife project. Like in retrofitting, participation methods for other fields (technology, mobility), should also implicate direct references to each citizens' everyday life to make sure that they have a fundamental interest in the development of a Smart City.

### 4.3 Helsinki experience

The Helsinki City has a general action plan detailing actions through which the city can become carbon neutral by 2035 called the **Carbon-neutral Helsinki 2035 Action Plan**<sup>1</sup>. The plan became effective at the end of 2018. The plan was prepared with involvement of all the main stakeholders in an open process. The involvement of different stakeholders (citizens, companies, tourists) was important, since the municipal sector only accounts for 10% of total emissions. What is more, developing citizen and stakeholder engagement is one of the themes of the action plan itself. One central tool for engagement is the Climate Watch<sup>2</sup>, a tool that tracks the progress of the actions of the Action Plan. Together with the transparent implementation process, the Action Plan's status as a politically approved program gives it legitimacy that forms a solid base for citizen engagement. As the interventions of the mySMARTLife project in Helsinki are directly linked with the Action Plan, these aspects of the citizen engagement form a backdrop for the project engagement efforts.

To better understand in which context the stakeholders have been involved, we remind some elements of description of the smart actions in Helsinki and their perimeter of application.

mySMARTLife project areas in Helsinki are divided into four zones. Zone 1 comprises Merihaka residential retrofitting zone, where retrofitting action, that is installation of smart thermostats, has taken place. Smart controls are connected to the Urban Platform. Performance evaluation of the buildings with heat leakage imaging and large-scale energy efficiency evaluations have also been conducted. Management and optimization of the district heating is studied as well. This zone represents an important pilot for the city in terms of finding ways to reduce the GHG emissions from city's existing private building stock.

Zone 2, Kalasatama district, is a new a high-performance residential area in Helsinki. There are buildings that produce energy performance data for mySMARTLife. Many RES investments are also on-going in this zone, like the world's largest cool reserve, crowd-funded solar power plant and the world's largest heat and cooling pump. The coal plant is situated in Zone 2 as well and its replacement with RES is a challenge adopted by mySMARTLife.

The third area, Zone 3 is the Viikki Environment House, a high performance office building, where the existing RES production will be maximised through better control and power management strategies.

Finally, Zone 4 is the whole city. Several interventions (including mobility actions, such as up-take of electric buses and charging stations, ICT actions, such as informational applications about energy issues and urban platform development) influence the whole city area.

---

<sup>1</sup> There are also other policy documents and agreements that the city is part of, strengthening its commitment in climate protection (such as Covenant of Mayors agreement).

<sup>2</sup> See <https://www.climate-kic.org/news/helsinki-launches-climate-watch/>

Smart sustainability transitions often involve a transition into a new way of doing things. This implies applying new technologies, delivering new services and forming new habits. For instituting such changes, a project with concrete interventions is a useful format. Apart from mobilizing resources to make the change, it provides **a communicative and participatory focal point** for the administration, citizens and other stakeholders to come together. Coming together enables the stakeholders to learn about the new technology or service and each other's point of view to it.

From the point of view of Helsinki experience, it is clear that opportunity to participate and communication go hand in hand. There is no successful communication campaign without concrete calls to action and opportunities to take part in a meaningful and compelling way. Alternatively, there is no successful participation campaign without reaching the potential participants through well-designed (or evolving through learning) communication efforts. However, it is likely that how these two elements concretely manifest depends on the city context and the type of intervention.

All of the replication plans in Palencia, Bydgoszcz and Rijeka contain an element of taking the first step in the transformation from interventions with public buildings: in Palencia and Rijeka, the plan is to implement energy monitoring in public buildings, and in Bydgoszcz, the plan is to implement PV panels on different municipal facilities. This is an avenue from which Helsinki city has a lot of experience in the mySMARTLife project intervention in Viikki Environmental House that is the home of the Helsinki city Environmental Division. The building has acted as a showcase for energy saving elements since its construction in 2011. Through mySMARTLife actions, the building systems have received an update. An important element in the intervention has also been to make the energy saving elements of the building even more accessible to the visitors and workers in the building.

Another, related action in the urban platform side related to the energy performance of public buildings has been to prepare the opening of municipal buildings' energy consumption and production data (the latter applying if the building has PV plants installed for example).

The influence these two mySMARTLife interventions in Helsinki related to public building energy use acts on based on three mechanisms. Firstly, the influence will be concrete. The municipal building stock represents a significant share of the building stock in the city. As the heating of the building stock represents 56% of the emissions of the city, buildings' energy efficiency is one of the most important actionable things for the city to become carbon neutral in 2035. Successful interventions and scaling them up in the building stock owned by the city forms an important part of this. Secondly, the municipality can have an impact via stimulating the markets through procuring new products and services that improve the energy efficiency of buildings. This helps the market to develop both in terms of technology and service offerings. Thirdly, the **city can have an inspiring and educational role**. For this, there are many channels, including introducing the **energy efficiency examples to visitors**,

and arranging **energy hackathons for students based on the open energy data** of the buildings, for example.

It is hard to estimate which specific tools or methods for communication and participation prove successful in which context. In the **Viikki Environment House** energy efficiency interventions, the method employed was service design. Building users of the Environment House and one other city office building participated in the process of data collection. The outcome of this project was a selection of communicational concepts that both communicated the energy performance of the buildings and contained some calls to action what the building users could do themselves. This kind of methodology is useful in producing **concepts that are based on user-understanding**. However, what must be taken into account is that there needs to be resources allocated for the implementation of those communicational concepts. In Helsinki, we are yet to employ those concepts in actual use.

There are various methods employed in the open energy data case that are an existing resource due to the work of **Helsinki Region Infoshare** (a unit within the city in charge of publishing open data and maintaining city's open Application Programming Interfaces or APIs). One of these methods was to organize a course for Metropolia University students in which they had access to the building energy data and they could propose applications that would in some way contribute to energy saving. This course proved to produce very interesting results and acted as a communication intervention of city's actions at the same time.



## 5. Replication plans for Palencia, Bydgoszcz, Rijeka

Social acceptance is part of the methodology applied in the replication strategy activities of mySMARTLife (gathered in Work Package 6).

This is one of the lines to be developed in order to select actions, precise their perimeters, analyse their feasibility, and integrate them in the replication plans of Bydgoszcz, Rijeka and Palencia.

Previously to the development the social acceptance campaign, first versions of the replication plans have been developed (Deliverables D6.8, D6.9 and D6.10), based on the following elements:

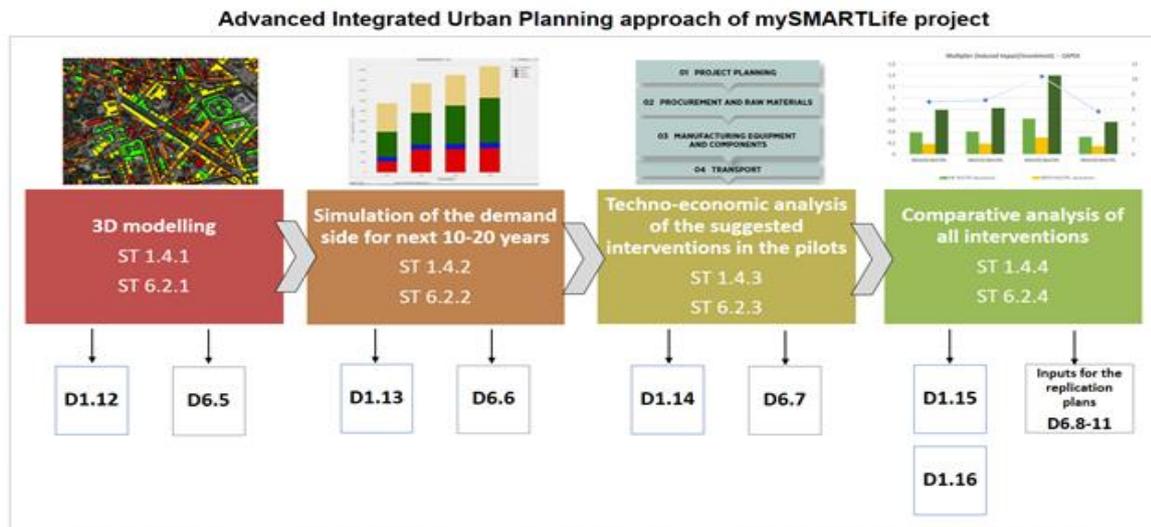
- City audit of the initial situation (energy, economics, in D6.1-3)
- PESTEL analysis (multi-criteria) to assess the opportunity of developing several examples of actions, based on the political, environmental, social, technological, economic and legal contexts (D6.1-3)
- Energy situation modelling, and energy scenarios for future demand (D6.5, D6.6)
- Selection of perimeters of application (e.g. which buildings, which districts)

The next objective is to elaborate more consolidated replication plans by the end of the project, based on further analysis:

- Social acceptance (D6.12); this is the topic of the present deliverable.
- Innovative business models, to detail the financial feasibility of the project (D6.13).
- Techno-economic feasibility analysis, based on detailed study of each proposed smart action, relying on contextual supply chain analysis of each component of the action.
- Analysis of the impact of the action in the form of a matrix, which will be integrated to the final version of the replication plans.

All these results will be part of the final preparation of the replication plan. Social acceptance initiatives will be considered as a way to evaluate the alignment of selected measures with citizen requirements. The way that each city has established this validation differs. For each type of interventions and city a specific approach is described in the following lines.

The figure below shows how each of the phases of the methodology corresponds with the different subtasks and how each contributes to the rest with their corresponding outcomes.



**Figure 3: Methodological approach of the Advanced Integrated Urban Planning in mySMARTLife project.**

Social acceptance is an important part. Replication of any intervention must indeed count with social support. With this task, T6.3, follower cities can gather citizen feedback about their replication plan. And they can use the knowledge developed in the “smart people” pillar with the lighthouse cities, where key elements for the success of social awareness and acceptance have been analysed.

The following tables detail which actions are considered and how they are included in each of the above mentioned steps. The list of actions varies depending on the deliverable due to various elements of context (e.g. evolution of the replication plan during the project, social acceptance more focused on a specific type of action).

The next sub-sections remind technical details about the actions considered for the social acceptance campaigns.

**Table 6: Smart Actions considered for the follower cities in the studies of WP6**

City	Smart Actions (replication plan)	PESTEL	Energy scenarios	Techno-economic analysis & impact matrix	Social acceptance focus
Palencia	DH with biomass				
	EV for municipal fleet				
	Smart Citizen Platform				
	Energy monitoring of public buildings				
	Public LED lighting				
	New heating systems in public buildings				
Bydgoszcz	e-mobility in Bydgoszcz				
	PV on public buildings				
	Smart lighting system				
	Smart rainwater system				
	Open data GIS portal				
	Public building refurbishment				
Rijeka	Smart bus stations				
	Smart public lighting				
	Smart metering and data management				
	Citizen participation in energy savings				
	Open data GIS platform				
	RES integration – PV panels, energy storage and sharing				

**Table 7: Smart Actions considered for the follower cities in replication plans**

City	Type of intervention	Actions considered
Palencia	City infrastructure	District Heating with biomass in public and private buildings
	Electromobility	Electric Vehicles for municipal services fleet
	NTA	Smart Citizen Platform for all municipal services
	Urban platform + ICT development	Energy Monitoring of public buildings
Bydgoszcz	Buildings	PV in public buildings
	City infrastructure	Smart lighting system
	Electromobility	E-mobility (E-buses, public charging station, EV)
Rijeka	Buildings	RES integration – PV panels: energy storage and sharing
	City infrastructure	Smart Public Lightning
	Urban platform + ICT development	Smart metering and smart data management

## 5.1 Replication plan in Palencia

### 5.1.1 Description of the replication actions

Here are brief descriptions of the actions considered for replication in Palencia.

#### - District Heating with biomass in public and private buildings

Initially, this action consisted in the construction of a public District Heating (co-financed by EDUSI funds and the municipality). Originally 3 public buildings were going to be connected to the system and it was expected to extend the network once it was in service towards two more public buildings and private residential buildings. The city council signed a collaboration agreement with Palencia ECO Energías S.L for the exploitation of the DH under an ESCO model (private or private/public).



The definition of the action has changed during the previous months and finally Palencia ECO Energías S.L. will be the owner and the constructor of the private DH. The DH includes a biomass boiler plant (30 MW) to supply thermal energy for DHW and heating to 6000 dwellings which will be combined with a thermal solar plant to cover partially the energy consumed by the DH installations. The DH project will be implemented in two phases: Campo de la Juventud and Santiago neighbourhoods (around 3500 dwellings, 1<sup>st</sup> phase) and Pan y Guindas, city centre and San Juanillo neighbourhoods (around 2500 dwellings, 2<sup>nd</sup> phase). The municipality will connect 2 of the public buildings originally identified (Public Library and Local Police Building, located in Campo de la Juventud) using the EDUSI funds already provisioned for this action.

- **Electric Vehicles for municipal services fleet**

The action consists in the implementation of 11 EV in the municipality of Palencia to replace combustion vehicles from the municipal fleet. The vehicles acquired consist of 7 e-vans for municipal services (gardens maintenance, public works and municipal sports) and 4 motorcycles for the Local Police. Finally, the implementation of these EV has been completed with the installation of 7 indoor charging points of 3 kW for the charging of the vans, and other 4 indoor charging points 3 kW for the Local Police motorcycles.

- **Smart Citizen Platform for all municipal services**

The action develops a new channel for compilation and dissemination of municipal information, allowing citizen participation and collaboration with the local administration through open consultations. A specific app will allow citizens to communicate suggestions, claims and geo-referenced incidents in the municipal GIS as well as conducting surveys to measure the satisfaction with this service given by the municipality.

- **Energy Monitoring of public buildings**

The action consists of the realization of energy audits and the implementation of energy monitoring meters in three public buildings of Palencia (Multipurpose Centre EFIDES, Local Police Building and Public Services Centre Mariano Timón) to obtain valuable information regarding the needs of the buildings in order to reduce the energy demand and/or cover it with renewable energies. The buildings have been selected both for their level of energy consumption and for their impact on the inhabitants due to their visibility, since this measure is intended to influence citizens and promote energy efficiency

in private buildings. These data will be processed and integrated into the DigiPal platform already mentioned.

### 5.1.2 Implementation replication actions detail

#### - **District Heating with biomass in public and private buildings**

*Status: under implementation.*

The 1<sup>st</sup> phase of the private DH system will be commissioned by the end of 2020. During the following months Palencia ECO Energías S.L, with the support of the municipality, will work in the identification of the buildings to be integrated in the DH: private residential buildings located in Campo de la Juventud and Santiago neighbourhoods. It is expected to have 1000 dwellings connected before 2021. The municipality will use EDUSI funds already provisioned to connect 2 public buildings located in the Campo de la Juventud to the DH, and the civil works for connection will be tendered. The 2<sup>nd</sup> phase of the project will start in September 2021 and commissioned at the beginning of 2022.

#### - **Electric Vehicles for municipal services fleet**

*Status: already replicated.*

Municipality has already purchased the eleven vehicles of the action in May 2019 (7 vans and 4 motorcycles) and the charging points are already in service. The investment has been funded by 50% by the EDUSI and by municipal funds. The EV were presented during the 2<sup>nd</sup> Sustainable Mobility fair in Palencia (called MOViSOP), which was held in September 2019.

#### - **Smart Citizen Platform for all municipal services**

*Status: under implementation*

The Smart Citizen Platform is part of the DigiPal Project, beneficiary of the “II Call for Smart Cities” on the Digital Agenda for Spain, which is managed by the Red.es initiative. The DigiPal Project has been funded in a 65% by the Red.es initiative with funds coming from ERDF, while the other 35% has been covered by the municipality.

The DigiPal Project has been promoted by the local government and awarded in public tender to the company Indra for development and implementation of each of the modules of the urban platform. The DigiPal Project is expected to be finished by July 2020, but the smart citizen platform will be finished by April 2020.

### - **Energy Monitoring of public buildings**

*Status: already replicated.*

The purchase and installation of the monitoring equipment has been funded by Red.es funds by 65%, and by the municipality for the remaining 35%. The audit and the periodic reports costs will be 100% financed by the municipality.

The installation of the monitoring system hardware (sensors, energy meters, data loggers) in the three buildings and the integration into the Smart Citizen Platform was carried out in December 2019 and the commissioning has been carried out in February 2020 together with the initial data capture of energy consumption of the three buildings. The audit will consist of monitoring quarterly energy consumption of the buildings for two years (starting in the second quadrimester of 2020) and the information obtained will serve to detect deviations, anomalies and decision-making.

## 5.2 Replication plan in Bydgoszcz

### 5.2.1 Description of the replication actions

Here are brief descriptions of the actions considered for replication in Bydgoszcz.

#### - **E-mobility (E-buses, public charging station, EV)**

For the City of Bydgoszcz, a detailed objective was set up to prepare a strategy for the development of electromobility to achieve the goals of the Electromobility Development Program under the Strategy for Responsible Development (SRO).

More concretely, the action proposed in the scope of mySMARTLife consists in the development of 210 EV charging points to be located in the city by December 2020, and the deployment of 30 e-buses to be procured in year 2020.

#### - **PV in public buildings**

The action corresponds to a group of PV production actions including:

- A solar plant on the Astoria Swimming Pools, the total installation power estimated at 140 kW - *under implementation.*
- RES investments on 11 facilities with a total capacity of 229.5 kW - *to be done by September 2020.*
- Installation of photovoltaic panels on the roof surface of the unloading hall by PRONATURA (Intermunicipal Waste Treatment Facility) – *planned.*

- Construction of photovoltaic power plants together with energy storage, infrastructure and intelligent control system of the main MV switchgear at MWiK facilities (Municipal Water and Sewage Company, for a total of 5 MW) – *planned*.

- **Smart lighting system**

The action includes the deployment of 16.000 lighting points to be replaced with LED technology.

### 5.2.2 Implementation replication actions detail

- **E-mobility (E-buses, public charging station, EV)**

*Status: under implementation*

The Act on electromobility assumes the functioning of nearly 210 EV charging points in Bydgoszcz.

The City of Bydgoszcz is starting to prepare an electromobility development program in the city by the year 2030 – to be done this year.

The e-Bus project is to be implemented as part of the so-called innovation partnership, where local governments will co-order the buses, and the public procurement will be carried out by the National Center for Research and Development. By accumulating orders of nearly 30 local governments, it will be possible to obtain the best solutions and prices.

- **PV in public buildings**

*Status: under implementation/being planned (depending on the action)*

All the actions mentioned in the previous section are considered in the scope of the replication strategy:

- Solar plant: under implementation.
- RES investments on 11 facilities: to be done by September 2020.
- PV on service building roof: planned.
- PV power plants integrating energy storage and intelligent control system: planned.

The value of eligible costs of the project will amount to PLN 1.4 million, of which over 50 percent is EU funding under the Regional Operational Program of the Kuyavian-Pomeranian Voivodeship for 2014-2020. The project is expected to be implemented in 2020 (Intervention: RES investments on 11 facilities).

In the EU perspective for 2021-2027, support for large renewable energy plants is forecast. A possible form of EU funding under the Regional Operational Program of the Kujawsko-Pomorskie Voivodeship for 2014-2020 may range from 45% to 85% of eligible costs. (Intervention: Construction of photovoltaic power plants together with energy storage 5MW).

- **Smart lighting system**

*Status: under implementation*

Transportation Board in Bydgoszcz proposes streets for lighting installation and modernization of lighting on the basis of the following criteria: the number of residents registered at a given street, the technical possibilities of lighting supply, and the applications for the construction of lighting from residents and District Councils.

In year 2015, street lighting was modernized in Bydgoszcz and the investment was carried out based on 45% refinancing obtained from the National Fund for Environmental Protection and Water Management. In the current years, various financing options are being considered from the Regional Operational Programme, the National Fund for Environment and to Smart Growth Operational Programme.

### 5.3 Replication plan in Rijeka (RIJ)

#### 5.3.1 Description of the replication actions

- **Smart Public Lighting**

The smart lighting system presumes the possibility of remote control and management (lighting/turning off/strength regulation) of every particular lamp in the system. For the Rijeka public lighting system, it would mean replacing all existing lamps (app.15.500) with new LED lamps which have the above-mentioned possibilities. The available technologies of the smart public lighting systems mostly use wireless GPRS technology.

- **Smart metering and smart data management**

40 smart meters will be installed in public buildings by year 2021 (including the public buildings under retrofitting actions – 17); and final number is estimated to be 150 with the data to be processed and stored in Rijeka Data center.

The monitoring of energy resources is an important issue in order to provide insight into consumption dynamics (importance for the city in terms of maintenance and planning); further promotion of the savings and the reduction of the emissions; and the deployed system allows upgrades.

- **RES integration – PV panels: energy storage and sharing**

This smart-action aims to implement an energy sharing concept joining neighbouring buildings in sharing electricity generated by PV panels.

### 5.3.2 Implementation replication actions detail

#### - **Smart Public Lighting**

*Status: being planned*

The City of Rijeka has specific activities planned in the Rijeka SEAP (Sustainable Energy Action Plan), such as: 1) replacement of old luminaires with ones that are energy efficient and environmentally adequate; 2) management of the intensity of public lighting. Smart public lighting is connected to both measures.

The timeline is still to be defined in accordance with the more precisely defined actions and phases; this will also be in line with the co-funding opportunities (Croatian Fund for Energy Efficiency).

The main funding sources are ESI funds and City of Rijeka budget.

#### - **Smart metering and smart data management**

*Status: under implementation*

The meters are to be installed by year 2021. The main stakeholders involved in the development of the action are the City of Rijeka, HEP ELEKTRA (Croatian national provider of electricity, Rijeka subsidiary), MC Energo d.o.o. (Public provider of thermal energy, gas and public lighting), NGOs and groups of citizens. The main funding source is the City of Rijeka budget.

#### - **RES integration – PV panels: energy storage and sharing**

*Status: under design*

A first draft of “notice paper” with the suggestion and opinions directed to the national government has been drafted by the end of 2019, oriented towards 15% of the public sector building’s roof area to be covered by solar PV technology

The main funding source is the city budget and national funds.

## 6. Social campaigns in Follower Cities focusing on replication plans

Social campaigns to communicate the replication actions are required in order to corroborate the acceptance of the actions in the follower cities. Feedback obtained will help to identify possible social opposition on the use of public budget for these solutions which could condition their future implementation or upscale in the cities. Additionally, if these actions are not well accepted by citizens, it is a risk for their implementation in the private sector.

Each city will design the strategy for the communication of the replication actions (which actions are communicated, through which media, to which target, etc.), taking into account that one of the objectives of the social campaign must be the collection of the impressions of the citizens on the solutions. Consequently, to obtain a suitable evaluation, the audience should receive proper information that helps to fill the requested questions at the end of the session.

This chapter deals with the guidelines to help follower cities in the definition of the approach of the social campaigns.

**Table 8: Questionnaire to guide the setup of the social campaign strategy**

Steps	Questions to be answered
<b>Identification of the need</b>	Which is the reason for planning the social campaign? (e.g. <i>communicate, disseminate, empower citizens in the city planning, citizens approbation</i> )
<b>Definition of the objective</b>	Who do you want to engage on the communication strategy? Please justify your selection (e.g. <i>Citizens, citizens affected by the actions (e.g. residents, users), companies, stakeholders etc.</i> )
	Which is the result expected with the realization of the social campaign?
<b>Definition of the scope</b>	How many people do you intend to reach?
	What is the time scale for the communication strategy? ( <i>Short-Medium-Long term</i> )
	Who will be the responsible of the organization of social campaign?
	Who will be actors that will take part of the implementation of the social campaigns?
<b>Definition of the target audience</b>	Which is the target audience that is interested for the objective of the social campaign?

Steps	Questions to be answered
	What will be the frequency of meetings to involve target audience?
	What engagement should they take if they want to participate? <i>(need to be engaged for several meetings, over a specific time period, etc.)</i>
	Which can be the strengths and weaknesses regarding the involvement target audience?
<b>Identification of the target audience</b>	Depending on the scale of the planned interventions in the city (city, neighbourhood, district, etc.), what is the expected representativeness of the population/interested stakeholders?
	How will the audience be selected? <i>(e.g. randomly, voluntarily, etc.)</i>
<b>Definition of the assessment objective</b>	Which could be evaluated by the audience after the social campaign?
	What want to be evaluated by the audience after social campaign?
	Which could be the best method of evaluation? <i>(E.g. questionnaire, focus interview, individual interview)</i>

Furthermore, the next table collects some ideas about which type of social campaigns can be implemented to guide follower cities in the definition of the activities to be performed as social campaign.

**Table 9: Typologies of social campaigns**

Objective of the social campaign	Type of social campaigns	Social acceptance evaluation
Communicate results derived from the participation of the city in mySMARTLife project in order to remark the potential benefits obtained with the implementation of smart city actions (energy scenarios, techno-economic analysis). Additionally, the city could tell how the municipality is working in the definition of a new city model based on smart actions	Workshop addressed to stakeholders / citizens	Social acceptance can be evaluated through a questionnaire/focus group interview where audience is asked for the impressions related to actions shown. If the workshop is open to all the public, audience size can be measured as a way to identify the interest of citizens by innovative actions in the context of a smart city. Also, background audience can be identified to know the citizens profile.
	Dissemination channels (newspaper, website, social media)	Social acceptance could be evaluated as audience reached

Communicate the execution plan of specific actions with the aim to inform and/or involve target audience in the solution design. Results of the studies should be communicated to increase the social acceptance	Workshops addressed to stakeholders / citizens	Social acceptance can be evaluated through a questionnaire/focus group interview where audience is asked for the impressions related to actions shown. If the workshop is open to all the public, audience size can be measured as a way to identify the interest of citizens by innovative actions in the context of a smart city. Also, background audience can be identified to know the citizens profile.
Communicate the actions analysed in WP6 to specific stakeholders to remark the benefits of these actions for the city, citizens or the new city vision	Meeting	Social acceptance can be evaluated through an individual interview where audience is asked for the impressions related to actions shown
Event held by the city about some of the pillars of the project (energy, mobility, ICT, etc.) as part of the Energy Week, local fair, etc.	Fair, Big event	Social acceptance can be evaluated through a questionnaire during the event. The actions to be evaluated will correspond with the topic of the event
Work group with main city stakeholders. Participation also of citizen associations.	Workshop with 10-30 participants	Workshop where the replication plan is presented to the main city stakeholders to know how they perceive each intervention planned
City website: Publication of the replication plan	Open access online to the replication plan.	The replication plan is made public on the city website, and anyone who wants to participate can make comments
Small group of city experts	The city names 3-4 experts so they can review the replication plan. They assess to which extent the proposed actions can be implemented.	The experts named by the city review the replication plan. They assess to which extent the proposed actions can be implemented.

Last but not least, here are some examples of ideas for the identification of actions to be communicated, identification of target audiences and identification of the timeline:

- **For the identification of actions to be communicated in social campaigns:**
  - Which are the actions that the city intends to communicate in the next months to a wide audience to increase the image of the local government?
    - Reason 1: The local government intends to assure the social acceptance of the actions that take part of the city planning.
    - Reason 2: The local government intends to assure the social acceptance of the actions included in the execution actions plans of the city.
  - Which of the current actions need to be corroborated in the next months by citizens/stakeholders before their implementation in the city?

- **For the identification of the timeline:**

- Has the city planned any event where to include social campaigns?
- Has the city the requirement to communicate the action in a specific timeline?
- Has the city any specific interest to show results from the project that are still under development (e.g. business models & financial schemes)?

Taking into account these guidelines, the following sections collect the general overview of campaigns to be held in each follower city as a part of their replication plan.



## 6.1 Social acceptance campaign in Palencia

The social acceptance campaigns in Palencia intend to inform citizens and professionals about the replication actions defined in mySMARTLife project with the aim to collect the feedback about the satisfaction of these solutions in the city and define the measures to be implemented. For example, in the case of lack of social acceptance in a specific action, the city can re-design, re-orientate the action or can make an effort in the dissemination on specific issues identified.

The municipality and specifically the Environmental area, which belongs to the local development Agency is responsible to carry out the social acceptance campaigns. These activities consists on workshops or physical meetings to provide key information on the replication actions to the citizens and local companies and consequently to ensure that these actions are widely accepted in the city and can be implemented without a social opposition in the future. Once the activity has been performed, the plan is to measure the satisfaction of the audience with the solution through a questionnaire. Additionally, it could count the number of attendees in order to measure the interest of the target audience to be informed.

Additionally, some dissemination and communication activities will be performed by the municipality to increase the number of people that are aware of these actions as follow:

- Social media of the municipality of Palencia: website (1,500 users), Facebook (760 followers) and Twitter (942 followers).
- Palencia local newspapers: Diario Palentino (daily publication - circulation of 150,000 per month), Norte de Castilla (daily publication - circulation of 150,000 per month), Carrión (daily publication - circulation of 15,000 per month) and Palencia Invierte (monthly publication - circulation of 18,000 per month).
- Local radio and local television.
- Organization of exhibitions, fairs and events.
- Brochures.

### 6.1.1 District Heating with biomass in public and private buildings

#### 6.1.1.1 General overview of the campaign

The private DH has been already designed to serve around 6000 dwellings in 2 different areas of the city: Campo de la Juventud and Santiago neighbourhoods (1<sup>st</sup> stage) and Pan y Guindas city centre and San Juanillo neighbourhoods (2<sup>nd</sup> stage). The need behind this action is on one hand to improve the air quality within the city by means of this infrastructure that uses biomass as a source of renewable energy and on the other hand to promote local economy through the involvement of local companies in the implementation and maintenance of the DH.

On other hand, since there is not any DH in Palencia, it is required to provide proper information to the citizens to convince that is a solution technically and economically feasible. If this DH is accepted by citizens, the posterior implementation of this solution in other zones of the city will be easier.

#### 6.1.1.2 Main activities foreseen

The implementation plan of the DH will be communicated through social media to increase the social acceptance of the action at city level and through a specific meeting to encourage the neighbours to connect to the system.

This meeting will be promoted by the municipality and celebrated in the municipal CEAS offices (social action centres), where the neighbourhood associations have their own premises. Citizens will be informed about the construction and exploitation project and the financial scheme for the investment, specifically the existence of public funds to undertake energy efficiency measures in building and the ESCO model for the exploitation. Potential doubts about works in private houses will be also clarified. Palencia ECO Energías S.L will participate in this meeting and give technical support to the municipality. Biomass suppliers will be also be invited to the initial meeting.

This initial meeting to inform neighbours about the project and time plan will be held during the second trimester of 2020. Then, from June 2020 to March 2021, Palencia Eco Energías will carry out several “building to building” meetings to assure the engagement of citizens to the DH, but the municipality will not participate in this campaign.

#### 6.1.1.3 Key actors carrying out the activities

Palencia City Council will lead the social acceptance campaigns and specifically the Environmental area, which belongs to the local development Agency. The municipality will count on the support of Palencia ECO Energías S.L.

#### 6.1.1.4 Target groups and value proposition

The social campaign to increase the social acceptance of DH with biomass has been defined considering as target groups the affected citizens to explain how the solution can be easily implemented as well as the financing scheme for the upfront cost in order to generate confidence towards this new city infrastructure. Biomass suppliers will be invited to be informed about the activity and demonstrate with their attendance to the citizens that there is a proper market of this fuel.

#### 6.1.1.5 Communication instruments used

The specific meetings to convince residents and biomass suppliers to be part of the action will be communicated through the neighbourhood associations and social media.

6.1.1.6 Timeline for social campaigns

The following table shows the timeline for the realization of the activities previously described. Although the deadline for reporting the results of the social acceptance campaigns is January 2021 (Deliverable D6.8), the efforts for increase the satisfaction of citizens on DH within the city of Palencia will continue during the rest of the mySMARTLife Project.

**Table 10: Timeline for district heating campaign in Palencia**

	2019			2020			2021
	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Press Release							
Social media and website							
Meetings							

6.1.1.7 Expected impact and measuring of success

*Expected impact:*

- Number of private companies informed/contacted/invited to the first meetings: 8
- Number of private houses connected to the DH by December 2020: 1574

*Measuring of success:*

After the initial meeting with residents, their feedback will be gathered by means of questionnaires (based on 5-point Likert scale) related to their perception and the degree of satisfaction/acceptance with the solution:

- Satisfaction with the technical solution (perceived adequateness, perceived usefulness, perceived ease of use, aesthetical solution, etc.).
- Satisfaction with the economic solution (cost, financial scheme, economic benefit).

Other way to measure the success of the social campaign could be measured through:

- Number of citizens invited to the first meeting.
- Number of citizens that attend to the first meeting.

## 6.1.2 Electric Vehicles for municipal services fleet

### 6.1.2.1 General overview of the campaign

As it has been already described in the Section 5.1.2, this action has been already implemented in Palencia, so the social acceptance campaign will be oriented to the **upscaling** towards other target groups: citizens and specially taxi drivers, delivery companies, private buses on provincial routes, or potential users of the car sharing platform.

The need behind the dissemination campaigns will be to promote the use of this alternative means of transport in order to improve the air quality in the city and surroundings and to contribute to solve the uncertainty of the buyer due to: the high prices of EV, its restricted autonomy, the lack of charging points and the time it takes to load.

### 6.1.2.2 Main activities foreseen

Apart from the traditional dissemination tools (press, radio, TV, social channels, etc.), the electromobility is promoted by the municipality of Palencia in the Sustainable Mobility fair (called MOVISOP) held each year.

The event took place for the 1<sup>st</sup> time in September 2018, and in 2020, it will be celebrated the 3<sup>rd</sup> Edition. The event in Palencia coincides with the European mobility week and takes place during the weekend, integrating the following activities:

- Conferences and round tables focused on sustainable urban mobility, with representatives of vehicle brands (Renault, Vectrix, etc.), electric operator, recharging, urban planning experts in smart cities, etc.
- Exhibition of different types of vehicles (electric, hybrid or hydrogen) for cars, bicycles, scooters and trucks.
- Road Show with the testing of EV in a closed urban circuit.

As a secondary event, it is the Social Biking Challenge, a competition between European cities to encourage the use of bicycles in urban routes.

In order to promote the upscaling to other professional sectors it is expected to organize specific talks or round tables in the MOVISOP 2020, inviting to expert speakers and convening local taxi drivers, delivery companies, etc.

### 6.1.2.3 Key actors carrying out the activities

Palencia City Council will lead the social acceptance campaigns and specifically the Environmental area, which belongs to the local development Agency.



#### 6.1.2.4 Target groups and value proposition

The social campaign to increase the social acceptance of electromobility has been defined considering the following target groups: citizens and specially taxi drivers, delivery companies, private buses on provincial routes, or potential users of the car sharing platform.

Since citizens are aware of the technical limitations of EV and perceive this type of vehicle as non-affordable, the activities to be performed intend to address the barriers to move to electro-mobility in Palencia. Thus, the specific message to be translated in the social campaigns will be related to the benefits of this means of transport and the existence of subsidies that are being offered by the Administrations to promote its use as well as the exemptions to pay the municipal Tax on Vehicles of Mechanical Traction already implemented by the municipality of Palencia.

#### 6.1.2.5 Communication instruments used

The dissemination of the MOVISOP will be performed through internet and social media to increase the participation of the citizens in the activities organized.

#### 6.1.2.6 Timeline for social campaigns

The following table shows the timeline for the realization of the activities previously described. Although the deadline for reporting the results of the social acceptance campaigns is January 2021 (Deliverable D6.8), the efforts for promoting social acceptance within the city of Palencia will continue during the rest of the mySMARTLife Project.

**Table 11: Timeline for EV campaign in Palencia**

	2019			2020			2021
	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Press Release							
Social media and website							
MOVISOP							

#### 6.1.2.7 Expected impact and measuring of success

*Expected impact:*

- Number of citizens attending the conferences: 90
- Number of participants from other target groups (taxi drivers, delivery companies) attending the conference: 18
- Number of citizens testing EV vehicles in the Road Show: 40

*Measuring of success:*

During the fair and after the different events held (both conferences and exhibition), the feedback from participants will be gathered by means of questionnaires based on 5-point Likert scale related to their perception and the degree of satisfaction/acceptance with the EV:

- Satisfaction with the technical solution (willingness of citizens, companies or taxi driver to acquire EV, willingness of citizens to use public charging stations, etc.).
- Satisfaction with the economic solution (cost, economic benefit).

### 6.1.3 Smart Citizen Platform for all municipal services

#### 6.1.3.1 General overview of the campaign

As it has been already described in the Section 5.1.2, this action will be implemented in April 2020, so the social acceptance campaign will be oriented to **disseminate** the platform among the general citizens in order to promote its use. The need behind the dissemination campaigns will be to improve the communication channels with the citizens and show the transparency of the local government. On other hand, the campaign should be addressed to overcome the “digital breach” and achieve that the citizens see the platform as an accessible and easy way to communicate suggestions, claims, incidents, surveys, etc.

#### 6.1.3.2 Main activities foreseen

Citizens of Palencia will be informed of the existence of this platform by traditional mass and social media. As already mentioned, during the second quadrimester of 2020, a public consultation will be launched by the platform in order to encourage citizens to access and use. Suggestions to improve it or making it friendlier will be asked. Another activity that could potentially be used to target the general public in Palencia is the use of Kiosks (following the experience of Nantes City in the theme of the e-mobility) during MOVISOP event to be held in September 2020. Finally, public employees of Palencia municipality involved with the use of the platform will receive a training course of 2 days organized by Minsait and Indra to teach to manage the tool. They will be held during the second quadrimester of 2020.

#### 6.1.3.3 Key actors carrying out the activities

Palencia City Council will lead the social acceptance campaign and specifically the Environmental area, which belongs to the local development Agency. The municipality will count on the support of Indra / Minsait. They are a major player in the global industry in different sectors such as energy and ICT, and particularly, Indra was the contractor of the public tender of the DigiPal Project which included this action and the one related to the energy monitoring of public buildings.

6.1.3.4 Target groups and value proposition

Citizens of Palencia are the key target group of the awareness campaign in order to promote the use of the municipality platform. Public employees are the second target group, which will be formed to start working with the platform as this intends to improve the internal communication and to coordinate the services provided by different departments of the city hall.

6.1.3.5 Communication instruments used

Apart from the traditional dissemination tools already mentioned (press, radio, TV, social channels, etc.) citizens will be informed through social media. Finally, Indra and Minsait will provide general information about the DigiPal project to the general public through their own communication tools.

6.1.3.6 Timeline for social campaigns

The following table shows the timeline for the realization of the activities previously described. Although the deadline for reporting the results of the social acceptance campaigns is January 2021 (Deliverable D6.8), the efforts for promoting social acceptance within the city of Palencia will continue during the rest of the mySMARTLife Project.

**Table 12: Timeline for smart citizen platform campaign in Palencia**

	2019			2020			2021	
	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan
Press Release								
Social networks and website								
Training courses								
Public consultation								
Kiosks								

6.1.3.7 Expected impact and measuring of success

*Expected impact:*

- Number of citizens participating in the public consultation launched in the smart platform: 200
- Number of public employees participating in the training courses: 60

*Measuring of success:*

The public consultation to be launched in the platform during the second quadrimester of 2020 will include a questionnaire based on 5-point Likert scale related to their perception and the degree of satisfaction/acceptance with the usability of the platform, or suggestions to make it friendlier.

Questionnaires will be used also to measure the success of the training seminars and public employees will be asked about for degree of satisfaction/acceptance with the usability and flexibility of the platform or if it fits their needs.

#### 6.1.4 Energy Monitoring of public buildings

As it has been already described in the Section 5.1.2, this action has been **already implemented** in Palencia. Any social campaigns will be organized to promote the benefits achieved with the monitoring systems towards private buildings as part of mySMARTLife since this type of action is less feasible in private residential buildings and therefore is not a priority action to be promoted by the municipality to achieve the upscale in the city.

## 6.2 Social acceptance campaign in Bydgoszcz

### 6.2.1 E-mobility (E-buses, public charging, EV)

#### 6.2.1.1 General overview of the e-mobility campaign

In the view of the Act on Electromobility and Alternative Fuels (2018), the City of Bydgoszcz is starting to prepare an electromobility development program by the year 2030. The EV-charging stations and e-buses are smart actions integrated in the Bydgoszcz's Replication Plan. The guidance acquired in mySmartLife project is very helpful as it is the first attempt for e-mobility in the city.

The social acceptance for electromobility is ensured by the writing and implementation of a strategy document, which will be the result of an information and participation process.

The University of Science and Technology in Bydgoszcz (Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy) will prepare the **Electromobility Development Strategy**. The prepared document will allow planning activities that will reduce low emissions and calm urban traffic.

The Electromobility Development Strategy is a comprehensive document containing an assessment of possibilities, an action plan and an analysis of possible investments that should be undertaken to fully exploit the potential of electromobility development in the city. These activities are tailored to the individual needs and capabilities of the individual, and should also be consistent with the strategic and planning documents in force in its area and the smart city initiatives implemented so far. The recommendations resulting from the conducted analyses allow, above all, to reduce low emissions, as well as to improve local traffic. The strategy supports the promotion of alternative means of transport in areas of local government units such as: city bike, including electric, scooters, electric scooters and other MaaS (Mobility as a Service) solutions. The strategy also includes solutions in the field of car and pedestrian traffic control (ITS, transport prioritization). The **strategy requires social consultations with residents and final acceptance by the City Council of Bydgoszcz**. Municipal units responsible for communication, energy management and integrated development of the city will join the preparation of documentation. The neighbouring municipalities associated in the Bydgoszcz Metropolis will also be involved in the study. The strategy for the development of electromobility is being created as part of the GEPARD Electromobility Development Program, which provides for the granting of a grant or loan for the purchase of electric buses, as well as co-financing the preparation of an electromobility development strategy for municipalities. As part of the program, Bydgoszcz obtained PLN 100,000 (EUR 25,000) co-financing for the development of the "Electromobility Development Strategy for the City of Bydgoszcz until 2030". The consultations begin with consulting the locations of the EV-charging stations in the city.



The entity contracted is the University of Science and Technology in Bydgoszcz (Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy). According to the contract, the document is to be ready by May 20, 2020.

A Strategy for Electromobility Development should enable the planning of activities in Bydgoszcz towards:

1. Increasing the number of low and zero emission vehicles moving within the city.
2. Recommendations on the use of low- and zero-emission vehicles by the city and companies providing services to the city.
3. Construction of charging infrastructure for electric and CNG powered vehicles.
4. Supporting the implementation of projects in the field of implementing alternative means of communication (bike and car rentals, car sharing).
5. Development of systems enabling analysis and ultimately facilitating communication within the city (ITS systems, passenger information).
6. Development of joint communication and / or agglomeration ticket initiatives.

#### 6.2.1.2 Main activities foreseen

Public consultations will take place in the form of meetings with residents, representatives of institutions, companies, the City Hall. Online survey among residents and entrepreneurs in the City of Bydgoszcz will also be organized.

#### 6.2.1.3 Key actors carrying out the activities

The actors carrying out the studies are diverse (university, company, public authorities):

- University of Science and Technology in Bydgoszcz (Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy).
- Pomorska Grupa Konsultingowa S.A. (Pomeranian Consulting Group S.A.).
- Energy Management Office, Integrated Development Department, Bydgoszcz Metropolis Association, Bydgoszcz Road and Transportation Board.

#### 6.2.1.4 Target groups and value proposition

The main target groups are first Bydgoszcz residents, and also technical experts and universities.

Bydgoszcz is in the process of the first e-mobility consultations and there is still a risk that the interest is rather scarce after the first contact with the topic

#### 6.2.1.5 Communication Instruments used

The consultations are published on the municipal website (<https://ankiety.um.bydgoszcz.pl/index.php/659773?lang=pl> on 13.03.2020 till 03.04.2020). It is thus possible to consult the locations of the charging stations in the city.

Other means are also used: newspapers, Facebook, workshops, expert meetings, radio, TV.

#### 6.2.1.6 Timeline for social campaigns

Here are the main actions and the foreseen periods for their implementation:

- Public consultations: March 2020 – May 2020,
- Dissemination days: Energy Day - June 2020, Mobility Week – September 2020

#### 6.2.1.7 Expected impact and measuring of success

The strategy is firstly aimed at Bydgoszcz residents. Therefore, the consultations with residents are necessary for proper preparation of the Electromobility Development Strategy by 2030. They are aimed at accurately determining the needs and expectations of the Bydgoszcz citizens in the field of electromobility development. The document aims at planning Bydgoszcz's activities towards:

- a) Increasing the number of low and zero emission vehicles in the city,
- b) Recommendations on the use of low- and zero-emission vehicles by the city and companies providing services to the city,
- c) Construction of charging infrastructure for electric and CNG powered vehicles,
- d) Supporting the implementation of projects in the field of implementing alternative methods of communication (bike and car rentals, car sharing),
- e) Development of systems enabling analysis and ultimately facilitating communication within the city (ITS systems, passenger information),
- f) Development of joint communication and / or agglomeration ticket initiatives.

The creation of a good strategy, compatible with the needs and capabilities of users of the strategy requires the participation of residents.

A major challenge is that the topic of e-mobility is new and the interested parties are still few. There seems also to be a lack of knowledge and funds for e-vehicles.

## 6.2.2 PV in public buildings

### 6.2.2.1 General overview of the PV campaign

The City of Bydgoszcz is not obliged to carry out public consultations as regards PV installations. In line with the Bydgoszcz Development Strategy until 2030 and SEAP, the City aims to upscale the use of PV installations and to gain financial sources from EU for that cause. Together with the projects, **public meetings and information activities** are undertaken. The City has started the PV investments relatively recently (a few years ago) and the need for education and information is very strong. The PV interventions listed in the Replication Plan for Bydgoszcz will be presented during technical and promotional meetings in context of the new coming projects - Construction of PV installations on public buildings in Bydgoszcz and the *'A city as a source of clean energy'* initiative.

### 6.2.2.2 Main activities foreseen

Here are the main activities planned at the moment:

- In the project: "Construction of PV installations on public buildings in Bydgoszcz" - a consultation meeting with teachers is planned for September 2020.
- Project on the Łuczniczka Sports Centre Bydgoszcz entitled 'A city as a source of clean energy'- pre-investment working consultations are planned for the second quarter of 2020.

### 6.2.2.3 Key actors carrying out the activities

The activities are mainly carried out by the local authorities supported by subcontracts: Energy Management Office, Municipal Social Communication Office, and an external ecological entity subcontracted.

### 6.2.2.4 Target groups and value proposition

Here again the citizens are the main target. They can be reached through events such as the Energy Day or the Mobility Week. Professional experts are also part of the target, they are involved by means of technical meetings with the municipality services.

### 6.2.2.5 Communication Instruments used

The procedure of investment information given to the public is to have investment reports published on the municipal websites and the City holds press conferences upon the closure of an investment with the emphasis put on the PV installations.

The audience is mostly the journalists and the representatives of the City and Metropolis and Marshal Office, the citizens.

As for the planned investment: the news is spread via available communication channels (LinkedIn, FB, website, newspapers).

#### 6.2.2.6 Timeline for social campaigns

Here are the scheduling details of the above mentioned activities:

- Meetings with teachers: September 2020
- Energy Day - June 2020, Mobility Week – September 2020
- Meetings with investors, investment and technical departments, City representatives – 2Q 2020

#### 6.2.2.7 Expected impact and measuring of success

One of the main objectives is to get the citizens acquainted with the implemented, ongoing and planned energy-efficient City investments. There is also an interest in presenting the state-of-the-art solutions to the public.

The impact of these social acceptance activities will be measured by questionnaires, and focused interviews.

### 6.2.3 Smart lighting system

#### 6.2.3.1 General overview of the smart lighting campaign

The Public consultations are not required by law in Poland and new lighting installations are not consulted per se. The Road and Public Transportation Board in Bydgoszcz that is the entity responsible for the city lighting has a yearly plan of replacing the old bulb with LED bulbs and also ongoing policy of fixing the lamps upon damaged street light reports from citizens. Also, the Road and Public Transportation Board in Bydgoszcz representatives attend Community Council meetings when needed.

#### 6.2.3.2 Main activities foreseen

There is currently one major activity foreseen, which is key for the social acceptance: the meeting with the City Community Council - either in 2020 or 2021.

#### 6.2.3.3 Key actors carrying out the activities

The main actor here is the Bydgoszcz Public Road and Transportation Board.

#### 6.2.3.4 Target groups and value proposition

Beyond the citizens, the City Community Council representatives are a crucial target on the smart lighting topic.

#### 6.2.3.5 Communication Instruments used

The communication instruments used are: newspapers, Facebook, workshops, expert meetings, radio, and TV.

### 6.2.3.6 Timeline for social campaigns

The previously mentioned events will also have an important role for the smart lighting solutions acceptance:

- Energy Day - June 2020.
- Mobility Week – September 2020.

### 6.2.3.7 Expected impact and measuring of success

The main objective here is to get the citizens and their representatives acquainted with the implemented, ongoing and planned city lighting investments.

## 6.3 Social acceptance campaign in Rijeka

In this section acceptance campaign, key actors, instruments, target groups and main activities related to the social acceptance campaign in the City of Rijeka will be explained.

The City of Rijeka is participating in the mySMARTLife project as a follower city, and accordingly, the social acceptance campaign is customized. It will refer to, not only implemented smart actions and activities in progress, but also, planned activities in accordance to the replication plan.

In that sense, this document refers to the City of Rijeka Replication plan, but also, takes into great consideration the good practice of the lighthouse cities, and to D1.1 Social Acceptance Campaign at local and district level.

The selection of target groups is also in accordance with the description above, or more accurately, depending on the implementation level of each activity, or better said, the possibilities of implementation in the context of the Republic of Croatia, and the target population is chosen accordingly.

### 6.3.1 Smart Public Lighting

#### 6.3.1.1 General overview of campaign

The smart lighting system presumes the possibility of remote control and management (lighting/turning off/strength regulation) of every particular lamp in the system. For the Rijeka public lighting system, it would mean replacing all existing lamps (app.15.500) with new LED lamps which have the above-mentioned possibilities. The available technologies of the smart public lighting systems mostly use wireless GPRS technology.

Within this action the target population refers to the local population related to the activities on the local level and experts in the field of energy.

### 6.3.1.2 Main activities foreseen

Along with the communication tools used so far, as the activities intensify, each smart action will be announced and followed by:

- Press releases.
- Updates on official city website.
- Updates on stakeholder websites and social media.
- Workshops.

### 6.3.1.3 Key actors carrying out the activities

- City of Rijeka.
- Energo d.o.o. – Public provider of thermal energy, gas and public lighting.
- HEP ELEKTRA – Croatian national provider of electricity, Rijeka subsidiary.
- REA Kvarner (Regional Energy Agency).
- NGOs.

### 6.3.1.4 Target groups and value proposition

Different target groups, or beneficiaries, are addressed depending on specific actions. On one hand we are talking about citizens and local residents and on the other hand we are talking about management and energy sector members (equipment suppliers, managers).

### 6.3.1.5 Communication Instruments used

The campaign is carried out using instruments that can be roughly divided in relation to the goal and the purpose we want to achieve, or to the target group we are addressing:

1. Publication of general information in the media
2. Presentation of projects and project activities in conferences, workshops and related events
3. Project presentation to policy makers, local and national administration and experts.

All the activities related to the public lighting are regularly published on the City of Rijeka and Energo web sites. When it comes to activities in a particular neighbourhood or street leaflets are used.

Workshops organized by the suppliers about new technologies have been held.

The project has also been regularly presented on meetings and workshops to provide insight to the level of development of the “smart city”, that has been intensified in the last years, and especially, since the Centre of competence for smart cities had been approved in Rijeka. Continuity of informing is also provided by showing project progress on yearly events, such as the Energy week and Green week.

### 6.3.1.6 Timeline for social campaigns

The previously mentioned events will also have an important role for the smart lighting solutions acceptance: Energy week (May 2020), Green week (June 2020).

### 6.3.1.7 Expected impact and measuring of success

The specific goals we plan to achieve are the following:

1. Social acceptance among the citizens of Rijeka.
2. Raising social awareness about the challenges that modern communities have to achieve to reach sustainable development (special emphasis on eco-awareness, energy efficiency and EU standards we try to reach).
3. Success will be measured through actions proposed in SEAP

## 6.3.2 Smart metering and smart data management

### 6.3.2.1 General overview of campaign

40 smart meters will be installed in public buildings by year 2021 (including the public buildings under retrofitting actions – 17); and final number is estimated to be 150 with the data to be processed and stored in Rijeka Data center.

The monitoring of energy resources is an important issue in order to provide insight into consumption dynamics (importance for the city in terms of maintenance and planning); further promotion of the savings and the reduction of the emissions; and the deployed system allows upgrades.

As in the previous action we are issuing energy savings so we address the general population. In another part, we address the technical management in public buildings and local administration.

### 6.3.2.2 Main activities foreseen

Along with the communication tools used so far, as the activity intensify (for example new smart meters) it will be announced and followed by:

- Press releases.
- Updates on official city website.
- Updates on stakeholder websites and social media.

For building users (i.e. schools) workshops have been and will be organized, as apart from installation of the equipment human behaviour is crucial when dealing with energy savings.

### 6.3.2.3 Key actors carrying out the activities

- City of Rijeka.

- HEP ELEKTRA – Croatian national provider of electricity, Rijeka subsidiary.
- MC Energo d.o.o. – Public provider of thermal energy, gas and public lighting.
- NGOs.

#### 6.3.2.5 Target groups and value proposition

As in other actions different target groups, or beneficiaries, will be addressed depending on specific goals.

- Citizens.
- Infrastructure (public buildings) users.
- City administration.

As always the goal is to reach general public (citizens), but in this specific action also users of the specific public buildings as well as technical staff.

#### 6.3.2.6 Communication Instruments used

- Publication of general information in the media.
- Presentation of projects and project activities in conferences, workshops and related events.
- Project presentation to policy makers, local and national administration and experts.
- Workshops.

Project information is provided on the official city website, in a specific section related to the project. As the project has been ongoing for several years now, it has been regularly presented on conferences, workshops, and for policy makers on local and national level.

The project has also been regularly presented on meetings and workshops to provide insight to the level of development of the “smart city”, that has been intensified in the last years, and especially, since the Centre of competence for smart cities had been approved in Rijeka.

Each of the key stakeholders provides general information on their websites, as well as press releases when achieving milestones in project development. Each project presentation on conferences is accompanied by announcements and press releases.

Continuity of informing is also provided by showing project progress on yearly events, such as the Energy week.

#### 6.3.2.7 Timeline for social campaigns

Social campaigns have been continuously held.



### 6.3.2.8 Expected impact and measuring of success

Expected impact relates to energy consumption awareness and energy efficiency, possibilities on energy usage that can be integrated in our daily life and workspaces, and smart usage of data in business and administration in our ecosystem.

## 6.3.3 RES integration – PV panels: energy storage and sharing

### 6.3.3.1 General overview of campaign

This smart-action aims to implement an energy sharing concept joining neighbouring buildings in sharing electricity generated by PV panels.

A first draft of “notice paper” with the suggestion and opinions directed to the national government has been drafted by the end of 2019, oriented towards 15% of the public sector building’s roof area to be covered by solar PV technology.

This activity is, regarded it’s under design status, different from previously explained actions. In this action policy makers and experts will be addressed.

### 6.3.3.2 Main activities foreseen

Communication tools that will be used due to the status of the activity and target group will be:

- Notice papers.
- Meetings.
- Workshop.
- Social media.

### 6.3.3.3 Key actors carrying out the activities

- City of Rijeka.
- HEP d.d. – Croatian national provider of electricity.
- HEP ELEKTRA Rijeka subsidiary.
- HERA – Croatian Regulatory Energy Agency.
- HROTE – Croatian Energy Market Operator.
- Energo d.o.o. – Public provider of thermal energy, gas and public lighting.
- REA Kvarner.
- MC Energo d.o.o. – Public provider of thermal energy, gas and public lighting.
- NGOs/Citizens.
- Other stakeholders from government, industry, R&D or civil sector.

#### 6.3.3.4 Target groups and value proposition

In this action policy makers, city administration and experts will be addressed. Since the activity is something new and so far it has not been enforced we opted for this kind of tailored target groups.

#### 6.3.3.5 Communication Instruments used

As noticed for the target group, the instruments that have been and will be used are:

- Meetings and e-communication.
- Workshops, conferences.
- Social media.
- Project presentation to policy makers, local and national administration and experts.

#### 6.3.3.6 Expected impact and measuring of success

As a young EU member with many social challenges and poor financial resources, several challenges are still to overcome.

Success will be obtained by completing the actions described in the Rijeka Replication plan in the foreseeable future and creating a better living environment for our citizens in terms of mobility, energy consumption awareness and energy efficiency. There are many possibilities on energy usage that can be integrated in our daily life and workspaces, and smart usage of data in business and administration in our ecosystem.

## 7. Conclusions

One important idea in the design of **any social acceptance campaign** is that it has to be “tailor-made”, **specific to the considered action, its perimeter, and its precise context of application**. General guidelines can be considered as the ones presented in section 3, but each campaign has to be designed and implemented on its own way. To consider the specificities of the context, and to allow the inspiration from lessons learnt, preliminary context analysis methods (such as PESTEL for example) can help greatly.

Another key idea is that there can be **various levels of implication of the citizens**, from the simple information, to the full participation as an actor of the smart action. The expectations and levels of involvement, for each stakeholder, are to be defined before the design of the campaign.

In the social campaigns proposed by Palencia, Bydgoszcz and Rijeka we can observe **different levels of details in the description of the campaigns**. This is partly due to the fact that the smart actions included in the replication plans are not all at the same stage of development, some actions are more advanced than others. Moreover in some cities, **some topics are relatively new for the citizens**, the social acceptance process may then require some time for the citizens to be fully aware of the benefits and impacts of the solution (e.g. district heating in Palencia, e-mobility in Bydgoszcz).

As regards the target groups, the city of Palencia is aiming **mainly and directly at the citizens** living in the project areas directly linked to the replication actions, whereas the cities of Bydgoszcz and Rijeka also include local authorities services and/or **policy makers** as targets of their campaigns. To get a tighter involvement from decision makers, the option to develop a strategy document as a result of a complete consultation of many stakeholders has been adopted (e.g. Electromobility development strategy in Bydgoszcz). The social acceptance campaigns can then also be an opportunity to comply with the commitment to transparency and governance.

**Professionals** (large companies, SMEs, start-ups), **investors and companies** are also important targets in most of the presented actions. The communication activities can motivate them to support the future implementation of the replication actions and learn about the business possibilities

The instruments of communication largely include **mass and social media** in all the cities; they are key to reach most of the citizens. Through the various media and **event** activities, **local target groups** will be informed in order to lead to a positive attitude and to guarantee their support for the activities. In the case of Palencia, the **meetings and workshops**, will lead to close collaboration and cooperation with citizens and other relevant stakeholders, in the sense of co-creation, again ensuring the support of the activities; the final objective being to increase the participation of citizens in urban decisions of the municipality to become a smart city at EU level.

The **questionnaires** are largely adopted as a solution to evaluate the social acceptance of the actions.

Finally this deliverable demonstrated how **Smart People concepts** already implemented in some lighthouse cities can be **adopted, adapted, and replicated** by other ambitious cities. The demonstration is being achieved by Palencia, Bydgoszcz, and Rijeka, and it can be as successful in any other willing city in Europe and the world. An important step is also to plan from the beginning the evaluation method to gather feedback about the social acceptance (e.g. questionnaires). In the case of Palencia, Bydgoszcz, and Rijeka, interesting results will be gathered in the coming months, from the implementation of their social acceptance campaigns.

## 8. References

Smart Cities Information System (SCIS) (2018): Social monitoring guide

Askvik, S., Jamil, I., & Tek Nath Dhakal. (2011). Citizens' trust in public and political institutions in Nepal. *International Political Science Review*, 32(4), 417-437. doi: 10.1177/0192512110377437

Leydesdorff, L. (2012). The Triple Helix, Quadruple Helix, ..., and an N-Tuple of Helices: Explanatory Models for Analyzing the Knowledge-Based Economy?. *J Knowl Econ*, 3, 25-35. doi: 10.1007/s13132-011-0049-4

Moffet, J. (1996). Environmental priority setting based on comparative risk and public input. *Canadian Public Administration*, 39(3), 362-85.

Montagna, F. (2011). Decision-aiding tools in innovative product development contexts. *Res Eng Design*, 22, 63–86. doi: 10.1007/s00163-011-0103-z

Rowe, G., & Frewer, L. (2000). Public Participation Methods: A Framework for Evaluation. *Science, Technology, & Human Values*, 25(1), 3-29. doi: 10.1177/016224390002500101

Sharp, V., Giorgi, S., & Wilson, D. (2010). Delivery and impact of household waste prevention intervention campaigns (at the local level). *Waste Management & Research*, 28(3), 256-268. doi: 10.1177/0734242x10361507

Yang, K. (2005). Public Administrators' Trust in Citizens: A Missing Link in Citizen Involvement Efforts. *Public Administration Review*, 65(3), 273-285. doi: 10.1111/j.1540-6210.2005.00453.x