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Towards circular towns and cities

Promoting **Green and Smart
Public Services** within
Mediterranean Municipalities to
move towards a Circular Economy

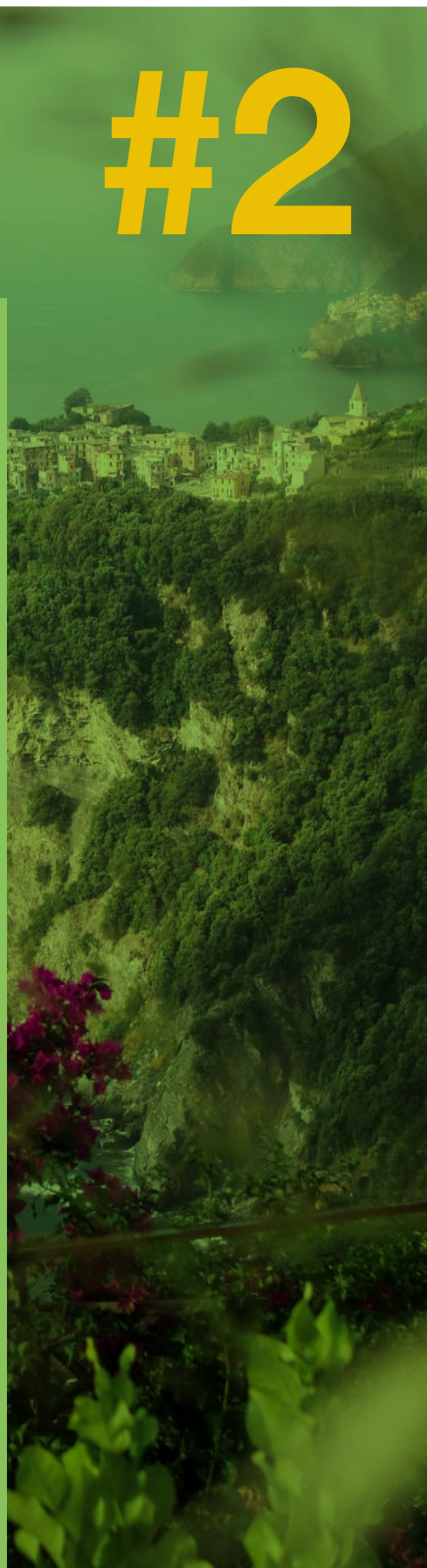
Interreg
Mediterranean



GREEN GROWTH

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Regional Development Fund

September 2019



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Promoting Green and
Smart Public Services within
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Circular Economy

About the Circular Economy White Papers

This White Paper is part of a series of thematic Circular Economy White Papers presenting the contributions of the Interreg MED Green Growth community and their efforts in transitioning towards a circular economy, in the areas of 1) Resource Efficiency, 2) Green and Smart Public Services, 3) Waste Prevention and Management and 4) Competitiveness and Innovation.

*A circular economy is
‘where the value of products,
materials and resources
is maintained in the
economy for as long
as possible, and the
generation of
waste minimised’.*

European Commission 2015¹

The thematic White Papers are complemented with a transversal White Paper and accompanied by a set of Policy Recommendations and Legal Recommendations in the same thematic areas. The elaboration of the White Papers was led and developed by the SYNGGI project based on contributions from modular projects of the Interreg MED Green Growth Community², through dedicated Thematic Working Groups on the four thematic areas.

Green and Smart Public Services and the Circular Economy

With the EU Circular Economy Action Plan³ adopted in 2015, the European Commission sets out actions which will help to ‘close the loop’ of product lifecycles, keeping resources in the economy while retaining the value of these resources. This will contribute towards a sustainable, low carbon, resource efficient and com-

petitive economy. In this transition towards a circular economy, greening public procurement – the buying of works, goods or services by public bodies – is regarded as a key driver, as it accounts for a significant share of consumption in the European Union, worth over 14% of the EU GDP (equating to over EUR 1.9 trillion).

Green Public Procurement is “a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured”.

European Commission 2008⁵

Among the EU’s actions for integrating circular economy principles in green public procurement (GPP) are those related to emphasizing circular economy aspects in the EU GPP criteria and supporting a greater uptake of GPP among European public bodies and by EU institutions themselves.

Only a few Member States have so far put in place policies for environmentally responsible public procurement. Furthermore, there is still an excessive use of the lowest price as an award criterion⁶. This does not always lead to the best value-to-cost ratio, let alone greater environmental sustainability. The European Commission promotes the principle of the Most Economically Advantageous Tender (MEAT), into which quality criteria can be integrated. The use of this principle in the EU countries of the Mediterranean region varies widely (see Figure 1).

5. European Commission (2008). Public procurement for a better environment.

6. European Commission (2017). European Semester Thematic Factsheet - Public Procurement.

7. European Commission (2017). European Semester

THE USE OF THE MEAT CRITERIA FOR EVALUATING TENDERS (2006-2016)⁷

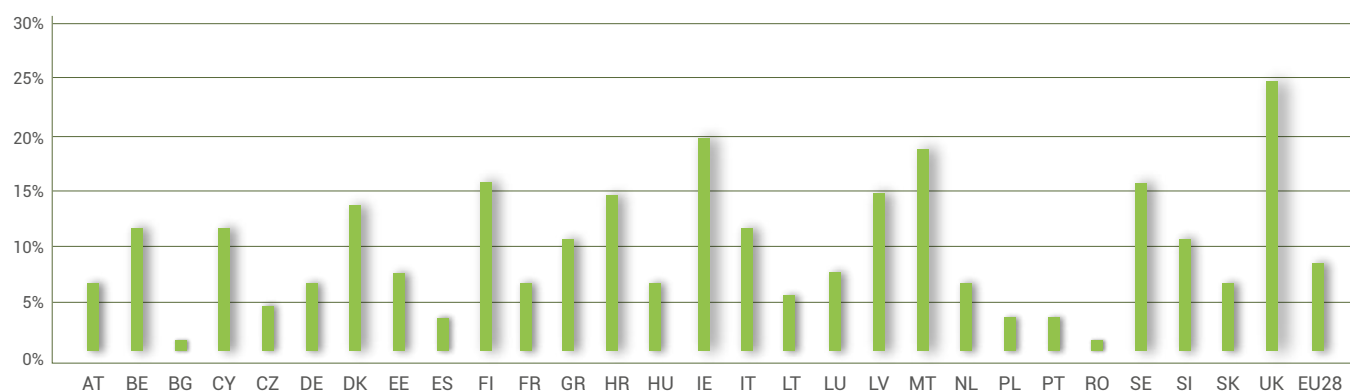


Figure 1

Source: European Commission (2017). European Semester Thematic Factsheet - Public Procurement.

To move away from the current linear “Take-Make-Waste” economic model and to procure in accordance with criteria of sustainability and circularity requires consideration of the long-term impacts of each purchase, including the costs of services and products over their entire life cycle. Circular public procurement emphasizes the role that public authorities can play in supporting the transition towards a circular economy⁸.

“Circular procurement can be defined as the process by which public authorities purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst emphasizing, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle”.

European Commission 2017⁹

At the same time, green or circular public procurement can only be effective if there are providers of products and services on the supply side that can comply with the criteria set in tender processes. Therefore, the capacity of SMEs to innovate and come up with green and circular products and services is key (see also Circular Economy White Paper No. 4 on Innovation and Competitiveness).

The Interreg MED Green Growth Community and its contribution to promoting green and smart public services for a circular economy

The objective of the Interreg MED Green Growth community is to promote sustainable development in the Mediterranean area, based on sound management of the natural resources and by fostering innovation through an integrated and territorially based cooperation approach. Several projects that form part of the Interreg MED Green Growth community strongly contribute to promoting green and smart public services:

GRASPINNO (Transnational model, strategies and decision support for innovative clusters and business networks towards green growth, focusing on green e-procurement in EE/RES¹⁰ for energy refurbishment of public buildings) provides innovative green procurement solutions for energy savings/efficient refurbishment of public buildings, focusing on smart cities and communities. Its goals are to (a) improve the capacity of Public Authorities to manage the energy efficiency of buildings, moving towards near zero energy buildings; and (b) strengthen SMEs to enter the green energy market.

ESMARTCITY (Enabling Smarter City in the MED Area through Networking) aims at improving the innovation capacity of Mediterranean cities by creating innovation ecosystems and applying the Smart City concept (the use of digital and energy saving technologies to supply better services to citizen with less impact on the environment). The project tests solutions in the field of intelligent urban districts, energy efficiency of buildings and smarter public lighting.

GREEN MIND (GREEN and smart Mobility INDustry innovation) has the objective to strengthen the transnational activities of clusters and agencies to support SMEs in exploiting the market opportunities of the raising demand for green and smart mobility products and services. The project tests new market intelligence, public funding screening and B2B matchmaking services for SMEs.

8. European Commission (2017). Public Procurement for a Circular Economy. Good Practice and guidance.

9. European Commission (2017). Public Procurement for a Circular Economy. Good Practice and guidance.

10. Energy Efficiency and Renewable Energy Sources.

Challenges and opportunities addressed by the Interreg MED Green Growth Community projects

The overall challenge addressed by the Interreg MED Green Growth community projects is that public procurement and the provision of public services across the Mediterranean do not systematically consider aspects of circularity and sustainability.

On the procurement side, green public procurement principles are not applied widely, and often economic and environmental criteria are perceived to be conflicting factors. The best choice from an environmental perspective does not always coincide with the best choice from an economic perspective if the costs of products and services are not calculated over the entire life cycle.

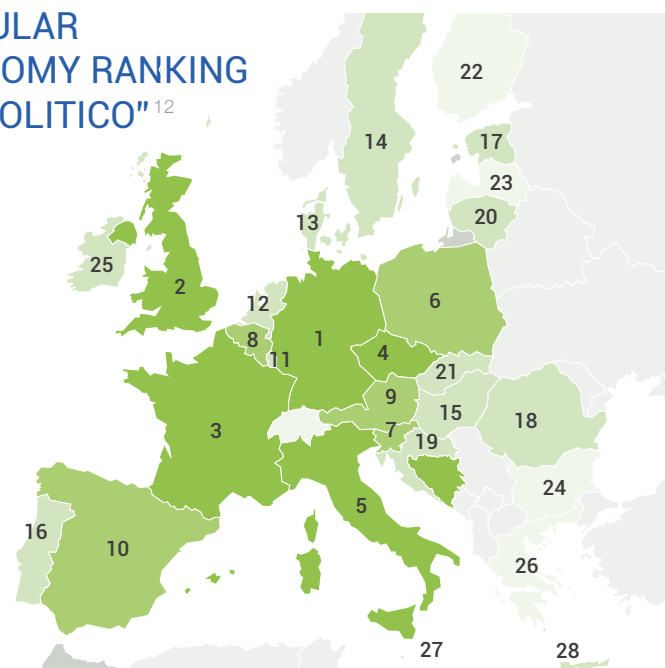
On the supply side, service providers – particularly SMEs – have a limited capacity to offer products and services that comply with criteria of sustainability and circularity. Overall, the innovation level in the Mediterranean region is still lagging behind the EU average (excluding Italy and Slovenia, which ranked fifth and seventh, respectively, in the European country ranking on Circular Economy), and Mediterranean SMEs do not keep pace in eco-innovation activities, as green and smart industry clusters are fewer in number and smaller in size.

Indicators regarding the number of patents, considering investments and jobs in circular economy sectors are those that are most directly aligned with the overall performance level of a country in the circular economy ranking¹¹.

The specific challenges tackled by the projects are:

- Limited integration between environmental and economic criteria and limited application of the life cycle cost methodology in green public procurement, where the use of a scoring system for the most economically advantageous tender (MEAT) does not always lead to a lower life cycle cost (LCC)
- Public buildings account for the second largest energy consuming sector in municipalities at European level, hence energy refurbishment of these buildings is considered to be a crucial first step to start improving the building stock.
- Public authorities require enhanced innovation capacities to engage in electronic green public procurement,

CIRCULAR ECONOMY RANKING BY "POLITICO"¹²



and private actors related to eco-innovation and green energy, which could provide solutions in green energy refurbishment of public buildings, need enhanced capacities to participate in green e-tenders.

- Cities need to allow new smart and green services over the existing city infrastructure. This is critical for both ensuring the proper maintenance and updating of existing infrastructure as well as enhancing the city as innovation ecosystem breaking the silos between application domains and providing opportunities for new service development based on the analysis of acquired big data representing a new asset and on new service providers.
- Vendor lock-in for cities (i.e. public authorities becoming dependent on a particular vendor of a product or service, only able to change the vendor at significant costs) and city lock-in for vendors (i.e. the vendor becoming dependent on a particular city for the provision of its product or service, unable to provide the same service to another city).
- A lack of awareness among public authorities and SMEs regarding the opportunities for smart mobility solutions.
- Mobility data is lacking at the city level, due to data gaps, a reluctance towards data sharing and the high costs for data aggregation and management; different approaches need to be explored to enable data sharing and to cut down cost for cities.

11. According to the study, and as shown on the map, "Germany, the U.K. and France respectively topped the ranking — with robust recycling systems and high levels of innovation in circular economy sectors. Bigger countries also tend to have higher circular economy scores, due in part to the fact that they have larger economies with more private investment and patents."

12. Politico (2018). Ranking how EU countries do with the circular economy

Solutions provided by the Interreg MED Green Growth Community Projects

To address the challenges and opportunities, the Interreg MED Green Growth community projects provide several concrete solutions that promote the procurement and provision of green and smart products and services:

Tools, Technologies and Services

Green Public Procurement Platform

The GRASPINNO project develops an electronic platform that integrates and standardises three existing tools for green public procurement management: i) A database architecture that helps public authorities set green energy requirements for their procurements, and also allows SMEs to propose solutions to meet those requirements, ii) an electronic Green Public Procurement (eGPP) Support Tool that offers public authorities an easy way to collect green specifications that can be used during the tender preparation, and iii) a Life Cycle Cost (LCC) Calculating Tool. Calculating the LCC of products and services gives them a specific economic value within the circular economy in the public sector. The platform supports public authorities in planning and managing the GPP process, and in publishing and awarding calls for tenders according to the rules of each country. SMEs can search for tenders and insert their green products and services into the eGPP platform. The platform is tested through various pilots, and the project develops a road map for promoting the large-scale utilization of the platform. The project is focused on buildings, though its tools are applicable to all products and services.

Open data and API (Application Programming Interface) solutions for smart cities

The ESMARTCITY project promotes the idea of open data and infrastructures as a way to help cities address challenges to the maintenance and upgrading of their infrastructures, while also allowing them to offer citizens more advanced and innovative services, enabling

deployment of innovative solutions across different application domains. Breaking the silos between application domains represents a significant opportunity, as deployed infrastructures can be useful for multiple city services. Open data is an asset for cities and could provide a way for them to cut down costs. Open data also has the potential to significantly enhance entrepreneurship and innovation ecosystems within cities, enabling new SMEs to experiment and co-create.

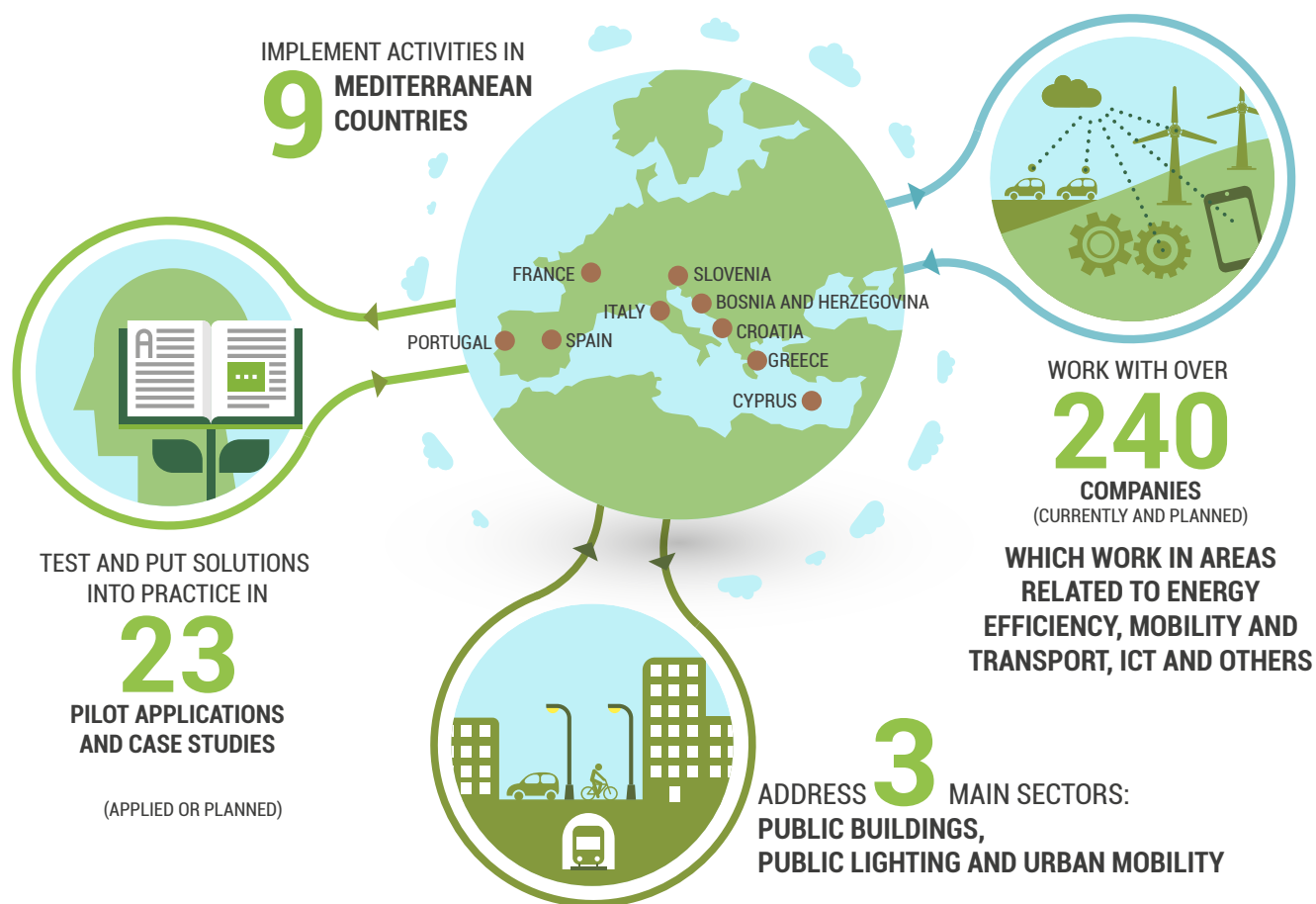
The ESMARTCITY project deals with the thematic areas of energy efficiency in public buildings and public street lighting performance, applied through pilot testing. The pilot testing utilizes some common preparatory activities, including the development of feasibility studies, testing and evaluation methodologies, and an operational framework for the pilot deployment. The general idea behind the testing is the deployment of the necessary infrastructure that can enable smarter solutions and services for cities and their citizens.

“Green and smart mobility” industry clustering and support services

The GREEN MIND project introduces a brand-new concept, considering “green and smart mobility” as an industry which has a high growth potential and can be a driver of economic development in the Mediterranean area in general, as well as of the transition to a more circular economy in particular. In this sense, the project promotes the green and smart mobility industry as an answer to the increasing need to reduce environmental impacts from transport in the Mediterranean region. The project adopts a cross-sectoral approach in SMEs innovation/clustering and tests and delivers transnational services to SMEs, including market intelligence, public funding screening and B2B matching. The Market Intelligence pilot aims to help SMEs understand the needs of the green and smart mobility market, assess their current position within it, and re-position themselves by exploiting its needs and new openings. The Public Funding Screening pilot provides targeted information about accessible funding sources at the EU, national and local levels, and aims to guide SMEs in the process of applying and accessing these funds. Finally, the B2B Matching pilot aims to develop a structure which allows SMEs to match their needs and diffuse their offerings at the regional and transnational levels.



TOGETHER, THE FEATURED PROJECTS



Pilots, Results and Key Success Factors

A common approach of the projects of the Interreg MED Green Growth Community is to apply, test and validate solutions in sectors and regions, and thus provide evidence for what works in terms of promoting green and smart public services and green growth in the Mediterranean region, in a manner that is highly context-specific and also regionally scalable and replicable.

Together, the featured projects:

- Implement activities in 9 Mediterranean countries: Bosnia and Herzegovina, Croatia, Cyprus, Greece, France Italy, Portugal, Slovenia, Spain.
- Test and implement solutions in 23 pilot applications and case studies.
- Address 3 main sectors: Public Buildings, Public Lighting, Urban Mobility.
- Work with 246 companies (currently and planned) in areas related to energy efficiency, mobility and transport, ICT and others.

Ensuring lower Life Cycle Costs in Public Procurements

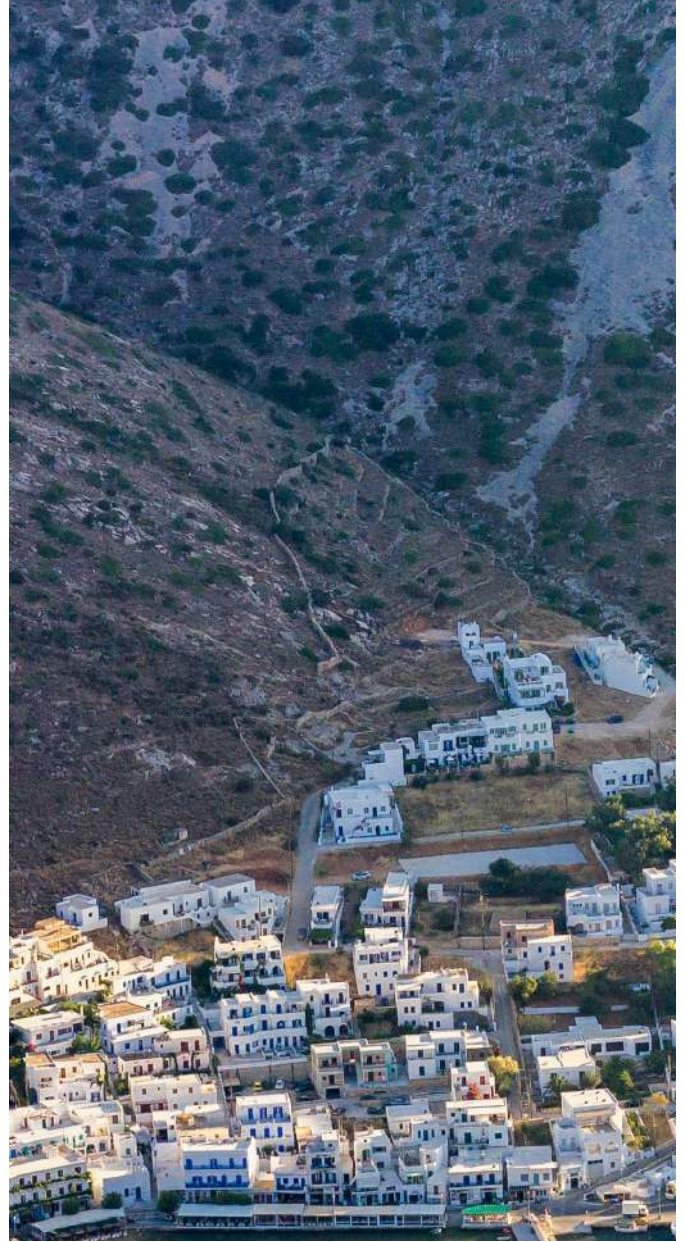
GRASPINNO project has carried out a series of tests on energy refurbishment tenders of public buildings from Greece, Italy, Cyprus, Spain and Bosnia and Herzegovina. The chosen solutions are shown per typology of intervention. Of the 13 pilot applications, 8 have been concluded so far.

As public procurement does not always result in the purchase of goods and services with a lower life cycle cost (LCC), a specific tool of the GRASPINNO project was developed to compare the value of LCC after the identification of GPP criteria (in which the principles of the circular economy should be included) and the conclusion of tender selection procedures with the value calculated before the intervention on the building. In some cases, the value of the LCC calculated after the intervention was higher than that before the refurbishment, a clear indication of a worse economic sustainability of the choice carried out. A second version of the tool, tested on some pilots, has been able to eliminate any risk of implementing a public tender with a higher LCC than before the energy refurbishment. To make it possible, the new tool is able to estimate the LCC value before the tender publication by supporting PAs in a correct tender preparation.

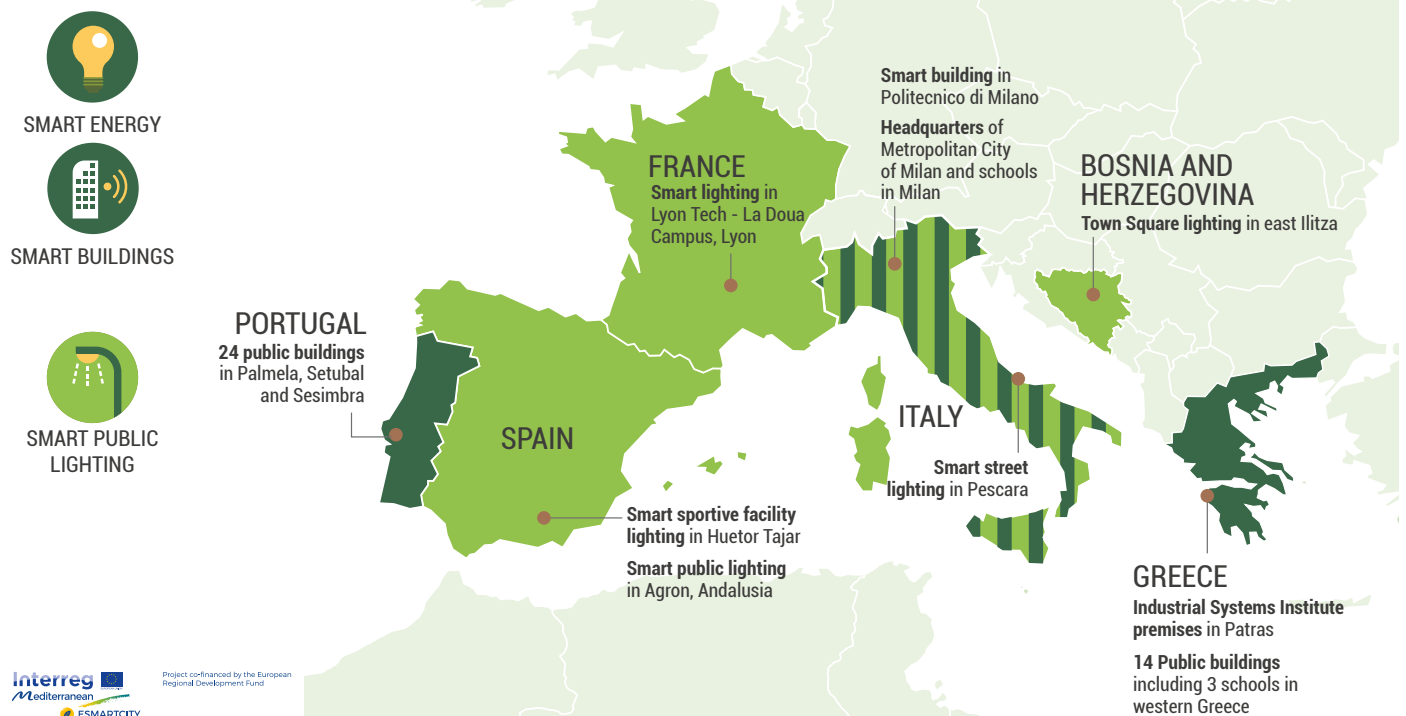
Esmartcity Pilot Testing

The pilot testing of the ESMARTCITY project comprises a number of different sites in 6 partner countries: Living Lab at the Industrial Systems Institute premises in Patras, Greece; Living Lab at the premises of Politecnico di Milano; energy efficiency in public buildings at the Region of Western Greece in Achaia, Aetoloacarnania and Ileia; energy efficiency in schools and the headquarters of the Metropolitan City of Milan; energy efficiency of 24 public buildings in Palmela, Setubal and Sesimbra, Portugal; public lighting at Veljine square in East Ilidza, Bosnia and Herzegovina; public lighting in sportive facility of Huetor Tajar and city of Agron, Andalusia, Spain; smart lighting at La Doua Campus, Lyon, France and public lighting in Pescara, Abruzzo, Italy. In order to ensure conformity and coordination between the pilot sites, there are different preparatory activities.

The preparatory activities are followed by the pilot testing comprising of: (i) pilot deployment following a common approach detailed in the preparatory phase, and (ii) pilot capacity building offered towards SMEs and networked communities to enable experimentation and co-creation over the deployed pilots. During the assessment phase, a benchmarking of the pilot sites before and after the intervention, as well as lessons learned, will be documented, leading to a Green Paper for Innovation Policy Change, detailing the project proposals for policy improvements so that sustainability of project results is ascertained.



E-SMARTCITY PROJECT FOCUSES ON



Enhancing City Logistics in Ferrara, Italy

The GREEN MIND project develops a market analysis of city logistics in the Italian city of Ferrara. The pilot aims to support the city in improving urban freight distribution, particularly in the city centre. This requires identifying and analysing the main issues in urban freight distribution and understanding the needs of logistics operators and commercial enterprises/shops. The actions include data collection and analysis and will enable the assessment of key actions of the city's Sustainable Urban Mobility Plan (SUMP), such as consolidation areas, delivery points and cargo bikes. The study deals with several issues related to the im-

provement of urban freight distribution in historical and UNESCO listed sites in city centres:

- Identifying and analysing the main issues in urban freight distribution in the city centre.
 - Understanding the needs of logistics operators and commercial enterprises / shops.
 - Analysing three solutions planned by Ferrara SUMP
- The study also includes a SWOT analysis and a tentative business plan to support the decision-making process and the outline of future strategies by predicting incentives and pricing policies for restricted traffic zones.



Key success factors for the Interreg MED Green Growth Community's projects are a focus on user needs, the activation of clusters, a high level of interest and engagement from stakeholders, and the close collaboration among many different partners in the implementation of the projects.

In a context of scarce public financial resources, particularly in many rural municipalities in the Mediterranean region, the presence of high margins for savings through green and smart public services and reduced life cycle costs, as well as the expected positive effects on the local economy, have resulted in high interest from public authorities. This proves that the transition towards a circular economy makes sense from both an ecological and economic perspective.



Circular Economy Monitoring Indicators

The European Commission's Monitoring Framework for the Circular Economy Action Plan, adopted in 2018, aims at assessing progress towards a circular economy in the EU and its Member States. A specific indicator on Green Public Procurement to monitor the share of major public procurements in the EU that include environmental requirements is under development. No data is available so far on the uptake of green public procurement by public authorities in Europe.

Under the Agenda 2030, Sustainable Development Goal (SDG) 12, to "Ensure sustainable consumption and production patterns," includes a specific target on public procurement, to "Promote public procurement practices that are sustainable, in accordance with national policies and priorities" with the indicator Number of countries implementing sustainable public procurement policies and action plans.

Building on the work of the Interreg MED Green Growth Community projects, the following indicators are proposed for monitoring the transition towards a circular Economy with specific focus on green and smart public services in the Mediterranean region. These can be applied at local, national and regional levels:

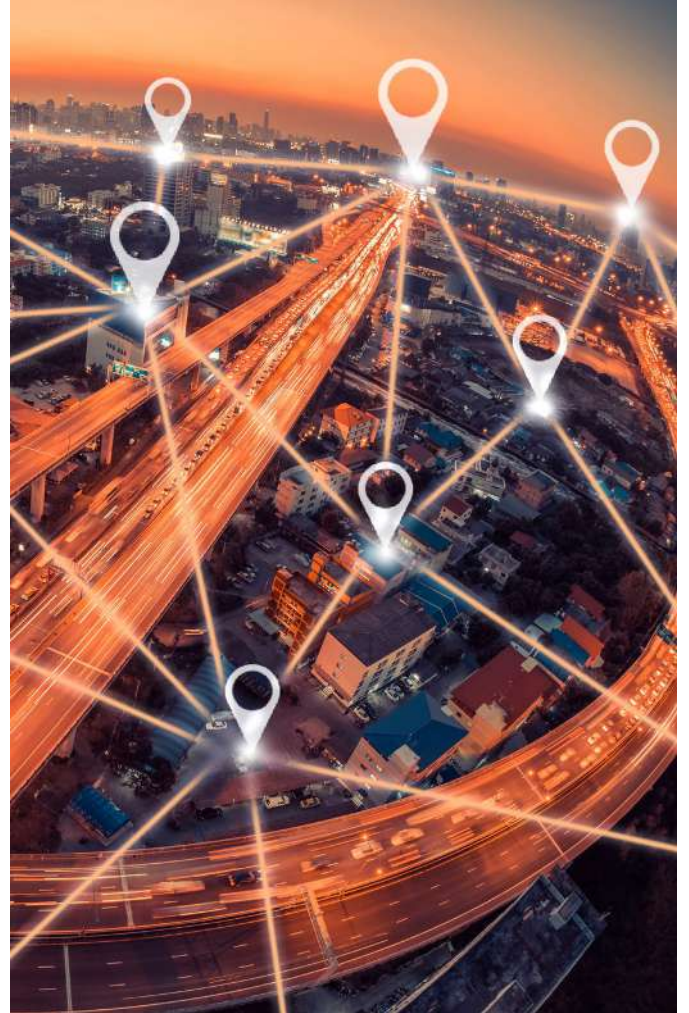
- Share of public tenders using GPP criteria (the presence of GPP criteria implies circular economy requirements)
- Life Cycle Cost of products and services procured by public authorities (a lower LCC implies a lower disposal cost; this cost is null when waste is absent)
- Number of transnational innovation clusters receiving support on green and circular economy issues
- Number of operational instruments in place to support innovation in SMEs on green and circular economy
- Number of enterprises receiving non-financial support on green and circular economy issues
- Energy consumption in public lighting and public building facilities
- Number of open data platforms in place, and number of SMEs involved

Call to Action

With several projects, the Interreg MED Green Growth community makes an active contribution to the implementation of the EU Circular Economy Action Plan, as well as to the Agenda 2030, particularly to the Sustainable Development Goal (SDG) 12 (Ensure sustainable consumption and production patterns) and SDG 13 (Take urgent action to combat climate change and its impacts).

Collectively, the Interreg MED Green Growth community contributes to the procurement and provision of green and smart public services in Mediterranean municipalities, both large and small. The community addresses both the “pull” and the “push factors” on the market of green and smart public services, by working with public authorities to integrate circular economy considerations into their procurement processes, and with SMEs to enable them to innovate and provide those green and smart products and services that help transition towards more circular towns and cities in the Mediterranean region. The results of the projects lead to win-win situations in which both the public authorities and SMEs benefit, while also making a contribution to the circular economy transition.

- A lower life cycle cost of products and services results in benefits for the public administrations in terms of economic savings and in a higher environmental compatibility, and for the SMEs in terms of improving their innovation capacity and competitiveness by offering the best solutions at a fair price.
- Open data solutions prevent vendor lock-in for cities by reducing the barriers to market entry for service providers, and also prevent city lock-in for SMEs by enabling replicability of solutions in other cities.
- Innovation clusters provide benefits to the participating SMEs by enhancing innovation capacity and competitiveness, and to public authorities by offering new and innovative solutions for city transport that comply with criteria of circularity and sustainability.



In order to reach the full potential of the presented solutions throughout the Mediterranean region, the Interreg MED Green Growth community calls for action in the following aspects:

The European Commission and EU Member States

- To promote the translation and adaptation of existing and emerging tools for the different regional contexts within the Mediterranean
- To promote a systematic use of LCC assessment in GPP as a relevant contribution to the EU's Circular Economy Action Plan
- To support research-industry collaborations to spark innovations that can lead to solutions that match GPP criteria
- To promote open data and APIs with reference to the Smart City paradigm in the context of public procurement, so that Smart City related deployments are increasingly vendor independent, more open and enabling new services on top of them.

Regional and local authorities in the Mediterranean

- Considering the role of the public sector as a catalyst for change, the increased uptake of GPP by authorities at all levels is fundamental for the circular economy transition
- Using LCC as an evaluation tool in order to have a clear and concrete approach to the sustainable development (it also includes a precise evaluation in terms of circular economy through the product lifespan and disposal costs/resale value)

SMEs

- To invest in innovation for green and smart services and products and make use of support services targeted at companies and clusters on green and circular economy issues
- To participate in green public procurement processes to support public authorities in their efforts towards a green and circular economy at local and regional levels



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Further resources:

- Unified Platform:

<http://graspinno.eu/index.php/unified-platform>

- Guidelines for the Public-Private partnership to achieve Energy Efficiency in Public Buildings (April 2019):

<https://drive.google.com/drive/folders/13R-FghWZ-nD9w5InhJdf1SI8qum0d6F2x>

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About the Interreg MED Green Growth Community and the SYNGGI Project

The Interreg MED Green Growth community is a thematic community of projects in the framework of the Interreg MED programme, which is a transnational European Cooperation Programme for the Mediterranean area. The Interreg MED Green Growth community counts with 15 projects working on different topics related to green growth such as sustainable agro-food systems, eco-innovation, green manufacturing, green public procurement, waste management and smart cities, among others.

The specific objectives of the Interreg MED Green Growth community are:

1. Empowered Green Growth community for Mediterranean and non-Mediterranean stakeholders:

creation of a solid community that acts as a hub to collect project results, disseminate and capitalize them among partners, consortia, stakeholders and countries.

2. Upgrading Green Growth community networks: the community creates bridges and seeks collaboration with networks, institutions and programmes inside and outside the Interreg MED cooperation area to transfer the knowledge and results of the projects and to promote synergies among initiatives in the Mediterranean region.

3. Capitalization Support: capitalization and transfer activities are performed to outreach the project results and potential replication of projects to other countries. Common policy outcomes are produced to contribute to the vivid legal framework that needs constant revision and input.

It is the first time that on such an extended scale, more than 150 partners from the quadruple helix (public authorities, industry, academia and civil society) from 12 countries are exchanging knowledge in the field of green growth in the northern and eastern area of the Mediterranean region. The Interreg MED Green Growth community counts with partners from Albania, Bosnia-Herzegovina, Croatia, Cyprus, France, Greece, Italy, Malta, Montenegro, Portugal, Slovenia and Spain. The total budget of the funded projects under the Interreg MED Green Growth community is approximately 34 million Euros.

SYNGGI – “Synergies for Green Growth Initiative – Energising the Impact of Innovation in the Mediterranean” is the project managing the Interreg MED Green Growth community (2016-2019). The SYNGGI project acts as a dynamic network to unify project results, support MED stakeholders and create a fruitful and collaborative environment for all implicated bodies. The methods that are used within that framework aim to stimulate sharing of project results and findings and enhance the cross-sectoral innovation practices among key Mediterranean stakeholders. The community disseminates the projects’ results and good practices to stakeholders and policy-makers from the Interreg MED cooperation areas and beyond. Moreover, strong emphasis is given on the capitalization process, with the objective to create common policy outcomes to contribute to the vivid legal framework that needs constant revision and input, such as the EU Circular Economy Action Plan and other environmental policies.

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Project co-financed by the European
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*“Technical Information
elaborated by WE&B
with the collaboration of
all modular projects
together with
the coordination of
CT BETA-UVic/UCC”*

