COMUNE DI FIRENZE

Smart Florence Plan

COMUNE DI FIRENZE

- **The Vision**
- **The City Of The Future**
- **The Smart City Plan and the “system thinking” approach**

- *Planning Florence*
- *Itc Tool and Objective of Innovation*
- *Efficiency of the Public Administration*
- *Zero Volumes City*
- *Moving about in the City*
- *The Sustainability of the Plan: choices and financial tools*
- *Involvement of Stakeholders and Communication*

- **Monitoring and Control**

PLANNING FOR A BETTER LIFE

Dario Nardella

Mayor of Florence

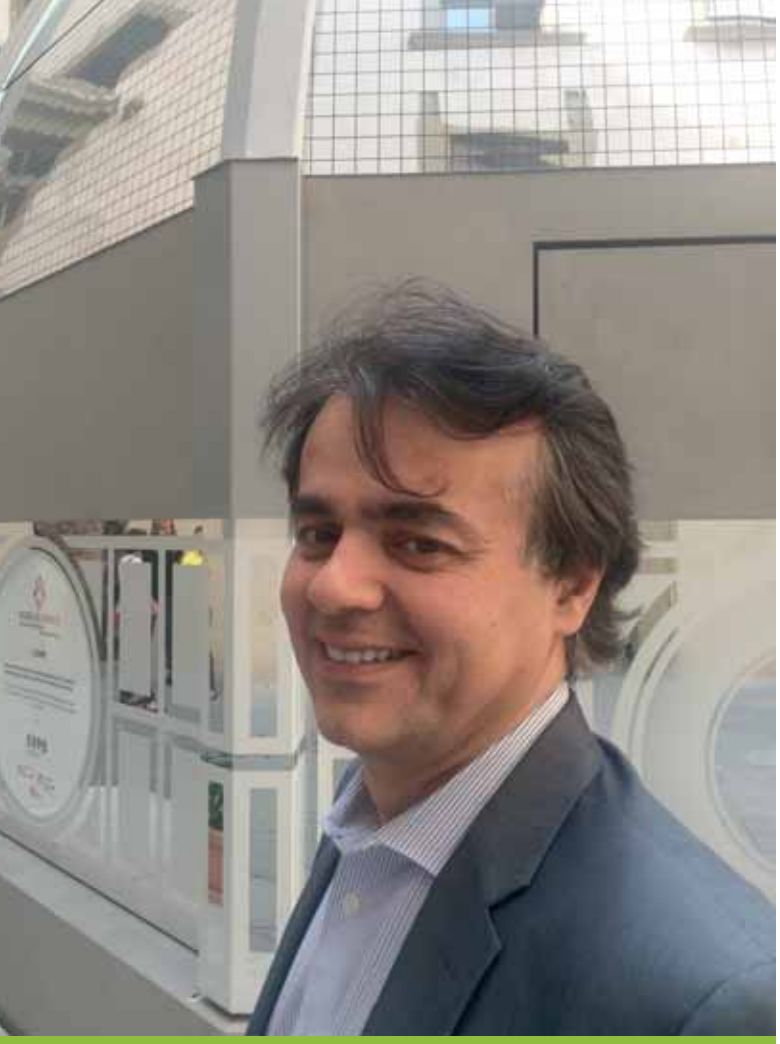
“The Smart City Plan is a powerful tool for achieving concrete goals for the city and the metropolitan area, thanks to solutions for improving everyone’s quality of life”

Cities are living organisms. We always start from this assumption when faced with urban transformation, but it is not sufficient just to acknowledge this. A mayor’s tenure lasts five years, however the task of managing the city stretches over a much longer period of time: from the solution of small day-to-day problems to large-scale planning that reaches far beyond the official five-year period. We are inevitably projected into the future. The objective of this plan is to provide the guidelines for the future of the city, at least until 2030.

For some time now we have been talking about *smart cities*, intelligent cities; however it is not intelligent to confine the concept to debates among experts. If we want the guidelines and consequent actions to really have an impact on everyone’s lives, we must answer a preliminary question: who are we targeting? The city belongs to the citizens: those who are born and live in a specific place develop a sense of belonging that calls for an equally strong sense of responsibility. We are therefore targeting people who are citizens by birth as well as those who live the city every day or even for a few hours.

The *Smart City Plan* is a powerful tool for achiev-

ing concrete goals for the city and the metropolitan area, thanks to solutions for improving everyone's quality of life. It is a planning tool that offers a coordinated vision of urban life from an architectural and town-planning perspective and in terms of infrastructures and mobility, energy efficiency and environmental sustainability, by always focusing on the social dimensions of civil cohabitation. And if the term *smart city* suggests something hyper-technological which is only for experts, we must immediately clarify that technology is merely a formidable tool for making life easier for citizens.
In his book *The triumph of the city*, Ed Glaeser reminds us that "cities are not structures; cities are people". "Cities have been engines of innovation since Plato and Socrates bickered in an Athenian marketplace" writes Glaeser. "The streets of Florence gave us the Renaissance, and the streets of Birmingham gave us the Industrial Revolution. The great prosperity of contemporary London and Bangalore and Tokyo comes from their ability to produce new thinking. Wandering these cities—whether down cobblestone sidewalks or grid-cutting cross streets, around roundabouts or under freeways—is to study nothing less than human progress". The search for these success factors and the development of the city must never cease and must always focus on the citizens, experts, public and private subjects in an ongoing exchange of values and shared solutions.
This is the real sense of the *smart city*: the concentrating of all the best energies on the goal of a sustainable and charitable city, really smart because – thanks to its social networks and innovative drive – it is able to constantly improve even when faced with apparently insurmountable difficulties. This is the concept of "resilience", namely, the capacity to adapt to change, to overcome the crises by opening up new scenarios.



THE CITY OF THE FUTURE

Giacomo Parenti

Florence City Manager

“It is a document that will accompany us step by step towards the Florence of tomorrow: electric, with zero volumes, green, sustainable, and resilient, in a word, smart”

We can find various definitions for the concept of the *Smart City*. One of the most widely diffused involves the integration of technological components, social components and a model of urban development in the Smart City, all in a vision that produces more intelligent, sustainable and charitable cities, not just by introducing technology but also by generating innovation. In order to pursue this integration, the city must adopt a planning/management model of the urban life cycle that is able to constantly integrate the ICT components with those of the governance and the decisions for pinpointing the most important urban functions, and that allows for achieving the best results in the shortest possible time and with minimum costs and effort. However, the intelligent city is also the city that adapts, in other words it shows it is able to change physical and social structures for the purpose of ensuring the quality of life and the environment, also when faced with major territorial difficulties produced by *climate change*, the risks of which are amplified by interference with the intense human presence and activity. It is a city that not only adapts, but also changes, by creating new social, economic

and environmental answers that allow it to resist in the long term against environmental and historical stress. In this sense, resilience is a necessary component for sustainable and consequently durable development, as it acts in a priority manner on the organisational and management models of the urban systems. Intelligent cities are sustainable and sustainable cities are resilient. The Florence of tomorrow is a Florence that welcomes opportunities, starting off from the Sustainable Energy Action Plan (SEAP), approved after the city adhered to the Covenant of Mayors in 2010, which sees a 21% reduction in CO_2 emissions into the atmosphere by 2020 and which also looks beyond, with an estimated 40% reduction by 2030. The prospects even reach as far as 2050, with a reduction target of 70%. This is an ambitious project that no-one can guarantee at the moment because we are dealing with a historic city and a city of art in which relevant and significant interventions are not always possible. Nevertheless, we must not give up in advance as we can count on the creative and innovative energy that this territory has always known how to express.

Developing a *Smart City Plan* is a daunting task: thanks to the STEEP (System Thinking for Efficiency Energy Planning) project, we have been able to share our views and experiences with Europe and the cities of Bristol (UK) and San Sebastian (Spain). We are in agreement with our partners that it is necessary to consider the city as a complex system of processes where the various elements and factors of city life are all intertwined: in this context, a single action in a single sector in the city can influence and have repercussions on the realities in all sectors due to being an integrating and integral part of a single efficient and effective system. However, the *Smart City Plan* is an instrument – and as its name implies – it can only be smart and simple: it is a versatile instrument capable of updating and keeping account of developments and innovations, especially in the key sectors identified, and namely, energy efficiency, mobility and ICT; it is an operational instrument but also a compendium of objectives and results. It is a plan, which in order to be successful, must be participated in and therefore it must be shared with everyone who resides and works in Florence. In the participatory perspective, the stimuli and suggestions, which must arrive precisely from the bottom, then turn the strategy and planning into a winning tool for their realisation. It is a long road; the first stage of the *Smart Florence Plan* will be in 2030, and only with a forward-looking analysis supported by clear, easily measured and immediately recognisable indicators in which the final user is our first objective, will we be able to equip ourselves with an instrument that is not merely the enunciation of principles, but thanks to the actions it entails, it will also be capable of being implemented and giving results. With the SEAP it has been possible to obtain a multiplication of the benefits in the medium-long-term (by 2020) with a clear-cut plan and the formulisation and details of energy policies that have taken current policies into account with a more comprehensive and integrated vision and with sectorial interaction. While we prefer not to call it “the plan of plans”, we can still affirm that the Sustainable Energy Action Plan has been the expression of a single, joint and synergic action by the administration that has included and amplified the objectives and results of the various sectors and existing plans recently approved or under review.

With the *Smart City Plan* the City Council of Florence wishes to go even further, not only as a time horizon, but also as a programming document: not an *action plan*, not a simple strategic description, but rather, a space for discussion for highlighting the eventual barriers, measures and actions to be taken to implement a local strategy of *smartness* that will be gradually extended and made known, also by investigating how to promote and increase awareness and active involvement by the citizens themselves. It is a document that will accompany us step by step towards the Florence of tomorrow: electric, with zero volumes, green, sustainable, and resilient, in a word, smart.

The Smart City Plan and the “system thinking” approach

The Smart City Plan should coordinate every sector of influence, driving the city to innovation, achieving best results in less time and with less effort and cost.
By taking an integrated approach to strategic city planning where all systems and their interlinkages are considered would actually result in greater efficiency in terms of both carbon and cost and also provide other benefits such as greater stakeholder engagement and ownership of actions that make the plan feels as a common property . The instrument for this endeavor should be a comprehensive Smart City Plan which includes the whole set of necessary actions following a holistic approach.
Nevertheless, developing a Smart City Plan is a difficult task. The three partner cities of the FP7 smart cities STEEP Project (San Sebastian, Florence and Bristol - Green Capital 2015) detected the following key factors for its definition:
• It is necessary to have the collaboration of all the stakeholders across the value chain: public administrations, technology experts, companies, end users, etc.
• It is necessary to consider the city as a complex system of processes, where the different elements of the city are connected and one intervention in one process of the city influences the rest of the processes.
• Building up a Smart City is a significant commitment and requires time, resources, clear vision and strong leadership.
To be successful a Smart City strategy has to be based on the four I’s: *Integration* of all possible sectors and aspects which are in the municipal influence
Innovation spread as wide as possible (a smart city has to be a forerunner in technology implementation and in testing innovative approaches or services)
Involvement of stakeholders in setting very ambitious “visionary” targets compared to the actual situation
Information in terms of ICT as a tool for the relation with the citizens and for the monitoring and control of the strategies.
Which is the best way a city can tackle these problems, and therefore, define an optimal Smart City Plan? The three cities consider that it will be possible if they use:

1. A system thinking approach that considers the city as a complex system. Systems thinking is a framework for problem analysis and solving that allows making reliable inferences about behaviour of complex systems by developing an increasingly deep understanding of underlying structure, and which is very suited to urban environments.

2. Open Innovation for engaging the stakeholders, and open standards to ensure interoperability, and open-source to maximise uptake and impact.

In order to identify innovative measures for sustainable cities, it is necessary to use an Open and Innovative approach built upon co-production, where all stakeholders work together. The concept of Open Innovation, will not be only address involving stakeholders in the development of the Smart City Plan Process Model, but also in understanding the contribution of interventions, identifying opportunities and barriers, as well validating the Process Model.

Example of hierarchical model built with system thinking (University of Bristol)

The method used by systems thinking is to explore the relationships and changes in a system, and try to develop a comprehensive picture of how the system works. It also spurs the emergence of new important questions which help better understand the system. Systems thinking thus views problems as the products of some structure of relationships, in contrast to conventional linear thinking, which instead explains patterns in terms of simple causes and effects between separate things.

Moreover, this approach allows for the modelling of the parameters of the systems, and how the modification of these parameters will impact the whole system. It can be used to found leverage points, parts of the structure that significantly influence the system's overall behaviour and that represent opportunities for changing system behaviour with relatively little effort.

Systems theory has been put to practical use in the business world for decades. More recently, systems thinking concepts have been incorporated into several strategic planning methods for local governments. These and other tools can help cities better understand the complex systems that exist within them, and the larger networks to which they belong. Systems thinking will also help cites to understand the role of key inputs and outputs like energy, water, waste and transport and to identify how municipalities are vulnerable to changes in the availability and price of those inputs.

The methods described facilitate the elicitation, sharing, capturing and transformation of pluralistic perspectives, knowledge claims and values about the problem situation in a collaborative process. The methodology is based upon the deliberative concept of discursive decision making with the objective to find the best possible consensus. Its overaching aim is thus to enhance moral legitimacy of decisions for intervention and to reflect social and cultural values in collective decision-making.

PLANNING FLORENCE

To achieve the City's environmental goals, efficient cooperation among inhabitants, the private industry, the public sector and many other players is crucial. In this variegated range of players, all of whom are necessary, the Administration must play a leading role, a key role, and it must demonstrate its leadership by managing to give life to a strategic plan, the smart city plan. This new instrument does not have its roots in the laws or its regulations in a decree, rather, it is presented as the flexible, adaptable expression of the strategies that the city has set itself for outlining its future development. This strategic document is the natural consequence and integration of the plans adopted by the city over recent years that have represented, with public participation by the various stakeholders, an indispensable moment of sharing and approval. The approach of a programming policy is confirmed and reinforced, in which the administrators and citizens come together at discussion time, in this case supported by innovative methods such as "system thinking", and motivated by the common goal of "Firenze #piùdiprima" *(Florence# more than ever)*.
The concept of interconnection and interdependence mentioned in the introduction that are valid among the territory's management and development instruments and also among the administration and citizens, is the logic underlying this strategic plan that sets its horizon for 2030 with a projection as far as 2050.
The year 2010 can be viewed as our reference year for the approval of the Structural Plan "with zero volumes" (2030) and the simultaneous adhesion to the Covenant of Mayors with the subsequent drawing up and approval of the SEAP, Sustainable Energy Action Pan (2020). These are the two planning instruments that have identified in particular, concrete guidelines and actions for a sustainable and efficient city. The urban redevelopment and reduction of CO_2 emissions in the atmosphere together with the analysis of slow and sustainable mobility policies with the proposed master plan of electric transport, represent the roots of the smart city that the SCP (Smart City Plan) is now outlining with the inclusion, updating and implementation of previous and future instruments.

In fact, the SCP will include all the subsequent updates of current regulations such as those concerning the building industry with sustainability requirements and the adopting of new ones such as those concerning town planning (with a five-year duration) as well as the necessary monitoring operations, like those associated with the SEAP (the encouraging results of which spur us on to even greater action). And it is precisely in this perspective of integration of the existing and the recent, that it is possible to perceive the programming pathways: the development of the issue on resilience and the consequent integration with the Civil Protection Plan, the municipal Disaster Recovery Plan and the proposed Municipal Computerisation Plan, as well as the Urban Mobility Plan of the city of Florence, are a sign of how the process towards an increasingly smarter Florence is now underway and how this must not stop or drag behind.
The voluntary strategic plan of the City Council of Florence consists of the use of planning and legislative instruments available for giving life to proactive and synergic actions for simplifying and intensifying the instruments currently available and which will therefore become a social answer to the citizens' growing expectations.
The digital Poster of Florence is, *inter alia*, a concrete example of that renaissance in which the agreements with third parties (such as the University of Florence, the Regione Toscana, the Careggi Hospital, the Chamber of Commerce of Florence, to mention just a few) are the condition *sine qua non* for obtaining that synergy able to provide innovative instruments for the economic and social development of the city. This is the case, for example, of the open data intended not only for statistical purposes but also as an

opportunity for growth and support in decision-making by acting as a Responsive city, placing knowledge at the heart of the activity of the city government and making it available for all the players, thus confirming the optimistic affirmation “if you can measure, you can manage”.

Florence today is a city that also looks beyond its traditional territorial boundaries, assuming its own role in the metropolitan city that has now been an official reality since January 2015. The Smart City Plan must necessarily enlarge the usual municipal planning context, not only in terms of time but also territory, integrating itself with the strategic plan being drawn up for the metropolitan city. The interactions will primarily influence the digital aspects, information technology and mobility/infomobility that will have a considerable impact on the users in the short term given the flows of commuters and tourists throughout the entire metropolitan area. The smart city plan aims to be an example of programming and multisectorial integration, a model that can be adapted to the different demands and that will also be the driving force behind the strategic metropolitan forecasts for energy efficiency and emission reduction.

WHAT WE INTEND TO DO

- To include and integrate the approved plans (Structural Plan) at the planning level with those being drawn up and foreseen in the medium-long term (urban mobility plan, municipal computerisation plan, resilience plan) in order to achieve synergies and amplify the effects.
- To use the regulations and monitoring operations in the short-medium term as synergic assessment instruments, also through the shared set of Key Performance Indicators, by interpreting them in a connected manner in the plan’s three focus areas (energy efficiency, sustainable mobility and ICT).
- to be a referenc e model for future strategic plans (such as the Strategic Metropolitan City Plan) by following a participation method and establishing ambitious objectives that could be declined at the level of the city and also in a more widespread manner.

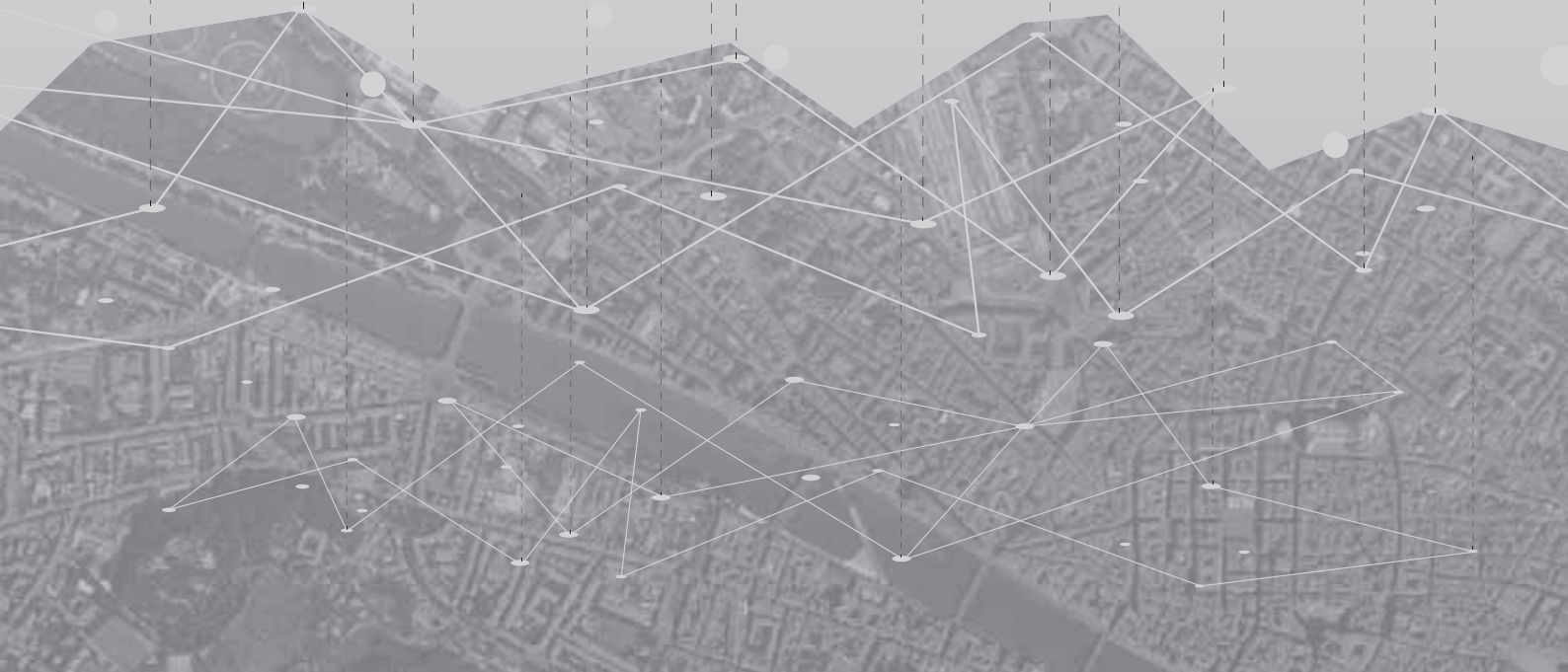
HOW?

- By defining guidelines for drawing up new integrated plans, also by means of performance indicators that allow not only for observing national legislation, but also for facing up the social, environmental and sustainability challenges for which the smart city plan will be a container par excellence.
- By conducting periodic monitoring operations that allow for cross and transversal interpretation of the results in the three key sectors of the plan, with requalification of the objectives from time to time.
- By creating a dialogue among the different sectors in defining the plans and regulations envisaged and that will be forecast in the future.

INDICATORS

CO_2 emissions residential and tertiary sectors	Primary energy use persector	Electrical energy use per sector	% Renewable energy	Noise pollution
	Smart meters coverage (%)	Resiliance to natural disasters	Percentage of buildings under refurbishment according to EPBD standard	

ICT TOOL AND OBJECTIVE OF INNOVATION



The information and communication technologies (ICT) represent a pivot that blocks and at the same time enables all and any actions of the Smart City Plan.
They are also a strategic element for the digital culture growth in the city, and the relative development of the market linked to innovation in Florence.
The goal of the City Council is to promote new digital services and encourage their use by citizens and businesses in the aim of ensuring improvement in the quality of life of Florence, simplifying relations with the Entity and associated companies through the ICT, and providing information, data, tourist-cultural contents, and services in a manner that is always more closely connected to the use context (providing what is needed at the time it is needed and in the specific place where the user is located). This is therefore an innovation strategy that aims at identifying the ICT as tools for achieving the goals of wellness and knowledge, but also as a goal in itself, that is, to stimulate and increase the use of IT equipment and services in the territory, also through information/computerisation pathways and tutoring.
In 2030 the city is envisaged as a place where all subjects supplying useful services to citizens will be using a federated model that allows for sharing digital assets such as infrastructures (network connectivity, especially wireless, sensors, video-cameras), data, and services. The latter in particular, will be extremely disaggregated and modular, meaning that it will be possible to connect multiple services of different subjects in a single, user-experience chain, thus providing the user with a unique and integrated offer.
But Florence is a city that also fits into a much wider territorial context, the metropolitan one, and the fact of being an example of good practice in the neighbouring and outlying districts will be a strategic objective to be pursued for managing to become not just a city but also a digital metropolis of national reference.

WHAT WE INTEND TO DO

The main lines of action on the ICT of the City Council will be as follows:

- **Implementation of the digital Florence manifesto**
  - Extension of the City Council's sharing model (memoranda of understanding for data and assets) to the stakeholders.
  - Implementation of the commitments foreseen in the memoranda of understanding in a 2015-2020 time horizon.
  - Structuring and implementation of a consolidated asset sharing model, exhibiting of the services in a modular logic in a 2020-2030 time horizon.

- **Digitalisation services and simplification**
  - Progressive abandoning of the physical counter for the sectors already providing online services (education, housing, SUAP – Single Contact Point for Productive Activities, taxation, demographic).
  - Massive increase in payment channels, with special focus (in view of 2030) on micropayments from mobile phones and based on SIM cards or other identification elements that will be located in the devices carried by users.
  - Defining of new, simplified digital interaction methods with disadvantaged users, recipients of the City Council's services currently not digitalised (e.g. welfare, housing, ERP – Enterprise Resource Planning, etc.).

- **The City Council's computerisation plan**
  - The City Council's computerisation plan, which has only recently been made a legal obligation, will gradually become a key element in planning the Entity's activities, also representing an annual collection point of the digitalisation requirements of the offices of the Entity.
  - The plan envisaged for 2030 must be extended to the entire metropolitan area, including and absorbing the Strategic Digital Plan of the Metropolitan Area and the digitalisation demands of the City Council's stakeholders
  - For several years now the City Council has also been carrying out an innovative platform prototyping activity for providing online services at a metropolitan level (People Light Pack system at the Service Centre 055055), a regional level (eToscana interoperability) and a national level (single PIN for citizens, SPC - public connectivity system payments, interoperability of the National Territorial Data Register). These prototyping operations will be continued in the coming years, allowing the Entity to always have a vantage point over the digital innovation mechanisms that are planned at a national level.

- **Availability of open data**
  - The quantity and quality of the open data will constantly increase, allowing citizens, businesses, professionals and offices to access the City Council's information heritage in an easy and automated manner.
  - Thanks to the federation mechanisms envisaged in Digital Florence, the opening of data by stakeholders will be encouraged as well as the sharing of data in a secure manner with private subjects with whom joint activities are conducted in the territory (e.g. companies that carry out road excavations).

- **WIFI network extension**
  - The network and the service will be constantly extended, ensuring a city that is increasingly more connected, as well as offering location-aware contents and services conveyed on the citizen WiFi network.

- **Pilot actions on the Internet of things**
  - The City of Florence is already experimenting with innovative solutions to offer digital services and contents supplied or controlled by things: experiments are underway using wireless beacons in museums, analysis of pattern recognition on images coming from surveillance video-cameras, and evolved sensor applications for monitoring traffic and parameters such as temperature and visitor-presence.
  - Experimentation sectors of these new technologies will be further extended, for example by exploiting them to simplify the control of vital signs and health parameters, and for communicating with subjects who require specific therapies or particular welfare care by the City Council.

- **Digital skills (including welfare, disadvantaged categories, etc.….)**
  - The promotion of digital skills is targeting multiple objectives: on one hand it will allow for

increasing the number of users of digital services produced by the Entity, on the other, it will stimulate the growth of new skills enabling young people and not only, to enter the labour world linked to technological innovation, and finally, it will make it possible to live the city in an increasingly more effective manner thanks to the evolved and aware use of ICT and digital services offered.

• The joint promotion of digital skills by the City Council, stakeholders and other entities with whom and which partnerships have been entered into (For Digital Florence and not only) will also allow citizens to gain knowledge of the overall "digital offer basket" of the City of Florence.

- **Digital school**
  - From the benchmarks pinpointed in 2013-2014, Florence is lacking in the promotion of innovation initiatives relating to the world of the Digital School. With these lines of activity the issue of broad-band availability will be addressed in Florentine schools, aimed at having all schools wired both internally and externally with up-to-date wireless technologies by 2030.
  - The City Council will also be a reference point in 2030, in terms of specialised skills and consultancy for innovation, for the various Florentine schools at all levels, offering interoperable solutions with the rest of the city's ICT structures and supporting the various educational institutions in carrying out networking with small- and large-sized companies in the ICT world.
- **Customer satisfaction**
  - In 2030 every digital asset exploited by citizens (whether it be a WiFi network, open data, or a digital service) will be subject to constant, continuous and structured monitoring of end-user satisfaction.
  - Mechanisms that have already been experimented by the Entity during these years of verification of the quality of the service supplied in the field of ICT services, will be brought into standard usage.
  - An annual revision process of the results obtained from the monitoring of customer satisfaction will be established, including any possible corrective actions in the planning by the Entity the following year, all in the aim of keeping citizens increasingly more satisfied with the "smart" Florence offered to them by the City Council.

HOW?

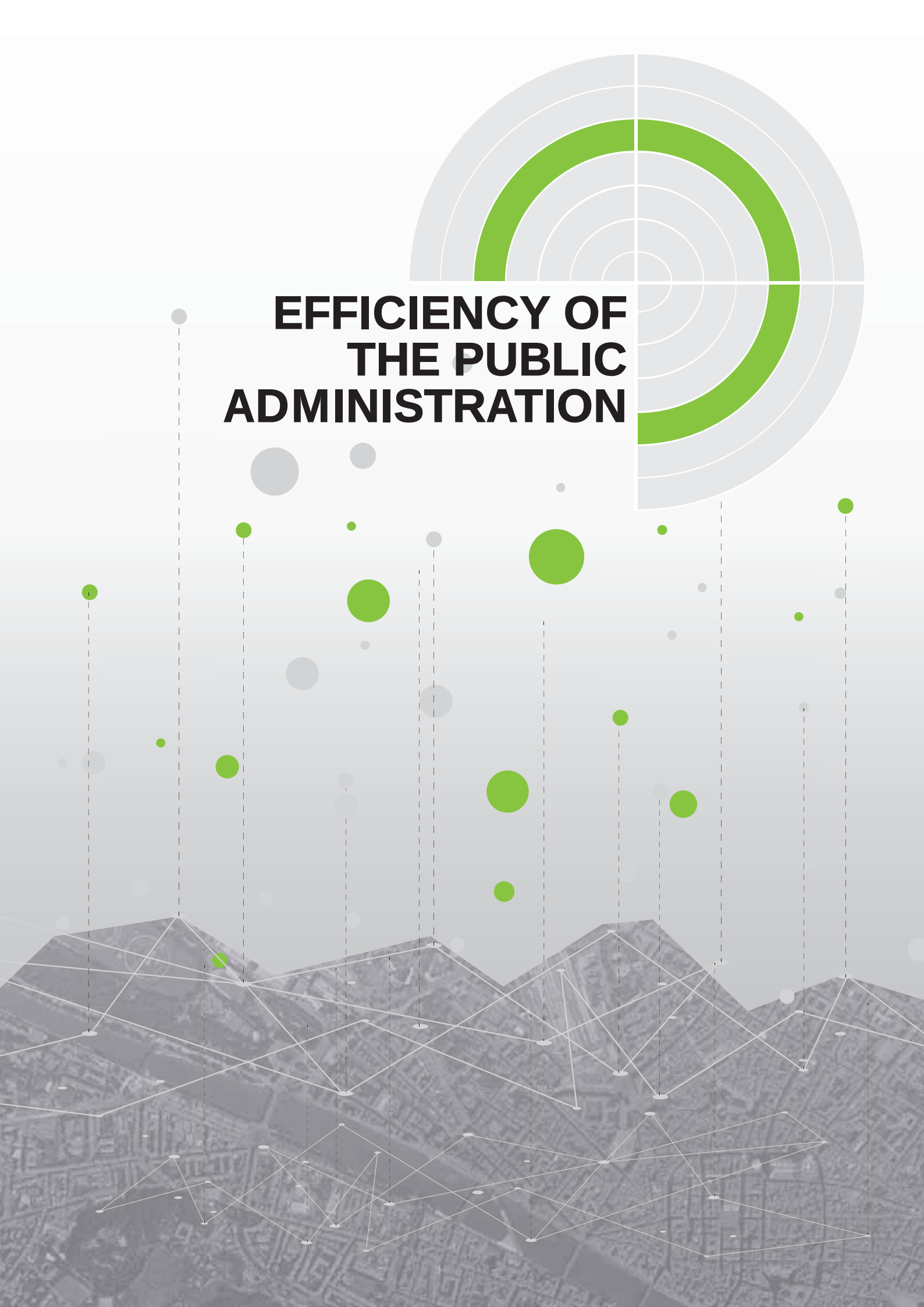
- by monitoring and comparing the data provided by the success indicators that will therefore be the periodic reference to be compared with and referred to during the various programming and progress stages and steps, with focus on some target points such as the promotion of public wireless connectivity, promotion of city broadband, promotion of digital channels, promotion of digital services usage, promotion of public sector information disclosure, promotion of city utilities public information disclosure.
- by programming, approving and implementing the targeted lines of action.
- by experimenting (also thanks to the opportunities provided by the European projects and participation in national, European and international networks) with integrated actions in the services of and for the city in ongoing comparisons and long-life learning with other cities.

INDICATORS

number of wireless hotspot at 2030 in the city (or % of wifi coverage)	number of internet connections per 100.000 inhabitants	number of centrally controlled (digital signage) displays	number of on line services activated	number of on line services users per 100.000 inhabitants

number of open datasets	number of public owned companies open datasets	number of public transport stops with a real time information display	% of public transport e-ticketing

EFFICIENCY OF THE PUBLIC ADMINISTRATION



Cities are the places where there is the greatest concentration of energy consumption, polluting activities, congested mobility, and growing land consumption, and it is precisely from the cities that it is necessary start off again. For several years now the city of Florence has been applying a management system integrated with its own administration actions, and in particular, the programming of intervention operations in the energy field, the carrying out of specific interventions with a strong impact on the reduction of CO_2 emissions in the Sustainable Energy Action Plan, energy auditing campaigns of public buildings, energy efficiency in public structures, provisions for reducing consumption, energy efficiency in private buildings, incentives for sustainability actions in the redevelopment or promotion, and indications for the purchase of electric vehicles to be used for public transport.

This means that based on the decision to turn Florence into a smart and sustainable city, one of the priorities that the City Council has set itself, is that of following up with actions aimed at ensuring energy efficiency of the public administration. The methods via which it intends to pursue the goal are both operational and managerial. Florence is a medium-sized city and the managerial provision concerning energy (Energy Manager) is considered a duty by law, whereas that concerning mobility (Mobility Manager) is instead a choice that initially stemmed from the opportunity of having a specific reference figure in the sector that has the greatest impact on the CO_2 emissions in the territory. Having a reference figure in the Energy and Mobility fields, flanked by a Manager of the Development of ITC technological infrastructures, ensures the possibility of harmonising and standardising the actions and synergistically integrating the results. Combined with the planning and programming action are the infrastructural operations that make the decisions effective to reduce energy consumption and cut the emissions into the atmosphere.

Planning savings policies and energy efficiency for 2030 means to structure the actions per sector as well as interventions that have a spill-over effect, that is, they can be replicated.

When it comes to energy efficiency, there are two main sectors that come to mind in the public property, namely, buildings (just on 500 in the city) and lighting.

The renovation of public buildings today finds itself having to deal not only with the traditional heritage, that is, existing offices, sporting installations and school buildings, but also with the new acquisitions, such as former army barracks, that all constitute a series of particularly significant surface areas and considerable redevelopment operations that entail complete renovation (the former Lupi di Toscana Barracks, for example, has a useful surface area of approximately 33,000 m^2) and which allow for application of the incentive and energy efficiency regulations linked to sustainable recoveries promoted with the Structural Plan and the recent Urban Regulations. Whenever the interventions pertain to integral recoveries of existing structures that already have sole ownership, such as the school building and sporting installation heritage for example, it is possible to design, plan and schedule over time forms of total energy efficiency that allow for calculating considering savings (as in the case of the Calvino Bio-School with renewable energy sources, savings of about 40% for heating the building, a 15% cut in electricity costs obtained from sunlight, and the plan to make the Florentine sporting installations more efficient by using less energy and saving on consumption). However, when the interventions are not comprehensive or the buildings concerned are protected heritage, it is obvious that the operating methods and intervention choices must be differentiated and they are in any event limited in time when carried out directly by the administration.

As regards lighting, even though public lighting has a minimum percent of incidence compared to the general impact of consumption in the city (equal to only about 2%), the energy efficiency project is equally significant as it is one of the most visible examples in the territory.

The management of lighting installations in any city is a complex undertaking (there are just on 45,000 lighting points in Florence). In this new millennium, lighting is an increasingly safer element, improving the exploitation of outdoor areas at night, making it possible to meet a variety of different needs. The City Council of Florence will mainly be installing a new lighting network to replace the traditional light fixtures with new LED lights with different intensities depending on the requirements and in any case, sufficient for ensuring the comfort and safety of the citizens, thus avoiding any form of light pollution, but also and above all, via the exploitation of an intelligent lighting network with a new system capable of managing remote control functions, video surveillance, environmental monitoring and WiFi connections. A distinctive feature of the proposed interventions will be the use of avant-garde technological solutions with special reference to light flux regulators and LED light fittings, which will be used to a great extent in the renewal of the installations.
The adopting of innovative and efficient technological systems accompanied by ICT infrastructure actions in specific sectors, primarily schools and welfare areas, confirms once again how the integration of instruments and actions gives rise to results that reciprocally reinforce each other.

WHAT WE INTEND TO DO

- Implement energy efficiency measures and promotion of renewable energy in buildings, facilities and public services using innovative tools and technologies.
- Strengthen the mobility and energy managers organizational structures.
- Streamline the existing structures (from renting to ownership, real-estate sales when possible,…).
- Render the public lighting system more efficient also by resorting to avant-garde and technologically advanced systems connected to the LED/video surveillance/WiFi.
- Introduce technological innovation infrastructure in the training and social/education structures.

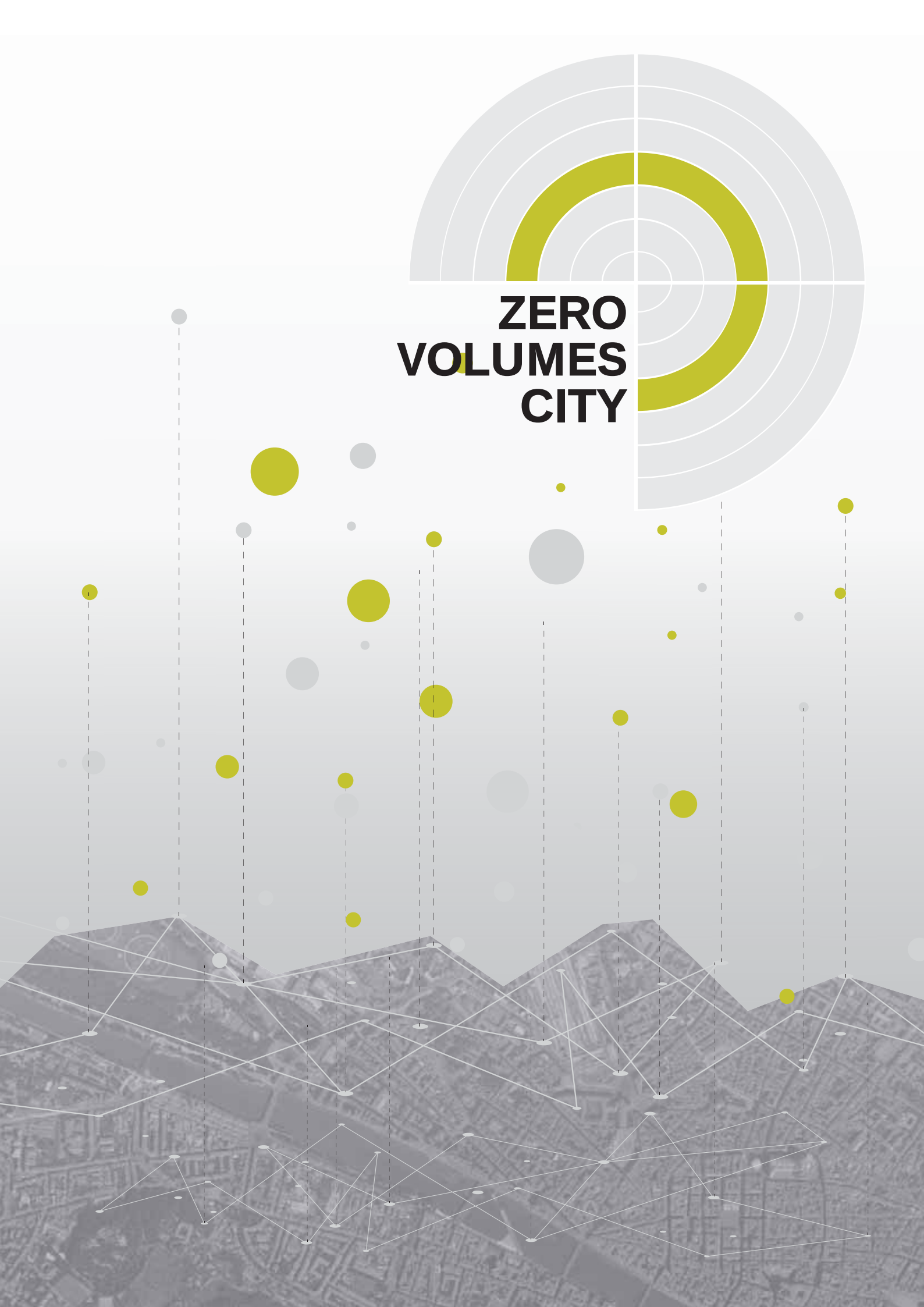
HOW?

- Increasing the level of knowledge of energy systems and environmental public in order to identify the best solutions to optimize consumption and impacts.
- By pursuing energy efficiency policies based on certain and measurable indicators of continuous improvement (total quality management).
- By fully replacing all lighting points in the city (street lighting, traffic lights...).
- By optimising the tenders for the granting and/or use of public structures (sporting and associative) based on criteria targeting energy savings and reductions in consumption (Energy Peeformance Contracting).
- By experimenting innovative solutions applied to buildings bound of historical value.
- By studying solutions by type of building depending on the characteristics and existing restrictions.
- By encouraging proper and responsible behaviour by the users of the buildings and public structures.
- By identifying exemplary actions to be encouraged and made attractive and replicable, also at the level of the metropolitan city, as a backup for a specific communication system.

INDICATORS

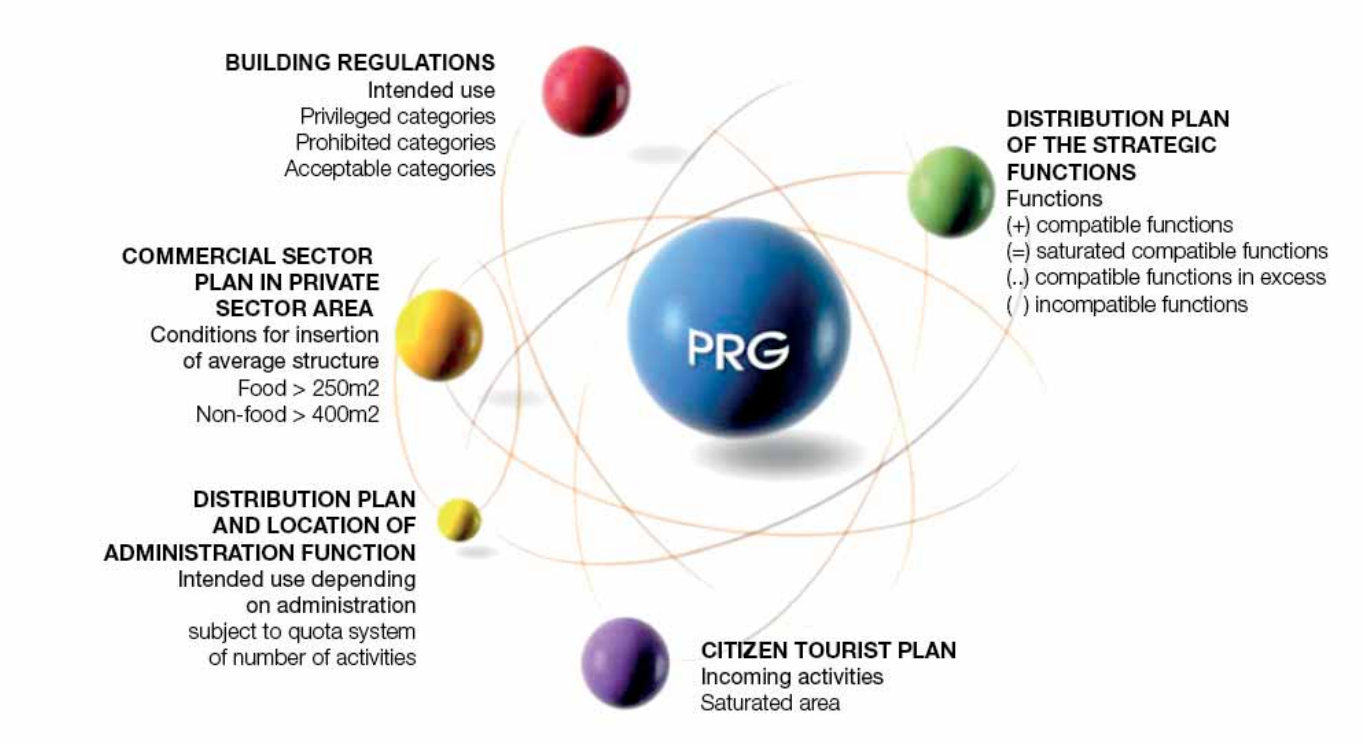
Electricity and heating consumption PA	Solid waste production per capita and % of solid waste recycled	Electricity consumption public lighting	Fossil fuel consumption PA's vehicles fleet and % LEV	Number of Energy performance contracts/ tenders
	% RES	Green Public Procurement	Liters of water used per capita % of losses in the water network	

ZERO VOLUMES CITY



Florence has recently armed itself with new town-planning instruments: A Structural Plan (strategic instrument) and Town-planning Regulations (operating instrument), based on urban regeneration with “zero volumes” and aimed at endowing with new functions the copious existing abandoned building heritage with historical-architectural value, and eliminating situations of degradation in order to reacquire community spaces and renovated areas.
“Zero volumes” means:
• demolition and reconstruction in situ.
• demolition +transferral+ reconstruction in other sites.
• a balance of volumes equal to “zero”.

Strategic objective for 2030:
To convey the idea that the development and future of the city no longer depend on expansion, but rather, on urban regeneration, success models for giving new vitality to the historic centre and experimenting new forms of redevelopment in the suburbs.
To encourage integration among the town-planning instruments in the metropolitan area, within the context of the future territorial plan for the purpose of optimising and amplifying the effects of the regeneration, above all in the suburbs that will be the subject of natural supra-municipal integration.



Transfer to redevelop

The possibility of creating new buildings and settlements through equalisation mechanisms is based on the thinning out of the too densely populated and degraded areas that will be reacquired by the community, and on the transfer of demolished surface areas to other sites that are however, already urbanised. Said transfer allows for the redevelopment of the vacated area via increased allocations of community green and parking areas, and the completion of fringe areas in need of intervention for improving living conditions and social relations.

WHAT WE INTEND TO DO

• To develop high energy-efficient settlements and experiment new “smart” living formulas.
• To increase the distribution of green areas in the neighbourhood as well as parking areas for residents.
• To improve the urban quality of the fringe areas.

HOW?

• The ability of the administration to create the right conditions for implementing the operations.
• The pinpointing of other transfer/landing areas.

To regenerate/compensate

The strategic regeneration interventions produce forms of compensation at all levels for the community that can be implemented via the creation of public works and installations, extraordinary urban maintenance or redevelopment and enhancement interventions of the ecological setup.
The ecological networks represent a load-bearing element of the planning, the implementation and redevelopment of which contribute to all the envisaged transformation operations.

What we intend to do

• To convey the message that the ecological network is an essential element for enhancing the quality of life in the city, and a valid alternative to the search for new areas.
• To overcome critical infrastructural issues and service shortcomings in the areas adjacent to the transformation areas, thus making the community aware that every private real estate investment corresponds proportionally to the commitment to improve the public context.

Success indicators in 2030

• The number of investments for the purpose of carrying out public works and installations, or extraordinary urban maintenance services.
• The number of investments for the purpose of implementing/redeveloping the ecological network, and more specifically, the 42 environmental redevelopment areas identified in the Planning Regulations.

Participating in the construction/monitoring of the implementation of the instruments

In order to convey the new planning methods, the construction of the instruments has been accompanied by a constant participation process implemented in various ways that has entailed the participation of citizens (Town Meetings, online questionnaires, telephone surveys, etc), corporate partners, trade unions, professional associations (focus groups, assemblies), stakeholders and privileged testimonials (interviews) for a total of over 4,000 citizens and 7,000 contacts on websites and dedicated blogs. The ongoing contacts with citizens have induced the administration to make the town-planning language understandable to everyone right from the start, in order to convey the idea of the city through a clear explanation of the project.

WHAT WE INTEND TO DO

• To promote the participatory processes for the most complex strategic interventions.
• To promote insolvency proceedings aimed at guaranteeing the quality of the transformations.
• To monitor and share the implementation of the instruments with immediate accessibility to the web.

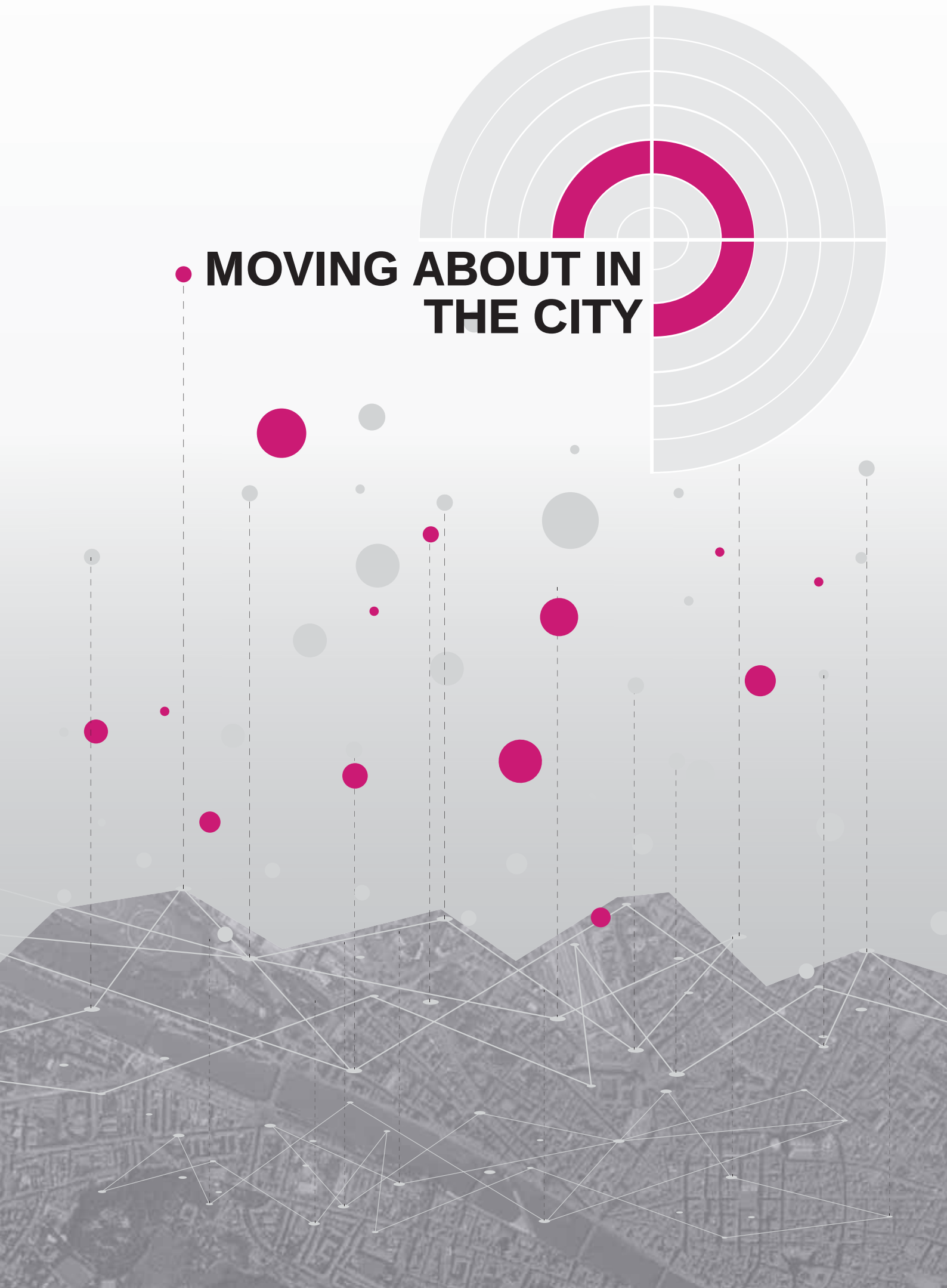
HOW?

• To ensure ongoing and integrated participation by citizens in the administrative action for the purpose of implementing a sequential pathway that consolidates and substantiates a relationship of co-designing.
• To increase the number of Florentines who use digital technology to engage in urban policy-making in Florence.

INDICATORS

Selection of other intervention areas (transfer/landing)	Investments for public works or services	Investments for sustainable mobility	Integration of citizens participation to design and planning processes	Number of Florentines who use digital technology (to engage them more and more in Florence's urban policy making)

MOVING ABOUT IN THE CITY



During the development of the Sustainable Energy Action Plan in Florence, the level of CO_2 emissions into the atmosphere was analysed and the results showed that mobility contributes to the release of CO_2 to the remarkable extent of 34%. This means that all the existing and planned actions can and must be aimed at establishing a city transportation system that allows people to move about freely, sustainably and in an environment-conscious manner.
Looking ahead to 2030, we would like to imagine Florence in the long-term as a city that enjoys the benefits of ongoing actions, even if developments will perhaps make life a bit more complicated during the construction of large infrastructures (as is happening with tramways #2 and #3 today and will happen with the next extension of the Bagno a Ripoli tramline in the future).
A smart city, as already mentioned, is a city that adapts to changing situations, capable of altering its structure, including its physical features, in order to improve the quality of life and the environment. This is the challenge faced by the new project of the City for a future sustainable city of Florence.
The strong objectives we have set to ourselves for the coming years, from now until 2030, will transform Florence into the national capital of electric mobility, a tourist city organised on a human scale, with an excellent transportation system enabling all users of the city to move about and be informed about the traffic situation (including problems caused by building sites), but also with multiple opportunities and alternatives to use of private vehicles, which will be just one of the many options available.
We are preparing a comprehensive project, integrated with technologies and “infomobility” to include a consistent set of tangible and intangible developments aimed at achieving the specific objective of transforming Florence into an environment-friendly city.
We intend to implemet the Urban Mobility Plan (UMP) with this strategic objectives:
- satisfy the mobility needs of the population and city users in general considering the relevant flow of daily city users (turist and commuters).
- reduce atmospheric and noise pollution in compliance with international agreements signed by the city (Covenant of Mayors, Conference of Parties COP21,….) and with EU and national laws
- reduce energy consumption.
- increase transport and road circulation safety levels.
- minimize the individual use of private cars and reduce traffic.
- increase the load capacity by optimizing public transport.
- Increase transport and road circulation safety levels.
- to minimize the single use of the private car and moderate the traffic even increasing the percentage of citizens carried by collective systems (car pooling, car sharing,...)
- Reduce traffic jams in urban areas with a high traffic density.
- Encourage the use of alternative means of transportation with minimal environmental impact (e-mobility)
Constitute priority interventions and consequent:
- Public transport infrastructures for all transport means.
- Road infrastructures, at a local level, with special focus on the roads to be used for modal interexchange.
- Parking areas, with special focus on inter-exchanges.
- Technologies.
- Initiatives aimed at increasing and/or improving the vehicle fleet.
- Governance of the demand for transportation and mobility (traffic supervisor)
- Traffic control systems.
- User information systems (info mobility real time)

- Logistics and technologies to be used to reorganize the distribution of goods in cities, as well as the flow and regulation of tourist coaches and related parking systems.

All the actions planned should be seen as a system aimed at ensuring smart mobility in the territory by offering a range of different opportunities and information on flows and transfers. All this will be combined with other strategic choices made by the City, with the selection of electromobility as a priority. The tram system that is being built, after the excellent result of Line 1, is the cornerstone of a campaign for the promotion of use of electricity aimed at transforming Florence into the national e-mobility capital. The 4,000 electric vehicles already in use in the city, combined with a corporate fleet of over 70 recently purchased vehicles, over 400 charging stations that are to be opened, an increasingly higher number of electric buses, particularly in the historic centre, an electric car sharing system that is also about to be activated, and a strong communication campaign at a European level, with Florence as a partner, for the promotion of the delivery of goods with electric vehicles as well and the use of electric scooters (in a city with over 72,000 motorcycles in circulation) are all signs and actions of a city that can lead by example and become a model for the development of concrete and structured sustainable mobility with zero emissions.

A zero-emissions target also implies the development of cycling mobility, the primary alternative to be considered: this is the aim of the projects, already in the pipeline, of extension and interconnection of bike lanes, their improvement with the use of sensors on critical tracks to help measure traffic levels and analyse emissions, ground signal lighting at the access to/exit from bike lanes, and the activation (in compliance with the new national legislation) of specific traffic lights in intersection areas both for new and existing connecting sections.

Actions regarding the infrastructure will be combined with the use of technologies. The development of a traffic control unit, a smart parking system with a related system of sensors also for ground parking lots will all create an infomobility system to complete the mobility plan of Florence, which will also be maximized with intermodality, park-and-ride areas and a smart pricing system.

Florence is and will remain a tourist city. It has been a tourist city in the past, it is a tourist city in the present and the constantly increasing positive trends of the last few years allow us to hope it will continue to be so in the future. This is an aspect of Florence that can never be overlooked, so it is from this point of view that we must approach the analysis of the flows of tourist coaches and the connected transit point, as well as the expansion of the airport (getting to Florence remains a critical issue for a significant number of tourists), to be connected with the tramway, railway, motorway and related parking areas.

Our plan conceives a fully-fledged city where no category of user or related issue is neglected.

But we must consider that Florence with approximately 380,000 inhabitants today, also includes over 1 million metropolitan residents and about 700,000 city users, who move throughout its territory everyday. This means that CMPs (City Mobility Plans), which span the medium/long-term horizon and also include the mobility of neighbouring areas, can be seen as a valuable tool for organizing mobility-related actions into a system.

WHAT WE INTEND TO DO

- to transform Florence into a veritable “sustainable-mobility city”, to become a real and best-practice example at both a local and european level.
- to implement UMP.
- to become the national capital of e-mobility.
- to optimize public transportation integrated with the tramway system.

- to strengthen the central traffic supervisor with repercussions at the metropolitan level.
- to implement congestion charge policies.
- to create smart parking systems.
- to develop alternative mobility systems (e-mobility, cicle mobility, pedestrian mobility,...).
- to extend the UMP integrating it into the strategic plan of the mobility of the metropolitan city.

HOW?

- By developping the planning of an integrated mobility even at metropolitan area completing the infra-structures (tramway, park, bike paths , intermodal systems,...).
- By strengthening and streamlining the public transport also by offering flexible services, adapted to the most vulnerable and low environmental impact.
- By strengthening the services and information available to citizens and city users (info mobility).
- By analyzing periodically the demand for mobility and the satisfaction of citizens also via surveys.

INDICATORS

km of Public Transport per 100.000 inhabitants	nr of annual PT trips per capita	nr of fossil fuelled cars per capita	nr of fossil fuelled motorbikes per capita	km of bicycle paths
	nr of electric vehicles recharging stations	km2 of limited traffic zones	km2 of pedestrian areas	

THE SUSTAINABILITY OF THE PLAN: CHOICES AND FINANCIAL TOOLS

The implementation of the actions and therefore the enforceability of the Smart City Plan, understood as a concrete intervention on the City, must necessarily pass through a careful financial planning including the phases of implementation and management in the medium and long term.
Financial Programming will include investments that are strictly up to the city and those that are triggered by economic operators in the area for the implementation of actions and projects of the SCP. On this, the City Council will play an important role as facilitator in order to promote the implementation of projects in the municipal area that are in line with objectives of the SCP, with high economic sustainability, energy and environment and high level of innovation.
Florence must harness the potential of attracting investment in innovative projects related to the implementation of the SCP.
Its programming/planning requires the combined allocation of human and financial resources, which should be determined for the purpose of achieving the preset goal within the shortest possible time and at the lowest possible cost.
The time schedule of the project is a primary issue in the organisation and management of the plan, as it will govern its implementation and maintenance over time.
However, the feature that makes this plan really sustainable is not the direct allocation of economic resources – although they are required when the City is the exclusive backer of the project -, but rather the form of participation in said plan, i.e. the investment opportunity, its attractiveness for private entities that may be willing to play an active role and invest directly.
Just like the communication plan - “Connecting Minds, Creating the Futures” -, the capacity to import investments involves strategies that will actually enable the implementation of the plan and its maintenance in a logic of synergistic sharing: Connecting Opportunities, Creating the Smart City.
The sustainability of the plan is mainly based on two coordinated actions: direct sustainability and derivative sustainability. While direct sustainability is supported by the Administration and relates to directly implemented actions that have be always oriented to innovation (such as the streamlining of public lighting or the construction of park-and-ride facilities), indirect sustainability refers to the actions that are implemented with the support of the private sector. This second form of support, whose importance and significance have been recently increasing, may be further classified into three main types of participation: one is related to the sustainability of the action, voluntary contribution and forms of service payment like road pricing policies, where revenues are then reinvested in the sector.
Direct financing is linked to the spending power of the City under the new provisions on harmonised budgeting and reinforced financial reporting, as well as to the spending restrictions imposed by the so-called “Stability Pact”, so that only very few significant infrastructures can actually be built and implemented. For example, the construction of the new tram lines prevents the simultaneous development of other works, and this virtually eliminates the possibility of obtaining significant results in energy efficiency indicators associated with a reduction of emissions and polluting agents.
The use of indirect financing may be the answer to the “economic limits” of the City and a guarantee of achievement of preset goals. If, for example, pricing policies can be a tool for maintaining and developing strategies, also to convey and reinforce the meaning of the choice made , the decision of a private entity to invest in the actions proposed by the Administration with calls for tenders is the result of a careful assessment of the opportunities offered and the consequent implications both in terms of economic attractiveness (PPP/ESCO) and of result and visibility (crowd-funding).
In addition to the investments for the actual implementation of the action, i.e. the physical construction

or requalification of an infrastructure (tramway), political strategies with direct spin-offs on citizens/residents/tourists/city users (eco-road pricing policies, town planning), there are equally significant choices made by the Administration which directly affect the same Administration and are good practices. For example, the Smart City Plan can be seen as a container for collecting the suggestions of other European countries that can also be used in Florence, essentially by the City. This should be the objective of Green Public Procurement (GPP), the policy of environment-friendly buying and the increasing activity of analysis and assessment of the opportunities offered by EU programmes and funds for regional development directly linked to the theme of smart cities.

WHAT WE ARE GOING TO DO

- Develop an economic-financial sustainability plan for the specific actions of the Smart City Plan
- Encourage the creation of innovative investment for the implementation of the SCP
- Implement financial strategies and innovative tools for the development of public private partnership
- Reinforce strategic policies for the sustainability of the choices made (eco-road pricing)
- Adopt sustainable choices and procurement policies
- Develop a network of partnerships at European and international level for the implementation of projects of the SCP
- Assess the different forms and opportunities for financing based on the actions selected

HOW?

- By developing a business plan for the medium to long term
- By promoting the implementation of the SCP with institutional investors , businesses and citizens
- By planning a sustainable timeframe for the actions to be exclusively implemented by the City
- By adopting Green Public Procurement practices
- By testing PPP options
- By establishing a dialogue with ESCo’s
- By analysing civic crowd-funding initiatives
- By taking part in the smart city calls selected at a European and national level

INDICATORS

Number of EPC contracts	Investments for energy efficiency	Investments for sustainable mobility	Investments for ICT projects	Crowfunding actions activated

INVOLVEMENT OF STAKEHOLDERS AND COMMUNICATION

A plan designed to have an impact on the future of a city will not have any future unless it is correctly communicated and shared with the partners and stakeholders.
This also applies for all the strategic plans, but even more so for this initiative that aims to change the behaviour of citizens and those operating in the urban context in order to make everyone's lives simpler and more sustainable.

The Florence City Council has considered this factor essential since drawing up the SEAP/Sustainable Energy Action Plan and in fundamental passages of the territorial planning such as the Structural Plan and the Urban Regulations. Based on these experiences and by extending them to the new specific dimension of the Smart City Plan, it will be possible to further strengthen a model of participation and communication that becomes crucial right from the design stage and consequently, also in the implementation stages.

The concept of "connecting minds, creating future" underlies not only any technological development that springs from the exchanging of ideas and completion of the same, but also all those actions that become successful in a process of ongoing development involving all those who are or who could be directly and indirectly affected.

By involving citizens and including them in the decision-making processes, means first and foremost to provide adequate information about the processes and the action to be implemented or planned, plus it means to render the administration transparent, accessible and interactive, in other words, capable of communicating and listening.

For this reason, the communication function plays an essential transversal role in the various inclusive and participatory decision-making processes: in fact, through communication it is possible to create knowledge and awareness among citizens not only of the activities, objectives and behaviour to be shared, but also of the opportunity of participating. By offering the necessary information and tools, areas can be created for listening and collecting citizens' comments and ideas both physically and virtually, and it also enables the spreading of the "results" of the listening and participating moments, and the dissemination of the decisions and implementation policies.

It is essentially a question of systematizing the public action, making it proactive with sustainable behaviour and involving the entire city, also through the associations, professional rolls, and intermediate entities. No-one must feel left out.

WHAT WE INTEND TO DO

- To build a Communication Plan that is not merely an appendage of the Plan, but an integral part of the same in all its forms and which provides not only unilateral informative actions (from the Promoting Body of the Plan to citizens), but also ongoing interactions.
- To involve the citizens and local stakeholders right from the initial drafting of the Plan and in all the deployment activities, in order to spread awareness and the contents useful for the cultural change, but also to help come to terms with the reality and stimulate all the energies useful for achieving the goals.
- To consider the participatory, sharing and communication actions no longer just a strictly city-related dimension but as part of the metropolitan city dimension

HOW?

- with periodic meetings with stakeholders: public and private entities and citizen organisations (associations, intermediate entities, etc.)
- with participation activities for information, collecting feedback and guaranteeing transparency.
- with coordination of the communication among all public (institutions and holding companies) and private subjects.
- with multichannel communication, planned as format and channels based on the contents to be disseminated and the feedback to be collected.
- with digital communication, starting from the specific developments of the “Digital Manifesto of Florence”
- by always considering the participation, information and communication actions in terms of Metropolitan City, creating a model of communication that can also be transferred to other urban situations or metropolitan networks.
- with dissemination of the results and periodic verifications

INDICATORS

Voters participation	Population trends	Number of city users and tourists	Incentives for final users for energy efficiency implementation

MONITORING AND CONTROL

The underlying objective of the plan is to ensure that the actions implemented in the municipal territory are compliant with the vision of the city and in line with the overall objectives of the Smart City Plan.
The implementation of the Smart City Plan requires the performing of an evolved monitoring and control activity to verify its compliance. This is a strategic document and therefore subject to periodic updates depending on the political indications, boosts from the technological and process innovation and the urban and metropolitan transformations that have increasingly more frequent impact and evaluations at a local level.
It is therefore necessary to adopt an innovative type of monitoring that is able to rapidly provide information on the evolutions and dynamics in progress so that it is possible to make decisions and advance suggestions for redirecting the actions. Consequently, a flexible and dynamic governance instrument but at the same time capable of quantifying and measuring the effects of the transformations taking place in the city. The smart plan should be “live” and flexible to fit evolutions and calibrations based on the step-by-step monitoring of the achievements. There are technological, human and institutional factors which could be able to divert municipal policies: a proper control system will detect the weak points that must be recalibrated.
Based on the positive experience accrued in drawing up the SEAP (Sustainable Energy Action Plan), Florence has continued with the activities of an internal, unidirectional work group that has followed all the stages of the STEEP (Systems Thinking for Efficient Energy Project) and actively collaborated in drafting the SCP.
The Smart City Group will be enhanced with innovative instruments and will open up inside but above all, outside the City Administration in order to capitalise on the contributions of stakeholders that are continuously involved in the “System Thinking”.
Inward flexibility is essential for involving the political party that represents the stakeholders that are the driving force behind the transformations of the city. A collaboration that must have times scheduled and defined for continuously aligning vision and objectives.
The aperture inside the Organisation is a crucial element for ensuring a constant flow of information inside the structure while at the same time seizing all the opportunities and stimuli coming from the territory in order to be able to continually update and adapt the same.
The monitoring proposed is also an ambitious project that requires the application of innovative instruments supported by the most advanced information techniques to ensure immediate and efficacious communication, as well as an effective calculation of the ensuing benefits.

The instruments identified include:

- the ***Energy Management System*** that represents a broad exception capable of including all the actions of the SCP, that is, the Management System of the Smart City Plan SG_SCP
- the ***performance indicators*** identified and tested by the STEEP.

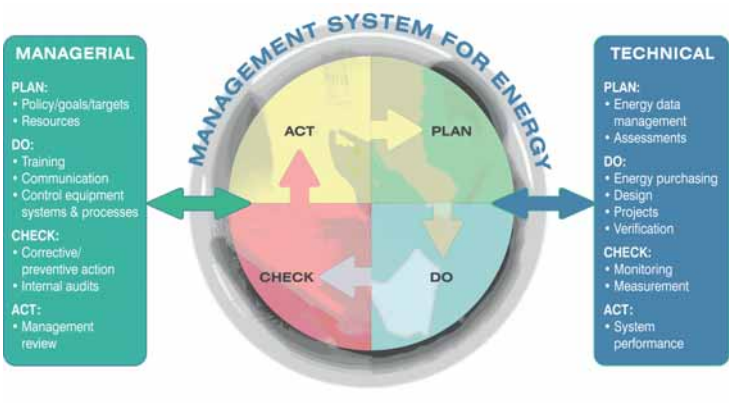
This is a modern energy management system capable of governing all the processes and transformations taking place in the city, which is positioned at a “top management” level able to capture the essence of

the evolutions in progress.

A system that will help the City Council Organisation to define the guiding strategies of energy and environmental responsibility, set short-, medium-, and long-term performance objectives and allocate the necessary resources for achieving the objectives.
In view of the strong presence of innovative elements in both actions and interactions between the various sectors, several processes have been identified that will require priority monitoring:

- *Strategic intelligence management,* that is, the process of collecting, analysing and producing of the most relevant information and knowledge necessary for the decision-making process during the various stages of the innovation management; given the importance of the activities and the purposes, this process must be governed by the top management.
- *Innovation thinking,* that is, the method for in-depth troubleshooting of the problems and analysis of the opportunities in order to identify the best solutions for creating innovation, by collecting data and information from the different sources and transforming them into the knowledge required by the organisation.
- *Collaboration management,* that is, the activity often necessary because neither the individuals nor the organisations in general possess all the skills and expertise required for ensuring a regular and concrete innovation process; thanks to the management of the collaboration inside and outside the organisation it will instead be possible to significantly improve the innovation performance.
- *Creativity management,* that is, the creativity that is the very essence of innovation: in this sense all the activities must be supported that are useful for stimulating and facilitating creativity within the organisation.

The Management System of the Smart City Plan will pursue the consolidation approach of the Deming Cycle (PDCA Plan-Do-Check-Act) that finds application in all the certification systems applied to public and private entities. We have to expand the intervention contexts of the SCP, extending the assessments to other sectors that are directly involved in the implementation and range from the ICT to welfare, as well as the interactions among the sectors that raise the level of complexity.



The approach, summarised in the figure above, will allow for complete governance of the scheduled transformation and will be able to provide the necessary indications for monitoring performance.

Within the context of implementation of the Sustainable Energy Action Plan, Florence has experimented the application of instruments able to “measure” the global performance of the city by analysing six intervention areas that represent an important part of the SMP actions: Planning and Programming, Buildings and Installations, Services offered to citizens, Mobility, Internal organisation, Communication and information.

This is the *European Energy Award – EEA* that is currently applied in over 1,300 cities in Europe and could be further intensified in the perspective of the SMART City.

Despite being complex, the Management System can benefit from the presence of operating systems that are already available and efficient, such as the energy manager, mobility manager, ICT manager, Disaster managing, etc. These structures will enable the system to make use of an “intelligent synthesis“ of the impact and effects of the transformations taking place. They are structures capable of planning the interventions and “measuring” the effectiveness of the results in the territory.

The measuring will also use the family of indicators that have been identified within the context of the STEEP. The complexity of the actions and interactions among the various sectors requires careful and flexible application of instruments to ensure compliance and representativeness between the values calculated and the actual situation. In this sense, the family of indicators has been divided into categories and it is also possible that other parameters will be identified for better representing the transformation of the city.