DONOSTIA SAN SEBASTIÁN SMART PLAN 2016-2020

(Plan Summary)

Donostiako Udala
Ayuntamiento de San Sebastián

donostiasustapena
fomentosansebastián
DESARROLLO ECONÓMICO DE SAN SEBASTIÁN
DONOSTIAKO GARAPEN EKONOMIKOA
SAN SEBASTIAN ECONOMIC DEVELOPMENT

www.fomentosansebastian.eus

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CONTENTS

1

OBJECTIVES AND STRATEGY

1. Introduction

This document synthesizes the Donostia / San Sebastián Smart Plan and an Action Plan for the period 2016-2020 and meets two main goals: On the one hand, establishing a strategic line with shared goals and, on the other hand, giving coherence and coordination to the public action, capitalizing on all actions carried out from different Municipal Departments and Public Corporations of the City Council.

In order to respond to these two goals, the document considers taking as reference the work that has been done for a long time in the Smart area of the city. The document presents a wide experience in specific areas carried out from different Departments and Municipal Companies, and that's the reason why the city has been recognized at national and international level on several occasions (top 5 of the smartest Spanish cities in the index of IDC - ICTs Development Index, for several years, Civitas award to sustainable transport in 2012, recognition as City of Science and Innovation in 2010 or the award of European Capital of Culture 2016, among others). Therefore, it does not start from zero but there is an important previous experience.

The second area of reference are the European policies setting the main lines of work through the funding they are granting and which represent an opportunity for the city itself. Europe increasingly seeks that cities may lead the transformation process to achieve a more sustainable society and with a better quality of life, both in the field of smart cities and also in that of smart specialization.

From this framework, the priority fields of work have been defined from the main work axes at European level for a Smart City:

1.- Axis for the Exploitation of other resources

- Improvement of water distribution network
- Rainwater Management. Sustainable drainage and reduction of waste-water generation.
- Reduction of water consumption
- Optimisation of waste management
- Adaptation to Climate Change

2.- Energy Axis

- Poly-generation and distributed generation
- Participation in the generation, distribution and marketing of energy
- Near zero development of energy consumption districts
- Exemplary and efficiency in municipal facilities

3.- Sustainable Urban Mobility Axis

- Electrification of transport
- Smart mobility
- Smart transport infrastructures

4.- Integrative Technologies Axis (applied ICTs)

- Interoperability platforms
- ICTs infrastructure
- Smartization and connectivity of the city, and provision of services and contents
- Open Data Platform

5.- Smart Axis and Open Government

- Open Government (Open Government for the empowerment of citizens)
- Creativity and Social Innovation
- Smart Government
- Smart Specialization Strategies

6.- Smart Living Axis

- Healthy environment
- Tourism
- Trade
- Culture

These are the axes and actions that have been considered as priority and with whom it is possible to start working on the time horizon 2016-2020. However they are not exclusive. They are actually complementary to other projects and work axes of the city. But this will require a greater effort of interdepartmental coordination and the exploitation of synergies that may result from this process.

The document also, and specifically, proposes a model for the interdepartmental coordination so that actions undertaken by the different municipal Departments and Companies have an operating nexus helping to share the knowledge generated, integrating actions to avoid the conflict of interests, facilitating the obtaining of subsidies (either from Europe, State or regional level), consolidating the leadership of the City Council in the interaction with social agents and the private sector and consolidating a Donostia Smart City brand recognizable at European level.

The Plan has been drawn up by Fomento de San Sebastián with the collaboration of Presidency as coordinator of the Municipal Departments. In November 2013 questionnaires were sent to the

Municipal Departments and Municipal Companies in order that they might give expression both the executed projects or in progress of execution within the Smart field, and they were also asked to raise the goals and vision of the city from the perspective of each department. The information collected and provided by each department has served as a basis to define the main lines of work outlined here.

In addition, under the coordination of Fomento de San Sebastián, 187 people from 96 different public and private entities (Municipal Departments, companies, research centres, universities, sectorial associations, civil organizations, etc.) have met in the period May 2014 – May 2015, in different sessions, reaching the definition of the actions/major projects included in this document. This participatory process and the wording of the Smart Plan has also been overseen by a group of experts, who formed the Advisory Board of the European project STEEP (Systems Thinking for Comprehensive city Efficient Energy Planning) funded under the framework of the Seventh Framework Programme of the EU. In total, the collaborative and participatory process of developing the Smart Plan has integrated 207 people, especially from the city and its surroundings, but also at state level and even internationally. Tecnalia (STEEP project partner) and Idom also participated and supported in developing the Smart Plan.

1.2 Goals

The main goal of the document is to define a strategy in the Smart field and an Action Plan for the period 2016-2020, which contributes the city of Donostia may effectively and in a planned way implement its development projects in the urban environment under an integrated and "SMART" perspective.

Considering a Smart City Plan as a portfolio of initiatives that include different areas of action and which pursue a common outcome in line with the global strategy of the city, this document aims to propose lines of action and specific projects which in the framework of these initiatives contribute positively to the achievement of the socio-economic development goals of the city.

Both the initiatives of the Action Plan and the corresponding projects that will allow promoting such initiatives should be in accordance to the main alignments and the general goals of the development strategic framework of the city. That is, the initiatives proposed in this document seek to respond to the specific needs of the municipality, enhancing its strengths through the identification and promotion of opportunities in the field of economic growth, social development and minimizing the environmental impact through an optimal management of resources.

The definition of the Action Plan largely depends on the priorities in the development strategy of Donostia / San Sebastián, whose key elements are the funding opportunities and the participation of stakeholders (public-private) in the successful achievement of the plan goals expected.

The definition of the goals is precisely a critical aspect of the process in which a great variety of actors of the municipality have been involved. By using the information provided, this document aims to identify the particular goals of this city as Smart City.

For that, it has been necessary to carry out an assessment of the situation of the city regarding the different dimensions considered in a Smart City.

13. The "Smart City" strategy as a mechanism for sustainable development

Nowadays, many cities seek to find their way to become smart cities. The information developed here understands this concept as a tool for a vision of future: a smart city project at the service of a transformation strategy that promotes the social sustainability (cohesion-citizenship-participation), economic (local development) and environmental.

This is not to replicate what others do, but to generate an own project that leads to adopt specific solutions in Donostia. A smart city project that will require to be supported in the future reflection of the city, in its conditions and its strengths as components on which the project will be built.

Another important element promoted from Europe is the Smart Specialisation Strategy (RIS3), which in the case of Euskadi has defined three main priority axes as described in the Science, Technology and Innovation Plan (PCTI 2020): Advanced manufacturing, energy and Bioscience-Health.

Also, other fields providing "opportunity niches" from a series of activities linked to the Territory with potential for their scientific-technological and business development are considered. The agri-food sector, Ecosystems and environmental regeneration, audiovisual, cultural and tourist activities, and activities related to urban development and territorial planning, among others.

For ten years in Donostia and through the urban clustering model driven by Fomento San Sebastián, the smart specialization of emerging economic sectors has been worked. This strategy has led that 6 urban sectoral clusters have been constituted taking into account the capacity and idiosyncrasy of the city and the potential impact on the socio-economic fabric of the city. Sectors that are being worked are the following: Audiovisual-Digital, Smart Energy, Assistive Technologies, Surf, Agri-food and Fashion.

In order to take advantage of these opportunities, having a smart city project with an appropriate management structure, boost and leadership, and a smart and solid financial architecture that provides credibility will be required.

In this context, the Smart Action Plan propose under generic strategic lines, ambitious goals in order to progress in the definition and implementation of initiatives that help to further improve environmental and socio-economic aspects in the city for 2020. These goals are consistent and continue with initiatives currently in force in the city, thanks to the involvement of different municipal departments in the Plan drawing.

In addition, another important aspect has also to be considered. It has to do with a way of working in the city, a model, a system of Citizen Participation that pivots on three dimensions: representative, dialogic and direct. And at the same time, it also pivots on an architecture adapted to the possibilities and character of the city. This is an own and differentiating element to be taken into account in order to give expression to the Action Plan in Donostia.

The following figure graphically summarizes this process, where it is possible to see how the bases are established through the Action Plan to move forwards in a future in the definition of the Donostia / San Sebastián Smart Plan strategy, on the basis of the current situation of the municipality and considering aspects taken from four main aspects that will be described below.

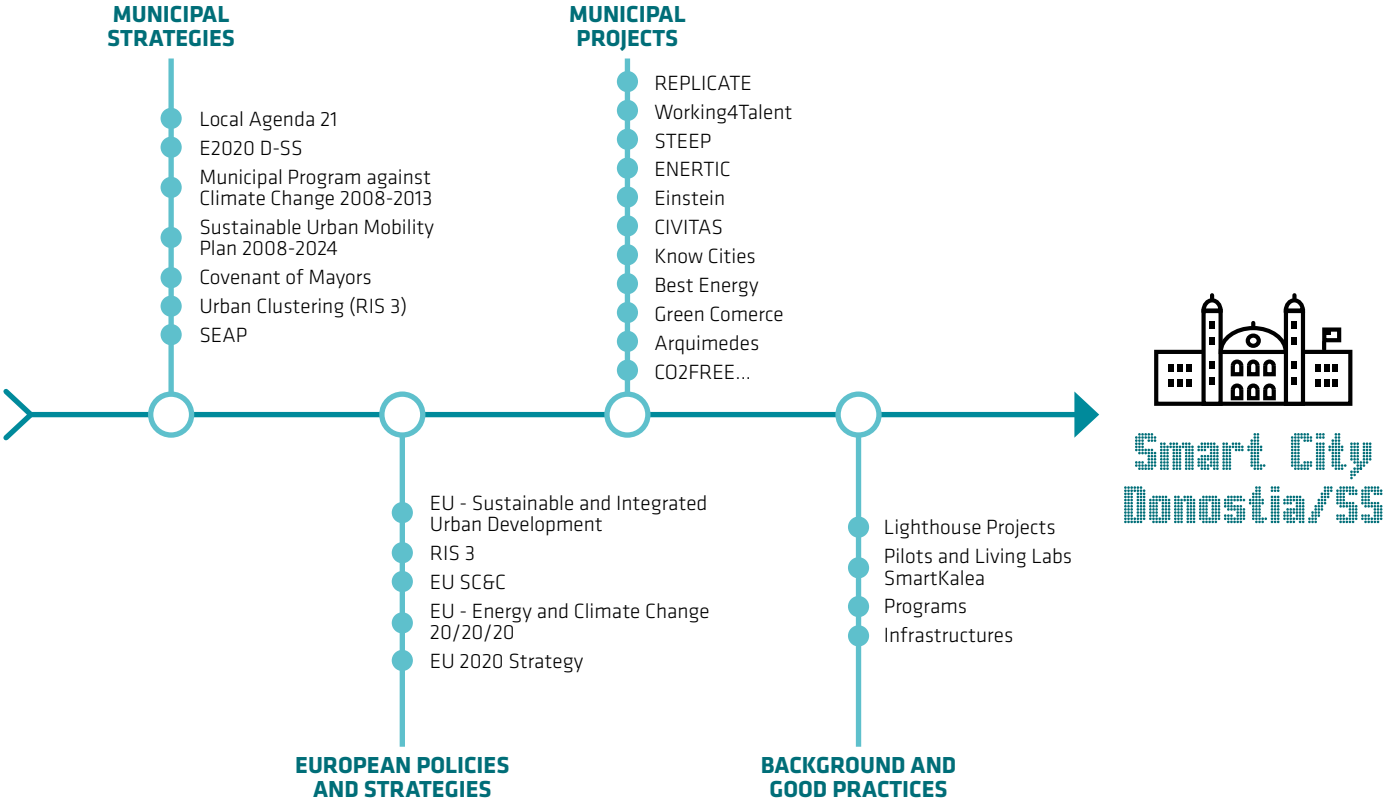


Figure 1. Factors taken into account in the definition of the Donostia / San Sebastián Smart Plan.

The first aspect regards municipal strategies. It has to be considered that Donostia / San Sebastián has an important trajectory in terms of policy initiatives on sustainability and combating the climate change. This is reflected in several documents and initiatives such as the Municipal Program to Combat Climate Change, Local Agenda 21, the Covenant of Mayors, Donostia Hiri Berdea 2030, the Sustainable Urban Mobility Plan, etc. Therefore there is a path already started which is part of the overall strategy of Donostia / San Sebastián and which has been considered in the drafting of this plan.

Over recent years and joined to the strategy set by the initiatives above mentioned, several municipal projects have been carried out, which despite of not being motivated by a Smart City Plan, they actually add value and consider as Smart actions already performed in the municipality. This is just the second aspect considered, where both projects created and still in progress in the municipality are contained, placing them within 3 major fields of "Smart City Plans": Sustainable building and urban environment, energy and environment and mobility.

In this field, it has to be highlighted the STEEP project, which aims to develop an Action Plan for the Urumea District and the drafting of a Smart Plan for the municipality. The project also seeks a direct involvement of the local agents in the definition of the main lines of work in the Smart field, taking into account the needs and problems and the best solutions to meet those needs and to respond to the problems arising.

The third aspect is related to European Policies and Strategies defining the European framework surrounding the "Smart Cities" and affecting, among other factors, to the own definition of the Smart City concept and the main trends in technical aspects of possible financing funds.

Finally, the fourth aspect corresponds to the analysis of the background and good practices implemented by other cities regarding the "Smart Cities" so that new ideas for Donostia / San Sebastián may arise.

1.4. Relevance and opportunity of a "Smart City" strategy for the city of Donostia / San Sebastián

Donostia / San Sebastián, as capital of the Province of Gipuzkoa, is a municipality with an area of 60.89 km2 and a resident population slightly over 186,000 inhabitants. In 2014 a consolidation of the population occurs that could be signaling a turning point in the dynamics of population since it does not seem to be producing significant increases in the coming years, unlike what happened in previous years.

In the last decade the distribution of the population of the city by sex and age has remained broadly stable, reflecting a structure of mature population, with a clear trend towards the progressive aging, which is one of the characteristics of the population of the city. It is a similar situation that occurs in the Historical Territory of Gipuzkoa and in the whole of the Basque Country, where it is becoming increasingly significant the proportion of the population over 65 years.

This is an aspect that influences the socio-economic development and that should be considered as a basic analysis element when proposing a city strategy, since on the one hand the city should respond to the needs of citizens and, on the other hand, that strategy may also help to provide to some extent such development and its consequences, promoting therefore a particular strategy consistent with the foreseeable scenario.

Furthermore, the structure of the economic activity shows the great dependence of both the economy and the employment in Donostia in the service sector. This is one aspect that makes it different, in part, regarding the situation of the Basque Country where the industry has a greater relative weight in the case of Donostia. Among the economic sectors, it has to be highlighted the relevance and the growth of the service and trade sectors (especially small business) which, together with the diversity of cultural and landscape attractions offered by San Sebastián, as well as its significant percentage of green areas, makes it a very relevant tourist destination.

Regarding employment, another aspect is the fact that 32% of the population works outside the municipality in activity sectors other than those reflecting the economic structure of the city.

A notable aspect to be noted in the residential sector is the fact that over 30% of the building stock has more than 50 years old, so there is great potential for the reduction of the demand through rehabilitation actions.

The analysis of the structure of energy consumption is a particularly important matter in cities, since it is related to one of the strategic policies of the EU, the boost to a competitive economy low in carbon and the reduction of Greenhouse Gases (GHG) emissions for 2050 by 80% compared to the base year. In the case of Donostia, the energy consumption of the town has undergone a growth in recent decades and it is possible to see that the greatest contribution to it is due to the transport sector (58%), followed by the residential sector (24%) and services (15%) and finally by the industry sector (3%).

Regarding the use of renewable generation technologies, the cumulative capacity of renewable energy facilities of Donostia / San Sebastián in recent years is following the desirable trend of increasing.

All these aspects are reflected in GHG emissions whose values referred to 2014 in the case of Donostia are: 42% of GHG emissions are due to the transport sector, 28% due to the industrial sector, 13% due to residential sector, 9% due to the services sector and 8% due to waste processing.

Under this socio-economic and energy-environmental context, it is possible to say that Donostia has been for years a pioneer town in the development of policies on sustainability and combating climate change. The main initiatives in this regard are detailed below:

- 2002: approval of the Action Plan Local Agenda 21 (2002-2007)
- 2004: Strategic Plan 2004-2010
- 2007: Second Action Plan LA21 (2008-2013)
- 2007: Municipal Program of Combating Climate Change (2008-2013)
- 2008: Urban Sustainable Mobility Plan (2008-2024)
- 2008: Adherence to Covenant of Mayors
- 2011: Donostia / San Sebastián 2020 Strategy
- 2011: Action Plan of Sustainable Energy (SEAP)
- 2013: Donostia Lagunkoia
- 2015: Donostia Hiri Berdea 2030

In addition it should be emphasized that Fomento de San Sebastián has also been pioneer in some implementations in the field of renewable energy facilities (photovoltaic solar panels on roofs of municipal buildings), energy sustainable buildings (Enertic, Talent House, Pi@, Uba), project of District Heating in the neighborhood of Txomin, collaboration in an intelligent micro network iSare, Smart Pilot projects and implementations (SmartKalea, ...) etc.

A differentiator vector of Donostia is the promotion of citizen participation and the collaboration processes between public-private agents and the promotion of entrepreneurship and the creation of new companies. Moreover, Donostia has become a leading city in the field of innovation and the generation-attraction of talent. This commitment sustained by innovation is embodied in "an innovation ecosystem" based on three transforming dynamics:

- Donostia **CITY OF KNOWLEDGE**, which has been committed to become the city in an intensive space of science and technology activities; creating a progressive network of agents and knowledge infrastructures.

- Donostia **SPECIALIZED**, which works to reinterpret its traditional basic sectors; and to open up to new emerging activities that allow to build a smart, sustainable and inclusive economic model.

- Donostia **LIVING LAB**, which seeks to become the life in the city in a space of innovative relationship from a dual perspective: stimulation of processes of participation of people and the optimization of their initiatives (Social Innovation); and integration of new technologies and smart techniques in the urban space management (Smart City).

Therefore, Donostia is very well positioned to face the development of a Smart City strategy. In accordance with the European framework, such strategy should work on the intersection and synergy between the areas of energy, mobility and ICTs; but it must also incorporate the differential keys in which the city project of Donostia is based.

1.5. Background and current context regarding the initiatives and projects in Donostia / San Sebastián

This section includes the main projects and initiatives carried out to date and also those in progress in Donostia / San Sebastián. As previously mentioned, even though the projects executed in the city have not been the result of a Smart City Plan specifically developed for the city, those identified in this section actually meet the profile of "Smart" initiatives that would complement the plan.

The dimensions on which it seeks to influence with this Action Plan are included specifically in the three main dimensions considered in the sustainable development: the economic, social, and environmental dimension. That is, this plan proposes to work in three areas of application or gear levers with the aim of promoting the socio-economic and environmental development of the municipality. The application areas that will be used for this purpose are the following: building, energy and transport and mobility.

These gear levers must at the same time rely on what it's known as the pillars for the transformation of the municipality. In the case of Donostia / San Sebastián, the strategy relies on the development of the services sector, mainly that regarding stores and business of small and medium size, as well as on the participation of the administration and the citizenship. The "smartization" of Donostia / San Sebastián will take place by promoting the differentiating vectors of the municipality that will be used as the focus for the proposed actions. In the framework of the strategy of smart specialization, San Sebastián has made a strong commitment to emerging sectors such as Audiovisual-Digital, Smart Energy, Assistive Technology, Agri-food, Surf and Fashion, as well as to others more traditional such as tourism, trade and culture.

The following figure represents in a graphical and intuitive way the dimensions considered, the gear levers to be used and also the pillars and focus of transformation.

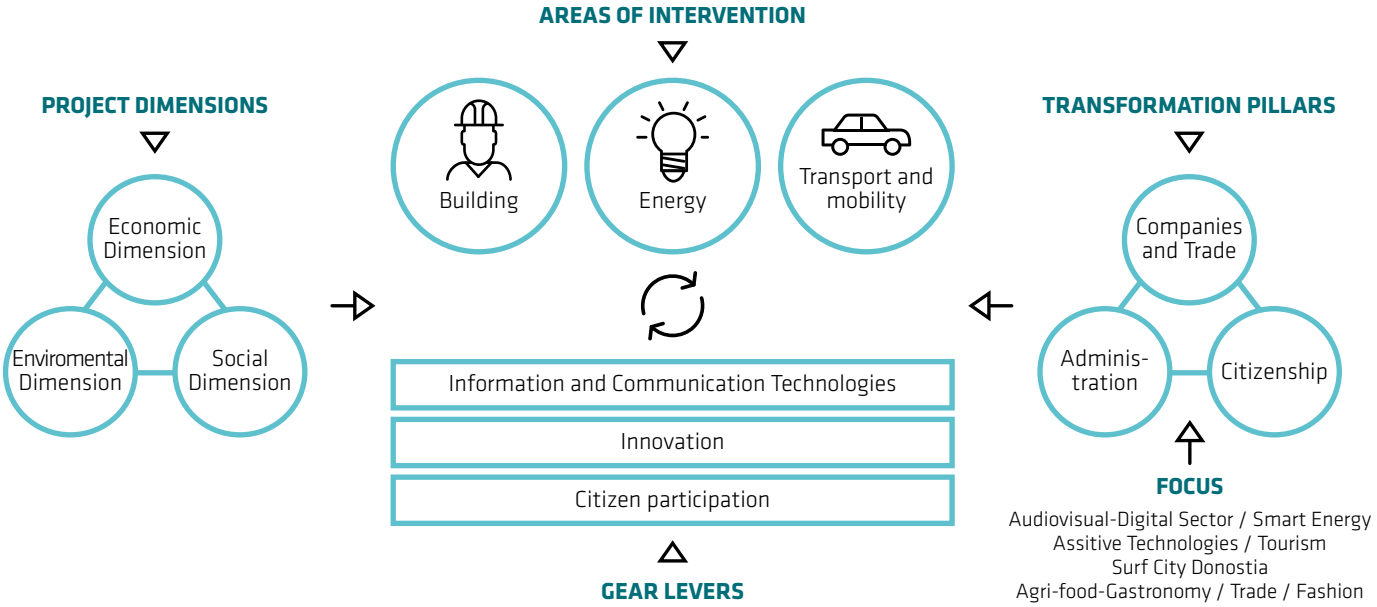


Figure 2. Dimensions, areas of intervention and transformation pillars of Donostia Smart City Plan.

An analysis of the projects in progress or already completed in the city set the way and serve as preliminary basis for this Action Plan. In the field of **building** and sustainable urban environment for example, the town has a clear goal to reduce the demand through energy efficiency strategies. As it can be seen in the different projects still in progress, these energy efficiency measures are applied to both residential and public buildings and also to the street lighting. In the case of Donostia / San Sebastián's buildings, both active improvement strategies (facilities) and passive (architecture) are being included. This way, lighting solutions (replacement of luminaries, lighting control, etc.), energy efficient solutions for energy facilities as well as different solutions to the monitoring and energy management of buildings are being applied.

Meanwhile, in the field of **energy**, it can be seen that there is a desirable trend of the municipality towards a decentralized generation that could gradually replace the use of large power generation plants in order to also facilitate the integration of renewable sources and the implementation of energy efficiency measures. This way, it is intended to reduce the emissions associated with the energy supply chain from the generation and processing, storage and distribution, to the final consumption with the aim of reaching the ambitious goals of decarbonisation of the municipality. To this end, work is being done through different projects both regarding efficiency measures for the thermal energy and also for the electric power.

Regarding heat generation and supply, work is being carried out on the deployment of "Low carbon" technologies, such as solar thermal and heat pumps, as well as in the seasonal thermal storage and in the district heating networks. Meanwhile, regarding electric energy, work is based on the deployment of solar photovoltaic and wind technologies, as well as the implementation of a smart micro-network that will facilitate the access to renewable energy and will provide efficient solutions for the processing, storage and distribution of electric power.

Finally, regarding **mobility**, Donostia / San Sebastián has made a major effort to promote the use of public transport by improving the service besides of the information available for citizens. This way, it is intended to motivate a change in the mobility habits in the town minimizing as far as possible the use of private cars. To this end, important adaptations have been carried out in the city, prioritizing pedestrians and bicycles as means of sustainable mobility. Bidegorris network and rental services of electric bicycles on the one hand, and the pedestrianisation of several streets on the other, have represented important steps towards the promotion of sustainable mobility.

Specific actions and projects regarding the fields detailed above identified in Donostia / San Sebastián are listed below:

a) BEST Energy: Energy monitoring project carried out in public facilities ("Paco Yoldi" Sports centre, Talent-House, PI@ Building, ...

b) ENERTIC BUILDING New bioclimatic building in Polygon 27 to host companies in the Smart field.

c) AUDITING, ENERGY EFFICIENCY CERTIFICATION AND REGISTRATION OF PUBLIC BUILDINGS: Project carried out by the Department of Environment to energy audit the public buildings of the city.

d) ACTIONS IN RESIDENTIAL BUILDINGS: Municipal program to give advice to housing regarding their energy improvement.

e) STUDY OF ENERGY AND ENVIRONMENTAL REHABILITATION OF THE DISTRICT OF AMARA: Study carried out to identify opportunities for energy improvement.

f) DISTRICT HEATING IN TXOMIN: Implementation project for the urbanization planned in Txomin

g) INSTALLATION OF SOLAR SYSTEMS AND SMALL WIND GENERATORS: Implementation of more than 1 MW power through solar panels and wind generators in public buildings.

h) I-SARE (ENERTIC BUILDING): 400kVa Smart micro-network to generate and store energy.

i) CAR SHARING and CARPOOLING: Implementation of systems to share vehicles allowing to reduce the emissions of them.

j) SMARTKALEA: Monitoring project

Monitoring Project, energy saving and sustainability in trade, housing and public infrastructure in the Mayor Street of Donostia, using technology of partners from the city itself.

k) PERSONALISED TRANSPORT PLANS: Preparation of ad-hoc plans for more sustainable journeys

l) INFORMATION TO TRAVELLERS. (From the results of the CIVITAS ARCHIMEDES project): Development of information systems for travellers.

m) MUGI (unified tariff system): Pricing and co-payment system.

n) MUNICIPAL FIBER NETWORK: Deployment of municipal broadband fiber optic which improves the connectivity of public buildings and provides fiber infrastructure to private and public operators.

o) MUNICIPAL Wi-Fi SERVICE: Wi-Fi connectivity in nearly 50 points in the city.

p) PROMOTION OF BIOFUELS: Promotion of more sustainable fuels.

q) HIGH QUALITY CORRIDORS: Improvement of urban corridors for public transport routes.

r) TRANSPORT PLANES IN SAN SEBASTIÁN:

s) GOODS TRANSPORT: TXITRANS. Implementation of last mile sustainable distribution system

t) EXTENSION OF CYCLING AND PEDESTRIAN INFRAESTRUCTURE.: Pedestrianisation of streets and extension of bidegorris (cycle paths) networks in the city.

u) DBIZI: Public electric bike system.

v) WAY TO SCHOOL: Initiative to improve the access to schools.

w) ROAD SAFETY AGREEMENT: Strategy to improve mobility.

x) CITIZEN PARTICIPATION. DISTRICTS AND VILLAGES STRENGTHEN DONOSTIA / SAN SEBASTIÁN

y) GREEN COMMERCE PROJECT: Energy efficiency project in the field of trade in the city.

ROADMAP FOR A PROPOSAL OF INTEGRATED ACTION PLAN

The proposal of strategic development of a city should set the goals, intermediate milestones, mechanisms and resources to meet current and future needs of such city. In fact, it should provide guidelines channelling the future of the city towards better socio-economic and environmental conditions for citizens and the environment.

In the case of Donostia / San Sebastián, factors such as the high rate of population aging, the dependence of the economic activity on the service sector, the high per capita income of the municipality, and the important contribution to GHG emissions from industry and transport sectors in its immediate environment should be considered in a strategic vision.

Moreover, it has among its strengths a great potential in certain fields among which the ability to attract tourists stands out, due to its wide gastronomic and cultural offer and the strong support to small businesses, audiovisual sector and initiatives such as the promotion of surfing. It is remarkable that the city was designated European Capital of Culture in 2016, with a project of coexistence, which was the result of a wide, open and pluralistic participation.

Donostia's strategy must help to increase the efficiency of its operation in all areas of application, relying on such strengths and opportunities developing local capacities in line with the idea of 'Smart Specialization' driven from Europe and which seems to be an essential precondition for the access to European cohesion funds.

One of the goals is the increase of the production activity in a sustainable way which can be reached hand-in-hand through the strengthen of the current activity, mainly through the enhancement of the competitiveness of the tourism sector and the consequent "drag along" effect generated on the support sectors. On the other hand, there is a strong commitment to new opportunities regarding smart energy, ICTs, creative economy and R&D+I, among others.

The effort performed over the last decade in terms of R&D has been significant. This is illustrated by the latest figures available corresponding to 2013, which indicate a figure of investment in this area of €193,372M in the city of San Sebastián representing 2.67% of GDP. This figure is higher than the national average (1.24%), the average of the Basque Country (1.99%) and the average of the EU-28 (2.02%) in the same year. Another important finding is that there are 4,756 people in this activity (4.58% of total population), which is equivalent to 3,096 full-time jobs, being 68% of such personnel dedicated to research.

The vision for the future of Donostia corresponds to a benchmark city due to the quality of life and welfare of its people, the efficiency and sustainability of its infrastructures and services capable of generating a unique and dynamic environment in which entrepreneurship and the creation of business, mainly medium and small, are promoted. A city enjoying the participation and commitment of citizenship, which becomes a source of inspiration for talent attraction, city of knowledge, interactive and inclusive city, with special sensitivity to social inclusion and co-responsibility in the development of the adjacent populations and committed to the fulfilment of European Strategy 2020's goals.

In this context, the city maintains a strong commitment to the European strategy, contributing to the effective achievement of the intermediate and final goals set through effective actions at local level generating the desirable endogenous social and economic development.

The city integrates its strategy in the regional area which under an aggregate perspective promotes the development of initiatives under the three fundamental axes of action.

Therefore, it is assumed that the design of a Smart City strategy is a mechanism for the definition and implementation in Donostia / San Sebastián of an "Action Plan 2016-2020" aligned with the Europe 2020 goals.

This Plan is in fact a set of actions in the area of the city that guarantee the inclusive, sustainable and smart growth through the identification and implementation of specific cohesive and prioritized projects through a Roadmap whose horizon includes the period 2016-2020.

The lines of action and specific projects identified in the different "Smart" fields are listed below, establishing on them a synergistic effect through a gradual and organized implementation throughout the period above mentioned.

2.1. Energy

MAIN EUROPEAN AXIS FOR "SMART CITIES"	OUTLINES	ACTIONS	SPHERE OF INFLUENCE / "SMART CITY" FEATURE						CONTRIBUTION TO EUROPE GOALS 2020					ROADMAP				
			Governance	Economy	Mobility	Environment	Citizenship	Quality of Life	Employment	R+D	Energy and C. Change	Education	Poverty and exclusion	2016	2017	2018	2019	2020
	Poly-generation and distributed generation	City Energy Plan: Maps of waste heat, renewable potential and heat exchange, superimposed on maps of energy demand		●		●			●	●	●			●				
		Implementation of smart networks (micro-grid)		●		●				●	●			●				
		District Heating: Implementation of urban heating exchange networks (use of biomass, etc.)		●		●				●	●			●	●	●	●	●
	Participation in the generation, distribution and marketing of energy	Study of energy management models in urban areas. Public-Private Partnership	●	●		●	●				●	●	●	●	●	●	●	
	Districts with Nearly Zero Consumption Balance	dentification of districts with energy problems and diagnosis of the needs of intervention (energy rehabilitation level) and identification and promotion of a "rehabilitation pack" (set of actions for the residential sector, defined technically and being eligible) at municipal level		●		●	●	●	●		●	●	●	●	●	●	●	
	Districts with Nearly Zero Consumption Balance	dentification and promotion of installation of renewable energy for self-consumption (residential level)				●	●				●				●	●	●	
		Pilot actions for the rehabilitation of an urban setting with standards of almost zero energy consumption		●		●	●	●	●	●	●			●	●	●	●	
	Exemplary and efficiency in municipal facilities	Smart Lighting: Efficiency study and monitoring. Implementation of measures to improve public lighting: high-performance LED lights				●					●			●	●	●	●	
		dentification and promotion of installation of renewable energy for self-consumption (institutional level)		●		●					●			●	●	●	●	
		Systematization of collection and storage of data (through remote management) on energy consumption of municipal buildings, for their monitoring and assessment of improvement actions.		●		●					●	●		●	●	●	●	
		Identification of municipal buildings with major potential for energy savings, and energy rehabilitation thereof (envelope and facilities)		●		●			●		●			●	●	●	●	●

2.2 Sustainable Urban Mobility

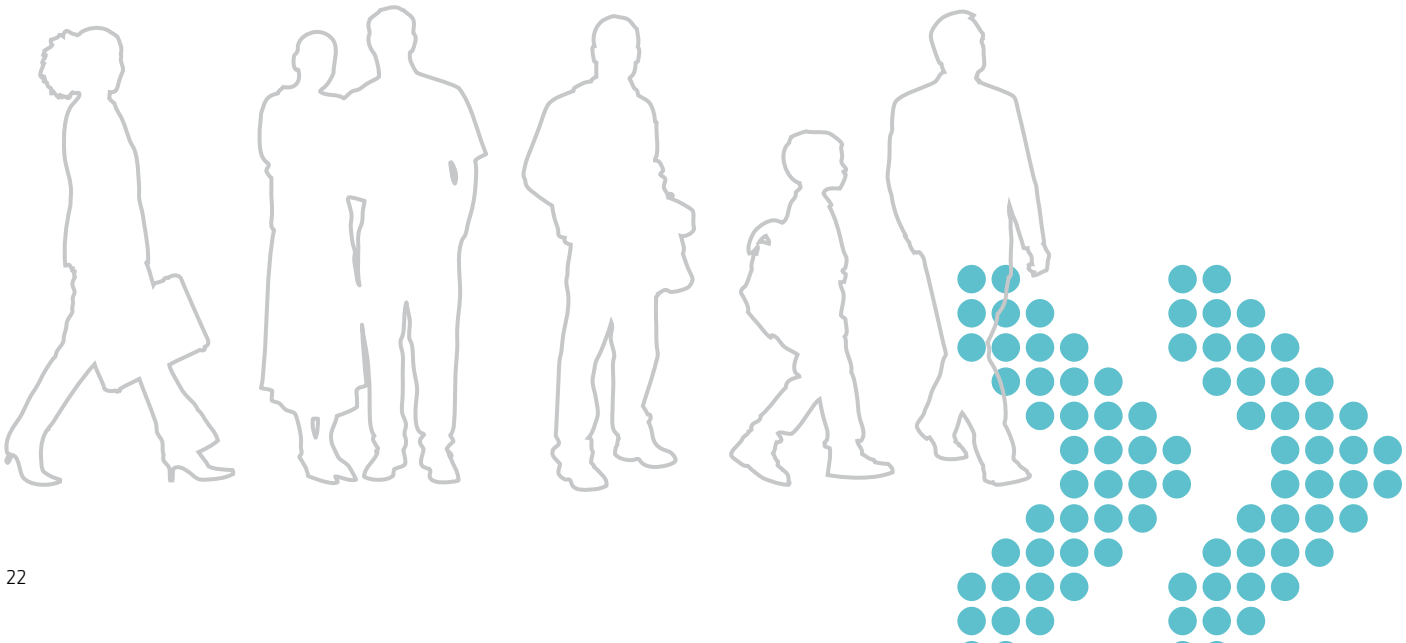
MAIN EUROPEAN AXIS FOR "SMART CITIES"	OUTLINES	ACTIONS	SPHERE OF INFLUENCE / "SMART CITY" FEATURE						ONTRIBUTION TO EUROPE GOALS 2020					ROADMAP				
			Governance	Economy	Mobility	Environment	Citizenship	Quality of Life	Employment	R+D	Energy and C. Change	Education	Poverty and exclusion	2016	2017	2018	2019	2020
	**Electrification of transport**	Implementation of electric Urban Public Transport (TPU) (bus fleet). Needs in the short-medium term			●	●				●	●			●	●	●		
		Solutions of light electric vehicle for the last kilometre			●	●				●	●			●	●			
		Promotion of Car-Sharing with electric vehicle			●	●					●	●		●	●	●	●	
		Promotion of the use of the electric public bikes Network			●	●					●	●		●	●	●	●	
		Study of implementation of electric charging points for the Urban Public Transport in the middle-long term depending on the technologies developed			●	●					●			●	●			
	Smart mobility	Smart Transport System: Smart management of transport, including internal displacement flows, visualization through camera, control of number of vehicles, pollution control, speed control, etc.	●		●	●					●			●	●	●		
		Platform of multi-modal information for users (shelters, web and apps)			●		●	●			●	●		●	●	●	●	
		Provide reliable information in real time to drivers (panels and apps)			●		●				●		●	●	●			
		Promote car-sharing and car-pooling in conventional vehicles			●						●		●	●	●			
		Deployment of secure mobile payment systems (Urban Public Transport, Taxis, etc.)			●		●	●			●		●	●	●	●		
	Smart Transport Infrastructures	Development and greater deployment of the Bidegorris Network (close rings and extension to the provincial networks).			●		●	●			●	●	●	●	●	●	●	
		Enhancing the pedestrianisation of streets (encourage pedestrian transits)			●		●	●			●	●	●	●	●	●	●	●
		Extension of the preference traffic light network and bus lanes to promote urban public transport			●		●				●	●		●	●	●		

2.3. Integrative Actions and Technologies. Information and Communication Technologies

MAIN EUROPEAN AXIS FOR "SMART CITIES"	OUTLINES	ACTIONS	SPHERE OF INFLUENCE / "SMART CITY" FEATURE						ONTRIBUTION TO EUROPE GOALS 2020					ROADMAP				
			Governance	Economy	Mobility	Environment	Citizenship	Quality of Life	Employment	R+D	Energy and C. Change	Education	Poverty and exclusion	2016	2017	2018	2019	2020
	Interoperability Platform	Study for the inventory or catalogue of systems and data sources	●							●				●	●			
		Interconnection of Systems, devices, sensors and platforms for their centralized management	●							●				●	●			
	ICTs infrastructure	Extension of Wi-Fi and Wimax network	●							●				●	●	●	●	
		Extension of Optic Fiber network	●							●				●	●	●	●	
		Infrastructure of Municipal Computer Centre	●								●			●	●	●	●	●
	Smartization and Connectivity provision of services	Wireless Sensor Networks. Connectivity in the city, and provision of services and contents, communication of data from the sensor system deployed through the city (waste management, water, assets-furniture, lighting etc.)	●			●	●			●	●			●	●	●	●	●
	Smartization and Connectivity provision of services	Data Smart Analytics: optimization, prediction and learning about large volumes of data from the sensor system, for smart mobility, co-generation-optimization-energy / water / gas prediction. Interfaces for the visual representation of data	●			●	●			●	●			●	●	●	●	
	Open Data Platform	Data distribution to citizens and consumers (energy, mobility, waste, water) through apps and other	●	●			●		●		●			●	●	●	●	
		e-government; internal administrative management	●				●							●	●	●	●	

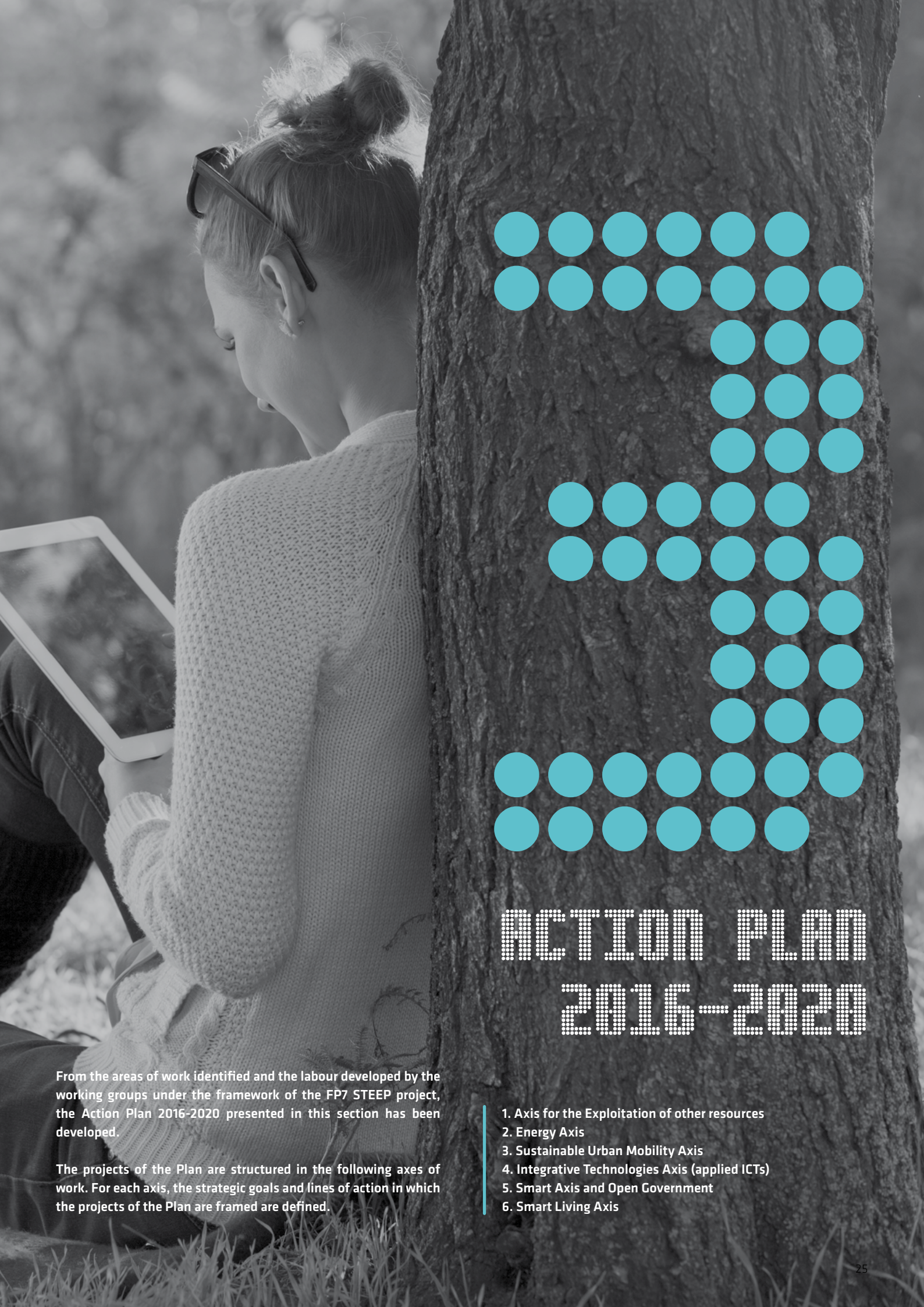
2.4. Smart & Open Government

MAIN EUROPEAN AXIS FOR "SMART CITIES"	OUTLINES	ACTIONS	SPHERE OF INFLUENCE / "SMART CITY" FEATURE						ONTRIBUTION TO EUROPE GOALS 2020					ROADMAP				
			Governance	Economy	Mobility	Environment	Citizenship	Quality of Life	Employment	R+D	Energy and C. Change	Education	Poverty and exclusion	2016	2017	2018	2019	2020
	Open Government	Empowerment of citizens	●									●		●	●	●	●	●
		Citizen participation (telematic channels, face-to-face channels, ...) and dissemination and communication activities to citizens and stakeholders	●		●	●	●	●				●	●	●	●	●	●	●
		Transparency in management	●				●			●		●	●	●	●	●	●	●
	Creativity and Social Innovation	Urban Living Lab for the construction of D-SS of the near future	●	●	●	●	●	●				●	●	●	●	●	●	
		Development of open innovation and collaborative knowledge generation processes: For example shared agendas platform	●	●	●	●	●	●				●		●	●	●	●	●
	Smart Government	Inter-departmental coordination: Break away from the exclusively departmental vision	●	●								●	●	●	●			
		Inter-institutional coordination: Multi-governance	●	●							●	●	●	●	●			
	Smart Specialization Strategies	Actions to improve the competitiveness and attractiveness of the city through cooperation, entrepreneurship and innovation (urban clustering)	●	●					●	●	●	●	●	●	●	●	●	●



2.5. Smart living

MAIN EUROPEAN AXIS FOR "SMART CITIES"	OUTLINES	ACTIONS	SPHERE OF INFLUENCE / "SMART CITY" FEATURE						ONTRIBUTION TO EUROPE GOALS 2020					ROADMAP				
			Governance	Economy	Mobility	Environment	Citizenship	Quality of Life	Employment	R+D	Energy and C. Change	Education	Poverty and exclusion	2016	2017	2018	2019	2020
	Healthy environment	Promotion of information management and environmental communication in urban environment				●	●				●		●	●				
		Innovative solutions and equipments for the integration of people with functional diversity					●	●		●			●		●	●		
		Active and healthy aging. Care services, technological solutions			●		●	●		●		●			●	●		
	Tourism	Augmented reality technologies, 3D visualization and simulation for museums, open centres and spaces, city and district maps.					●			●					●	●	●	
		Promotion of the development of apps for congress and conventional tourism					●	●		●				●	●			
		Loyalty of tourism + local trade					●			●				●	●	●	●	
	Trade	Improvement in payment systems and loyalty: Smartphones-NFC					●			●				●	●	●	●	
		Trade as host gate: QR codes with information about the city in different languages					●			●				●	●	●	●	
		Smart Shopping: platform with information on shopping offers					●	●		●				●	●	●	●	
	Culture	Support to 2016 Donostia events												●				



ACTION PLAN 2016-2020

From the areas of work identified and the labour developed by the working groups under the framework of the FP7 STEEP project, the Action Plan 2016-2020 presented in this section has been developed.

The projects of the Plan are structured in the following axes of work. For each axis, the strategic goals and lines of action in which the projects of the Plan are framed are defined.

1. Axis for the Exploitation of other resources
2. Energy Axis
3. Sustainable Urban Mobility Axis
4. Integrative Technologies Axis (applied ICTs)
5. Smart Axis and Open Government
6. Smart Living Axis

3.1. Axis for the Exploitation of Other Resources

Project S1: Smart management of rainwater and waste water	
Strategic Goal: Line of Action	Rainwater management, sustainable drainage and reducing the generation of waste-water. Management optimization by type of space (buildings, green areas, urban areas)
Goals	Take efficient advantage of all resources. To fix a strategy for the assessment and reduction of the impacts of rainwater and waste water. Optimization of management, treatment and retention at source by type of space: 1) buildings and plots, 2) urban areas and 3) green areas, improving the management of the sewage network by reducing the hydraulic load and pollution with the aim of reducing or preventing unloads and reliefs to the natural course. Reduce urban waterproofing level and run-off, reduce consumption of drinking water, reduce hydraulic load on the existing sewerage network. Establish a real action plan in which the measures to be implemented in Donostia are set
Project S2: Educametering	
Strategic Goal: Line of Action	Reduction of water consumption. Monitoring of consumption
Goals	Take efficient advantage of other resources and reduce the consumption of water; as well as the monitoring of consumption and the installation of online measurement equipments for their remote management
Project S3: Ekorrek – Environment and Sustainable Collection	
Strategic Goal: Line of Action	Optimisation of waste management. Promote waste prevention through information to consumers
Goals	Optimize the waste management, by maximizing their recycling.
Project S4: Donosti-Climate	
Strategic Goal: Line of Action	Adaptation to climate change
Goals	Define preventive actions in the city to adapt to climate change

3.2 Energy Axis

Project E1: Municipal Energy Development Agency	
Strategic Goal: Line of Action	Rehabilitate buildings in order to get an almost zero consumption. Prepare a catalogue of solutions, propose funding mechanisms and business models, adapt regulatory framework of CO2 emissions
Goals	Analyse the current form of organization for the municipal energy development and its management. Define the strategy, organization, management and resources necessary for the creation of an agency
Project E2: Community biomass heating: DH Txomin	
Strategic Goal: Line of Action	Implement Central Heating Systems with renewable energies. Generate business models (join technical and economic viability), communicate economic, social and environmental benefits
Goals	Encourage energy in the residential sector and implement centralized heating systems with renewable energies. Their installation will result in a more efficient use of energy and in a direct reduction on household energy bills. Generate business models joining technical and economic viability, and also communicate economic, social and environmental benefits
Project E3: Energy bankruptcy	
Strategic Goal: Line of Action	Exploit alternative marketing and consumption models. Introducing public-private energy models (ESCOs)
Goals	Promote energy efficiency in the residential sector, by performing a comprehensive rehabilitation of a set of "Bankruptcy" buildings. Making a city map to prepare an energy cadastre, identifying the areas in need and the actions to be performed by each building. Pilot execution in a building exploring alternative marketing and consumption models, besides of public-private energy exploitation models.
Project E4: Energy rehabilitation of the existing municipal buildings	
Strategic Goal: Line of Action	Improvement of energy efficiency in public buildings. Energy cadastre of public buildings
Goals	Prioritize the interventions to be performed depending on the cost and profitability of the intervention

3.3. Sustainable Urban Mobility Axis

Project M1: Ekobus	
Strategic Goal: Line of Action	Promote the Electrification of Public Transport. Promote Electric Bus
Goals	Promote the implementation of electric bus through the search for a new model of public-private funding which, besides of providing new ways to increase funding, also may reduce costs
Project M2: Translabel	
Strategic Goal: Line of Action	Improvement of goods distribution services. Promote the use of green delivery vehicles
Goals	Create an environmental certificate of goods distribution and encourage the certification of companies in the sector through tax benefits, or higher municipal taxes to the most polluting vehicles.
Project M3: Last mile of Goods in regulated areas	
Strategic Goal: Line of Action	Improvement of goods distribution services. Set load management systems
Goals	Establish a more sustainable model of goods distribution in the city. Extension to the entire city of the pilot experience developed in the Old Town (limiting the presence of conventional vehicles to certain areas)
Project M4: Karga Tú	
Strategic Goal: Line of Action	Encourage the sustainability of private vehicles. Replace conventional fleet of vehicles for electric vehicles
Goals	Communicate to citizens the advantages of promoting the electrification of transport, globally. Encourage the sustainability of private vehicles. Encourage their acquisition, facilitating the implementation of charging points
Project M5: Proelek	
Strategic Goal: Line of Action	Encourage the sustainability of private vehicles. Promote the use of electric vehicles
Goals	Encourage the use of electric vehicles for private use and promote the acquisition of electric bikes or the electric adaptation of such bikes through financial aids and agreements with manufacturers
Project M6: Platform of inter-modal mobility	
Strategic Goal: Line of Action	Improvement of user satisfaction. Establishment of multi-modal information platform
Goals	Create a computer platform to provide multi-modal information to citizens
Project M7: Regula Moto	
Strategic Goal: Line of Action	Encourage the sustainability of private vehicles. Motorcycle
Goals	Discourage the use of conventional motorcycles for the promotion and regulation of electric motorcycles

3.4. Integrative Technologies Axis

Project TI1: Proactive Sense	
Strategic Goal: Line of Action	Determine the sensor need of the city. Data collection (sensor networks)
Goals	Complete the sensor infrastructure of the city.
Project TI2: 360° Connectivity	
Strategic Goal: Line of Action	Determine the connectivity need of the city. Improve the connectivity of devices, transport to control centres
Goals	Increase connectivity by district so that information and services available through the network may increase. Establish agreements between companies (operators, developers, etc.) to provide services with public and private participation, improving connectivity between devices and control centres
Project TI3: Smart Management Platform	
Strategic Goal: Line of Action	Integrate the entire network of data collection on a single management platform
Goals	Determine and integrate both internal and external municipal services to be managed by the smart platform. Increase interoperability (data and platform) with other public platforms allowing to create synergies

3.5. Smart and Open Government Axis

Project SOG1: Alado - Local aggregator of applications of Donostia	
Strategic Goal: Line of Action	Improve eGovernment and communication channels. Improvement of municipal websites, applications and social networks
Goals	Establish a repository of links to all the applications related to the city. This repository will offer the application developers a Marketplace to offer their products and made a new service available to citizenship
Project SOG2: Open Donostia or Light in our Data / Gure Datuak argitan	
Strategic Goal: Line of Action	Open Data. Make an inventory of the data available and Create forums to establish the demand
Goals	Improve the relationship of the City Council with citizens, enabling them to have a better knowledge of the municipal reality and the services they use through more and better information. To this end, it is necessary to define municipal data and also those from private entities of public nature that may be disclosed to the citizenship (in particular regarding mobility, water, waste, energy and lighting) trying to incorporate private data that may be of general interest
Project SOG3: Erabaki Gunea	
Strategic Goal: Line of Action	Citizen participation platform. Complement face-to-face with ICT and Establish participation model
Goals	Establish a computer platform of citizen participation that allows to complement the face-to-face architecture based on the representative, dialogic and direct democracy that is being worked with citizenship. Besides, the platform will also integrate the tools available which are already being used, such as the Sociological Observatory, DPostontzia, website of the citizen participation department, etc.
Project SOG4: Citizen's Folder	
Strategic Goal: Line of Action	Improve eGovernment and communication channels. e-government
Goals	Promote the existing citizen's folder and add new services at municipal level
Project SOG5: City of People	
Strategic Goal: Line of Action	Improve eGovernment and communication channels. e-government
Goals	Implement participatory systems that allow to gather citizen information and opinion and from those agents involved in the planning and management of areas of interest

3.6. Smart Living Axis

Project SL1: Trade Contents Management Platform	
Strategic Goal: Line of Action	Trade. Smart Shopping
Goals	Develop a multilingual platform combining and allowing to manage the offer of products and services offered by trade
Project SL2: Donostia in your Smartphone	
Strategic Goal: Line of Action	Trade. QR codes with information about the city
Goals	Improve the perception of the city by tourists, as well as its trade and services, through the use of reference stores where it is possible to gather information about the environment, which is of interest to the visitor, through an application using QR codes and which interrelates the activities of trade and tourism
Project SL3: Smart Donostia Cultural Platform	
Strategic Goal: Line of Action	Culture. Integration of non-municipal offer, event management, cultural itinerary and monitoring of participation in events and shows
Goals	Creation of a single portal in the city to Integrate all the municipal and non-municipal cultural offer, whether public or private, and which enables the development of a complete itinerary (agenda-tickets- monitoring of assistance through smartphones-supporting social networks) and performing the spreading of events in streaming in Cultural Centres
Project SL4: SERC – Remote Cognitive Stimulation System	
Strategic Goal: Line of Action	Healthy environment. Support direct home care with information systems
Goals	Preparation/Design of remote cognitive stimulation systems to attend elderly people
Project SL5: Facilitate the access to digital services for the elderly	
Strategic Goal: Line of Action	Healthy environment. Facilitate the access to digital service
Goals	Training to the elderly with the aim of facilitating their access to digital service
Project SL6: Donostia galore	
Strategic Goal: Line of Action	Tourism. Loyalty of Tourism
Goals	Improve the visitor experience with the provision of connectivity tools such as free WIFI and information tailored to the tourist's profile

GOVERNANCE: PLANNING AND EXECUTION ORGANIZATION

Donostia / San Sebastián wants to develop the "Smart City" concept in a broader version where the role of the citizenship and the governance model of the city take a relevant position and technology becomes a tool to improve the quality of life and to reduce the environmental impact.

The design and implementation of initiatives in the "Smart City" field must therefore imply, and as the backbone, the participation of citizenship. The model of governance chosen must therefore respond to those values and goals sought by citizens, structured so that it becomes the centre and the engine of the transformation of the city. The administration should facilitate the creation of this governance model and its application for the implementation of initiatives consistent with such model.

4.1. Current Model of Participation

The current starting point is led by the City Council and it is based on the work performed by the Social Council and the Advisory Councils on the one hand, and by the Department of Citizen Participation on the other.

4.1.1. The Social Council and the Advisory Councils

The Social Council acts as a coordination space of the various existing structures and organizations of participation in the city. It has an advisory character, with functions such as information, study, debate and advice to support the municipal government team in the definition of the municipal policy lines affecting the strategic, economic, social and cultural development of our city.

The City Council has also 12 Advisory Councils, participation bodies of advisory, informative and advisory nature at the municipal level, which are intended to facilitate the participation of citizens and to channel the information from the associative entities regarding municipal issues. The different agents involved in the affairs of each sector participation space take part on them, channelling the citizen participation in issues related to each topic.

Sectoral councils are structured as follows:

SECTORAL COUNCILS
Historical Memory Council
Environment Council
Social Action Council
Basque Council
Cooperation and Education for Development Council
Sectoral Council for Equality
Mobility Council
Municipal Approach Advisory Council

SECTORAL COUNCILS OF AUTONOMOUS BODIES AND MUNICIPAL
Trade Advisory Council
Culture Advisory Council
Tourism Council
Sport Advisory Council

4.1.2. The Model of Citizen Participation in San Sebastián

Meanwhile, the area of participation of the City Council's mission is to make possible the right of citizens to participate with capacity to influence the construction of municipal policies and their development.

The reason for launching this kind of processes has to do with the political rights to be decided and with the influence on public and institutional policies by the citizenship. With a clear goal which results in the possibility of enabling a political and social change in the institutions and the society itself towards a more shared and people-centred construction of policies. In addition, the process will ensure that public decisions are effective and lasting. Because decisions taken collectively are closer, and respond better to the needs of the community.

Principles and values that are taken into account for the configuration of the municipal participation model are the following:

- **Inclusion:** Citizens must feel part of it, especially those that are socially far or excluded: women, people of different origins, young...

- **Promotion of Basque language:** Priority is given to Basque language and promotes people who do not understand Basque the possibility to follow the meeting and feel comfortable, making a brief translation of what has been said and presenting in Castilian the materials created.

- **Effectiveness:** The process must achieve to be valid for everyone, both citizens and the City Council (politically and technically). Also, it has to be able to influence municipal policies.

- **Equal opportunities:** The necessary conditions so that all people feel they have the right to express their opinions and that all contributions are treated with respect must be created.

- **Plurality:** Different opinions must be sought. Qualitatively, the collection of different opinions has higher priority than the quantitative substitution.

- **Closeness:** It must serve to promote close and trust relationships between the citizenship and the City Council.

- **Simplicity:** The resources used (language, communication media, etc.) must be understandable.

- **Flexibility:** When working with people, the process must be flexible, but this is no reason to lose effectiveness. It will be analysed at any time if it is necessary to adapt the production process.

- **Collaboration:** Opening of points of collaboration between the City Council and the citizenship.

- **Autonomy:** In the internal work, the autonomy of the district associations will be developed, jointly analysing the resources and the presence of technicians, according to the needs of districts and associations.

On the other hand, another important aspect to be considered are those individuals involved in the process, which are defined by their relationship with the community. In this sense, three aspects must be considered:

I) First, the person is a user of a public service which the democratic institutions are responsible to deploy the economic and human resources for their provision.

II) Second, the person is a member of a community, a group of people sharing a space, some interests, some wishes.

III) And finally, the third aspect to be considered: the person is a citizen in the most political sense of the word, which undeniably entails the right to participate.

These are three different angles from which the person may acts (uses) what is collective. It is important to note their differences to use the proper channels to each role besides of not confusing the defense of "mine" (person- service user holding rights) to the defense or performing of what is "our" (citizen holding political rights). Looking at the different levels of relationship of the individual with the group, the collective, it may be justified that participation which has political sense is that relating the person with the construction of public things.

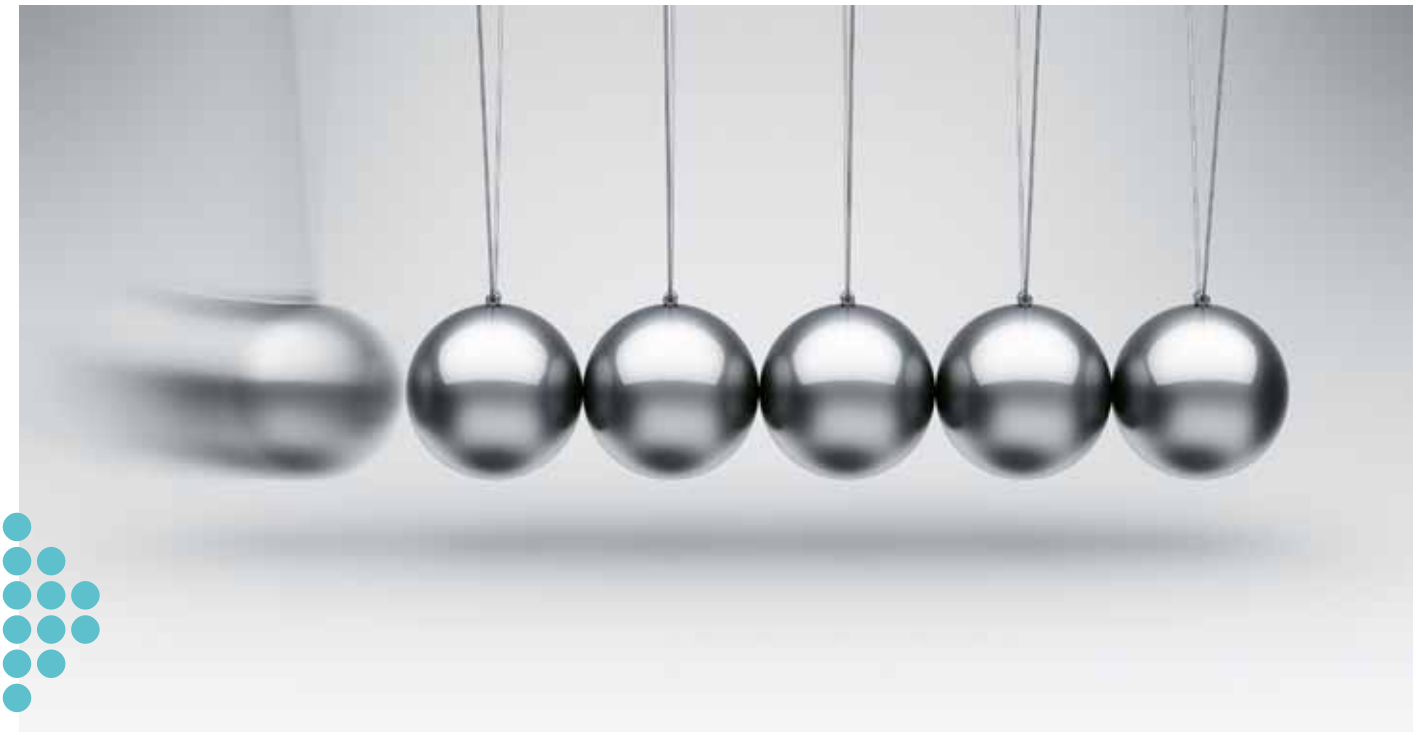
4.1.3. Participation Model in the Field of Economic, Social and Sustainable Development

Public company Fomento de San Sebastián (FSS) is dedicated to the promotion and economic and social development of the city through innovation, generation and transformation of knowledge, the promotion of collaboration and networking, and the boost and project management, all that under sustainability criteria.

Through this entity, a very important work of relationship with the productive fabric of the city has been coordinated by promoting emerging sectors and through a smart specialization according to the capabilities and opportunities of the sector and the market. It has also worked with the most traditional sectors of the city, which have the greatest economic weight, such as trade and services. Moreover, it has helped to create and improve the network knowledge of the city and the innovation processes of the different entities of knowledge.

As noted in previous chapters, this relationship with the private sector has been established by seeking public and private partnerships, by promoting the collaboration of companies (networking), or by facilitating and supporting the technology centres and universities. Fomento de San Sebastián has created and energizes 6 sectoral and urban clusters (Audiovisual-Digital, SmartEnergy , Assistive Technologies, Surf, Agri-food and Fashion).

The work done, which still continues, favours the integration of companies, technology centres, public organizations, training centres, associations and other stakeholders, creating forums to share experiences, present business opportunities and explore collaborations, which are aspects specially valued by the small companies of the city. This way, many different kinds of projects are formed, such is the case of those mentioned in the previous sections of this document, entailing the first steps of the city towards its configuration as "Smart City". Projects that, as indicated above, are led by the different Municipal Departments and/or Fomento de San Sebastián.



4.2. Initiatives Towards a New Model of Governance

The challenge of the cities planning to use Smart approaches is to achieve a transition from the current functional systems towards more sustainable and smart systems, identifying and developing experiments, specific projects and/or actions shaping transition paths towards the strategic goals and, ultimately, towards the vision.

In the case of Donostia / San Sebastián, these transitions have an important trajectory performed thanks to policy initiatives on sustainability and combating climate change and improving municipal services (Municipal Program against Climate Change, LA 21, SEAP, Sustainable Urban Mobility Plan, implementation of e-government, etc.) that despite of not being motivated by a Smart City Plan, they have developed municipal projects and activities which add value to it and, therefore, must be taken into account in it.

The management of this transitional perspective is a governance process that seeks to manage or modulate the transition dynamics through interactive and iterative processes between the actors' networks. This involves the creation of shared visions and goals, invigorating the change through transition experiments, and the assessment and learning of the relative success of such experiments . That is, the ways of doing unidirectional politics are replaced from top to bottom, by forms of inclusive and multi-stakeholder governance. The participation of citizens and stakeholders becomes fundamental to the success of the Smart City and, in this context, governance can be seen as the shared responsibility of government, private sector and citizenship when dealing the problems of the city.

More specifically, governance refers to the set of principles and provisions guiding and articulating the decision-making processes between public institutions, private sector and citizenship on the development, evolution and future of public issues.

The proposed governance model integrates the current participatory structure of the municipality ensuring the necessary application of the principles of good governance in the White Paper on European Governance . In particular, the following four basic processes that would be considered in the proposed model are derived from it horizontal and vertical coordination (coherence and responsibility), transparency (openness), participation (participation) and collaboration (effectiveness).

4.2.1. Proposal of "Smart" Governance Model for San Sebastián

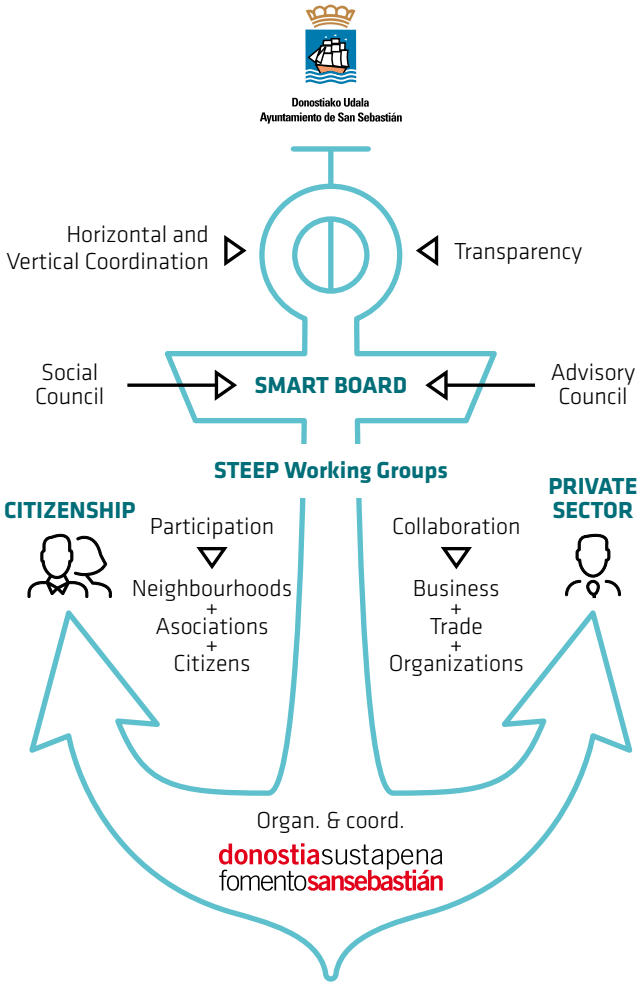


Figure 3: Governance Structure of Donostia Smart City.

[1] T. J. Foxon et al: Transition Pathways for a UK Low Carbon Energy System: Exploring Different Governance Patterns; 1st European Conf. on Sustainability Transitions, Amsterdam, The Netherlands, 4-5 June 2009.

[2] European Commission: "'European Governance – A White Paper", COM (2001) 428 final.

Figure 3 shows the governance structure proposed for the development of Donostia Smart City in which the City Council, through the Smart Board created for that purpose, manages the transitions necessary to achieve the vision developed as Smart City, relying on the municipal company Fomento San Sebastián which organises and coordinates the areas of action to achieve the necessary participation and collaboration of all actors: citizens, private sector and administration.

The innovation proposed in this model of governance is based on the inclusion as fundamental basis of both citizenship and the private sector or economic and social "stakeholders" of the city. As noted above, the participatory process is essential in the achievement of a really smart city. Therefore, the work developed with the economic fabric (business, trade, knowledge network, sector organizations, etc.) through urban sectoral clusters and citizenship (including district associations and civic organizations) through programs of citizen participation and districts is essential. These processes are already in progress and can be an appropriate basis for work, strengthening their interventions.

The junction between these two areas with the City Council is found in the Advisory Councils that in a sectoral way and nourished by the contributions of the agents present, but also from the proposals that may come from the base, can study the potential of the different proposals. Therefore, these structures take great importance and allow a wide participation both of the different Municipal Departments and the local agents.

Initially, it would not be necessary to modify the existing Councils, although it would be necessary to invigorate them in a coordinated manner so that they can conveniently nourish through the base proposals and the work they perform may be organized towards the achievement of shared goals.

The information and proposals put forward and approved by the Councils would be addressed to the consideration of the Smart Board. This will be a newly created technical and political body, composed of representatives of the Municipal Departments that could meet in regular sessions throughout the year to discuss different topics and in extraordinary sessions, when necessary. In principle, the participation of the following Departments is considered: Environment, Mobility, Urban Planning, Urban Services, Etxegintza, CIM and Fomento de San Sebastián.

The main goal of this body will be to study the proposals emanating from the base, besides of seeking solutions to the needs arising from the City Council. This analysis must led to study the feasibility of the proposals before submitting them to the local government bodies for their consideration. It is therefore both a "top-down" and "bottom-up" process, interactive and also able to address to the advisory councils the proposals for their study and the search for solutions.

Additionally, in this Smart Board, which could be coordinated by Fomento de San Sebastián, the following councillors should participate:

- Economic Development, Hostelry, Commerce and Tourism

- Districts and Decentralization, Civic Responsibility, Equality and Cooperation

- Presidency and Transparency, Human Resources and Innovation

- Sustainable Urban Design, Housing and City Projects

- Mobility and Transport

- Public Roads and Environment

The proposed organization would ensure consistency in the transition agenda through the horizontal and vertical coordination of institutions, and would ensure the transparency of the process providing valuable information at all levels. It is also about contemplating the multi governance and its impact on the process.

Within the municipal level, Fomento de San Sebastián is who could manage and coordinate the fields or niches promoting and encouraging the development of alternatives based on new technologies and new practices that can lead to the desired transitions. This has been a work already done to set up proposals that could obtain external funding (Europe, Ministries, Basque Government or Regional council, among others).

The starting point of the process is that problems related to Smart City lack a clear definition or are unstructured and therefore require the revitalization of the collective action for the common definition of the problem, the vision and identification of collective goals, the prioritization of experiments to be developed, the search of alliances and consensus for their implementation, etc.

From the identification of the proposals and after their evaluation by the Smart Board, the City Council will have to determine not only the technical suitability of the proposal but also the political suitability of it. As maximum organ, it will be who will determine the vision of the city and the strategic and operational goals to be achieved in the transitional model above mentioned. The Smart Board will ensure the continuity and the technical coherence, besides of the interdepartmental synergies of the proposed solutions complementing the governing body.

Once the consensus by the main body is achieved, the necessary actions to multiply the municipal budget through the mobilization of new sources of external and/or public-private funding in order to obtain the adequate budgetary allocation to the projects to be developed should be promoted.

Fomento de San Sebastián could ensure the technical coordination of the participating partners and the activities dealt in the "Smart" projects of the city. Public-private partnerships, the involvement of the knowledge network, etc. will be dealt. This technical coordination will take place as soon as an interdepartmental coordination would be necessary. To the extent that there are projects that can be executed directly by a single department, this technical coordination will fall exclusively on such department.

A fundamental aspect of the process is the monitoring and assessment as regular activity of such process, in order to assess what has been achieved in terms of contents of each project, achievements in the dynamics of the transition process, knowledge gathered and learning. The definition of indicators and the establishment of a baseline for both the adequate control of the progress performed and the establishment of the comparison (benchmarking) basis with other cities of interest will be of the utmost importance in order to analyse the relative progress of Donostia / San Sebastián.

It is important to note that in the assessment process, the citizenship and the economic fabric of the city, which are in short for whom the different proposals are launched, will intervene directly. Therefore, the assessment process will include the creation of mechanisms in order to be able to assess what has been done, learn from mistakes and serve as basis for the generation of new ideas, proposals and projects to be carried out. The process is, therefore, continuous.

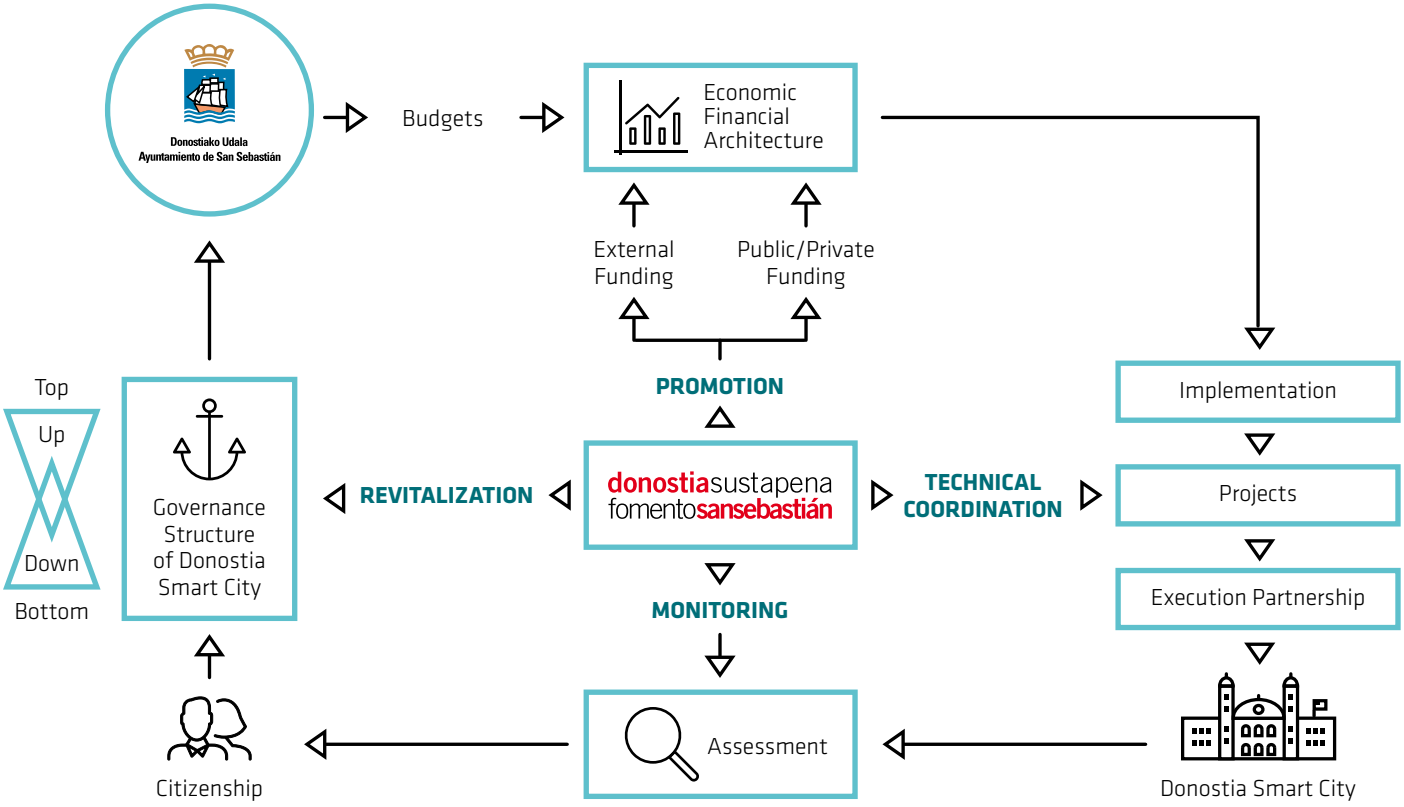


Figure 4: Experiments, Projects and Activities Management Process.

4.2.2. "Smart" Dimension of Governance

Finally, we must consider the 'Smart' dimension of governance in which a key factor is the application of the ICTs (infrastructure, hardware and software). At this point, it is important to discriminate between e-government and e-governance.

In the first case, we refer to the transformation of the Municipal Government to provide efficient, convenient and transparent services to citizens and companies, through the Information and Communication Technologies.

In the second case, e-governance considers citizens as participants in the decision-making and co-creation processes, using ICTs to extend such participation, improve transparency, facilitate the empowerment of citizens, promote collaborative spaces for creativity and social innovation, facilitate horizontal and vertical coordination, improve monitoring processes, etc.

Both fields are very important and therefore actions to be developed in the two cases have been proposed. The possibility of establishing a coordinated and effective "Smart" policy at municipal level will largely depend on their achievement.

3

INDICATORS AND METHODOLOGY OF IMPACT ANALYSIS

n aspecto fundamental de la implantación del plan es su evaluación fin de valorar qué se ha alcanzado en términos de contenidos de ada proyecto, de logros en la dinámica del proceso de transición, y e conocimiento adquirido y aprendizaje. Asimismo, tras la ejecución e los proyectos es importante analizar su impacto. Dicho impacto se odrá medir en términos reales si el proyecto ha alcanzado un grado e implantación completo. Si el proyecto tiene grado de estudio piloto, el impacto se puede analizar desde una perspectiva de otencialidad. Esta sección presenta una propuesta de indicadores a tilizar en el proceso, así como una metodología para llevarlo a cabo.

uchos de los indicadores que se proponen a continuación han do desarrollados en el contexto del proyecto STEEP, acorde a etodologías previas y de forma consistente con la filosofía de la O 37120, es decir, se trata de evaluar los puntos fuertes y débiles e las Smart Cities, cooperar con otras ciudades y monitorizar su rogreso en el proceso de mejora continua.

A fundamental aspect of the implementation of the plan is its assessment in order to evaluate what has been achieved in terms of contents of each project, achievements in the dynamics of the transition process, knowledge gathered and learning. Likewise, once projects have been implemented, it is important to analyse their impact. Such impact can be measured in real terms if the project has reached a full grade of implementation. If the project has study or pilot grade, the impact can be analysed from a potentiality perspective. This section presents a proposal of the indicators to be used in the process, besides of a methodology to perform it.

Many of the indicators proposed below have been developed in the context of the STEEP project, according to previous methodologies consistent with the philosophy of ISO 37120, that is, it intends to assess the strengths and weaknesses of the Smart Cities, cooperating with other cities and monitoring their progress in the process of continuous improvement.

5.1 Indicators

Indicators are relatively easy to use and can be mandatory or optional. Some of them serve as data-entry for the internal management of the city, while others have a more comparative nature.

ENERGY SCOPE			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	CO2 emissions	Environment Department	t/year
	Use of total electrical energy per capita	Manager of electricity network, suppliers	t/year
	Green electricity	Manager of electricity network, suppliers, Electricity management entities	% of the total number
	Smart meters	Manager of electricity and gas network, suppliers, Electricity management entities	%
	Buildings constructed under the EPBD standard	Municipal Department, builders	m^2
	Power consumption of the public sector	Municipal power management, Offices of public buildings, suppliers	%
	Renewable energy	Municipal power management, Offices of public buildings, suppliers	%
	Green public procurement	Administrative office, responsible for purchasing	%
	OPTIONAL		
	PM10 Emission	Air samples	µg/m3 or days when the threshold is exceeded
	Use of total electrical energy per sector	Manager of electricity network, suppliers	kWh/y
	Buildings renovated with the improvement of energy efficiency beyond the EPBD requirements	Municipal Department, builders	m^2
	Percentage of lighting points with energy saving system	Municipal Department	%

SCOPE OF EXPLOITATION OF OTHER RESOURCES			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	Production of solid waste per capita	Water management company, Dept. of Environment	t/year and per capita
	Percentage of recycled solid waste	Water management company, Dept. of Environment	%
	OPTIONAL		
	Percentage of losses in the water network	Water management	%
	Percentage of waste waters receiving treatments of secondary and tertiary level	Water management	%
	Number of containers for organic matter	Municipal department responsible	n
	Kg of annually waste produced per inhabitant	Municipal department responsible	Kg/per capita
	Kg of annually waste produced per inhabitant	Municipal department responsible	Kg/per capita
	Use of the fifth container (organic matter)	Municipal department responsible	%

MOBILITY SCOPE			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	Km of public transport system per 100,000 inhabitants	Municipal Department of transport, Public transport companies	Km/ 100,000 inhabit
	Number of annual public transport journeys per capita	Municipal Department of transport, Public transport companies	n/per capita
	Number of fossil fuel vehicles per capita	National Vehicle Register	n/per capita
	Km of bike routes by 100,000 inhabitant	Department of municipal mobility	Km/ 100,000 inhabit
	Number of public recharging stations for electric cars	Department of municipal mobilit	n
	Number of journeys per modal type	Department of municipal mobility	
	Km^2 of restricted areas	Department of municipal mobility	Km^2
	OPTIONAL		
	Number of vehicles > EURO4	National Vehicle Register	n
	Number of electric bikes registered	Mobility Department	n
	Number of subscribers to dBizi	Mobility Department	n
	Number of dBizi uses	Mobility Department	n
	Number of electric cars registered	National Vehicle Register	n
	Number of electric motorcycles registered	National Vehicle Register	n

ICT SCOPE			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	Number of Internet connections per inhabitant	Eustat	n
	WIFI coverage in public areas	Fomento San Sebastián	m^2 or %
	Number of public transport stops with information screens in real time	Public Transport Company	%
	E-ticketing	Public Transport Company	%
	Number of users of the digital services for citizens	Municipal Computer Centre (CIM)	n
	Set of open data available	Municipal Departments	n
	OPTIONAL		
	Number of service applications to citizens	Municipal Departments/CIM	n
	Number of service applications with geolocation to citizens	Municipal Departments/CIM	n
	Number of procedures performed on line	Municipal Departments/CIM	n
	Number of downloads of applications	Municipal Departments/CIM	n
	Number of municipal websites	Municipal Departments/CIM	n
	Number of publications in municipal websites	Municipal Departments/CIM	n
	Número de accesos a las webs municipales	Municipal Departments/CIM	n
	Number of publications in Social Networks	Municipal Departments/CIM	n
	Number of interactions in Social Networks	Municipal Departments/CIM	n

OPEN SMART GOVERNMENT SCOPE			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	Number of attentions made in Citizen's Folder	Municipal Departments/CIM	n
	Number of new procedures incorporated into Citizen's Folder	Municipal Departments/CIM	n
	Number of Open Data queries per year	Municipal Departments/CIM	n
	Number of Open Data licenses processed	Municipal Departments/CIM	n
	Participation of voters in the last municipal elections	Electoral Board	%
	OPTIONAL		
	Population trend	Registration office, national statistics	n
	Number of users of the city by year	Tourist office, office of economic development, national statistics	n/year
	Regular audits of municipal accounts	Department of finance	yes/no
	Formal publication of municipal contracts	Department of finance	yes/no
	Formal publication of municipal budgets	Department of finance	yes/no

ECONOMY AND FINANCE SCOPE			
	Indicator	**Source of data**	**Unit of measure**
	COMPULSORY		
	OPTIONAL		
	Number of PPP and EPC contracts	Department of finance	n
	Assessed value of commercial and industrial properties	Urban planning and areas of private buildings	%
	Incentives for the end users to implement energy efficiency	Municipal Dept.	€/inhabit
	Incentives for the end users to implement sustainable urban mobility	Municipal Dept.	€/inhabit

5.2 Methodology of Impact Analysis

This section presents a methodology proposal to analyse the impact of the Donostia / San Sebastián Smart Plan. Due to its nature of study or pilot project of several of the plan projects, the impact analysis will have a limited scope, due to the inherent difficulty of measuring the impact of a study, for example. It comes to analyse the impact of the Plan on socio-economic and environmental aspects to which the actions of the plan are directly aimed: Energy, Mobility, ICT, Smart Open Government, combining aspects of Governance, Public Administration and social participation, Smart Service Management and Economics and Finance.

It has to be noted that, generally, the analysis of social and environmental aspects have an important qualitative, and also, quantitative component.

From the analysis of several methodologies, and the methodology of Input-Output tables or SROI methodology (Social Return on Investment), the proposed methodology adopts good practices on them, adapting the data collection and the impact analysis to the plan context. This way, the SROI methodology adopts the goal that impact measuring entails to measure the change in ways that are relevant. The methodology will allow to analyse the impact in terms of evolution of the indicators defined.

The consideration of the seven principles on which the SROI is based is also considered relevant:

Involve stakeholders	Report what is measured and how it is measured and valued by involving stakeholders.
Understand what changes	Assess how the change is created and assess it from the evidence obtained, recognizing positive and negative changes as well as those changes that have been covered or not covered.
Value important things	Use financial proxies in order to recognise the value of the results. Many results are not traded in markets and as a result their value is not recognized.
Include only what is essential	Establish what information and evidence should be included in the accounts in order to give a fair and true description, so that stakeholders can draw reasonable conclusions about the impact.
Do not demand too much	Demand only the value that organizations are responsible for creating.
Be transparent	Show the basis on which the analysis may be considered accurate and honest, and make clear that it will be reported and discussed with stakeholders.
Check the result	Although a SROI analysis provides the opportunity to better understand the value that is being created by an activity, it inevitably involves subjectivity. An independent evaluation is needed to help stakeholders to assess whether the decisions taken by those responsible for the analysis were reasonable.

The proposed methodology consists of 5 phases.

Phase 1: Establish the scope and identify the stakeholders

• Establish the scope of the plan regarding goals, time and geography. The plan establish two goals: to establish a strategic line with shared goals and to give coherence and coordination to the public action, capitalizing on all actions carried out from different municipal departments and public corporations of the City Council. The temporal scope of the plan is from 2016 to 2020 and it is geographically limited to San Sebastián.

• Identify all those agents involved in the collection of data, their analysis and comparison of results, so at least it will involve to project leaders (responsible for ensuring the data collection from the results of their projects), the team responsible for analysing the development (responsible for analysing and monitoring the development of indicators), as well as experts and policy makers involved in the contrast and the decision making.

Phase 2: Identification of impact indicators and establishment of target values

• The impact indicators table proposed for the plan is included in section 9.1. To ensure the availability of data or, where appropriate, the establishment of new collection mechanisms, this task will require to carry out a definition and collection of prior information and data collection systems. As a starting point, a collection of data that may be affected by the projects to be undertaken in order to know the development possibilities in the future of the impact indicators considered has to be performed.

• The use of target values allowing an analysis in terms of improvement, from an analysis and trend scenarios is recommended. In cases where the plan launches projects to be developed in the city for the first time (WIFI in lighting points, biomass heating, etc.), the impact analysis involves the comparison of the trend in the "business as usual" scenario with that of the new scenario.

Phase 3: Collection of quantitative and qualitative information

• The collection of quantitative information involves the collection of data after the execution of the projects that serves to calculate the impact indicators.

• The collection of qualitative information involves the collection of information regarding customer satisfaction. For this purpose, the proposal is to collect information from those citizenship mailboxes

integrated into the applications (as it is the case of the application "jokogarbia") where users can submit their queries/questions, suggestions/incidents, acknowledgements or complaints. This collection and subsequent analysis can take advantage from the work already performed by the Citizen's Advice Service with annual reports published in http://www.donostia.eus/info/udalinfo/udalinfo_atencion.nsf/vowebContenidosId/NT0000094A?OpenDocument&idioma=eus&id=D325225&doc=D

In order to collect this information, it will be necessary to analyse at the beginning of the process the type of information collected by each mailbox. It will also be necessary to define the goal and type of information intended to be obtained through this qualitative information, so that it would be complementary to the quantitative data collected.

Phase 4: Analysis of quantitative and qualitative information

• Analysis of the quantitative data and study of trend scenarios. Comparison of the "business as usual" scenario, predicting what it would have been if no changes have been made (from a trend analysis), compared to the new scenario. It is important to remember that projects with pilot test character have a very restricted impact. On the other hand, projects in this plan may not be the only contributing to the impact obtained.

• Analysis of the qualitative information combining the data collected through the citizens mailboxes in applications with data. In general terms, it is about to know the users satisfaction and their perception of the plan in terms of impact.

• Integration of quantitative and qualitative analysis in an annual report.

Phase 5: Contrast and improvement actions

• Creation of a group of experts to contrast results, development and trends, and propose improvement actions.

• Presentation of results and improvement proposal.

PARTICIPANTS IN THE PREPARATION OF THE DONOSTIA / SAN SEBASTIÁN SMART PLAN 2016-2020

DONOSTIAKO UDALETXEA – CITY COUNCIL OF SAN SEBASTIÁN (Donostia Smart Plan Revision and/or Participants in Working Groups)	
Agirreolea Amaia - Citizen Participation	Juaristi Ana - Environment
Baro Iñaki - Mobility	Larragueta Txema - Maintenance and Urban Services
Barrenetxea Tere - Social Welfare	Manuel Asier - Environment
Basurto Aitor - Maintenance and Urban Services	Ordóñez José Ramón - Parking, Mobility
Benaito Josu - Mobility	Otamendi Iñaki - Citizen Participation
Braceras Pilar - Urban Planning	Pérez Fernando - Maintenance and Urban Services
Cuevas Juan Carlos - Urban Planning	Querejeta Angel - Mobility
Del Rey José Manuel - Maintenance and Urban Services	Rebollo David - Urban Planning
Etxeberria Juan Mª - Urban Planning	Sánchez Prieto Carlos - Maintenance and Urban Services
García Javier - Presidency	Sierra Loly - Urban Planning
Gastañares Jon - Environment	Vázquez Alfonso - Projects and Works
Irurtia Iñaki - Environment	
MUNICIPAL COMPUTER CENTRE	
Cipitria Ibon - Municipal Computer Centre	Salustiano Ana - Municipal Computer Centre
DBUS COMPAÑÍA DEL TRANVÍA DE SAN SEBASTIÁN S.A.	
González Eduardo - DBUS Compañía del Tranvía de San Sebastián S.A.	Vallejo Javier - DBUS Compañía del Tranvía de San Sebastián S.A.
DONOSTIAKO ETXEGINTZA	
Artola Juan Mª - Donostiako Etxegintza	
DONOSTIA KULTURA	
Almirall Amaia - Donostia Kultura	San Sebastián Ainhoa - Donostia Kultura
Galdós Imanol - Donostia Kultura	Sanz Jon - Donostia Kultura
DONOSTIA TURISMO	
Aguirrezabala Isabel - Donostia Turismo	Narváez Manu - Donostia Turismo
FOMENTO SAN SEBASTIÁN	
Aizpuru Ana - Fomento de San Sebastián	Korta Kepa - Fomento de San Sebastián (Oficina Estrategia 2020)
Arocena Alazne - Fomento de San Sebastián	Libreros Bibiana - Fomento de San Sebastián
Ayestarán Maite - Fomento de San Sebastián	Martínez Iker - Fomento de San Sebastián
Blanco Lourdes - Fomento de San Sebastián	Mendoza Nora - Fomento de San Sebastián
Díez Gorka - Fomento de San Sebastián	Miera Eduardo - Fomento de San Sebastián
Escribano Lourdes - Fomento de San Sebastián	Oráa Cristina - Fomento de San Sebastián
Fernández Eduardo - Fomento de San Sebastián	Sesé Euken - Fomento de San Sebastián
Jorde Ruth- Fomento de San Sebastián	
CRISTINA ENEA FOUNDATION (Participants in Working Groups)	
González Manu - Sustainability Observatory Director	
AGUAS DEL AÑARBE S.A. (Participants in Working Groups)	
Corcuera Mitxel - Technical Director	
ADVISORY BOARD OF SAN SEBASTIÁN (Committee of External Experts)	
Calzada Igor - Lecturer, Research Fellow & Senior Policy Adviser, University of Oxford	Nessi Paolo - DISIT Lab, Dipartimento di Ingegneria dell'Informazione. Università degli Studi di Firenze (UNIFI)
Lee Peltan Darwin - Manager, DLP Digital Ltd.	Ortiz de Zárate Alberto - Independent Consultant, alorza.net
Lumicisi Antonio- Chairman, Fondazione Ambiente Pulito	Parkhurst Graham - Professor of Sustainable Mobility, Centre for Transport and Society, University of the West of England
Mateos Miguel - Consultant, GEA21	Tuppen Chris - Managing Director, Advancing Sustainability
Naldini Leonardo - U.O. Mobilitá e Infrastrutture, Comune di Perugia	

TECNALIA RESEARCH & INNOVATION (STEEP Project Partners and Participants in Working Groups)	
Alonso Asier- Intelligent Transport Communication Networks Researcher in ICTs Division	García Alberto - Energy Storage Manager, in Energy and Environment Division
Arrizabalaga Eneko - Energy Efficiency Area and Industrial Sustainability	González Marta - Semantics Manager, OPTIMA are in ICTs Division
Azkarate Gotzon - Project Manager, Innovation Strategies Division	Hernández Patxi - Energy Efficiency Area and Industrial Sustainability
Bilbao Sonia - Researcher in ICTs Division	Herrero Jesús - e-Services, ICTs Division
Delgado Estibaliz - R&D Programs Manager in ICTs Division	Iturraspe Urtza - Computer Communications Networks in ICTs Division
Etxebarria Iñaki - Head of Mobility Market in ICTs Division	Rodríguez Txomin - Project Manager, Automotive Area in Industry and Transport Division
Feliú Efrén - Climate Change Manager, Urban & Territorial Sustainability Area in Energy and Environment Division	Saiz Sergio - Director of Energy Efficiency and Industrial sustainability Area, Energy and Environment Division
ACCIONA INFRAESTRUCTURAS S.A. (STEEP Project Partners and Participants in Working Groups)	
Méndez Elena - Geographer and Researcher	
EUSKO JAURLARITZA – BASQUE GOVERNMENT (Participants in Working Groups)	
Losa Ruth - Technician, Energy section in Gipuzkoa	Vitorica Ana - Head of Information Society Programmes of the Economic Development and Competitiveness Department
SPRI (Participants in Working Groups)	
Larrea Susana - Head of Service, Technology Department	
EVE – BASQUE ENERGY ENTITY (Participants in Working Groups)	
Domínguez Valentín - Transport Area	García Iñaki - Tertiary Area
GIPUZKOAKO FORU ALDUNDIA – REGIONAL GOVERNMENT OF GIPUZKOA (Participants in Working Groups)	
Bergua Edorta - Mobility and Road Infrastructures, General Directorate for Mobility and Public Transport	Martín Angel - Head of Service in Directorate for Information Society Systems
Lertxundi Xabier - Head of Department of Mobility and Transport	Martínez Axpe Lore - Information Society Manager
Marticorena Beatriz - Head of Sustainability Section in General Directorate for Environment and Hydraulic Works	
IZFE (Participants in Working Groups)	
Ostolaza Elixabete - Manager	Sistiaga Koro - Technician
ATTG – TERRITORIAL TRANSPORT AUTHORITY OF GIPUZKOA (Participants in Working Groups)	
Karrera Jakot - Senior Technician	Renedo Eluska - General Manager
BIC-BERRILAN GIPUZKOA (Participants in Working Groups)	
Martínez Pablo - Technology Manager	
EHU-UPV UNIVERSITY OF THE BASQUE COUNTRY (Participants in Working Groups)	
Aramberri Josu - I2Basque Manager and Professor at the Computer Science Faculty	Millán José Antonio - ENEDI Manager, Energética en la edificación Group, Superior Technical College of Engineering of Bilbao
Gallego Josune - Professor and Researcher, Artificial Intelligence Department, Computer Science Faculty	Echarri Imanol - Student of Transport University Master
Hidalgo Betanzos Juan Mª - ENEDI Researcher, Energética en la edificación Group, Superior Technical College of Engineering of Bilbao	Martínez Oier - Student of Transport University Master
MU – MONDRAGON UNIVERSITY (Participants in Working Groups)	
Amorrortu Itxaso - Professor and Researcher, Industrial Organization at Polytechnic University	Lizarralde Osane - Professor and Researcher, Information Systems at Polytechnic University
Aztiria Asier - Professor and Researcher, Distributed Systems at Polytechnic University	Retegi Aiur - Doctoral student at Polytechnic University
Illarramendi Miren - Professor and Researcher, Distributed Systems at Polytechnic University	Sagardui Goiuria - Professor and Researcher, Information Systems at Polytechnic University
Larrinaga Felix - Professor and Researcher, Information Systems at Polytechnic University	Serna Ainhoa - Professor and Researcher, Information Systems at Polytechnic University

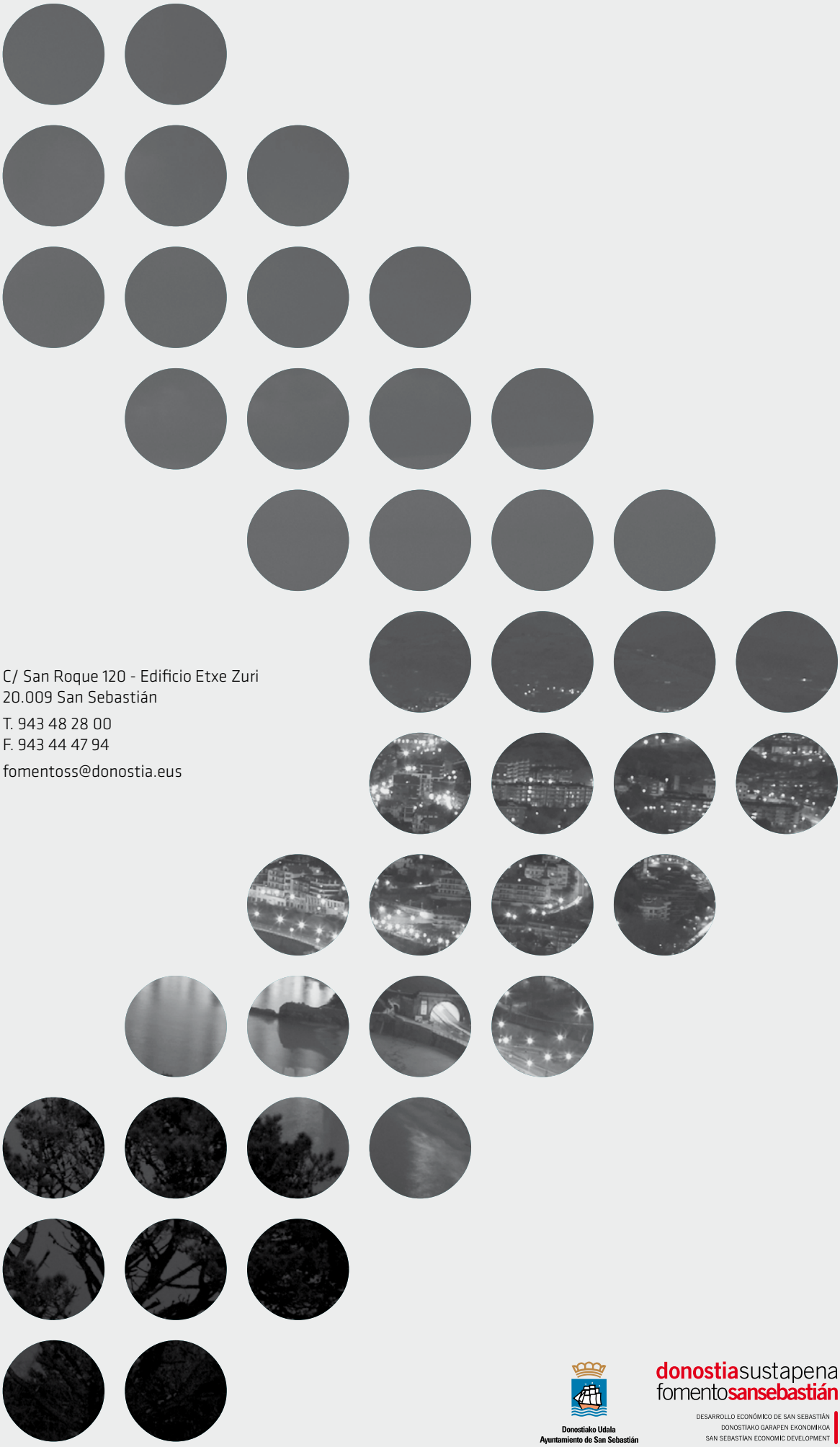
UNIVERSITY OF DEUSTO (Participants in Working Groups)	
Castro Unai - Professor and Researcher, Orkestra-Energía	Perallos Asier - Senior Researcher, DeustoTech Mobility, Faculty of Engineering
Elejoste Pilar - Professor and Researcher, DeustoTech Mobility, Faculty of Engineering	Zubillaga Agustín - IT Department, Deusto Foundation, Faculty of Engineering
García Bringas Pablo - DeustoTech Computing Manager, Faculty of Engineering	
TECNUN SCHOOL OF ENGINEERING – CEIT IK4 (Participants in Working Groups)	
Fontán Luis - Professor at Tecnun e Senior Researcher of the Electronic Unic of Power at CEIT	
INSTITUTO TKNIKA (Participants in Working Groups)	
Otaño Aitor - renewable energy Project Manager	
IK4 – CORPORATE SERVICES (Participants in Working Groups)	
Otegui Juan - Market Manager at IK4 Research Alliance	
VICOMTECH – IK4 (Participants in Working Groups)	
Flórez Aitor - Technician of Technology Transfer Department	Martín Iñaki - Technician of Technology Transfer Department
Linaza Mª Teresa - Head of Tourism and Heritage Department	Otaegui Oihane - Manager of Smart Transport Systems and Engineering Department
TEKNIKER – IK4 (Participants in Working Groups)	
Zuazo Carlos - Commercial Manager	
CIC – ENERGIGUNE (Participants in Working Groups)	
Castellanos José - Corporate Development Manager	
CIC - TOURGUNE (Participants in Working Groups)	
Martín David - Researcher	Peralta María - Researcher
LKS GROUP (Participants in Working Groups)	
Cepeda Gutiérrez Mikel - Urban and Landscape Architect, Urbanism and Climate Change	
AEDIVE - BUSINESS ASSOCIATION FOR THE DEVELOPMENT AND PROMOTION OF ELECTRIC VEHICLES (Participants in Working Groups)	
Pérez de Lucía Arturo - Managing Director	
APPA - ASSOCIATION OF RENEWABLE ENERGY PRODUCERS (Participants in Working Groups)	
Albistur Francisco Xabier - President of the photovoltaic section	
APTES - ASSOCIATION FOR THE PROMOTION OF SOCIAL TECHNOLOGY (Participants in Working Groups)	
Martínez Adriana - General Manager	
GAIA – BASQUE ASSOCIATION OF ELECTRONIC AND INFORMATION TECHNOLOGIES (Participants in Working Groups)	
Murillo Cristina - Technician	
MLC ITS EUSKADI – BASQUE CLUSTER OF MOBILITY AND LOGISTICS (Participants in Working Groups)	
Mónica Fanlo - Marketing & Communication Manager	
IVL - BASQUE INSTITUTE OF LOGISTICS (Participants in Working Groups)	
García Iratxe - Organization and Corporate Development Manager	
HOSTELERIA GIPUZKOA (Participants in Working Groups)	
Amonarraiz Andoni - Head of Kalitatea Project	
RACVN - BASQUE COUNTRY-NAVARRE ROYAL AUTOMOBILE CLUB (Participants in Working Groups)	
Murguía Luis - Vice president	
KALAPIE – URBAN CYCLISTS ASSOCIATION (Participants in Working Groups)	
Lasa Patricio - Member of the Association	Otazu Higinio - President of the Association
KUTXA EKOGUNEA (Participants in Working Groups)	
Esteban Xabier - Project coordinator and head for energy	
GOIENER COOPERATIVE (Participants in Working Groups)	
Ochoa de Eribe Santiago - Manager	

ADEGI (Participants in Working Groups)	
Alkorta Aitziber - Competitiveness and Innovation Technician	Arratibel Josean - Head of Competitiveness and Innovation Dept.
ALTIA CONSULTORES S.A. (Participants in Working Groups)	
Deza Jesus Mª - Associate Director	Varela Santiago - Project Manager
AQUALOGY SOLUCIONES AND TECNOLOGÍAS DEL AGUA S.L. (Participants in Working Groups)	
Alberich Herrera Jose Mª - Head of San Sebastián	San José Jesús - Urban cycle manager
Casas Ana - Product Manager, Control Systems	
BIDATEK INGENIERÍA AMBIENTAL S.L. (Participants in Working Groups)	
Goikoetxea Yon - Technician	
BONOPARK S.L. (Participants in Working Groups)	
Gastañares Jaione - DBizi Manager	
BUNT PLANET S.L. (Participants in Working Groups)	
Lete Ainhoa - Founder and Manager	
COFELY GDF-SUEZ (Participants in Working Groups)	
Tejero Isabel - Public Tertiary Manager, East Area, Development and Innovation Commercial Department	
CONCEPTUAL KLT S.L. (Participants in Working Groups)	
De Castro García Pablo - Partner Director	
CONTENUR S.L. (Participants in Working Groups)	
Ajuria Jesús - Industrial Director	
DATIK INFORMACIÓN INTELIGENTE S.L. (Participants in Working Groups)	
Odriozola Iñigo - Managing Director	
DINYCON SISTEMAS S.L. (Participants in Working Groups)	
García Roberto- Manager	Vadillo Iona - International Area
Russiel Elisson - Technician	
ELEKTRA S.A. (Participants in Working Groups)	
Calonge Javier - Head of energy efficiency	
EMPARK APARCAMIENTOS Y SERVICIOS S.A. (Participants in Working Groups)	
Uriarte Juan Luis - Delegate Vizcaya-Cantabria	
ENEA – ESTRATEGIAS PARA LA SOSTENIBILIDAD S.L. (Participants in Working Groups)	
López Ana - Project Manager	Torregaray Susana - Technical Manager
ENERDOM CONSULTING S.L. (Participants in Working Groups)	
Insausti Pello - Manager	
ESPACIOS VITALES (Participants in Working Groups)	
Ortiz Imanol - Architect	
EUROHELP CONSULTING S.L. (Participants in Working Groups)	
Del Corte Ricardo -General Manager	
EUSKALTEL S.A. (Participants in Working Groups)	
Molinos Natxo - Strategy Manager	
FACTOR CO2 (Participants in Working Groups)	
Muñoz Mª Jesus - Project Manager	
FERROVIAL SERVICIOS (Participants in Working Groups)	
Fernández Rafael - Spain Projects Director, Centre of Excellence for Cities	
CI3 FOUNDATION (Participants in Working Groups)	
Hyam Pablo - Technical Manager	
GAMESA CORP. (Participants in Working Groups)	
Larretxi José Ignacio - General Manager of Excellence	

GEA21 - GRUPO DE ESTUDIOS Y ALTERNATIVAS 21 S.L. (Participants in Working Groups)	
Mateos Miguel - Consultant	Sanz Alfonso - Consultant
GESE INTEGRAL DE SERVICIOS ENERGÉTICOS S.L. (Participants in Working Groups)	
Mateos Diego - General Manager	
GIROA S.A.U. (VEOLIA GROUP) (Participants in Working Groups)	
Hernánz Iñaki - Technical Office Manager	Taracena Juan Manuel - General Manager
GRUPO SIMEC INSTALACIONES Y SERVICIOS ENERGÉTICOS S.L. (Participants in Working Groups)	
Uría David - Commercial Manager	
GUSMAYTECH S.L. (Participants in Working Groups)	
Castillo Alejandro - Commercial Manager	
HISPAVISTA S.L. (Participants in Working Groups)	
García de Kortazar Xabier - Business Development Manager	
IBERMATICA S.A. (Participants in Working Groups)	
Alkorta Aitziber - Competitiveness and Innovation Technician	Zaballa Monike - Innovation Consultant
IBIL GESTOR DE CARGA DE VEHÍCULO ELÉCTRICO S.A. (Participants in Working Groups)	
García Alvaro - Head of Sales and Customer Service	
IBM (Participants in Working Groups)	
Rubio Hugo - Client Executive	
I2MAPP INNOVACIÓN EN MOVILIDAD S.L. (Participants in Working Groups)	
Fernández Ray - Managing Director	
IDOM (Participants in Working Groups)	
Zendoia Mikel - Business Development, Technology and Communications	
IKASPLAY S.L. (Participants in Working Groups)	
González de Txabarri Joannes - Operations Manager	
IKUSI ÁNGEL IGLESIAS S.A. (VELATIA GROUP) (Participants in Working Groups)	
Rodríguez Julián - IT Manager	Villameriel Tomás - Technical-Commercial Coordination, Integration of Systems and Services
Sánchez Pedro - R+D+i Project Manager	
ILUMINACIÓN INTELIGENTE LUIX S.L. (Participants in Working Groups)	
Ezkurra Félix - R+D+i Manager	Yurrita Javier - General Manager
INGARTEK CONSULTING S.L. (Participants in Working Groups)	
Arrieta Isidro - Manager and Founder Partner	
INGETEAM POWER TECHNOLOGY S.A. (Participants in Working Groups)	
Asín Jon - Product Manager, Electric Vehicle Infrastructure	Iriarte David - Account Manager, Electric Vehicle Infrastructure
JEMA ENERGY S.A. (Participantes en Grupos de Trabajo)	
Santamaría Giovanna - R&D Engineer	
JUST IN SAN SEBASTIAN DMC (Participants in Working Groups)	
Ranelli Gabriella - Partner	
IRIZAR S. COOP. (Participants in Working Groups)	
Olabegogeaskoetxea Héctor- Head of Electromobility	
MAPPLAS INNOVATIONS S.L. (Participants in Working Groups)	
Román Alberto- Founder and Manager	
MÁSMÓVIL IBERCOM, S.A. (Participants in Working Groups)	
Barbarin David - Technical Manager WWWIBercom	
MKZ – SERVICIOS DE GESTIÓN DE MOVILIDAD S.L. (Participants in Working Groups)	
Maguregui Iker - Manager	

NEC IBÉRICA S.L. (Participants in Working Groups)	
Martínez Victor - Commercial Manager	
ORONA GROUP (Participants in Working Groups)	
Aizpurua Ritxar - Drives and Energy Manager	
RB3 INNOVACIÓN URBANA INTEGRADA S.L. (Participants in Working Groups)	
Pennesse Claudia - Founder and Manager	
SUDS-ATLANTIS S.L. (Participants in Working Groups)	
Lasa Pedro - Manager	
SUMELCO TECHNOLOGIES S.L. (Participants in Working Groups)	
Martínez Daniel - Manager	Zurutuza Aitor - Sales Technician
TECHNOSITE – ONCE FOUNDATION (Participants in Working Groups)	
Torena Roberto - Manager, Accessible Technologies & Innovation Business Unit	
TELVENT ARCE SISTEMAS S.A. - GRUPO SCHNEIDER ELECTRIC (Participants in Working Groups)	
Garduño Jesús - Account Manager	Milla Sonia- North Regional Sales Director
THE MOVIE VIRTUAL S.L. (Participants in Working Groups)	
Torres José Ignacio - Manager Marketing and Communication	
TXITA TXIRRINDAK S.L. (Participants in Working Groups)	
Zuazo Harri - Head of Communication	
URGULL MENDI S.L. (Participants in Working Groups)	
Bañales de la Quintana Javier - Manager	
WEGETIT (Participants in Working Groups)	
Madariaga Irene - Web Project Manager	
ZEHARK STUDIO S.L. (Participants in Working Groups)	
Blázquez Angel B.- Head of energy efficiency and sustainability	Muñoz Aitziber - Founder Partner
Muñagorri Asier - Architect and Founder Partner	
ZIGOR CORPORACIÓN S.A. (Participants in Working Groups)	
De la Serna Jorge - Engineer R&D Department	Pérez Miguel Angel - Head of renewable energy

TECHNOLOGY SOLUTIONS TO IMPROVE THE QUALITY OF LIFE OF CITIZENS



C/ San Roque 120 - Edificio Etxe Zuri
20.009 San Sebastián

T. 943 48 28 00
F. 943 44 47 94

fomentoss@donostia.eus

Donostiako Udala
Ayuntamiento de San Sebastián

donostiasustapena
fomentosansebastián

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