The European Commission's
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CHALLENGE

Diputación Provincial de Alicante: Intelligent City Transformation Overview

D1.1 Deliverable

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Executive summary

Diputación Provincial de Alicante (from now on DPA) is the public institution in charge of the Government of the province of Alicante. It has worked intensively in the latest years to boost digitalization and green sustainability in the province. Considerable progress has been made in electronic administration and e-Government thanks to the advances and public innovations promoted by Diputación among the province and its 141 municipalities.

Regarding green sustainability, many initiatives has been undertaken (such as the Agenda 2030 or the Provincial Energy Saving Plan through which 24 million euros has been invested in actions to reduce the energy expenditure of the province's municipalities). DPA has focused on the protection of the environment through plans and calls that stimulate sustainability and promote the use of clean energy in the province. To speed up and reinforce this line of action, in the last year the budget for the Environment, Energy and Solid Waste Department has been doubled to reach 18 million euros in 2022.

All of these is directly linked to DPA's Vision: To become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets. To achieve this, DPA together with the City Ecosystem and stakeholders, reached the conclusion that certain actions needed to be implemented and the following solutions were proposed:

Solution 1. Public Services Platform. Creation of a smart platform for Tourist Destination Management.

Solution 2. Municipal Self-consumption and local energy communities, which consist of the one hand in the launching of calls to help municipalities in the process of establishing a Local Energy Community; on the other in the implementation of self-consumption actions in municipalities (for instance the installation of Solar Thermal and Photovoltaic panels in municipal facilities).

Solution 3. Remote water consumption metering. Design a comprehensive solution to assess about requirements for updating/improving infrastructure and to optimize water management through automation.

Solution 4. Municipal carbon footprint. Roadmap for municipalities regarding their carbon footprint.

We have made a huge progress in all the solutions mentioned above, with the implementation of certain initiative such us the Call For Grants to draft Studies related with Municipal Energy Sustainability (that include studies for the development and implementation of local energy communities).

Diputación Provincial de Alicante pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document

1 Preparation & assessment

5 months:
September 2020 – January 2021

2 Ambition & roadmap

3 months:
February 2021 – April 2021

3 Implementation

15 months
May 2021 – July 2022

4 Review & way forward

2 months
August 2022 – September 2022

Summary

Find out where a city is, where it should go and who in the ecosystem is going to mobilise make things happen

Develop a concrete plan to achieve measured improvements, collaborating with the community; push action with immediate benefits

Get "big moves" done and see results; take action in partnership with others

Measure success, and commit to keep connections and improvements going

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Section

1

Diputación Provincial de Alicante: Preparation and assessment

ICC transformation

September 2020 to January 2021

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Introduction

To understand DPA's work and the decisions taken, some features should be highlighted about the Province of Alicante and the DPA.

Sociodemographic features	Subdivision	Climatic features	Political actions	Academic and Associate Framework
Size: - Population: 1.863 million inhabitants (5th most populated province in Spain and 5th in population density) - Area: 5.816 km² Economic activity (Number of companies per activity sector): • 76,00% Service Sector (mainly Trade and Tourism) • 10,3% Construction • 10,2% Manufacturing (mainly footwear, metal, food, clothing, energy and water) • 3,42 % Agricultural Sector	141 municipalities: • 2 big cities: Alicante (+334k inhabitants) and Elche (+230k) • 26 cities with more than 20.000 inhabitants • 116 with less than 20.000 inhabitants	Mild, annual average temperature of almost 18 degrees (2,700 hours of sunshine per year), but it's expose to extreme weather phenomena such as cold drops and heat waves due to climate change.	• DPA is the Coordinator of the Covenant of Mayors in the Province. • Agenda 2030 • Electrical Energy Supply Framework Agreement: it allows municipalities to obtain better contractual conditions in the electricity rates offered. • PROVINCIAL ENERGY SAVING PLAN	• Digital Intelligence Center (CENID): an initiative of DPA, the University of Alicante (UA) and the Miguel Hernández University (UMH), to create the main benchmark in the province of Alicante in terms of development, research, dissemination and application of digital enabling strategies and technologies. • Provincial Energy Agency of Alicante: created by DPA to give technical support and assistance to municipalities in the fields of sustainable energy, climate change and electric mobility.

Entity needs: State of the province overview

The state of Alicante's province today

- DIGITALIZATION: several projects from Public Administrations have been developed at Regional (Distrito Digital), Provincial (CENID) and Local (Alicante Futura) level. One of DPA latest achievements has been the creation of CENID (Center for Digital Intelligence) together with two public universities of the province (UA and Elche UMH). This Center works on the phenomenon of digital transformation of municipalities and ecosystem of the province.
- e-GOVERNMENT: It has been launched initiatives such as the "Moderniza" Plan that facilitates electronic administration to all alicantinian municipalities with less than 20,000 inhabitants. It offers them services such as iCloud, municipal software, e-Government, municipal websites, as well as electronic signature and website security certificates. It has also developed a citizen survey management tool which main objective is to encourage online citizen participation in local government.
- On GREEN SUSTAINABILITY some initiatives have been undertaken to fight against climate change and in line with the European Green Deal goals: Provincial Energy Saving Plan, 2030 Agenda, GO Electricity Framework Agreement and the creation of the Provincial Energy Agency. DPA also supports municipalities signatories of the CoM by drafting for them the CoM documents.

Key insights from local entity performance analysis

Higher performance observed	Lower performance observed
1 Several projects promoted by different governments.	1 Better coordination of projects
2 Cities and municipalities motivated in work on digitalization and green deal.	2 Cities and municipalities need greater technical support, work tools and financing to make projects a reality.
3 The degree of technological maturity and work on the covenant of the mayors of the municipalities is high	3 It is necessary to take a step of greater maturity, taking advantage of the most distributed technologies.
4 Roadmap of new projects.	4 To improve decision-making in the territory, in an open, participatory and transparent way.
5 Reduction of municipalities' energy consumption, increased use of renewable energy and electric mobility thanks to actions developed within the Provincial Energy Saving Plan.	5 Municipalities are aware that more actions need to be made to reduce even more their energy bills, have zero waste facilities and municipal buildings and fulfill their CoM commitments.

Entity needs: State of the province overview

The state of Alicante's province today

- BLUE SUSTAINABILITY: The Water Cycle Department promotes investments aimed at financing initiatives, studies, projects and works, grouped into 4 axes: Water Resources (conducting hydrological, hydrogeological and water management studies); Municipal Management (studies and facilities aimed at achieving optimal management of the water cycle at the municipal level); infrastructures; and public awareness and dissemination (organization of activities for citizens to make rational use of water).

Key insights from local entity performance analysis

Higher performance observed

6 Reduction of municipalities energy bill through a centralized energy purchase (GO Electricity Framework Agreement).

7 The telemetering platform develop by the Provincial Gov. allows to know the pipes' water losses of the municipal facilities.

Lower performance observed

6 There are still municipalities reluctant to join the GO Electricity Framework Agreement.

7 Lack of application of these improvements at the citizen and company level.

ICC strategy: Vision and ambition statements

Overarching ICC city vision

To become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets

Ambition statement 1

Propose and consolidate common models and plans on energy addressing all the municipalities in the province, accompanied by assistance actions and roadmap elaboration, and focus on topics such as self-consumption, energy communities and electric vehicle.

Ambition statement 2

Strengthen the collaboration and set-up of coordinated initiatives and working groups engaging the provincial stakeholders, both public and private, aiming at the transfer and application of knowledge and technology capable of targeting the most relevant energetic and hydric challenges in Alicante.

Ambition statement 3

Foster awareness and capacity building oriented to digital upskilling in public employees and reducing digital divide of citizens and companies, therefore increasing performance and opportunities raised by eGovernment.

Ambition statement 4

Deploy or retrofit critical infrastructure and technological resources required for a full implementation of selected energy, hydric and digital solutions, as well as platforms for improvement of data management and use as a mean of intelligence and sustainability.

City strategy: justification

The four solutions chosen as a priority (1. Public Services Platform. Creation of a smart platform for Tourist Destination Management; 2. Municipal Self-consumption and local energy communities; 3. Remote water consumption metering; and 4. Municipal carbon footprint) do interact positively with each other, as they are all directly related to our ICC vision: “To become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets”.

In recent years, DPA has focused on the green sustainability of the province, which is why investment in environmental issues has grown exponentially, going from 8.6 million in 2018 to nearly 18 million in 2022. This increase is due to a strategy of sustainability and recovery of the environment.

Among the most relevant investments of the Environment, Energy and Solid Waste Department during 2022: 6.2 million euros invested in the promotion of sustainable mobility and the reduction of atmospheric pollution in the municipalities of the province (Solution 4).

Especially significant is also the budget of 3.6 million euros addressed to the execution of the projects included in the last Provincial Energy Saving Plan (Solution 3 and 4).

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Section

2

Diputación de Alicante: Ambition and roadmap

ICC Transformation

February 2021 to May 2021

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Roadmap summary

Solution #1 Public Services Platform

Creation of a Smart Platform for Tourist Destination Management.

INITIATIVES

#1. Smart Costa Blanca

BENEFITS

Improving management of tourist citizens in the region.

Solution #2 Intelligent Water Management

Design a comprehensive solution to assess about requirements for updating/improving infrastructure and to optimize water management through automation.

INITIATIVES

#1. Provincial LoRaWAN network

#2. Private communication network

#3. Real time intelligent monitoring system

#4. Data water mining

BENEFITS

Improve the quality of water supply, preserve water resources and decrease energetic demands for water pumping.

Solution #3 Municipal Self-Consumption & Local Energy Communities

Help municipalities to have a more efficient and clean energy.

INITIATIVES

#1. Creation of Local Energy Communities

#2. Municipal self-consumption

BENEFITS

Reducing the energy cost, the creation of new jobs related with the installation and design of infrastructures, improving the quality of life of citizens and the reduction of emissions.

Solution #4 Municipal carbon foot print

Roadmap for municipalities regarding their carbon footprint.

INITIATIVES

#1. Covenant of Mayors for Climate & Energy

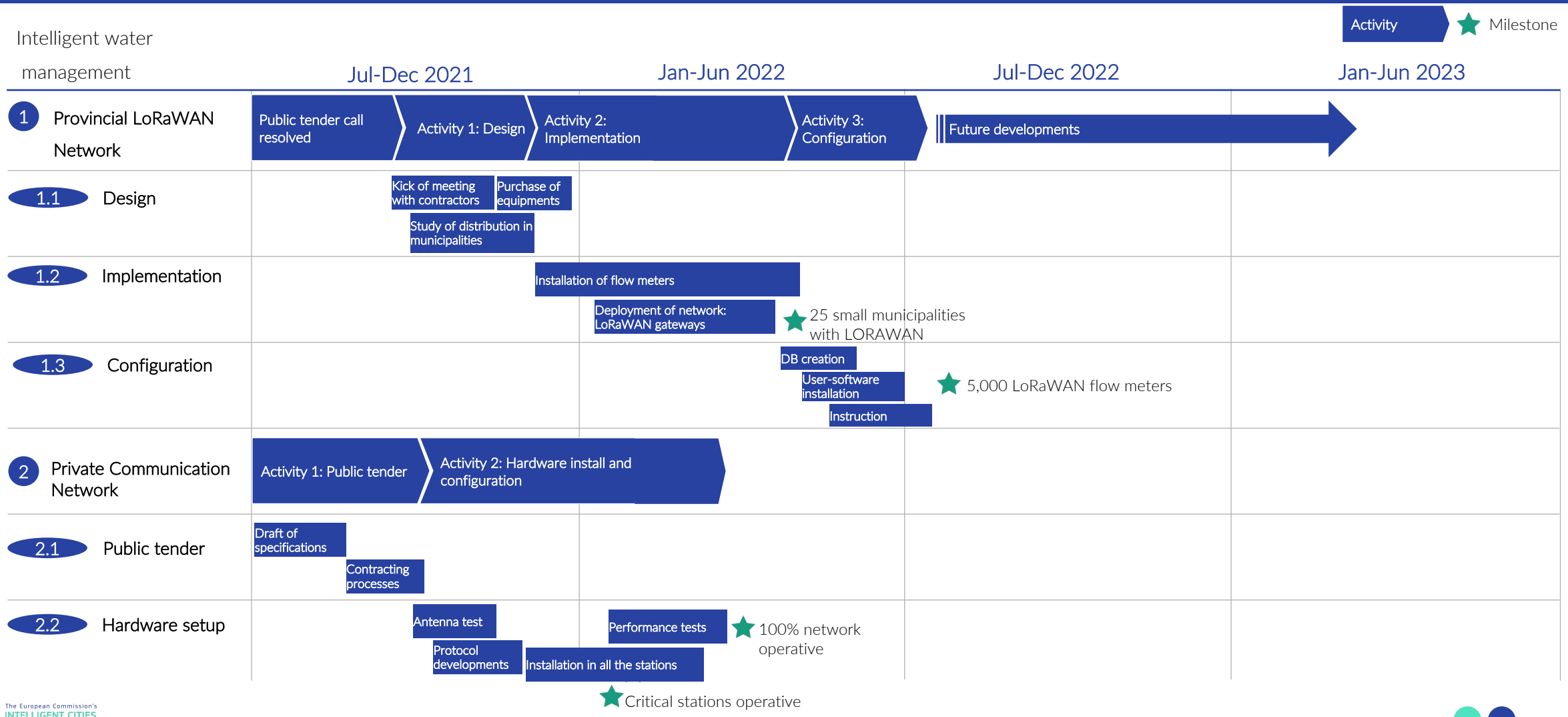
#2. (GO) ELECTRICITY FRAMEWORK AGREEMENT

#3. Sustainable Urban Mobility

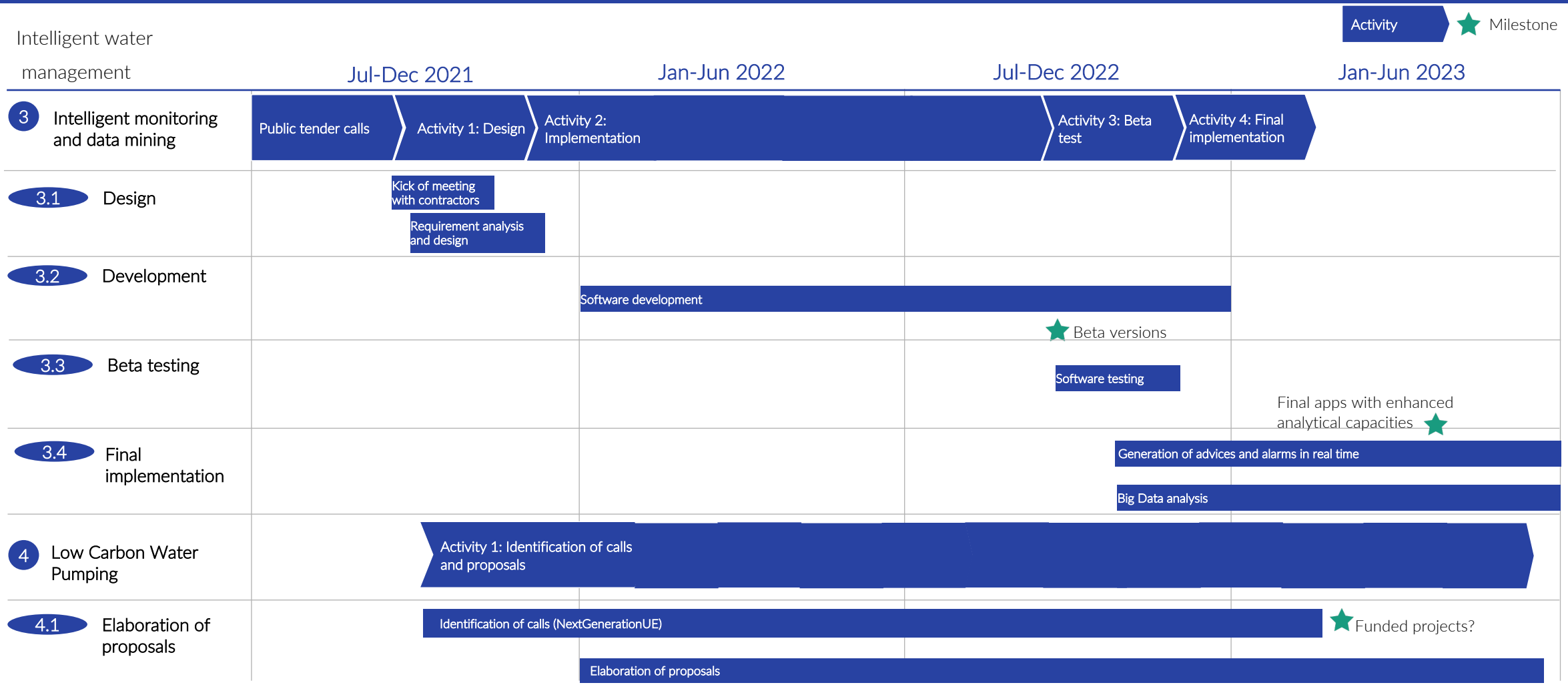
BENEFITS

Boosting the municipalities in the Alicante province to reducing their carbon footprint. Direct benefits for the citizens.

Roadmap Solution #2 Intelligent water management



Roadmap Solution #2 Intelligent water management



SOLUTION 3: MUNICIPAL SELF-CONSUMPTION AND ENERGY COMMUNITIES

High level implementation roadmap (“10000m plan”)

	Month 1: April 2021	Month 2: May 2021	Month 3: June 2021	Month 4: July 2021	Month 5: August 2021	Month 6: Sept 2021
1 Initiative 1: Municipal self-consumption	Activity: Provincial Energy Saving Plan 2019: Publication in the Official Gazette of the Province (BOP) of the granting of subsidies for municipalities to execute the projects	Activity: Provincial Energy Saving Plan 2019: THE 63 BENEFICIARY MUNICIPALITIES HAVE UNTIL MAY 19 TO SUBMIT TO A NEW CALL FOR THE EXECUTION OF THE PROJECTS		Activity: Provincial Energy Saving Plan 2019: Opening of the tendering procedure THE RESOLUTION OF THIS CALL WILL TAKE PLACE IN THE JULY COUNCIL'S PLENARY		Activity: Provincial Energy Saving Plan 2019: TENDERING PROCEDURE IN PROGRESS
Overarching Milestones	★ Milestone: 63 beneficiary municipalities (in 19 of them the works will be on renewable energy . E.g. PV installations).	★ Milestone: 63 projects submitted will be executed. 19 of them the works will be on renewable energy . E.g. PV installations).				

SOLUTION 3: MUNICIPAL SELF-CONSUMPTION AND ENERGY COMMUNITIES

High level implementation roadmap (“10000m plan”)

	Month 7: October 2021	Month 8: November 2021	Month 9: December 2021	Month 10: January 2021	Month 11: February 2021	Month 12: March 2021 ahead
1 Initiative 1: Municipal self-consumption	Activity: Provincial Energy Saving Plan 2019: TENDERING PROCEDURE IN PROGRESS	Activity: Provincial Energy Saving Plan 2019: RESOLUTION OF THE TENDERING PROCEDURE AND SIGNING OF THE EXECUTION CONTRACT WITH THE contracted company/-ies.	Activity: Provincial Energy Saving Plan 2019: BEGINNING OF THE EXECUTION PHASE OF THE 30-35 PROJECTS (19 OF THEM ARE INSTALLATION WORKS OF RENEWABLES IN MUNICIPAL BUILDINGS)	Activity: Provincial Energy Saving Plan 2019: BEGINNING OF THE EXECUTION PHASE OF THE 30-35 PROJECTS	Activity: Provincial Energy Saving Plan 2019: BEGINNING OF THE EXECUTION PHASE OF THE 30-35 PROJECTS (19 OF THEM ARE INSTALLATION WORKS OF RENEWABLES IN MUNICIPAL BUILDINGS)	Activity: Provincial Energy Saving Plan 2019: BEGINNING OF THE EXECUTION PHASE OF THE 30-35 PROJECTS (19 OF THEM ARE INSTALLATION WORKS OF RENEWABLES IN MUNICIPAL BUILDINGS)
Overarching Milestones		★ Milestone: Resolution of the tender Signed contracts				★ Milestone: Finished/delivered works 19 of the executed projects will be renewable installation works in municipal buildings

Expected date for completion of works: End of 2022

SOLUTION 3: MUNICIPAL SELF-CONSUMPTION AND ENERGY COMMUNITIES

High level implementation roadmap (“10000m plan”)

Expected date for completion of this initiative: End of 2022

	Month 1-6	Month 6-12	Month 13	Month 14	Month 15-16	Month 17-18	Month 19-21
1 Initiative 2: Creation of Energy Communities **Activity:** Promotion of the creation of energy communities through provincial subsidies.	Start of the STUDY PHASE (April – September 2021)	Preparation of the Call	LAUNCH OF THE CALL BY "DIPUTACIÓN" FOR TECHNICAL ASSISTANCE TO CONSTITUTE LOCAL ENERGY COMMUNITIES	Deadline for submitting applications	Evaluation of the submitted applications	Resolution of the Call	Execution : Beneficiary municipalities will directly hire the companies to carry out the feasibility studies for the implementation of Local Energy Communities in their territory. DPA will be responsible for paying these studies.
Overarching Milestones	★ Milestone: Conclusions of the study phase Drafting of the Call	★ Milestone: team meetings	★ Milestone: Call launch date (12/04/2022)	★ Milestone: Call Closure date (12/05/2022) Applications Received	★ Milestone: Number of applications received (17)	★ Milestones: Resolution publication date 17 beneficiary municipalities	★ Milestone: Delivery of the studies 17 Feasibility studies carried out

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap (“10000m plan”)

	Month 1: Nov 2019	(Break do to covid)	Month 2: June 2020	Month 3- 5: July – Sep 2020	Month 6: October 2020	Month 7: November 2020
1 Initiative : Covenant of Mayors for Climate & Energy Actions: - Development of the Covenant of Mayors' Documents – Execution of the Provincial Energy Saving Plan's works	**Publication of the REGULATORY BASES OF THE CALL THAT WILL GOVERN THE GRANTING OF SUBSIDIES FOR THE DRAFTING OF the CoM DOCUMENTS (EARLY CALL FOR 2020) O.B.P. No. 223 of 11/22/2019)**		**Publication of the technical specifications for the tender to draft the documents**	**Call for tender:** **Presentation of offers** **Evaluation of proposals** **Drafting of the final report on the award of contracts**	**Call for tender:** **Communication of the resolution of the tender to the interested parties** **Call for Applicants (Municipalities):** **Resolution of the call for municipalities signatories of the CoM**	**Start of work** • **First contact with the municipalities** • **Data request** • **follow-up Meetings**
Overarching Milestones	★ Milestone: Date of publication of the bases Number of applicants (municipalities)		★ Milestone: Number of beneficiary municipalities	★ Milestone: Final report	★ Milestone: Tender's Resolution Report Date of publication of the resolution	★ Milestone: N° of meetings

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap ("10000m plan")

	Month 8-12 Dic 2020- April 2021	Month 9: May 2021	Month 10: June 2021	Month 11-12: July – August 2021	Month 13: Sep 21 from here on out (end of 21 and 2022)	
1 Initiative : Covenant of Mayors for Climate & Energy Actions: - Development of the Covenant of Mayors' Documents – Execution of the Provincial Energy Saving Plan's works	**CoM Action:** **Work and Drafting Phase** **Data on electricity and fuel consumption start to be collected at municipal level (residential, tertiary and industry).** **Compilation of actions already implemented by the municipality ("Monitoring")** **Drafting of the report on vulnerabilities and risks for climate change** **PESP: Publication in the BOP of the granting of subsidies for the execution of projects (April 2021))**	**CoM Action:** **Work and Drafting Phase** - **Meetings with municipalities to present and discuss the measures to be introduced in the SECAPs**	**CoM Action:** **Phase of Review and submission of the works** **(documents of the Covenant of Mayors)**	**CoM Action:** **Phase of Review and submission of the works** **Registration of documents and data on the website of the Covenant of Mayors**	**PESP: The implementation of the projects will take place in late 2021 and 2022.** **Depending on the budget of the Provincial Council for 2022, another call will be articulated to execute the rest of the projects.**	Expected date for completion of this initiative: CoM Action: - This action is recurring over time, in July 2021 one call ended and in November 2021 a new one came out. PESP Action: - The execution of all the work will finalize by late December 2022.
Overarching Milestones	★ Milestone: Reports drafted Collected data **PESP**: Beneficiary Municipalities: 63 (the first 30-35 will be executed)	★ Milestone: meetings held 52	★ Milestone: Documents submitted 76	★ Milestone: Profiles of each municipality on the CoM website with updated data	★ Milestone: Projects executed Dec 21: Approval in plenary session of the 2022 Provincial Budget with and specific budget departure for the PESP	

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap (“10000m plan”)

	Month 1: September 2021	Month 2: October 2021	Month 3: November 2021	Month 4: December 2021	Month 5: January 2022	Month 6: February 2022
2 Initiative : Electric power supply framework Agreement	**Initiative initiation: Drafting of 3 reports:** • **Estimated value of the contract** • **Assessment of energy consumption** • **Technical solvency** **Drafting of the technical and administrative specifications**	**1st Plenary Session of "Diputación": to start the contract**		**Call of Tender:** **Publication on the Public Sector Contracting Platform**	**Call of Tender:** **Receipt and evaluation of offers from tendering companies**	**Call of Tender :** **Hiring of companies that are part of the central contracting agreement** **2nd plenary session of the Provincial Council: approval of the hiring of companies**
Overarching Milestones	★ Milestone: Delivery of the 3 reports And of the technical and administrative specifications	★ Milestone: Minutes of the Plenary		★ Milestone: Tender publication date	★ Milestone: Evaluation of tenders	★ Milestone: contracts with energy trading companies Minutes of the Plenary

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap (“10000m plan”)

	Month 7-9: March –May 2022	Month 10-11: June-July 2022	Month 12: August 2022	Month 13: September 2022	Month 14: October 2022
2 Initiative : Electric power supply framework Agreement	**March: Opening of the economic offer of the only company that submitted to the tender** **April: The offer of the only participant was rejected since the price they offered exceeded the maximum price of the contract.**	**At the beginning of June, the only participant was invited again in a negotiated without publicity with the condition that the new price offered had to be lower than the maximum price of the contract.** **At the end of July, the economic envelope with the new prices was opened and the offer submitted by the bidder was accepted.**	**August 3 : The plenary session of the DPA will the approve tendering and contracting of the Framework Agreement with the tenderer.** **20 business days later the framework agreement is formalized with the tenderer.**	**Time limit of the municipalities’ adhesion to the contract** **Drafting of the technical hiring reports (made by APEA)**	**Start of the contract for the electricity supply of the municipalities with the successful tenderers**
Overarching Milestones	★ Milestone: Opening of the economic offer Contract signed with the tenderer	★ Milestone: Approval of the contract by the plenary session of the DPA Contract signed with the tenderer	★ Milestone: Approval of the contract by the plenary session of the DPA Contract signed with the tenderer	★ Milestone: Number of adhered municipalities Technical reports drafted	★ Milestone: Signed contracts

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap (“10000m plan”)

	Month 1: March 2021	Month 2: April 2021	Month 3: May 2021	Month 4: June 2021	Month 5: July 2021	Month 6: August 2021
3 Initiative : Sustainable Mobility Actions: - SUMPs Drafting - Provincial Energy Saving Plan: Aids for the Installation of EV charging points	**SUMPs**: Bases and call for subsidies for the drafting of plans Sustainable Urban Mobility (SUMP). O.B.P. No. 58 of 03/26/2021	**SUMPs :**Submission of applications by the municipalities. From 03/27/2021 to 04/21/2021 **PESP**: Publication in the BOP of the granting of subsidies for the execution of projects (includes aids for EV charging points)	**SUMPs:** Rectifying applications. 10 days to rectify Last rectification May 7.	**SUMPs:** Valuation commission. Proposal report of 05/13/2021	**SUMPs** Advisory Committee of June 9. Governing Board for the resolution of the concession (we do not know the date yet)	**SUMPs :** Announcement in the O.B.P. of the resolution of the call. Notification to beneficiaries.
Overarching Milestones	★ **SUMPs**: Publication of the call	★ **SUMPs**: Applications received **PESP**: Beneficiary Municipalities: 63 (installation of EV charging points in 22 municipalities)	★ **SUMPs:** Rectifications received	★ **SUMPs**: Valuation report carried out	★ **SUMPs**: Resolution of the Governing Board	★ **SUMPs**: Publication of the resolution in the O.B.P.

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap (“10000m plan”)

	Month 7: Septembre 2021	Month 8: October 2021	Month 9: November 2021	Month 10-11: Dec 2021-Ene 2022	
3 Initiative : Sustainable Mobility Acciones: - SUMPs Drafting - Provincial Energy Saving Plan: Aids for the Installation of EV charging points	**SUMPs : Execution of the works by the beneficiary municipalities**	**SUMPs : : Execution of the works by the beneficiary municipalities .**	**SUMPs : Execution by the municipalities of the works.** **Justification until November 15 of the grant awarded by submitting the work and form 1-A**	**PESP : The implementation of the projects will take place in late 2021 early 22.** **Depending on the budget of the Provincial Council for 2022, another call will be articulated to execute the rest of the projects.**	Expected date for completion of this initiative: <u>SUMPs Action</u>: - This action is recurring over time, in Nov 2021 one call ended and in April 2022 a new one came out. - PESP (EV charging points) Action: The installation of all the EV Charging Points will finalize by December 2022 - In 2022 a new budget item was launched only for recharging points with its own financial budget (1.500.000 €) . This works will be executed in 2022-2023
Overarching Milestones			★ **SUMPs** drafted and delivered to the municipalities	**PESP** : Projects submitted Approval in plenary session of the 2022 budget with an specific budget for the PESP	

SOLUTION 4. MUNICIPAL CARBON FOOTPRINT
High level implementation roadmap ("10000m plan")

	Month 1: August 2020	Month 2: September 2020	Month 3-4: Oct-Nov 2020	Month 5: December 2020	Month 6-9: January –April 2021
3 Initiative : Sustainable Mobility Actions: - Provincial subsidies to supply electric vehicles for municipalities	NON-CASH SUBSIDIES CONSISTENT IN THE SUPPLY TO MUNICIPALITIES AND MINOR LOCAL ENTITIES OF THE PROVINCE OF ALICANTE OF ELECTRIC VEHICLES ... O.B. P. nº158 of 08/20/2020	Sending of applications by the municipalities. From 08/21/2020 to 09/09/2020 applications rectification. 10 days.		Resolution of the call by decree 2020/4588 of 12/3/2020 The resolution of the call is published in the P.O.B. No. 237 dated 12/14/2020 The necessary documentation is sent to the contracting department so that the tendering procedures for the purchase of the vehicles can begin. 12/16/2020	Award of the tender Purpose of the Contract: Supply of various electric vehicles for municipalities and smaller local entities of the province of Alicante. LOT 2: Supply of 57 100% electric truck-type vehicles with a range of more than 100 km.
Overarching Milestones	★ Milestone: Publication of the grant in the O.B. P.	★ Milestone: Applications received from municipalities		★ Milestone: Call resolved Resolutions published	★ Milestone: Award of the tender and its Publication on the Public Sector Contracting Platform .

Provincial subsidies to supply electric vehicles for municipalities Action:

- This action is recurring over time, in the first half of 2021 one call ended and the second one another one came out. In february 2022 DPA delivered the electric vehicles to the beneficiary municipalities of the last call (2021) of this non-monetary subsidy

Rationale to road map

Each of the roadmaps of the solutions - approved by the Financial Control Department and DPA in different plenary sessions; and supported by the ecosystem- was designed by the department in charge of them:

- Solution 1: IT and Telecom Department
- Solution 2: Water Department
- Solution 3: Environment, Energy and Solid Waste Department and the Provincial Energy Agency,
- Solution 4: Public Procurement Depart. (In charge of initiative 2 of Solution 4) and Environment, Energy and Solid Waste Department (in charge of the other initiatives; and the Provincial Energy Agency who gives advice in all the initiatives).

Solution 3 and 4 share the same initiative, the Provincial Energy Savings Plan, because this Plan comprises different aids related to energy saving and efficiency, renewable energies and sustainable mobility.

The COVID situation, the shortage of raw materials and the rise in material prices have affected some of these solutions that have seen their execution delayed. Having to adjust the budget of many of them, both by the contractors/tenderers and by DPA.

High electricity prices have directly affected initiative 2 (Electric power supply framework Agreement) of solution 4 that is currently paralyzed: The Public Procurement Department (with the technical advice of the Provincial Energy Agency) is negotiating with the only company that submitted to the tender to adjust/reduce the prices offered so that the municipalities do not trigger their electricity bill (some could even double their spending compared to the previous period).

Solution 1. Public Services Platform
Initiative 1 charter. Smart Costa Blanca

Strategy

Description

What: Smart Platform for Tourist Destination Management

Why: Problem(s) the solution addresses

How: Main activities foreseen

Link to vision

To become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets

Link to ambition statement

Relevance to ambition statement 4 as platform for improvement of data management and exploitation. Relevance to ambition statement 3 as platform increasing performance and opportunities raised by eGovernment

Expected impact and timing

8 million tourists/year

Stakeholders involved

Solution lead:

Patronato Turismo Costablanca. MARQ. Medio Ambiente. Servicio de Informática

Solution working team:

(Costa Blanca Tourism Board Executive Director/CEO)

(Diputación de Alicante CTO)

Contributors:

Municipalities of Alicante province. Telecommunications carrier. IT solutions integrator.

Risks and mitigation

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

RED.Es. Diputación de Alicante. 2.493.012,71 € (Indirect taxes included)

Solution maturity outputs

City performance outcomes and impacts

Solution 2. Intelligent Water Management
Initiative 1 charter. Provincial LoRaWAN Network

Strategy

Description

What: **Intelligent Water Management**

Initiative #1. Provincial LoRaWAN Network: Develop open network for domestic water consumption telemetry

Why: Telemetry in water networks is hard to implement in the smaller municipalities without technicians

How: the development of a low cost (for municipalities), open and centralized solution with the support of Provincial Council

Link to vision

The vision the solution links to become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets.

Link to ambition statement

The ambition statement the solution links to relevance to ambition statement 3 (strengthening collaboration between stakeholders) and 4 (dealing with technological resources associated to digital hydric solutions).

Expected impact and timing

Second semester of 2021: projects launched and installation in progress

First semester 2022: complete implementation of the system in 20 municipalities

Stakeholders involved

Solution lead: Diputación Provincial de Alicante (DPA, Provincial Council of Alicante)

Solution working team: (Water Technologies Head DPA)
(Civil Engineer DPA)

Contributors:
Municipalities
Water supply companies
(CEO Silicon Media)

Risks and mitigation

Key risk: Lack of funds for a second phase in 2022-23

Challenges to arise during implementation: the use by municipalities of other technologies offered by vendors, that in the future will be difficult to manage from the municipalities.

Mitigating measures that are being put in place: Provincial Council develops information campaigns for the municipalities, drafts the projects based in the provincial LoRaWAN solution and only funds this technological solution

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Provincial Council of Alicante

Estimate of the cost: 50,000 € per municipality (there are 20 still without the system

Solution maturity outputs

Over 20 municipalities are using the system to produce water taxes

Alarms for water leaks are produced daily

City performance outcomes and impacts

Water leaks early detection is reducing water losses, ant its economical and environmental impact.

Water management is improved and taxes are more accurate.

Water users can check their consumption online.

Solution 2. Intelligent Water Management
Initiative 2 charter. Private Communication Network

Strategy

Description

What: **Intelligent Water Management**

Initiative #2. Private Communication Network: Migrate the radio network of the water monitoring system into a mobile telephony intranet network

Why: Radio networks are more expensive to maintain and have smaller bandwidth

How: By substituting radio stations with PC104 + routers devices, developing the required software

Link to vision

The vision the solution links to become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets.

Link to ambition statement

The ambition statement the solution links to relevance to ambition statement 3 (strengthening collaboration between stakeholders) and 4 (dealing with technological resources associated to digital hydric solutions).

Expected impact and timing

Migration ended 2021

Stakeholders involved

Solution lead:

Diputación Provincial de Alicante (DPA, Provincial Council of Alicante)

Solution working team:

(Water Technologies Head DPA)

(Communication Engineer DPA)

Contributors:

(R&D Head Telecom Levante)

Telefonica Movistar

Risks and mitigation

Key risk: Change of communication operator

Challenges to arise during implementation: software and firmware has been developed that matches the requirements of an intranet of the current operator. If it might change adaptations would be required

Mitigating measures that are being put in place: there were some economical resources to do the update, but finally operator will not change

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Provincial Council of Alicante

Estimate of the cost: 200,000 €

Solution maturity outputs

Continuous monitoring along over 500 stations in the province of water resources and infrastructure is allowing to create a huge hydrologic database in the province, where some Big Data techniques can be useful to model future trends

City performance outcomes and impacts

Real time data in all the stations improves water management while reducing the load and need of availability for the water workers. Automatic strategies and alarms are key for optimized systems. Also, they minimize water cuts for the users

Solution 2. Intelligent Water Management
Initiative 3 charter. Real Time Intelligent Monitoring System and Water Data Mining

Strategy

Description

What: **Intelligent Water Management**

Initiative #3. Real Time Intelligent Monitoring System and Water Data Mining: Improve the monitoring system (SCADA based) to develop water leaks alarms available in real time and improve analysis capabilities

Why: The big amount of data obtained requires new strategies to analyze it

How: Developing of new software for the Monitoring System

Link to vision

The vision the solution links to become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets.

Link to ambition statement

The ambition statement the solution links to relevance to ambition statement 3 (strengthening collaboration between stakeholders) and 4 (dealing with technological resources associated to digital hydric solutions).

Expected impact and timing

Projects launched 1st Sem. 2021

Expected ending date: 2st Sem. 2022

Stakeholders involved

Solution lead:

Diputación Provincial de Alicante (DPA, Provincial Council of Alicante)

Solution working team:

(Water Technologies Head DPA)

(Water Department Head DPA)

Contributors:

(R&D Head Telecom Levante)

(CEO Silicon Media)

Risks and mitigation

Key risks:
Delays in software development
Difficulties in interoperability of data

Challenges to arise during implementation: not all the improvements can be specified in the first stages, as there is some learning during the implementation

Mitigating measures that are being put in place: a technical steering committee has been created to follow all the implementation, to reformulate requirements and to suggest new strategies when difficulties arise

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Provincial Council of Alicante

Estimate of the cost: 250,000 €

Solution maturity outputs

The development of an open source SCADA property of the public administration, that can be adapted to new requirements and to Big Data techniques, that can be useful to model future trends

City performance outcomes and impacts

The important capacities to analyze data and to adapt to new scenarios creates resilience in the cities to:

- Foresee difficulties with some sources of water supply
- Keep a preventive maintenance of infrastructure
- Reduce water losses by leaks
- Follow the adequate daily disinfection of water

Solution 2. Intelligent Water Management
Initiative 4 charter. Low Carbon Water Pumping

Strategy

Description

What: **Intelligent Water Management**

Initiative #4. Low Carbon Water Pumping: Substitute pumping based on carbon fuels for clean energies

Why: The need of a low carbon economy

How: Installing solar pumping when possible, reducing the economical cost of pumping and CO_2 emissions

Link to vision

The vision the solution links to become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets.

Link to ambition statement

The ambition statement the solution links to relevance to ambition statement 3 (strengthening collaboration between stakeholders) and 4 (dealing with technological resources associated to digital hydric solutions).

Expected impact and timing

Some major pumping stations migrated in a two years horizon

Stakeholders involved

Solution lead:

Diputación Provincial de Alicante (DPA, Provincial Council of Alicante)

Solution working team:

(Water Resources Head)

(Water Technologies Head DPA)

Contributors:

Environment, Energy and waste Department

APEA

Risks and mitigation

Key risks:
Availability of soil
Difficulties to handle funding

Challenges to arise during implementation: without funding from the EU, it will be very unlikely that municipalities are going to invest in this transformation

Mitigating measures that are being put in place: there will be a team of the Provincial Council of Alicante working in Next Generation funding opportunities

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: EU funds

Estimate of the cost: 3 M€

Solution maturity outputs

Still not implemented

City performance outcomes and impacts

Still not implemented

Solution 3. Municipal Self-consumption and Local Energy Communities
Initiative 1 charter. Creation of Local Energy Communities

Strategy

Description

What: Help municipalities to create Local Energy Communities.

Why: High electricity prices and CO2 emissions.

How: by informing citizens about what are Local energy communities and their benefits; launching grants aimed at local councils to create them; and install the pv solar panels.

Link to vision

To become a European reference on green economy, as sustainable and resilient territory relying on unique local assets .

Link to ambition statement

Linked to our **AS1**: proposing and consolidating common models and plans on energy (like Local Energy Communities) addressing all our municipalities. Also to **AS2** as it engages both public and private provincial stakeholders to address a relevant energetic challenge in Alicante.

Expected impact and timing

The initiative will begin to create impact by the time the work is completed, and the community is put into operation (local energy communities established, photovoltaic solar panels installed and already operating). it is estimated that throughout 2022 will be fully operating.

Stakeholders involved

Solution lead:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department

Solution working team:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Provincial Energy Agency of Alicante

Contributors:

Local Councils / Municipalities

Successful tenders

Risks and mitigation

Risks: Lack of interest from neighbors, Local economic unavailability

Challenges: Convincing neighbors to join the project

Mitigating measures: DPA elaborated an information campaign for neighbors, explaining all the advantages of participating in the Local Energy Community

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: DPA own funds

Estimate of the cost: Minimum 60.000€ per CEL (Extra funds for the execution of the CELs would be needed)

Solution maturity outputs

Increase in the production of energy from renewable sources, decrease in the electricity bill of the users that are part of the energy community; the formal and legal constitution of local energy communities that can serve as an example for other users who want to establish one.

City performance outcomes and impacts

Citizens' awareness on energy efficiency importance

Industry compliance with green economy practices

Decrease in CO2 per capita

Increase in quantity of CO2 absorbed in negative emissions

Number of jobs in "Green" sectors

The European Commission's INTELLIGENT CITIES CHALLENGE

Solution 3. Municipal Self-consumption and Local Energy Communities
Initiative 2 charter: Municipal self-consumption

Strategy

Description

What: Municipal self-consumption: Provincial Energy Saving Plan.

Why: Municipalities need to implement actions to reduce their energy bills, have zero waste facilities and municipal buildings and fulfill their CoM commitments.

How: Through DPA's Provincial Energy Saving Plan by installing photovoltaic panels for self-consumption and works to improve municipal buildings' thermal insulation.

Link to vision

To become a European reference on green economy, as sustainable and resilient territory relying on unique local assets

Link to ambition statement

Linked to our AS1: proposing and consolidating common models and plans on energy addressing all our municipalities. Also to AS2 as it engages both public and private provincial stakeholders to address a relevant energetic challenge in Alicante.

Expected impact and timing

The initiative will begin to create impact at the moment in which the works will be completed, and the facilities start their activity.

Stakeholders involved

Solution lead: DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Solution working team: DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Provincial Energy Agency of Alicante

Contributors: Local Councils / Municipalities

Successful tenders

Risks and mitigation

Risks: None

Challenges: That the facilities have adequate maintenance and operation during their useful life.

Mitigating measures: DPA created the Provincial Energy Savings Plan to implement in municipalities actions such as LED street lighting to reduce their CO2 emissions and energy bills.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

The source of funding: DPA's own funds

Estimate of the cost: +/- 740,000 euros for the execution of the renewable installation projects of the PAE 2019 (60,000 euros per municipality)

Solution maturity outputs

% renewable power generated

% renewable power use

Positive/negative mentions in social media about provincial performance on energy

Decrease in the local councils' electricity bills

City performance outcomes and impacts

Citizens' awareness on energy efficiency importance

Industry compliance with green economy practices

Decrease in CO2 per capita

Increase in quantity of CO2 absorbed in negative emissions

Number of jobs in "Green" sectors

1 Solution 4. Municipal carbon footprint Initiative 1 charter. Covenant of Mayors for Climate and Energy

Strategy

Description

What: Municipal carbon footprint: Covenant of Mayors for Climate & Energy

Why: Help municipalities to fulfill their commitments as signatories of the Covenant of Mayors since they do not have the resources to do so.

How: Drafting of CoM documents , drafting of projects and implementation of the projects

Link to vision

To become a European reference on green economy, as sustainable and resilient territory relying on unique local assets.

Link to ambition statement

Relevant to AS1 as it involves the elaboration of a roadmap for municipalities regarding their carbon footprint, roadmap that will be accompanied by actions focus on topics such as CO2 emission reduction through, use energy from renewable sources, self-consumption and sustainable mobility.

Expected impact and timing

The initiative will begin to create impact when the actions contemplated in the CoM documents (SECAPs, etc) wil be implemented.

The European Commission's INTELLIGENT CITIES CHALLENGE

Stakeholders involved

Solution lead:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Solution working team:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Provincial Energy Agency of Alicante

Contributors:

Successful tenderers

Beneficiary municipalities

Risks and mitigation

Risks: Lack of funding to implement the actions.

Challenges: Lack of citizen awareness

Mitigating measures: DPA elaborated an information campaign for neighbors, explaining all the advantages of participating in the Local Energy Community.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: DPA's own funds.

Estimated cost: 88,226 euros (own funds of the Provincial Council to carry out the documents) 126,000€ (New call Funds)

Solution maturity outputs

Number of municipalities assisted in carbon footprint estimation

Number of municipalities helped in the drafting of the CoM documents

Number of works implemented

% renewable power generated

% renewable power use

City performance outcomes and impacts

Citizens' awareness on energy efficiency importance

Industry compliance with green economy practices

Decrease in CO2 per capita

Increase in quantity of CO2 absorbed in negative emissions

Number of jobs in "Green" sectors

Solution 4. Municipal carbon footprint
Initiative 2 charter: Electric Power Supply Framework Agreement

Strategy

Description

Electric Power Supply Framework Agreement

Centralized purchase of energy for the municipalities adhered to the framework Agreement that allows obtaining a competitive price of energy; in addition to obtaining the energy certification with a guarantee of origin 100% from renewable sources.

Link to vision

To become a European reference on green economy, as sustainable and resilient territory relying on unique local assets

Link to ambition statement

Relevant to AS1 as it involves the elaboration of a roadmap for municipalities regarding their carbon footprint, roadmap that will be accompanied by actions focus on topics such as CO2 emission reduction through, use energy from renewable sources, self-consumption and sustainable mobility.

Expected impact and timing

The solution begins to create impact at the time the contract begins (October 1st, 2022) and for 2 years.

Stakeholders involved

Solution lead:

Diputación Provincial Alicante (DPA)- Central Contracting Unit

Solution working team:

Diputación Provincial Alicante (DPA)- Central Contracting Unit

Provincial Energy Agency of Alicante

Contributors:

Successful tenderers

Beneficiary municipalities

Risks and mitigation

Risks: that no companies want to participate in the Call of Tender

Challenges: get a very competitive price

Mitigating measures: The energy supplied to the municipalities through this Framework Agreement will be 100% renewable energy with Guarantee of Origin.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

DPA own resources

Solution maturity outputs

% renewable power generated

% renewable power use

% reduction in the price of electric fixed fee

City performance outcomes and impacts

Citizens' awareness on energy efficiency importance

Decrease in CO2 per capita

Increase in quantity of CO2 absorbed in negative emissions

Number of jobs in "Green" sectors

The European Commission's INTELLIGENT CITIES CHALLENGE

Solution 4. Municipal carbon footprint
Initiative 3 charter. Sustainable Mobility

Strategy

Description

What: Municipal carbon footprint - Sustainable Mobility

Why: CO2 emissions

How: development of SUMPs and Electrical car Purchase.

Link to vision

To become a European reference on green economy, as sustainable and resilient territory relying on unique local assets

Link to ambition statement

Relevant to AS1 as it involves the elaboration of a roadmap for municipalities regarding their carbon footprint, roadmap that will be accompanied by actions focus on topics such as CO2 emission reduction through, use energy from renewable sources, self-consumption and sustainable mobility.

Expected impact and timing

The solution will begin to create impact when the municipalities start using the electric vehicles and implement their SUMPs

The European Commission's INTELLIGENT CITIES CHALLENGE

Stakeholders involved

Solution lead:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Solution working team:

DPA (Diputación Provincial de Alicante- Environment, Energy and Solid Waste Department)

Provincial Energy Agency of Alicante

Contributors:

Successful tenderers

Beneficiary municipalities

Risks and mitigation

Risks: proper functioning of the electric vehicles purchased

Challenges: have financial resources to implement the SUMPs

Mitigating measures: Cars and other vehicles supplied to the municipalities are 100% electric.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: DPA's own funds.

Estimated cost:

SUMPs: 350.000 €

Electrical car Purchase 2020 Call : 2.751.000 €

Electrical car Purchase 2021 Call: 2.000.000 €

Solution maturity outputs

Number of air quality metrics improved

% of Electric Vehicle penetration

% increase in charging spots deployed

City performance outcomes and impacts

Citizens' awareness on energy efficiency importance

Industry compliance with green economy practices

Decrease in CO2 per capita

Increase in quantity of CO2 absorbed in negative emissions

Number of jobs in "Green" sectors

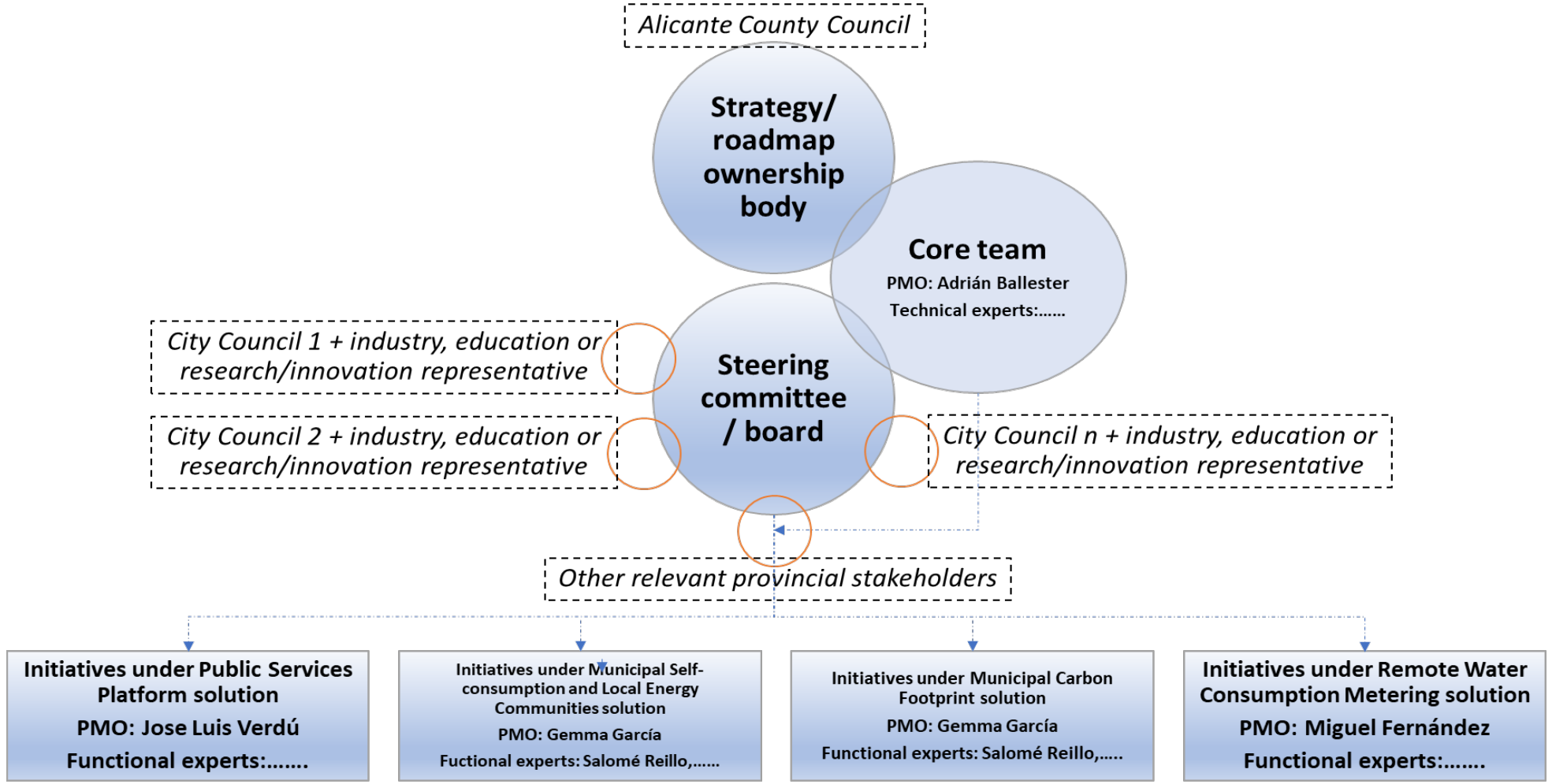
Key Performance indicators

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
1. Public Services Platform	- Percentage of executed budget over - Percentage of executed activities on time - Number of months behind scheduled		
2. Intelligent Water Management			
3. Municipal Self-consumption and local energy communities		• Number of air quality metrics improved • % of Electric Vehicle penetration • % increase in charging spots deployed • % reduction in the price of electric fixed fee • Number of municipalities assisted in carbon footprint estimation	Estimated annual greenhouse gas reduction (tons of CO2 equivalent/year Reduction of final energy consumption in municipal facilities (Ktep/year) Reduction of annual primary energy consumption in public buildings (kWh/year) Citizens awareness on energy efficiency importance Number of jobs in "Green" sectors
4. Municipal carbon footprint		• % renewable power generated • % renewable power use • Positive/negative mentions in social media about provincial performance on energy	

Key Performance indicators - Cross cutting indicators

Cross cutting indicators
Number of meetings and teamwork between DPA different departments with the Provincial Energy Agency (Solution 3 and 4)
Number of new relationships with new stakeholders (e.g. number of collaboration agreements signed)
Number of new "green" jobs created

4 Governance structure for roadmap implementation



4 Governance structure for roadmap implementation (I)

Steering committee/board (main decision-making body)

Description: Led by DPA, it will take the main strategic and operational decisions, will have **the overall responsibility for the implementation and monitoring of the digital strategy and roadmap**; and must also provide leadership and input into all steps of the process. **Open body whose members (persons) can change over time**. The overall structure follows a clear and well-configured framework facilitating both the involvement and withdrawal of new and existing members.

Composition: Members belong to a City Council representing a municipality with **a limit of 15 municipalities being selected and attending each steering committee/board meeting**. The selection approach will follow a turning or rotating process among the total number of municipalities in the province. In addition, **each City Council member will be requested to bring an advisor** belonging to an organization representing (for the corresponding city) any of the other three types of stakeholders (except public institutions) either directly affected or enabling the digital transformation process, that is, education, industry and research/innovation. Finally, members from organizations representing relevant stakeholders with not a city but provincial scope will be invited too.

All the members will be part of the steering committee/board for a period of six months. Every 12 months a new steering committee/board will be constituted where new members (from new Alicante Municipalities and new city or provincial stakeholders) will be selected. At the same time the members will vote a president for the steering committee/board every year.

4 Governance structure for roadmap implementation (II)

Meetings: **4 times a year**. It takes the most critical decisions. Each member has one vote. If a tied vote, the elected president shall have the casting vote.

** A member of the steering committee/board will be responsible for the coordination and supervision of the different **initiatives** being implemented and monitoring progress and results under the scope of the digital transformation strategy and roadmap of the Alicante province, in this case conformed by a **core team** for that purpose. Such core team will be appointed by DPA as the **digital strategy and roadmap ownership body**, and potentially associated to an internal department with digitalization competences.

Rationale to KPI approach

When choosing the most appropriate KPIs to measure the results of the implemented solutions, the opinions of the DPA officers of the departments involved, the stakeholders, the City Ecosystem and the Provincial Energy Agency (this last one for the Solutions 3 and 4) were taken into account to ensure their feasibility and effective execution.

Our main concern in relation to the KPIs was not knowing how to measure them or not having access to that data, so we have tried to choose those that are easy for our officers to measure.

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Section

3+4

Diputación provincial de Alicante: Impact

ICC Transformation

February 2021 to May 2021

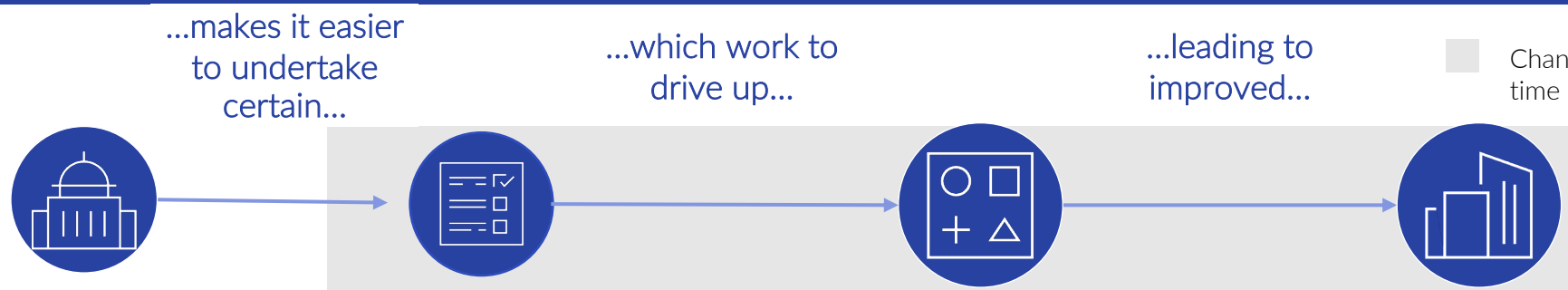
European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Impact executive summary

There have been achievements during the ICC as shown in the KPI's, but they have been related basically to the internal processes in our administration rather than to ICC inputs. The lack of founding for concrete actions and the poor management of ICC project has made it of minor help to achieve progress.

DPA's commitment with the sustainability of the municipalities of the province and the own resources that it has means that the budget items in these three fields (digitization, water and energy) are very important, which helps that year after year calls (like the ones included in our ICC project) continue to be made.

There are four types of measurable concepts that come together to drive success in the ICC



Idea	Local enablers –city characteristics	Activities – actions and inputs	Technology maturity – outputs	City performance – outcomes and impacts
Description	Each city has unique strengths and weaknesses that help action happen. These can be stakeholder networks, local capabilities, cultural factors or many more that drive success in ICC projects.	A cities main intervention on the ICC is to take actions. These can be direct (e.g., procuring technology), or indirect, (e.g., forming a working group on a topic). The right actions can lead to the right inputs going in to the ICC (e.g., funding, time)	Cities can drive technological solutions to try and improve city performance. How well these solutions are currently used can be described as their 'maturity', - considering whether they are available for stakeholder use, what stakeholders think of them, and so on	Success of an intelligent city is ultimately measured by its ability to address city needs. These can be considered an improved quality of citizen life and a better environment for stakeholders
Example	A history of strong collaboration between city and a local university...	...allows the creation of a new e-health pilot project using social housing in the city...	...leads to the launch a new tele-health solution utilising 4G data connections...	...resulting in pre-emptive diagnosis and lower wait times at medical facilities

Assessment of city performance - progress against KPIs

CITY PERFORMANCE	FINAL RESULTS
Citizens' awareness on energy efficiency importance	Much better
Industry compliance with green economy practices	Much better
Citizens and industry satisfaction level on existing digital enabling means	Stayed the same
Digital skills maturity in citizens and public/private employees	Stayed the same
Increase in public-private partnerships for digitalization purposes	Somewhat better
Increase in research-industry cooperation for digital knowledge and technology transfer	Stayed the same

Assessment of city performance - discussion

In reference to Solution 1, the project is starting, defining the implementation plan and development of the services.

In reference to Solution 2, municipalities are more concerned with the value of energy and water, also due to the effects of the conflict in Ukraine and the recent heat waves. So, remote water management with the use of optimization strategies is being extensively demanded and used even in the smaller municipalities.

In reference to Solution 3 y 4 as municipalities are more concerned in energy issues and aware of the importance of adapting to new energy circumstances, DPA's environmental investment has grown exponentially from 8.6 million in 2018 to nearly 18 million during 2022.

Assessment of solution maturity - progress against KPIs

SOLUTION 1	RESULTS
Share of government services available online	Starting
Number of IoT devices deployed	Starting
Extent of data publicly available	Starting
SOLUTION 2	
Penetration of smart water meters	95 %
Avoiding water under measurement	85 %
Saving in citizens water consumption	90 %
Number of new Smart services/processes available	1
Improving decision making	Stayed the same

Assessment of solution maturity - progress against KPIs

SOLUTION 3	RESULTS
Renewable power generated (kWh/year)	640.000 kWh/year
Renewable power use	256.000 kWh/year
Estimated anual greenhouse gas reduction (tons of CO2/year)	149 Ton of CO2
Number of RREE Projects implemented	19
Number of viability studies carried out for the constitution of Local Energy Communities	17
SOLUTION 4	RESULTS
Number of Electric Vehicles purchased	171 (98 - 1° Call + 73 – 2° Call)
Number of municipalities to which electric vehicles have been supplied	122 municipalities with less than 50,000 inhabitants.
Number of charging points installed	40 (in 22 municipalities)
% reduction in the price of electric fixed fee	****
Number of municipalities/entities within the framework agreement	Don't know yet. Municipalities have from august to sept. to join the agreement
Number of municipalities assisted in carbon footprint	52
Number of CoM documents drafted for the municipalities	76
Number of SUMPS elaborated	19 (1° Call) + 19 (2° Call)

**** In the new "Electric Power Supply Framework Agreement" (for Sep 22 - Sept 24 period) there has been no reduction in the Price of Electric Fixed Fee because the market price is very high, moreover, an average increase of 2.5 times is expected with respect to the previous framework contract agreement.

Even so, it has been reduced by 40% compared to the March tender from which the offer submitted by the only participant tenderer was rejected for exceeding the maximum price of the contract was thrown out.

Assessment of solution maturity - discussion

Solution 1. Public Services Platform: Plataforma Provincial IoT.

They have not yet begun to collect data as the project is just beginning. However, the planning meetings held are focused on removing obstacles to be able to meet the objectives.

Solution 2. Remote water consumption metering

The basic implementation of the solutions for remote water measuring and management is nearly completed for the province which impacts positively in avoiding water losses. Though, there are still management solutions that have to be developed to improve decision making

Solution 3. Municipal Self-consumption and local energy communities

The works included in Solution 3 (municipal self-consumption activity) are currently being carried out, although some have already been completed. Regarding the Local Energy Communities, DPA has carried out all the administrative procedures for the municipalities to hire the consultants who are going to carry out the viability studies.

Solution 4. Municipal carbon footprint

Municipalities continue to work on improving their carbon footprint by implementing the actions included in their SECAPs (those that have them). A new call is underway to draft new sustainable energy action plans and other CoM documents for municipalities that do not have them yet. Regarding the Electric Power Supply Framework Agreement, municipalities have till September to join it and benefit from the reduction in the price of electricity.

Assessment of city ecosystem and activities - progress against KPIs

SOLUTION 1	RESULTS
Number of digital services for tourism available through smart devices	Starting
% increase in digital services accessed by tourists	Starting
SOLUTION 2	
% of investment spent	25%
%of actitivities completed on time	50%

Assessment of city ecosystem and activities - progress against KPIs

SOLUTION 3	RESULTS
% of investment spent	100%
% of actitivities completed on time	90%
SOLUTION 4	RESULTS
% of investment spent	100%
% of actitivities completed on time	90%

Assessment of city ecosystem and activities - discussion

Activity KPIs

In the case of the KPIs related to the evolution of activities, these were mainly aimed at measuring the degree of implementation of the proposed solutions.

- Solution 1, as has already been mentioned, has suffered a significant delay due to the bidding deadlines for the project, since the process has depended on a state entity as it is financed with funds from the European Union.
- Solution 2 and is being implemented, with minor delays (under 6 months) for the actions founded by DPA, due to administrative tasks, and higher for those founded by Next GenerationEU, caused by delays in the calls.
- Solution 3 and 4: All activities included in these solutions are being developed on time and will be completed by the end of the year. Only in the works of the Energy Savings Provincial Plan have there been delays due to lack of budget allocation. But they all will be completed by the end of this year beginning of 2023.

Ecosystem KPIs

With regard to those relating to the ecosystem, our objective was to measure the increase in grants request for energy communities, the number of projects or activities implemented, the number of sustainable urban mobility plans elaborated, or the number of public electric vehicles purchased, among others.

The results obtained are generally very satisfactory, although work is still being done to improve them in the following stages.

5 key lessons

Lesson	Reflections
1	The difficulty of setting up an Energy Local Community, mainly due to the lack of Legislation on the subject and the scarcity of real cases implemented and operating that can serve as examples.
2	The importance of having controlled at the municipal level all the energy consumption of the municipalities. Knowing the consumption is faster to take action because we know where to take it. It is necessary to emphasize to municipal officer that they should have all the electricity invoices controlled.
3	The amount of C02 that can be reduced by applying solutions 3 and 4: All the activities from these solutions have this as it's main final goal, e.g. the purchase of electric vehicles for municipalities or the works of the Provincial Energy Savings Plan (installation of more efficient public lighting, solar panels in municipal buildings...).
4	The predisposition of city councils to collaborate and their gratitude to the DPA and the Alicante Energy Agency for carrying out actions that represent significant economic savings for them: Most of the municipalities are small local entities that do not have financial resources or technical staff to carry out actions on their own, such as improving public lighting.
5	One of the lessons related to the ICC process was the importance of having good and accurate planning in order to implement successfully the solutions, anticipate risks and possible problems.

Reflections on city collaborations

Local Energy Communities: Alcoy, Castellón de la Plana

Green Economy and local green deals: Gdansk, Patras, Gijón.

Port: Thessaloniki

Participation in ICC also helped us to be known, establish relationships with similar European cities/Local Entities/Consortiums and give a boost to our participation in European Calls.

Meetings we had:

- The ICC city of Ulm (Germany), they were fous on sustainable outcome for citizens instead of output determined by the administration. Our strengths and expertise lie in different fields, such as Open Data (platform and data ethics), IoT (LoRaWAN), Aging & Health, Sharing Mobility and Citizen Participation & Education. Among others, their project ideas revolve around the topics smart urban security, open government, digitally supported aging or climate protection with citizens' support.

- The ICC Tripolis-Corinthos consortium (Greece): We had a meeting with this consortium because they were interested in DPA's "Blue routes" project and they wanted to do something similar in their cities.

- The ICC city of Kavala, Greece. Thanks to the collaboration within ICC, Together with this city we participated (2021) in the HORIZON Green Deal call: “European capacities for citizen deliberation and participation for the Green Deal” - TOPIC ID: LC-GD-10-1-2020; and submitted together with other partners the proposal "INNOGREEN: Massive Crowdsourcing, Social Media, Open Innovation and Artificial Intelligence in citizen deliberation and social transformation for the Green Deal" (RIA action).

Ambitions and Commitments

In its commitment to sustainable development in the province, the DPA created in July 2020 a Commission for the drafting of its 2030 Agenda Action Plan, taking into account the situation of the SDGs in the policies and instruments already existing in the DPA and the large axes of work to be reinforced. Work in which all departments and dependent organizations were involved.

Aware of the importance of this document, in April 2022 DPA launched specific grants for municipalities in the province of Alicante to help municipalities write their own action plans for the urban agenda and the 2030 Agenda.

All of this forms part of the long-term strategy of DPA, which coincides with its ICC vision "to become a European reference on digitalization and green economy, as intelligent territory relying on unique local assets".

DPA has spent the last 10 years very focused on supporting municipalities to reduce their energy consumption and their carbon footprint. This work is in line with the energy transition process undertaken by the European Union. The solutions carried out by the DPA (especially solutions 3 and 4) are helping municipalities to fight high energy prices, reduce their C02 emissions and become more energy self-sufficient.

Almost all DPA grants presented within the ICC project are launched annually (the Provincial Energy Saving Plan, e.g. has been active since 2012, the aid for drafting CoM's documents as well; the call on CELs is the newest but the objective is to be convened annually) and it will continue to be done as long as DPA detects that there is a need among the municipalities.

The great challenge now will be to increase the number of grants and cover the largest possible number of municipalities, and for this the Next Generation European funds are essential. That is why the DPA's European Office is already actively working on requesting these funds.