REPLICATE PROJECT

REnaissance of PLaces with Innovative Citizenship And Technology

Project no. 691735

H2020-SCC-2015 Smart Cities and Communities

Innovation Action (IA)

D8.5 Open data platform to share the outcomes integrated in the common ICT platform (Weblink)

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	Project no. 691735	
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1. EXECUTIVE SUMMARY

This report summarises the work undertaken by the University of Oxford, as the WP8 leader, from January to December 2019 in order to implement the '**City-to-City-Learning Programme**' as the main replication activity of Replicate among the three fellow/follower cities (Essen, Lausanne, and Nilüfer) and the three ligthouse cities (San Sebastian, Florence, and Bristol): www.replicate-project.eu/city2citylearning. This programme is the outcome of the task 8.3., which aimed to foster a sharing participative environment betwen partners and their urban solutions by networking intensive open data sessions and events for lighthouse and follower/fellow cities. The task T.8.3. was presented as the crucial one for the WP8. During the period M37-M48, Lighthouse and Follower Cities have effectively shared the urban solution implementation while adapting them to the Follower Cities. The arrangements for this task have employed as defined networking activities in the three follower and the three lighthouse cities (one networking event for each city), resulting in the 'City-to-City-Learning Programme'. Therefore, a networking activity was delivered every two months. Likewise, the deliverable of this task is the outcome of the 'City-to-City-Learning Programme' as the open data platform that was properly designed and tailored in close collaboration with the six Replicate cities to share the outcomes and the urban solution prototypes during the whole programme.

By following the description of the WP8.3. provided by the DOA (Description of the Action), the 'City-to-City-Learning Programme' has unequivocally assisted and thus is feeding and inspiring now the formulation of the replication plans of the fellow/follower cities. In doing so, we have actively facilitated a sharing participative environment particularly addressed to the stakeholders' in the six Replicate cities. The outcome is being very successful and relevant for the replication plans of the fellow cities in light of their ongoing task now.

Back in 2016, we started planting the seed of 'City-to-City-Learning Programme' (#City2CityLearning) for its implementation during 2019 in collaboration with three lighthouse cities (San Sebastian, Florence, and Bristol) alongside three fellow cities (Essen, Nilüfer, and Lausanne)—replacing the former nomenclature and the hierarchical position of the follower cities. In doing so, we intensively encouraged a fertile dialogue connecting stakeholders—regardless of their lighthouse or fellow city consideration—working either in one or even sometimes in several smart policy sectors: energy, mobility, and ICT. Furthermore, this experimental approach has resulted in a productive multidirectional conversation loop among stakeholders in the six cities. It goes without saying that we have examined the important and unique related multi-stakeholder framework in each city through the Penta Helix (including actors interacting in the public, private, civic society, academic, and entrepreneurial/activism domains of cities; Calzada & Cowie, 2017) as it was covered and reflected upon in the previous deliverable D.8.4 Report on conclusions of the interviews and the focus groups.

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2. REPLICATE

The main objective of REPLICATE project is the development and validation in three lighthouse cities (**San Sebastián** – Spain, **Florence** – Italy and **Bristol** – UK) of a comprehensive and sustainable City Business Model to enhance the transition process to a smart city in the areas of the energy efficiency, sustainable mobility and ICT/Infrastructure. This will accelerate the deployment of innovative technologies, organizational and economic solutions to significantly increase resource and energy efficiency improve the sustainability of urban transport and drastically reduce greenhouse gas emissions in urban areas.

REPLICATE project aims to increase the quality of life for citizens across Europe by demonstrating the impact of innovative technologies used to co-create smart city services with citizens and prove the optimal process for replicating successes within cities and across cities.

The Business Models that are being tested through large scale demonstrators at the three cities are approached with an integrated planning through a co-productive vision, involving citizens and cities' stakeholders, providing integrated viable solutions to existing challenges in urban areas and to procure sustainable services. Sustainability of the solutions is fostered in three areas: economic and environmental and finally, fostering transparency in the public management.

In addition, the Model features the replicability of the solutions and their scale up in the entire city and in follower cities, particularly in three follower cities (**Essen** – Germany, **Lausanne** – Switzerland and **Nilüfer**–Turkey) that are involved in the project and therefore, have access to know-how and results achieved on the project so they can apply the developed model. At the moment, there are 2 observer cities, Guanzhou (China) and Bogota (Colombia).

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3. INTRODUCTION

3.1   Relation to Other Project Documents

The definition of working procedures under REPLICATE framework is essential for assuring an effective project management and achievement of the project goals. Different documents, have been approved that serve as guideline to the activities to carry out. All those documents are complying with the contract with the EU (Grant Agreement) including its Annexes, and by the Consortium Agreement (CA).

In the event of discrepancy between documents, these documents are overruled by the Project Management Plan (PMP), the contract with the EU (Grant Agreement) including its Annexes, and by the Consortium Agreement (CA).

3.2   Reference documents

This document is based in the following projects level documents:

Ref.	Title	Description
REPLICATE Grant Agreement signed 240713.pdf	Grant Agreement	Grant Agreement no. 691735
DoA REPLICATE (691735)	REPLICATE Annex 1 – DoA to the GA	Description of the Action
REPLICATE Consortium agreement signed December 2015 (7th December version)	Consortium Agreement	REPLICATE project – Consortium Agreement
REPLICATE Project Management Plan	D1.1 Project Management Plan (v.1) (29/04/2016)	REPLICATE Project Management Plan
REPLICATE District Management Plans	D1.4 District Management Plan San Sebastian D1.5 District Management Plan Florence D1.6 District Management Plan Bristol	REPLICATE District Management Plans
REPLICATE Communication Plan	D11.1 Communication Plan	REPLICATE Communication Plan

Table 1. Reference documents

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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There will also be stored on the share online platform.

Where there are contradictions, the documents listed above supersede this deliverable. The Grant Agreement is the contract with the European Commission so takes precedence over all other documents.

3.3   Abbrevations list

GA	Grant Agreement
CA	Consortium Agreement
DoA	Annex I–Description of the Action
EC	European Commission
H2020	Horizon 2020
PC	Project Coordinator
PL	Pilot Leader
PMP	Project Management Plan
TC	Technical Coordinator
WP	Work Package
WPL	Work Package Leader

Table 2. Abbreviation list

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

DELIVERABLE DESCRIPTION

This document comprises the visual summary of deliverable D8.5.: the content for the weblink produced during the whole 2019 resulting in the site www.replicate-project.eu/city2citylearning. It reports the description and the making-off of such weblink as a platform for fostering a sharing participative environment between partners and their urban solutions by networking intensive open data sessions/ exchange sessions and events for the three lighthouse cities (San Sebastian, Bristol, and Florence) and fellow/follower cities (Essen, Lausanne, and Nilüfer). This open data platform to share the outcomes integrated in the common ICT platform is already available and has been possible as a result of the active participation of stakeholders from the six cities.

The 'City-to-City-Learning Programme' has been developed in the course of the progress of the Replicate project through webinar sessions led by each city. Every webinar session has been accurately prepared in close collaboration between the host city and the WP8, by curating the title, editing the three slots, discussing earlier with each speaker, posting the programme in the site, disseminating the content of each session and particularly each slot, and ultimately, interacting through social media (using #ReplicateEU and #City2CityLearning before, during, and at the end of each session) with external viewers once posting the webinar publicly. Thus, the 'City-to-City-Learning Programme' has allowed to create a tool to involve directly stakeholders into the platform. All Replicate partners had actively contributed as presenters or participants during the whole programme.

The logo developed for the site and the communication material designed and employed have been done in close collaboration with WP11.

This document presents the following sections to unfold the 'City-to-City-Learning Programme':

- Section 5: The management of the 'City-to-City-Learning Programme'
- Section 6: The content of the 'City-to-City-Learning Programme'
- Section 7: Lessons Learnt
- Section 8: Innovation, Impacts and Scalability
- Section 9: Conclusions

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4. THE MANAGEMENT OF THE CITY-TO-CITY-LEARNING PROGRAMME

This section explains the content describing the implementation or actions carried out to prepare the 'City-to-City-Learning Programme' before 2019.

Here there is the outcome: www.replicate-project.eu/city2citylearning

4.1   Methodology

Wisely influenced by the research and policy findings conducted by the Urban Transformations ESRC (Economic and Social Research Council) Programme at the University of Oxford (Calzada & Keith, 2018), we have anticipated this cleavage between the 'smart' policy urgencies and the early-entrepreneurial-research-discoveries at the beginning of Replicate project to deconstruct the highly-technocratic smart city policy agenda (Calzada & Cobo, 2015). We initiated methodological advancements that could foster fruitful learning in and among cities by avoiding (and presumably overcoming) replicability as a techno-deterministic principle based on so-called *solutionism*. Not only are (smart) cities not mechanical machines (Amin & Thrift, 2017; Ratti & Claudel, 2016), but their internal implementations are directly and proportionally dependent on stakeholders interacting in a unique fashion with a dense set of power relationships (Calzada, 2018; Calzada & Cowie, 2017; Calzada & Keith, 2018). How should such a complex task called *Replication* be approached (European Commission, 2017)?

Figure 1. City-to-City-Learning Banner

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In the first three years of the project, covering 2016-2018, the three lighthouse cities focused entirely on their pilot implementations of three smart city sectors (energy, mobility, and ICT). Alongside these implementations, the WP8 (led by the University of Oxford) suggested reverting the rationale for the mainstream approach stemming from a monodirectional and mechanic-driven replicability logic. By contrast, the Replicate project has been gradually empowering the former follower cities (now already officially and institutionally fellow cities; SCIS, 2019) by putting them at the same level as the lighthouse cities through a multidirectional learning cycle. Until 2019, WP8 Replication carried out fieldwork research alongside the lighthouse cities' implementations in three fellow cities for those early three years: (i) to conduct critical factors' assessment and (ii) to map out the unique composition of stakeholders by following the Penta Helix policy framework. Thereafter, the 'City-to-City-Learning Programme' has set the scene to establish a prolific common ground among the six Replicate cities without any hierarchical or functional distinctions. The stakeholders fostered a shared participatory *agora* and a co-operative platform directly among Replicate stakeholders (regardless of their city of reference). Most importantly, the Replicate project curated and warmed-up this programme with the active participation of the representative and strategic stakeholders of the six Replicate cities by experimenting alternatively the complex task of replication through a multi-directional learning loop stemming from an open innovation approach.
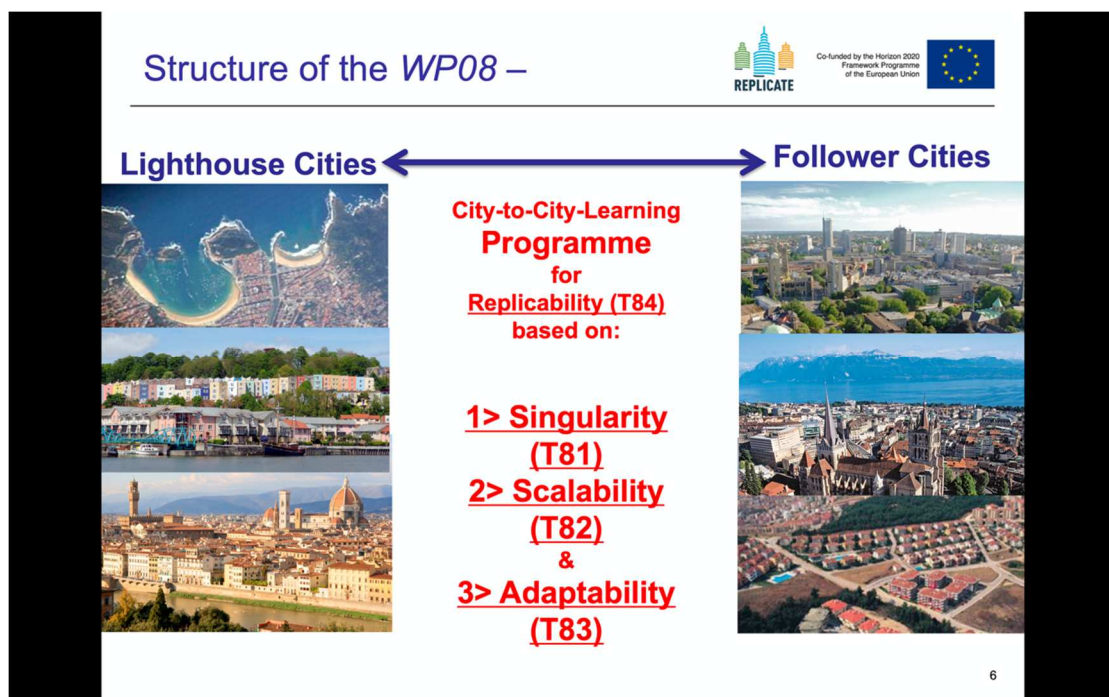

Figure 2. City-to-City-Learning based on Singularity, Scalability, and Adaptability

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Figure 3. City-to-City-Learning Logo

Ultimately, this programme was designed to assist fellow cities in formulating their own replication plans. Judging from the successful experience and objective results—more than 110 registered participants and almost 255 offline views—we firmly believe this is worth further exploration by the EC new Horizon Europe Framework Programme: how to develop new forms of policy incentives for more participatory policy design as well as monitoring, feedback/assessment, and learning loops that utilise the characteristics of digital transformations in smart cities among a vast and nuanced democratic representation of stakeholders' plurality and diversity.

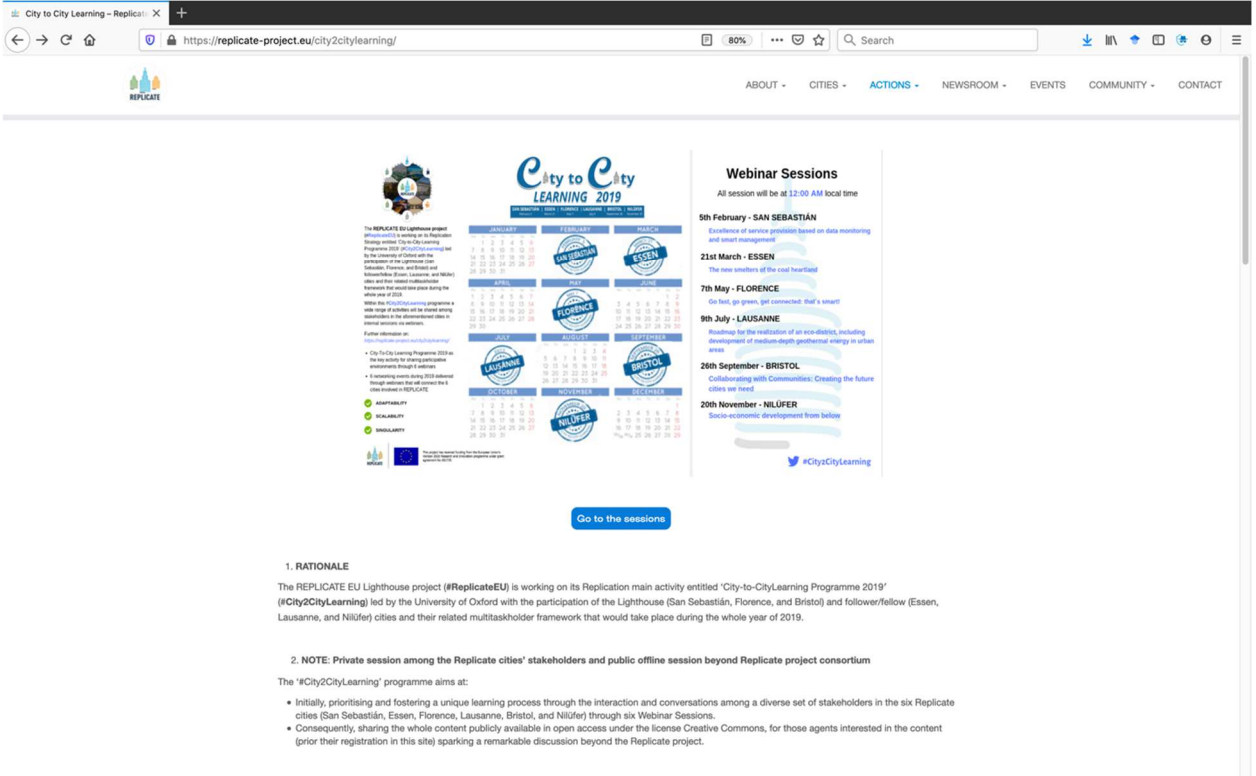Here there is the presentation of the programme as an open platform in the website of Replicate as follows:

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Figure 4. Weblink: www.replicate-project.eu/city2citylearning

1. RATIONALE

The REPLICATE EU Lighthouse project (**#ReplicateEU**) is working on its Replication main activity entitled 'City-to-CityLearning Programme 2019' (**#City2CityLearning**) led by the University of Oxford with the participation of the Lighthouse (San Sebastián, Florence, and Bristol) and follower/fellow (Essen, Lausanne, and Nilüfer) cities and their related multitaskholder framework that would take place during the whole year of 2019.

2. NOTE: Private session among the Replicate cities' stakeholders and public offline session beyond Replicate project consortium

The '#City2CityLearning' programme aims at:

- Initially, prioritising and fostering a unique learning process through the interaction and conversations among a diverse set of stakeholders in the six Replicate cities (San Sebastián, Essen, Florence, Lausanne, Bristol, and Nilüfer) through six Webinar Sessions.

- Consequently, sharing the whole content publicly available in open access under the license Creative Commons, for those agents interested in the content (prior their registration in this site) sparking a remarkable discussion beyond the Replicate project.

3. REGISTRATION

Thus, #City2CityLearning programme is designed to be a private programme among Replicate stakeholders. Nevertheless, it will be entirely and publicly accessible just after each Webinar session upon registration. Looking forward to receiving your registration to the sessions you would like to watch.

4. PUBLIC DISCUSSION

In order to ensure broadly an interactive discussion, the hashtag **#City2CityLearning** in the Twitter channel, will be used to facilitate these conversations not only among Replicate stakeholders but also beyond the Replicate consortium as well. Stay tuned!
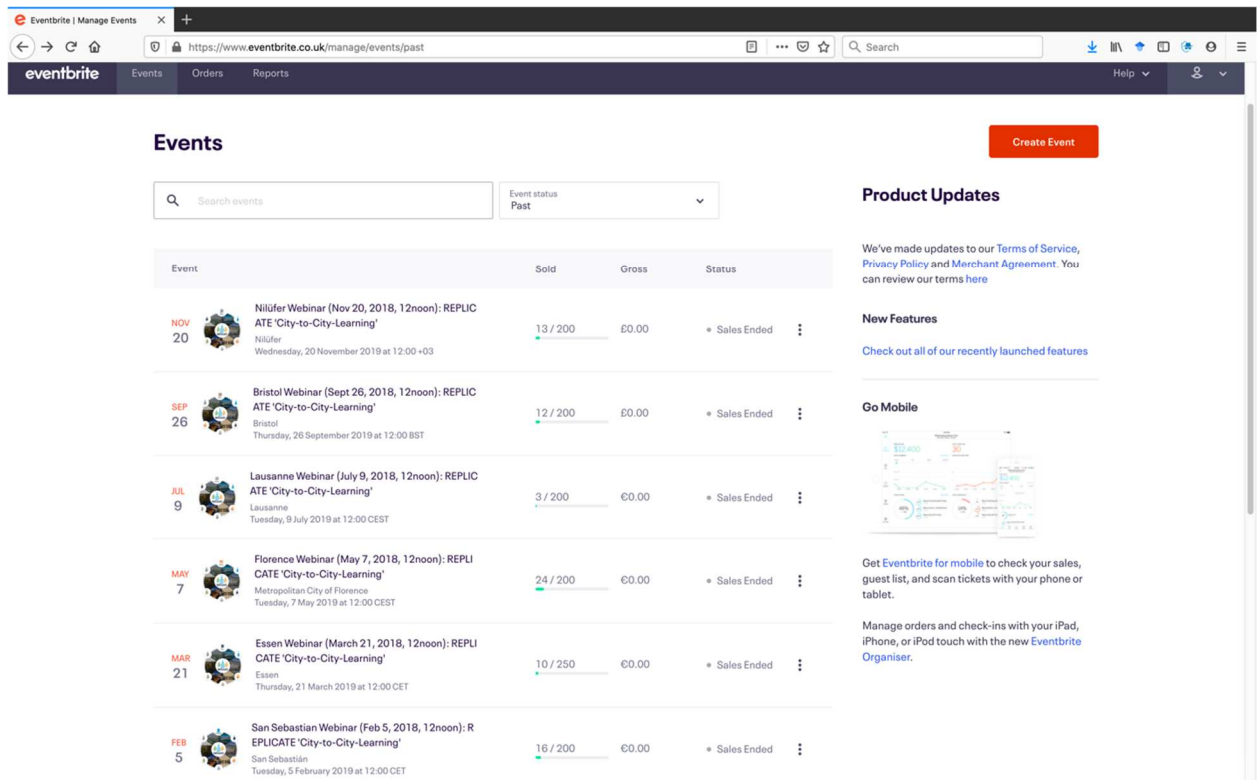
D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

4.2   Registration: Eventbrite

Prior to the sessions, an Eventbrite link was sent to each city representative to encourage the participation of their stakeholders in the session.

Figure 5. Registration: Eventbrite

Alongside the curation of the programme, each session was prepared beforehand by undertaking a technical test with the city representative (in close collaboration with WP1 leader from FSS) to avoid technical disruptions in the day of the session. All the cities collaborated intensively previous and during the session in coordination with WP8. It is noteworthy the cross-collaboration of this task from WP1 and WP11, by ensuring the quality of the sessions and disseminating before and after the session the content, respectively. The content of each session as it was announced per each city to their stakeholders is presented as follows:

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5.3. Execution. Go-to-Meeting

Figure 6. City-to-City-Learning Session led by St. Sebastian

1ST SESSION: FEBRUARY 5, 2019. 12 NOON.

Leading City: SAN SEBASTIÁN

Excellence of service provision based on data monitoring and smart management

1/ From traditional infrastructures to intelligent connected solutions

2/ Exploitation of city information linking data to other cities through the semantic web

3/ Smart Services through a Smart Platform

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Figure 7. City-to-City-Learning Session led by Essen

2ND SESSION: MARCH 21, 2019. 12 NOON.

Leading City: ESSEN

The new smelters of the coal heartland:

How dedicated Innovation Hubs Accelerate the Smart and Sustainable Transition in Essen

1/ How Facilitation of the Start-Up Scene can help to Blend the Smart and Sustainable Agenda of Cities

2/ Essen 51. How a brownfield turns into a showcase for the smart and sustainable future of cities

3/ EUREF Campus Ruhr: Solutions for Global Challenges from the World Heritage Site Zollverein, once the largest coal mine in Europe

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Figure 8. City-to-City-Learning Session led by Florence

3rd SESSION: MAY 7, 2019. 12 NOON.

Leading City: FLORENCE

Go fast, go green, get connceted: that's smart!

1/ Fast recharge (and e-taxi): an example of the e-mobility initiatives to deploy sustainable mobility in the city (lead by municipality and e-distribuzione)

2/ E-recharge system to move towards a sustainable community and city

3/ Smart City Platform

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Figure 9. City-to-City-Learning Session led by Lausanne

4th SESSION: JULY 9, 2019. 12 NOON.

Leading City: LAUSANNE

Roadmap for the realization of an eco-district, including development of medium-depth geothermal energy in urban areas

1/ Roadmap for the realization of an eco-district

2/ Development of medium-depth geothermal energy in urban areas

3/ Energy efficiency program

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Figure 10. City-to-City-Learning Session led by Bristol

5th SESSION: SEPTEMBER 26, 2019. 12 NOON.

Leading City: BRISTOL

Collaborating with Communities: Creating the future cities we need

1/ Methodologies and Approaches to Co-design

2/ Technology, data and democracy – how we make it accessible

3/ One city approach and inclusive futures

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Figure 11. City-to-City-Learning Session led by Nilüfer

6th SESSION: NOVEMBER 20, 2019. 12 NOON.

Leading City: NILÜFER

Socio-economic development from below

1/ Grassroots Empowerment

2/ Bottom-up Energy Efficiency

3/ Industrial spin-off Ecologies

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5.4.   Dissemination: #City2CityLearning & #ReplicateEU

Figure 12. City-to-City-Learning Calendar

The whole programme was disseminated by following the calendar above and by using the hashtag #City2CityLearning and #ReplicateEU as follows:

- https://twitter.com/hashtag/city2citylearning

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Figure 13. City-to-City-Learning Hashtag

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6. THE CONTENT OF THE CITY-TO-CITY-LEARNING PROGRAMME

In this section, we synthetically present the content of the 'City-to-City-Learning Programme' as the direct outcome of the open data platform to share the outcomes integrated in the common ICT platform. Thus, the content is publicly available and disseminated in Open Access.

Figure 14. City-to-City-Learning Infography

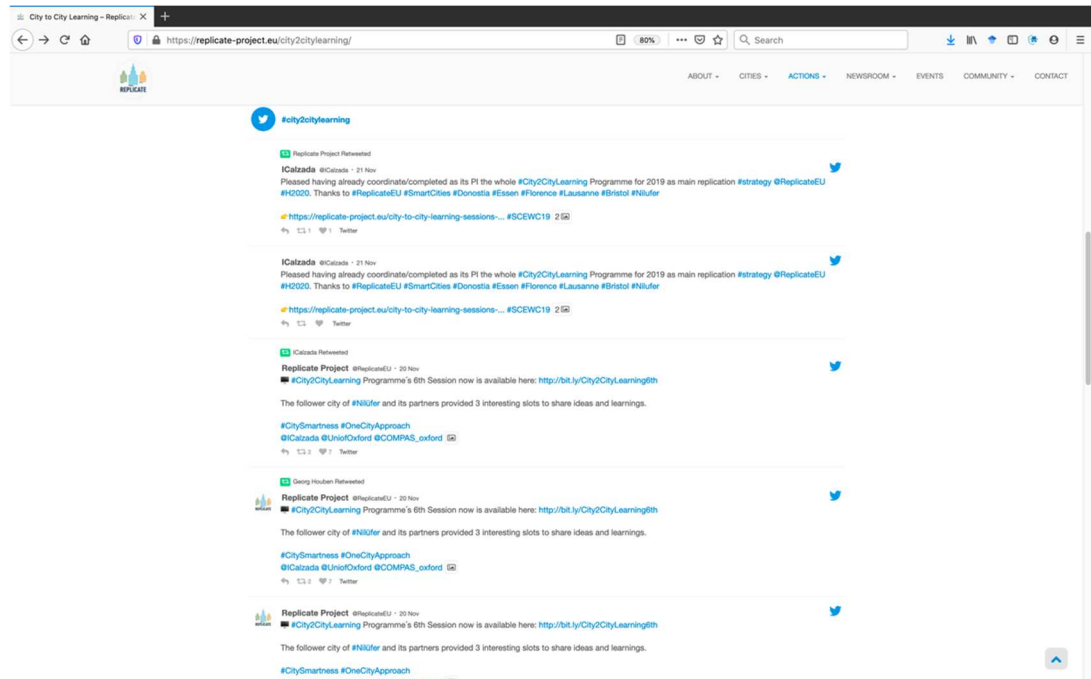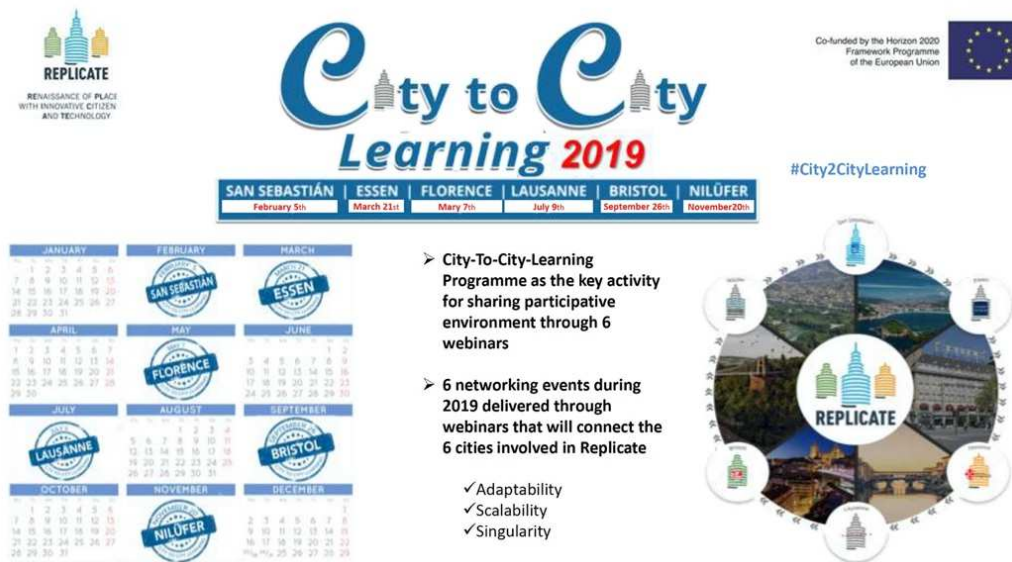|	Project no. 691735	
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6.1.   1st Session: San Sebastian

San Sebastian – Lighthouse and Leading City

- The session entitled 'Excellence of service provision based on data monitoring and smart management' took place on 5th February 2019.
- Outcome: https://replicate-project.eu/1st-session-excellence-of-service-provision-based-on-data-monitoring-and-smart-management
- City Profile and Characterisation:

Donostia–San Sebastian is the capital of the Province of Gipuzkoa in the Basque autonomous community in the northern side of Spain. It has a population of 186,000 people. Fomento San Sebastian is San Sebastian City Council's Department for Economic Development and the city's Development Agency and is the coordinator of the Replicate project. The implementations which are deployed in Replicate project framework in the San Sebastian pilot are mainly concentrated in the Urumea Riverside District. The district covers three sites with a surface area of around 200 hectares: residential area (Txomin neighbourhood), Industrial Park (Polígono 27, which has a capacity for 350 companies with 4,500 people) and a natural park (Ametzagaina, carbon reserve). The residential area was urbanised during the first half of the 20th century, with low energy efficiency buildings, vulnerable to flooding from the river, whereby it had connection problems with the city centre and was at risk of social exclusion. To address this problem, San Sebastian City Council defined a special Urban Plan for the regeneration of the district in 2008. On the other hand, the city of San Sebastian, through Fomento de San Sebastián, also designed a Smart Plan for the city with an Action Plan for 2016–2020, in which an integral plan for the city's smart strategy is established with the main challenge of establishing a strategic line with shared objectives and to give coherence and coordination to the public action. This district has been selected for the planned integrated strategy in order to turn it into a smart district with nearly zero emissions, becoming a sustainability district brand. Replicate project has implemented actions in energy efficiency (District Heating, Building Retrofitting and Demand Side Platform), sustainable mobility (e-buses, electric vehicles and mobility platform) and ICTs/Infrastructures (Smart City Platform with integrated services, Open Data and Citizen Participation Services, High Speed mobile wireless network and Smart Public Lighting). In addition, Fomento Sebastian is working on the deployment of further actions (out of Replicate funding) in Txomin neighbourhood continuing with the transition to the Smart Txomin District. Other smart projects and implementations are also being carried out in other areas of the city, promoted by Fomento San Sebastian and in collaboration with members of the Smart Cluster, Municipal Departments and other public and private entities (Universities, research corporations, companies, associations).

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Figure 15. San Sebastian aereal

Figure 16. February 5

Slot 1: From traditional infrastructures to intelligent connected solutions

Intelligent connected LED systems and integrated IP services smart management in San Sebastian

The replacement of existing sodium-vapour luminaries with new LED technology has been optimized including an automatic regulation system based upon detection technologies, calendar and environmental parameters among other additional data. The solution has also allowed the communication between luminaries and remote smart management of the system

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and integration of IP applications as part of the intelligent generated network. The compatibility of the elements of the system allows the transmission of broadband, support of data, voice, video, etc. through a solution that can either be 100% PLC or hybrid PLC (PLC + WIFI).

The optimized and integrated smart system provides important advancements in the monitoring and management being ready for replication.

Speakers: **Felix Ezcurra,** President of the company and Commercial and Technical Department Manager; **Mikel Caeiro** Research and Development Department Manager. Engineers. Conduct and coordination of energy optimization projects, design of lighting and control systems. Monitoring and analysis of energy performance.

Company: **LEYCOLAN** develops an innovative solution for outdoor lighting in order to reduce consumption energy and maintenance costs, improving the quality of lighting, security and remote management. Currently provides engineering, consulting lighting, assembly and maintenance of the proposed facilities;

Sector: ICT

Stakeholders: Fomento San Sebastian (Public), San Sebastian City Council (Public) and Leycolan (Private)

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Figure 17. Public Smart Lighthing Slot

Slot 2: Exploitation of city information linking data to other cities through the semantic web

The data generated within the city of San Sebastian is published using an automatic pipeline as open data under the Linked Data paradigm as part of the Linked Open Data Cloud.

The city data related to energy, mobility and ICT/Infrastructures is published and linked to other existing linked data sets in the Linked Open Data Cloud to enrich its content and to boost reach ability from other data sets around the world. The architecture developed and the infrastructure related is deployed within the Smart City Platform of San Sebastian and ready for other cities. The architecture of the platform will be showcased as an innovative solution to be replicable to other cities and entities.

For the nature of the solution proposed, the early stage of this approach and the initiatives that are ongoing in Europe, it is easy to be replicable to other cities and organizations.

Speaker: **Arkaitz Carbajo**, Technical Computer Systems Engineer expert. Arkaitz is a software analyst and consultant who has participated in many software development projects, mostly for the Public Administrations. He is the technical leader of Eurohelp R&D department and has led several projects related to Smart Cities and Open Government.

Company: **EUROHELP** offers Innovative and effective solutions in the field of ICT incorporating high technological value and high added value to the projects they carry out in different areas. It is composed of up to 250 professionals and among the different fields of expertise are Digital transformation, Big Data and Open Government.

Sector: ICT

Stakeholders: Fomento San Sebastian (Public), San Sebastian City Council (Public) and Eurohelp (Private)

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Figure 18. Linked Open Data Slot

Slot 3: Smart Services through a Smart Platform

Advanced smart services provision in San Sebastián through a designed and developed platform with specific visual software components and functional specifications for several city mobility services.

The platform permits to obtain information in real time about the state of mobility in the city of San Sebastian, so that the necessary actions can be taken to improve transportation services. It gives a global vision of mobility and details for each service area (bicycles, parking, traffic, etc.). Geo-referenced vision of services with visualization of events and automatic reception of alarms, indicators for mobility verticals with dashboards that summarize the status of the mobility area, collection of KPIs and development of an algorithm for the predictive analysis of demand.

It offers a coordinated vision of all mobility areas, the possibility of integration with other smart city systems and it is an easily extensible and adaptable solution.

Speaker: **Aitor Rodriguez**, Degree in Electronics Engineering. Project Manager in Ikusi.

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Company: **IKUSI** is an engineering and technology development company for business digital transformation working in integration and engineering projects, specialized business solutions, IT and telecommunication networks and advanced electronics technology.

Sector: ICT

Stakeholders: Fomento San Sebastian (Public), San Sebastian City Council (Public) and Ikusi (Private)
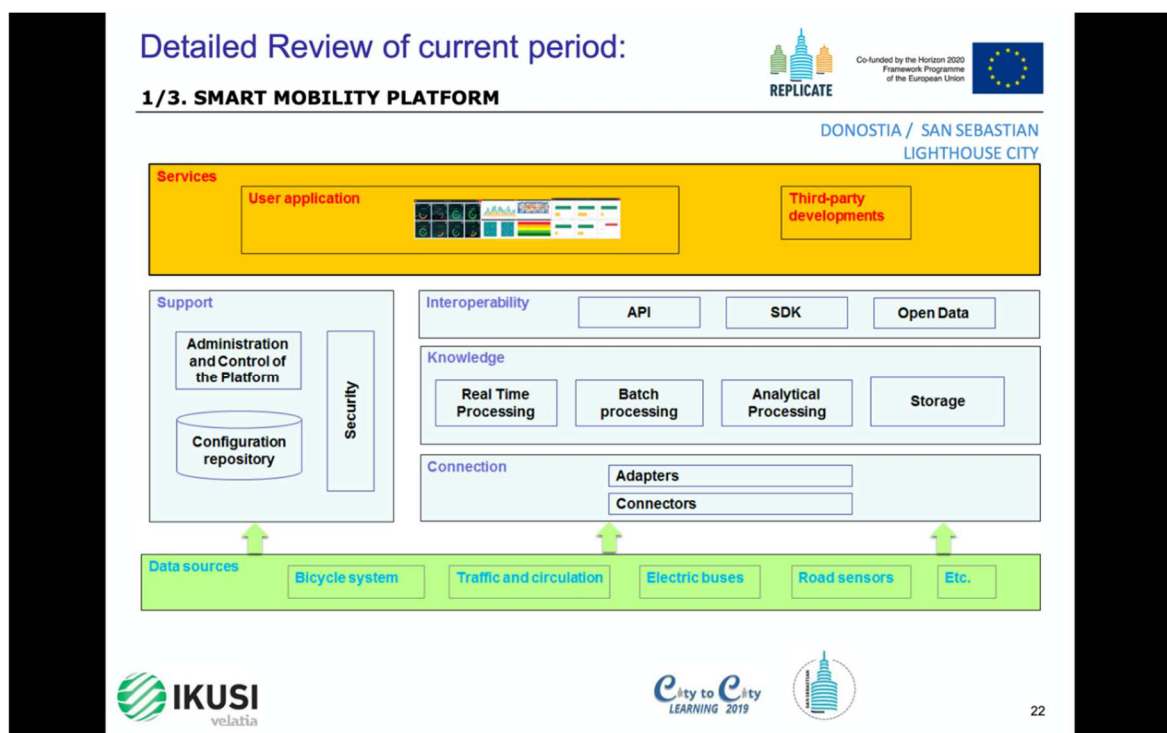
Figure 19. Smart Mobility Platform

Preliminar Conclusion of this session

In this session, the way smart lighting through Leycolan, data governance model through Eurohelp, and ultimately, mobility through the smart mobility platform project led by Ikusi, are being developed showed the interest of stakeholders of the Replicate cities. As such, data governance issues were discussed in the session and participants interacted in an interesting fashion by providing new pathways for smart solutions. Particularly it is relevant to see how Open Linked Data initiative can lead the other two initatives to a different scenario after Replicate project will be fully deployed. This is a fact that is necessary to be followed up in the upcoming months.

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

6.2.   2nd Session: Essen

<u>Essen</u> – Fellow City

- The session entitled 'The new smelters of the coal heartland' took place on 21st March.
- Outcome: https://replicate-project.eu/2nd-session-the-new-smelters-of-the-coal-heartland/
- City Profile and Characterisation:
  The City of Essen is located in the North-Rhine Westphalia, in the heart of the Ruhr Area, which encompasses approximately 5.1 million people. Following London and Paris, this metropolitan area constitutes the third largest urban agglomeration in Europe. Essen is an independent city in the administrative district of Düsseldorf. Its 582,624 inhabitants make it the ninth largest city in Germany. Essen has made a transition from a coal and steel metropolis to a European Green Capital. The municipal area of 210 km2 is divided into nine districts and 50 neighbourhoods. Essen is an important industrial centre for German enterprises. A mix of big firms, SMEs, and an active craft sector maintain a good economic climate. There is a very comprehensive relationship of the European Green Capital 2017 project with Essen's goal to establish a Smart City strategy from the Replicate project.

Figure 20. Essen map

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Figure 21. March 21

Slot 1: How Facilitation of the Start-Up Scene can help to Blend the Smart and Sustainable Agenda of Cities: The Case of Camp-Essen

Essen, the former capital of coal and steel industry has already undergone a Cinderella story by having been rewarded European Green Capital 2017. Now Essen is trying to use this international spotlight on its urban transition to establish herself as the regional hotspot for the start-up scene. Several Start-Up Hubs are already in place, such as impacthub Ruhr:agile accelerator and ruhr:hub or the financing facility Gründerfonds Ruhr. Another prime example is the Camp-Essen. The collaboration of the City, the Economic Development Agency, The University and of course young entrepreneurs creates a competence of change that exceeds the urban borders and affects the whole region.

Speakers: **Andreas Kaminski**: Essen Economic Development Agency, Co-ordinator Camp-Essen

Sector: Entrepreneurship

Stakeholders: Essen Economic Development Agency (Public-Private partnership), City of Essen (Public), University Duisburg-Essen (Academia), Thysenkrupp, Innogy, Sparkasse, open grid Europe (private)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Figure 22. Start-up Promotion, Camp Essen

Slot 2: Impacthub Ruhr: Connecting Communities for Change

We are on our way to tomorrow's Essen – from the heartland of coal and steel industry to a more liveable city that is going to be more social, low-carbon, resilient and smarter. This transformation needs innovation. Essen created a strong supporting landscape for innovative entrepreneurship. The impacthub Ruhr offers a platform where public and private partners as well as academia find together to solve the urban challenges of the future. It is exceptional that the impacthub Ruhr as most of Essen's Start-Up Hubs focus their attention on the smart and sustainable transition of cities

Speakers: **Ulrike Trenz**: Co-founder of the impacthub Ruhr

Sector: Innovation, Entrepreneurship

Stakeholders: impacthub Ruhr (Entrepr/Act), City of Essen (Public), e-on (Private), State of Northrine-Westfalia (public)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

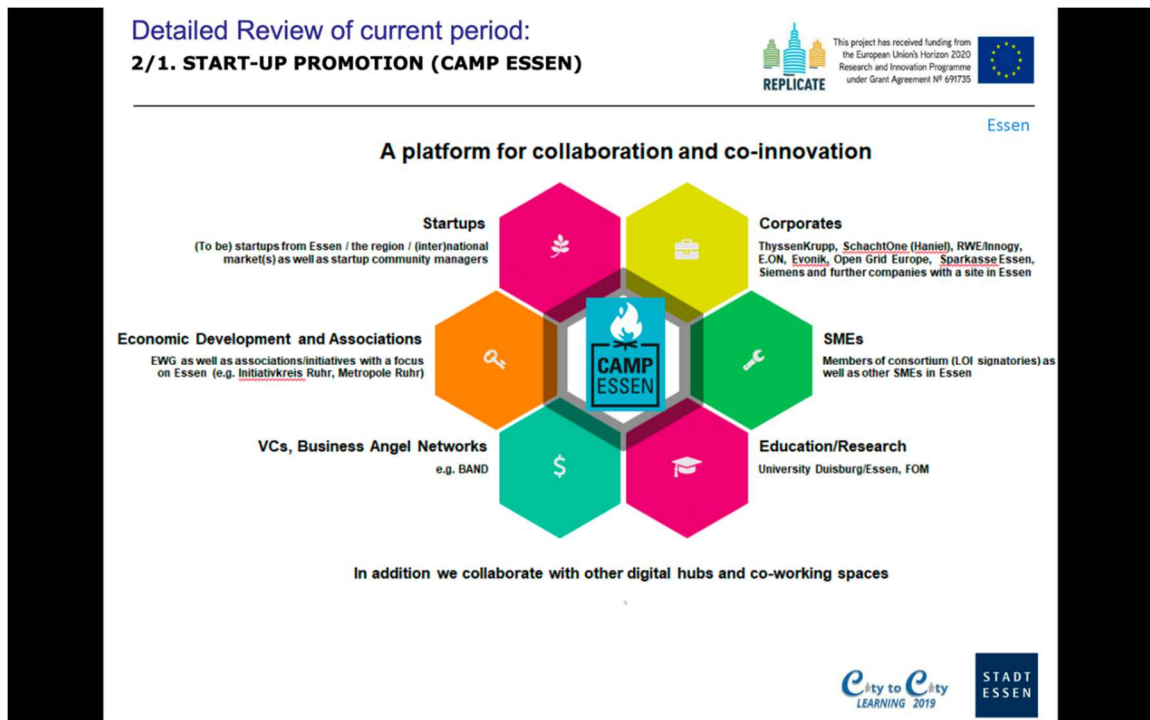|	Project no. 691735	
REPLICATE	REPLICATE PROJECT	This Project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 691735
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Figure 23. Impact Hub Ruhr

Slot 3: Essen 51. How a brownfield turns into a showcase for the smart and sustainable future of cities

Essen 51 is a landmark project not only due to its impressive dimensions (52 hectars of brownfield regeneration, 1500 new homes and 500.000 squarmeters of new business space), but also due to the integrative smart concept. Smart means quality of life through the interaction of technical innovations and sustainability: green spaces form the heart of the city disctrict, and an innovative drainage system uses natural open water surfaces and rainwater decoupling. ESSEN 51 will integrate modern environmental technologies for the generation of renewable energies, higher energy efficiency and energy saving. Mobility functions automatically and networked, adapts dynamically and is available via ESSEN 51. App as required: Pooling of carpools by bus; high-speed collective taxi or private car; sharing offers for e-cars and bicycles offer full flexibility; start-ups, pop-ups, urban farming, beekeeping, brewery, technopark, gastronomy…. Individualized and communicative production processes are characteristic for the companies in ESSEN 51. The office offers a variety of structures for different activities: individual offices, open space, co-working, different design and always with integration of technology and comfort.

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

Speakers: **Norman Sahl Poynor**, Managing Partner SV Gebäudeautomation GmbH (A Thelen-Gruppe company)

Sector: Energy and mobility

Stakeholders: City of Essen (Public), Thelen-Gruppe (Private)
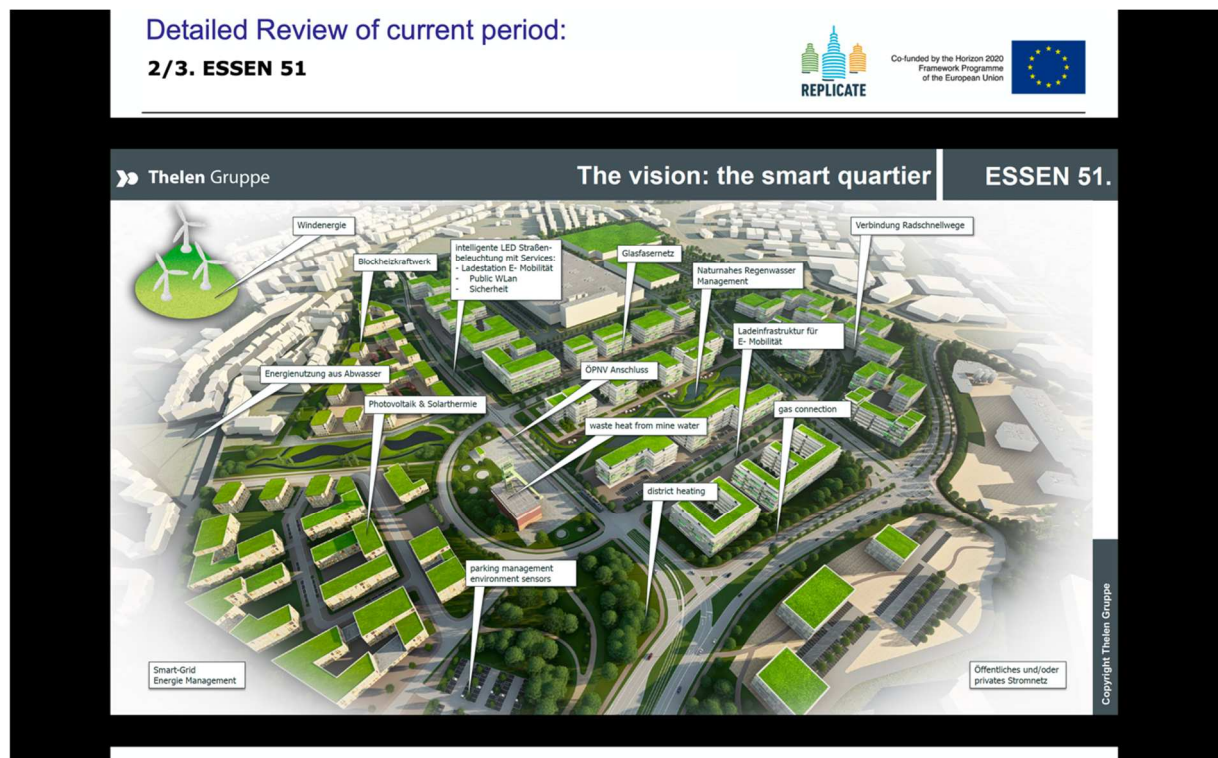
Figure 24. Essen 51

Preliminar Conclusion of this session

The three slots were presented in a very consistent way being coherent with the Critical Factor Assessement carried out in 2016. As such, Essen as the European Green Capital is focused on establishing an strategy driven by the Sustainable Development Goals (SDGs) while being flavoured with entrepreneurship and smart city actions. It is very clear that the interest of Replicate stakeholders stems from the fact that Essen is cultivating the seed to social entrepreneurship while creating a platform for public, private, and civic innovation. We asume this aspect is going to core when formulating the replication plans.

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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6.3.   3rd Session: Florence

<u>Florence</u> – Lighthouse City
- The session entitled 'Go fast, go green, get connected: That's smart!' took place on 7th May.
- Outcome: https://replicate-project.eu/3rd-session-go-fast-go-green-get-connceted-thats-smart/
- City Profile and Characterisation:
  Florence, the capital of the Italian region of Tuscany, has approximately 383,000 inhabitants in the core city and over 1 million in the greater metropolitan area. It is the region's most populous city. Due to its historical and cultural heritage, tourism is the city's most important industry, but production and commercial activities remain important economic drivers, especially in the greater metropolitan area. The city is often in the Top 10 most visited cities in the world, with approximately 10 million tourists staying in local accommodations. About 2 million more visits through cruise ship and day-tours. This high number of visitors presents a significant challenge for the city administration. While it represents the main source of income for the city, it is also increasingly seen as a threat to the city services and management, as well as to the quality of life for those who live in the highly congested central urban zones. Within the context of Replicate, the smart city pilot projects have been implemented in the district of Novoli, northwest of Florence.

Figure 25. Florence map

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

Figure 26. May 7

Slot 1: Fast recharge (and e-taxi): an example of the e-mobility initiatives to deploy sustainable mobility in the city (lead by municipality and e-distribuzione)

Florence is the national e-capital. The strategy of a smart and sustainable city is based on topic suggested as relevant such as mobility. According to the SEAP, the baseline inventory has been showed that mobility is the most responsible for CO2 emissions: working on mobility means working on health and sustainable society city and community. Facilitating the transfer from private to public transport is the main achievement. A sustainable public taxi fleet is one of the measures provided by the modernization of the network in Florence and provide the infrastructures is necessary together with the attitude to choose green counting also on tourism and city users.

Speakers: **Alessandra Barbieri**, City of Florence, Project Manager for Replicate Project, **Valerio Moscarini** and **Stefano Riva**, E-distribuzione for Replicate Project.

Sector: Mobility

Stakeholders: City of Florence, Metropolitan City of Florence, Silfi (Public) E-distribuzione (Private), taxi associations (Private), University of Florence (Academia), CNR (Academia) and Mathema (Etrepr/Act)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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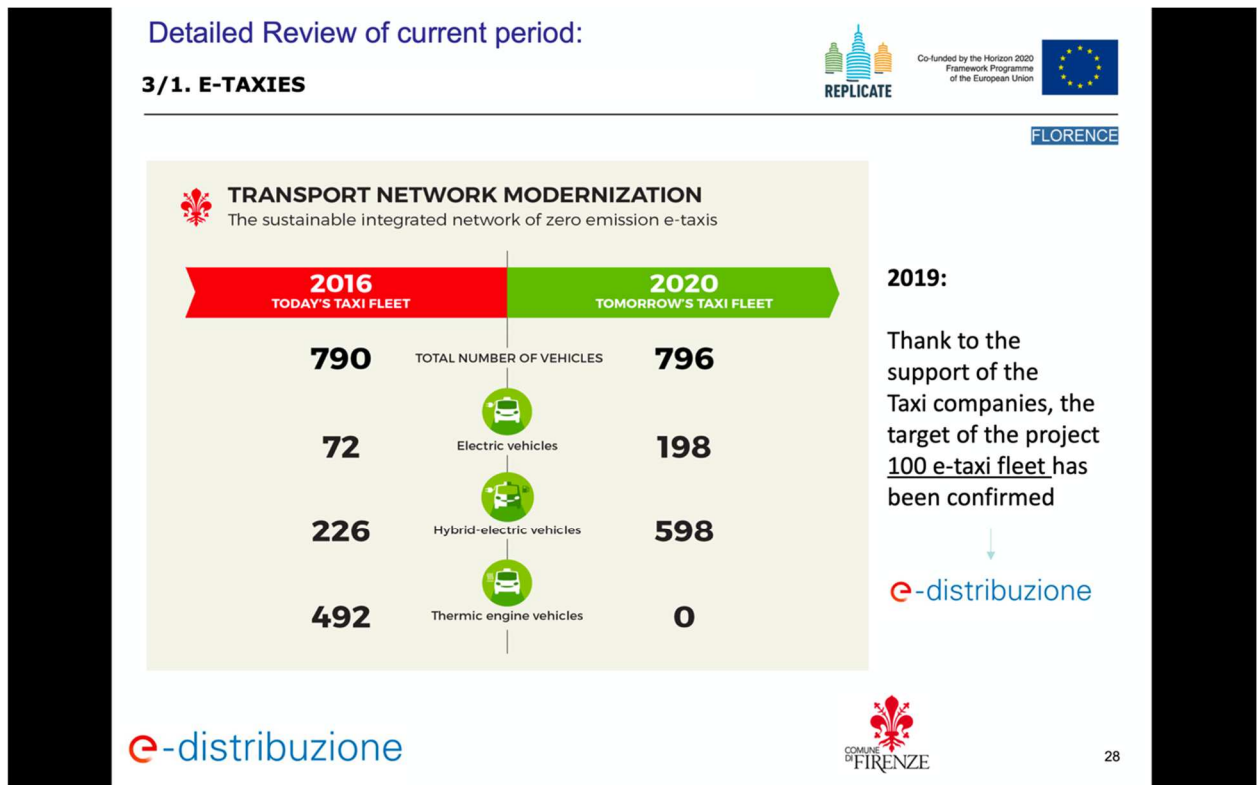
Figure 27. E-Taxies

Slot 2: E-recharge system to move towards a sustainable community and city

With around 200 recharging public points, multivendor system spread all over the city Florence is leading the transition towards low impact public and private transport system (we want people to move and to come to Florence but with low environmental local impact).

Speakers: **Alessandra Barbieri**, City of Florence, Project Manager for Replicate Project and **Giuseppe Carone**, engineer at the e-mobility Office Municipality of Florence.

Sector: Mobility

Stakeholders: City of Florence, Metropolitan City of Florence, Silfi (Public), Enel X (Private), Companies Mobility Managers (Private), E-cars sellers (Private), University of Florence (Academia) and CNR (Academia)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Figure 28. E-Recharging System

Slot 3: Smart City Platform

Florence is testing and improving the smart city platform for monitoring the city. The new governance model that put together all the services provided in the city bringing together the services providers, municipality, utilities and private one, is the win-win strategy at the bases of the innovative smart city platform system.

Speakers: **Chiara Lorenzini**, IT and EU projects, City of Florence

Sector: ICT

Stakeholders: City of Florence, Metropolitan City of Florence, Silfi and all the Utilities (Public), National Association of Municipalities (Public), other National Smart Cities lighthouses and followers (Public), Thales (Private), E-distribuzione (Private), Mathema (Etrepr/Act) and University of Florence (Academia)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

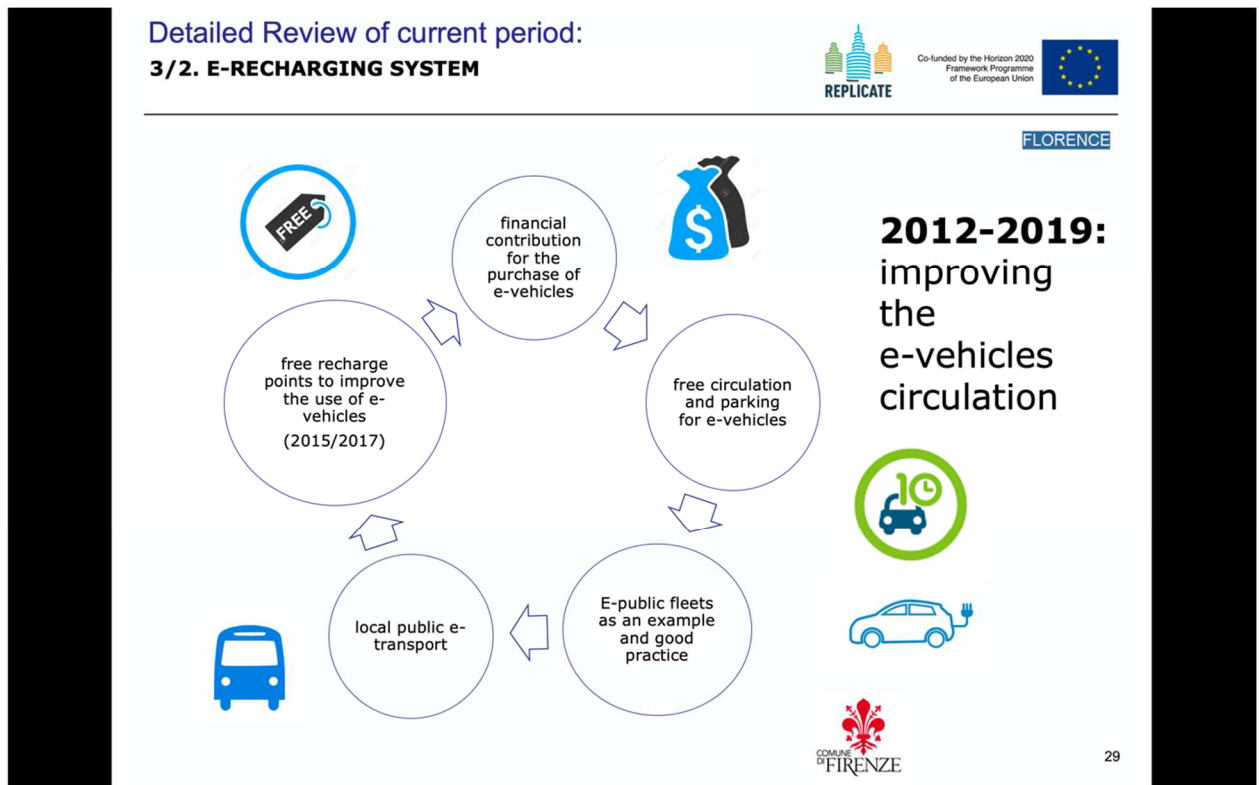|	Project no. 691735	
	REPLICATE PROJECT	This Project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 691735
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Figure 29. Smart City Platform

Preliminar Conclusion of this session

Like San Sebastian, Florence presented to interrelated initiatives in the field of energy: e-taxis and e-charging systems. In addition to this, acting as an overarching framework, the smart city platform was presented. Replicate stakeholders discussed around the technical aspects of the e-charging systems and how the smart city platform should provide the information to citizens. The GDPR was discussed about stakeholders and how Replicate stakeholders understood the implications. Privately-held data may be a forthcoming topic for the policy decisions in Florence.

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

6.4.   4th Session: Lausanne

<u>Lausanne</u> – Fellow City

- The session entitled 'Roadmap for the realization of an eco-district, including development of medium-depth geothermal energy in urban areas' took place on 9th July.
- Outcome: https://replicate-project.eu/4th-session-roadmap-for-the-realization-of-an-eco-district-including-development-of-medium-depth-geothermal-energy-in-urban-areas/
- City Profile and Characterisation:

Lausanne is the 4th biggest city in Switzerland. It consists of 142,000 inhabitants and is the centre of an urban area with 350,000 inhabitants. The GDP per capita is about 61,000€ in (2015). Here is a list of Lausanne's main firms: SICPA, Bobst, Tetrapack, and Logitech. In 2016, Lausanne launched an energy efficiency program call Equiwatt with the objective of saving energy for individuals and businesses, thereby raising awareness of energy consumption. In the mobility sector, Lausanne has been striving for many years to limit the overwhelming space taken up by private cars to encourage more access to shops and businesses. By reducing authorized parking times on the streets, the municipality encourages commuters to leave their vehicles at outlying Park & Ride facilities. Private car traffic has been reduced by 6,000 vehicles per day. ICT is a pending subject for Lausanne.

Figure 30. Lausanne map

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

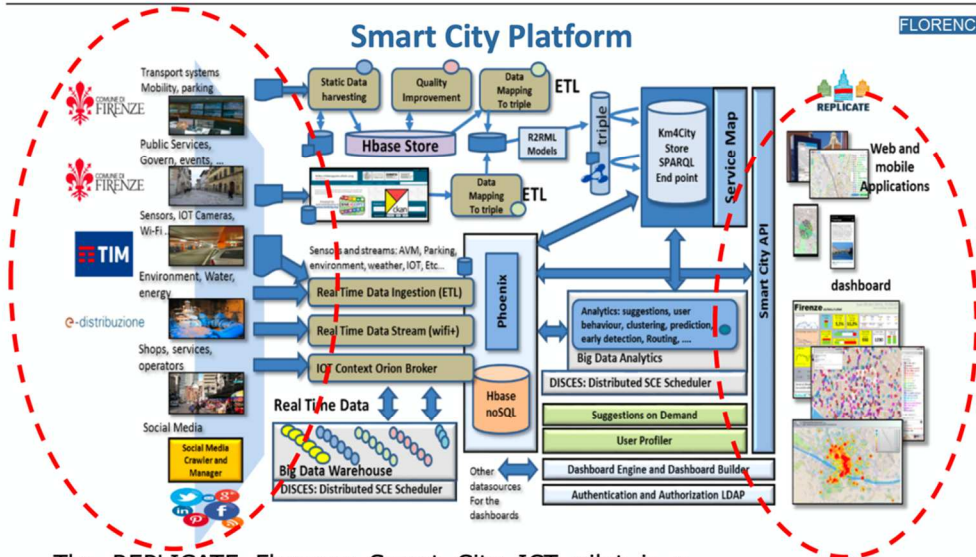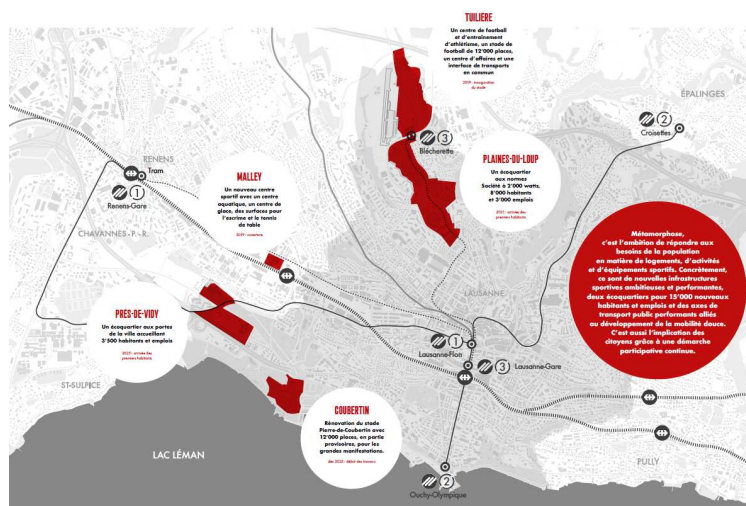|	Project no. 691735	
	REPLICATE PROJECT	This Project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement N° 691735
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Figure 31. July 9

Slot 1: Roadmap for the realization of an eco-district

The City of Lausanne has the ambition to realize the Plaines-du-Loup eco-district. The roadmap starts with the realization of an energy concept, which shows that for heat generation, the most promising option is the implementation of heat pumps connected to deep geothermal probes (800 m). Then, organization of an urban planning competition. Its objective was to select a masterplan project offering sufficient flexibility to integrate the technical and social evolutions that would have taken place over the period until 2030. It was essentially to develop a process of people participation, to lay favourable framework conditions to the anticipated appropriation of this neighbourhood by citizen. The winner has been entrusted with the mandate to implement the master plan, which sets the principles of urbanization, landscape and mobility, and formalizes the energy concept, which is accompanied by an environmental paper. From the master plan, 4 partial assignment plans were adopted, defining the rights to be built. The first of these plans as well as its principles of urban planning and landscaping has been adopted. A call for tender made it possible to select 18 investors, grouped into 5 companies, one per Urban block. Each company's mission is to organize an architectural competition on its territorial scope. A first winner has been nominated.

Speaker: **Maria Riera** Project manager in building management. Apprehend the transversality of sus-tainnable construction, deepened themes such as the heritage, the quality of the living environment, city planning, etc.

Sector: Energy

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

<u>Stakeholders</u>: Town planner (Public and private), Engineer (Public and private), Lawyer (Public, private and civic society), Communication specialist (Public) Architect (Private) and Investors (Entrepr/Act).

Figure 32. Plaines-du-Loup Eco-District

Slot 2: Development of medium-depth geothermal energy in urban areas

Before embarking on the realization of a neighbourhood, it was necessary to develop the technology and validate the economic aspects of a similar pilot project in terms of density and geology. The pilot project allowed:

- to make possible the use of heat pumps with geothermal probes in a compact urban environment with a coefficient of performance approaching the value of 5;

- to develop a protocol allowing the use of standard drills planned for depths of 200 meters, which makes it possible to obtain a competitive cost compared to installations using fossil fuels;

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- to develop, in collaboration with the driller, a coaxial probe model making it possible to limit the heat losses encountered at great depths with a conventional double-U type geometry;

- to equip geothermal probes with optical fibers to be able to continuously measure the temperatures according to the depth;

- to produce a software for processing the mass of data generated, making it possible to visualize the evolution of the temperature at hourly, daily or monthly averages; to validate the calculation models used to simulate deep geothermal probe fields, with a difference of 3% with the measured values.

Speaker: **Francesco Barone** Engineer. Deep geothermal probes: theory and design

Sector: Energy

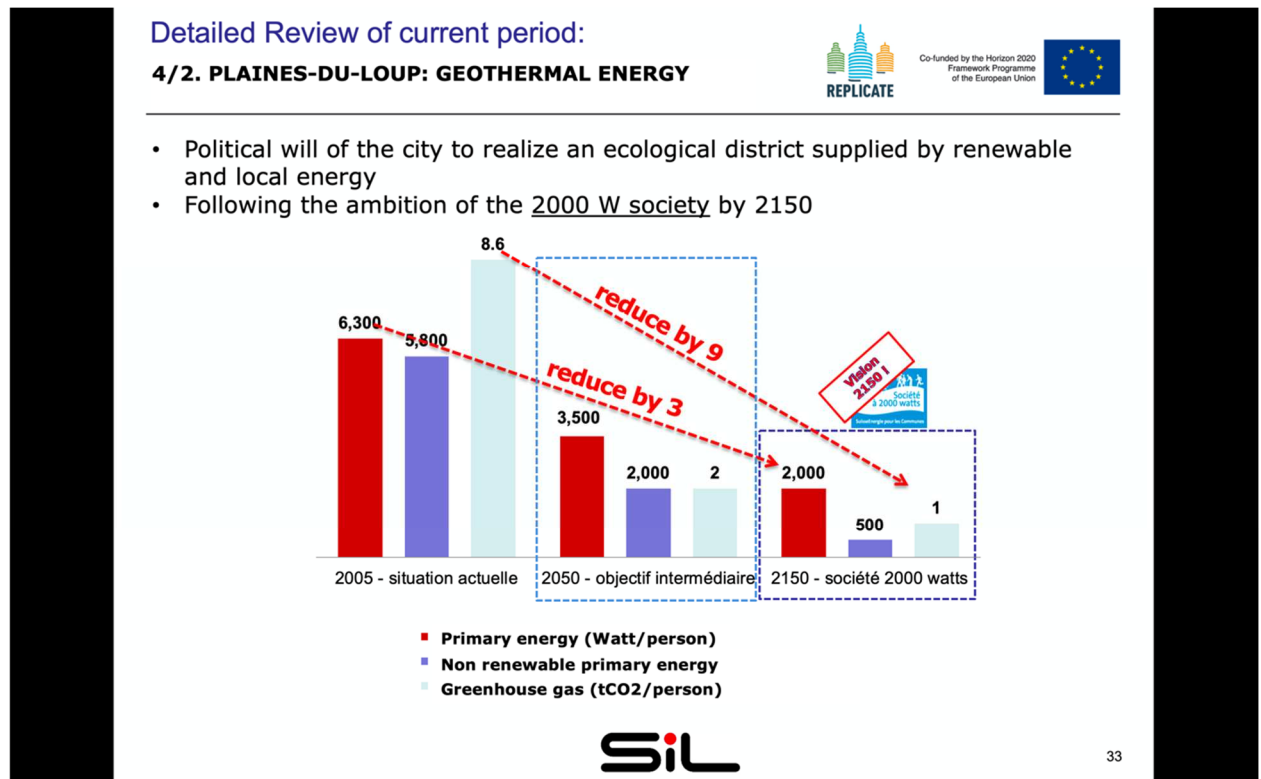Stakeholders: Engineer (Public) and Geologist Driller (Entrepr/Act)

Figure 33. Plaines-du-Loup Geothermal Energy

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Slot 3: Energy efficiency program

In 2016, the City of Lausanne launched an energy efficiency program call Equiwatt with the objective of saving energy for individuals and businesses and raising awareness of energy consumption. This program is financed over seven years by the Energy Efficiency Fund of the City. In order to reach all target audiences, the program has implemented various action plans, including:

- A collaboration with the biggest store chain and other partners made possible to offer 50% discount LED bulbs

- Four eco-social operations took place in different districts of the City where efficient equipment was offered and behaviour change explained to the inhabitants of subsidised housing

- A incentive is offered to companies undertaking renovation of lighting systems or cooling system

- When changing refrigerators, Equiwatt offers a subsidy for the purchase of new high-performance equipment

- An awareness module has been put in place to allow company collaborators to understand the impact of their everyday behaviour on the energy consumption.

Speaker: **Baptiste Antille** (Public) Engineer. Conduct and coordination of energy optimization projects. Monitoring and analysis of energy. performance

Sector: Energy

Stakeholders: Citizens (Civic society) and SMEs (Entrepr/Act)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Figure 34. Equiwatt, Energy Efficiency Programme

Preliminar Conclusion of this session

The session revolved around raising a specific tax for the energy consumption at the city level. Essen showed interest on this aspect. In addition, Florence emphasised the interesting project equiwatt to engage citizens. The case of Lausanne proved the importance of political leadership and social acceptability. The district Plain-du-Loup through Metamorphose project was the central part of the session. Possibly the main conclusion of this session is how the City Council of Lausanne is being able to lead the whole process by including stakeholders throughout the whole process.

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6.5. 5th Session: Bristol

<u>Bristol</u> – Lighthouse City

- The session entitled 'Collaborating with Communities: Creating the future cities we need' took place on 26th September.
- Outcome: https://replicate-project.eu/5th-session-collaborating-with-communities-creating-the-future-cities-we-need/
- City Profile and Characterisation:

  A recent performance assessment framework on Bristol's smart city strategy (Calzada, 2017), stated that the strategy was formed in 2011 to lead the digital innovation agenda within the city. The initial focus areas were smart energy, smart mobility, and smart data. Two main landmark projects are detailed as the key performance of this city: "Bristol is Open" and "Replicate" EU-funded H2020 project. According to the assessment, Bristol's smart strategy, according to the assessment, has already implemented interactive, inclusive, and continuous engagement methods to practice transparency and has made the best of the feedback. So far, research and policy findings reveal two main and optimistic conclusions for the case of Bristol (Calzada 2017, p. 6): First, 'Bristol presents an increasing effort to experiment with the citizen-centric approach given the consideration of (smart) citizens as decision-makers rather than pure data providers. Second, Bristol is ultimately amalgamating a large number of smart projects in a complex network of interactions with citizens. The prospect for the future will be fostering decision-makers' interplay, portraying the city as an open platform.
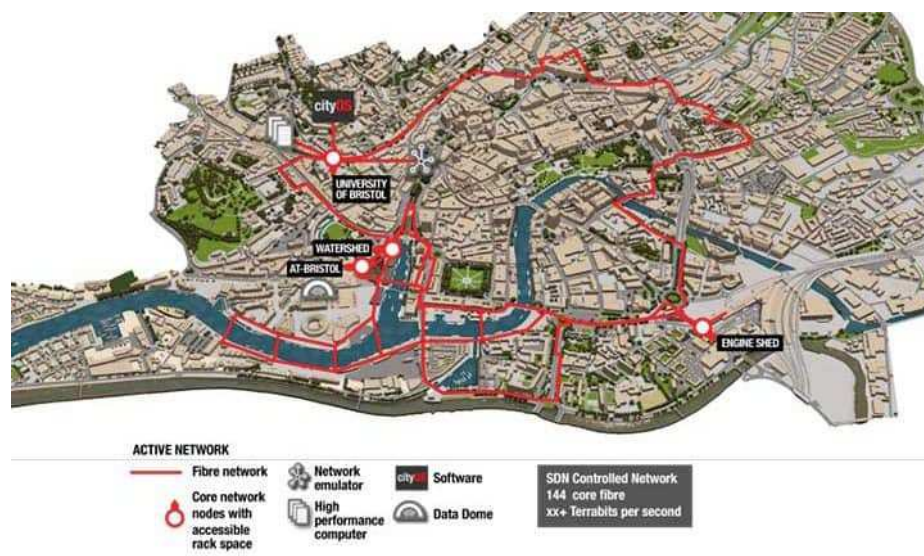

Figure 35. Bristol map

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Figure 36. September 6

Slot 1: Methodologies and Approaches to Co-design

'Smart city' initiatives have the potential to connect people more easily and use technology to address issues affecting our urban centres. But a 2015 report by UK charity NESTA identified several factors that have held 'smart cities' back from delivering real value, including: "not addressing the issues people really care about; not taking human behaviour as seriously as technology [and] a lack of integration with other things going on in cities."

This webinar shared learning from the Bristol pilot of the REPLICATE Project and other tools developed by the project's partners to explore how cities can move away from project planning models that impose pre-decided 'solutions' onto communities, with little room for meaningful citizen participation. It explored how co-design approaches to smart city projects can, instead, open conversations about the challenges communities face and how combining community assets, citizens' skills and interests, and relevant technologies could help to tackle them. In addition, it examined different approaches to co-design – and challenges we might encounter – to illustrate how adopting co-design methodologies can help cities create initiatives where citizens not only imagine new futures but are equipped and enthused to work with others to make them a reality.

Speakers:

Rachel Clarke – Knowle West Media Centre (Ent/Ac), **Helen Manchester** – University of Bristol (Academia)

Sector: Transversal

Stakeholders: BCC (Public), University of Bristol (Academia), Knowle West Media Centre (Entrepr/Act)

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)
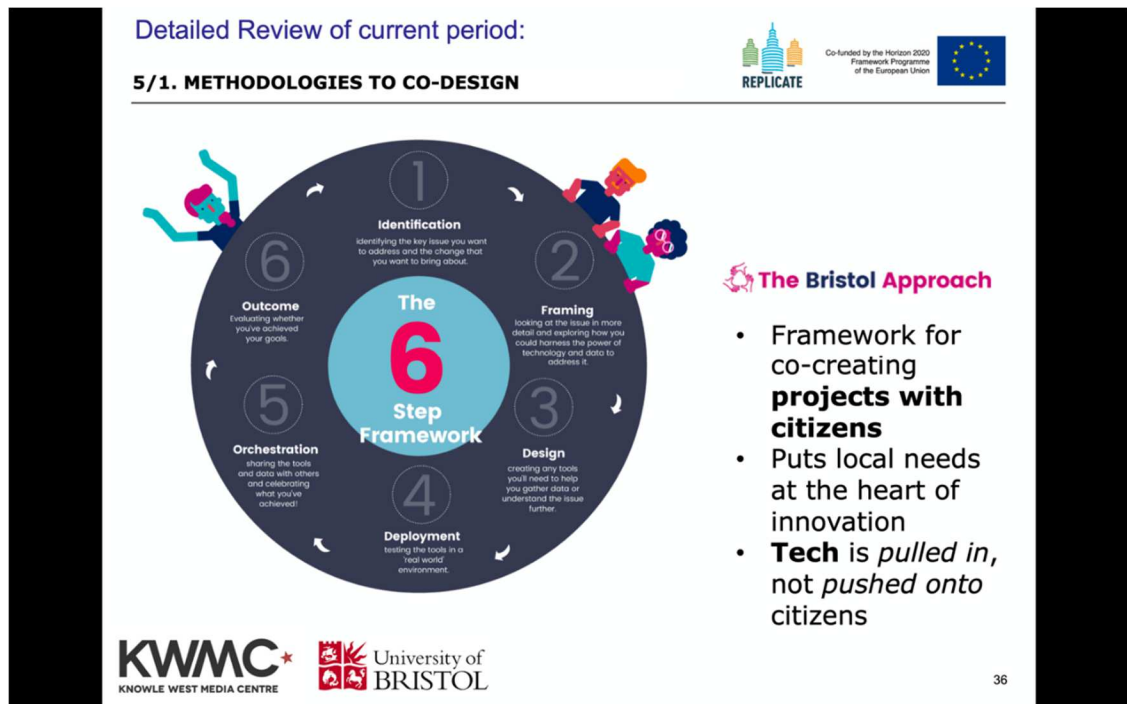
Figure 37. Methodologies to Co-Design

Slot 2: Technology, data and democracy – how we make it accessible

Smart cities are perceived as technologically augmented spaces populated with technically literate citizens able and willing to interact with the technology. However, we have a long way to go to achieve these idealised assumptions:

i) Present technology is not usable enough, nor readily accessible to allow all citizens to engage with it.
ii) Even if citizens are able to engage with technology, many are unwilling to, as currently "smart" technology threatens to takeaway control over their freedom in decision making. This webinar will look into the technical complexities of "city smartness", opportunities for meaningful engagement of citizens with technology and its control. Addressing the following:
1. Key technical, funding and delivery challenges in setting up smart city infrastructures?
2. Societal challenges (trust and fear of ownership loss over own data or appliance control) that impede citizens engagement with smart city technologies?
3. Lessons learned through engagement with citizens' at Bristol in bridging the trust and control gaps (e.g., through data sharing agreements allowing individuals to retain their data ownership while allowing for companies to deliver smart city services; or through demand-side response trials, where automation of smart appliances includes individualised preferences of households in how/when automation should take place).

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Speakers: **Theo Tryfonas,** University of Bristol (Academia), **Zoe Banks,** – Knowle West Media Centre (Ent/Act)
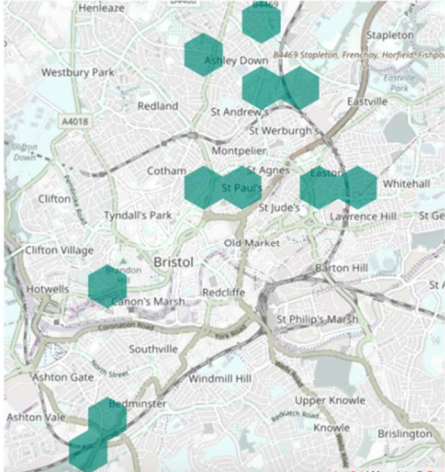
Sector: ICT

Stakeholders: University of Bristol (Academia), KWMC (Entrepr/Act)

Figure 38. Open Data Movement

Slot 3: One city approach and inclusive futures

Bristol is embarking on a journey to find its own narrative with common visions and shared goals. This One City approach, is a way for all stakeholders (public, private, voluntary organisations and our communities) to engage with the co-design of the future development of the city, it's looking to access new perspectives and innovative thinking, a wider leadership power bases across different sectors, increasing spheres of influence. The One City approach enables an innovative and collaborative approach to urban governance by encouraging partners across the city to contribute to addressing the immediate and long-term city challenges. This One City approach harnesses the collective power of public, private and voluntary organisations to focus resources and co-ordinate and prioritise actions it aims to align focus, effort and

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

resources on a few intractable problems, remove barriers and share aspirations, obligations and interdependences

This Webinar looked at how the One City Approach is being developed in Bristol. We will draw on examples from practice, particularly those developed within REPLICATE in relation to digital, civic futures and in community led energy production to assess the bent's and challenges of this city wide approach. Bristol is emnarking on a journey to find its own narrative with common visions and shared goals.

Speakers: **Hayley Ash,** Bristol City Council (Public), **Ruzanna Chitchyan**, University of Bristol (Academia) **Dave Tudgey (**Civic Society)

Sector: Transversal

Stakeholders: Bristol Energy Network (Civic Society)

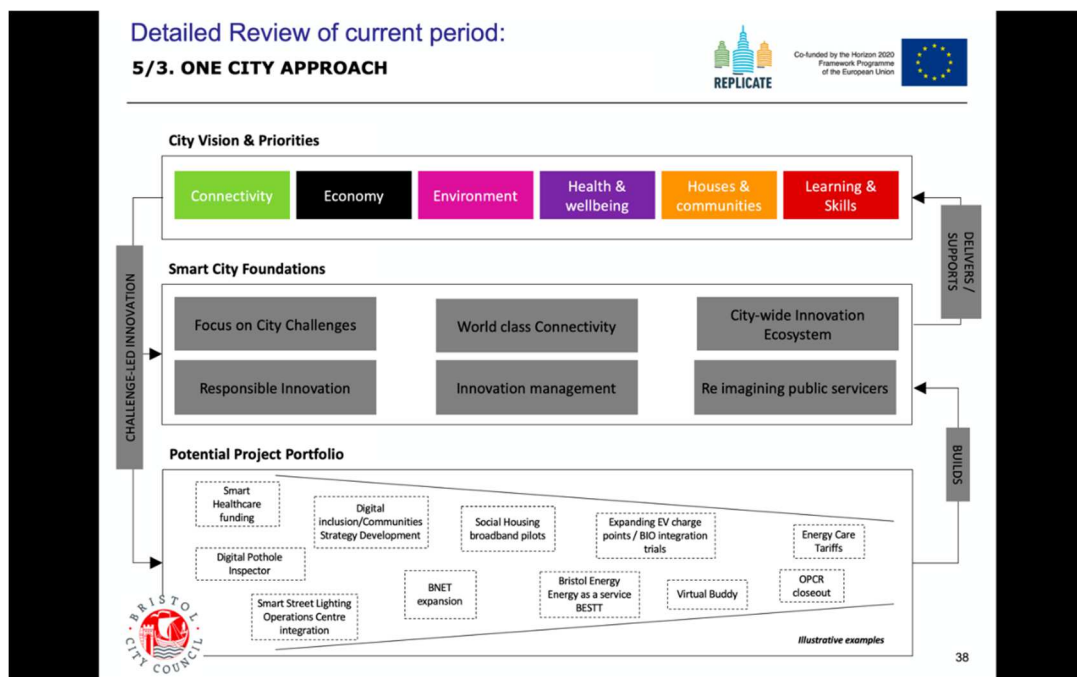

Figure 39. One City Approach

Preliminar Conclusion of this session

The session led by Bristol revolved around key aspects of its unique approach to smart cities. Community development was continuosly emphasised by speakers and the interest by Nilüfer and Essen went in line with their potential replication plan. Critical and digital literacies were presented in terms of how important was to train and prepare citizens.

D8.5 Open data platform to share the outcome integrated in the common ICT platform (Website)

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Open data approach in the city was a focal point of this session, presumably key for fellow/follower cities of Nilüfer and Essen. The focus on citizenship and communities was clearly pointed out in the whole session, which eminently offers an opportunity to the rest of Replicate stakeholders to operate diifferently and more innnovatively in their cities by including a diversity of agents.

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6.6. 6th Session: Nilüfer

<u>Nilüfer</u> – Fellow City

- The session entitled 'Socio-economic development from below' took place on 20th November.
- Outcome: https://replicate-project.eu/6th-session-socio-economic-development-from-below/
- City Profile and Characterisation:
- Bursa is in a key geographic location providing logistics connection for major cities such as Ankara, İstanbul, and İzmir. It is a location with access to national and global markets. There are three universities offering world-class education. Advanced infrastructure, dynamic entrepreneurs, and a high quality of life and work create an attractive investment as well as social climate. Nilüfer is one of the 17 districts of Bursa Province. It has been established as the main residential development area of Bursa to meet housing needs of the growing city as well as industrial and commercial structures. Nilüfer comes first among the districts of Bursa in terms of the economical contribution while providing employment opportunities to 80% of the Bursa population via the Organized Industrial Zones in its border. In 2015, the population of Nilüfer Municipality reached 397,303, an increase of 5.81% over the previous year. The population increase of the last five years was 35%. This growth is higher than the average of Turkey and Bursa and will probably continue due to the attraction of the city to industrial investment and, thus, jobs. The population of Nilüfer encompasses 13.98% of the total population of Bursa (2,842,547). Nilüfer had 495.75 km2 of district area and 962 person/km2 in 2015 while these values were 10,886 km2 and 273 person/km2 for Bursa, respectively. Bursa is viewed as one of the fast-growing middle-weight cities that are projected to account for more than 60% of global GDP growth over the next 15 years. There are 16 organized industrial zones and one free trade zone with clusters in automotive, textile, machinery, food, and furniture. Employment opportunities are increasing, and GDP per capita of Bursa is $21,507 according to 2014 data.
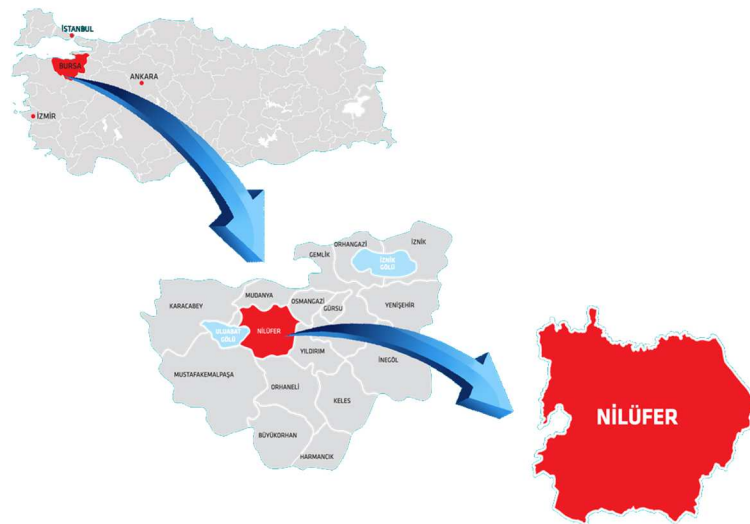
Figure 40. Nilüfer map

Figure 41. November 20

Slot 1: Grassroots Empowerment

Nilufer has undertaken a bold experiment in bottom up governance grassroots organization of the citizenry through neighbourhood committees and proliferation of NGO's.

Economic development to "raise all boats" needs to be inclusive and emancipatory. This means grassroots empowerment and participation in decision-making processes. Nilufer Kent Konseyi (City Council but not a public body) came out of the agenda 21 groupings of Habitat III and

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developed into a body of organized citizenship. NGO's are the determining feature of this body and most municipal decisions effecting the district are discussed within the Kent Konseyi. One of the very original organizations in Nilufer, the neighbourhood committees with preferential membership by disadvantaged groups, youth and women are strongly represented.

It is a model that can and is replicated in local governments with a progressive tendency and can be repeated elsewhere. The benefactors are the citizenship as a whole and other cities and municipalities in Turkey are trying to replicate the model in their respective regions and cities.

Speaker: **Ms. Elvan Atay**, Nilufer Kent Konseyi

Sector: Empowerment

Stakeholders: Nilufer Mun. (Public), Bursa M. M. (Public), Uludag University (Academia), Citizen Council (Civic Society)

Figure 42. Grassroots Empowerment

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Slot 2: Bottom-up Energy Efficiency

Transforming the supply and demand architecture of the energy sector towards a more democratically controlled and local scale economic activity is critical for the sustainable transformation of cities.

Demand side energy efficiency depends on using state of art technology as well as behavioural change on the part of the end users. Citizen awareness is a very important part of this process and neighbourhood committees as a grassroots empowerment model may be a very efficient tool to raise awareness in energy efficiency. Different countries and cities may find differing models of citizen engagement but neighbourhood committees spread the word to the largest possible potential users of energy. This model is also very suitable to address fuel-poverty issues as neighbourhood committees encompass all citizenry including the disadvantaged sections of society.

Speaker: **Mr. Umut Sevilmis**, Nilufer Innovation Center

Sector: Neighbourhoods

Stakeholders: Nilufer Mun. (Public), Nilufer Innovation Center (Public), Uludag University (Academia), Citizen Council (Civic Society) and Tool developpers (Entrepr/Act)

Figure 43. Bottom-up Energy Efficiency

Slot 3: Industrial spin-off Ecologies

As host to large industrial firms and industries, there is now an active start-up dynamism in Bursa including large industry spin-offs that has the potential to create economic value added in Nilufer.

Bursa within which Nilufer is a district, is one of the industrial powerhouses of Turkey, hosting the automotive and textile industries as well as their OEM producers besides important portions of the mechatronics and electro-mechatronics sectors. These are normally large multi-nationals in the case of the auto industry and large scale local firms in textiles and machine-making. A large part of employment comes from these firms and their suppliers in the region. The large firms are in search of new lines of business and spinning off startups in ICT, services and other sub-sectors creating a flurry of activity in entrepreneurship mostly in the general area of smart citizenry and smart public services. This development, though particular to the industrial ecology of Bursa, is replicable in other parts of the world.

Speaker: **Mr. Emin Direkci**, Freelancer

Sector: Entrepreneurship

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<u>Stakeholders</u>: Nilufer Mun. (Public), Large companies (Private), Start-ups and SMEs (Entrepr/Act)

Figure 44. Industrial spin-off Ecologies

Preliminar Conclusion of this session

Three different but complementary initiatives were presented: Neighbourhood Committees, energy co-operatives, and industrial spin-off ecologies. Niilüfer seems to have an early-stage project with strong ingredients and it is a city that will take advantage of its position in Replicate. Discussion among stakeholders was fruitful and insightful providing ideas in relation to community development and industry strategies. In this direction the lessons learnt offered by Bristol could be applicable in Nilüfer. Not only participatory approaches for Nilüfer could be rewarding but also inspirational to include the extra layer of the ICT to their city processes.

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7. LESSONS LEARNT

The future seems to belong to European cities and regions that genuinely embrace agile methodologies such as the 'City-to-City Learning' Programme, attempting to fulfil the promise of smart cities (Calzada, 2018b; Calzada & Cobo, 2015; Coletta, Evans, Heaphy, & Kitchin, 2018). 'City-to-City-Learning Programme's will likely become the standard replication strategy in cities rather than pure predictable *replicability*. Pure replicability means 'the possibility of transporting or *copying* results from a pilot case to other geographical areas' (European Commission, 2017a, 2017b, 2017c, p. 12, 2018, 2019a; European Parliament, 2014). The 'City-to-City-Learning Programme' has constructively revised the scientifically inaccurate assumption that the city is a predictable and rational machinery (Kitchin, 2017) with strong evidence to further innovate in this direction.

Consequently, we formulate several lessons learnt to allow us implementing open data platform mechanisms such as th 'City-to-City-Learning Programme':

1. It is crucial to empower fellow/follower cities during this process by putting them at the same learning level than lighthouse cities.
2. The role of the city representative must be acknowledged as having a core strategic value in the course of this programme. They formulate at the end of the day the collective strategy of the city by contacting key stakeholders.
3. One of the less obvious aspect in the policy field is the importance to curate and edit content. To prepare the sessions becomes one of the most remarkable condition for the success of the sessions.
4. It is necessary to remark that a learning process is intrinsically connected with the chance for replication. Let's say learning comes just before adaptation, scaling-up, and ultimately, replication.
5. Ultimately, the selection of the stakeholders for the programme is key for its success.

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8. INNOVATIONS, IMPACTS AND SCALABILITY

The direct impact of the programme as the open data platform for the Replicate cities could be measured by focusing on two quantitative assessments:

- First, the number of effective participants: 110. Which differ from the preliminar registered participants in Eventbrite section 5.2.
- Second, the number of effective viewers of the sessions in the open data platform allocated in the Replicate site: 255.

Regarding the two measurements, we can observe the uneven turnout of each session. Besides this aspect, the type of stakeholders presenting has clearly differed from session to session by consistently pointing out the multistakeholders' composition assessed in T.8.2. in the fellow cities. The multistakeholder composition depicts in each case the combination of strategic stakeholders interacting strategically and thus formulating the smart city strategy of their city.

Detailed Review on the current review period (M31-M42)

T.8.3: City-to-City-Learning Programme Through 6 Webinars — 2019: M37-48

Replicate city	Lighthouse/ Follower-Fellow	Smart City Actions	Impact		Stakeholders Actively Involved In/Presenting: Penta Helix				
			Participants	Views	Public	Private	Civic. Society	Academia	(Social) Entrepeneurs/ Activists
SS	L	Public Smart Lighting	19	142	SSCC	Leycolan + FSS	U.P.M.		
		Linked Open Data			SSCC	Eurohelp+FSS			
		Smart Mobility Platform			SSCC	Ikusi+FSS			
Essen	F	Start-up Promotion	17	29	CE	RAG			EUREF
		Impact Hub Ruhr			CE+S N-R W	eON+IRE+EDA	U.D-E		IHR
		Essen 51			CE+S N-R W	eON+IRE+EDA	U.D-E		IHR
Florence	L	E-Taxies	27	37	CF+MCF	ED+TA+H+N+R	U.F	Ass.	M
		E-charging system			CF+MCF	EK	U.F		
		Smart City Platform			CF+MCF	GSP+AVR+T+C	U.F.		
Lausanne	F	Plaines-du-Loup Eco-District	10	16	CCL				
		Plaines-du-Loup Geothermal Energy			CCL				
		Equiwatt: Energy efficiency programme, eco-social operations			CCL				
Bristol	L	Methodologies to Co-Design	17	20			U.B.		KWMC
		Open Data Movement					U.B.		KWMC
		One City Approach			BCC				
Nilüfer	F	Grassroots empowerment	20	11	NCC		U.N.	Ass.	E.
		Bottom-up energy efficiency			NCC		U.N.	Ass.	E
		Industrial spin-off ecologies			NCC	C.C.	U.N.		E.

Figure 45. Impact

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8.1. Innovation solution

The 'City-to-City-Learning Programme' could be presented itself as an innovative solution that overcomes the limitations of pure and mechanic 'replicability'. As such, the programme is a new process and method successfully experimented during 2019 by the six Replicate cities and their related stakeholders.

8.2. Social impacts

The 'City-to-City-Learning Programme' has reinforced the interactions among stakeholders. The Programme has consolidated as a practice inside Replicate something crucial for the success of the project: the strong interaction directly (without middelmen) among stakeholders.

8.3. Environmental impacts

Not directly. Albeit several slots addressed key invesments in infrastructure such as district heating (in the case of San Sebastian and Lausanne) that may lead the project to achieve a substantial environmental positive impact.

8.4. Replication and scalability potential

Actually, this is the most important impact. The 'City-to-City-Learning Programme' was designed to be the most relevant strategic activity for replication. This potential can be viewed through the content of the programme. The programme itself is the source of the replication strategy.

8.5. Economic feasibility

The replication plans by the fellow cities once formulated will clearly show this economic feasibility. The programme has contributed to open up the economic formulation for replication.

8.6. Impact on SME´s

By observing the stakeholders participating in the programme, we can highlight the involvement of the SMEs in Replicate cities. The role they have played during this programme has been remarkable.

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9. CONCLUSIONS

There are several take-aways in the function of replication among Replicate cities:

1. Replicate project has established a unique way to prepare the formulation of the Replicate Plans in the follower/fellow cities.
2. During 2019, stakeholders from the six Replicate cities, have actively become co-producer of the 'City-to-City-Learning Programme'.
3. Its resulting content has constituted the open data platform even for stakeholders beyond Replicate.
4. The interaction among stakeholders has shown a clear potential to plan ahead replication activities.
5. Overall, there is a strong correlation among the session each city prepared and their multistakeholder composition and city strategy.
6. The six Replicate cities have intensively interacted.
7. Future opportunities could arise from this preliminary content of the programme.

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10. LIST OF TABLES AND FIGURES

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FIGURES

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