



D6.3

Report on transnational challenges and recomendations for local stakeholder involvement and consumer/tenant orientation

final

SINFONIA

“Smart INitiative of cities Fully cOmmitted to iNvest In Advanced
large-scaled energy solutions”

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Executive summary

This deliverable tries to give an overview about the transnational challenges and recommendations from the two demo cities in SINFONIA - Innsbruck and Bolzano - for local stakeholder involvement and tenant orientation experienced in the project so far.

In both cities the focus was set on four main topics, that derived from demonstration measures that have already been implemented or are in the implementation process: chapter 2 focuses on “monitoring of building refurbishments”, chapter 3 on “other implemented technical measures” and chapter 4 on “building refurbishments”. The last main topic is covered in chapter 5 – the analysis of the “communication and dissemination activities done by all partners” .

As the experts on these topics are the involved project partners – the internal and external stakeholder – from both demo cities as well as from other project partners, the information summarised in this deliverable is deduced from a series of workshops, where all experiences, knowledge and recommendations were discussed, collected and recorded. This report is not only a “status quo” of the knowledge at that time of the project (although this part covers the majority of the report), it also gathers compiled recommendations to the early adopter and replication cluster cities in order to save time and overcome certain challenges faster. In order to do this, the group of stakeholder derived so called “key-messages” for each relevant topic within these workshops. It has to be stressed that this is always based on the individual experiences and knowledge of every stakeholder, and therefore no scientific analysis. Knowledge and experiences are developing during a project of 5 years duration – so this deliverable gives a snapshot at the time of the workshops and is not always able to document the ongoing work and the opinions, that are likely to change over time.

A variety of challenges occurred within SINFONIA, as it is a large scale demo and research project. Also the fact that Sinfonia is an inter- and transdisciplinary project makes challenges inevitable but more interesting is how to overcome these challenges. This means, that every partner has to face first internal challenges (technical, organisational, financial) to implement the measures. And then in a second step challenges occur at district level between the involved partners. Therefore a combination of both levels of challenges - let's call them internal and external - had to be overcome in every single demo project.

Beside this - internal and external stakeholder bring their different views, their various professional experiences and backgrounds as well as their “languages” into the project. Cooperation is essential for the success of such a project and has to be learned again and again.



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Shortcuts of the involved partners:

Innsbrucker Kommunalbetriebe AG (IKB)

Innsbrucker Immobilien GmbH & CoKG (IIG)

Neue Heimat Tirol Gemeinnützige WohnungsGmbH (NHT)

TIGAS-Erdgas Tirol GmbH (TIGAS)

Leopold-Franzens-Universität Innsbruck (UIBK)

Tiroler Zukunftsstiftung - Standortagentur Tirol (SAT)

Stadtmagistrat Innsbruck (MagIbk)

Passivhausinstitut Innsbruck (PHI)

Urban Software Institute (USI)

Istituto per l'edilizia sociale della provincia autonoma di Bolzano / Institut für den Sozialen Wohnbau des Landes Südtirol (IPeS)

European Academy of Bozen-Bolzano (EURAC)

Municipality of Bolzano (MoB)



1. INTRODUCTION

Workpackage 6 focuses on the involvement of local stakeholders e.g. tenants in the demonstration buildings, who are crucial for a positive implementation of refurbishment measures. Other relevant stakeholders such as politicians, institutions and the general public have been identified in the first project years.

Task 6.3 focused on the « transnational comparison of challenges and findings between the two demo cities Innbruck and Bolzano ». Thus, to better understand favourable conditions and barriers for the implementation of demonstration measures, a mutual learning process was started.

Findings of task 6.1 and task 6.2 which were presented to the internal stakeholders of the demo cities created the basis for this process which lead into the organisation of three interdisciplinary workshops between spring 2016 and May 2017, where local stakeholders from both demo cities participated. Each of these transnational workshop focused on challenges and findings related to one of the following topics :

- a. monitoring activities
- b. building refurbishments
- c. communication and dissemination activities.

The first workshop in spring 2016 was dealing with monitoring activities. As this workshop covered two large topics - “building refurbishments” as well as “smart districts, district heating networks and smart points”, the results were split into two chapters in the deliverable 6.3 – chapter 2 “challenges and findings related to monitoring of building refurbishments” as well as Chapter 3 “challenges and findings of other implemented technical measures.

The second workshop took place in November 2016 in Bolzano, stakeholder from both demo cities as well as other project partners discussed challenges related to building refurbishments – ranging from social to technical and legal questions.

The third workshop in May 2017 in Pafos focused on the analysis of dissemination activities of three stakeholder groups, that had not gained as much attention so far as the stakeholder group “tenants” – namely “youth - general public”, “scientific community” and “politicians”.

The outcomes of these workshops are the basis for this deliverable and were investigated concerning interdependencies, involvement, effects, interrelationship of stakeholders. Furthermore, the public perceptions of, and social and institutional impacts and dynamics induced by renewable energy or energy saving investments were analysed. The results and recommendations developed in task 6.3 are amongst others the basis for the knowledge transfer with the Early Adopter Cities and replication cluster cities, eager to start similar projects, via the online Toolkit (task 6.1).



2. CHALLENGES & FINDINGS RELATED TO MONITORING OF BUILDING REFURBISHMENTS

The first workshop focusing on “monitoring” took place in spring 2016 in Innsbruck. Representatives/internal stakeholders from relevant organisations participated. In the SINFONIA project “monitoring” was set up for building refurbishments (block of flats and schools) and affected local stakeholder groups. The following chapter considers financial, technical, legal, organizational, social and other challenges and possible solutions around the topic of monitoring of building refurbishments in the two pilot cities Innsbruck and Bolzano. In chapter 2.1 the findings of Innsbruck and in chapter 2.2. the findings of Bolzano at the time of the workshop are documented – and reflect the common view of all workshop participants. Of course, today these findings would be different due to gained experience and knowledge over the last 20 months. Some solutions that had been elaborated till today, have not been obvious in spring 2016. However, the aim of the report is not finding the perfect findings but the opinion and knowledge of the relevant stakeholders at that time of the project. Based on the identified challenges and solutions “key-messages” for Early Adopter and replication cities were defined with the workshops participants.

2.1 CHALLENGES & SOLUTIONS IN INNSBRUCK – MONITORING OF BUILDING REFURBISHMENTS

Building refurbishments are realised in social housings as well as in three primary schools in Innsbruck. Once the refurbishments are completed, monitoring equipment is installed and data from the flats and school classes is transferred to a secure data server for 12 months. The data collected is analysed regarding comfort and energy issues.

Tables 1 to 6 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary. Please consider, that financial, technical and legal challenges are closely connected to each other.

TABLE 1: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
Expenses of monitoring devices exceed the calculated costs (limited budget!)	After the tendering procedure for the monitoring equipment (responsible partner IKB) the final expenses of the sensors should be within the estimated budget.



	Reduction of planned measures e.g. reduce the space, reduce measures,...according to the budget.
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TABLE 2: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
<p>Integration of monitoring devices/systems:</p> <ul style="list-style-type: none"> - Calibration of monitoring devices - Data transfer: Wifi or cabling? <p>Development status of technology (LORA)</p> <ul style="list-style-type: none"> -- Data protection during data transfer <ul style="list-style-type: none"> - Comparability of monitoring devices enabling comparisons of measured and calculated energy demand applied in Innsbruck and Bolzano - Data transfer: different partners are working with different software (EXCEL, matlab) Different database structure in Bolzano and Innsbruck? - highly intrusive method for installation of ventilation systems; level of performance of companies 	<p>In Innsbruck the sensor communication is made by cable. For sensors where we know that cabling might be a problem, the Innsbruck partners also included wireless (Wireless M-Bus) sensors in the call for tender (e.g. gasmeters, watermeters). Thus Innsbruck is able to do the data transfer via Wifi as well as cabling. In Innsbruck a data concentrator is used in every building. In Innsbruck different types of inputs are used for the database. There are dynamic data that are received every e.g. minute (measurement data). Then there are quasi-stationary data that are changing e.g. once a year (occupancy...). And there are also stationary data e.g. data concerning the building (m²...). The database is able to handle with these different types. The Database also can handle data exchange in both directions but the interface has to be defined.</p> <p>Technical break-through in facade-integrated ventilation/electric system solutions for refurbishments (not yet available on the market).</p> <p>Training of handcraft workers in appropriate handling of building technology (windows, facade insulation,...)</p>

TABLE 3: THE FOLLOWING LEGAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
ELWOG (= Electricity sector act)	Data protection is a difficult topic and substantial for SINFONIA.
Data protection regulations	
MRG (Mietrechtsgesetz = tenancy law)	Anonymized data can be provided to the whole consortium without problems. Data security
DSG (Datenschutzgesetz= data protection act)	



	<p>experts decide about required steps.</p> <p>For not anonymized data the tenants give their permit only for a named organisation and with a clear description of the use.</p>
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TABLE 4: THE FOLLOWING ORGANIZATIONAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
internal communication	To put together data from the baseline (WP2) and monitoring data from refurbished buildings (WP5) is essential for the final assessment in the district. The work on KPI's is ongoing.
lack of economic KPI's	
definition of useful indicators	
availability of baseline data	

TABLE 5: THE FOLLOWING ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
Cooperation between SINFONIA's internal stakeholders (IIG; IKB; NHT; UIBK) regarding monitoring	In cooperation with IKB (budget for monitoring equipment) and NHT & IIG (building companies with the budget for cabelling costs) a monitoring concept was developed. After receiving the declaration of consents of the tenants equipment is ordered (IKB with support of UIBK), will be completed (standard control of functionality, calibration, naming) and sended to the building site for installation.
Procurement	
Comparability of data / indicators of different cities	
Who pays for monitoring equipment (cabelling)	

TABLE 6: THE FOLLOWING SOCIAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
Tenants do not give their approval for monitoring measurements in their flats	To convince tenants for the monitoring is a big challenge for the building companies.
Affortability of smart home measures	Design of information events for tenants
Participation of tenants in the monitoring measurements – how to motivate tenants; incentives	UIBK gives support when required to the building companies and tries to keep the work in the apartments as small as possible.
Extremely high burden for tenants in terms of noise and dust during refurbishment within the flats (especially core drilling for ventilation tubes and suspended ceilings)	Rent reduction Future refurbishment within flats only when tenants are resettled



2.2 CHALLENGES & SOLUTIONS IN BOLZANO – MONITORING OF BUILDING REFURBISHMENTS

In Bolzano social housings will be refurbished. Once the refurbishments are completed, monitoring equipment is installed and data from the flats is transferred to a secure data server for 12 months. The data collected is analysed regarding comfort and energy issues.

Tables 7 to 11 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary. Please consider, that financial, technical and legal challenges are closely connected to each other.

TABLE 7: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO:

CHALLENGES	SOLUTIONS
Expenses exceed calculated costs Limited budgets	No solution yet

TABLE 8: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Integration of monitoring measurements/devices Calibration of monitoring equipment Wifi or cabling? (adopting the WIFI connection means using batteries that run down quickly and are not very reliable)	Tenants live in their flats during refurbishment - > only a wireless connection is possible. The system adopted is a commercial monitoring system and not an experimental one. As much as possible, the use of batteries was avoided. The cable connection was chosen because it is more effective and it is possible in technical rooms, but also because it is possible to apply sensors. Inside the flats and along the stairways WIFI technology was preferred.
To study a data acquisition system which makes possible an easy exchange of data within the project.	The data acquisition system will work through a proprietary platform of the municipality of Bolzano, which makes it possible to use such data for in-house purposes. The data collected on the platform may be acquired and reprocessed by EURAC and transmitted to the displays placed in the monitored apartments.



<p>Data management. All monitored data provide a picture of how the tenants manage their own apartment, getting a significant amount of both quantitative and qualitative information. The municipality cannot handle such data mainly because it performs other types of functions, but also because it lacks dedicated staff. Another problem is the use of such data. A major point of discussion was whether to use the data only for internal use or also to educate tenants.</p>	<p>Data management has been outsourced to EURAC for one year.</p> <p>The monitored data is not only for in-house use, but will be used as part of several workshops addressed to the tenants for a proper use of their apartments.</p>
<p>Development status of technology (LORA)</p> <p>Comparability of tools for comparison of measured & calculated energy demand applied in IBK and BOZ</p> <p>Data transfer: different partners are working with different software (EXCEL, matlab)</p> <p>Database structure in BZ/IBK?</p>	<p>Meeting UIBK / BOLZANO /EURAC: Maybe we find a way to exchange data more comfortable within the project (XML) - also concerning KPI's; Database exchange.</p>

TABLE 9: THE FOLLOWING LEGAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
<p>Data protection regulations:</p> <ul style="list-style-type: none"> - Getting the necessary amount of permissions from tenants for monitoring - How to handle confidential information? 	<p>Legally tenants are the only owners of their monitoring data. The only possibility is to cooperate with them - every aggressive approach is negative.</p> <p>The Municipality of Bolzano e. g. solved the problem by sending the tenants of the apartments to be monitored a consent form in which it asked for permission to collect sensitive data, highlighting the benefits related to monitoring activities. Contracts with new tenants</p>

	include the permission for the monitoring automatically.
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TABLE 10: THE FOLLOWING ORGANIZATIONAL/ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO:

CHALLENGES	SOLUTIONS
<p>Internal communication</p> <p>Precise definition of different roles within the group of stakeholders (this should be done at the beginning of the project):</p> <ul style="list-style-type: none"> - who defines technical specifications (performance indicators not specification on technologies)? - How should the technical specifications be accounted for in the tender? - Who issues the tender? - Who is responsible for the implementation of the measures? 	<p>Definition of the different roles and tasks of the stakeholders involved in the monitoring process:</p> <ul style="list-style-type: none"> - The basic technical specifications are to be defined jointly by the Municipality of Bolzano, IPES, and EURAC; - the detailed implementation of monitoring subcontracted to external consultants. - Both the Municipality of Bolzano and IPES have customized and adapted techniques based on the different technologies used in their buildings. The description of these technical specifications will be taken into consideration within the tender (one tender for IPES and one tender for the Municipality). - The municipality of Bolzano will issue the tender for the monitoring of the City buildings and will be responsible for the implementation of the measures.
<p>Cooperation between internal stakeholders (BOZ; IPES; EURAC)</p> <p>Procurement</p> <p>Who pays for monitoring equipment (cabling).</p> <p>The Municipality will have to spend some money for the collection of monitored data, which it will then not be able to manage (please note that there is no 100% contribution for the costs for monitoring incurred in by the Municipality).</p>	<p>The City of Bolzano will spend money for the monitoring equipment for the collection of data it will not use, because of the lack of dedicated staff.</p> <p>IPES will spend all the money to pay the whole monitoring system inside the buildings, with only partial refund by the project. Most of the data collected have no-relevance for IPES statutory activities.</p>



TABLE 11: THE FOLLOWING SOCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Participation and communication of energy demand to tenants How should monitoring data be communicated to tenants?	Each monitored appartement will have a display on which some data will be viewed in real time. This information will help tenants to save energy and better manage their own apartments. In this regard, EURAC, in collaboration with BOZ, CASA CLIMA and IDM, has planned several workshops for tenants, with the following objectives: information / training on acceptance of the monitoring and on the correct use of the displays.

2.3 KEY-MESSAGES FROM INNSBRUCK AND BOLZANO – MONITORING OF BUILDING REFURBISHMENTS

In the following chapter, the key-messages from Innsbruck and Bolzano, that were drafted by all workshop participants based on the findings in the discussion, are recorded.

Key-messages from Innsbruck

- ▶ Elaborate and use only one consistent data protection agreement for data collection, that is developed by all involved partners and their lawyers. Time consuming!
- ▶ Use industry-standard monitoring equipment! Open source solutions might not be able to deliver data constantly and for a longer period!
- ▶ The monitoring period should be more than one year in order to secure quality and control mechanisms. The outcomes are important for future refurbishments!
- ▶ A critical number of flats to be monitored is necessary for statistical analysis!
- ▶ Incentives for tenants to encourage them to take part in monitoring campaigns!

Key-messages from Bolzano

- ▶ It is important to start the monitoring process with a clear vision of objectives, methods and results to be achieved. (Monitoring objectives have to be clear at the beginning of the project)
- ▶ Roles and tasks of involved partners need to be clear at the beginning of the project.



- ▶ Each partner involved has to master the framework of the monitoring process (legal issues, technical issues, planning, etc) in order to give a positive contribution.
- ▶ Data acquisition systems to be integrated in the existing database need to be studied in the starting phase
- ▶ The Municipality of Bolzano solved the problem of data protection by sending the tenants a consent form, in which the municipality asked for permission to collect sensitive data, highlighting the benefits related to monitoring activities.

2.4 COMPARISON BETWEEN INNSBRUCK AND BOLZANO - MONITORING OF BUILDING REFURBISHMENTS

In the following chapter the challenges of Innsbruck and Bolzano concerning the implementation of monitoring measurements are discussed. Comparing the two demo cities Innsbruck & Bolzano similar problems occurred:

- ▶ Tenants in social housings often have low educational background and are not open minded towards monitoring aspects. More time than thought was needed to deal with tenants.
- ▶ Both cities underestimated the issue of data protection; huge administrative effort is needed to get agreements between the involved SINFONIA partners and – in a next step - tenants. Very time consuming.
- ▶ Technical aspects such as the realisation of measurements, data transfer, database structure were underestimated. Time consuming -> delays.
- ▶ Working in a team with different institutions needs time and patience.

3. CHALLENGES AND FINDINGS OF OTHER IMPLEMENTED TECHNICAL MEASURES

Beside building refurbishments, a variety of technical measures was planned and implemented in both cities: A district heating network was realised in Innsbruck as well as in Bolzano, smart points were installed in Bolzano and the IKB implemented the powerhouse Rossau in Innsbruck as well as the IKB smart district, the power to heat site, and so on.

In the **first workshop – taking place in Innsbruck in spring 2016** - challenges and solutions around these topics were also discussed in an interactive way by all relevant stakeholders (internal) from the Demo Cities. In chapter 3.1 the findings of Innsbruck and in chapter 3.2. the findings of Bolzano at the time of the workshop are documented. Of course, today these findings would be different due to



gained experience and knowledge in the last 20 months. Some solutions that had been elaborated till today, have not been obvious in spring 2016. However, the aim of the report is not finding the perfect findings but is reflecting the opinion and knowledge of the relevant stakeholders at that time of the project.

3.1 CHALLENGES AND SOLUTIONS IN INNSBRUCK

In Innsbruck a district heating network, the powerhouse Rossau, the IKB smart district, the power to heat site and others were realised.

Tables 12 to 15 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary.

TABLE 12: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK:

CHALLENGES	SOLUTIONS
Expenses exceed calculated costs/ funding form the EU or national	Ongoing discussions with relevant partners for national or other funding sources

TABLE 13: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
Integration of systems Development status of technology	Development of technical solutions through dynamic simulations

TABLE 14: THE FOLLOWING LEGAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
Urban planning Construction regulations	Demonstrate the legal options and pick out the problems

None **organizational/administrative points** were discussed and relevant in Innsbruck:

TABLE 15: THE FOLLOWING SOCIAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
Cooperation between internal stakeholders (TIGAS; IKB; MagIBK) Procurement procedures	Participation on recurring appointments



3.2 CHALLENGES AND SOLUTIONS IN BOLZANO – SMART POINTS

In Bolzano the Municipality of Bolzano developed a concept for smart points.

Tables 16 to 20 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary.

TABLE 16: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Expenses exceed calculated costs Funding (EU / National)	No solution yet

TABLE 17: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Long and complex exchange between BOZ and EURAC to define: a) functions and services offered by the Totems / Smart Points; b) nature, quantity and quality of data monitored by 150 Smart Points. Time consuming	Start with clearer ideas: this would avoid many discussions, would be less time-consuming and would facilitate final decisions.
Integrating monitoring data of the new grid Smart Point into the current systems of data collection and management of the municipality of Bolzano.	More meetings between all relevant stakeholders (BOZ, EURAC, IDM, Alperia) before to start the project in order to better understand how a new smart grid can be integrated into the systems currently used in the city.

TABLE 18: THE FOLLOWING LEGAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
The inclusion of 'approved' components (e.g. vehicle points, electric bike charging stations) in the Totem (integrated smart point) was challenging. Time consuming market research	Deeper analysis of technical details and timely knowledge of regulations of individual components at an earlier stage of the project. The national legislation on the "approval" can not be changed.

TABLE 19: THE FOLLOWING ORGANIZATIONAL/ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Communication and operation between the different stakeholders (BOZ and EURAC)	no solutions

TABLE 20: THE FOLLOWING SOCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO:

CHALLENGES	SOLUTIONS
Acceptance Social Acceptance and right use of Smart Points (with Interactive Tools)	User Friendly Design and Location Friendly Design

3.3 CHALLENGES AND SOLUTIONS IN BOLZANO – DISTRICT HEATING NETWORK

In Bolzano Alperia implemented a district heating network. Tables 21 to 24 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary.

TABLE 21: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
High investment costs - expenses exceed calculated costs Funding (EU / National)	Higher heat loss reduction = shorter payback period Adopt a different perspective: the major goal of the H2 engine is to achieve considerable emission reductions, rather than to have some economic benefits.

TABLE 22: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Integration of systems Development status of technology	Collaboration with relevant stakeholders with deep knowledge on the technologies to be implemented (Software Termis for district heating + H2 Engine for district heating)

TABLE 23: THE FOLLOWING LEGAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
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Urban planning Construction regulations	Strong collaboration with Alperia's legal office, - - lessons learned from previously implemented district heating projects, - communication with relevant offices for obtaining authorizations
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**TABLE 24: THE FOLLOWING ORGANIZATIONAL/ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT
IN BOLZANO**

CHALLENGES	SOLUTIONS
Cooperation between stakeholders (Alperia; Municipality of Bolzano)	Intensivy communication and collaboration exchange of information
Procurement procedure	Strong collaboration with Alperia's legal office and with the purchasing department

No **social points** were discussed and relevant in Bolzano.

3.4 KEY-MESSAGES FROM INNSBRUCK AND BOLZANO – DISTICT HEATING, SMART DISTRICT, SMART POINTS

In the following chapter, the key-messages from Innsbruck and Bolzano, that were drafted by all workshop participants based on the findings in the discussion, are recorded.

Key-messages of other technical measures from Innsbruck

- ▶ Keep in mind, that utilities are bound to general laws as well as to additional national regulations.
- ▶ Reasonable effort is given/is necessary for data transfer (e.g. personal costs, hiring a server) - this should be clarified in the very beginning of the project.
- ▶ In order to avoid differences and friction during implementation, it is essential to define clear responsibilities and competences within the project consortium before starting technical implementations (for e.g. costs, material, equipment, execution, ...).
- ▶ Recording of data is a very sensitive process; - for this it is recommendable to draft contracts between the various stakeholder. To establish/generate such contracts enough time has to be calculated.
- ▶ Beside legal challenges a technical analysis of the current situation is essential



- ▶ Considering legal regulations and the state of technology, smart grid and district heating can be implemented without major problems.

Key-messages of other technical measures (smart points) from Bolzano

- ▶ Do not start working on the project details before having a clear list of services offered to citizens by the Integrated Smart Points
- ▶ At the very beginning of a project, administer questionnaires to survey the needs and desires of citizens in order to define the list of services offered by Smart Points.
- ▶ Realize the smart multifunctional Totem Smart Point capable of delivering truly useful services for citizenship.
- ▶ Study in advance how to integrate the new smart grid into the current monitoring systems of the city.
- ▶ Think of an attractive and user friendly design of the smart point as a landmark in the city.

These key-messages were drafted for the district heating network from Bolzano

- ▶ Intensive collaboration of involved departments within the company/institution is essential for the success of a research project.
 - ▶ Start at the very beginning of a project to deal with all the administrative, regulatory and legal issues of implementing a demo activity (5 years seem a long time, but sometimes they are not)
 - ▶ Make sure to have a very clear view on the actual situation and a vision of the final purposes of your planned activity at the start of the project
 - ▶ Do a deep analysis of the technical details of the demo activity in the first months of the project and inform all relevant stakeholders on the outputs
 - ▶ Pay attention to map internal and external factors that may affect the Project thoroughly
- Procurement procedures always take longer than originally planned

3.5 COMPARISON BETWEEN INNSBRUCK AND BOLZANO – OTHER IMPLEMENTED TECHNICAL MEASURES

In the following chapter the challenges of Innsbruck and Bolzano concerning the implementation of other implemented technical measures are discussed. There are quite similar challenges and solutions in both cities:

- ▶ High investments costs



- ▶ Different institutions and different stakeholder groups need to cooperate and work together in interdisciplinary projects
 - ▶ Long planning and implementation phases for large and innovative projects (legal, administrative, regulatory challenges) need to be considered
- 



4. CHALLENGES AND FINDINGS RELATED TO BUILDING REFURBISHMENTS

The **second workshop** took place in **November 2016 in Bolzano where the** relevant stakeholders from both demo cities discussed the challenges of the refurbishment process (one working group for Innsbruck, one for Bolzano). Not only technical, but also social, legal and organisational challenges were faced by the housing companies. The cost-benefit ratio of the measures has to be positive to provide possible solutions for replication. In the mentioned workshop, each demo city presented the results of the discussion in the plenum. After this plenary session, 3-5 key-messages per city were developed as recommendations for Early Adopter and the replication cluster cities.

In chapter 4.1 the findings of Innsbruck and in chapter 4.2. the findings of Bolzano at the time of the workshop are documented – and reflect the common view of all workshop participants . Of course, today these findings would be different due to gained experience and knowledge in the last 20 months (see also introduction of chapter 3).

4.1 CHALLENGES AND SOLUTIONS IN INNSBRUCK – BUILDING REFURBISHMENTS

Building refurbishments are realised in social housings as well as in three primary schools in Innsbruck. These building refurbishments are comprehensive. The following steps are realised: replacement of windows, insulation of the facade, of earth-bearing walls as well as the top floor, electric installation work (e. g. conversion to LED lighting) and installation of ventilation systems, PV collectors on the roofs, etc. All these refurbishment activities are performed while tenants are living in their flats. Tables 25 to 29 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary.

TABLE 25: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
Social housing tenants / Social housing companies have limited budgets	Cheap but sustainable solutions
Structure of the buildings is not known (houses of 1950-1970s): complex cost estimation - no fixed costs are possible in the beginning	Step by step refurbishments
Depreciation of durable equipment	Eligible as consumables / full costs would be good! (concerning EC financial guidelines)

TABLE 26: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK



CHALLENGES	SOLUTIONS
Technical requirements are very high in SINFONIA (a lot changed since the 1950s - laws concerning statics, technical details of windows, ventilation systems, elevators...)	No comprehensive refurbishments - step by step refurbishments are recommended
Too complex and too much invasive heating/ventilation systems	Research for prefabricated integrative solutions
Real innovations are not standard yet - are not sure if they are successful, there is no guarantee that they will last for 20-30 years.	Separation between costs of energy measures and costs of other measures , so that "energy" refurbishment does not seem to be so expensive!

TABLE 27: THE FOLLOWING LEGAL/REGULATORY POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
New "standards" for housing (OIB, Norms, etc.) increase the costs and requirements in all aspects	no solution yet
NHT: needs the agreement of 75% of the tenants to start refurbishments	no solution yet
Different national laws to be considered	no solution yet

TABLE 28: THE FOLLOWING ORGANIZATIONAL / ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT IN INNSBRUCK

CHALLENGES	SOLUTIONS
Partners with different interests	Closer contact of the partners in the planning phase Knowledge transfer and process innovation
Project applicants are not the project implementators, the involved team members/personel changes	Good partner interaction, good overall atmosphere
SINFONIA is a research and demonstration project	Planning phase should not be underestimated; project duration of five years too short (project extension) for innovative projects.

An important role within large projects can be an additional management and coordination layer, is the so called "district leader" in SINFONIA, who is responsible for regular district meetings, site-visits and the exchange between all local partners.



TABLE 29: THE FOLLOWING SOCIAL POINTS REGARDING TENANTS WERE DISCUSSED AND RELEVANT IN
INNSBRUCK

CHALLENGES	SOLUTIONS
Unpredictable behaviour of tenants Mixed social groups	To find the right time and the right way to inform the tenants
Tenants live in the flats while refurbishing // these are social housings!	To find individual solutions for each tenant (needs a lot of time). Complete refurbishment inside the flats only when the flat is empty (step by step refurbishment) Innovative technical solutions to be installed in flats without major intervention.

A variety of participatory approaches was exercised in Innsbruck after first challenges with tenants. A comprehensive description of these activities can be found in all progress reports of the SINFONIA project.

4.2 CHALLENGES AND SOLUTIONS IN BOLZANO – BUILDING REFURBISHMENTS

In Bolzano social housings are refurbished in the SINFONIA project. These building refurbishments are comprehensive – the following steps are realised: replacement of windows, heat insulation of the façade, of earth-bearing walls as well as the top floor, electric installation work (e. g. conversion to LED lighting) and installation of ventilation systems, PV plants on the roofs, etc. As in Innsbruck these refurbishments are performed, while tenants are living in their flats.

Financial, technical and legal challenges should be seen as closely connected to each other. Tables 30 to 34 are transcriptions of the workshops results, additional comments and explanations are put below, where necessary.

TABLE 30: THE FOLLOWING FINANCIAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Ambitious refurbishment is not economically sustainable, the pay-back is longer than the technical life	Pay-back driven analysis and more realistic targets are necessary
Very high technical targets have to be reached within Sinfonia (very expensive)	New financial roles are needed – it is not easy to find financial resources for innovative projects



An additional floor as part of the business plan. It was not possible to do it in all the case studies because of structural problems.	Structural audit in order to choose the buildings that will be refurbished Design the projects more realistic (regarding targets and costs) --> better analysis in the beginning
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TABLE 31: THE FOLLOWING TECHNICAL POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Some technical details are too expensive	Deeper analysis of technical details should be done more in advance
Timeframes (planing and implementation) are delayed, lots of money and time is needed to recalculate and to redesign	External factors cannot be changed or managed

TABLE 32: THE FOLLOWING LEGAL/REGULATORY POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
New laws during the project period concerning earthquakes and statical conditions of houses were released resulting in new legislative conditions for the process, delays in the planning phase and shatters the timeframes	External factors cannot be changed or managed

It can be recommended for the planning of similar projects to consider possible delays and difficulties early in advance.

TABLE 33: THE FOLLOWING ORGANIZATIONAL / ADMINISTRATIVE POINTS WERE DISCUSSED AND RELEVANT IN BOLZANO

CHALLENGES	SOLUTIONS
Long project approval and negotiation process of FP7 projects	No solution yet, but Early Adopter Cities should be aware of this and think about it in advance...

TABLE 34: THE FOLLOWING SOCIAL POINTS REGARDING TENANTS WERE DISCUSSED AND RELEVANT IN BOLZANO:

CHALLENGES	SOLUTIONS
Tenants are often old people or with low educational level, they are against	Installation of demo appartements to show the planned refurbishments in advance



refurbishments aprioristic and cannot see the benefits	
We are not sure that tenants will manage the refurbished flat in an optimal way.	Learning activities for tenants (regarding technical equipment) and a user manual about the right management of refurbished flats

4.3 KEY-MESSAGES FROM INNSBRUCK AND BOLZANO – BUILDING REFURBISHMENTS

In the following chapter, the key-messages from Innsbruck and Bolzano, that were drafted by all workshop participants based on the findings in the discussion - are recorded.

The following **key-messages were drafted from Innsbruck**

- ▶ **Change the image of refurbishments from negative to positive (tenants are partners!)**
- ▶ **Refurbishments are more complicated and more expensive than new buildings when considering the the whole life-cycle costs**
- ▶ Step by step refurbishment is recommended when tenants stay in flats while refurbishment
- ▶ Knowledge transfer and collaboration amongst partners are essential for the success of a project
- ▶ Build living structures in the cities that last longer than the project duration

The following **key-messages were drafted from Bolzano**

- ▶ **Start the discussion and exchange with tenants at the very beginning of a project; the set up of a participation approach is crucial**
- ▶ Do not start a refurbishment project before having a very clear view on the actual situation and a vision of the outcome
- ▶ Interventions of such a high level should be carried out in empty buildings / when no tenants live inside
- ▶ No acceptable payback: Start this type of refurbishment only if your main goals are different than economic e.g. social, technical, well being of tenants (do not expect a financial profit out of these refurbishment projects)

The 3 top-keymessages are highlighted in bold (very important for the representatives of both cities)



4.4 KEY-MESSAGES IN TENANT PARTICIPATION

The following 16 key-messages regarding tenant participation had been drafted from literature (task 6.1) as an example for a possible stakeholder involvement processes with a special focus on sustainable retrofit projects of lived-in buildings.

- ▶ A participation process is a benefit for every stakeholder due to reduced conflict and cumulative knowledge over market demand and needs.
- ▶ Every project will differ in size, type, economic-, cultural- or social characteristics. Therefore, every participation method must be individually adapted for the situation at hand. Hence, most guidebooks put a special emphasis on a degree of flexibility that each method should inherit.
- ▶ For all levels of participation that exceed the basic level of information it must be clear that the outcome of participation processes can be fixed from the beginning; a participation process will inevitably result in new results.
- ▶ External moderation is a key criterion to guarantee fair and neutral discussions between the stakeholders.
- ▶ Start involvement activities as early in the process as possible.
- ▶ Participation structures should be maintained until the refurbishment is finished and beyond to be able to react to failures and foster social bonding within the community.
- ▶ All tenants (from every social and cultural group) must be informed and invited to be part of the involvement process.
- ▶ Different groups of stakeholders may have very different access to certain types of information. Therefore, alternative methods may need to address these different groups with respect to stakeholder characteristics (social class, migration, type of business, size of business...).
- ▶ Architects, construction managers ect. should be personally available onsite. Information about these “office hours” should be sufficiently available.
- ▶ Graphical support like thermo-graphic images or construction time-lines are a must in order to gain widespread acceptance and support for energy efficiency measures.
- ▶ Critical, highly engaged individuals or organisations that normally exacerbate conflict and distrust, can be highly useful for the project, if they are asked to contribute to the project early onwards.
- ▶ Housing associations should draft individual rent agreements to acknowledge already refurbished flats through the tenant in order to clearly account for the work needed to be done by through the general refurbishment.



- ▶ Wherever possible, no matter how small the decision would be, to include certain aspects of codetermination are beneficial for the acceptance of the project.
- ▶ As consumer behaviour can greatly affect the final energy savings from the refurbishments, educational measures about heating, electricity and appliance are a must for the success of a project.
- ▶ Empower tenants to control their services independently (gas, water, electricity,...) and make the immediate savings as transparent as possible in order to fully convince tenants of the use of a retrofit.

Many retrofits turn out to save less energy than expected, therefore they are often unable to meet the expected financial benefits in saving energy.

4.5 COMPARISON BETWEEN INNSBRUCK AND BOLZANO – BUILDING REFURBISHMENTS

Regarding building refurbishments both demo cities faced similar challenges in the last three years. It became clear, that partners of both demo cities definitely underestimated the challenges they had to face, especially when it comes to the work with tenants.

The high level of innovation within the SINFONIA buildings is one of the biggest challenges. SINFONIA is a research and demonstration project and the realization of activities time consuming. The unknown building structure of old houses (1940-1970s) caused comprehensive replanning and unexpected delays in both cities.

Representatives of both cities see two major points:

1. Interaction with tenants should not be underestimated since a positive interaction is crucial for the success of refurbishments
2. Generally general renovation should be avoided with tenants living in their flats; if this is the case a step-by-step refurbishment is recommended.

Comparing the key-messages generated within SINFONIA and those from literature showed, that the SINFONIA ones are not as much in detail and in depth as those from literature (e.g. the involvement of the tenants). This does not mean it was of little relevance, but partners did not have so much time in the workshop to go into details. The importance of participatory approaches is much more stressed within literature. Maybe a deeper understanding of participatory approaches would have avoided a number of problems with tenants in both demo cities.



The reality of demonstration projects differs due to constraints as the legal framework, available time of project partners, political frameworks etc. Reality cannot e.g. reach the level of participation that is described in literature, what can be seen as optimum.



5. CHALLENGES AND FINDINGS RELATED TO COMMUNICATION AND DISSEMINATION IN THE FIRST 3 SINFONIA YEARS

The variety of communication and dissemination activities of SINFONIA was seen as another key-factor for the success of the project.

Different activities have been placed, to reach the public and to reach internal as well as external stakeholders. Time frames and formats of these activities were analysed as well as the consortium's perception of these activities.

In order to discuss and evaluate already ongoing or finalised activities a **third workshop** - taking place in **Mai 2017 in Pafos, Cyprus – was held in order to** develop recommendations for Early Adopter Cities and other followers concerning dissemination and communication activities that are reasonable to reach various stakeholder groups.

In a **first step**, an overview of activities „what has been done in the last 3 years of SINFONIA“ to reach internal and external stakeholder was presented to the audience. In a **next step** relevant representatives of both demo cities as well as other members of the consortium focused on three selected stakeholder groups, namely “Youth-Public“ / „Politicians“ / „Scientific community & professional audience“, and evaluated in a group work the main activities already performed within the project and their relevance for one of the proposed three stakeholder groups. The selection was done because these stakeholder groups were not tackled in the last years' analyses. The stakeholder group of tenants was not discussed, as this group already had a strong focus within the 6.3 workshop series. After the group work the outcomes of each group were presented in the plenum focussing on recommendations for Early Adopter Cities for each stakeholder group.

In the following chapters firstly, an overview on the “types of activities“ will be provided and secondly the three selected stakeholder groups will be discussed.

5.1 WHAT HAS BEEN DONE IN THE LAST 3 YEARS

After analysing the periodic reports of the first three project years, a variety of more than 80 dissemination and replication activities to present SINFONIA to a wider audience was documented in spring 2017. Figure 1 provides an overview about dissemination activities that vary from school workshops to press conferences .





FIG 35 - DISSEMINATION AND REPLICATION ACTIVITIES.

During the preparation of the workshop it was decided together by the lead of the task (SAT) and lead of the workpackage (alpS) to focus only on the category “events”, as they are reported by all partners in detail in every progress report and thus can be evaluated effectively. All other activities like “print, press and film” and “activities for tenants” are listed in chapter 5.1.2. but will not be further discussed or evaluated. The limited time frame of the workshop did not make it possible, to evaluate these “other activities” as well in detail. Furthermore partners report their “print and press” activities in the yearly reports but do not make them available to all partners (in the reports only the “headline” is recorded, but these articles are not available for download for all partners). It was not possible to perform a serious analysis of these activities. Therefore the focus had to be set on the above mentioned stakeholder groups for the workshop in Pafos.

In May 2017 a table was distributed amongst the SINFONIA partners in order to collect information about their main dissemination activities. Furthermore, partners were asked for their experiences and recommendations which was used as an input for the workshop in Pafos and all further analysis. The synopsis of these information is summed up in the chapters 5.2.1., 5.3.1 and 5.4.1..



5.1.1 EVENTS

These dissemination and replication activities can be analysed concerning their differences in time, place, type of activity as well as targeted stakeholder group. All these activities have been summed up in the category “events” - in the following a not complete number of events in connectin with SINFONIA (from the beginning of the project till May 2017) is listed:

- ▶ Open Door Event - Long night of research
- ▶ Press conferences
- ▶ Participation at international scientific conferences, workshops and exhibitions
- ▶ Organization of infodays and other events
- ▶ CasaClimaTour – conference and infoday
- ▶ Organization of site visits
- ▶ Meetings with regional and national authorities
- ▶ Participation at international fairs
- ▶ School Workshops
- ▶ Young University, Day of Action «Uni Kids Day»
- ▶ Ideas competition « Smart cities – cities of the future »
- ▶ Monitoring advisory board Innsbruck
- ▶ Replication activities for Early Adopter and replication cluster cities
- ▶ International Passivhouse days
- ▶ Local stakeholder panels in Innsbruck and Bolzano
- ▶ Regional stakeholder workshops
- ▶ Exchange with other EU-projects (z. B. Smarter Together)

5.1.2 OTHER ACTIVITIES

All other activities like “print, press & film” and “activites for tenants” are listed listed here but will not be further discussed or evaluated:

- ▶ Print, press and film:
 - SINFONIA Film in Innsbruck and Bolzano
 - Various press releases / press articles
 - Scientific publications, reports and conference papers
 - Publications in newsletters and on websites



Banner with the SINFONIA logo on refurbishment sites in PV Flowers next to the « Baggersee » Innsbruck, with an Infoboard about SINFONIA

- ▶ **Activities for tenants** (a more comprehensive and detailed summary can be found in all 6 and 12months progress reports of WP 6 of the SINFONIA project)

Innsbruck:

Tenants survey (before and after refurbishments – higher participation rate due to incentives)

Presentations of planed refurbishment activities to tenants

Interactive workshops with tenants (active sharing of knowledge with tenants, discuss open questions, concerns, wishes of tenants) – one-way-communication with tenants is not suitable for in-flat-refurbishment-actions

Personal consultations on the building sites offered by housing associations once a week for two hours, to sort out open questions during the construction phase. At these consultation hours tenants can get first hand information about ongoing construction measures by the construction and property manager.

Demo appartements in each building to show tenants which technical measures will be implemented

Bolzano :

Demo appartements - tenants will be given the possibility get an idea on the outcomes of the refurbishments by the installation of demo apartments. These demo apartments are refurbished within the project and open to all interested tenants. Benefits associated with energy refurbishments are highlighted.

Meetings with tenants: A series of meetings with tenants planned by the Municipality of Bolzano took place and had a dual objective - on the one hand, to inform tenants about the refurbishments of the houses, on the other hand, to meet the main needs and concerns of the tenants.

Questionnaire – high participation rate – strong interest of tenants in refurbishment activities

Social learning approaches – neighbourhood parties (more information about the project and the ongoing refurbishments)

User manual for tenant: will be a «guideline» in order to guarantee the correct use of new technologies in the SINFONIA apartments. With this guideline tenants should better manage their apartments and the main technical devices , with regards to heating, ventilation and electricity. Releasing a user manual is a good strategy to interact with tenants. It prevents tenants to feel like passive recipients of the refurbishment. Tenants are more active in the management of their newly refurbished apartments – a key factor for achieving the expected energy savings.

5.2 YOUTH - GENERAL PUBLIC

5.2.1 WHAT HAS BEEN DONE SO FAR FOR THIS STAKEHOLDER GROUP

▶ **School Workshop programme Innsbruck**



SINFONIA; “Smart INitiative of cities Fully cOmitted to iNvest In Advanced large-scaled energy solutions” has received funding from the European Union’s Seventh Programme for research, technological development and demonstration.

Content and aim of the activity: Series of workshops on « smart cities » for the pupils of the refurbished SINFONIA primary schools in Innsbruck

Stakeholder groups intended to reach: Pupils aged 7-8, from the refurbished schools

How often took this activity place: 29.2.2016 / 15.2.2016

Scope: Local

In which project period is it good, to initiate this activity: Implementation phase and project end

Recommendations: This activity is highly recommended. The knowledge of the pupils concerning energy and sustainability issues varied very strongly. There is still a lot of awareness raising necessary. The format was working very well (different stations with different topics - see also the programme of this activity). Interest of teacher was only partly detected. The motivation of pupils was higher than those of the teachers.

► Uni Kids Day and Ideas competition, University of Innsbruck

Content and aim of the activity: Interactive workshops by all SINFONIA partners in Innsbruck on energy, renovation of schools and houses, a PV race course and on the baseline, taking place on the two « Uni Kids Days » 2015 and 2017 at the University of Innsbruck. During these two Young University Days an ideas competition for kids in writing and painting (« Smart cities – cities of the future «) was organised by SINFONIA partners. Pupils aged 8-18 years from Innsbruck & Tyrol participated. Among the ideas that were submitted, an award ceremony for the best ideas with the vicemajor of Innsbruck was held 2 weeks later.

Stakeholder groups intended to reach: Pupils from all over Tyrol, aged 8-18years, all types of schools

How often took this activity place: 06.11.2015 – 10.12.2015 / 21.04.2017 - 8.5.2017

Scope: local and regional

In which project period is it good, to initiate this activity: Implementation, project end dissemination

Recommendations: Because SINFONIA also refurbishes schools in Innsbruck, pupils are dedicated as stakeholder group. Activities with kids are definitely recommendable, for they create/ increase awareness for sustainability. Pupils showed a huge motivation to deal with and think about this topic in the given context of their current (urban) living environment and their ideas for a sustainable future. Moreover, many participants revealed detailed background information on sustainability matters, indicating that this is a topic of interest to the target group. The interest of pupils and motivation to engage in that topic should be encouraged by such activities.

Regarding young people as the future citizens chance in the future it is very important to keep them in the process.

The ideas competition and award with the vicemajor is a good possibility to have interaction between pupils and local politicians.

► Open Door Event / Long night of research

Content and aim of the activity: Active participation in Innsbruck as well as in Bolzano of the SINFONIA consortium at « Long nights of research & open door events » with an interactive stand about the project (e. g. demonstration of effects of thermal insulation of buildings with infrared



camera, information on SINFONIA monitoring activities, game « how to save energy »). The aim is to bring scientific content to the public.

Stakeholder groups intended to reach: general public

How often took this activity place : 22.04.2016 (Ibk) / 26.09.2014 & 30.09.2016 (Bolzano)

Scope: local & regional

In which project period is it good, to initiate this activity: implementation, project end and dissemination

Recommendations: This kind of event is a good possibility to introduce "SINFONIA & science" to a large group of people all over the city.

It is an excellent activity to reach the stakeholder group of the citizens of Bolzano. Alperia in Bolzano and UIBK & SAT in Innsbruck had a very positive experience. It is a unique opportunity to familiarize the general public, regardless of age, with the world of research in an interesting way, providing a forum for researchers to meet and interact with the general public. With this initiative, the citizens of Bolzano and Innsbruck can meet researchers/technicians and discover places not generally open to the public (e.g Alperia's district heating plant), visit demonstrations and simulations and generally exchange views and ideas.

5.2.2 DID WE REACH THE STAKEHOLDER GROUP WITH THIS RANGE OF ACTIVITIES – CHALLENGES?

The discussion in Pafos showed that the stakeholder group “pupils and youth” was strongly focused on in the project, especially in Innsbruck due to the refurbishment of three primary schools. The activities already performed can be seen as a success. The involvement of teachers within activities can be improved. The consortium will continue to focus on “pupils and youth” and is planning new events in 2018, e. g. a participation at the next “Uni Kids Day in Innsbruck”.

Reaching the stakeholder group “general public” was not the main focus in Innsbruck and Bolzano, which should be changed in the remaining 2-3 project years. The CasaClima-Tour in Bolzano and South Tyrol was very successful and reached, beside professionals, also the interested general public. The active participation at already existing events for the general public like the “long nights of research” is highly recommended and should be more in the focus of the whole consortium.

The main challenge for both stakeholder groups are the funding sources!

Two activities planned in Bolzano – the demo apartments with a pathway for kids and adults in these apartments as well as the smart points – are not realised yet. These activities are expected support awareness raising within these two stakeholder groups in an interactive way.



5.2.3 WHAT CAN BE RECOMMENDED TO OTHER CITIES - IDEAS FOR THE UPCOMING PROJECT YEARS

Based on a discussion in Pafos on “how could these stakeholders” be reached in a better way the

following points can be recommended for the stakeholder group « PUPILS – YOUTH »:

- ▶ To invite technical schools to building sites
- ▶ To organize and offer regular school workshops
- ▶ To develop permanent posters / small exhibitions in schools before and after refurbishments on energy issues
- ▶ To organize an event during summer in a refurbished school for pupils and their parents (to visualize the steps of refurbishment)
- ▶ To better involve headmasters and teachers (more communication necessary)
- ▶ To use social media – games and apps on energy issues
- ▶ To train pupils as „energy guides“ in their classes (on user behaviour) – as already performed in Bolzano
- ▶ To organize a competition between schools or classes regarding energy use
- ▶ To push overlapping subjects on energy issues for older pupils in schools

For the stakeholder group « GENERAL PUBLIC « the following can be recommended:

- ▶ To reach them via pupils / schools
- ▶ Print and press – social media
- ▶ To transport SINFONIA as part of sustainability / energy issues in the regions / cities
- ▶ To organize “the Energytour” in South Tyrol also for Northern Tyrol
- ▶ Getting the commitment of the city council on energy topics is essential - > for press / PR etc
- ▶ Involving other organisations like „Alpine clubs“ or church institutions to promote the topics “energy, PV, etc.”

5.3 POLITICIANS

5.3.1 WHAT HAS BEEN DONE SO FAR FOR THIS STAKEHOLDER GROUP

▶ Press conferences

Content and aim of the activity: Press conferences were held in both cities at the beginning of the project as well as later in the project, when the first measures started or were completed. Press conferences are on the one hand useful to inform politicians about the progress of the project and on the other hand to involve them in an active way.



Stakeholder groups intended to reach: Politicians, general public, companies

How often took this activity place: 11.09.2014 - The operational phase starts - BOZ, EURAC, IPES, SEL, Casaclima // 23.09.2014 Kick-off press conference Ibk // 30.6.2016 - Presentation of refurbishment projects of IPES and MoB // 29.11.2016 - Power to heat, IKB // 15.2.2017 - half time of the project, presentation of the film, vicemajor of Ibk and MagIbk /

Scope: Local and regional

In which project period is it good, to initiate this activity: Project start, implementation and project end

Recommendations: Press conferences are important to present the citizens activities of the demo cities : what SINFONIA is about and to get political commitment as well as a positive public perception for the project. It can be recommended to organize press releases and press conferences more frequently.

► Organisation of Infodays and other events

Content and aim of the activity: From the very beginning of the project, a broad variety of infodays was organized in both cities. Smart city dialogues, exchange meetings & exkursions with partner cities or cluster companies, presentations in the city council, etc. had the aim, to proactively inform about the content, the goals, the outcomes and the challenges of the project on the one hand and enable exchange between the affected stakeholders on the other hand.

Stakeholder groups intended to reach: Politicians, public authorities, designers, social housing companies, general public, companies

How often took this activity place : Ibk, 21.10.14 – SINFONIA Info-Event, Ibk partners plus Eurac / Wohnplus Akademie 24.3.15 – SAT, NHT in Innsbruck / Smart City Dialog 20.4.15 Innsbruck – SAT, IIG, NHT ; PHI / Smart City Info Day Ibk-IKB, 21.5.15 / Meeting of Cluster Companies – SAT – 23.6.15, Ibk / Smart Cities : Chancen in der Euregio. 28.1.16, Bolzano. SAT & Eurac / Exchange meeting with city of Grenoble, 19.9.2016 in Ibk on sustainable buildings / Participation on the Smart Cities and Communities Info Day 2015 – 12.5.2015, Brussels, greenovate / 15.02.2017 - presentation in the City Council of Innsbruck / Dialog at the Innsbruck exhibition: SINFONIA - smart specialisation - smart city projects, 9.5.2016 / Presentation at the "Innsbruck circle": "SINFONIA - smart communities", 26.04.2017 / Information on SINFONIA for the public at a total of 20 district days (10 in the fall 2016, 10 in the spring 2017) / Inspection and photo session "refurbishment primary school Angergasse as part of SINFONIA

Scope: Local & regional

In which project period is it good, to initiate this activity : project start, implementation & project end

Recommendations: Infodays are highly recommended to reach politicians, the general public as well as the professional audience to inform in a proactive way about the goals, the progress and the results of the project.

The target group of the first SINFONIA infoevent in Ibk was too big. It would have been better to separate it into several smaller groups dedicated to single target groups. e.g. politicians, tenants from



SINFONIA bildungs etc. Summing up it can be recommended to organise infoevents together with press releases more frequent in order to raise peoples awareness to projects like SINFONIA.

► **Monitoring advisory board Innsbruck**

Content and aim of the activity: The monitoring advisory board was introduced in Innsbruck, in order to regularly inform political players on a regional level. This board was organized by the district leader SAT - relevant stakeholder from the regional administration, the city administration and other institutions affected with energy relevant issues were invited.

Stakeholder groups intended to reach : politicians, public authorities

How often took this activity place : 06.08.2015 / 08.10.2015 / 09.12.2015 / 16.03.2016 / 05.10.2015 / 03.11.2017

Scope: Local and regional

In which project period is it good, to do this activity: Project start, implementation and project end

Recommendations: As SINFONIA is a large and politically affected project, the introduction of a monitoring advisory board was seen as important in Innsbruck, in order to communicate project goals, outcomes and challenges also to a wider political audience. A monitoring advisory board is a good possibility to get regular contact with the political administration at regional level proactively and inform about the progress of the project. It can be recommended, to organize it twice a year, starting with the beginning of the project. More frequent meetings can not be recommended, as there should be valuable input at every meeting to have good discussions. A combination of presentations with a site-visit is also a good way to get interaction of various stakeholder.

In Bolzano no monitoring advisory board was introduced.

► **Organization of site visits & study tours**

Content and aim of the activity: A guided tour to SINFONIA demonstration measures (refurbishment sites, district heating network, smart district, etc.) was organised by the district leaders or other project partners, accompanied by a general presentation of the SINFONIA project and specific thematic presentations. These site-visits took place for Early Adopter Cities, interested professional audience, delegations of companies etc.

Stakeholder groups intended to reach: Companies, professional audience, Early Adopter Cities

How often took this activity place: AVT Forum, 20.9.2016, Innsbruck / EAC Rosenheim visits Innsbruck 13.10.2016 / Austrian Chamber of foreign trade in Padua, visit with a delegation of architects & civil engineers 16.02.2017 in Innsbruck

Scope: Local, regional and european

In which project period is it good, to initiate this activity: Implementation and project end

Recommendations: Study visits are very effective and recommendable, as experts and professionals talk on site on specific issues and challenges.



5.3.2 DID WE REACH THE STAKEHOLDER GROUP WITH THIS RANGE OF ACTIVITIES - CHALLENGES

In both cities the project partners agreed, that it is of major importance to foster official as well as unofficial relationships to local and regional politicians, like the mayor and the city council. Regular explanations of the goals of the project as well as demonstration of the progress in the implementation of the project is essential to get and maintain political support. Within the consortium it can be recommended, to define responsible persons, who have already experiences and connections to politicians – these persons should continue their activities in a proactive way with the main messages of the SINFONIA project. To present positive stories in an active way is extremely necessary for a good project communication.

In both cities a good contact was established to the responsible politicians, e.g. the vice-mayor in Innsbruck, the responsible person for housing, etc. More contact to the city council, e.g. by yearly presentations of the progress and by actively inviting them to building sites / site visits can be recommended.

5.3.3 WHAT CAN BE RECOMMENDED TO OTHER CITIES - IDEAS FOR THE UPCOMING PROJECT YEARS

Based on the discussion in Pafos on “how could the selected stakeholder groups” can be better reached the **following points can be recommended for the stakeholder group « POLITICIANS »:**

- ▶ Keep in mind that in a five year’s project the political authorities may change
- ▶ Immediate contact with politicians (also from external stakeholders project partners)
- ▶ Regular presentations of project highlights to the city council (proactive)
- ▶ Organization of site visits of building sites, finalized implementation measures, etc. for politicians
- ▶ Focus on a big picture – as outlined in the calls of H2020
- ▶ Why do we do „SINFONIA“ – explain again and again!
- ▶ Stress positive outcomes for cities and the local economy
- ▶ Highlight benefits for citizens

5.4 SCIENTIFIC COMMUNITY – PROFESSIONAL AUDIENCE

5.4.1 WHAT HAS BEEN DONE SO FAR FOR THIS STAKEHOLDER GROUP

- ▶ **Participation at international scientific conferences, workshops and exhibitions**

Content and aim of the activity: Presentations about SINFONIA and Smart Cities on various occasions. Two events are explained in detail:

At the annual « International Passive House Conference » poster presentations at the exhibition,



presentations of project results in conference sessions and in year 2017 a dedicated SINFONIA session with different presentations from SINFONIA partners.

The Urban software institute (USI) participated at conferences, workshops and exhibitions of the German Smart City Forum, in order to maintain and increase the dialogue between cities, research institutes, industry and the EU. Since 2013 regular international expert meetings, workshops and exhibitions were held. The forum is intended to facilitate further exchange, mutual learning and lively discussion. USI chairs those meetings; furthermore USI, MAGIBK and SAT staff members involved participated as speakers/guests.

Stakeholder groups intended to reach: Professional audience, scientific community, companies

How often did this activity took place: 2014 : 3 // 2015: 7 // 2016 : 6

Scope: Regional & european

In which project period is it good, to initiate this activity: Project start, implementation and end, dissemination

Recommendations: It is important, whether a SINFONIA partner was a speaker, chaired a workshop or presented a poster and referred to SINFONIA or NOT (just participated, maybe distributed flyers). The consortium underlines the positive results of such activities although the evaluation of outreach is difficult. For common goals e. g. increase of renewables, reduction of CO2 emissions etc. a constant knowledge exchange between scientific partners is valuable in order to speed up the development of successful solutions.

The participation in form of scientific presentations can be recommended. Apart from scientific presentations face to face meetings are important. A good combination are scientific presentations and poster presentations at a stand, where a much higher interest can be seen after the presentation. Furthermore the exchange with other ongoing projects with similar project issues is valuable.

► CasaClimaTour

Content and aim of the activity: CasaClima organized several events all over the Province of Bolzano and Italy. The aim of these workshops was to inform the stakeholders on important aspects related to sustainability and energy efficiency of smart buildings and districts, and to highlight the SINFONIA project as a good practice example. The events were either scheduled in the evening (Province of Bolzano) or during day (rest of Italy). The organisation of the meetings was supported by the municipalities.

Stakeholder groups intended to reach: public authorities, designers, students, craftsmen, general public, etc.

How often did this activity take place: San Genesio 29.11.2016 / Appiano 07.12.2016 / Vipiteno 08.03.2017 / Terento 22.03.2017 / Nova Ponente 29.03.2017 / Corvara 05.04.2017 / Merano 16.05.2017 / Civitavecchia 06.11.15 / Parma 26.04.2016 / Genova 27.04.2016 / Torino 28.04.2016 / Bologna 19.05.2016 / Belluno 26.05.2016 / Naples 27.09.16 / Matera 28.09.2016 / Lecce 29.09.2016 / Rome 23.11.2016 / Bari 23.02.2017 / Sanremo 09.03.2017 / Bergamo 16.03.2017 / Roseto Degli



Abruzzi 06.04.2017

Scope: local and regional

In which project period is it good, to initiate this activity: project implementation and end

Recommendations: The very specific purpose of the presentations was to provide people with very relevant and useful information that could have been applied in their activity. The success this dissemination format was underlined by the large number of people attending the meetings, also in small villages. Many people contributed to the final discussions with questions dealing with practical application of the reported measures. The events will be repeated in other municipalities of the Province of Bolzano.

► Participation at International fairs

Content and aim of the activity: Presentation of SINFONIA with a poster at a stand or an oral presentation to people visiting the stand and to other exhibitors

Stakeholder groups intended to reach: Scientific community, companies, professional audience interested in the topic 'Smart City' (cities and local authorities, developers and real estate, providers of retrofitting solutions, energy utilities, providers of IT solutions, engineering and consulting companies, etc.)

How often took this activity place: BAU 01/2015 & 01/2017 Munich, pHI / Smart City Expo World Congress 11/2016 Barcelona, Technofi / Klimahouse fair 01/2016 Bolzano – all partners / German trade fair DEUBAUKOM Essen 01/2016, PHI / EXPO Real München 10/2015, SAT, MagIbk / CONSTRUMAT FAIR 05/2015 Barcelona, GIE

Scope: regional and european

In which project period is it good, to initiate this activity: Project implementation and end, dissemination

Recommendations: In general a recommendable action - poster presentations at fairs give the possibility to reach a huge number of people. - However the number of people reading the poster in detail is quite small. This activity it is a good opportunity to get people in touch with project activities, expected results etc.

The discussions and conferences were a valuable source of information to identify the needs of cities when it comes to planning long term urban refurbishment. However in some cases, it might be a bit too early to present concrete project results, which limited the impact.

Within the consortium it can be wise to discuss, which results are available for such presentations in which project period.

5.4.2 DID WE REACH THE STAKEHOLDER GROUP WITH THIS RANGE OF ACTIVITIES - CHALLENGES

The participation at international scientific conferences, at thematic workshops and exhibitions with information of SINFONIA (good PR materials necessary) is crucial to communicate the project goals



and results to the scientific community, to discuss challenges, main outcomes, etc. Active internal and external communication was done by various partners within the consortium and was seen as positive. The organisation of specific courses and lectures at different universities for students and professionals is important for the scientific discussion.

Study tours and study visits support knowledge exchange and are a good way to either see similar construction sights in other cities or to invite interested stakeholders or partners to the own sites.

The participation at fairs was seen critical. It is not evident for all partners, that a major outcome is given by this activity.

5.4.3 WHAT CAN BE RECOMMENDED TO OTHER CITIES - IDEAS FOR THE UPCOMING PROJECT YEARS

Based on the the discussion in Pafos on “how could these stakeholders” can be better reached the following points can be recommended for the stakeholder group « SCIENTIFIC COMMUNITY – PROFESSIONAL AUDIENCE » :

- ▶ Presentation of project results as soon as you have some
- ▶ Organisation of dedicated workshops/sessions about the project in the language of the country
- ▶ Involvement of students (by lectures)

Collection of already existing presentation material and distribution amongst the involved partners

5.5 COMPARISON AND CONCLUSIO FOR INNSBRUCK AND BOLZANO

If a project consortium starts thinking about “public perception” – and how it can be measured – four main questions should be considered:

“Who” / “How” / “When” / “Where”

At the very beginning of a project, it should be defined, **who** are the main stakeholders the project needs for its successful implementation. Based on this, activities tailored to the selected stakeholder groups can be designed. It is important to differentiate between internal and external stakeholders (**how**). Along the time line of the project implementation activities need to change based on the progress of the project (**when**) – some activities are more useful in the beginning, others in the end of a project.

And finally, activities should address stakeholders of different levels – local, regional, national, European (**where**).

Similarities and differences between Innsbruck and Bolzano



- ▶ Innsbruck: focus on pupils due to the refurbishment of schools
- ▶ Innsbruck and Bolzano: too little focus on “general public” – more activities for the inhabitants of Innsbruck and Bolzano should be performed/proposed
- ▶ Innsbruck and Bolzano: good participation at scientific conferences, fairs, etc. – this is embedded in the daily routine of some partners and reflects the professional background of some partners
- ▶ Innsbruck and Bolzano: after three years of good interaction and contact with politicians confidence and reliance towards the project is developed but this has to go on – actively organise activities to keep politicians involved.
- ▶ To better adjust various activities between the partners in the consortium



Annex: DOCUMENT INFORMATION

SINFONIA DELIVERABLE FACT SHEET	
PROJECT START DATE	1 June 2014
PROJECT DURATION	60 months
PROJECT WEBSITE	http://www.sinfonia-smartcities.eu
DOCUMENT	
DELIVERABLE NUMBER:	6.3
DELIVERABLE TITLE:	Report on transnational challenges and recommendations for local stakeholder involvement and consumer/tenant orientation
DUE DATE OF DELIVERABLE:	November 2017
ACTUAL SUBMISSION DATE:	March 2018
EDITORS:	
AUTHORS:	SAT (Brigitte Berger, Klaus Kleewein)
REVIEWERS:	UIBK (ALPS), RISE
PARTICIPATING BENEFICIARIES:	UIBK (ALPS), NHT, IIG, IKB, TIGAS, MagIbk, RISE, TEC, EURAC, MoB, IPES, ALPERIA, CASACLIMA, ZABALA
WORK PACKAGE NO.:	6
WORK PACKAGE TITLE:	Local stakeholder involvement, evaluation & follow up in demo cities
WORK PACKAGE LEADER:	UIBK (alpS)
WORK PACKAGE PARTICIPANTS:	All
DISSEMINATION LEVEL:	
CO (CONFIDENTIAL, ONLY FOR MEMBERS OF THE CONSORTIUM INCLUDING THE COMMISSION SERVICES)	
PU (PUBLIC)	x
PP (RESTRICTED TO OTHER PROGRAMME PARTICIPANTS, (INCLUDING THE COMMISSION SERVICES))	
RE (RESTRICTED TO A GROUP SPECIFIED BY THE CONSORTIUM INCLUDING THE COMMISSION SERVICES)	
DRAFT/FINAL:	Final
NO OF PAGES (INCLUDING COVER):	45
KEYWORDS:	Transnational challenges & findings, monitoring, building refurbishments, communication activities



