XPRESS

Facilitating green public procurement in the energy sector

Deliverable 1.1

Partners

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Deliverable 1.1

First draft of RES Survey (RESS)

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XPRESS

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INTRODUCTION

The main result of this deliverable is the first draft of the RES Survey (RESS), which will be implemented in Task 2.3. As foreseen in the Grant Agreement, XPRESS partnership planned to achieve this result through 10 co-creation workshops that organized in each partner country with innovative SMEs and local authorities. The workshops will serve for mapping needs and build new ideas for collaboration.

The task leader with the support of all partners have organized 4 co-creation workshops (with locations in Odense – Denmark, Bratislava – Slovak Republic, Braga – Portugal, Frankfurt - Germany) featuring innovative SMEs and local authorities. Co-creation workshops have the main goal to discuss existing multilevel governance strategies, policies and planning tools and operational, financial and organizational measures for energy, transport, mobility and land-use planning at community and city level in relation to the innovative concept of XPRESS integrated strategy for RES investment fostering. These meetings contributed in shaping the way (XPRESS Strategy) XPRESS elaborates the RESS (RES Survey).

Local authorities taking part to these meetings have had the opportunity to start a direct dialogue with innovative SMEs with the opportunity to collaborate with them in implementing green innovations in the energy area. The innovative SMEs who are potentially interested in developing innovative green solutions by taking part in GPPs, have been offered the opportunity to cooperate actively in the project and to provide useful insights on their innovative solutions.

Innovative SMEs collaborating with the XPRESS project will be provided an analysis of their projects with the additional suggestion of suitable financial solutions that, in collaboration with the public procurers, will allow their business to flourish. The XPRESS project will benefit from this collaboration by having the chance to understand the developers 'perspective, which is a valuable input for the overall Project in order to develop - based on those innovative RES solutions – suitable standardized documents and procedures such as contracts or agreements. These documents will be beneficial for any future implementation of RES technologies by innovative SMEs via public procurement.

The main output of the co-creation workshops will be the first draft of the RES Survey (RESS) which will be implemented in Task 2.3 and will provide the necessary data for analyzing the status

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quo of the interaction between innovative SMEs and public procurers when implementing RES technologies with a specific view on supporting a smooth collaboration between these two key parties.

As part of the XPRESS stretegy, the co-creation workshops contribute to the stakeholders engagement and XPRESS survey

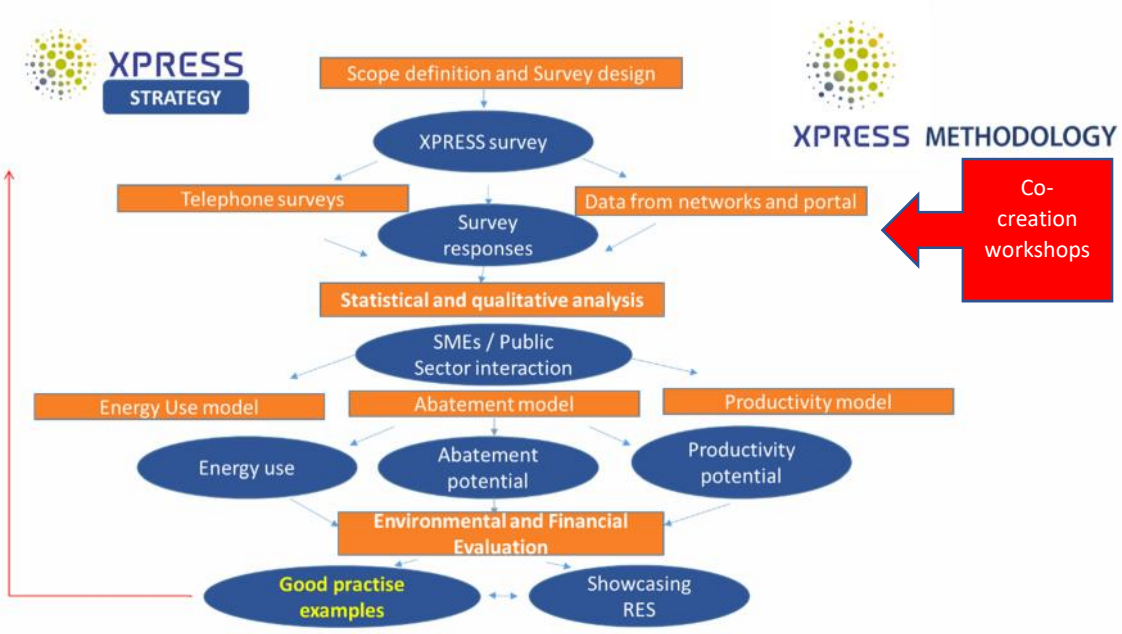

Figure 1 – XPRESS Methodology

The co-creation workshops have been mainly focused on public procurement.

Public procurement can be an effective tool for promoting innovation and integration of renewable energy (RE) - for municipalities and businesses. Collecting information from the co-creation workshops is one of the main sources of data for the XPRESS project.

The purpose of the data collection is to detect barriers that need to be overcome.

More specifically, it may be difficult for a public authority to find small and medium-sized enterprises who can offer some specific innovative services. Conversely, as it has emerged from the XPRESS workshops, too cumbersome and bureaucratic public procurement procedures might constitute a barrier for small and medium-sized enterprises when engaging with the public procurement process. In this context, the workshops have been looking at the criteria for

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evaluating competing proposals put forward by innovative SMEs in a public procurement process. One of the main recommendations of the workshops is that not only the "most economically advantageous" criterion, but also LCA (Life Cycle Analysis) should be included in the evaluation of competing offers.

The XPRESS co-creation workshops have also identified good practice case studies, and put both barriers and opportunities on the agenda - including EU procurement rules. The XPRESS co-creation workshops have brought together public authorities, innovative SMEs and academia with the aim of debating these barriers.

Furthermore the participating stakeholders received and shared knowledge on:

- Latest international research on supply of green technologies
- Good practice cases
- EU procurement rules
- Terms and conditions for green and innovative public procurement
- Barriers to procurement of innovative, green promotional solutions from the municipalities
- Barriers to procurement for innovative SMEs.

As supporting actions to the XPRESS survey, as a result of the stakeholders presentations and the co-creation sessions, the co-creation workshops provided a valuable contribution on the following topics:

1. *Analysis of the barriers and challenges to innovative green tenders (GPPs) for the public sector*
2. *Support to Public Authorities in minimizing any financial and regulatory constraints*
3. *Initial financial evaluation of the barriers faced by innovative SMEs*
4. *Informed advice on SME friendly procedures*
5. *Information and updates on current initiatives*
6. *Analysis of the environmental impact of RES innovations carried out by GPPs*

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1. Co-creation workshops

The input data for the XPRESS analysis will combine secondary source with primary source data.

The outputs from the XPRESS co-creation workshops will perfectly integrated within the XPRESS data collection system. Information collected from existing datasets (TeD, Amadeus, Innobarometer and Eurobarometer) have been used in order to shape the workshop activities.

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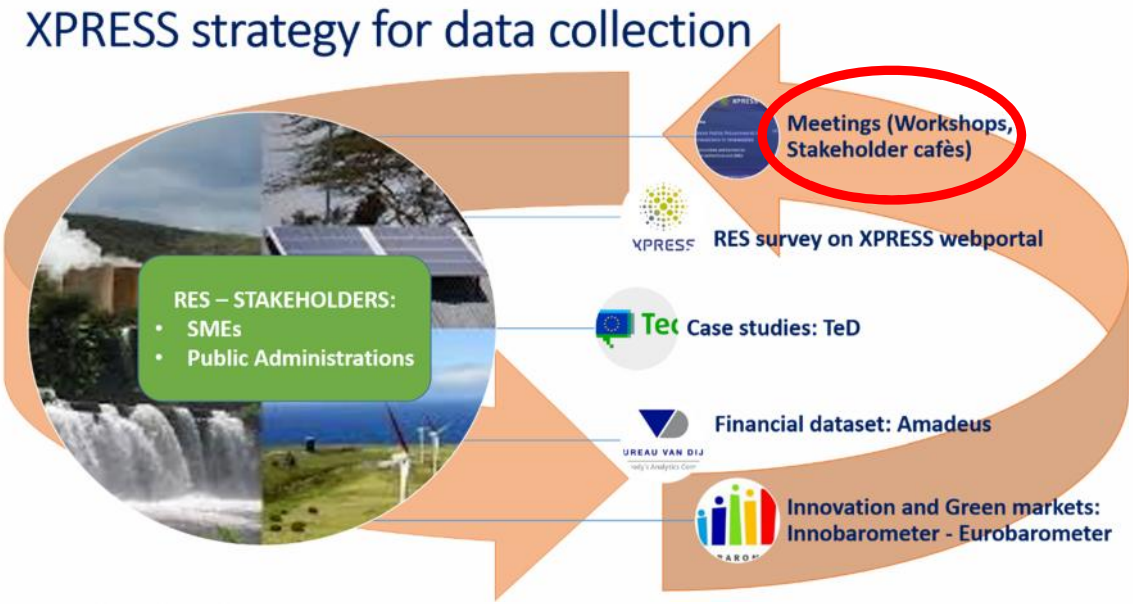

Figure 2 – XPRESS strategy for data collection

The original workshops schedule was the following:

	Partner	Country	City	Date	Status
WS1	EGC	Danmark	Odense	26 november 2019	Done
WS2	SZZ	Slovak Republic	Bratislava	24 january 2020	Done
WS3	EURADA	Portugal	Braga	21 february 2020	Done
WS4	INSME	United Kingdom	Cambridge	28 february 2020	Postponed

WS5	CAE	Germany	Frankfurt	2 march 2020	Done
WS6	INSME	Italy	Roma	6 march 2020	Postponed
WS7	CAE	Spain	Madrid	18 march 2020	Postponed
WS8	EURADA	Belgium	Bruxelles	20 march 2020	Postponed
WS9	EGC	Sweden	Växjö	27 march 2020	Postponed
WS10	EGC	Norway	Trondheim	30 March 2020	Postponed

Only 4 of the scheduled workshops have taken place so far while 6 additional workshops have been postponed because of the Covid19 pandemic.

The XPRESS workshop structure is composed of a presentation of the main issues by local administrations, innovative SMEs and other stakeholders. The first session has been designed in order to give the opportunity to all the stakeholders to interact with the other participants and to start discussing about problems and potential barriers affecting the GPP process.

INITIAL TEST QUESTIONS (BRAGA and FRANKFURT workshops only)

During the Braga and Frankfurt workshops the XPRESS experts proposed a short interactive questionnaire via Mentimeter before the co-creation session. The questionnaire provided very useful material that was then the main topic of discussion during the workshop. These questions have been tested as the initial step towards the RES survey that will be eventually available on the XPRESS Portal:

Question 1

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Question 2

What are the main obstacles to either investment or implementation of technologies in renewable energy sources?

You may choose multiple options.

- [ ] Lack of information about green technologies
- [ ] Lack of skilled labour
- [ ] Legal restrictions /administrative procedures
- [ ] Industry standards/norms

Question 3

What are the main obstacles to either investment or implementation of technologies in renewable energy sources?

You may choose multiple options.

- [ ] Financial risk
- [ ] Innovation costs
- [ ] Size of the contracts (too big or too small)
- [ ] Dominant Market positions of incumbent firms

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Question 4

QUESTIONS FOR THE CO-CREATION WORKSHOP

The parallel co-creation sessions were based on the following track based on data collected from case studies and financial dataset. Co-creation workshops have been implemented giving the opportunity to all the stakeholders to participate in all the three parallel sessions:

Parallel Session # 1: How to increase innovation through green public procurement?

Municipalities / public authorities / purchasers

1. Are the municipality / public institution / purchasers in dialogue with potential suppliers in connection with the different phases of procurement:

a. Before announced purchases?

b. During procurement - during the tendering period?

c. After the contract - during the contract period?

2. Is the municipality / public institution / purchasers working to provide innovative solutions?

3. Are functional requirements used in procurement?

4. What other processes exist to promote innovation?

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Suppliers / SMEs

1. Does your company have a dialogue with the municipality / public institution / purchasers regarding the different phases of the green procurement:

a. Before announcing purchases?

b. During procurement - during the tendering period?

c. After the contract - during the contract period?

2. Does your company work on developing green innovative solutions?

3. Are functional requirements used in public procurement?

4. What other processes exist to develop green, innovative solutions for the public sector?

Parallel Session # 2: Financial and Innovation Barriers

FINANCIAL BARRIERS

• What are the economic barriers to innovation activity?

(Ex .: High financial risk - High cost of innovation - Lack of internal sources of funding - Lack of external sources of funding - Internal resistance to innovation projects - Organizational problems in the company - Lack of skilled labor - Lack of technological information - Lack of appropriate market information - Lack of demand for innovation - Legal restrictions - Long administrative procedures (bureaucracy) - Industry standards and norms - Failure to violate intellectual property (eg patents) - Dominant market positions of dominant companies)

Barriers to INNOVATION

• What innovation barriers have you faced in the last 3 years?

(Ex: Lack of demand for innovation - Specifications that are too ordinary - Contracts not large enough - Contracts not long enough - Lack of interaction - Low procurement - Insufficient IPR management (Intellectual property) - Poor risk management)

• Are there any factors that hamper your innovation activities?

(Ex: Lack of internal financing for innovation - Lack of credit or private loans - Innovation costs too high - Lack of skilled employees in your company - Lack of partners - Difficulty getting public

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grants or subsidies for innovation - Uncertain market demand for your ideas for innovations - Too much competition in your market)

• Product innovation (questions especially for SMEs)

• Has your company introduced new products or services in the last three years? Is the company new to the market? Are products or services new to the company?

(Ex .: Internal R&D External R&D Acquisition of machinery, equipment, software and buildings Acquisition of existing knowledge from other companies or organizations Education for innovative activities Market introduction of innovative Design)

(R&D = research, research and development)

Parallel Session # 3: Environmental Innovations and Impacts - Purchasing Best Practices

Municipalities / public authorities / purchasers

1. What environmental criteria have the public authority established for procurement of renewable energy products and services?

2. Are specific environmental criteria established for each procurement initiative or are different criteria used for each category eg technologies and services needed to purchase?

3. Have specific criteria been set up for suppliers to use, manage, maintain and end-of-life when the facility, technology or service is implemented?

4. What type of products and technologies are being produced and installed by the public authority as a result of a green procurement initiative (ie are they specifically seeking to procure eg renewable energy technologies)? What are their technical specifications?

Suppliers / SMEs

1. Have you developed products and services with a longer life, better energy efficiency and reduced environmental impact to be able to participate in a green? If so, please specify products / services, their service life, energy efficiency and / or reduction of environmental impact.

2. What position do you have in the renewable energy products and services market?

3. Did your company introduce innovations that had environmental benefits in the period 2016-2019, and if so, what was their contribution to environmental protection?

(Ex: Reduced energy consumption - Reduced material use / Water use - Reduced CO2 footprint (total CO2 emission) - Reduced air pollution (ie SOx, NOx) - Reduced water or soil pollution - Reduced noise pollution - Paid fossil energy sources with renewable energy sources - Replaced materials with less hazardous substitutes - Recycled waste, water or materials for own use or sale).

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4. Did your company introduce new products or services through the use of these products / services during 2016 to 2019, and if so, what was their contribution to environmental protection?

(Ex: Reduced energy consumption - reduced air, water, soil or noise pollution - Improved reuse of the product after use - Extended product life through longer and more durable products).

5. What were the results of your company's decisions to introduce environmental innovations during 2016 to 2019?

(Ex: Existing environmental regulations - Existing environmental taxes, fees or fees - Environmental regulations or taxes expected in the future - Government grants, grants, etc. for environmental innovations - Current or expected market demand for environmental innovations - Improving your company's reputation - Voluntary actions or standards for good environmentally friendly practices in your sector - Increased energy, water or materials costs).

All the partners who organized the workshops with the support of other XPRESS partners collected the information and drafted the minutes in support of the XPRESS data collection strategy.

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1.1 WS1 Odense

The first co-creation workshop was held in Denmark on the 26th of November 2019 both in Danish and English.

XPRESS Policy Co-creation Workshop

The role of Green Public Procurement (GPP) in boosting innovations in renewables: challenges, opportunities and barriers to overcome for local authorities and small and medium enterprises (SMEs)

STJERNESKIBET, HAVNEGADE 29, DK-5000 ODENSE
November 26th, 2019 11:00 a.m.

Introduction

Public procurement can be an effective tool for promoting innovation and integration of renewable energy (RE) - from the municipalities and businesses. But there are also barriers that need to be overcome. For example, it may be difficult for a public authority to find the small and medium-sized enterprise that can offer innovative services. Conversely, it may be a barrier to small and medium-sized enterprises that the municipal procurement procedures are too complicated. In this context, the workshop will be looking at whether there are the right conditions for SMEs to compete. For example, not only the "most economically advantageous", but also LCA (Life Cycle Analysis) should be included in the evaluation of an offer.

The co-creation workshop puts both barriers and opportunities on the agenda - including EU procurement rules. The co-creation workshop brings together public authorities, innovative SMEs and academia with the aim of debating these barriers.

Attending the co-creation workshop provides knowledge on

- Latest international research on green supply
- EU procurement rules
- Danish terms and conditions for green and innovative public procurement
- Barriers to procurement of innovative, green promotional solutions from the municipalities

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- Barriers to procurement of innovative, green promotional solutions from SMEs

The workshop will be held in English with translation in the local language.

For registration: www.greencities.eu/events

Agenda

11.00 – 11.15	Registration and Welcome
11.15 – 11.30	**Introduction: HORIZON 2020 XPRESS initial results** *Riccardo Coletta - XPRESS project coordinator, APRE* *Dr. Paola Zerilli - XPRESS scientific project coordinator, University of York, UK*
11.30 – 12.00	**Scope of the workshop: The role of Green Public Procurement in boosting RES investment and innovation: challenges, opportunities and barriers to overcome** *Dr. Paola Zerilli - XPRESS scientific project coordinator, University of York, UK*
12.00 – 13:00	**Mutual Learning of good practices among the participants I** About the opportunities for green and innovative public procurement by Charlotte Brønserud Jespersen, Tender and Contract, Odense Municipality - who just won the award as "The world's best buyer" at the annual conference in "Forum for Sustainable Procurement.
	Mutual Learning of good practices among the participants II About barriers and opportunities from an SME by Mads Christensen, Solar Future

Lunch Break 13:00-13:45

13:45 – 15:00	Quadruple Helix parallel group sessions: Academia/Business/Policy makers/Civil Society. *The participants will discuss the topics proposed in three facilitated parallel groups*
	Parallel session#1: How to boost innovations in RES through GPP
	Parallel session#2: How GPP on RES will contribute to the implementation of Sustainable Development Goals (SDGs)?
	Parallel session#3: How to support policy makers in boosting the RES market through GPP?

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Plenary Discussion	
15:00 – 15.30	**Integration of results from the parallel groups and final plenary discussion on possible policy recommendations** *Presentation of the main insights from the parallel sessions*
15.30 – 15.45	**Conclusions of the day – next steps**
16:00	**End of the workshop**

Below are the details about the presentations given by the main stakeholders.

Charlotte Brønserud Jespersen, lawyer and Linett Hindberg, consultant of the Odense Municipality
The representatives of Odense Municipality initiated their presentation by informing that Danish Procurement Act allows demands for the object of the procurement, also in the whole value chain, but not for companies. The municipality can process demand for certification and make a follow up.

Odense Municipality – and many other Danish Municipalities – uses dialogue- and negotiation-based tenders. This tender form is expensive for companies, as they need to participate in hearings and give input to the market dialogue without knowing, if they succeed. There is already a good exchange of information, before, during and after the procurement.

The municipality has a "Supplier Portal" with lists of suppliers – all companies can sign up. It's a centralizer purchasing centre that coordinate the public procurements.

A new opportunity has occurred with the latest revision of the Danish Procurement Act. It is now possible to build "Innovation Partnerships". If a company has a new idea or a new product, a contract of a partnership can be made.

The concerns of the SMEs are about problems with tenders of more than 1 million DKK, because the municipality usually asks for collateral. This means that, according to the limited resources available, a SME can only bid once, limiting their participation to public tenders. On the contrary, on tenders with a value of less than 1 million, collateral is not required. Partial-contracts can be a possibility to facilitate the SMEs participation.

Odense Municipality is committed to focus on circular economy development and to include it in public tenders. But one of the questions and the concerns of the municipality is to detect and verify whether there are enough companies that can offer these products.

Linett Hindberg explained clearly the municipal policy on tenders with the following slogan: Use less, use more efficient. Odense has a clear target: within 2025, the municipality will develop one quarter of the city as "Sustainable Development Goals" quarter. This target implies a more intense public procurement activity while progressively increasing the involvement of innovative enterprises.

Presentation by Martin Dietz: architect of SolarLighting (SME):

Mr Martin Dietz discussed several barriers that he has experienced with Public Procurement.

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1. Risk sharing.

The local authorities do not take the financial and technical risk in procurement and transfer these risks to the SMEs. Mr Dietz presented a specific example in explaining this first barrier. In a procurement case in the Aarhus Kommune, two schools launched a procurement for solar roof panels while the procurers were not sure whether the roof could support the solar panels. This risk was not explained in the tender document and therefore it was exclusively taken by the SME who won the bid.

When risks are too high, only big firms are able to take them on: this is a clear barrier against SMEs participation.

Sharing these risks with the public procurers would be a possible way of overcoming these barriers.

2. Power of large enterprises.

Large enterprises have the power to win GPP bids while often outsourcing the actual activities to SMEs and making large profits.

3. State, regional, and municipality regulations.

State and regional buildings are allowed to have solar roofs and get the economic benefits from the solar roof, but the same does not hold for municipalities.

4. EU policy vs. policy in Denmark

EU regulations encourage local energy production, but this is not applied in Denmark. The EU is more progressive in terms of climate policy than the Danish government.

5. Tender documents are difficult to understand and not instructive

The current tender documents are very complex in order to avoid any legal conflicts. Only the big firms have the capacity to interpret the tender document, since they can count on specific legal department. The tender documents are often not instructive, and difficult to understand, and SMEs are, once again, in a disadvantageous position.

6. The application of climate goal in Denmark

The Danish government have very specific climate goals, but the process to achieve them is very slow. Enterprises would need a faster implementation of the national goals. Public procedures and bureaucracy are considered not friendly for enterprises.

7. Financial obstacles.

Building owners do not give 100% payment guarantee, which means that there is a lot of risk for SMEs involved in putting in place. Without the payment guarantee, it is also very difficult for SMEs to get finance support from the bank. Big companies can achieve more easily financial support.

8. Competence of local procurers.

Odense commune does not have architects and engineers as employees, while the energy agency can provide consultants. Copenhagen commune usually pays for external consultants. This lack of expertise can produce miscommunication with enterprises interested in taking part to public procurement.

Presentation by Jacob Brandt, SMV Denmark

SMV Denmark has defined SMEs as companies with less than 100 employees. In Denmark, 99% of companies are SMEs – there are only very few large companies.

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Public tenders, in order to be SME friendly, need to be organised by type in smaller groups and they need to explain clearly the procurer's needs.

The Danish "SKI" is an organisation, centralizing the public sector's procurement needs (see: https://www.ski.dk/Viden/Sider/Facts-about-SKI.aspx).

SKI does not prepare SME friendly tenders. For a public procurer, it's easier to handle one project instead of hundred projects!

Just recently, the Copenhagen Municipality has had a consultant company telling them that electric cars are cheaper than ordinary cars – for the municipality. But, on the market, an electric car in Denmark costs perhaps 50.000 DKK more than a diesel car. The difference could be due to the lower Life Cycle Costs (LCCs) related to the electric vehicles. At the moment in EU, a common calculation method for LCCs is missing. It would be helpful to have a standardised method for computing them.

Another potential barrier is the certification requirement and the costs related to the certification in order for SMEs to be able to participate to public procurement. It is very difficult to understand whether SMEs would face recurrent certification costs and whether they would be able to afford them in the long run.

Presentation by Charlotte Brandt, master in political science, Danish Business Authority

Charlotte Brandt presented some development projects in the Danish Business Authority, focussing on innovative public procurement. The three models were:

- 2011-2015: Grants to public procurers
- 2014-2019: Pre-commercial procurement of innovation – PCP
- 2017-2019: Innovation partnerships

Grants to public procurers were tested in 23 projects. In these cases, the preparation process for tenders was financed or supported in order to make the bidding process more accessible to enterprises. The main goal was to encourage the companies winning the bids to share their development work with competitors.

PCP - 3 partnerships have been built:

- Municipalities (rainwater barriers in city areas)
- Regions (automation in hospitals/sterilization centres)
- Water companies (optimized wastewater solutions)

The results are not yet known. But all these projects look promising.

Innovation partnerships are considered as an effective tool, but they require a lot of resources.

The Authority has developed a platform publicising the challenges that companies might face and encouraging the proposal of possible solutions. See: https://challenges.dk/en

The big question is, if the models benefits businesses and companies.

The open discussion session (with co-creation methodology) involved all the participants on the following topics related to the Green Public Procurement GPP

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a. Decision process.

The decision process in Denmark gets narrower, and the decision power belongs in most of the cases to the central government. The regulation imposed by the central government makes it difficult to choose the winning bids: even if, in some cases, local communes can directly choose the winning bids, they are still restricted by the regulations imposed by the central government. Odense commune won the prize for the best Public Procurement model because of its focus on implementing sustainable development goals.
Other municipalities such as Copenhagen and Aarhus have also shown a good performance in implementing GPPs.

b. The procurement scheme-SKI

SKI is used mostly for common and standard products and has not been used for RES.
Each municipality has their own ecommerce system managed and based on local needs.
Only large companies can supply procurement in SKI as it is not a SME friendly tool.
SME needs to participate together with large companies. If they own a competitive solution, SMEs need to collaborate with large companies, and they take 20% profit leaving SME the risks.

c. Barriers for SME when bidding in a public tenders

It can be risky for SME to involve in a market dialogue. The solution that a SME proposed, can be copied by other firms.

d. What kind of SMEs can be supported by GPPs

From the procurers´ perspective, it is difficult to support some very small companies e.g. with 3-4 people. They are not professional enough. The representative from Odense municipality can hardly influence on this barrier. Companies need to understand the tender documents and they need to have the appropriate competences to do so. For middle size, 50-100 people companies, municipality has the responsibility and possibility to provide support".

e. Association of SMEs

It can be a solution that SMEs gather together into associations. District heating is an example in Denmark. It would give SMEs the strength to compete with large companies.

f. Supporting SMEs even beyond the tender process

According to the political framework, some funding can be given to SMEs without a tender. In contracts with a lower value than certain amount (1 million DKK) rules are more flexible.

g. Higher flexibility in Danish regulations.

In countries like Denmark, there is very little corruption. But this may be difficult in other EU countries. Higher flexibility in the tender process and more political support would provide a valuable boost towards the achievement of climate goals. Specifically tailored solutions might be necessary for the single EU countries, depending on their specific characteristics and needs.

h. Reducing the complexity of the procurement process and documents.

Preparing tenders requires a substantial investment in terms of time and resources. This means that SMEs can't compete with large companies who have a plethora of resources at their disposal. The procurers should aim for a shorter bidding time and reduce the bureaucratic requirements.

i. Market dialogue

Public procurers always invite companies to ask what is new in the market. Opportunities like the XPRESS workshops can strength the cooperation between the actors involved.

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j. Financial barriers

As commercial bank only offer high interest loans charging interest rates as high as 8 - 10%. SMEs need more financial incentives.

k. Creating a RES market for SMEs

Municipalities should create the right conditions for a SME friendly market where they guarantee to buy their innovative solutions. Innovative partnerships could be a good way to achieve this purpose.

l. Certifications

Certifications could be a driver towards SME involvement in GPPs when they are cost effective in the sense that public procurers commit to buy a certain amount of products and services from SMEs who have the required certifications. By the same token, if not cost effective, certifications might represent a major barrier for SMEs who want to compete in a public tender.

m. Environmental impact

Municipalities nowadays are increasingly using Life Cycle Analysis as a criterion to rank competing bids in a GPP context.

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1.2 WS2 Bratislava

XPRESS Policy Co-creation Workshop

The role of Green Public Procurement (GPP) in boosting innovations in renewables: challenges, opportunities and barriers to overcome for local authorities and small and medium enterprises (SMEs)

LOCATION. Bratislava
January 24th, 2019 11:00 a.m.

Introduction

Public procurement can be an effective tool for promoting innovation and integration of renewable energy (RE) - from the municipalities and businesses. But there are also barriers that need to be overcome. For example, it may be difficult for a public authority to find the small and medium-sized enterprise that can offer innovative services. Conversely, it may be a barrier to small and medium-sized enterprises that the municipal procurement procedures are too complicated. In this context, the workshop will be looking at whether there are the right conditions for SMEs to compete. For example, not only the "most economically advantageous", but also LCA (Life Cycle Analysis) should be included in the evaluation of an offer.

The co-creation workshop puts both barriers and opportunities on the agenda - including EU procurement rules. The co-creation workshop brings together public authorities, innovative SMEs and academia with the aim of debating these barriers.

Attending the co-creation workshop provides knowledge on

- Latest international research on green supply
- EU procurement rules
- Slovakian terms and conditions for green and innovative public procurement
- Barriers to procurement of innovative, green promotional solutions from the municipalities
- Barriers to procurement of innovative, green promotional solutions from SMEs

The workshop will be held in local language/English with translation in the local language/English.

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Agenda

10.00 – 10.15	Registration and Welcome
10.15 – 10.30	**Introduction: HORIZON 2020 XPRESS initial results.** **Scope of the workshop: The role of Green Public Procurement in boosting RES investment and innovation: challenges, opportunities and barriers to overcome** *XPRESS partners*
10.30 – 11:15	**Mutual Learning of good practices among the participants I** About the opportunities for green and innovative public procurement.
11.15 – 13:00	**Mutual Learning of good practices among the participants II** About barriers and opportunities from an SME
Lunch Break 13:00-13:45	
13:45 – 14:15	Quadruple Helix parallel group sessions: Academia/Business/Policy makers/Civil Society. *The participants will discuss the topics proposed in three facilitated parallel groups*
	Parallel session#1: How to boost innovations in RES through GPP
	Parallel session#2: How GPP on RES will contribute to the implementation of Sustainable Development Goals (SDGs)?
	Parallel session#3: How to support policy makers in boosting the RES market through GPP?
Plenary Discussion	
	Integration of results from the parallel groups and final plenary discussion on possible policy recommendations *Presentation of the main insights from the parallel sessions*
14.15 – 14.30	**Conclusions of the day – next steps**
14:30	**End of the workshop**

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On the 24th of January 2020 a creative workshop was held in Bratislava, Slovakia focused on finding solutions to facilitate the introduction of innovative technologies based on renewable energy sources (RES) through public procurement (PP). The event was the second of the XPRESS workshops scheduled.

Mrs. Bellušová (SZZ) - welcomed all participants and presented the Slovak Craft Industry Federation (SZZ), which is an association of craft communities and professional guilds. In collaboration with state authorities, it represents the interests of self-employed and small entrepreneurs.

Dr. Zerilli (University of York)- informed, that the project partners have been working on XPRESS for several months, trying to increase investments in green technologies, linking local authorities and resources across Europe.

Mr. Coletta (APRE) – said that the XPRESS project is currently mapping barriers in investment in green technologies, barriers in enterprise - investor cooperation, and self-government – state cooperation in individual countries. They would also like to get to know successful projects from these countries which they will share across Europe. They will return to each participating country once a year to inform the partners about the project results.

He introduced a new website, which is currently only in English, but several language versions are being prepared. On this website an international collection of green procurement contracts will be published and a link to apply for SMEs cooperation, municipalities, towns - anyone may participate. Their aim is to gather practical experience and to find out what the obstacles are in the implementation of green technologies by individual countries.
The website will present the results of all workshops in participating countries as well as an online questionnaire, which may be filled by the relevant stakeholders.

Presentation Green Public Procurement (GPP) – Ministerstvo životného prostredia SR (Ministry of environment SR), Mr. Rousek Miroslav

Mr.Rousek (MZP SR) - Green procurement means using public finances ecologically, but the definition of green procurement is not yet defined clearly by the law. It is currently only a voluntary instrument in public procurement. In Slovakia, 16% of GDP is invested through public procurement.
The National Action Plan for Green Public Procurement in Slovakia (NAP GPP III) was implemented during the years 2016-2020, in which the concept of development and implementation of GPP in Slovakia was adopted and its strategic objective is to achieve 50% share of green contracts implemented by state authorities. However, this objective has not been achieved yet.

Currently, the NAP GPP IV for 2021-2025 is being prepared, whose strategic objective is to achieve a 70% portion of green contracts implemented by state authorities and to create a binding legislative regulation for GPPs.

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GPPs are supposed to be implemented in 12 priority product groups. For example, by purchasing organic paper, the contracting authority protects forests, moreover its production uses less water and chemicals.

Discussion:

Mrs. Tonková (Community Karlova Ves of Bratislava city), in Slovakia, in the public procurement, there is for example such problem that green paper is significantly more expensive than normal paper. The green solution might be not be immediately economically advantageous, but lack of benefit calculation and the need to purchase at the best price can favourite the traditional goods.

Presentation GPP – good practice examples – Slovenská agentúra životného prostredia (Slovak agency for environment) Mrs. Jurkovičová Slávka

Mrs. Jurkovičová (SAZP)- the role of the agency is to monitor GPPs, have good practice examples from other countries, such as ecological elementary schools in Pembroke and Malta, procurement of a waste water recycling system for the Austrian mint, ecological electricity and cars in Slovenia.

GPP applies the circular economy principle, which aims to reduce the negative impact on the environment while stimulating innovation and forming production and consumption trends.

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The NAP GPP III introduces the term 'green contract' and prioritises these four groups in the area of usage of renewable resources:

- Electricity
- Traffic
- Design, construction and management of office buildings
- Waste water infrastructure

According to the official statistics, only 3.8% of procurements in terms of number and 7% in terms of volume can be labelled as “green” in Slovakia.

Presentation - Ako sme obstarali elektromobil (How did we procure an electric car) – Inštitút pre verejné obstarávanie (Institute for public procurement)

Mrs.Gajdošíková and Mrs.Jurčáková (IVO)- gave an example of how they procured electric cars using their public procurement office. They printed a booklet and made a video about the entire procurement process, pointing out that the preparation of the procurement is very important. But they also found out that electric cars are significantly more expensive than regular cars. For electric vehicles, we can distinguish between direct carbon emissions, which don´t occur in operation and indirect carbon emissions, related to the production and disposal of the vehicle, especially batteries, which are not negligible. Similar but higher type of emissions can be calculated for regular vehicles. This example suggests that Life Cycle Costs (LCC) should be taken into consideration when pricing any type of vehicle.

On the IVO website, it is possible to find the details about the methodology related to public procurement of electric cars.

Discussion:

Dr. Zerilli- projects such as XPRESS can help making green technologies cheaper by evaluating the *effective social and environmental costs of green technologies versus competing technologies*.
They will be very happy if we let them know about green procurement, companies can offer them their green technologies.

Presentation Zavádzanie inovatívnych technológií v oblasti OZE (Introducing innovative technologies in RES) – Združenie (Association) CITY-ENERGO, Mr.Matúš Škvarka

Mr. Škvarka (CITY-ENERGO) – works as an energy expert for renewable energy sources. Since aircraft and ships are the biggest polluters, only by increasing domestic production it is possible to minimise the pollution caused by good transportation.

He presented a project for the construction of e-mobility infrastructures in the city of Trnava. He mentioned several problems in the implementation of RES technologies. For example, with

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solar panels, there was a problem with the structural soundness of the buildings as old roofs would not bear the weight of the panels and also that the retention was determined by 10% of the estimated outgoings in the PP. However, the price was ultimately much lower and the amount of the retention amounted to almost 50% of the bid price, which was unacceptable for the PP participants.

Financing of innovations:

- without payback (for example, grants and subsidies): in this case, there is a need for an audit that recommends specific measures. But the problem is that such an audit can be very expensive while the auditor cannot be an expert in all areas and new technologies

- with a payback (for example, Energy Power Contracts): in this case, a quick screening is often sufficient as additional details will be provided by the bidders.

In his opinion, effective support for electric vehicles could take the form of free charging at power stations rather than grants to buy electric cars, as these grants are not capable of reaching a significant portion of the population.

Presentation – Local Smart City Solutions for Slovak and Czech Municipalities, I Want Smart City Initiative, SEAK s.r.o., p. Heliodor Macko,

Mr. Macko (SEAK,s.r.o.)- The "I want smart city" initiative collaborates directly with innovative SMEs. The goal of this initiative is to show that "smart city" is not a fashionable word far from Slovak reality, but actually refers to technologies that truly deliver simpler, greener and better organized life in sustainable cities. Together they cover different areas and work together to form one intelligent whole. They provide innovative products that they manage to place mainly abroad but not so much locally. According to them, there is a problem in public procurement.

For example, his company produces intelligent public lighting - they are able to remotely control the intensity of each lamp individually, provide remote diagnostics, monitor, and identify illegal smears. They communicate via electrical cables, so there's no need to add anything to the lamps themselves.
They also make electric car chargers and can integrate them into public lighting lamps. Cities now pay large amounts of money for flexibility to be able to adjust their electricity supply. Green energy brings an even greater risk to this process. He would like to have a simple methodology for the PP, for example a form, because the mayor of the city is not an expert on everything and even if he has an employee at the PP, the technical parameters of the project can no longer be worked out well. It would be more than appropriate for the Office of PP (UVO) to prepare a collection of representative processes for 10-15 commodities as best practices.

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Discussion:

Mrs.Tonková (Community Karlova Ves, Bratislava city) - supports the proposal that the UVO should develop a standard model form for green public procurement.

Mr. Škvarka (CITY - ENERGO) – today, there is an obligation to publish contracts for public authorities, but it would be beneficial to organise them so that they are not only published by towns and villages but, as for example in Austria, they are also presented by publicly funded public energy agencies that represent the interests of cities and municipalities.

Mr. Magyar - (SIEA) - it is good to join forces and share existing solutions, e.g. in Finland there are PPs that operate worldwide based on templates with standard procedures.

Mr. Macko (SEAK, s.r.o.) - Although we support electric vehicles in Slovakia, we also subsidize coal mining in mines, which is the worst energy production.

Paralell group 1 – How to support RES innovations through PP?

Discussion:

Mr. Jánoš – Cech vykurovania, tepelnej techniky a inštalácií (*Heating, Thermal and Installation Guild)* - represents small businesses providing heating services. Members of the guild do not participate in the PP, as there is enough work on the market also from private customers, numbers of assembly companies are decreasing, and they lack professional staff. The number of workers interested in the apprenticeship fields is also decreasing for heating engineer, plumber, power engineering. Companies in their guilds can also integrate solar panels and heat pumps into the heating systems, and they are doing services in energy management. The Guild also organizes trainings for local governments on the use of, for example, hydraulic adjustment. They usually give solutions with combined energy sources.

*Mr. Orovnický – Slovenský zväz pre chladiacu a klimatizačnú techniku (*Slovak Association for Refrigeration and Air-Conditioning Technology) - in practice mainly heat pumps are used, their use has exponential growth. In his opinion, the main problem is that the mayor's voting term in towns is 4 years while the timing for getting the return on investment is much longer. Municipalities only make little use of EU environmental investment programs, which could cover up to 90% of the costs. As there are not many RES experts on the market, companies focus on short-term solutions in terms of profit and that is the main reason why they do bid within PP tenders.

Mr. Macko – SEAK, s.r.o. (private company) - return on investment for optimizing public lighting is 3-4 years while the life of the overall system is 10-15 years. Private companies are also often able to finance investments, and the city has lower energy bills than before as short-term positive effect for the entire community. For example, the European Investment Bank (EIB) also

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offers resources for projects over € 5 million. Their company received a pilot project to deploy Smart Technologies in cities for public lighting and charging stations where 50% of the resources were provided by the State Ministry of Economy and 50% were provided by a private company. The project was supposed to be implemented by Banská Bystrica which, at the end, did not provide sufficient support in the preparation of the contracts therefore delaying the implementation.
To facilitate the procurement of RES, it would be helpful if the UVO set up a single procurement procedure that cities could apply without always have to re-designing the whole process. More innovations based on RES will start when real opportunities for energy sharing are created. E.g. in the form of virtual power plants. This sharing would take place only virtually, within a designated project - for example, a city quarter of several streets, houses. If one house produces more energy than it consumes, it provides the extra energy to the public grid. Nowadays, all overproduction is given to 3 monopoly distribution companies.

Intelligent charging stations for electric vehicles can also be built on this principle. If they are managed through energy management, users will know when "green" energy is available in the system with the possibility of charging cars for free.

*Mr. Orovnický – Slovenský zväz pre chladiacu a klimatizačnú techniku (*Slovak Association for Refrigeration and Air Conditioning) – believes that 80-90% of the necessary technologies for the deployment of RES already exist, but no support legislative frameworks and energy systems are ready yet. Therefore, it is not entirely clear how such technologies should be procured properly in the PP. Slovakia makes also a specific use of geothermal water. When using groundwater, consumers have to pay, also for surface water, whose temperature is adjusted by +/- 5 degrees Celsius. Therefore, having a 5 MWH heat pump like in Vienna on the Danube, would not be profitable in Bratislava.

Mr. János – Cech vykurovania, tepelnej techniky a inštalácií (Guild of heating, heating technology and installations) - water distribution pipes are also in poor condition, there are large heat leaks from hot water distribution. The question of the composition and quality of water is also crucial for the possibility of use of the geothermal energy.

Mr. Rousek – Ministerstvo životného prostredia SR (Ministry of environment SR) – thinks that the main obstacles are represented by the attitude of people who don't give the right importance to environmental problems.

Mr. Macko – SEAK, s.r.o.- thinks that it is common practice for cities to ask consultancy companies to prepare documents for the public procurers and they are not always independent - they prepare a tailor-made assignment for a specific supplier. There is no regulation on the activities of consulting companies while if proven that they have repeatedly prepared tenders, they should be disqualified. It is also necessary to simplify VO rules, because although the EU Procurement Directive is the same for all countries, some countries have simpler procedures than in Slovakia.

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Paralell group 2 – What are the financial and innovative barriers?

Discussion:

Mrs.Kaštílová Tonková- representative of the Local Office of Karlova Ves, Bratislava pointed out that public institutions do not have the resources they can use to introduce innovation in their business. The high cost of innovation is often an obstacle to the use of new methods.

Mr.Škvarka - City energo záujmové združenie miest a obcí SR (City energo, an interest association of towns and municipalities of the SR) - confirmed that they also have a lack of internal resources for the introduction of innovations and people often face internal barriers and insufficient technical information. There are often organizational problems in the company and administrative burdens when implementing innovative projects. He would favour an action plan, sufficient capacity, time management in all companies, thus overcoming the financial problems in the company.

Mrs. Kaštílová Tonková-Miestny úrad Karlova Ves, Bratislava- from the point of view of the state institution, innovation is not applied; employees are not able to use new technologies, they still have lack of experienced employees e.g. They do not have cross-linked systems, so each employee writes in their own "spreadsheet". They would certainly appreciate the introduction of optimization and the use of digital technologies e.g. various applications and the possibility of obtaining public grants and subsidies for innovation.

Mr. Gajdošík - Pow-en, a.s. (súkromná energetická spoločnosť, private energy company) According to him, the criteria and rules for public procurement are not clearly defined. He gave an example of his own experience in the procurement of a hydroelectric power plant, which was procured by the Ministry of the Environment of the Slovak Republic. Even private companies do not have sufficient capital for innovation and from their perspective, such activities should be financed by the state. He also sees a problem in the stability of the legislative environment, which is burdening companies. Pow-en, for example, trades electricity and has around 40 employees and currently provides green energy certificates, using resources only for current market needs and lacking the resources for long-term research and development in innovation. He would appreciate networking with companies for better cooperation within the XPRESS project.

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1.3 WS3 Braga

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XPRESS Policy Co-creation Workshop

Green Companies for green regions and green cities

The role of green public procurement to foster innovations in renewables

on **21 February 2020** – from **08h30** to **14h00**

at **Altice Forum Braga** in Av. Dr.Francisco Pires Gonçalves 60, 4711-909 (Portugal)

Introduction

"The European Green Deal is our new growth strategy" so the President of the European Commission. The energy, industry, buildings and mobility sectors have never been at the centre of the public debate to this extent as today. While EU Institutions set the frame for new policies and programs for the future of a green and inclusive transition, **regions**, **cities** and **companies** are now struggling to make the most out of the current bureaucratic, financial and technological instruments to deliver on the challenges of the climate change.

Europe's public authorities are major consumers. By using their purchasing power to choose eco-friendly goods, services and works, they play a key role to foster sustainable consumption and production. This "green purchasing" is **Green Public Procurement** (GPP). GPP is also a strong **stimulus for eco-innovation**. In fact, it stimulates a critical mass of demand for more sustainable goods and services which otherwise would not easily get onto the market. But there are also barriers that need to be overcome. For examples, it may be difficult for a public authority to find an SME offering the "green" innovative services needed. Conversely, it may be a barrier to SMEs that procurement procedures at regional and municipal level are too complicated.

The workshop "*Green Companies for green regions and green cities*" gathers at the same table Portuguese regional and local authorities and innovative green companies as well as internationals researchers and experts.

The goal of this participative workshop is to together discuss and find solutions concerning:

- EU and Portuguese procurement rules with emphasis on the terms and conditions for innovative GPP;
- Latest international research on green supply;
- Barriers/Solutions to regional and public authorities to promote GPP;
- Barriers/Solutions to SMEs to apply for GPP.

The workshop will be held in English/Portuguese.

For the registration: – here in English and – here Portuguese.

For information about XPRESS: **Webpage Twitter LinkedIn Facebook**

Workshop agenda

Friday, 21 February 2020

08h30 – 09h00 **Registration of the participants and welcome coffee**

09h00 – 09h15 **Introduction**

InvestBraga welcomes the audience, APRE and EURADA then provide an overview of the workshop. Afterwards, a short presentation about the Horizon2020 XPRESS project and its initial project results is held.

Welcome

Ricardo RIO, Mayor of Braga Municipality and InvestBraga President (tbc)

XPRESS presentation

Riccardo COLETTA, XPRESS project coordinator (APRE)

Dr **Paola ZERILLI**, XPRESS scientific project coordinator (University of York)

Giacomo FRISANCO, XPRESS project partner (EURADA)

09h15 – 09h45 **Nanoscience and nanotechnology for renewable energy**

Pedro SALOME', INL - International Iberian Nanotechnology Laboratory

The presentation focuses on how nanoscience and nanotechnology can deliver on renewable energy.

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09h45 – 10h30

Showcase your green solutions

Two SMEs and two public authorities from Portugal showcase their best-practices; the first ones to offer innovative green services to regions and cities and the latter ones to make a smart use of GPP.

Introduction

Carlos SILVA, InvestBraga (tbc)

Representative, PT SME

Representative, AGERE (public utility for water management)

Representative, PT SME

Representative, TUB (public utility for transport)

10h30 – 11h00

Coffee break

11h00 – 12h30

Group work

The group work's goal and structure are detailed namely, to explore challenges, opportunities and barriers to overcome to better use GPP as tool to boost renewables (RES) investments and green innovations.

Guidelines

Dr **Paola ZERILLI**, XPRESS scientific project coordinator (University of York)

Group work

Participants work together facilitated by the XPRESS team to address the questions: A) How to boost innovations in RES through GPP; B) How GPP on RES contribute to the implementation of Sustainable Development Goals; C) How to support policy makers in boosting the RES market through GPP?

12h30 – 13h00

Conclusions

Participants present the group work's outcomes. APRE then draws the conclusions of the workshop.

13h00 – 14h00

Networking Lunch

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After the welcome speech of Mr Ricardo Rio, Mayor of Braga Municipality and an introduction on the purpose of the workshop presented by the XPRESS team, **Pedro Salome** gives a speech about the challenges that climate change will bring to our societies.

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Dr Salome started with a positive approach. Nanotechnology and technology could help us to achieve the goal of saving the planet and at the same time of increasing the GDP. Not only nanotechnology but also physics, engineering, chemistry and other sciences can provide a valuable contribution.

Dr Salome gave to the audience an overview of Primary energy sources (PPT) and of where we are using them: services, housing, transports, and industry. Agriculture and fishery. The main users are Industry and transport sectors. The most exploited energy primary sources are natural gas, oil and biomass (40 oil and 25 gas). Renewable energy sources are relevant not only for the impact on the environment but also because they are able to create higher employment than the traditional energy sources.

Some examples of the application of technology and renewable sources: the electricity for cars will provide us with more efficient batteries with faster recharges. At the same time, the development of sensors for the automotive sector will give us more security in freeways.

Nanotechnology for buildings.

The use of nanotechnology in windows (new materials) might help increasing the saving on energy for heating. Potential applications of nanotechnologies in building energy efficiency are the production of energy in local buildings with photovoltaics, energy storing, water management and filtering. Furthermore the use of recycling as a "second life" (circular economy) and the use of smart buildings (Advanced architectures for ultra-thin high efficiency CIGS solar cells with high manufacturability) are valuable examples of potential application of nanotechnologies in developing energy efficiency and environmental friendly solutions.

Carlos Silva Invest Braga

Presented the goals and objectives of Invest Braga that hosted the XPRESS workshop. Thanks also to the Municipality, Invest Braga allows the city of Braga to collaborate with national and international investment and entrepreneurship. Invest Braga attracts investment to the region, support the growth of economy and employment. Supporting economic dynamics and direct foreign and national investments is the main activity of Invest Braga.

The following are the activity areas: Invest Braga, Altice Forum, Centro de Juventude de Braga and Startup Braga.

Altice forum aims at attracting this investment through the use of a major auditorium for conferences, events organisation.

Centro de Juventude de Braga: Support and development of a quality tourism, especially among the youth. They created hospitality space with 26 rooms and more than one hundred beds.

Startup Braga: development of programmes related with creation, acceleration, pre-acceleration for start-ups with global ambitions.

Green solution showcase speakers:

Rui Carvalho, Empresa Cartonagem Sao Tiago.

Empresa Cartonagem (EC) is a group which includes various companies in both Portugal and Spain (Galicia). They design packaging for industry transport, consumer goods, e-commerce and food & beverage. The goal of packaging is not only to transport supplies but also to communicate and showcase the products.

EC policy is based on quality and success, but also on respect of the environment. For this purpose their quality standards are based on official certificates (European, Portuguese and local rules). EC is member of different national and international associations. The industry model of the group is fostering the circular economy in eco-design, marketing, competitiveness and innovation.

ECODESIGN: EC is always looking for more efficiency (aesthetic of the packaging, security, ergonomics) mostly in the following key aspects: materials and raw materials, packaging

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materials which use less paper such as thin cartons, from sustainable production, structural design, developing models that aims at minimizing the leftovers of paper.

PRODUCTION: The target is to reduce plastics, the consumption of water and energy (61% of fuel). Second life (circular economy) is one of the important things in the production (it has been created a pizza boxes production that could be transformed into a football ball).

RECYCLING: EC identifies the different materials and how many uses could they do of the raw materials.

RAW MATERIALS: Paper, 90% is 100% recycled paper. EC choses providers who have appropriate environmental certificates.

Paula Campos, AGERE

AGERE manages the water sourcing, treatment and distribution systems in Braga.

Its mission: providing excellent services to water and waste/residue management, preserving the environment and satisfying the needs and expectations of the clients focusing on results, transparency, integrity, sustainable development, quality and commitment.

Strategy Europa 2020 since 2010 for the following 10 years have developed an EU strategy to create consciousness and commitment. The strategy has 3 principles:

- Intelligent growth (economy based in knowledge and innovation)
- Sustainable growth (efficient economy in terms of resources) – commitment for a green growth
- Inclusive growth (economy with high levels of employment)

Their priority goods and services are infrastructures and equipment of water treatment, supply, distribution and collection. AGERE's main objectives since 2011 are: General quality, environment, and job security requirements.

AGERE restructured the activities and urban hygiene management. The acquisition aimed at:

- Using alternative combustibles
- Emitting less CO2 – lower levels of carbon

Based on the Strategy Europa AGERE acquired 8 electric vehicles for cleaning and 18 urban electric vacuum cleaners. The city conducted the acquisition of electric equipment with zero carbon emission and with no noise emissions.

The procurement includes several requirements for the contract documents

- Engine compliant to Norma Euro vi
- Leakproofness of the discharge port

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- The process can be performed by only the driver: Decreasing of the time of collection and hazards on the workers
- Containers of bigger dimensions 3,7 m^3

AGERE developed a centralized printing services. This means less printers, (from 100 to 20) and:

- Personalised printing
- Management of ink cartridge 'just in time'
- Printer reduction
    - Less ink cartridge and toner consumption
    - Less paper consumption

AGERE Energy efficiency

Planning of the energy rationalization

ETA- intensive consumer of energy (>1000tep)

- Control platform of energy consumption acquisition (ongoing)
- Installation of variable speed drive to their equipment
- Photovoltaic panels installation with savings of 200.000KWh/year and a payback of 4 years

ETAR – intensive energy consumer (>500tep)

- Platform of energy consumption control and processing acquisition (CREATECH)
- Photovoltaic panel installation, with savings of 54.000Kh/year and a payback of 4 years

Substitution of the electricity installation for LEDs – 30% consumption decreasing

Digitalizing of the processes

- Software acquisition for documental management – filedoc
- Maintenance software – valuekeep
- Operation software – aquafield
- Data monitoring software for the driving of the residual collection vehicles - fleetboard

AGERE integrated a bigger number of environment criteria (less carbon emissions, energy efficiency) in their procedures of public procurement

Economic strand <-> environmental strand

They can guarantee the principle of transparency equity and concurrency

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Future challenges

- Acquire goods and equipment with less environmental impact in their life cycle, giving answers for financial questions and following their budget
- Consideration of environment criteria as guidelines for their procurement processes

Maria Ramalho, Grupo Casais

Catarina Marques, Empresa AmpereEnergy do Grupo Casais

SMEs in GPPs for building refurbishing and in efficiency improvement have to deal with some barriers. Tenders sometimes are characterized by different definitions with different interpretations.

To mitigate this sort of barriers Ms Ramalho proposes a set of possible solutions:

- Centralised information and easy access to it and the creation of a guidelines for green procurements that includes minimum criteria and all the useful information for potential tenderers.
- A clear elaboration of technical details including the definition of which materials could be used in the building (recycled materials) and then the building phases.
- State-of-the-art with a correct alignment of the energy and tax and financial policy such as passive construction principle: thermal exogenous isolation; production and consumption of renewable local energies: production using photovoltaic cells; energy storing: Spheres, squares, towers

Ms Ramalho suggests a possible future scenario: a new law in Portugal that allows to create communities of prosumers who would produce their own energy and sell the leftovers to the market. Collaboration with local authorities is a future trend but there is still much to work to do. She suggests to promote this collaboration in the Xpress Project portal.

Sandra Cerqueira, TUB

TUB is the Transportation Company in the municipality of Braga and its philosophy is: Green companies for Green regions and Green cities.

Ms Cerqueira presented the TUB Public service network: TUB is connecting the main points/most concurrent points of the city with public transportation running every 15-20 minutes, has recorded an increase of 10 thousand passengers in 2018. TUB implemented an integrated management system: ISO 9001:2015.

Sustainability is one of its main commitments and its mission is to offer mobility and convenient solutions in the region.

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TUB currently applies Green and sustainable procurement practices adopting a green and sustainable procurement approach. Their GPP scope definition is based on:

- Three main factors
    - Environmental impact
    - Budgetary significance
    - Potential to influence the market: *no more carbon*
- Aligning the company's integrated management policy with their green and sustainable procurement approach
- Communicating and raising awareness among company employees
    - Procurement department
    - Health and safety department
    - Equipment and maintenance department
    - Transport and mobility systems management and planning department
    - Legal department

TUB procurements practices take into account other relevant factors in the selection of goods and services subject to tenders with environmental criteria:

- Local municipality priorities
- Market availability
- Costing significance

Specific objectives (2017-2021) for some goods and services such as fleet renewal (30% of their fleet renewed with electric or low carbon vehicles), 70% of the fleet to be sanitized (green wash). Employees directly involved in the procurement process are set to be trained.

TUB selected the following environmental award criteria:

- Environmental management systems (EMAS, ISO 14001)
- Labels
- Environmental technical capacity
- Test reports and certificates

TUB is evaluating tenders according to life cycle costing or cost of ownership: purchasing price and all associated costs (delivery, installation), operating costs, end-of-life of the products.

Example of GPP. Bus fleet renewal procurement process has the main goals of:

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- Reduce environmental impact in the city
- Reduce greenhouse emissions
- Reduce average fleet age
- Reduce fuel consumption
- Improve service quality
- Increase fleet reliability
- Improve noise performance
- Improve comfort
- Increase frequency
- Incorporation of renewable energies
- Operational efficiency cost savings

With electric chargers, award criteria

- Most economically advantageous proposal
- Quality
- Energy efficiency
- Life cycle

And sanitized and hygiene services: GPP approach

- Award criteria following environmental technical specifications, management systems (ISO 14001), tests and certificates and saving on use of water
- Benefits such as cost savings, water consumption, promoting public health and positive visibility of the company for the community

Result: calls for sustainable transport with which they have been very successful. Aiming to add to their fleet new electric cars with 67% savings (about 75000 euro), avoiding the emission of 294 tons of CO2 emissions.

However, there are still barriers to local public authorities to promote GPP. Here TUB proposes some questions (useful for the co-creation session) about the difficulties in introducing environmental requirements in public procurement system:

- Do they affect the awarding process?
- Do they comply with legal obligations?
- Are there companies in a given sector with relevant environmental certifications and labels that simultaneously make us obey the criteria of public procurement:

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competition, non-discrimination, equal treatment, transparency and proportionality?

- Are there suppliers and providers in the market that meet the green and sustainable requirements that I intend to have for my goods and services?
- Do companies understand the economic viability of green purchasing based on life cycle costs?
- Is there an environmentally preferable alternative available on the market?
- Are there suitable alternatives on the market with less environmental impact?
- Will the green alternatives we wish to introduce be cost neutral or will they affect my budget?
- Do companies providing goods and services in our market comply with technical specifications that take into account environmental impacts throughout the goods' life cycle?
- Are companies prepared to comply with selection criteria based on environmental technical capacity or environmental and supply chain management measures and accept the exclusion or bidders who do not comply?
- Is business in Portugal prepared to accept the exclusion of bidders who are not in compliance with environmental legislation?
- Or that we, as public entities, use selection criteria based on environmental certifications? (EMAS, ISO 14001).

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Sadro Louro, Municpio de Braga

Politics are influenced by two main elements. Central government and Local authority politics. This relationship between the two administrative levels is shaping the development of the policies.

The priorities of the city and the local government can change in the short or middle term (i.e. ten years ago they changed all the parking of the city centre but now they want to remove the private car circulation from the centre). This might be costly.

The city aims anyway, at developing a sustainable city, social responsible and to foster the quality of life. These priorities might be sometime clashing between them. Hence, municipalities are called to take decision. To solve this problem, many municipalities decided to boost Green Public Procurement, developing a centralized management for suppling goods and services.

Have been identified 5 phases:

1. Identify the sustainability principles.

2. Presentation of the results
3. Creation of a planning for public sustainable purchases. Best practices manual.
4. Creation of a purchasing centre.
5. Categorization of expenses and integrate immediately into the purchasing process.

The main challenges for the municipality in transforming the municipal services are:

- Financial management;
- The capacity of the municipality to boost the sustainability offer among the suppliers;
- The impact on social dynamics.

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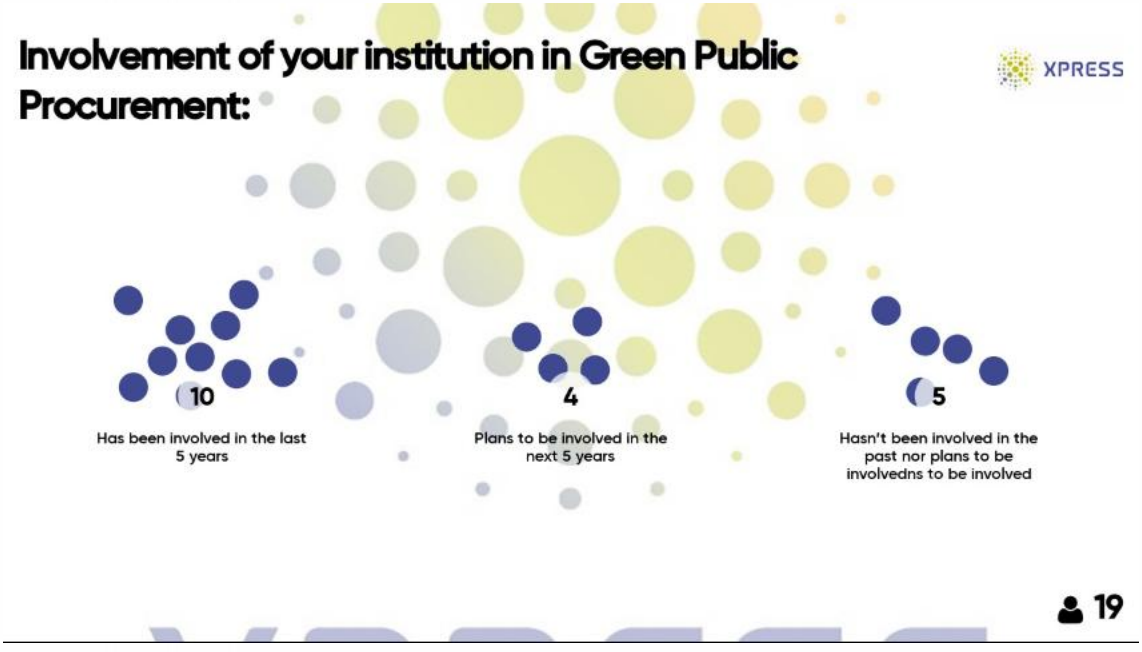
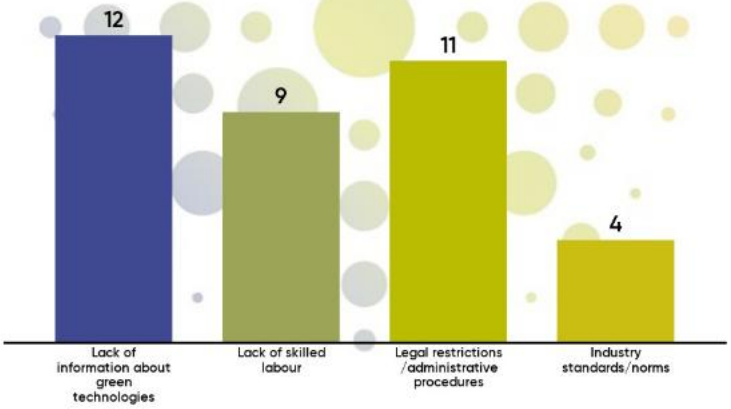
Co-creation activities:

As foreseen in the agenda, after the speaker presentation the participants at the workshops were organised into two groups. One table was chaired by Dr. Paola Zerilli, XPRESS Scientific Coordinator, while the other one was chaired by Riccardo Coletta, XPRESS Coordinator. Before starting any activities the audience has been presented with the "Mentimeter" questionnaire with the following result:



What are the main obstacles to either investment or implementation of technologies in renewable energy sources?



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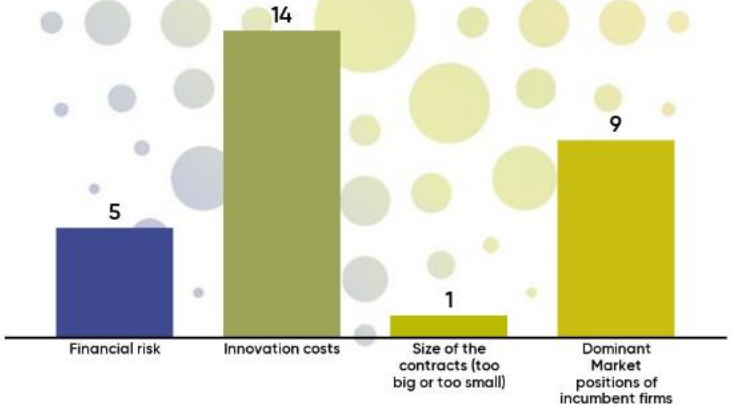
What are the main obstacles to either investment or implementation of technologies in renewable energy sources?



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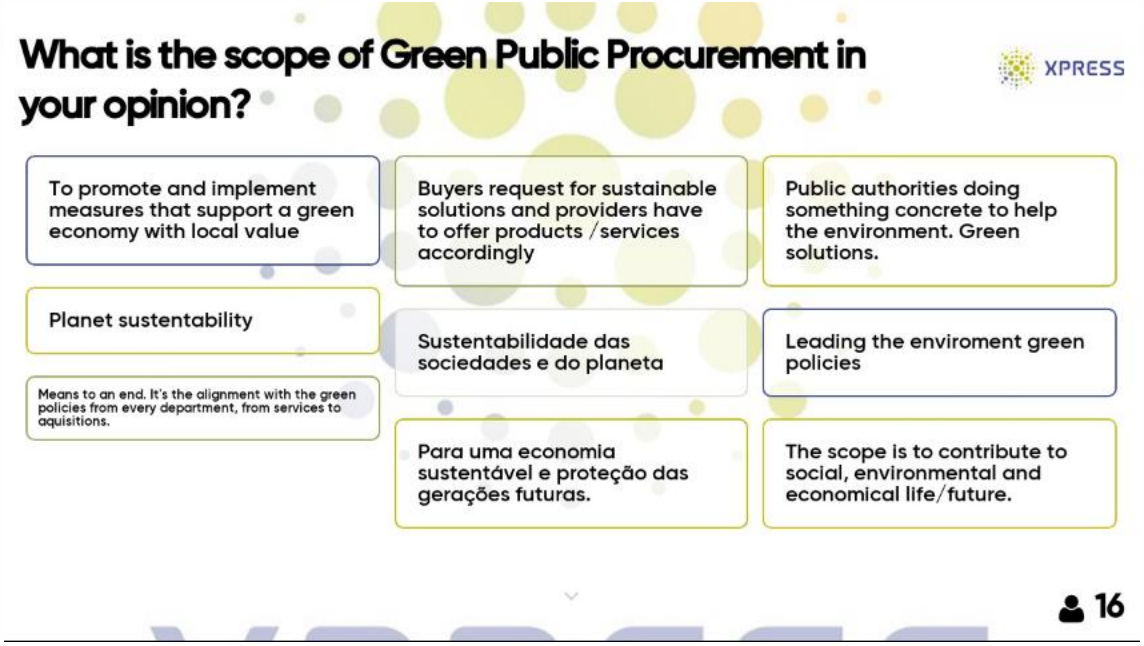

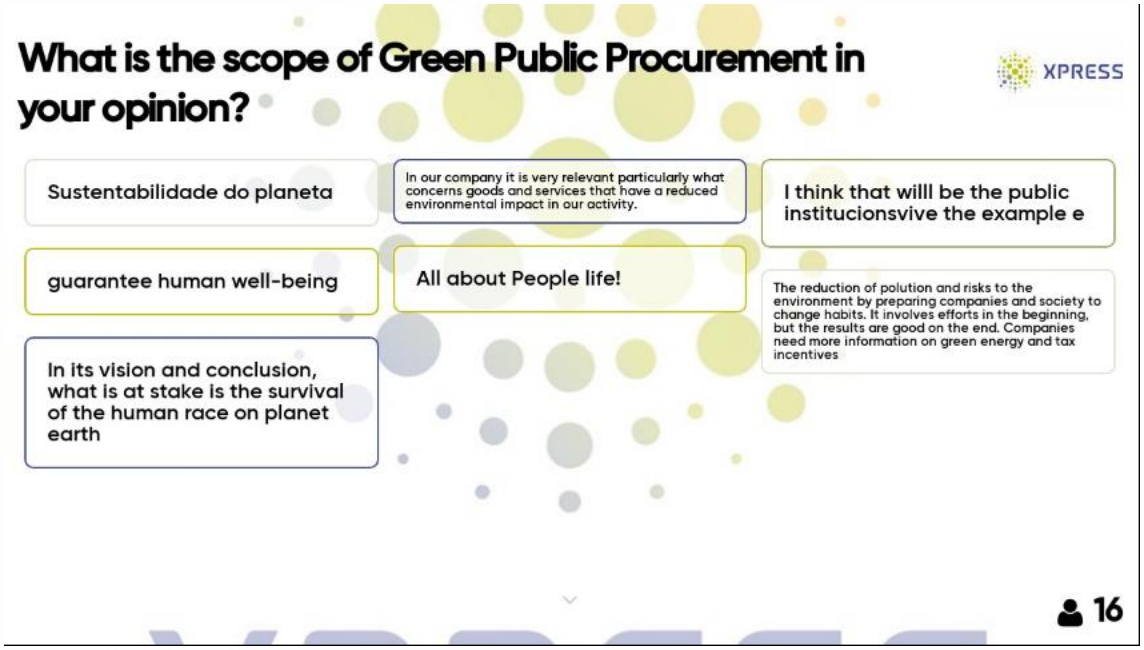

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Table Paola Zerilli

Topics discussed:

1. Barriers: environmental criteria, public procurement, equal treatment for all the actors and the inequality when applying for the GPP tenders. There are unprepared players on the market who need too much support but, at the same time, there are problems with the tender characteristics: sometimes only a few companies apply for public procurement. Some actors have problems in achieving ISO certificates.
2. Social values: it is important to raise social awareness on sustainability. Education is a key matter. There is not the same level of awareness among the different sectors. A challenge is to demonstrate to the people how important the GPP is. The creation of logical criteria and the proper dissemination among the entire society is important in order to foster their contribution to preserve the environment.
3. Lack of information: there are difficulties related to the access or ignorance about the sustainability principles.
4. Lack of an agency in charge of fostering practices aligned with the general policy lines (like fiscal rules, promotion, advantages, tax incentives). Incentives for the SMEs should be able to change the mind-set and the way the companies are working. The social and environmental responsible companies are not receiving any kind of support about these aspects.
5. Policy can make the difference. It would be useful to have a clear policy agenda that aims at the implementation of the correct measures.
6. Creating a reward system for the sustainable and environmental responsible companies.
7. Sometimes companies have a lack of resources to apply for a GPP or to change their productive system, in order to adapt it to green criteria.
8. It would be extremely beneficial to provide support to companies whose know-how is not up to date. Potential solutions are curricular adaptations in the educational system (school, university and vocational education), investment in human capital, and development of human skills.
9. Education on environmental issues should be mandatory.
10. Increasing investments in environmental sustainable technologies.
11. Lobbying: there are problems linked to the lobbies. Local policies cannot influence global trends. Sometimes there is no interest in developing clean technologies.
12. Positive discrimination in companies that are investing in sustainable energy. This doesn't mean a negative attitude against the other companies but positive for the environmental responsible companies.

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13. Introduction of a grace period to switch from plastic to other materials. Using tax incentives to foster this transformation. Positive discrimination in public procurement.

Is the main obstacle financial?

1. Assessment of life cycle impact on new technologies. Lack of qualification among the human capital to evaluate the environmental impact.
2. Translation and interpretation of the European rules..
3. Finance and liquidity is a severe problem for SMEs, not all of them can wait several months before receiving the payments.
4. Case study of the project. Some local Braga SMEs are likely ask to XPRESS project some help.

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Summary

There are clear difficulties in public procurement and number of entities who are able to fulfil the requirement in order to obtain the criteria recognised.

Legislation: enterprises are concerned about the huge number of rules and legal deployment. It creates so many difficulties for the local SMEs.

Geographic location is also important in the selection process, but there are difficulties for local companies in achieving green certification. A positive discrimination for green companies can be proposed as a solution in the short term period, since the payback is too long.

Sustainability is still far away from reality. For private companies the cost for following green policies is too high, especially for the very small companies that do not have the necessary flexibility.

Legislation: current funding for green solutions is often not enough. Companies and enterprises are often not benefiting from funding.

Tenders: public administration still prefer the cheaper solutions and not the greenest and still care about the current budget instead of the impact of that policy in the future. Green solutions are more expensive. Environmental impact should be included in the calculation of the procurement costs.

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Table Riccardo Coletta

The discussion aimed at identifying the participants experiences and opinions about knowledge of GPP, difficulties in implementing both from private and public point of view and barriers encountered in previous tenders.

1. Innovation costs: main issue. If a company has developed a solution that doubles the price of a traditional product, the tenderer will not choose them due to the considerable higher costs. Braga was already asking for green vehicles but still choose a different ones due to the price. Price is still a major factor.

2. Private company. One of the highest expenses for them is the transport of the goods. Big sized trucks are very costly. When you are really investing, the EU does not really give solutions. It takes time to actually receive the necessary funding. Not enough support is provided for introducing innovations on the market. The support provided by local administrations provide support, nonetheless, the aid from the municipality was not big enough.

3. Invest Braga: the costs for some infrastructures are quite high. Lack of tax incentives at a national level is a problem. Solutions at local or national level would be helpful in this sense.

4. Buildings: considering this sector, there are always more expensive solutions that might be better in the long-term. The decision-making process should ponder the better options for the long-term. For instance it might be much cheaper to install a solution but more expensive to maintain it. There is a natural answer for these situations, such as annual reports or, better shorter (trimestral).

5. Professional and personal experience. To build a house: is mandatory to have at least part of the energy coming from renewable sources. It is clear that it would be an environmental and economic better solution, but people do not usually know the positive impact at environmental and economic level of these solutions, in the long term. Professional: when the EU Commission promotes the state-of-the-art projects working on natural based solutions, it should deal with different types of areas. At local level it might be feasible but the market is not ready to really promote and implement environment friendly solutions. In Portugal it is different to open a process to hire this kind of solutions. The market is much more competitive. There is also a lack of appropriate knowledge on green solutions.

6. Sometimes (most of the times) it seems preferable to keep using the solutions already known and experienced, and not really taking a chance on new solutions. GPPs can actually open the way to substantial innovations on the market.

7. Requirements of a tender from the side of a public institution. There are issues with long term and short term solutions.

8. Are SMEs are really capable of adopting a green point of view? Changing their infrastructure for green solutions. Do they have the financial means to do it? They might not be able to take this change and go green because of lack of financing.

9. There are bigger companies with special departments for green solutions. Managing green solutions is normally accompanied by a big investment and with help of the EU funding options. Mentality seems to be changing but it is not a reality yet.

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10. What is the local authority doing? Do they have a well-defined environmental plan?

CONCLUSIONS

Paola's Group: The number of companies that can fulfil the certification criteria is low, the legislation is not centralised: there are many legal requirements that might differ on the basis of the geographical location. In Ireland they should buy local because it is more sustainable, but for these companies being certified it might be difficult. Solutions: positive discrimination for companies that are green, looking for a short payback, measuring impact, capacity building. Education: importance of having an education about this since an early stage.

Riccardo's Group: 3 main things. The cost is still very high for companies to attain green impact. For smaller companies: they might have various options (but not necessarily green) on the market. Funding: from Europe there are not enough solutions that go through first nationally, then locally and then to the company. Sometimes public administrations prefer the cheaper options rather than the long-term and sustainable ones. This might change through legislations, but the market has to regulate itself.

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1.4 WS5 Frankfurt

XPRESS Co-creation Workshop

Gemeinsame Veranstaltung des Klima-Bündnis und des Umweltforum Rhein-Main e.V.

Die Rolle des Beschaffungswesens für den Klimaschutz

Herausforderungen und Chancen für Kommunalverwaltungen sowie kleine und mittlere Unternehmen

am 2. März 2020 um 14:00 Uhr
Galvanistr. 28, 60486 Frankfurt am Main, Raum 32

Agenda

13.30 – 14.00	Anmeldung (Kaffee)
14.00 – 14.15	**Begrüßung** • *Umweltforum Rhein Main (Hans-Georg Dannert, 1. Vorsitzender Umweltforum Rhein-Main e.V.)* • *Klima-Bündnis (Thomas Brose, Geschäftsführer Klima-Bündnis)*
14.15 – 15.45	***Impulsreferate*** • Die Rolle von Beschaffung bei der Förderung von Innovationen im Bereich der erneuerbaren Energien *Dr. Jürgen Hirsch, SIC CONSULTING und 2. Vorsitzender des Umweltforum Rhein-Main e.V.* • Grüner Öffentlicher Beschaffung bei der Förderung von Innovationen im Bereich der erneuerbaren Energien aus der Sicht einer Stadt *Anja Zeller, Leitung Stabsstelle Nachhaltige Strategien, Stadt Hanau* • Gemeinsame Ausschreibung für Ökostrom des Landkreises mit seinen Kommunen *Landkreis Marburg-Biedenkopf (tbc)*

Facilitating green public procurement in the energy sector

XPRESS PARTNERS APRE | Eambiente | University of York | Element Energie | DIW Berlin | NTNU | Ovgroup | Linnaeus University | LOBA | INSME | CIRCE | European Green Cities | Alleanza per il Clima Italia | Climate Alliance | Slovensky zivnostensky zvaz | Eurada

info@xpress-h2020.eu
www.xpress-h2020.eu

XPRESS

15.45-16.00	***Pause***
16.00 – 16:10	Methodische Einführung in den Erfahrungsaustausch *Dr. Andreas Kress, Klima-Bündnis*
Parallele Arbeitsgruppen: Die Teilnehmer werden die vorgeschlagenen Themen in zwei moderierten Parallelgruppen diskutieren.	
16:10 – 17.00	**Parallele Sitzung #1:** **Wie kann Beschaffung zu den Zielen der nachhaltigen Entwicklung (Klimaschutz, nachhaltige Stadtentwicklung, Förderung von Innovationen, etc.) beitragen?** *Moderator: Dr. Andreas Kress, Klima-Bündnis*
16:10 – 17.00	**Parallele Sitzung #2:** **Wie kann die Ankurbelung des Erneuerbaren Energien Marktes durch Grüne Beschaffung unterstützt werden?** *Moderator: (Express, NN)*
17.00 – 17.30	**Integration der Ergebnisse aus den parallelen Gruppen** *Die Moderatoren werden die wichtigsten Erkenntnisse aus den parallelen Sitzungen präsentieren.*
17.30 – 17.45	**Abschlussdiskussion im Plenum über mögliche politische Empfehlungen**
17.45 – 18.00	**Fazit**
Ab 18.00	**Get-together der Teilnehmer*innen und der Mitglieder des Umweltforum Rhein-Main e.V.**
Anmeldung bitte unter: https://forms.climatealliance.eu/en/xpress-co-creation-workshop/form.html	

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Umweltforum Rhein-Main e.V.

Climate Alliance

The Frankfurt workshop has been implemented following these steps:

1. Welcome
2. Introduction
3. Presentation by Jürgen Hirsch (SIC Consulting)
4. Presentation by Björn Kajewski (Marburg-Biedenkopf district)
5. Brainstorming
6. Conclusions

1. Welcome

Andreas Kress (Climate Alliance) welcomed the guests, presented the agenda and thanked the co-organizers:

Hans-Georg Dannert (Environmental Office Frankfurt/M. and 1st Chairman of the Environmental Forum) emphasized the importance of green procurement: public administration is implementing 1.5 trillion euros in the EU, in Germany the share of PP is the 13% of GDP.

Thomas Brose (Managing Director climate alliance) suggested to combine practice at local level with the "theoretical" level of the legislator (e.g. EU).

2. Introduction to XPRESS

Dorothea Schäfer presented the goals and the strategy of the XPRESS project. In order to learn from the experience and ideas of the participants on the topic of green procurement, a survey with Mentimeter has conducted (see also introduction section for the questionnaire).

The questions given to the audience are presented below:

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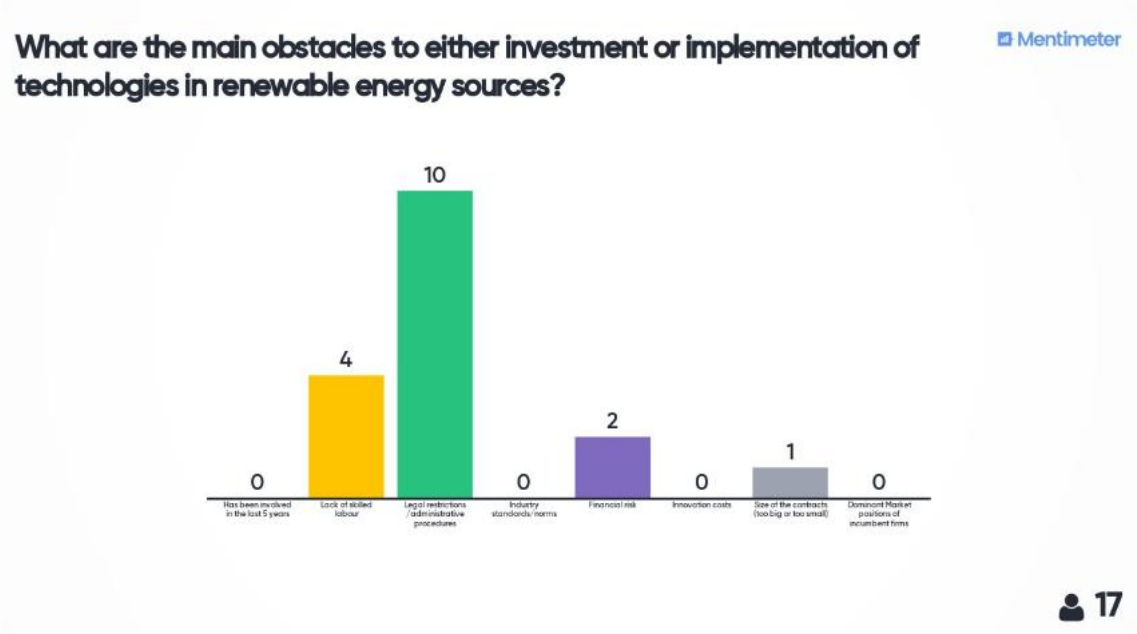
1. What is the involvement of your institution in Green Public Procurement?

2. What are the main obstacles to either investment or implementation of technologies in renewable energy sources?



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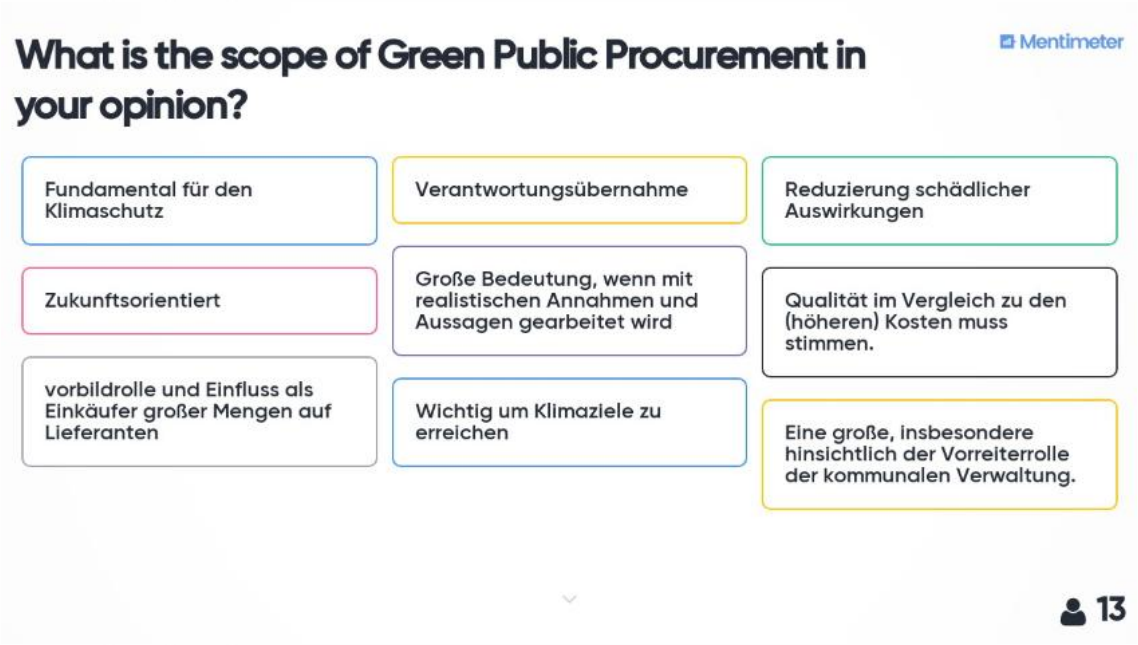
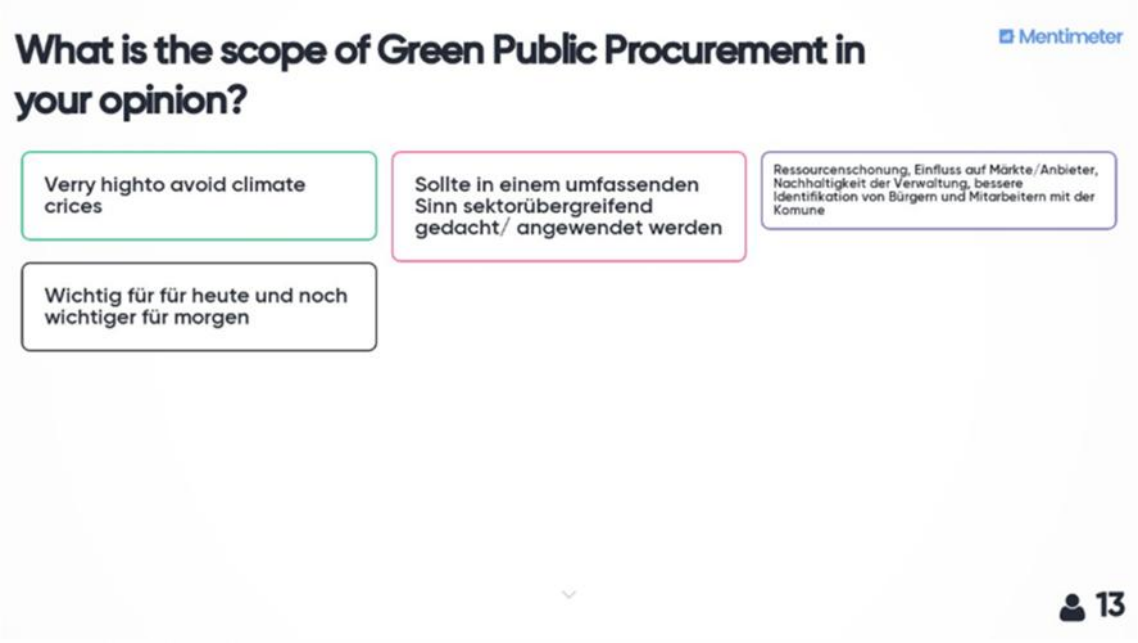
3. What is the scope of Green Public Procurement in your opinion?





3. Presentation by Jürgen Hirsch (SIC Consulting) "XPRESS Role of procurement"

Discussion:

During the presentation and the questions afterwards, it became clear how difficult it is to gain appropriate knowledge about existing funding programmes and tenders but also to find the knowledge and information on how to collect these grants.

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Jürgen Hirsch suggests, as possible solution, contacting institutions of large or experienced cities/municipalities (e.g. energy department of the city of Frankfurt). In addition, Jürgen Hirsch drawn attention on the fact that EU funding programmes often have large minimum contract volumes, which is why it is advisable to apply for state and federal funds first.

In order to simplify the application for funding under the “Intelligent Energy Europe II” (IEE II) program, one participant suggested the 'ELENA – European Local Energy Assistance' programme, which supports local and regional authorities in the preparation of ambitious and large-scale investment projects in the field of energy efficiency and renewable energies.

4. Presentation by Björn Kajewski (Marburg-Biedenkopf district)

The discussion that followed Mr Kajewski presentation is presented below:

1. Is there a joint procurement for further municipalities in the district of Marburg-Biedenkopf? The county wants to do that, but it is currently experiencing a shift in responsibilities due to the declared climate emergency.

2. Do renewable sources of energy (RES) offer better conditions than conventional forms of energy? The price of RES is comparable to the price of conventional forms of energy.

3. How many different electricity suppliers did apply to the tender? 5 vendors have downloaded the offer, 3 have applied and 1 supplier has won the contract.

4. Is there a regional component in the provision of electricity? No, but it is planned to have a regional component in the future.

5. If the price gets higher with higher standards, how high could the prices become? Edmund Flößer-Zilz (City of Eschborn) believes that a 10% price increase is likely in case of long-term investments, compared to consumer goods such as paper.

A platform on which suppliers could find producers which are proven high quality suppliers would make sense in order to obtain high quality and/or low prices.

Problems faced by municipalities with the procurement of electricity (Contribution of Edmund Flößer-Zilz: Procurement for the city of Eschborn):

1. It is difficult to procure high-quality electricity labels (because the costs of green electricity are higher than conventional electricity).

2. Employees who are responsible for procurement are often not very keen to work with climate protection managers.

3. Many green energy providers offer compensatory electricity and do not deliver true green electricity.

4. Procurers are often reluctant to leave old paths, and this behavior is often justified using irrational arguments. The solution would be to provide environmentally friendly procurement a service instruction or a policy guideline.

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Other comments

An environmental guideline (instruction) would be useful to support future green procurement.

Procurers should not only select offers considering only financial criteria. Instead sustainability should be integrated into every procurement process or aspect of the procurement.

Procurement instruction need to be adjusted accordingly.

Hans Georg Dannert has drawn attention on the business aspects: although many sustainability strategies are motivated by the expectation to reduce costs, there are also many companies who consider sustainability to be a higher goal than minimizing costs.

It is suggested that a proper proof of origin should be published over time.

In procurement, the balance between regionalism and sustainability is important and public transport is a very important area in this respect.

Moderated Working Group - Since almost all participants in the workshop selected "How can procurement contribute to the goals of sustainable development (climate protection, sustainable urban development, promotion of innovation, etc.?") no separation of working groups was necessary and all participants discussed the same topics. The topic of the originally

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planned second working group, "How can green public procurement support the boosting of the renewable energy market?" has been integrated into the general discussion.

How can procurement contribute to the goals of sustainable development (climate protection, sustainable urban development, the promotion of innovation, etc.)?

Participants are invited to collect their ideas on how procurement can contribute to sustainable development. The collected ideas can be sorted into the three clusters:

1. economics
2. instruments
3. guidelines/standards.

Economics:

• Development and expansion of a new market: demand of large quantities from the public authorities which provides a strong signal to both industry and economy.

• Support for start-ups through new markets which provides a strong signal to industry and businesses.

Instruments:

• Energy-efficient housing of public buildings.

• Defining standards for sustainability.

• Sustainability criteria in the call for tenders.

• Integrating cleaning and repair friendliness as a selection criterion.

• Using refurbished products.

• Considering regionalism a key factor and proposing adequate tailored solutions.

• Improving access to infrastructure.

• Introducing and implementing CO2 pricing, as it provides economic incentives to act sustainably.

• Strengthening sustainable agriculture.

Guidelines and standards:

• CO2-savings.

• Carrying out an overall ecological assessment.

• Using selection, reduction and substitution as a guidelines for procurement.

• Using climate protection also as a principle in production processes.

• Giving preference to traceable supply chains.

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• Promoting lifecycle assessment.

After collecting thoughts and opinions on the question "How can procurement contribute to the goals of sustainable development (climate protection, sustainable urban development, promotion of innovation, etc.)?" ideas were also collected on the question of "How can green public procurement help boosting the renewable energy market?"

Here are the resulting contributions:

• Introduction of energy exchanges. This means that public buildings who produce e.g. solar power and do not currently use it should offer it to alternative users (e.g. a school with solar power on its roof could offer the energy produced to alternative users during the school holidays). That can make the generated green electricity accessible to other public buildings. Thus, the municipality can save money and get green electricity.

• Implementation or expansion of municipal support programmes.

• Carrying out a targeted search for innovations.

•Encouraging renewable energy generation on public open spaces and roofs.

• Cooperation with civic groups in order to increase the number of recipients of green electricity.

The results of the discussion to both questions were very fruitful, and the way in which knowledge was collected was well received.

5. Conclusion

The conclusion of the event is that the volume of public procurement is so large that it is absolutely necessary to involve public procurement in the design of the transition towards RES. In order to achieve this, however, it is necessary to leave known paths and be open to innovation. The hurdles that arise can be overcome with political support. This is extremely important in order to get the benefits of a change toward RES in the society as a whole.

From the side of the procurers and providers, it makes sense to build and strengthen networks in order to achieve better results through cooperation.

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2.1 Conclusion

As a first result of the co-creation workshop, in the following table are reported the main obstacles and related solutions both from SME´s and public authorities perspective.

Summary

	Obstacles	**Solutions**
SME/ **Private sector**	➢ Small businesses are at a disadvantage compared to big players ➢ Lack of experienced professionals workers ➢ Complicated rules and procedures of PP ➢ Demonstrating the return on investment in RES - cities prefer short-term benefits ➢ Lack of private capital for research and development of innovative technologies ➢ Certification requirement and the costs related to the certification ➢ Financial and technical risk in procurement	✓ Introduction of virtual power plants Deregulation of el. power ✓ Developing muster green procurement procedures (10-15 types) ✓ Simplify the processes of PP in administrative terms ✓ Establish independent public energy agencies to help cities and municipalities as well as consumers. ✓ Bring energy companies and SMEs together to apply new solutions in practice. ✓ Sharing risks with the public procurers ✓ Organize public tenders in smaller groups (lots) ✓ Have SME friendly tenders

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	➢ Complexity of tender documents in order to avoid any legal conflicts ➢ Lack of expertise can produce miscommunication with enterprises interested in taking part to public procurement ➢ The Innovation cost, not using only the price as a major factor ➢ Lack of tax incentives at national level is a problem	✓ Positive discrimination in companies that are investing in sustainable energy. ✓ Identify the balance between regionalism and sustainability ✓ Support for start-ups through new markets which provides a strong signal to industry and businesses. ✓ Increase cooperation with civic groups in order to increase the number of recipients of green electricity.
Authorities/ **Public sector**	➢ Green solutions are more expensive than "classic" solutions (paper, electric cars), which causes a problem with demonstrating the effectiveness on spending the public funds ➢ Overall, there is a lack of resources for investment into new technologies and modern workflows ➢ Inefficiently set internal processes in local	✓ Define GPP in the legislation (Act on the Public Procurement) ✓ To involve suppliers in the preparatory phase of the public procurement, in form of consultations ✓ Improve the search in the register of public procurements, so that the client can orientate himself in already realized tenders and can be inspired by other examples

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	governments and municipalities ➢ Poor technical condition of buildings requires additional investment in the deployment of RES (e.g. solar panels) ➢ Big administrative difficulty in introducing innovative technologies ➢ Green solutions are more risky from the point of view of the flexibility on electricity supply	✓ Education for environmental responsibility in schools and in public ✓ Reducing the complexity of the procurement process and documents ✓ Using Life Cycle Analysis as a criterion to rank competing bids in a GPP context ✓ Raise social awareness on sustainability. Education is a key matter. ✓ Introduction of a grace period to switch from plastic to other materials. Using tax incentives to foster this transformation. Positive discrimination in public procurement. ✓ An environmental guideline (instruction) would be useful to support future green procurement.

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