



Public procurement of energy-efficient works, supplies and services

Support provided to projects under the Intelligent Energy Europe II programme and Horizon 2020 Energy Efficiency



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1. INTRODUCTION

This report aims to provide an insight in the results achieved by projects supporting the uptake of public procurement of energy-efficient works, supplies and services, under the Intelligent Energy Europe II programme and the Horizon 2020 programme. This report is of interest to the European Commission's services, the direct beneficiaries of these projects, and stakeholders involved in energy-efficient public procurement such as the public authorities, public procurers, and suppliers, among many others.

Under the Intelligent Energy II programme and the Horizon 2020 programme, the Executive Agency for Small and Medium-sized Enterprises (EASME) and its predecessor the Executive Agency for Competitiveness and Innovation (EACI) have funded thirteen¹ projects supporting the public procurement of energy-efficient works, supplies and services through green public procurement (GPP), sustainable public procurement (SPP), and public procurement of innovation (PPI).

In total, 122 unique organisations participated in the 13 projects. The total eligible costs of the funded projects was 18,990,000 €, whilst the total EU contribution to the projects accounted for 15,889,000 €. Public authorities, research organisations and universities, consultancies and associations represent the largest share of the partners involved in the projects. The low representation of central purchasing bodies is a key challenge for a new generation of public procurement projects that look at procurement in a strategic way and in which public authorities should include criteria related to sustainability, social responsibility, and innovation in their tenders, because central purchasing bodies can act as demand aggregators for innovative solutions. Moreover, small and medium-sized enterprises (SMEs) represent 28% of the project partners, which is acceptable for this type of projects. The use of public procurement as a strategic tool also creates new opportunities for SMEs to be involved in tenders as suppliers of energy efficient, innovative and sustainable works, supplies and services.

The projects presented in this study have been active in 24 EU Member States and in Switzerland, providing support to the development and implementation of 518 tenders. However, the projects were not equally active in all involved countries, and further efforts are required for a better involvement of Central and Eastern European countries and some countries from the Mediterranean basin.

In terms of impacts, and the assessed evidence, the projects managed to achieve 280 GWh/year of primary energy savings and 77,000 t CO₂/year saved. At the same time, the projects provided training and capacity building to 12,117 procurement trainers, procurers, other staff members and decision makers of local, regional, and national authorities. The projects organised 245 trainings for procurers and 23 "train the trainer events". Finally, the projects supported the creation and / or reinforcement of public procurement support structures in 22 EU Member States.

Based upon the results of this study and the feedback received from the stakeholders, the following elements are important challenges for a new generation of projects targeting the public procurement of energy-efficient services, products and works:

- Training and capacity building remain crucial, especially locally organised trainings and capacity building focussing on the promotion of centralized (joint) public procurement approaches. Training and capacity building should also better involve technical staff to stimulate a close cooperation between procurement officers and technical staff during the procurement process. Finally, training and capacity

¹ Four projects funded under the first phase of the Intelligent Energy Europe programme, which ran from 2003 until 2006 are not taken into account, because data gathering and surveying would have been particularly challenging for them.

building should focus more on the development of soft skills and the governance management and restructuring in organisations, to embed approaches such as green public procurement, sustainable public procurement, and public procurement of innovation in the culture of an organisation.

- Although already covered by past procurement projects, the following product categories could benefit from continued support: i) office building design, construction and management, ii) energy-efficient transport, iii) green electricity, iv) road design, construction and maintenance, and v) street lighting and traffic signals. Product categories that were less covered or not covered at all, and that could benefit from support through new projects are i) wastewater infrastructure, ii) food and catering services and iii) textiles.
- Some respondents also suggested the use of more progressive, results oriented, targets per product category linking public procurement towards the UN Sustainable Development Goals. The use of public procurement as a strategic tool has the potential to address this remark.
- Finally, the digital transformation, and the emergence of e-procurement will create new challenges in terms of training and capacity building for those involved in public procurement at all levels.

2. GLOSSARY

For the purpose of this report, it is necessary to define the following essential key terms in relation to their specific context and terminology:

- **Energy Efficiency:** 'energy efficiency' means the ratio of output of performance, service, goods or energy, to input of energy²;
- **Energy Savings:** 'energy savings' means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalisation for external conditions that affect energy consumption³.
- **Green Public Procurement (GPP):** consists of procuring 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 procured⁴;
- **EU GPP Criteria:** green public criteria "developed to facilitate the inclusion of green requirements in public tender documents⁵".
- **Public Procurement of innovative solutions (PPI):** procurement approach where contracting authorities act as a launch customer of innovative goods or services, which are not yet available on a large-scale commercial basis, and may include conformance testing⁶.
- **Renewables:** referred to 'energy from renewable sources', which means energy coming from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases⁷;
- **Strategic public procurement:** refers to the strategic use of public procurement, which should allow central and local governments to respond better to society, environmental consultation and/or qualitative assessments. This strategic use of public procurement requires that public authorities change smoothly their qualification criteria and "move away" from the lowest price as the only award criteria; towards the use of other economically advantageous tenders (MEAT⁸) based on a cost-effectiveness approach, which may include aspects such as social, environmental, innovative, accessibility and/or other qualitative criteria. Public authorities, private sector and/or the relevant stakeholders usually refer to

² Art 2.4. of the Energy Efficiency Directive of the European Parliament and of the Council of 25 October 2012, European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027&from=EN>

³ Art 2.5. of the Energy Efficiency Directive of the European Parliament and of the Council of 25 October 2012, European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012L0027&from=EN>

⁴ Communication (COM (2008) 400): 'Public procurement for a better environment', European Commission: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0400:FIN:EN:PDF>

⁵ EU GPP criteria, European Commission, DG Environment,: https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

⁶ General Annexes of the Horizon 2020 Work Program, European Commission: https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-ga_en.pdf

⁷ Art 2. of the Directive on the promotion of the use of energy from renewable sources 2009/28/EC of the European Parliament and of the Council of 23 April 2009, European Commission: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009L0028>

⁸ MEAT stands for "most economically advantageous tender" and is further explained in Directive 2014/24/EU of the European Parliament and the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02014L0024-20180101&from=EN>

green public procurement, socially responsible public procurement, and public procurement for innovation (PPI), which are the 3 most commonly forms of strategic public procurement.

- **Socially responsible public procurement (SRPP):** refers to the possibility of contracting authorities to take into account different social considerations, such as social inclusion, labour standards, gender equality and ethical trade;
- **Sustainable Public Procurement (SPP):** seeks that public authorities achieve the appropriate sustainable development by delivering the adequate balance between the economic, social and environmental pillars, when procuring goods, services or works during the different phases of the project⁹.

The scope of the current report includes projects that have supported the public procurement of energy-efficient works, supplies and services through green public procurement (GPP), sustainable public procurement (SPP), and public procurement of innovation (PPI). Therefore, when referred to 'public procurement', it refers to these procurement approaches.

⁹ *Green and Sustainable Public Procurement*, European Commission, DG Environment:
https://ec.europa.eu/environment/gpp/versus_en.htm

3. METHODOLOGY

For the purpose of this study, a comprehensive analysis has been prepared on 13 projects, by which 8 projects were funded by the Intelligent Energy Europe II programme (IEE II) and 5 other projects funded under the Horizon 2020 (H2020) programme. The projects supported under the Intelligent Energy Europe II Programme (IEE II) are BuySmart, BuySmart+, Clean Fleets, GPP2020, GreenProca, PrimeEnergyIT, Primes, and Smart SPP. The Horizon 2020 projects included in this report are the following: CEPP12, Eureka, GreenS, SPP Regions, and where possible PremiumLight_Pro¹⁰.

Firstly, the exhaustive analysis focused on the information provided by the projects during their interim and final reporting periods. This allowed us to gather the main relevant information and data provided in order to assess the relevance and effectiveness of the projects, by analysing their main impacts, outcomes and outputs such as tools, guidelines, and training material.

As a second step, an EU Survey was addressed to the project coordinators and beneficiaries¹¹ of 12 of the Intelligent Energy Europe and Horizon 2020 finalised projects¹². After sending out this EU survey, 32 replies were received via the online platform, which represent more than 20% of the total beneficiaries of these projects. This high response rate enabled us to narrow down the conclusions, and at the same time, it is a clear indicator still up today of the good interactions and the mutual understanding between EASME and the stakeholders, considering that most of these projects ended up by 2013.

The EU survey provided important insights into the relevance and effectiveness of the EU support to the 12 projects. It indicated the main project outputs in terms of tools, guidance, and trainings developed by those projects, and the direct and long-term impact of these projects on different stakeholder groups. The survey also allowed us to incorporate recommendations from the stakeholders for potential tenders and future calls for proposals.

Later in the process, a second EU Survey aimed to reach the public authorities and other stakeholders, such as public service providers, mainly to request their feedback in relation to the public procurement of energy-efficient works, supplies and services. Nevertheless, the response rate was not sufficiently high to be able to draw meaningful conclusions for the purpose of the study.

¹⁰ PremiumLight_Pro started on 01/04/2016 and finished on 31/07/2019. As such, it was not possible to draw conclusions on the outputs and outcomes of the project, because the desk research related to this report was finalised before the project ended.

¹¹ Beneficiaries are all the other project consortium partners, except the coordinator.

¹² PremiumLight_Pro started on 01/04/2016 and finished on 31/07/2019. As such, it was not possible to draw conclusions on the outputs and outcomes of the project, because the desk research related to this report was finalised before the project ended.

4. POLICY CONTEXT

Public procurement of works, supplies and services accounts for about 14% of the EU's GDP with an annual value of about € 2 trillion¹³. As such, the public sector constitutes an important driver to stimulate a market transformation towards more sustainable energy-related works, supplies and services¹⁴. At the same time, about 55% of public procurement procedures still use the lowest price as the only award criteria. The market transformation towards more sustainable energy-related works, supplies and services is key to achieve the targets that the EU has set itself in terms of energy-efficiency, renewables and greenhouse gas reductions for 2020 and 2030¹⁵. On the longer-term, this market transformation also contributes to the realisation of a prosperous, modern, competitive and climate-neutral European economy by 2050¹⁶.

The Energy Efficiency Directive¹⁷ requires Member States to ensure that central governments purchase only products, services and buildings with a high energy-efficiency performance. At the same time, Member States shall encourage public bodies at regional and local level to follow the example of their central governments. Nevertheless, there are, several operational barriers related to sustainable energy public spending due to the lack of knowledge, practical training and tailored guidelines, as well as the lack of willingness to change procurement habits and / or perceived legal uncertainties from the side of the involved parties.

Since 2003, the European Commission has supported public procurement of energy-efficient works, supplies and services through overall 17 projects¹⁸, first as part of the past Intelligent Energy Europe Programme (IEE Programme), and then as part of currently ongoing Horizon 2020 Programme (H2020).

Procurement projects funded under the above-mentioned programmes mainly have focused on support and capacity building to help public procurers at national, regional and local level to adopt energy-efficient public procurement criteria and practices when purchasing works, supplies and services. The main goal of these projects was to enable a structural transition towards energy efficient public procurement, beyond the project lifetime and beyond the actual purchase of works, supplies and services within their lifetime as main outcome of the project. For that aim, the projects have placed many efforts on the involvement of authorities responsible for public procurement (e.g. national procurement agencies, central purchasing organisations, ministries) and on the development of high-leverage schemes (e.g. training for trainers, helpdesks, example of national contracts) resulting in the training and concrete support of public procurers, and ultimately in proving that energy savings are possible.

¹³ *Public Procurement*, European Commission: https://ec.europa.eu/growth/single-market/public-procurement_en

¹⁴ Communication from the Commission to the Institutions: Making Public Procurement work in and for Europe: COM(2017)572 final (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0572&from=EN>)

¹⁵ European Commission, DG Energy, Energy efficiency: <https://ec.europa.eu/energy/en/topics/energy-efficiency>

¹⁶ *2050 long-term strategy*, European Commission: https://ec.europa.eu/clima/policies/strategies/2050_en

¹⁷ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

¹⁸ This includes four projects funded under the first phase of the Intelligent Energy Europe programme, which ran from 2003 until 2006. The current study does not take into account these early projects, because data gathering and surveying would have been particularly challenging for them.

The Intelligent Energy Europe Programme was a pillar of the Competitiveness and Innovation Framework Programme (CIP). The European Commission launched the Intelligent Energy Europe Programme in 2003 and it ran until 2013, divided in two phases. The Intelligent Energy Europe Programme at that time was open to all EU Member States, as well as Norway, Iceland, Liechtenstein, Croatia and the Republic of North Macedonia. The Intelligent Energy Europe Programme supported projects aiming to overcome non-technical barriers in energy-efficient buildings, industry, consumer products and transport, and renewable energy helping EU energy-efficiency and renewable energy policies, to achieve the EU 2020 targets. At that time, the former Executive Agency for Competitiveness and Innovation (EACI) was responsible for managing the largest share of the annual call for proposals that made available funding for projects under the IEE Programme. During the first phase of the IEE Programme, the European Commission funded four projects for the public procurement of energy-efficient works, supplies and services. The first of these projects started in 2004 and the last one ended up in 2010¹⁹; hence, the scope of this report has been restricted to the eight Intelligent Energy Europe II programme projects and the five Horizon 2020 projects, mentioned earlier in this report. An overview of the projects in the scope of this report is available in Annex I.

The budget of the Intelligent Energy Europe II programme was approximately € 730 million and focused on 4 funding areas²⁰:

- **Energy efficiency and the rational use of energy (SAVE):** The SAVE funding targeted the improvement of energy efficiency and the rational use of resources in the industry, products and building sectors.
- **New and renewable resources (ALTENER):** The ALTENER funding aimed to increase the share of renewables in the production of electricity, heating and cooling, and to integrate them in the local energy systems.
- **Energy in transport (STEER):** The STEER strand of initiatives targeted energy savings and energy efficiency in the transport sector, including stimulation of demand for alternative fuels and clean and energy-efficient vehicles.
- **Integrated initiatives:** These initiatives covered several economic sectors or several of the SAVE, ALTENER and STEER areas at the in one project. In addition, it covered projects for children education, energy savings and consumers, among others.

Public procurement projects were mainly funded under SAVE and STEER, with one project funded under ALTENER during the first phase of the Intelligent Energy Europe Programme.

Through the public procurement of works, supplies and services, the Intelligent Energy Europe Programme carried out a number of studies and launched several online portals, which included BUILD UP, Clean Vehicle Europe, Eltis, ManagEnergy, BUILD UP Skills, "Covenant of Mayors for Climate & Energy", U4Energy. For several of them, new service contracts guaranteed their further development, keeping them still active up today.

Within the current Horizon 2020 programme, the Executive Agency for Small and Medium sized Enterprises (EASME) manages on behalf of the European Commission several EU programmes in diverse fields such as SME support & innovation, environment, climate, energy and maritime affairs. Horizon 2020 is the most ambitious EU Research and

¹⁹ These very early projects were the following:

- DEEP (EIE-04-067) focusing on the procurement of energy-efficient materials and products by public bodies in the building sector;
- GreenLabelsPurchase (EIE-05-038) focusing on the use of energy labels in public procurement;
- PROCURA (EIE-05-102) focusing on green fleet procurement models and
- PRO-EE (EIE-07-207) focusing on the public procurement of office equipment, electric street equipment and fuel efficient vehicles.

²⁰ European Commission, EASME, Intelligent Energy Europe:
<https://ec.europa.eu/easme/en/section/energy/intelligent-energy-europe>

Innovation programme ever, running from 2014 to 2020. Funding under the Horizon 2020 programme materialised through the multi-annual work programmes focused on Societal Challenges, which are the seven following:²¹:

- Health, demographic change and well-being;
- Food security, sustainable agriculture and forestry, marine and maritime and water research, and the Bio economy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world - inclusive, innovative and reflective societies;
- Secure societies - protecting freedom and security of Europe and its citizens.

The Societal Challenge on Secure, Clean and Efficient Energy, the so-called Energy challenge supports the transition to a reliable, sustainable and competitive energy system. The Energy challenge has a budget of €5,931 million allocated to it for the period 2014 – 2020 and is structured around a number of specific objectives and research areas, which are²²:

- Reducing energy consumption and carbon footprint
- Low-cost, low-carbon electricity supply
- Alternative fuels and mobile energy sources
- A single, smart European electricity grid
- New knowledge and technologies
- Robust decision making and public engagement
- Market uptake of energy and ICT innovation.

The five H2020 projects in this report have been funded under the different calls for proposals on energy efficiency that were launched under the multi-annual work programme 2014 - 2015 on Secure, clean and efficient energy²³. Through these calls for proposals on energy efficiency, the European Commission supports research, demonstration and market uptake of energy-efficient technologies and solutions for buildings, consumers, public authorities, heating and cooling, industry, products and services and financing of sustainable energy. The projects funded under these calls for proposals contribute to the achievement of the energy-efficiency targets for 2020 and 2030 and the strategy for a climate-neutral Europe by 2050. The H2020 Energy Unit of EASME manages these calls for proposals²⁴.

²¹ *Societal challenges*, European Commission: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/societal-challenges>

²² *Secure, Clean and Efficient Energy*, European Commission: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/secure-clean-and-efficient-energy>

²³ *Horizon 2020 work programme 2014 – 2015: Secure, clean and efficient energy*, European Commission, viewed 24 January 2020:

https://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-energy_en.pdf

²⁴ *EASME - Executive Agency for SMEs*, European Commission: <https://ec.europa.eu/easme/en>

5. DISTRIBUTION AND OUTREACH OF THE SUPPORT TOWARDS THE PUBLIC PROCUREMENT OF ENERGY EFFICIENT WORKS, SUPPLIES AND SERVICES

This chapter presents the results of the desk analysis on the distribution and outreach of the EU funded projects through the Intelligent Energy Europe II programme, and the Horizon 2020 programme for the public procurement of energy-efficient works, supplies and services over the EU Member States and third countries involved²⁵.

In total, 122 unique organisations participated in the 13 projects.

The total eligible costs of the funded projects reached the amount of 18,990,000 €, whilst the total EU contribution to the projects accounted for 15,889,000 €²⁶.

The figure below shows the **distribution of the projects in terms of their total eligible costs**. One project had a total eligible cost below 1,000,000 €, while eight projects were situated in the range between 1,000,000 € and 1,500,000 € and four projects had a total eligible cost between 1,500,000 € and 2,000,000 €.

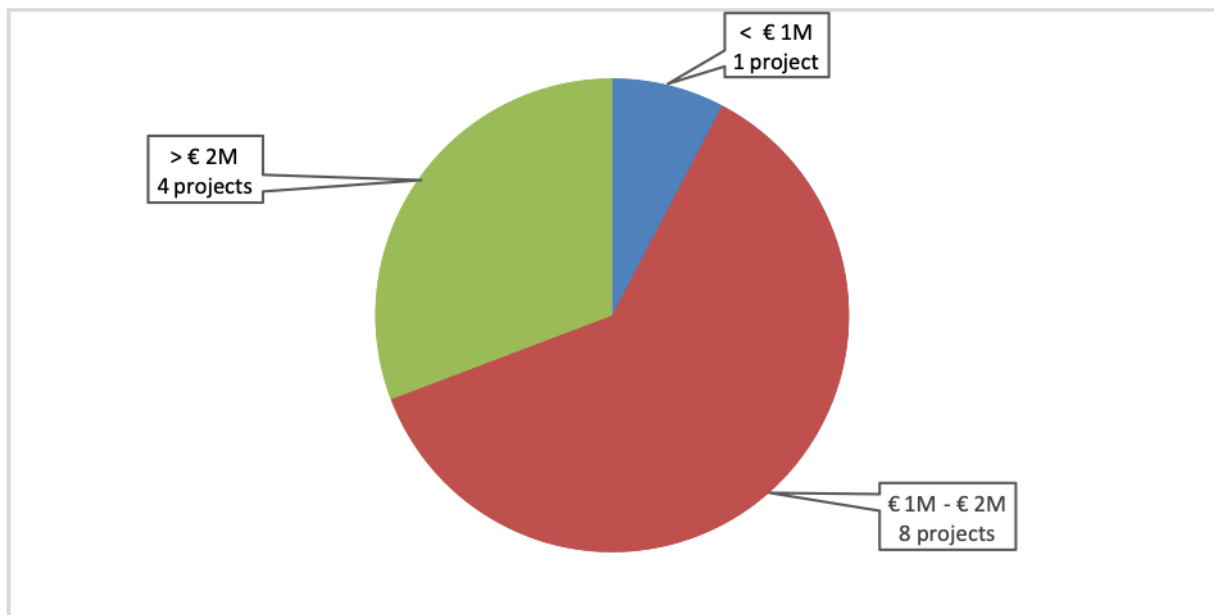


Figure 1: Distribution of project in terms of their total eligible costs

²⁵ Part of the desk analysis discussed in this chapter takes into account 13 projects, including the PremiumLight_Pro project, which started on 01/04/2016 and finished on 31/07/2019.

²⁶ The rate of the EU contribution to the projects has not been always the same. While the former IEE projects received an EU contribution of maximum 75% of the total eligible costs of the project, the H2020 projects received an EU contribution covering 100% of the total eligible costs of the project.

5.1. The organisations involved in the projects

Most projects in both funding programmes focused on knowledge sharing and capacity building on best practices in public procurement for public authorities, mainly at local and regional level. In addition, the projects involved public and private sector participants such as consultancies, energy agencies and educational institutions participating as facilitators and specialist partners. The figure below indicates **the share of the different types of organisations funded**. Out of 122 unique organisations involved in the projects, 38% are public authorities. Public authorities consisted of national, regional and local authorities, energy agencies and environment agencies. The consultancies mainly provided specialist knowledge, or acted as project coordinator. The project coordination for these multi-beneficiary projects involving partners from across the EU Member States and third countries was quite a challenging and complex task, and thus several projects decided to outsource these activities to consultancies specialised in the management of energy projects.

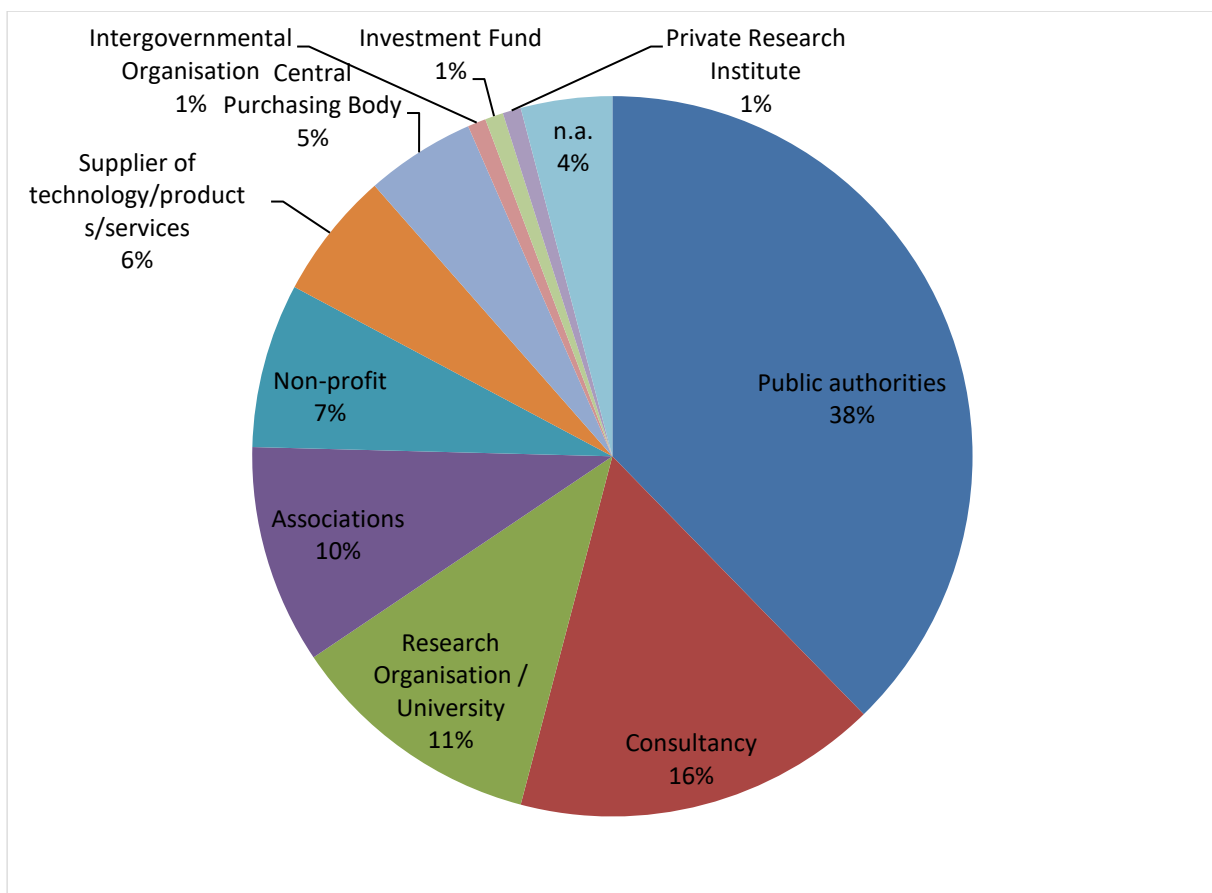


Figure 2: The organisations involved in the projects

The figure below provides a breakdown of the public authorities involved in the projects. Fully in line with the projects objectives to support to local and regional authorities on the public procurement of energy-efficient works, supplies and services, they account for 39% and 13% of the public authorities respectively. Energy agencies play an important role as facilitator and specialist partner in terms of providing information, networking, training and capacity building services to the local and regional authorities in their country; as such, energy agencies also represent 39% of the involved public authorities. National authorities and environment agencies were less involved in the projects.

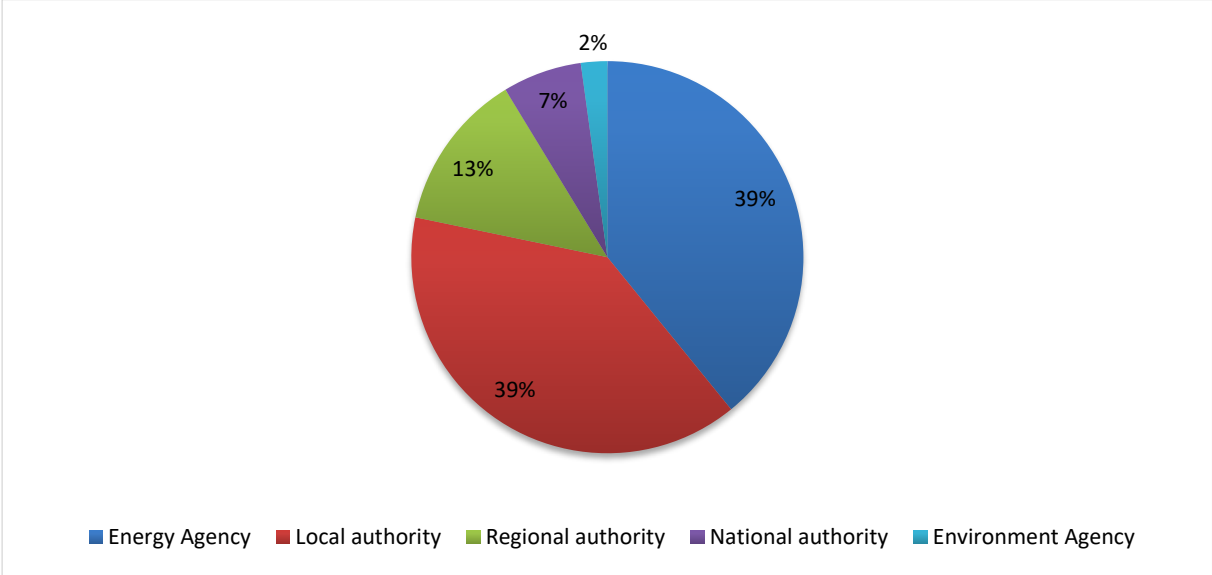


Figure 3: Distribution of 46 public authorities over different categories.

The figure below, provides the same breakdown, but in absolute figures. In absolute terms, 46 different public authorities, 20 different consultancy organisations, 14 different research organisations and universities were involved in the EU funded projects, while 10 associations and 6 different central purchasing bodies also participated in the projects.

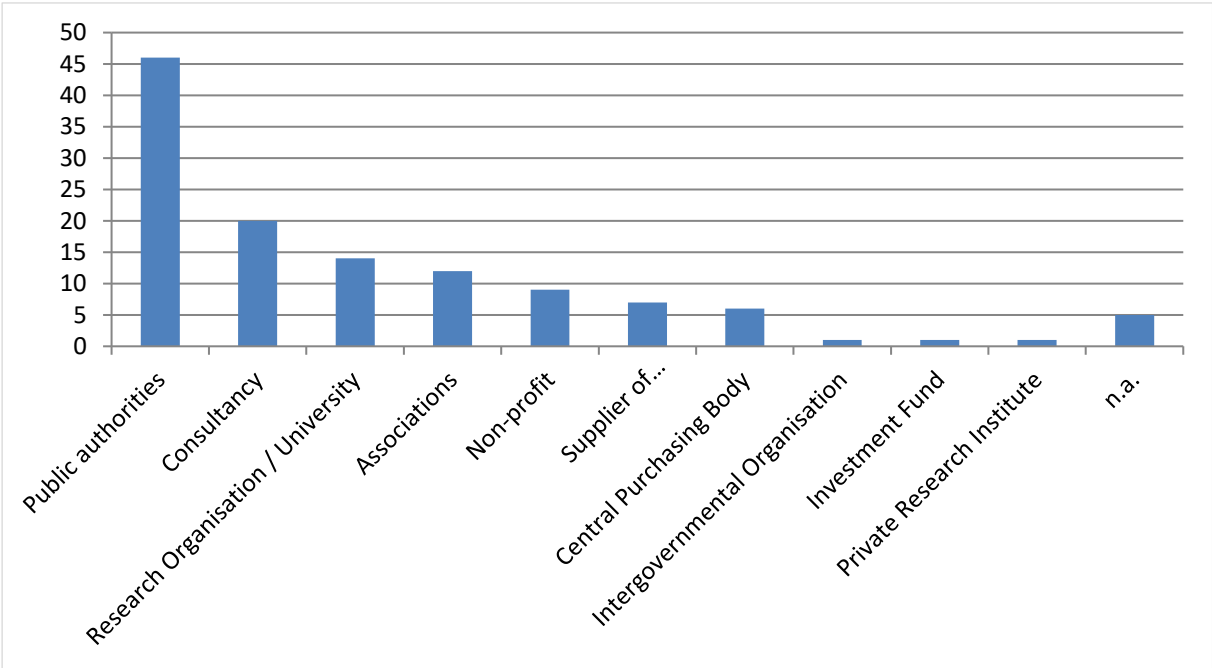


Figure 4: Unique organisations involved in the projects in absolute numbers. Public authorities include national, regional and local authorities, energy agencies and environment agencies.

5.2. The geographical distribution of the beneficiaries

The graphic underneath shows the number of beneficiaries per Member State involved in the public procurement projects that are part of this report. Out of 28 EU Member States, 23 were involved with at least one beneficiary. The distribution of beneficiaries per Member State shows the need for additional efforts to attract project partners from Central and Eastern Europe, but also partners from some Mediterranean countries. No third countries were involved in the projects; a possible explanation is that the EU public procurement legislation and other relevant EU legislation forms the legal basis of the projects.

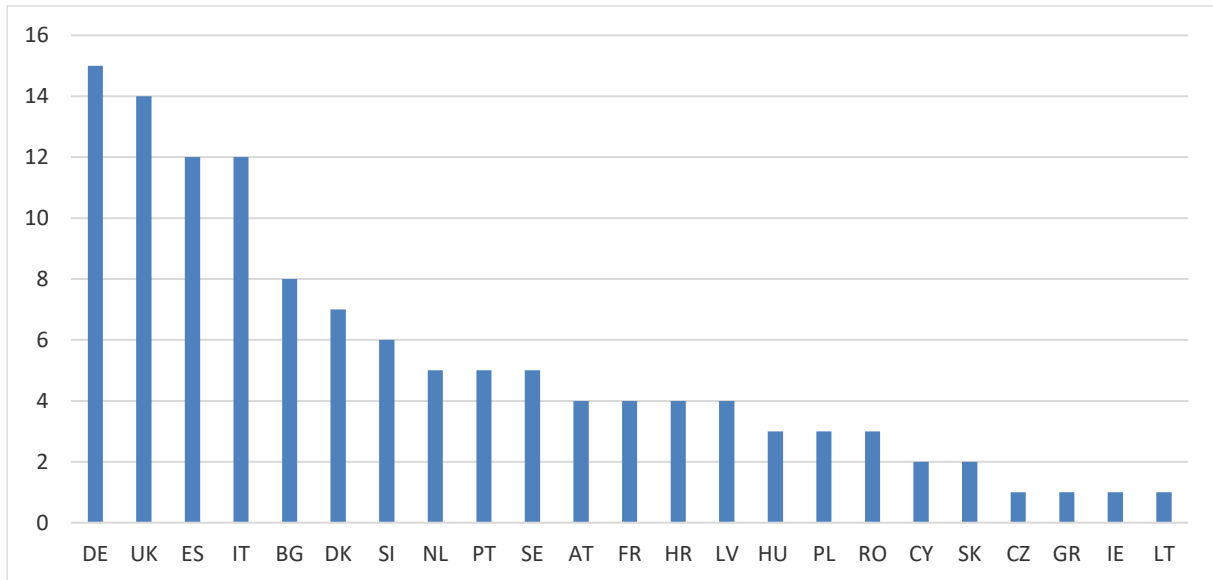


Figure 5: Number of unique beneficiaries per Member State involved in the projects

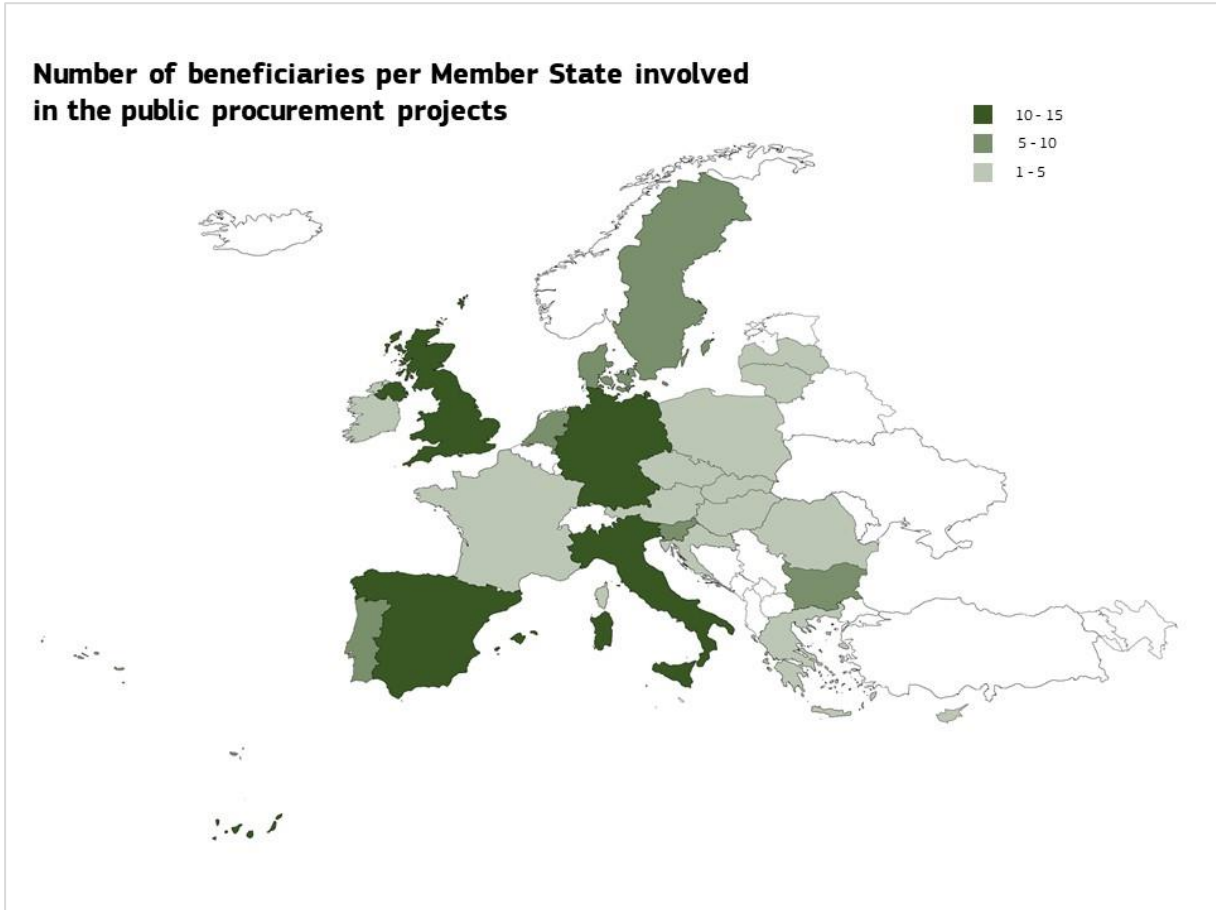


Figure 6: Geographical distribution of the number of beneficiaries per country.

5.3. SME involvement in the projects

From the total number of beneficiaries (122) that received the EU funding, 34 were Small and Medium-sized Enterprises (28%). Given the nature of the projects, mainly focusing on public procurement of energy-efficient works, supplies and services by local and regional authorities, this is a successful participation rate for SMEs. Most SME's were involved as project partners providing expert advice, rather than as actual providers of energy efficient works, supplies and services.

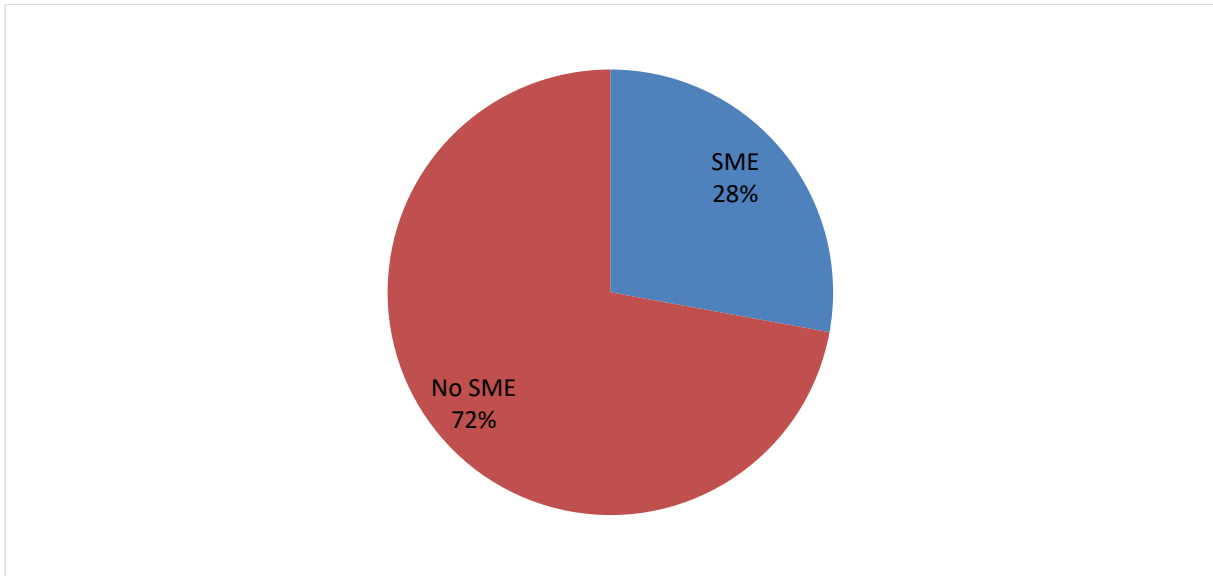


Figure 7: Out of 122 unique project partner, 28 % were SME's.

The 34 SMEs participating in the projects originate from 19 different EU Member States. The largest number of SMEs per country involved in the projects originate from Germany, with five SMEs and Austria and Slovenia, with each three SMEs.

supported through the projects. From the Mediterranean Basin Spain (27), Portugal (13), are forerunners, while the need for further support the public procurement of energy-efficient works, supplies and services to Cyprus (7) and Greece (6) through future funding programmes is worth investigating. The projects supported between one and six tenders in Romania, Slovakia, Lithuania, Poland, Finland, and Ireland. These figures show that also for these countries, there could be a need for additional efforts towards the public procurement of energy-efficient works, supplies and services. None of the projects had activities supporting tenders in the following EU Member States: Belgium, Estonia, Luxemburg, and Malta. Switzerland was the only non-EU country where the projects provided support to a tender.

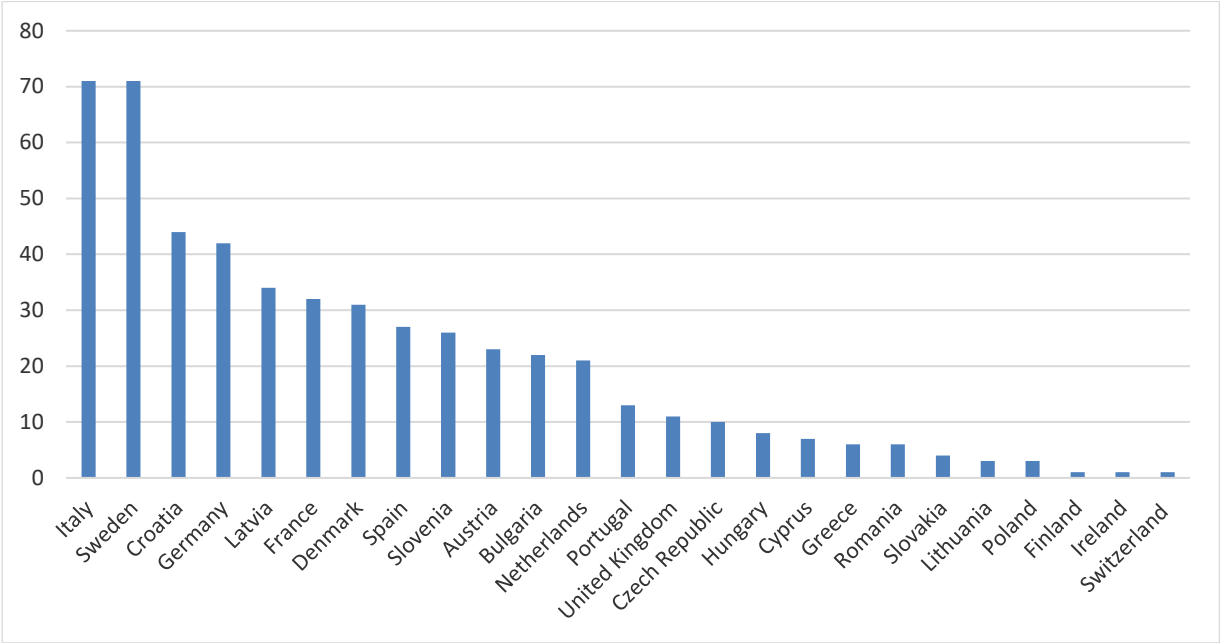


Figure 9: Number of tenders supported per country by the projects.

When looking at the geographical distribution of the fifteen cities most involved in the projects in terms of supported tenders, a more diverse picture is visible than when

looking at the level of beneficiaries or countries. The five cities that were most actively involved in the projects in terms of supported tenders are Koprivnica in Croatia (17), Ljubljana the capital of Slovenia (17), Barcelona in Spain (15), Berlin the capital of Germany (11) and Riga the capital of Latvia (11). The fifteen cities most involved, include 8 capital cities, and 8 of the cities have more than 500,000 inhabitants. Älmhult has the smallest number of inhabitants with almost 9000, whilst Rome has the largest number of inhabitants with almost 4.4 million.

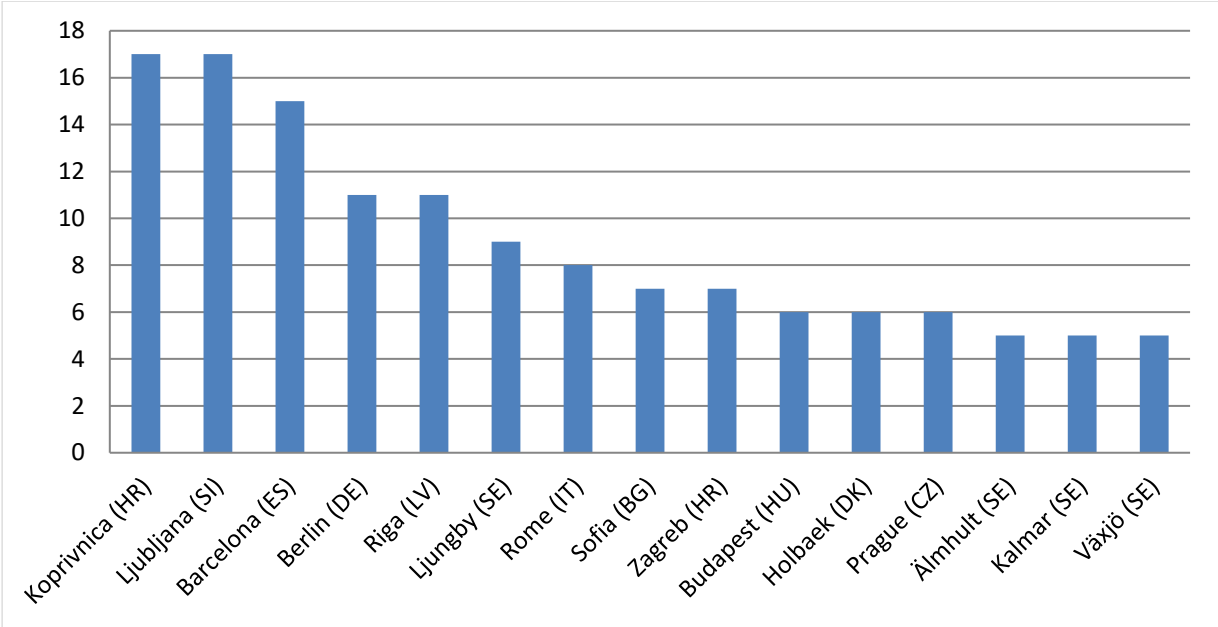


Figure 100: Tenders supported per city, top 15.

6.2. The number of tenders supported per country and the total general government expenditures on works, goods, and services

A comparison of the number of tenders supported per country with the total general government expenditures on works, goods, and services (excluding utilities) as percentage of GDP in 2015²⁸ provides no indication of any correlation. This exercise only takes into account the EU Member States where our projects supported tenders. As a result, the figure does not include information on Belgium, Estonia, Luxemburg, Malta and Switzerland.

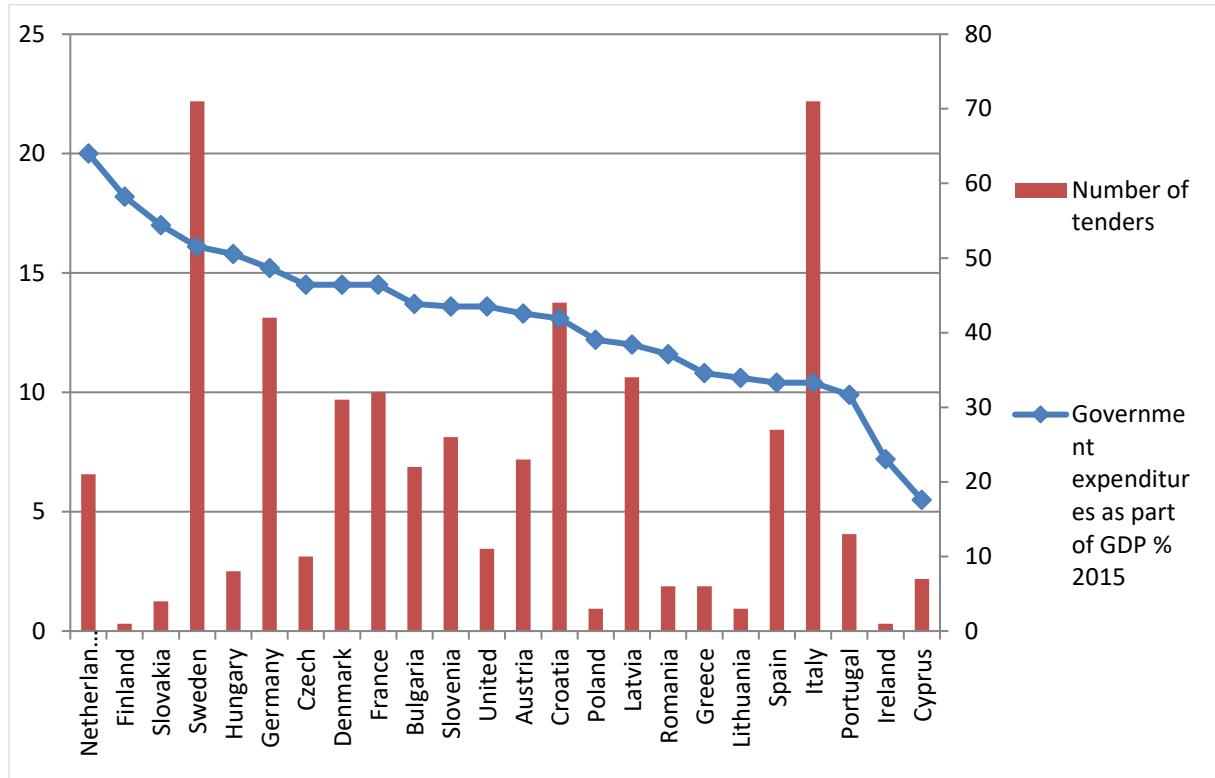


Figure 111: Total general government expenditures on works, goods, and services (excluding utilities) as percentage of GDP in 2015 compared with the number of tenders supported by the project.

²⁸ *Public Procurement Indicators 2015*, European Commission: <https://ec.europa.eu/docsroom/documents/20679>

A similar exercise, comparing the number of tenders supported with the total general government expenditures on works, goods, and services (excluding utilities) in billion euros in 2015²⁹, also indicates that no correlation exists. As with the previous figure, no information is included on information on Belgium, Estonia, Luxemburg, Malta and Switzerland.

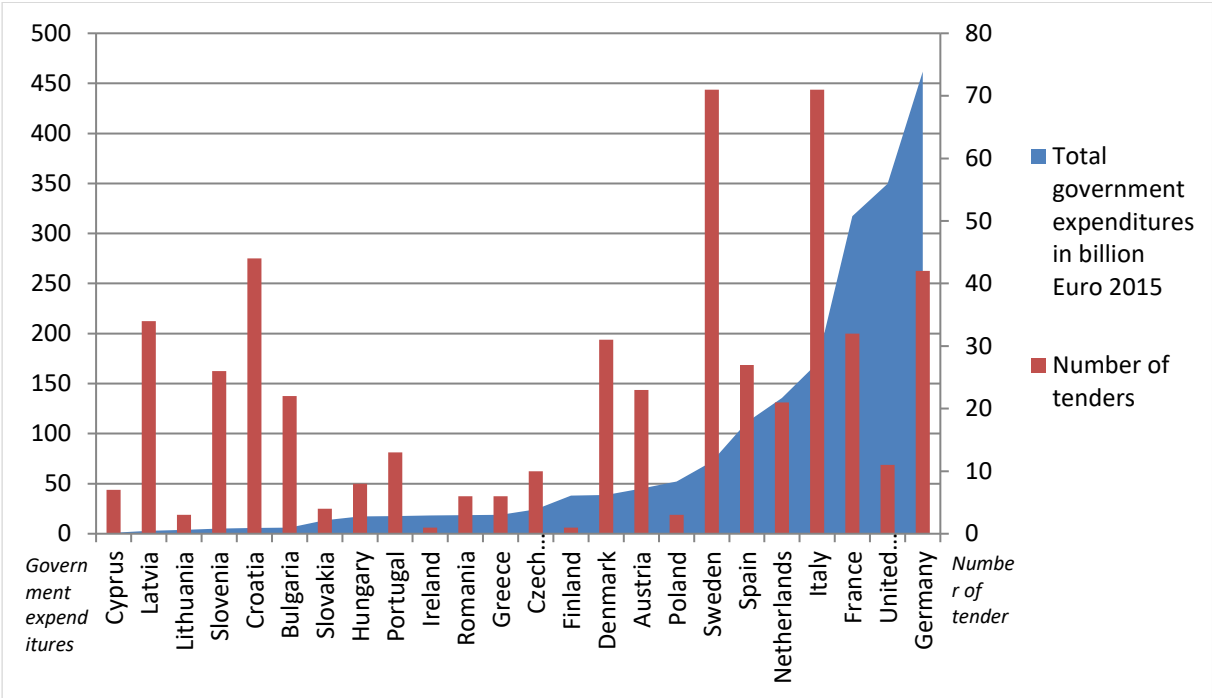


Figure 122: Total government expenditures on works, goods, and services (excluding utilities) in billion euros compared to the number of tenders per Member State.

²⁹ Public Procurement Indicators 2015, European Commission: <https://ec.europa.eu/docsroom/documents/20679>

6.3. Tenders supported per product category

In total, the 12 projects, provided support to 518 tenders in a wide range of product and service categories. As the figure below indicates, there were however a number of product categories for which the projects supported significantly larger numbers of tenders than for other product categories. The main product categories named by relevance, are office building, design and management (107 tenders), street lighting and traffic signals (84 tenders), clean vehicles³⁰ (70 tenders), green electricity (53 tenders), and IT equipment and services (33 tenders).

Other product categories such as imaging equipment (28), electrical goods, washing machines, dishwasher and dryers (13), heating and cooling equipment (13), road design, construction and maintenance (13), computers and monitors (12), and indoor LED lighting (10) were all targeted by ten or more tenders. Eighteen tenders out of 518 did not provide sufficient information on the product categories targeted.

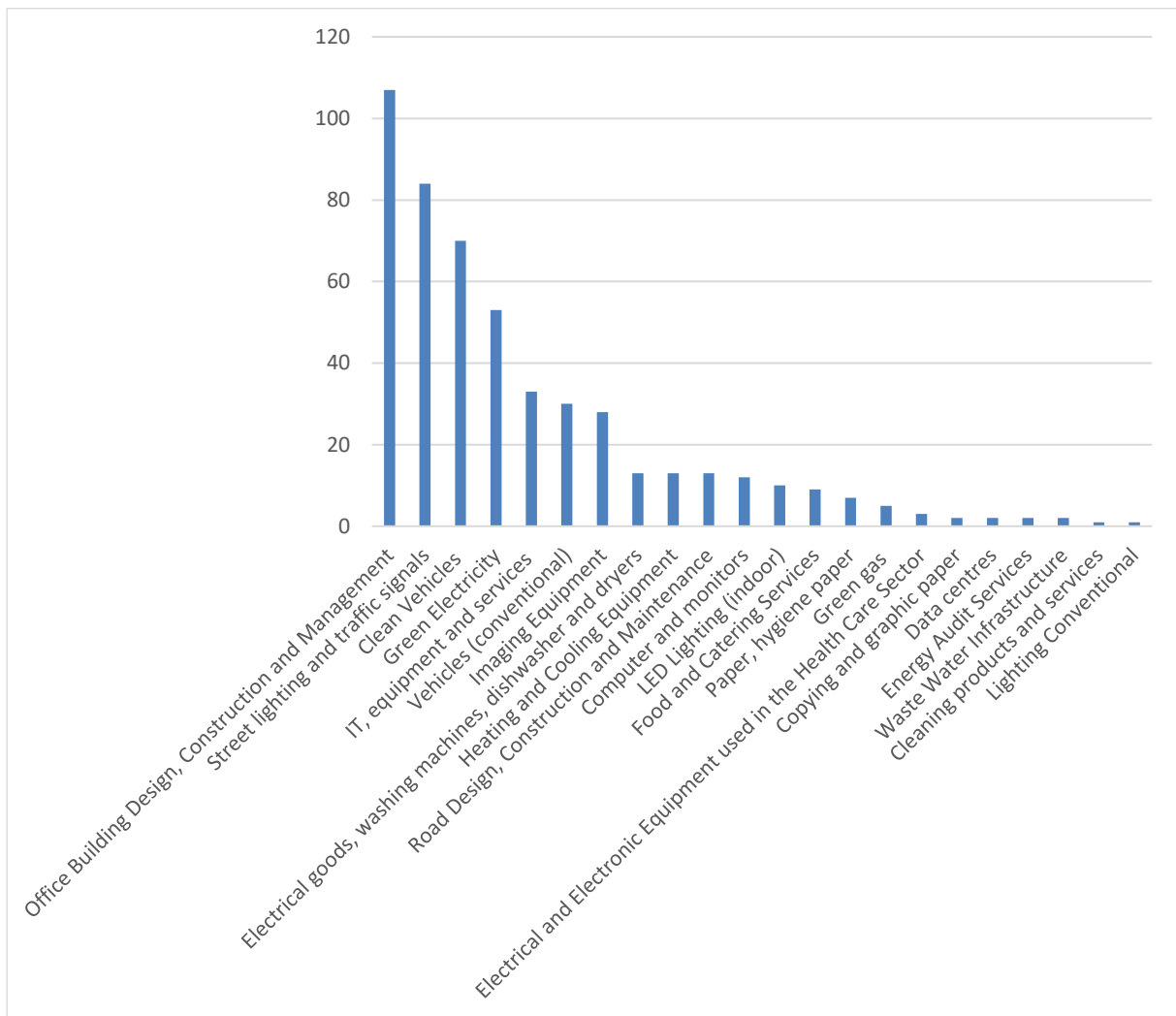


Figure 13: The number of tenders per product category supported by the projects.

³⁰ Clean vehicles means all types of vehicles that not rely on an internal combustion engine solely for their propulsion.

For a good understanding of the figures provided on the number of tenders per product category, it is important to consider the following:

- Some product categories such as street lighting and traffic signals mainly relate to the exchange of existing equipment with LED lighting, an action that gives immediate and high impacts in terms of energy-efficiency, with rather straightforward tendering procedures;
- The five most prominent product categories are broader categories, whilst other less prominent product categories are much smaller. For example, the product category “electric vehicles” encompasses all types of electric vehicles that are not solely using an internal combustion engine, ranging from electric bikes and mopeds to electric cars and electric busses.

There was not sufficient reliable information available on the monetary value of individual tenders to draw conclusions on the total amount in euro of the tenders per product category. Whereas several projects provided good datasets, other projects provided the data either in an aggregated way, either only for a part of the tenders supported by the project.

6.4. Success stories

Success story 1. The procurement of green electricity in Koprivnica, Croatia.

Within the IEE II PRIMES project, the city of Koprivnica in Croatia decided to go for green electricity supply in 7 public buildings and street lighting. The city included green public procurement criteria in the tender specifications, indicating a minimum of 20% of renewable energy and decided to go for the most economically advantageous procedure instead of the lowest price as only award criterion, allowing that 10% of the award points would go to the bidder with the greenest electricity offer. The procedure was more successful than anticipated with a 100% green electricity supply by the winning bidder. This resulted in 1333,85 tonnes of CO₂ saved on an annual basis and 385 tonnes of oil equivalent of renewable energy triggered and an investment of 193.500,00 €.

Success story 2. The replacement of street lighting with LED in Alona and Polistipos, Cyprus

Within the H2020 GreenS project, the municipalities of Alona and Polistipos decided to replace 100% of their street lighting with LED lighting. The Cyprus Energy Agency, through the GreenS project technically supported both municipalities. The energy savings are promising. The municipalities of Alona and Polistipos were both able to reduce their energy demand for street lighting by more than 50% per year and to achieve CO₂ emission reductions of almost 20 tonnes per year each of them. The municipalities received the first prize in the Cyprus Green Public Procurement Awards 2016.



Figure 14: Green Public Procurement of LED lighting in Alona and Polistipos with support of the GreenS project. Picture courtesy of the GreenS project.

Success story 3. The joint procurement of charging points in Rotterdam, The Netherlands



Within the H2020 SPP Regions project, the Metropolitan Region of Rotterdam and The Hague (MRDH – region) prepared and launched a tender for the joint procurement of 4000 charging points (2000 charging poles) for electric vehicles for Rotterdam and 16 surrounding municipalities. The tendering party

was the City of Rotterdam, while the other municipalities joined later in the process. It was the first time that such a large scale tender for charging infrastructure was put on the market in the MRDH – region. Six consortia responded to the tender, which was awarded in 2016. The contract should lead to an estimated primary energy savings of 4.91 GWh/year and 2,272 tonnes of CO2 savings per year.

Figure 15: Installation of electric vehicle charging points in Rotterdam, thanks to the SPP Regions project. Picture courtesy of the SPP Regions project.

7. THE PROJECT ACHIEVEMENTS IN TERMS OF GREENHOUSE GAS REDUCTIONS, ENERGY EFFICIENCY, TRAINING AND CAPACITY BUILDING

The aggregation of the impacts in terms of energy-efficiency and CO₂ savings for 12 of the projects involved in this report proved to be a challenging exercise³¹. The figures shown below result from a careful and conservative interpretation of information originating from different sources, assessed on their reliability and acceptability. First, of all the impact figures provided by the project partners in their final technical report and in dedicated project deliverables were collected and converted to the same measurement units. Where available, the information provided by the 518 tenders in terms of energy-efficiency and CO₂ savings, was analysed in terms of completeness, measurement units used, and credibility in relation to other fields, such as value of the tender and its subject, and compared with similar tenders for which complete and credible data sets were provided. Tenders for which not sufficient information was available were excluded from the calculations. As a final step, the report compared the figures of the energy savings and CO₂ savings as provided by the projects with those collected on the 518 tenders to calculate the most reliable and acceptable figures possible.

Taking into account the methodology used above, we identified the following results in terms of energy-efficiency and CO₂ savings:

- About 280 GWh/year of primary energy savings for 12 projects, which equals the annual electricity consumption of 175,000 EU-28 households, based on the Eurostat figures indicating an Electricity consumption per capita in the households sector in the EU-28 in 2017 of 1.6 MWh³².
- About 77,000 t CO₂/year saved based upon the information available for 10 out of 12 projects, which almost equals the total carbon footprint in tonnes of CO₂ of 10,000 EU-28 citizens in 2017³³.

More importantly, the 12 analysed projects in this impact study provided **training and capacity building** to 12,117 procurement trainers, procurers, other staff members and decision makers of local, regional, and national authorities. The projects organised 245 trainings for procurers and 23 train-the-trainer events. For example, the H2020 GreenS project involved 35 energy agencies in the organisation of 49 green public procurement trainings in respectively Bulgaria, Germany, Greece, Italy, Latvia, Slovenia, Spain and Sweden. The project trained 1484 procurers. The training materials developed by the project focussed on a wide range of subjects such as a general introduction to sustainable public procurement, the European and national legal framework and policy framework for sustainable procurement, the process of sustainable procurement, the strategic implementation of sustainable public procurement, and life cycle cost calculations (LCC). The H2020 EURECA project developed an impressive training package consisting of nine modules for green and innovative procurement for data centre professionals. The training modules cover the following topics: public procurement of innovation for public sector procurers and ICT managers, business case development, legislation and policies, procurement strategies, tendering practices, data centre

³¹ The findings in this chapter do not include the PremiumLight_Pro project that started on 01/04/2016 and finished on 31/07/2019. As such, it was not possible to draw conclusions on the outputs and outcomes of the project, because the desk research related to this report was finalised before the project ended.

³² Electricity consumption per capita in the households sector in the EU-28 in 2017 was 1.6 MWh. Source: Eurostat: "[Energy, transport and environment statistics — 2019 edition](#)", p. 57.

³³ The EU-28's total carbon footprint was equal to 7.2 tonnes CO₂ per person in 2017. Source: Eurostat: "[Energy, transport and environment statistics — 2019 edition](#)", p. 117.

contracts and risks, data centre key performance indicators and standards, the EU Code of Conduct for energy efficiency in data centres and the data centre maturity model. A final example is the IEE II Green ProcA project that provided 90 trainings to more than 2100 participants, mainly consisting of purchasers from different departments within local authorities and procurement agencies, responsible for different product groups as well as environmental managers at municipal level. The trainings focussed on topics such as the background and importance of green public procurement, green public procurement legislation, life cycle costing, and the implementation of green public procurement within an institution. The project used different moderation methods during the trainings, like brainstorming, questions and group work.

The projects supported the creation and / or reinforcement of **public procurement support structures** in 22 out of 28 EU Member States: Austria, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Lithuania, Latvia, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, Slovenia, Slovakia, and the United Kingdom. In their most straightforward form, these public procurement support structures consisted of a website with contact details for consultation via e-mail or by telephone, combined with a repository of documents, guidelines and tools. The BuySmart+ project established 15 Green Public Procurement helpdesks. The Green ProcA project developed an additional two, following the same approach. The SPP Regions project developed seven regional sustainable procurement networks in the following countries: Bulgaria, Denmark, France, Italy, Spain, the Netherlands and the United Kingdom. These regional sustainable procurement networks bring together municipalities to work on sustainable public procurement and public procurement of innovation. The networks facilitated capacity building, knowledge sharing and collaboration on sustainable public procurement and public procurement of innovation between municipalities. The GreenS project focused on the creation of permanent support structures in energy agencies, the so-called Green Public Procurement Supporters (G.P.P.S). The Green Public Procurement Supporters stimulate multi-level cooperation and dialogue amongst actors at local, regional and national level, and provide long-term support and technical assistance on green public procurement to public authorities. The countries most targeted were Italy, Germany, Spain, and Slovenia, however different projects focused on different regions or integrated new services into already existing support structures. The CleanFleets project created a helpdesk for EU-wide support to the uptake of clean vehicles.

8. PROJECT COORDINATORS AND PARTNERS SPEAK: THE FEEDBACK RECEIVED FROM THE EU SURVEY

8.1. The main fields of delivery of the projects

In relation to the EU Survey feedback, the respondents had the option to choose two possible answers out of five when asked about what they considered as their main field of delivery during the project. In total, 30 replies were received, each of them giving at least one answer. The table below shows the percentage distribution of the replies based on 30 replies and taking into account that several respondents provided more than one answer.

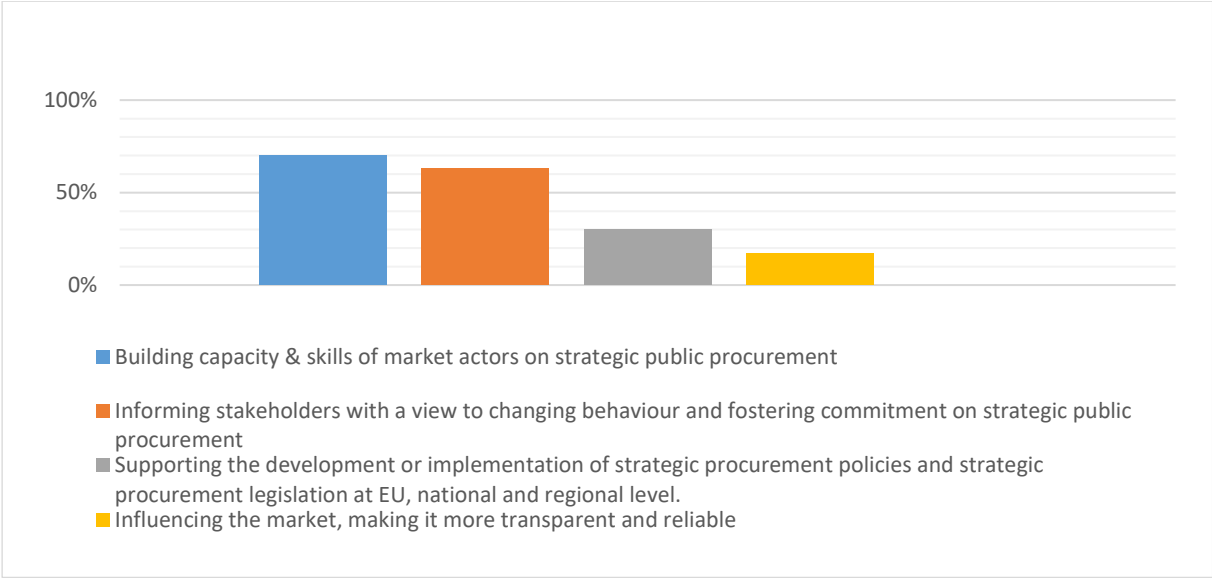


Figure 16: The main fields of delivery of the project in relative figures. Multiple replies per respondent allowed.

Of the respondents 70% indicated that “*building capacity and skills of market actors on strategic procurement*” was the main field of delivery of the activities in the project. “*Informing stakeholders with a view to changing behaviour and fostering commitment on strategic procurement*” was the main field of delivery of the action for 63% of the respondents. “*Supporting the development or implementation of strategic procurement policies and strategic procurement legislation at EU, national and regional level*” and “*Influencing the market, making it more transparent and reliable*” were the main fields of delivery of the project for respectively 30% and 17% of the respondents.

The table below shows the distribution of the responses to the same question in absolute figures.

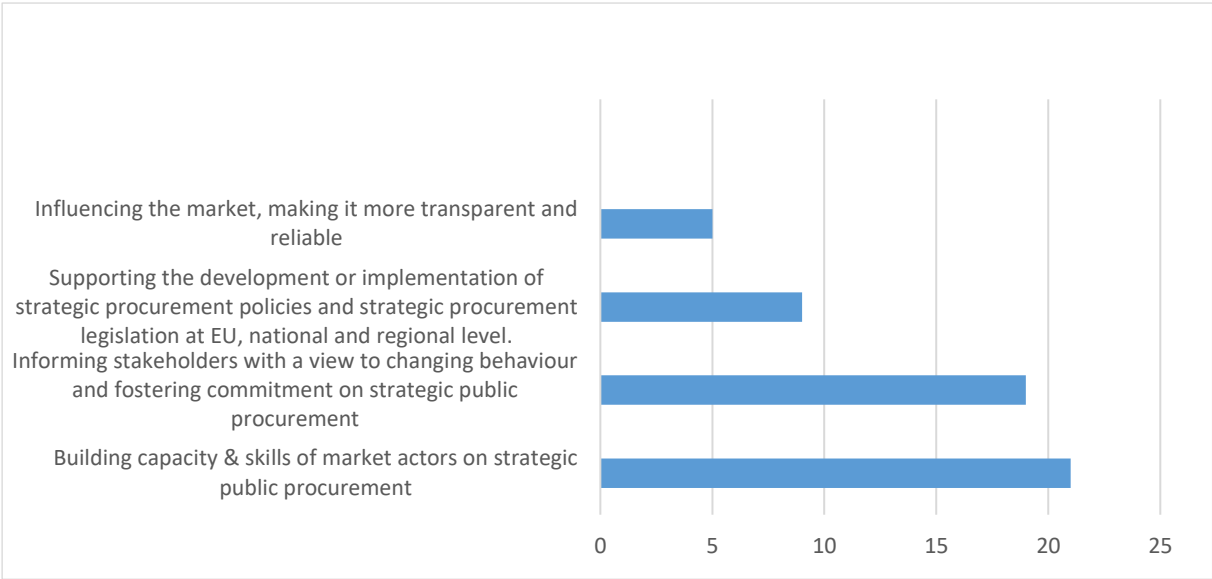


Figure 17: The main fields of delivery of the projects in absolute numbers. Multiple replies per respondent are possible.

8.2. The most important services provided by the projects

When asked about the most important services provided by the project (percentage distribution calculated back on 30 respondents, providing more than one reply), training events (73%), coaching and advisory services (53%), workshops (37%), one to one meetings between project partners and third parties (30%), and online platforms (27%) all score above 25%. The respondents to the survey considered other services as less important, amongst them, network and stakeholder organisation, information campaigns and the provision of product assessment tools. The inclusion of network and stakeholder organisation, and information campaigns in this list is surprising, because most projects provided such a services.

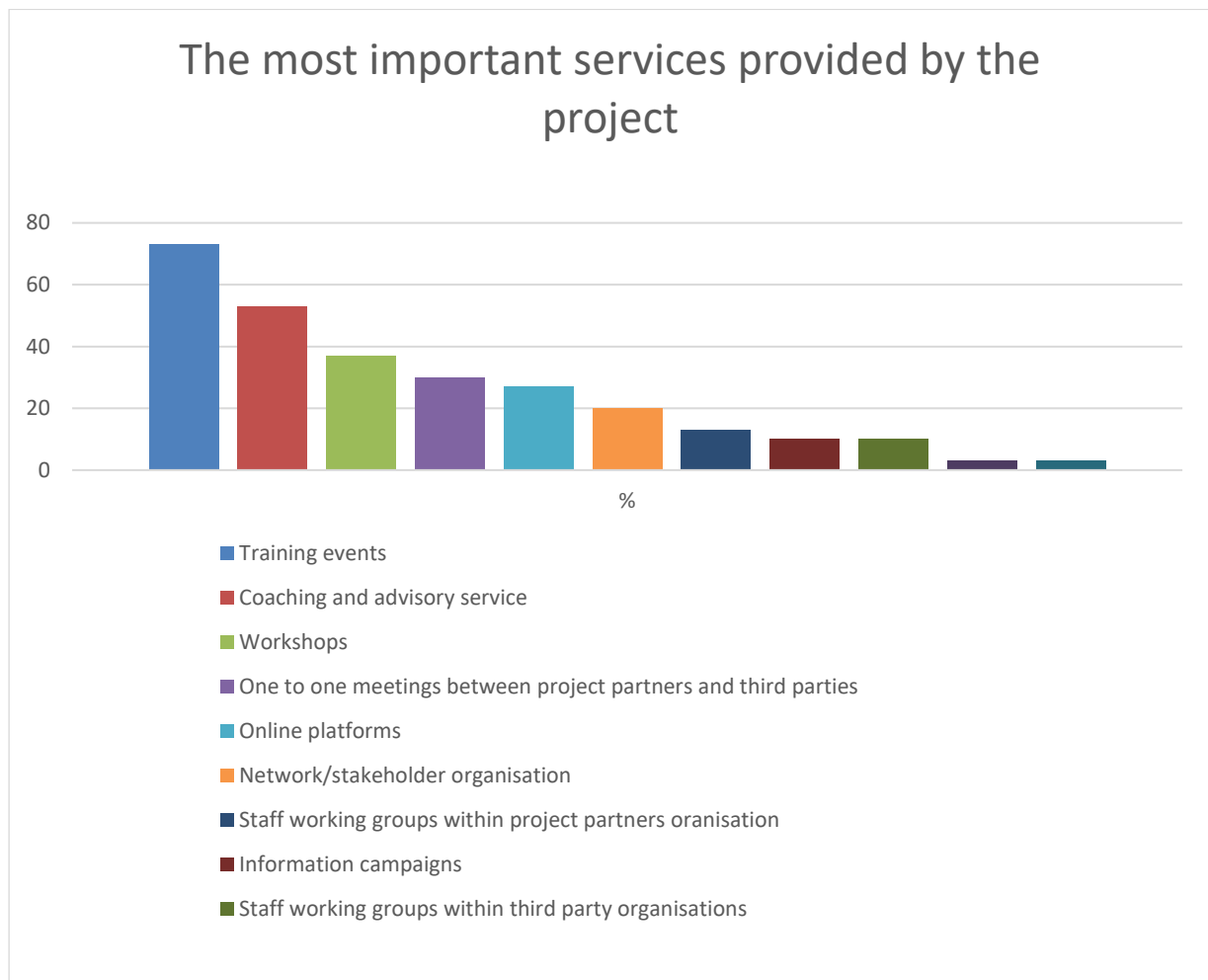


Figure 18: The most important services provided by the projects in relative figures.

8.3. The product categories covered by the tenders launched by the projects

The survey asked project coordinators and the beneficiaries information on the product categories for which their projects successfully launched procurement procedures and which product categories needed additional support. For the definition of the product categories, we based ourselves on the priority sectors as developed by the European Commission³⁴.

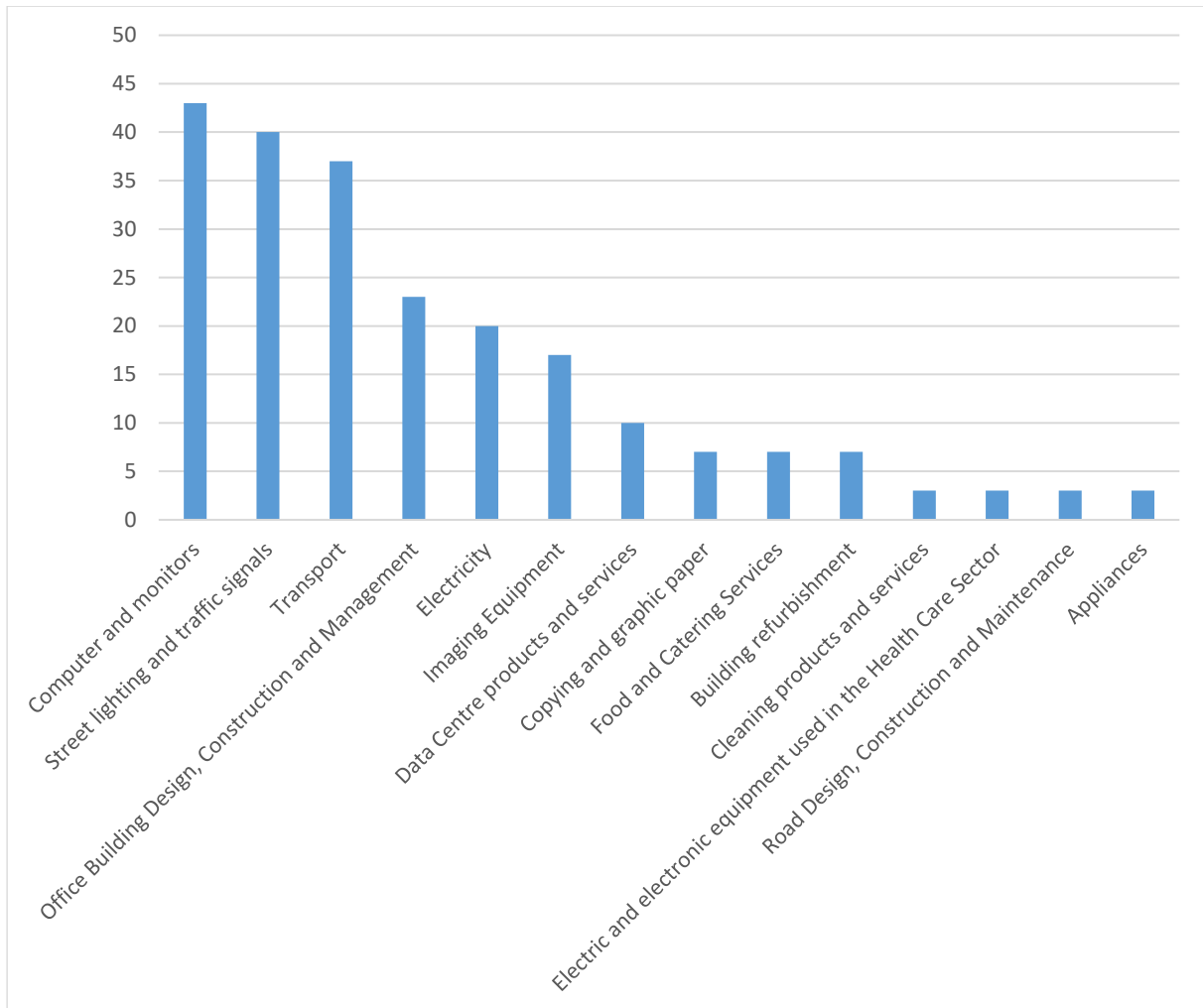


Figure 19: Most successful product categories in terms of procurement procedures launched according to survey respondents.

The survey also asked the respondents to indicate between one and three product categories, which in their view were the most successfully launched. The replies were focused on i) tenders procuring computers and monitors (43%), ii) street lighting and traffic signals (40%), iii) transport (37%), iv) office building design, construction and management (23%), v) green electricity (20%) and vi) imaging equipment (17%). Data centre products and services (10%) is a category specifically targeted by only a few specialist projects. Food and catering (7%) is a rather recently targeted procurement need, whilst the potential of building refurbishment (7%) does not appear fully used yet. None of the respondents indicated successful procurements launched for the following product categories: furniture, gardening products and services, plants, varnishes and

³⁴ Communication “Public procurement for a better environment” (COM (2008) 400): <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52008DC0400>

road markings, sanitary tap water, textiles, toilets and urinals, wastewater infrastructure and water-based heaters. For these non-targeted product categories other procurement criteria than energy-efficiency are likely to be more important.

Although the ranking of product categories in figure 19 are relatively similar to the ranking of product categories in figure 12, there are a number of differences visible. The first rank for computers and monitors, compared to the low ranking of the same product category in figure 12, is the most prominent. It is important to note that the product categories used for figure 12 are not fully similar to the ones used in figure 19. Figure 12 has a product category IT equipment and services, which is not available in figure 19. In addition, differences in interpretation between "supported" tenders in figure 12 and "successfully launched" tenders in figure 19 might exist. When a tender received support, this does not automatically mean that a successful procurement resulted from it.

8.4. Product categories that need further support

When asked about the product categories that needed additional support, the feedback provided by the respondents (between one and three options) in the figure below, shows some interesting features. A large number of respondents indicated that procurement activities related to office building design, construction and management (48%) and energy-efficient transport (41%) need more support. Two categories, already well covered by the projects analysed in this report. Many respondents agreed on further support activities towards the procurement of green electricity (21%), road design, construction and maintenance (21%) and wastewater infrastructure (21%). Food and catering services (17%), street lighting and traffic signals (14%) and textiles (10%) are other categories that deserve further attention, based upon the feedback gathered from the survey. Wastewater, food and catering services and textiles are product categories that received low to zero support by the projects that are part of this report. A straightforward explanation might be that energy efficiency gains are not easy to reach for those product categories, and are mainly complementary to other more prominent tender specifications. Previously supported product categories such as data centre products and services and imaging equipment now score much lower in terms of a need for further support, both 3%. Computers and monitors, and copying and graphic paper disappeared completely from the list of product categories that would require additional support.

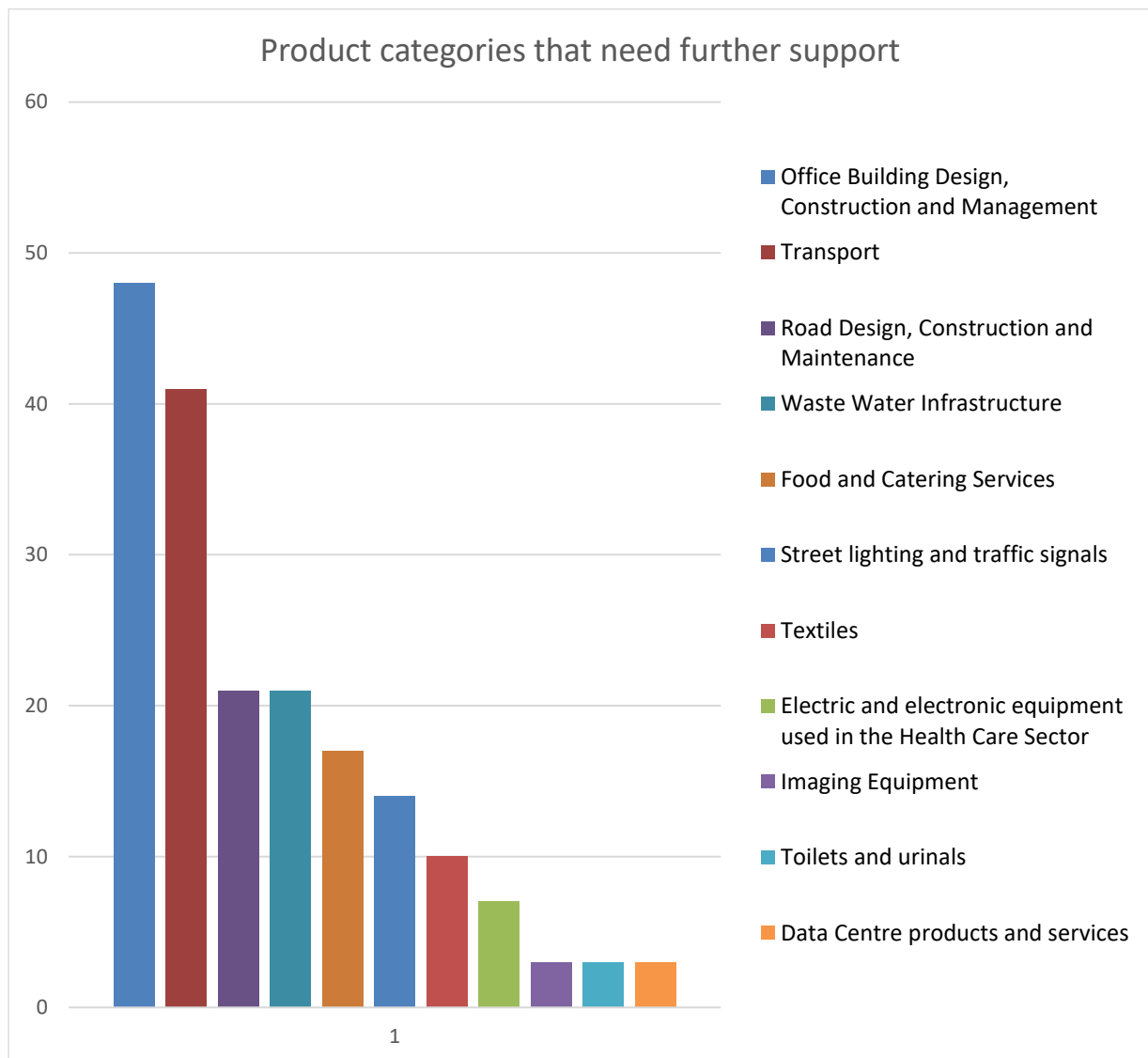


Figure 20: Product categories that would need further support according to the survey respondents.

8.5. Key tools for further support the public procurement

The figure below shows the replies of the survey respondents on the question: “How public procurement can be better promoted as a tool to support the transition to a low-carbon, secure and competitive EU economy?” Each respondent had the possibility to indicate one or two options. In the opinion of the respondents, capacity building for public procurements remains the most important tool to promote public procurement (53%), followed by the development of public procurement support networks (40%). These figures might look surprising, given the amount of efforts already put in these types of activities, however the analysis done before in this document, shows a significant geographic imbalance for both types of activities. The respondents rate a more ambitious national legislation and more financial incentives equally important (33%). Most respondents are reluctant towards a further strengthening European public procurement legislation, and especially Art. 6 of the Energy Efficiency Directive³⁵ (20%).

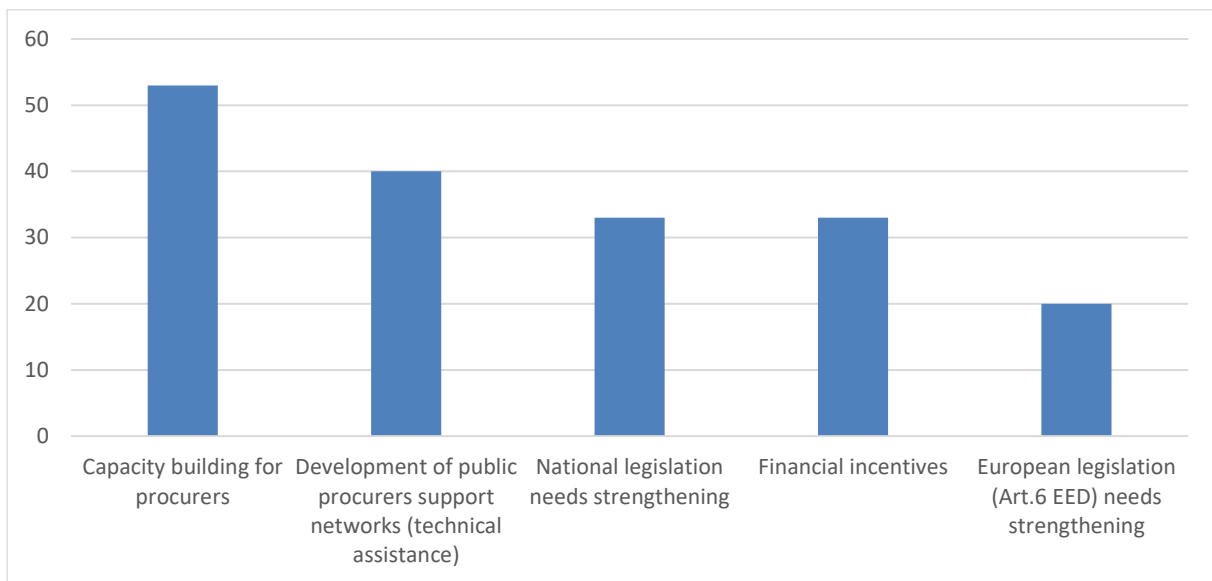


Figure 21: Key tools to further support public procurement according to the survey respondents.

³⁵ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

8.6. Barriers towards the public procurement of energy efficient works, supplies and services

When asked about the main barriers they perceived towards public procurement, the respondents to the survey could choose as many options as they wanted. This resulted in 63% of the respondents indicating the lack of knowledge and training on new procurement approaches as the main barrier towards the implementation of public procurement. Budgetary constraints (50%) and legal and institutional barriers (47%) also scored high. The unfamiliarity with relatively new public procurement approaches, such as green public procurement, sustainable public procurement, and public procurement of innovation suggests that stakeholders and beneficiaries involved require further training and support before and during the tendering phase to better familiarize themselves with those new procurement approaches. The score of 40% for time constraints could reflect two different issues. On the one hand, the fact that those more complex procurement approaches require more efforts during the preparation and implementation phase, and on the other hand, the resources needed to follow the trainings to familiarize staff with those new procurement approaches. The respondents to the survey perceived the interest of public procurers (30%), the access to suppliers (10%) and the political support (7%) as less important barriers towards the implementation of public procurement.

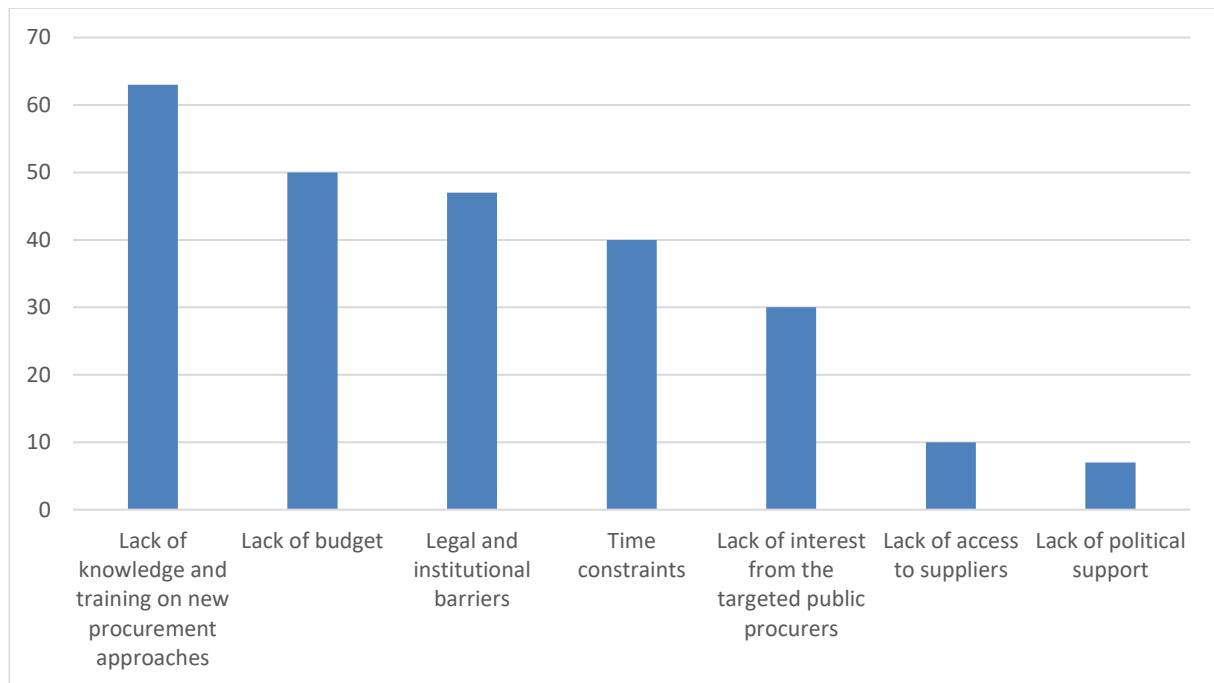


Figure 22: Which are the main barriers towards public procurement of energy-efficient works, supplies and services?

9. PROJECT COORDINATORS AND PARTNERS SPEAK: RECOMMENDATIONS FOR FUTURE ACTIVITIES ON PUBLIC PROCUREMENT OF ENERGY EFFICIENT WORKS, SUPPLIES AND SERVICES

A final question of the EU Survey, addressed to the project coordinators and beneficiaries of the projects, was to provide a maximum of three suggestions on what they would consider as essential for the future facilitation and smooth operation of public procurement of energy-efficient works, supplies and services.

In total 40 suggestions were received, that can be clustered in a number of groups: i) training and capacity building, ii) changes to the legal framework and setting of mandatory targets, iii) fostering political commitment, iv) additional efforts on networking and v) the exchange of best practices.

Based upon the feedback received, the top suggestion is that there must be a stronger focus on training and capacity building on the short and long-term benefits of the public procurement of energy-efficient works, supplies and services. Locally organised trainings and the promotion of centralized (joint) public procurement approaches are highly important, because budgetary and resource constraints of many small municipalities do not allow for their staff to travel to trainings organised at national or international level. At the same time, technical staff should be better involved in procurement trainings, and close cooperation between procurement officers and technical staff during the procurement process should be stimulated. Training and capacity building should focus more on the development of soft skills and the governance management and restructuring in organisations, to embed approaches such as green public procurement, sustainable public procurement, and public procurement of innovation in the culture of an organisation.

A beneficiary (anonymized) indicated the following:

"People make change: our project (...) showed that it is often about the soft skills and change management applied in organisations - here: public authorities. If Strategic Public Procurement would focus more on this aspect, real change would be possible towards sustainable development."

Moreover, there is still a need for further support towards networking and sharing of best practices between public procurers and between public organisations at local, regional, national level and at EU level.

The survey respondents highlighted that support towards the public procurement of energy-efficient works, supplies and services needs to pay more attention to the engagement political decision makers to achieve political commitment. The respondents made a number of suggestions to achieve this goal, such as the following:

- Specific campaigns, awareness raising, and training activities targeted to politicians and high-level decision makers in municipalities and regions;
- Challenge local authorities (especially larger entities such as cities) to demonstrate more leadership in influencing the procurement behaviour of other public (and private) organisations within their geographic area (peer pressure);
- Convince high-level stakeholders in national/regional and local public authorities that public procurement is a powerful tool to achieve their climate and energy policy objectives;

A number of respondents suggested going ahead with the implementation of changes to the existing legal framework making sustainable public procurement mandatory. Some of the suggestions included the request to revise of the taxation of energy efficient buildings, taking into account the emissions during the whole lifetime of the building. Other suggestions called for better regulation for sector specific public procurement by creating sectorial directives, such as for public sector datacentres.

Some respondents also suggested more progressive, result oriented, targets per product category linking public procurement towards the UN Sustainable Development Goals³⁶.

Beneficiaries (anonymized) indicated the following:

"Buying health (fighting obesity); buying (food) culture; buying Small and Medium-sized Enterprises support; buying biodiversity; from few frontrunners to mainstream implementation of the Sustainable Development Goals through targeted Green Public Procurement"

"Product group: sustainable food procurement;

Target: Healthy and sustainable meals in all EU schools and kindergartens by 2025;

Way forward: buying sustainable agriculture;"

A final set of recommendations asked for the development of financial instruments, incentives and mechanisms for sustainable public procurement. In that light, the respondents suggested the alignment of existing finance and investment schemes from the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), the European Fund for Strategic Investments (EFSI), and Horizon 2020 with ambitious sustainability requirements.

³⁶ *About the Sustainable Development Goals*, United Nations:
<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

10. FINDINGS

In total 518 tenders were supported by 12 of the projects involved in this report³⁷, which accounts for 43 to 44 tenders supported per project. Depending on the type of procurement covered and the type of activities promoted through the work programmes, some projects supported a small amount of tenders, whilst others provided support to a large number of tenders. An attempt to cluster the projects involved in this report could be the following:

- Wide-scale training and dissemination projects, including actual procurement objectives: Smart SPP, Buy Smart, Buy Smart + and GPP2020, and SPP Regions;
- Training and dissemination projects focused on a specific type of public authorities: PRIMES (Small and medium-sized municipalities), Green PROCA (signatories of the Covenant of Mayors (CoM)³⁸ addressing green public procurement in their Sustainable Energy Action Plans (SEAP))³⁹, GreenS (local and regional energy agencies);
- Sector specific projects: Prime Energy IT (IT equipment) and EURECA (datacentres), Clean Fleets (vehicles);
- Focusing on a very specific procurement approach different from green public procurement: one project focused on sustainable public procurement and public procurement of innovation (SPP Regions), and one on public procurement of innovation (CEPPI2).

Finding 1: As the records indicate, the number of tenders supported through project funding was the highest in Italy, Sweden, Croatia, Germany and Latvia. Italy and Sweden are leading the way with 71 tenders per Member State respectively, followed by Croatia (44), Germany (42) and Latvia (34). France and Denmark are following, with respectively 32 and 31 tenders supported through the projects. From the Mediterranean Basin Spain (27), Portugal (13), are forerunners, while the need for further support the public procurement of energy-efficient works, supplies and services to Cyprus (7) and Greece (6) through future funding programmes is worth investigating. The projects supported between one and six tenders in Romania, Slovakia, Lithuania, Poland, Finland, and Ireland. These figures show that also for these countries, there could be a need for additional efforts towards the public procurement of energy-efficient works, supplies and services.

Finding 2: In terms of product categories, public procurement efforts have focused mostly on the following products: i) street lighting and traffic signals, ii) transport, iii) office building design, construction and management, vi) green electricity and v) IT – equipment, including computers and monitors. When asked about the product categories that could benefit from additional support, the survey participants indicated a number of interesting newcomers such as i) wastewater infrastructure, where energy-neutral or energy-positive plants have been demonstrated at full scale of operation, but are not yet the norm⁴⁰, ii) food and catering services and iii) textiles. Those new product categories

³⁷ The findings in this chapter do not include the PremiumLight_Pro project that started on 01/04/2016 and finished on 31/07/2019. As such, it was not possible to draw conclusions on the outputs and outcomes of the project, because the desk research related to this report was finalised before the project ended.

³⁸ Covenant of Mayors for Climate & Energy: <https://www.covenantofmayors.eu/>

³⁹ *Plans & Actions*, Covenant of Mayors for Climate & Energy: <https://www.covenantofmayors.eu/plans-and-actions/action-plans.html>

⁴⁰ *JRC Science for Policy Report “Water – Energy Nexus in Europe”*, European Commission: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/water-energy-nexus-europe>

are in line with a holistic approach towards public procurement, in which energy-efficiency is only one of the sustainability criteria to take into account amongst other criteria. Strategic public procurement, mainstreaming innovative, green, and social criteria, could provide an answer to this challenge.

Finding 3: Additional efforts are required to involve small and medium-sized enterprises as supplier of innovative energy efficient works, supplies and services in a new generation of sustainable, socially responsible and innovative public procurement projects. The flexibility of small and medium-sized enterprises as a game changer gives them a comparative advantage in terms of answering the needs of public procurers that enables them to bring innovative, green and/or social, solutions more rapidly to the market. For that aim, local authorities should ensure that small and medium-sized enterprises are able to participate in market engagement activities, which take place before the formal procurement process begins, and provide procurers with the possibility to fine-tune their specifications and insight in the potential of the market to respond to their needs. On the other hand, however those same SME's often lack the capital and resources to scale up. In that sense, the stronger involvement of central purchasing bodies in public procurement projects as demand aggregators could play an important role, as well.

Finding 4: Despite the considerable efforts already put in the provision of training, capacity building and network structures by the projects, most respondents to the survey still, indicated the need to have capacity building as the most important tool to promote public procurement, followed by the development of public procurement support networks. This indicates the clear need for comprehensive knowledge by the local and regional actors in order to achieve an adequate understanding of sustainable, socially responsible, and innovative public procurement within their cities/countries.

Finding 5: Additional efforts are required to support local and regional authorities, to move away from the traditional procurement habits, because about 55% of public procurement procedures still use the lowest price as the only award criteria. Procurers should implement additional criteria mainly related to sustainability, social responsibility, and innovation in future tenders to deliver high-quality public services and at the same time contribute to a more innovative, resource and energy efficient, and socially-inclusive economy at local, regional, national and EU-level. The emergence of new more strategic public procurement approaches also requires a high level of flexibility and willingness to learn new skills from public procurement professionals and decision makers.

Finding 6: As part of the digital transformation, e-procurement will become a common practice, actively supported by the European Commission. E-procurement has the potential to increase the transparency of procurement processes and decisions, and thus lead to efficiency gains in the use of public money. Already at this moment, a number of obligations in relation to the electronic submission of tenders and the acceptance of electronic invoices by contracting authorities are already in place within the EU. National legislation needs alignment with the EU Rules in order to comply with the EU legislation. This would enable national authorities to simplify their (national and local) procurement processes⁴¹. At the same time, it will create new challenges in terms of training and capacity building for those involved in public procurement at all levels.

Finding 7: This public procurement study is the first study that elaborated in relation to the public procurement of energy-efficient works, supplies and services in EU funded projects under the Intelligent Energy Europe Programme and the H2020 Energy challenge. Overall, after reviewing the impacts, outcomes and outputs of these projects, we are able to conclude that they got a relevant impact on the parties involved by

⁴¹ *Public Procurement*, European Commission: https://ec.europa.eu/growth/single-market/public-procurement/strategy_en

providing real life training and building capacity within the local and regional communities.

Projects share best practices during meetings and conferences, some of them even built upon each other. Several projects include on their webpages guidelines or tools created, which created the opportunity of networking between the communities and sharing the lessons learnt. Neighbouring communities replicated the outcomes of some projects. An example is the SPP Regions project that managed to extend the number of regional sustainable public procurement networks to eight mainly in Italy and Spain. In those countries, other local and regional authorities replicated best practices from Barcelona and Torino in relation to sustainable public procurement.

11. ANNEX I: THE PROJECTS THAT RECEIVED SUPPORT FROM THE INTELLIGENT ENERGY EUROPE II PROGRAMME:



Budget: 1.498.939,00 €

Duration: 36 months (1 September 2008 to 31 August 2011)

Project Coordinator: ICLEI – Local Governments for Sustainability, European Secretariat

Webpage: www.smart-spp.eu

Smart SPP promoted the introduction of new, innovative low carbon emission technologies and integrated solutions onto the European market, by using the purchasing potential of the public sector.

The project contributed to bridging the gap between sustainable product development and sustainable public procurement, by facilitating the creation of a market for innovative highly energy-efficient technologies through early market engagement between public authority procurers, suppliers and developers of new innovative works, supplies and services in the pre-procurement phase of public tenders. The project carried-out pilot activities on public procurement in five cities. The project published tenders on indoor and outdoor LED lighting replacement including a joint procurement with seven municipalities, electric vehicles and electric vehicle charging points, and vending machines. The project also provided training courses addressing more than 250 procurement practitioners. One of the key outputs of the project was the "Smart SPP Guide", a practical guide for public authorities on sustainable public procurement to help them to become "innovation friendly" in their public procurement activities.



Budget: 876.502,00 €

Duration: 30 months (1 May 2009 to 31 October 2011)

Project coordinator: Berliner Energieagentur GmbH

Web page: no longer available.

Linked projects: Green Labels Purchase, BuySmart+

Buy Smart promoted the implementation of green public procurement by providing extensive training and capacity building to address the main barriers for the broad implementation of green public procurement. The project did not provide new tools but used existing tools and guidelines developed by the previous EU supported Green Labels Purchase project. The project focused on the following product categories: office equipment, household appliances, lighting, green electricity, building components, and vehicles.

Policy recommendations were developed and channelled into green procurement discussions in the revision of the National Energy Efficiency Action Plans (NEEAPs)⁴². The project carried out an analysis of the state-of-the-art in green public procurement in Europe and in the partner countries and presented information about 33 labels. A good practice database containing examples of green public procurement was developed.



Budget: 1.202.414,00 €

Duration: 30 months (1 May 2010 to 31 October 2012).

Project Coordinator: Austrian Energy Agency

Webpage: no longer available

PrimeEnergyIT focused on tackling the growing energy demand for centralized IT equipment in data centres and central IT units of companies. To our knowledge, it was the first initiative on procurement criteria for central IT equipment for the EU market. The project contributed significantly to the development of metrics and energy-efficiency criteria for servers and data storage equipment.

The project produced a set of best practices for central IT and infrastructure, demonstrating successful implementation of IT hardware and cooling solutions in different types of server rooms and data centres. The project also developed a comprehensive set of guidelines for the procurement of servers, data storage, network-equipment and cooling equipment. Associated partners implemented green public procurement for their IT equipment, and the project trained 500 IT managers and consultants.



Budget: 1.498.939,00 €

Duration: 30 months (15 March 2012 to 14 September 2014)

Project Coordinator: Energieagentur GmbH

Webpage: no longer available

Linked project: Buy Smart, Green Labels Purchase

Buy Smart+ focused on consolidating and mainstreaming green public procurement among countries with advanced green public procurement experience and knowledge and how to transfer this expertise to countries with only limited experience and knowledge on green public procurement. The project provided consultation and training on green procurement to public and private purchasers. Buy Smart+ established "Green Public Procurement helpdesks" in 15 countries together with a website in English including 15 national sub-sites providing information in local language. The project developed technical guidelines; life cycle cost calculation tools and training materials for vehicles, household appliances, lighting, office IT, green electricity, and construction and building

⁴² National Energy Efficiency Action Plans (NEEAPs) set out estimated energy consumption, planned energy efficiency measures, and the improvements individual EU countries expect to achieve. Under the Energy Efficiency Directive, EU countries must draw up these plans every three years (<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive/national-energy-efficiency-action-plans>).

components. The project provided more than 900 consultations, more than 300 trainings, and expert assistance to 70 pilot projects.



Budget: 1.445.320,00 €

Duration: 36 months (1 of June 2013 to 31 August 2015).

Project Coordinator: ICLEI – Local Governments for Sustainability, European Secretariat

Webpage: <http://www.clean-fleets.eu/home/>

The Clean Fleets project assisted public authorities and fleet operators with the implementation of the Clean Vehicles Directive (CVD)⁴³ and the procurement of clean, energy efficient vehicles. The aim of the project was to accelerate the broad market introduction of vehicles with higher energy and environmental standards and thereby reduce energy consumption, noise, CO₂ and pollutant emissions from the transport sector.

Through a European Helpdesk, workshops and trainings, the project has provided assistance to over 30 public authorities in their vehicle procurement activities, contributing to the publication of 11 tenders. The project developed a Clean Vehicle Directive toolkit, including amongst others a Clean Fleets procurement guidance, a Life Cycle Cost calculation tool, practice case studies, a report on clean bus technology options and modular training materials in nine languages. More than 1,000 people attended the project events, providing a huge opportunity for the exchange of experiences, capacity building and the development of new partnerships between local government and transport operators across Europe.



Budget: 1.873.042,00 €

Duration: 36 months (May 2013 to April 2016).

Project Coordinator: ICLEI – Local Governments for Sustainability, European Secretariat

Webpage: <http://www.gpp2020.eu/home/>

Linked project: SPP regions

The GPP2020 project tried to bridge the gap between the availability of tools and guidance on green public procurement criteria in eight countries and the lack of awareness on the topic that exists with many procurers for the actual implementation of green public procurement. GPP2020 put in place structures to support public authorities looking to implement green public procurement within eight EU countries. These include dedicated national helpdesks, replicable case studies and an international training programme.

⁴³ *Clean Vehicles Directive*, European Commission:
https://ec.europa.eu/transport/themes/urban/vehicles/directive_en

The project managed to implement more than 100 low-carbon tenders by over 40 public authorities in the countries involved in the project. This project brought a massive upscaling of green public procurement implementation, delivering train-the-trainer and train-the-procurer seminars reaching more than 1231 market stakeholders, networking events, 108 model tender documents, and energy & CO2 saving calculation tools. The project set up "Green Public Procurement helpdesks" in eight to support public authorities with the implementation of green public procurement.



Budget: 1.639.121,00 €

Duration: 36 months (1 of November 2013 to 31 October 2016)

Project Coordinator: Holbæk Kommune (Holbæk Municipality)

Webpage: <http://primes-eu.net/>

Linked project: GPP2020

PRIMES focused on the lack of capacity and knowledge on green public procurement, particularly within small and medium-sized municipalities. The project created the PRIMES Task Force in six countries to provide tailor made "hands-on" support for the development of basic skills to implement green public procurement by training and capacity-building sessions, the provision of case studies and best practice examples and organised networking and knowledge sharing. PRIMES demonstrated how to deliver support in conditions, which are favourable for even the smallest purchasing organisations, by sharing and co-operating.

The project developed a comprehensive green public procurement training package of 17 modules, looking at the legal aspects of green public procurement, the procurement process, Life Cycle Costs, and several product categories. The project largely builds upon materials developed by the previous GPP2020 project. The project trained 351 stakeholders. The project implemented 84 procurements, including three joint procurements.



Budget: 1.146.908,00 €

Duration: 30 months (1 March 2014 to 31 August 2016)

Project Coordinator: Berliner Energieagentur GmbH

Webpage: <https://gpp-proca.eu/>

Linked project: Buy Smart+

The project built upon the outcomes of the previous project 'Buy Smart +'. Green ProCA supported the implementation of green public procurement among public authorities. The project, mainly focused on signatories of the Covenant of Mayors for Climate & Energy (CoM)⁴⁴ addressing green public procurement in their Sustainable Energy Action Plans (SEAP)⁴⁵ and on local authorities that are on the brink of becoming Covenant of Mayors

⁴⁴ Covenant of Mayors for Climate & Energy: <https://www.covenantofmayors.eu/>

⁴⁵ *Plans & Actions*, Covenant of Mayors for Climate & Energy: <https://www.covenantofmayors.eu/plans-and-actions/action-plans.html>

for Climate & Energy signatories or have other voluntary targets for enhancing energy efficiency or reducing CO₂. The project collaborated with national and international network partners of the public sector, provided capacity building and set up 39 lighthouse projects to act as guidance to interested stakeholders. This action enhanced the ability and effectiveness of public authorities and other public actors to apply green criteria in their purchasing activities, by training 2147 stakeholders. The project used the already existing BuySmart+ helpdesks in five countries and created new structures in PL and SK.

12. ANNEX II: THE PROJECTS THAT RECEIVED SUPPORT FROM THE HORIZON 2020 PROGRAMME:



Budget: 1.534.055,50 €

Duration: 36 months (1 March 2015 to 28 February 2018)

Project Coordinator: University of East London

Webpage: <https://www.dceureca.eu/>

EURECA (649972) empowered public sector procurers and ICT managers to assess the energy efficiency of their data centres. At the same time, the project provided them with the tools to take the right decisions in terms of investing in existing staff, refitting facilities, consolidation actions, new builds, or outsourcing – or combinations of these to improve the performance of their data centres and server rooms. The project developed a Data Centre Maturity Model (DCMM) to assess the technical age of data centres. The project also developed a training package of nine modules divided in two categories: 'procurement' and 'technical'. The procurement courses cover various aspects of innovation procurement such as policies, timelines and business case development. The technical courses cover best practices, standards and frameworks related to data centre energy efficiency.

Fourteen EURECA events have been organised across Europe resulting in the training of more than 800 stakeholders. EURECA now hosts an open market directory listing over 200 data centre products and services available to the European market. In 2018, EURECA won the DCD Global Awards 2018 for the Industry Initiative of the Year.



Budget: 1.294.808,00 €

Duration: 40 months (1 April 2015 to 31 July 2018)

Project Coordinator: Optimat Ltd

Webpage: <http://www.ceppi.eu/>

The CEPPI project (649720) aimed to demonstrate how European cities could make more rapid progress towards achieving their energy-related objectives through the strategic use of public procurement of innovation (PPI). The project was one of the earliest attempts to use public procurement of innovation approaches towards the public procurement of energy efficient works, supplies and services by local and regional authorities. The project involved five cities of different sizes in Hungary, Poland, Spain and the United Kingdom as a testing ground. The project opted for an action-learning approach to create 'living labs' providing local stakeholders with coaching and mentoring on real procurement projects and opportunities. One of the main lessons learnt by the project, and reflected in the PPI Guide for Low Energy Cities, is that cities need to embed the application of innovation procurement approaches for energy efficient works, supplies and services in a longer-term strategy towards energy transition, to create the right framework conditions. The partners did considerable efforts in the establishment of the right framework conditions in terms of policy and structures to allow for innovation procurement interventions. In Budapest, this resulted in the creation of a 'Sustainable and Innovation Procurement Strategy for the Municipality of Budapest and municipal

companies', and to the integration of innovation procurement targets in the Budapest Climate Strategy. In Birmingham, the new Commissioning Strategy includes innovation as a specific theme.



Budget: 1.489.540,33 €

Duration: 36 months (1 June 2015 to 31 May 2018)

Project Coordinator: Alessco

Webpage: <https://greensproject.eu/en/>

The GreenS project (649860) supported the provision of long-term support and technical assistance on green public procurement (GPP) to local authorities, by the establishment of permanent supporting structures, called G.P.P.S. – Green Public Procurement Supporters within Energy agencies in seven EU countries: Bulgaria, Cyprus, Italy, Latvia, Slovenia, Spain and Sweden. The permanent supporting structures provide a platform for interaction and multilevel cooperation among stakeholders at national, regional and local level on green public procurement. Steering committees within each supporting structure guarantee the early involvement of relevant stakeholders such as energy agencies, planning regions, central and regional purchasing organizations, municipalities, consultancy offices and producers of eco-friendly goods and services in each of the regions involved in the project. The project provided large-scale capacity building and training activities to almost 1500 procurers.



Budget: 1.498.738,00 €

Duration: 36 months (1 April 2015 to 31 March 2018)

Project Coordinator: ICLEI European Secretariat

Webpage: <http://www.sppregions.eu/home/>

SPP Regions (649718) supported public authorities at regional level in capacity building, best practice exchange and direct collaboration in sustainable and innovative procurement, whilst slowly moving into the direction of circular procurement. This resulted in 40 eco-innovative tenders focusing on energy savings in public buildings, vehicles and transport, and food and catering. The project built upon the legacy of the previous GPP2020 project, funded under the Intelligent Energy Europe II programme. The project aimed to use of regional networks to allow for collaboration between municipalities on sustainable public procurement and public procurement of innovation. The project created new regional networks in Copenhagen (DK), Rotterdam (NL), Bristol (UK) and Gabrovo (BG), and strengthened existing networks in Barcelona (ES), Torino (IT) and West France. The project created a systematic capacity-building programme for public procurers within each region, based on European best practice and training material, training more than 4200 stakeholders. The project redeveloped the Procura+ network⁴⁶ into a European Sustainable Procurement Network, and produced a number of high-quality publications on public procurement such as the "Market Engagement Best

⁴⁶ PROCURA+ European Sustainable Procurement Network: <http://www.procuraplus.org/>

Practice Report”, the “Life Cycle Costing State of the Art Report” and the “Circular Procurement Best Practice Report”, available on the project website.



Budget: 1.997.987,00 €

Duration: 40 months (1 April 2015 to 31 July 2018)

Project Coordinator: Austrian Energy Agency

Webpage: <http://www.premiumlightpro.eu/>

PremiumLight_Pro (695931) supports the wide uptake of outdoor and indoor LED lighting systems in the public sector, by developing green procurement criteria and guidelines for LED lighting systems, the provision of capacity building and education for planners, architects, installers, consultants and other target groups. Finally, the project supports the national implementation of the Energy performance of buildings directive (EPBD)⁴⁷. The project was still running when this report was finalised.

⁴⁷ *Energy performance of buildings directive*, European Commission:
<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-performance-of-buildings/energy-performance-buildings-directive>

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