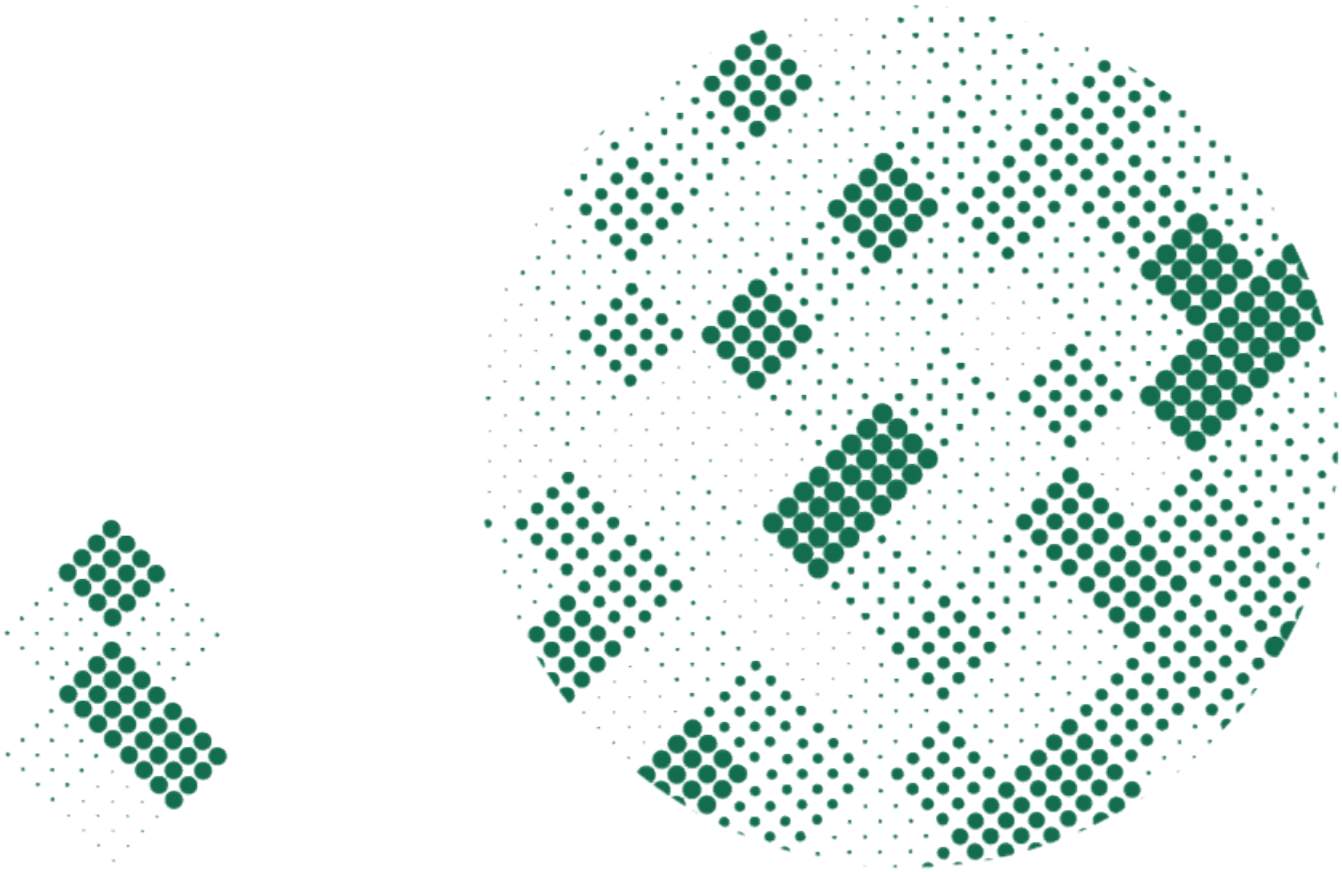
RESPONSIBLE RESEARCH AND INNOVATION IN TERRITORIES

LEADERS

Deliverable 3.1

INITIAL DELPHI QUESTIONNAIRE



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Deliverable 3.1

Initial Delphi Questionnaire

Deliverable leader	Partner 5 – ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN (ZHAW)
Lead authors	**Zurich University of Applied Sciences (ZHAW)** University of Western Macedonia (UoWM) Applied Research and Communications Fund (ARC Fund) Catalan Foundation for Research and Innovation (FCRi)
Contributors	List of contributing partners: • Regional Association of Local Government of Western Macedonia (LGA-WM) • Sofia Development Association (SDA) • Municipality of Thalwil (THA) • Economic Development Agency of Sabadell City Council (PES SL)
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RRI-LEADERS Partners

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P4	THE CATALAN FOUNDATION FOR RESEARCH AND INNOVATION	FUNDACIO CATALANA PER A LA RECERCA I LA INNOVACIO	FCRi
P5	ZURICH UNIVERSITY OF APPLIED SCIENCES	ZURCHER HOCHSCHULE FUR ANGEWANDTE WISSENSCHAFTEN	ZHAW
P6	REGIONAL ASSOCIATION OF LOCAL GOVERNMENT OF WESTERN MACEDONIA	PERIFEREIAKI ENOSI DIMON DYTIKIS MAKEDONIAS	LGA-WM
P7	SOFIA DEVELOPMENT ASSOCIATION	АСОЦИАЦИЯ ЗА РАЗВИТИЕ НА СОФИЯ (ASSOTSIATSIA ZA RAZVITIE NA SOFIA)	SDA
P8	MUNICIPALITY OF THALWIL	GEMEINDE THALWIL	THA
P9	ECONOMIC DEVELOPMENT AGENCY OF SABADELL CITY COUNCIL	PROMOCIO ECONOMICA DE SABADELL	PES SL

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List of acronyms / abbreviations used in this document

AIRR – Anticipation, Inclusiveness, Reflexivity, Responsiveness
EMAS - Eco Management and Audit Scheme
ICT – Information and communication technology
RRI - Responsible Research and Innovation
R&I – Research and innovation
SME – Small and Medium-Sized Enterprises

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About the project

The project "Leveraging Leadership for Responsible Research and Innovation in Territories" (RRI-LEADERS) explores the relevance of responsible research and innovation (RRI) to territorial governance in four European territories, representing different cultural and socio-economic backgrounds, different scope of territorial oversight, different institutional and decision-making infrastructures, different R&I landscapes and different dynamics among territorial actors.

The objectives of RRI-LEADERS are:

- to facilitate the adoption of RRI principles within territorial governance;
- to promote innovative, inclusive and responsive multi-actor approach to the development of policies on issues related to science and innovation; and
- to provide an evolutionary perspective on the future of RRI in territorial policy and governance.

The central goal of RRI-LEADERS is to elaborate future-oriented strategy and action plans, or territorial outlooks, for the future potential of RRI as a guiding framework in territorial R&I governance. Outlooks will be developed through a multi-stage co-creation process, which will mobilise quadruple-helix stakeholders, i.e. academia, policymakers, industry and civil society, from the participating territories.

RRI-LEADERS involves four different territories: Sofia (Bulgaria), Thalwil (Switzerland), Western Macedonia (Greece) and Sabadell (Spain), representing a diverse range of opportunities and implications for responsible research and innovation (RRI), which will enable to carry out a thorough assessment of the RRI relevance to territorial governance. The involved territories will thus act as demonstrators for the potential of RRI on sub-national level. The accumulated knowledge will be used to chart a detailed outlook for the future potential of RRI as a guiding framework in territorial governance of R&I and will aim to provide an evolutionary perspective on RRI for the Horizon Europe programme.

The project adopts the dominant understanding of RRI, as defined by von Schomberg: "A transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products."[1] It diverges only slightly from this definition in that it does not promote the separation of innovators from the rest of the societal actors, and instead seeks to include societal actors as co-creators in the innovation processes, and enable leadership in the development of policies with a future outlook. In doing so, RRI-LEADERS interpretation of RRI, draws heavily on the extension of the RRI framework proposed by Stilgoe, Owen and Macnaghten, who emphasise the prospective notion of responsibility by introducing four dimensions of RRI – *anticipation, inclusiveness, responsiveness* and *reflexivity*, largely known as the AIRR dimensions.[2] RRI-LEADERS integrates these four dimensions into its methodological design and operational implementation.

[1] von Schomberg, R. (2011). "Prospects for technology assessment in a framework of responsible research and innovation". In: Dusseldorp, M., Beecroft, R. (Eds.), *Technikfolgen Abschätzen Lehren: Bildungspotenziale Transdisziplinärer*. Vs Verlag, Methoden, Wiesbaden.

[2] Stilgoe, J.; Owen, R. & Macnaghten, Ph. (2013). "Developing a framework for responsible innovation". In *Research Policy*, vol.42(9), pp.1568-1580.

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RRI-LEADERS attempts to leverage leadership through three complementary tiers of planned intervention around RRI. For each of these tiers the RRI-LEADERS exemplifies leadership as a proactive, shared and responsible taking of action towards setting ambitions for change and societal transformations, driving collaboration and agreement across societal actors, and striving for excellence and lasting impact in the pursuit of these ambitions. The three tiers of leadership intervention are interlinked into an operational progression, whereby each tier supports and enables the others as the project progresses:

1. Leveraging leadership in understanding of RRI proliferation and opportunities in the four territories.
2. Leveraging leadership in examining RRI construct relevance to territorial applications and its transformative potential.
3. Leveraging leadership in the reaffirming of the RRI concept with a view of providing tighter integration of territorial aspects into a renewed RRI construct.

Website of RRI-LEADERS: www.rri-leaders.eu

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Executive Summary

This document represents RRI-LEADERS Project **Deliverable 3.1 (D3.1) Initial Delphi Questionnaire** and contains the initial Delphi questionnaires developed for the four participating territories (municipalities of Sofia and Thalwil, region of Western Macedonia and city of Sabadell).

It is important to note that the initial Delphi questionnaires represent a first full version of the Delphi questionnaires for each territory. In November 2021, these initial Delphi questionnaires will be used in a Pilot Test with 2-3 stakeholders from each territory, in order to get feedback and to enhance the questionnaire for the final implementation of the questionnaire end of November 2021 for the First Round of the Delphi Study.

This Deliverable is based on **five steps**, which are described in the Methods section:

(1) Best Practice Analysis with Scientific Literature and Practice Literature
(2) Specification of Policy and Scientific Objectives
(3) Qualitative System Analysis
(4) Development of a Common Structure for the Initial Delphi Questionnaire and Development of Initial Delphi Questionnaires for the four territories

Summary of the **results of the Best Practice Analysis**:

For the city of Sabadell, RRI-LEADERS partners collected 21 best practices from scientific literature and 28 best practices from practice literature; for the municipality of Sofia, partners collected 41 best practices from scientific literature and 41 from practice literature; for the municipality of Thalwil, partners collected 10 best practices from scientific literature and 75 best practices from practice literature; for the region of Western Macedonia, partners collected 19 best practices from scientific literature and 19 best practices from practice literature. Best practices were selected that fit well to the policy focus/ foci of the specific territory.

Summary of the **results of the Specification of Policy and Scientific Objectives**:

For the city of Sabadell, RRI-LEADERS partners specified 8 policy objectives for the sub-topics circular economy, active ageing, and intelligence design (tech based) applied to industry systems; for the municipality of Sofia, partners identified 7 policy objectives in the policy area sustainable urban development, 5 policy objectives for the policy area support for innovation, 6 policy objectives for the policy area digital transition, and 5 policy objectives for the policy area youth employment and entrepreneurship; for the municipality of Thalwil, partners specified 43 policy objectives for the sub-topics energy system, mobility, consumption, finance, controlling, buildings, plants, utility and society; for the region of Western Macedonia, partners identified 20 policy objectives for territory.

Summary of the **results of the Development of a Common Structure for the Initial Delphi Questionnaires**:

The Delphi Questionnaire for the First Round will be implemented in the software “Unipark” end of November 2021. As the policy foci in each territory are different, partners in each territory needed to populate the initial Delphi questionnaire with their content. To be able to compare the results across regions, the questionnaire still needs to have a common structure. That is why the WP 3 lead ZHAW developed a common template for the Initial Delphi Questionnaire, consisting of the following parts: Section 1: Short Introduction; Section 2: Participants Characteristics; Section 3: Panellists’ Input for Policy Objectives (Open Questions); Section Four: Evaluation of Best Practice Solutions (Closed Questions).

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Summary of the **results of the Development of Initial Delphi Questionnaires for the four territories**:

The Initial Delphi Questionnaires were developed for the four territories Sabadell, Sofia, Thalwil and Western Macedonia. It became clear that:

- The Questionnaires needed to be developed by the methodological partners and the territorial partners in tandem in order to bundle knowledge and expertise from science and practice
- Due to the differing policy foci in the territories the Initial Delphi Questionnaires look quite differently concerning the policy objectives and best practices that are suitable for the territories and the policy foci

The Initial Delphi Questionnaires will be implemented in the software solution “Unipark” and then will undergo a pilot test (part of Task 3.1) to enhance the questionnaire concerning comprehensibility and preciseness.

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Introduction

This report outlines the various steps to develop the Initial Delphi Questionnaire for the four territories Sabadell, Sofia, Thalwil and Western Macedonia. Results and findings from WP2 were reviewed and integrated into the Initial Delphi Questionnaire. A three-stage Delphi will be conducted in WP3 based on the results of the RRI audits in WP2 to ensure full integration of stakeholder views and allow validation of RRI principles in practice, while defining the scope of territorial RRI governance and policy implications for the future. Thus, the scoping process also aims to understand the barriers that currently prevent territorial stakeholders from integrating RRI principles into territorial governance.

For the creation of the first Delphi version, a four-step process was adopted, consisting of the following steps, (i) Best Practice Analysis with Scientific Literature and Practice Literature by the methodological partners, (ii) the specification of policy objectives by territorial and methodological partners, (iii) qualitative system analysis including the twenty main change factors with respect to the policy focus in each territory, and (iv) the development of a common structure for the Initial Delphi Questionnaires and a first version of the questionnaires in all territories.

The report first describes the methodology used to create the questionnaire and then presents the results, i.e., the Initial Delphi Questionnaire for the four territories.

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Methodology

The current report is elaborated under WP3 Delphi exploration of consensus about future orientations for RRI in the participating territories, Task 3.1 Design of Delphi Instrument. The Delphi method of consensus-building studies was chosen to ensure, under the anonymity of the panellists, controlled feedback, and repetition of responses to arrive at a common group response. Therefore, the overall goal of WP3 is to use Delphi methods to assess dissensus and barriers and to reach consensus about possible and feasible future pathways for a better RRI integration for each territory. A Delphi study is a multi-stage survey, where answers from Delphi Panellists are assessed after each stage and feedback is provided to Delphi Panellists in the form of bar charts and standard deviations. In the course of the Delphi study and the three survey rounds we aim to build a consensus among the Panellists about future strategies and measures for the specific policy foci in the territories.

The policy foci of the participating territories are as follows:

- Region of Western Macedonia, Greece: Clean energy, Energy markets, Economic transition towards a low-carbon economy.
- Sofia Municipality, Bulgaria: Support to innovation, Digital transition and new skills, Youth employment and entrepreneurship, and Sustainable urban development.
- Municipality of Thalwil, Switzerland: Energy transition, focused on reducing the use of fossil fuels and hence the greenhouse gas emissions, and reducing the total energy consumption on the territory of the municipality.
- City of Sabadell, Catalonia, Spain: Building an inclusive innovation ecosystem through different methodologies which will directly improve the territorial specialisation in design applied to industry in a sustainable scope.

To achieve the goals of the work programme, four steps were completed by September 31 as part of Task 3.1:

(1) Best Practice Analysis with Scientific Literature and Practice Literature

The first step of this task comprises an international best practice analysis for each of the policy foci in each territory conducted by the methodology partners. The methodological partners for each of the participating territories conducted (i) an international analysis of the current state of research based on a Web of Science literature search and (ii) an analysis of the current international practice literature on the specific policy focus based on a Web search in each territory. The result comprises a summary of the current state of research and practice for the specific policy focus and provides scientific input for relevant strategies and measures for the respective policy focus for the Delphi survey rounds in the following Task 3.2.

(2) Specification of Policy Objectives

In a second step, a meeting between the methodological partner and the territorial partner initiated a discussion on the specific research/system objectives of the Delphi study. In general, research objectives should address inhibiting and facilitating factors, promising (future) strategies/measures, and consensus on procedural and substantive strategies and measures to advance the policy focus in the area. The outcome

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of the second step produced research objectives for the Delphi study that are suited to the policy focus and specific situation in the territory, and that meet the goals of both academic and territorial partners.

(3) Qualitative system analysis

In a third step the methodological partners in cooperation with territorial partners developed for each territory a qualitative system analysis including the twenty main change factors with respect to the policy focus in each territory. The input for the qualitative system analysis were (i) the insights from the interview questions in Task 2.1 (i.e. interviews with territorial stakeholders as part of the RRI audits) about the main change factors, (ii) the international best practice analysis from step 1, and (iii) the research objectives from step 2. In an Excel template provided by ZHAW, the qualitative system analysis consisted of the following steps: (i) identification and selection of key system change factors and (ii) an impact analysis, i.e., a qualitative analysis of the mutual interactions among the factors. Complementing Steps 1 and 2, Step 3 yielded an overview of the driving and ambivalent factors and thus the key change actors in the territories, providing the basis for the initial Delphi questionnaires.

(4) Development of a Common Structure for the Initial Delphi Questionnaires

In the fourth step, ZHAW created the first Delphi questionnaire with a common structure for all territories, including results of step 1-3, i.e., inhibiting and promoting factors, relevant strategies/measures, and consensus on future strategies/measures. This initial structure was then populated by the methodological partners in each territory in cooperation with the territorial partners with further questions that are more suited to the specific policy focus and to the main change factors in each territory. The questionnaire consists mainly on the one hand of open-ended questions to generate ideas for future strategies/measures which are analysed qualitatively (with coding methods) and on the other hand of closed ended questions which are analysed quantitatively/statistically. This step resulted in the Development of Initial Delphi Questionnaires for the four territories.

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Initial Delphi Questionnaires for the Four Territories

This chapter lists the initial Delphi Questionnaires that were developed for the four territories.

Initial Delphi Questionnaire Territory: Sabadell

INVITATION: Delphi participants information sheet	
SECTION ONE: Short Introduction Explanation of the study and project, goals and objectives related to the policy focus, Declaration of anonymity, names and addresses of methodological and tutorial partners, and consent to participate, etc.	
SECTION TWO - Participants Characteristics	
Year of birth:	
Gender:	
Highest educational qualification:	
Area of responsibility (in the Territory)	(I) Municipal authorities (including municipal council, (II) Municipal administration, (III) Research (including academic research), (IV) Business and economy
Further participant characteristic you want to use?	*Indicate the answer options.*
Personal Identifier: *To track a person's information over time, it is important to create a Personal Identifier at the beginning.*	○ *A) "*Please write down the day of the month on which your father was born as a 2-digit number (e.g., 01, 22, 30)" ○ B) "Please write down the day of the month on which you were born as a 2-digit number (e.g., 06, 12, 25)" ○ C) "Please add at the end the first character of your name and surname (e.g., BL)
SECTION THREE – Panellist's Input for Policy Objectives (Open Questions)	
Policy Objective 1 **Circular Economy:** Create self-diagnosis tools to achieve eco-efficient polygons by 2021.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 1."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 1." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 1." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 1? (Please think of creative solutions).
Policy Objective 2 **Circular Economy:** Increase by 15% the number of photovoltaic panels installed in the city's industrial estates by 2030.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 2."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 2." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 2." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 2? (Please think of creative solutions).
Policy Objective 3 **Circular Economy:** Identify 25 companies with industrial waste to be used as possible resources for other production processes or companies (industrial symbiosis) by 2025.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 3."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 3." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 3." (Please think of short-, medium- and long-term measures)

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	What do you think would be an unconventional solution to achieve the policy objective 3? (Please think of creative solutions).
Policy Objective 4 **Active ageing:** Create a senior lab**:** elderly people directly participating in the creation process of new products and services (showing the trends) by 2022.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 4."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 4." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 4." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 4? (Please think of creative solutions).
Policy Objective 5 **Active ageing:** Prepare good professionals for attending elderly people by 2023.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 5."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 5." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 5." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 5? (Please think of creative solutions).
Policy Objective 6 **Active ageing:** Create a participatory tool for identifying the challenges of elderly people by 2022.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 6."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 6." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 6." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 6? (Please think of creative solutions).
Policy Objective 7 **Intelligence design applied to industry systems:** Create prototyping and product testing spaces (digital innovation hubs) to be used for pre-market validation. Access to knowledge, expertise and technology that can support firms and in particular SMEs with piloting, testing and experimenting with digital innovations by 2025.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 7."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 7." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 7." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 7? (Please think of creative solutions).
Policy Objective 8 **Intelligence design applied to industry systems:** Development of pilot projects for the design of technology-based products mostly focused on active ageing and circular economy by 2023.	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 8."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 8." (Please think of short-, medium- and long-term measures)

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	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 8." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 8? (Please think of creative solutions).

SECTION FOUR - Evaluation of Best Practice Solutions (Closed questions)

Policy Objective 1 **Circular Economy:** Foster a self-diagnosis tools use to achieve eco-efficient polygons by 2021.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 1.* Best Practice Solution 1 for Policy Objective 1: Adapt the EcoPorts Tool: Self-Diagnosis method (SDM): The user-friendly environmental checklist. The founding principle of EcoPorts is to create a level playing field on environment through cooperation and sharing of knowledge between ports.[3] Best Practice Solution 2 for Policy Objective 1: Self-Diagnostic Sustainable Tool (University of Valencia). Diagnostic tool for sustainability so that small and medium-sized enterprises can quantitatively assess the social and environmental impact of their business activity.[4]

	1	2	3	4	5
Involve companies of the affected area					
Create a public-private discussion group on prioritising certain measures					
Search for public calls to implement the agreed measures					
Implementation of a "Eco-efficiency" seal whose obtainment would give rights to tax or other benefits					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

[3] Cf. https://www.ecoports.com/sdm

[4] Cf. https://www.uv.es/economy-common-good-chair/en/news-1286020020456/Novetat.html?id=1286175142603)

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Policy objective 2 **Circular Economy:** Increase by 15% the number of photovoltaic panels installed in the city's industrial estates by 2030.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 2.* **Best Practice Solution 1 for Policy Objective 2:** FOSTERinMed Guidelines on building integration of photovoltaic in the Mediterranean area. To integrate photovoltaic elements into the building envelope (such as museums, civic centres, public institutions etc), establishing a symbiotic relationship between the architectural design, functional properties and economic regenerative energy conversion. The photovoltaic modules thus replace conventional construction materials, taking over the function that these would otherwise perform. [5] **Best Practice Solution 2 for Policy Objective 2:** The city purchases the Photovoltaic solar panels using its own funds, grants from national or regional government, or by borrowing money using municipal bonds, such as Boa Vista (Brazil) city has been doing.[6]

	1	2	3	4	5
Development and implementation of public/local grants & funds for covering the costs					
Directive/law forcing new buildings to use a minimum number of photovoltaic panels					
Eliminate red tape for installing solar panels					
Awareness campaign about benefits and financing options					
Promotion and setting up, by a public administration, of a free-use tool for companies					
Setting up an assessment group for analysis and evaluation of results					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

[5] Cf. http://www.enpicbcmed.eu/sites/default/files/guidelines_on_building_integration_of_photovoltaic_in_the_mediterranean_area.pdf

[6] Cf. https://www.c40knowledgehub.org/s/article/Boa-Vista-s-four-year-journey-to-100-percent-clean-municipal-energy?language=en_US

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Policy objective 3

Circular Economy: Identify 25 companies with industrial waste to be used as possible resources for other production processes or companies (industrial symbiosis) by 2025.

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 3.

Best Practice Solution 1 for Policy Objective 3:

The GUIDE FOR INDUSTRIAL SYMBIOSIS FACILITATORS in the UK examines the technical, chemical, volume needs, or other, specifics of the resource exchange to figure out of it is possible and essentially feasible to collaborate in a symbiotic exchange. This requires that the companies share information about each other's pool of resources and by-products that can be supplied and handled.[7]

Best Practice Solution 2 for Policy Objective 3: describe the concrete measure of the proposed solution

Development of tools where companies can input information on their processes and waste streams into a database accessible to others. For example, The SymbioSyS tool, developed by the University of Cantabria, detects industrial symbiosis synergies and connections among companies that otherwise, naturally or accidentally, would be unlikely to happen.[8]

	1	2	3	4	5
Awareness campaign about benefits, etc.					
Creation of a website with information about firms sectorized, their waste, geolocation, contacts, etc. It would be fed by the firms themselves and run by a public intermediary.					
Establishment of a public & private commission to promote and work for the creation of a network of possible "symbiotic firms"					
Tax reductions for firms which implement examples of industrial symbiosis					
Implementation of experts' assessments of the territorial firms as potentially symbiotic					
Free transportation costs if materials have to be sent between firms					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

[7] Cf. https://symbiosecenter.dk/guide-for-industrial-symbiosis-facilitators/

[8] Cf.https://www.scalerproject.eu/resources/guides-outlooks

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Policy objective 4 **Active ageing:** Create a senior lab**:** elderly people directly participating in the creation process of new products and services (showing the trends) by 2022.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 4.* Best Practice Solution 1 for Policy Objective 4: describe the concrete measure of the proposed solution The council for third age, C3A, is an agency which promotes active ageing in Singapore through public education, outreach and partnerships. As an umbrella body in the active ageing landscape, with its focus on lifelong learning, senior volunteerism, and positive ageing, C3A works with and through partners to help third agers age well. Through various initiatives and platforms, third agers can self-discover and enhance their different dimensions of wellness in their journey of positive ageing. C3A aims to create a vibrant pro-age Singapore where seniors can participate as integral members of society. [9]

	1	2	3	4	5
Awareness campaign					
To foster digital alphabetisation of elderly people					
Establishment of a formal elderly people network interested in the issue, sectorised					
Direct collaboration of recently retired people from certain firms' teams developing products and services					
Involvement and support of public administration					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 5 **Active ageing:** Prepare good professionals for attending elderly people by 2023.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 5.* **Best Practice Solution 1 for Policy Objective 5: describe the concrete measure of the proposed solution** Employees over 50 years of age take on the function of training and assessing younger workers. The more experienced older employees work alongside their younger colleagues carrying out the same tasks mentoring them on various aspects of the job. This process allows the transfer of experience, as well as technical and

[9] Cf. https://www.c3a.org.sg/

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	methodological knowledge, from older to younger workers. In other words, the older employees not only carry out the required production tasks, but also provide on-the-job training [10]

	1	2	3	4	5
Involvement of senior professionals or even retired ones who attend/attended elderly people in the training of the next and younger generation of careers.					
Participation of experts/researchers in active ageing in the development of training curricula and practices					
Offer free training courses					
Promote the continuous training to the workers - to force them to take training courses every X years, in order to know the latest technology					
Offer a free coaching service to encourage their vocation throughout their professional career					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 6 **Active ageing:** Create and encourage the use a participatory tool for identifying the challenges of elderly people by 2022.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 6.* **Best Practice Solution 1 for Policy Objective 6:** ActivAge is building the first European interoperable and open IoT ecosystem enabling the deployment, at a large scale, of IoT based services for Active and Healthy Ageing. This ecosystem will be integrating thousands of devices to collect and analyse environmental and lifestyle information, identify needs, and provide customised solutions, while ensuring data privacy and security. The vision of ActivAge is to be the global world-wide reference for providing the evidence that: https://digital-strategy.ec.europa.eu/en/news/activage-project-supporting-active-and-healthy-ageing-through-iot-technologies Best Practice Solution 2 for Policy Objective 6: *Polibienestar* (University of Valencia) has one initiative consisting of detecting the needs of people in labour exclusion risk and those

[10] From G., Walker, A., & European Foundation for the Improvement of Living and Working Conditions (Eds.). (n.d.). A guide to good practice in age management.

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	of older people. Once they have been detected, the next step is to develop strategies to increase the opportunities of people in labour exclusion risk of finding a job through their training in the social and health care field to improve the quality of life of older people. This action contributes to the sustainability and efficiency of public policies. The main challenge is making health care systems sustainable (promoting the quality of life, creating jobs, promoting sustainable home care, incrementing the customer satisfaction). [11]

	1	2	3	4	5
Agreement between public administration and private IoT firms					
Involvement of the established elderly people network (see policy objective n. 4) for (i) how to design an optimal participatory tool and (ii) to give ulterior feedback about the obtained results					
Previous talking to elderly people about how to best design such a participatory tool					
Involvement of specialized firms/university departments for analysing and synthesizing the obtained results					
Awareness campaign calling for the elderly people's participation					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 7 **Intelligence design applied to industry systems:** Create prototyping and product testing spaces (digital innovation hubs) to be used for pre-market validation. Access to knowledge, expertise and technology that can support firms and in particular SMEs with piloting, testing and experimenting with digital innovations by 2025.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 4.* **Best Practice Solution 1 for Policy Objective 7: describe the concrete measure of the proposed solution** The South-Moravian Digital Manufacturing Hub is coordinated by the South Moravian Innovation Centre (JIC) in partnership with Brno University of Technology, the research institute INTEMAC Solutions and the Industry Cluster 4.0. It has a national scope of its activities. The Digital Innovation Hub is a collaborative project, where the JIC acts as the facilitator of the project and as the interface with the regional government, Intemac provides methodology and expertise to the clients, Brno University of

[11] Cf. https://ec.europa.eu/eip/ageing/sites/eipaha/files/practices/eip-aha_d4_a_compilation_of_innovative_practices_0.pdf

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	Technology provides expertise, and the Industry Cluster 4.0 provides competences in education of companies and expertise in needs analysis. The cluster also mobilizes the industry interest.[12]

	1	2	3	4	5
Involvement of Chambers of Commerce and public administration					
Expert support to firms for implementing plans of digitalisation					
Create a start-up network organised by sectors to exchange expertise and enhance synergies					
Collaborate with international hubs that have already implanted them and work properly					
Activate actions to attract and retain talent					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 8 **Intelligence design applied to industry systems:** Development of pilot projects for the design of technology-based products mostly focused on active ageing and circular economy by 2023.	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 8.* **Best Practice Solution 1 for Policy Objective 8: describe the concrete measure of the proposed solution** PRODUTECH Digital Innovation Hub Platform's mission is to foster the digital transformation of the manufacturing industry, via the gathering of a critical mass of capacities, the networking of stakeholders and the nurturing of the ecosystem, towards the deployment of added value support services that enables, potentiates and furthers industry modernisation. PRODUTECH Cluster's DIH Platform gathers regional initiatives and stakeholders in a one-stop gateway for digitalisation support and further levering cooperation at European scale (e.g., networking of pilot initiatives and services under Vanguard Initiative). [13]

[12] Cf. https://publications.jrc.ec.europa.eu/repository/handle/JRC113111

[13] Cf. https://publications.jrc.ec.europa.eu/repository/handle/JRC113111

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	1	2	3	4	5
Establishment of public funds/grants for innovation of firms					
Free or affordable expert support to firms for implementing innovation measures					
Awareness campaign					
Implementation of an online tool fed by the firms themselves with information					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Do you have any further comments or solution options you want to share? (Open question in the end to provide panellists again the chance to contribute something if they want)	

Thank you for your participation in this first round of the Delphi study. There will be two more rounds in the coming weeks and it is very important for the success of the project that you continue to participate in the additional rounds.

Thank you for your support!

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Initial Delphi Questionnaires Territory: Sofia

INVITATION: Delphi participants information sheet What is the purpose of the study? Why have I been chosen? etc. – one week before the Delphi starts.

SECTION ONE: Short Introduction Explanation of the study and project, goals and objectives related to the policy focus, Declaration of anonymity, names and addresses of methodological and tutorial partners, and consent to participate.

SECTION TWO - Participants Characteristics	
Age	*"Please specify your year of birth."*
Gender	*"Please specify your gender."*
Highest educational qualification	*"Please specify your Highest educational qualification"*
Area of responsibility (in the Territory)	*"Please indicate your area of responsibility":* (I) Municipal authorities (including municipal council, (II) Municipal administration, (III) Research (including academic research), (IV) Business and economy
Previous experience with RRI framework	*Yes / No* *If yes, explain briefly*
Personal Identifier: *To track a person's information over time, it is important to create a Personal Identifier at the beginning.*	*A)* "Please write down the day of the month on which your father was born as a 2-digit number (e.g., 01, 22, 30)" B) "Please write down the day of the month on which you were born as a 2-digit number (e.g., 06, 12, 25)"

SECTION THREE – Panellists Input for Policy Objectives (Open Questions)	
1. Policy area Sustainable Urban Development	
Policy Objective 1: ***Introducing social and economic impact assessment (besides ecological impact) of policies for***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 1."*

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sustainable urban development by 2025.	
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 1." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 1." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 1? (Please think of creative solutions).
Policy Objective 2: ***New public procurement procedures developed, which include RRI keys and AIRR dimensions by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 2."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 2." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 2." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 2? (Please think of creative solutions).
Policy Objective 3: ***Developing staff training programmes for municipal administration for public sector innovations by 2023.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 3."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 3." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 3." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 3? (Please think of creative solutions).

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Policy Objective 4: ***Developing a data policy framework for Sofia municipality; using data for evidence-based policy making, where the processes of collection, sharing, storing and opening of data are well defined by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 4."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 4." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 4." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 4? (Please think of creative solutions).
2. Policy area Support for innovation	
Policy Objective 5: ***Building horizontal communication links with stakeholders from research and academia, the private and civic sectors on RRI-AIRR approach in policies by 2023.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 5."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 5." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 5." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 5? (Please think of creative solutions).
Policy Objective 6: ***Setting up funding instruments for support to innovation start-ups and companies by 2030.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 6."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 6." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 6." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 6? (Please think of creative solutions).
Policy Objective 7: ***Increasing the competitiveness of the municipality and developing the knowledge economy, securing financial capital, establishment of new mechanisms for incubation and financing (particularly in the early stages) by 2030.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 7."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 7." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 7." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 7? (Please think of creative solutions).
Policy Objective 8: ***Sofia Municipality develops and implements Flagship projects for innovations in the public administration area by 2030.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 8."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 8." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 8." (Please think of short-, medium- and long-term measures)

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	What do you think would be an unconventional solution to achieve the policy objective 8? (Please think of creative solutions).
3. Policy Area Digital transition	
Policy Objective 9: ***Improving the connectivity and technical infrastructure in Sofia Municipality through environmentally friendly, user-friendly, smart and cost-effective solutions by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 9."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 9." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 9." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 9? (Please think of creative solutions).
Policy Objective 10: ***Improving social inclusion especially of vulnerable groups and minorities, creating new social e-services adapted to people with disabilities, providing an accessible and inclusive environment for senior citizens by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 10."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 10." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 10." (Please think of short-, medium- and long-term measures)

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	What do you think would be an unconventional solution to achieve the policy objective 10? (Please think of creative solutions).
Policy Objective 11: ***New data policy allowing for optimising the dissemination of information to the public, including open data of the municipality, as well as internal communication of data and information amongst municipal units by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 11."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 11." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 11." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 11? (Please think of creative solutions).
Policy Objective 12: ***Include the gender dimension in the Innovation Strategy for Smart Specialisation of Sofia by 2023.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 12."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 12." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 12." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 12? (Please think of creative solutions).
4. Policy area Youth employment and entrepreneurship	
Policy Objective 13: ***Secure municipal funding for young innovators and start-ups and increase funding by 5% by 2030.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 13."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 13." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 13." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 13? (Please think of creative solutions).
Policy Objective 14: ***Financing an innovative Start-ups Programme of the Municipal Guarantee Fund for SMEs and introducing new financial instruments for youth entrepreneurship by 2030.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 14."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 14." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 14." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 14? (Please think of creative solutions).
Policy Objective 15: ***Include gender equality measures in a revised Youth Strategy of Sofia Municipality by 2025.***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 15."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 15." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 15." (Please think of short-, medium- and long-term measures)

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	What do you think would be an unconventional solution to achieve the policy objective 15? (Please think of creative solutions).

SECTION FOUR - Evaluation of Best Practice Solutions

1. Policy area Sustainable Urban Development

Policy Objective 1: ***Introducing social and economic impact assessment (besides ecological impact) of policies for sustainable urban development 2025.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 1.* **Best Practice Solution 1 for Policy Objective 1:** Enforce EMAS Regulations on public transport tenders (Spain): Companies in the transport sector of Barcelona will be legally required to implement EMAS (EU Eco-Management and Audit Scheme) regulations within 18 months of having won the public transport tender. Companies will have to conduct the necessary audits to ensure their adherence to the regulations. **Best Practice Solution 2 for Policy Objective 1:** Developing smart cities through the Social, Management, Economic, Legal, Technology and Sustainability (SMELTS) framework (Canada): Research has identified six crucial pillars for the successful development of smart cities: Social, Management, Economic, Legal, Technology and Sustainability (SMELTS). In smart cities, citizens play an active part in their design by participating in the governance and management of the city. Smart management is based on citizen participation, private-public partnerships and smart governance infrastructure. Business is the core system of a smart city, enhancing its ability to innovate, to maximise profits and to facilitate capital flow. Policies are devised with the objective to support both the technical and non-technical requirements for urban growth. ICT has a crucial role by contributing to the increased sustainability and quality of life. Sustainability includes intelligent deployment of technology and increasing resilience to environmental shocks, while decreasing carbon footprint. **Best Practice Solution 3 for Policy Objective 1:** Enhancing impact investing for addressing social challenges (Greece): Impact investing is a relatively new term, defining the practice of investing in business ventures, which provide solutions to social challenges. Potential source for such investments could be cooperative banks, which have the potential to address the

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	weaknesses of the banking sector through accumulating their experience into innovative behaviour, aiming to enhance the inter-bank cooperation.

	1	2	3	4	5
EMAS Regulations on public transport tenders					
Developing smart cities through SMELTS framework					
Enhancing impact investing for addressing social challenges					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 2: ***New public procurement procedures developed, which include RRI keys and AIRR dimensions by 2025.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 2.* **Best Practice Solution 1 for Policy Objective 2:** Implement a green public procurement plan (Cyprus): A green public procurement plan must be adhered to by all contracting authorities, thus preventing overconsumption of resources, facilitating the application of environmentally friendly practices and encouraging buyers to focus on sustainable, economically beneficial and environmentally safe options for public procurement, rather than allowing them to immediately choose the cheapest option. **Best Practice Solution 2 for Policy Objective 2:** Facilitate green public procurement and develop technical specifications related to its implementation (Lithuania): A digital catalogue is used to simplify public procurement by dividing goods and services into various categories and listing the hundreds of green technical specifications available. **Best Practice Solution 3 for Policy Objective 2:** Facilitate sustainable public procurement (The Netherlands): While required to take into account a series of ecological factors, public procurement procurers are also fostered through voluntary sustainable behaviour of procurers. Environmental sustainability must be ingrained in procurers' behaviour through training initiatives, motivation to change behaviour, and information on the practical benefits of environmentally friendly procurement.

	1	2	3	4	5

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Implement a green public procurement plan						
Facilitate green public procurement (digital catalogue)						
Facilitate sustainable public procurement (behaviour change)						

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 3: ***Developing staff training programmes for municipal administration for public sector innovations by 2023.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 3.* **Best Practice Solution 1 for Policy Objective 3:** NO GOOD PRACTICE SOLUTION IDENTIFIED
Policy Objective 4: ***Developing a data policy framework for Sofia municipality; using data for evidence-based policy making, where the processes of collection, sharing, storing and opening of data are well defined by 2025.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 4.* **Best Practice Solution 1 for Policy Objective 4:** Enhancing participatory urban planning (Canada): The Montréal Urban Ecology Centre (MUEC) has developed a guide on how to effectively implement participatory urban planning initiatives. The guide includes six steps: 1) launch (establishing partnerships with relevant stakeholders and creating an action plan); 2) understand (collecting data in order to create a reliable picture of the relevant project/issue); 3) explore (identifying different options to resolve the issue with the help of professionals, citizens, community workers, merchants and elected officials); 4) decide (validating and improving the proposed solutions with the involvement of relevant stakeholders); 5) act (implementing the solutions and establishing a monitoring committee to supervise the process); 6) celebrate the accomplishment of the project. **Best Practice Solution 2 for Policy Objective 4:** Including citizens perspectives in circular economy policies: While consumers are central in the concept of circular economy, their role is usually related to the end-use of products. The understanding of consumers and policy-makers regarding circular economy is different, which has led to discrepancies between consumer visions and policy priorities. To address this gap, circular economy policies need to include energy and climate change issues as well as social topics. Furthermore, local issues have to be imbedded also in order

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	to make policies closer to citizens/consumers and thus to stimulate their acceptance. **Best Practice Solution 3 for Policy Objective 4:** Improving open data release of local governments: Open data has proven to be a smart way for local governments to relate to the public, but it is crucial to evaluate which barriers for information sharing are present at the different governmental levels. Existing research concludes that innovative strategies, implemented through smart projects, are needed to improve the openness of local data management processes.

	1	2	3	4	5
Enhancing participatory urban planning					
Including citizens perspectives in circular economy policies					
Improving open data release of local governments					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

2. Policy area Support for innovation	
Policy Objective 5: ***Building horizontal communication links with stakeholders from research and academia, the private and civic sectors on RRI-AIRR approach in policies 2023.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 5.* **Best Practice Solution 1 for Policy Objective 5:** Promoting the use of online consultations with citizens (UK, New Zealand and Canada): E-democracy exploration usually begins with a focus on online policy-making consultations. New Zealand and Canada have developed online portals which are dedicated to promoting consultations across their governments, including both traditional offline opportunities and online ones. In the UK, online consultations with citizens are also popular when their input in policy-making is needed. **Best Practice Solution 2 for Policy Objective 5:** Foster experimentation and urban manufacturing (Portugal): FabLabs are small-scale laboratories offering space and means to all users, cultivating a creative and entrepreneurial atmosphere in the city. The lab is equipped with accessible tools and machinery, and

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	helps inexperienced youth and professionals alike to turn their ideas into reality. This concept has greatly aided urban innovation, as it supports the creation of thousands of prototypes of products and services.

	1	2	3	4	5
Online consultations with citizens					
FabLabs experimentation and urban manufacturing					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 6: ***Setting up funding instruments for support to innovation start-ups and companies 2030.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 6.* **Best Practice Solution 1 for Policy Objective 6:** Support the creation of sustainable business start-ups (Ireland): Ireland's National Entrepreneur Development Programme focuses on perfecting entrepreneurs' business concepts in three phases: preparing the plan and testing it, conducting weekly training on the subject of crucial skills and valuable financial and legal information, and finally, supporting and pitching the plan. This ensures that entrepreneurs develop their ideas in a supportive environment and enter the business world with sufficient theoretical and practical knowledge. **Best Practice Solution 2 for Policy Objective 6:** Stimulating youth employment by start-up support programmes: Many young people are willing to start a business, but do not engage in entrepreneurial activities, because of the many challenges they face. Data show that start-up firms, owned by young people, are more successful than those of older entrepreneurs, evincing that youth entrepreneurship has to be stimulated and supported during the whole process from idea inception to full operation. Supporting services that will stimulate youth start-ups are loan schemes, vouchers, microfinancing mechanisms and a regulatory environment that is favourable to business expansion.

	1	2	3	4	5

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Support the creation of sustainable business start-ups						
Stimulating youth employment by start-up support programmes						

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 7: ***Increasing the competitiveness of the municipality and developing the knowledge economy, securing financial capital, establishment of new mechanisms for incubation and financing (particularly in the early stages) by 2030.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 7.* **Best Practice Solution 1 for Policy Objective 7:** NO GOOD PRACTICE SOLUTION IDENTIFIED
Policy Objective 8: ***Sofia Municipality develops and implements Flagship projects for innovations in the public administration area by 2030.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 8.* **Best Practice Solution 1 for Policy Objective 8:** Encourage digitisation on a local, regional and international level (Slovenia): A one-stop shop is fostering digitisation by involving municipalities, companies, public administration and educational facilities in the digital development process. Through networking with potential partners and including them in the decision-making process, this Slovenian organisation aims to reach out to actors in society with technological expertise and innovative suggestions, and become an entry point for digitisation. **Best Practice Solution 2 for Policy Objective 8:** Bring creative entrepreneurs to abandoned shopping areas (Belgium): This project utilises a multi-stakeholder approach, bringing together different levels of government, entrepreneurs, local inhabitants and non-profit entities. The goal is to find vacant properties, have them refurbished by the local authorities, and offer them to creative entrepreneurs at a lower rent for a trial period. The coaching and evaluation offered thereafter help young entrepreneurs to establish their own business and recognise the potential advantages and dangers, while simultaneously improving neighbourhoods with vacant retail properties. **Best Practice Solution 3 for Policy Objective 8:**

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	A support point for entrepreneurs (Belgium): A support point for entrepreneurs was established, making consultancy accessible and facilitating collaboration with city departments and governmental entities. Having one single point of contact proved to be encouraging to entrepreneurs; this project contributes to the establishment of local business and the cultivation of a positive business environment.

	1	2	3	4	5
Encourage digitisation on a local, regional and international level					
Bring creative entrepreneurs to abandoned shopping areas					
A support point for entrepreneurs					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

3. Policy Area Digital transition

Policy Objective 9: ***Improving the connectivity and technical infrastructure in Sofia Municipality through environmentally friendly, user-friendly, smart and cost-effective solutions by 2025.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 9.* **Best Practice Solution 1 for Policy Objective 9:** Maintain and improve the public space and revive commercial zones by increasing civic involvement (The Netherlands): The Dutch municipality of Heerlen utilises a digital platform which allows citizens to contribute to the maintenance of their community in exchange for digital currency. The platform consists of a mobile app, through which citizens can find and complete tasks, an application for entrepreneurs to receive payment and a municipal dashboard to upload tasks. The project plans to simultaneously improve the municipality's public space, increase public engagement and stimulate the local economy. **Best Practice Solution 2 for Policy Objective 9:** Create a digital solution which will reduce the approval process for building applications (Austria): Vienna is increasing the efficiency of the planning sector by employing an ICT solution based on artificial intelligence, augmented reality and 3D building models. The goal is to develop a modern technical solution, which will improve the quality of submitted building applications and significantly reduce the time required for their approval, so that social infrastructure can be improved.

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	Best Practice Solution 3 for Policy Objective 9: Introduce citizens and tourists to history through the digitisation of cultural sites (Bulgaria): Digitisation of cultural and historical sites, VR technologies and augmented reality are combined in multimedia to present cultural and historical objects in a variety of ways. Graphic images, video, audio and text are all included to create unlimited combinations, visually restore demolished or lost historical objects and recreate historical events through augmented reality. This concept can both stimulate students and boost tourism. **Best Practice Solution 4 for Policy Objective 9:** Implement smart grid technologies throughout the city (Andalusia, Spain): The community of Andalusia conducted a large-scale test focused on transferring to a smart grid and implementing sustainable energy technologies. Deployment of communication infrastructure, testing of tele-management technology, integration of renewable energy generators in public spaces, and grid automation were all important focus points. The Smart Grid included industrial customers, service customers and regular households alike. Energy efficiency, use of renewables, and reduction of CO2 were achieved through this project.

	1	2	3	4	5
Maintain and improve the public space and revive commercial zones by increasing civic involvement					
Digital solution which will reduce the approval process for building applications					
Introduce citizens and tourists to history through the digitisation of cultural sites					
Implement smart grid technologies throughout the city					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 10: ***Improving social inclusion esp. of vulnerable groups and minorities, creating new social e-services adapted to people with disabilities, providing an accessible and inclusive***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 10.* **Best Practice Solution 1 for Policy Objective 10:** Improve living conditions by creating a one-stop shop that encompasses various mechanisms for home renovation (France):

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environment for senior citizens by 2025.	The goal of this project was to centralise all the services which tenants, property owners and landlords can address in order to seek out technical, legal and financial support, so that they may renovate their homes, escape energy poverty, and create better and more sustainable living conditions.

	1	2	3	4	5
Improve living conditions by creating a one-stop shop that encompasses various mechanisms for home renovation					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 11: ***New data policy allowing for optimising the dissemination of information to the public, including open data of the municipality, as well as internal communication of data and information amongst municipal units by 2025.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 11.* **Best Practice Solution 1 for Policy Objective 11:** Building e-governance: E-governance aims at building transparency, accountability and trust among the general public. The steps that need to be taken in order to implement e-governance include: raise awareness and ensure high-level commitment to e-governance; identify key institutions that are able to plan and implement e-governance projects; adopt regulations, enabling it; develop a national e-governance strategy; ensure operational capacities to implement e-governance pilot projects. **Best Practice Solution 2 for Policy Objective 11:** Digital Economy and Society Index (DESI): DESI is an initiative of the European Commission, aiming to summarise relevant indicators on Europe's digital performance and to track the evolution of EU Member States in the area of digital competitiveness. Collected data is presented in annual reports that include selected indicators, divided into thematic groups, which illustrate some key dimensions of the European information society, such as Telecom sector, Broadband, Mobile, Internet usage, Internet services, eGovernment, eCommerce, eBusiness, ICT Skills, Research and Development.

	1	2	3	4	5

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Building e-governance						
Digital Economy and Society Index (DESI)						

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 12: ***Include the gender dimension in the Innovation Strategy for Smart Specialisation of Sofia 2023.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 12.* **Best Practice Solution 1 for Policy Objective 12:** NO GOOD PRACTICE SOLUTION IDENTIFIED
4. Policy area Youth employment and entrepreneurship	
Policy Objective 13: ***Secure municipal funding for young innovators and start-ups and increase funding by 5% by 2030.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 13.* **Best Practice Solution 1 for Policy Objective 13:** Provision of subsidised employment: Programmes for subsidised employment provide short-term interventions, but work towards longer-term labour market impacts and usually include wage subsidies to employers or employees, aiming to cover individuals' employment costs. This measure aims to provide incentives to employers to hire members of a specific target group. Wage subsidies are offered through different mechanisms such as direct transfers to firms or workers, reductions in social security contributions, payroll taxes or tax credits. Employer-side subsidies decrease the financial costs and risks associated with the lack of information about the productivity/skills of the person to be employed. Employee-side subsidies increase the incentives to seek and retain employment and permits to target specific socio-demographic groups. **Best Practice Solution 2 for Policy Objective 13:** Stimulate youth entrepreneurship and facilitate the realisation of business projects (France): Project offers young entrepreneurs the opportunity to provide students with training by implementing entrepreneurship programmes in higher education institutions. A financial aid programme for students and alumni was established by the Ministry of Education, Higher Education and Research, rewarding young entrepreneurs for their successful business endeavours.

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	1	2	3	4	5
Provision of subsidised employment					
Stimulate youth entrepreneurship and facilitate realisation of business projects					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 14:

Financing an innovative Start-ups Programme of the Municipal Guarantee Fund for SMEs and introducing new financial instruments for youth entrepreneurship by 2030.

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 14.

Best Practice Solution 1 for Policy Objective 14:

Create a business centre that will attract smart, sustainable businesses (Portugal): A business centre was established, housed in municipal-owned, renovated building. It offers secure infrastructure for innovative, sustainable businesses to use. Specialist trainings are organised for the local population, which created new jobs for young, qualified people.

Best Practice Solution 2 for Policy Objective 14:

Promoting returnee entrepreneurship (Romania): Returnee entrepreneurs are qualified personnel who have lived abroad in order to work or study and have returned to their country of origin to set up a business, using the experience and know-how, gained in the foreign country. A best practice guide covers financial, legislative, institutional and educational aspects, such as developing a favourable environment for ventures initiated by returnees (exemptions from lease payment for business offices, business incubators tailored to returnees, personal benefits like subsidised housing, tax-free imports for cars, equipment, computers, etc.), providing information on business opportunities, organising training programmes, supporting access to the market, ensuring infrastructure, improving the legislative framework, developing financial support policies, preferential fiscal and taxation policies etc.

	1	2	3	4	5
Create a business centre that will attract smart, sustainable businesses					
Promoting returnee entrepreneurship					

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(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 15: ***Include gender equality measures in a revised Youth Strategy of Sofia Municipality 2023.***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 15.* **Best Practice Solution 1 for Policy Objective 15:** Promote entrepreneurship among women by addressing inequalities and other gender-related issues (Ireland): The aim of the project is to sensitise business advisors to gender issues and to address the link between gender and entrepreneurship. The removal of physical and social barriers through forums, learning programmes and upskilling processes will empower women to enter the field of business and thus stimulate the local economy.

	1	2	3	4	5
Promote entrepreneurship among women					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Do you have any further comments or solution options you want to share? (open question in the end to provide panellists again the chance to contribute something if they want)

Thank you for your participation in this first round of the Delphi study. There will be two more rounds in the coming weeks and it is very important for the success of the project that you continue to participate in the additional rounds.

Thank you for your support!

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Initial Delphi Questionnaires Territory: Thalwil

INVITATION: Delphi participants information sheet

What is the purpose of the study? Why have I been chosen? etc. – one week before the Delphi starts.

SECTION ONE: Short Introduction

Explanation of the study and project, goals and objectives related to the policy focus, Declaration of anonymity, names and addresses of methodological and tutorial partners, and consent to participate.

SECTION TWO - Participants Characteristics

Age	*"Please specify your year of birth."*
Gender	*"Please specify your gender."*
Highest educational qualification	*"Please specify your Highest educational qualification"*
Area of responsibility (in the Territory)	*"Please indicate your area of responsibility":* (I) Municipal authorities (including municipal council, (II) Municipal administration, (III) Research (including academic research), (IV) Business and economy
Further participant characteristic you want to use?	*Indicate the answer options.*
Personal Identifier: In order to track a person's information over time, it is important to create a Personal Identifier at the beginning.	○ *A) "*Please write down the day of the month on which your father was born as a 2-digit number (e.g. 01, 22, 30)" ○ B) "Please write down the day of the month on which you were born as a 2-digit number (e.g. 06, 12, 25)"

SECTION THREE – Panellists' Input for Policy Objectives (Open Questions)

Policy Objective 1 Building stock in whole municipality: primarily renewable energy for the communal building stock by 2050	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 1."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 1." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 1." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 1? (Please think of creative solutions).
Policy Objective 2: Whole car fleet registered in Thalwil: Carbon neutral fleet (biogas, electric, or hydrogen powered) of the community by 2050	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 2."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 2." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 2." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 2? (Please think of creative solutions).
Policy Objective 3 Financing: Development of a financing instrument by 2025 to finance the municipal energy transition	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 3."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 3." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 3." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 3? (Please think of creative solutions).
Policy Objective 4: Buildings of the whole municipality/territory: In	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 4."*

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municipal buildings, a thermal energy demand of -30% by 2035	
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 4." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 4." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 4? (Please think of creative solutions).
Policy Objective 5 Municipal-owned buildings: In municipal buildings a specific energy consumption of -20% (incl. domestic hot water) and a renewable energy share of 75 % (from current: ??%) (incl. domestic hot water) by 2035	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 5."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 5." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 5." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 5? (Please think of creative solutions).
Policy Objective 6: Personal climate balance (direct and indirect emissions) of all municipal inhabitants: nearly 0t CO_2eq per capita (net zero) by 2050	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 6."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 6." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to

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	achieve policy objective 6." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 6? (Please think of creative solutions).
Policy Objective 7: Analysis and reporting of all energy and CO_2 flows on territorial level by 2030	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 7."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 7." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 7." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 7? (Please think of creative solutions).
Policy Objective 8: Territorial consumption: High degree of circularity for disposable consumer goods by 2030	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 8."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 8." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 8." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 8? (Please think of creative solutions).
Policy Objective 9: Utility: Biogas share of 30% (from current 20%) of total Gas Wasser Thalwil sales by 2030	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 9."*

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	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 9." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 9." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 9? (Please think of creative solutions).
Policy Objective 10: Strengthening of role model function of Thalwil administration by concrete measures	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 10."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 10." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 10." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 10? (Please think of creative solutions).
Policy Objective 11: Improvement of the involvement/ public engagement of all community inhabitants and improvement of visibility of energy measures	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 11."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 11." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 11." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 11? (Please think of creative solutions).

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SECTION FOUR - Evaluation of Best Practice Solutions	
Sub-Topic 1: Housing/ Buildings	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 1.* - **Increased use of heater check:** The heating check by the municipality has the goal of offering private homeowners a simple operational optimisation of the heating system. As part of the heating check, the following settings are checked and adjusted where necessary: Times of use, heating curve, hot water temperature, summer/winter changeover, circulation pump. The heating checks were carried out on several campaign days. Thus, the consultations/operational optimisations could be handled efficiently and offered at low cost. Two thirds of the costs would be borne by the municipalities and one third by the homeowners. - **Strategy for increased use of photovoltaic on communal buildings:** strive to use full potential of renewable energy on communal buildings: For each newly built or renovated site, possibilities of photovoltaic power plants are therefore evaluated - **Energy accounting of privately-owned buildings:** Energy accounting of buildings and building parks - making energy visible and reducing costs. With energy accounting, consumption can be recorded and controlled in the buildings of the municipality. It facilitates the conscious use of energy, the monitoring of consumption development and the planning and success control of energy saving measures. - **One-Stop-Shop for energy home renovation:** The one-stop-shop offers homeowners a municipal tax deduction and a grant depending on the amount of CO_2 emissions saved. Homeowners can benefit from two financing schemes developed by the municipality. A soft loan for the installation of building-integrated photovoltaic technology. A municipal grant for energy renovation measures and photovoltaic technology. The municipality could engage with different local stakeholders (private construction companies, energy auditors, banks, etc.) which play the key role as partners of the one-stop-shop but it does not directly interfere in the market.

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- **Summer and Winter Temperature Set Points across Municipal Facilities:** The added benefit is increased occupant satisfaction by reducing the overcooling of indoor air in the summer.

	1	2	3	4	5
Increased use of heater check					
Strategy for increased use of photovoltaic on communal buildings					
Energy accounting of privately-owned buildings					
One-Stop-Shop for energy home renovation					
Summer and Winter Temperature Set Points across Municipal Facilities					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Sub-Topic 2: Mobility

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 2.

*(***Implementation of Foot Bike Programme:** it motivates residents to travel on foot or by bicycle more frequently, especially for short distances: Several infra-structure projects are accompanied by various service and promotion measures. The bicycle and pedestrian infrastructure are constantly being optimized and supplemented. Special attention in the process is being paid to disabled access.

- **Full implementation of Slow Town:** convert municipal streets into (30 km/h) speed limitation zones and car-free areas. Evaluate public acceptance of speed limitation and car-free areas. Create save pedestrian-walkway to the schools for children to incentivize parents not to drive children to school.
- **eCargo-Bikes:** eCargo bikes in local commercial transport: local SMEs from different sectors test the use of eCargo bikes (cargo bikes with electronic pedal assistance). The SMEs are granted free access to these bikes through a project of the local mobility advisory service of the municipality.
- **Concept e-charging infrastructure:** the municipalities are confronted with offers for free e-charging stations in public parking lots. In order to avoid entering the topic of

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	electromobility in an uncoordinated manner and without an overall view, they join forces for an electromobility concept. - **Electric cars in a sharing system:** Municipality offers car with electric drive, for official trips of the administration as well as for the population. - **Fast cycling tracks to transform mobility:** Fast cycling tracks is designed and build up in order to encourage the bike use as a real option for a safe and comfortable way of transport and improve the air quality of a city that meets the optimal conditions for bicycle mobility.

	1	2	3	4	5
Full implementation of Slow Town					
eCargo-Bikes					
Concept e-charging infrastructure					
Electric cars in a sharing system					
Fast cycling tracks to transform mobility					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Sub-Topic 3: Consumption	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 3.* - **Velo home delivery- & recycling service:** Collectors delivers customers' purchases to their homes on trendy cargo bikes and home and disposes of their recyclables properly. This social and environmental project builds a bridge between people and the labour market. Purchases from customers are delivered to their homes daily. In addition, the recycling subscription offers regular, professional disposal of recyclables. - **Procurement of sustainable goods:** The municipality implements a sustainable procurement standard to which municipal employees orient themselves for all internal purchases. In this way, the municipality saves resources and reduces its environmental impact. Examples: (1) the administration's rooms are cleaned with sustainable products, (2) motivate employees to drink tap water instead of mineral water bottles, (3) new electrical appliances bear an eco-label; (4) offer mandatory trainings for government

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	and administration employees and in schools on sustainable consumption.

	1	2	3	4	5
Velo home delivery- & recycling service					
Procurement of sustainable goods					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Sub-Topic 4: Energy System/ Utility	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 4.* - **Increased use of recycling of organic waste in local biogas plant to generate electricity and heat.** All kinds of organic waste from households and businesses are collected by electric vehicles with the lowest noise and exhaust emissions. This can reduce local CO2 emissions by almost 100 % and a reduction in energy costs by 80 % compared to conventional systems can be achieved. - **Lake-water heating and cooling network:** Use of lake-water to meet the heating and cooling needs of public and private properties.

	1	2	3	4	5
Increased use of recycling of organic waste in local biogas plant to generate electricity and heat.					
Lake-water heating and cooling network.					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Sub-Topic 5: Society	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 5.* - **Energy educational trail:** As a municipality that has already done a lot for sustainability, an energy trail was implemented. Where and how renewable sources are used for electricity production in the municipality and what energy-efficient construction looks like today - the energy trail shows and makes an energy experience. An app guides you through the individual stations of the energy path with

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lots of background information. On-site boards provide brief information about the objects, and additional information can be accessed via QR code.

- **Students at the centre of the energy transition:** The aim of the project is to get students to collaborate with the community so that they can think together about the energy transition. Both the potential for renewable energy development and energy savings are analysed. The results of the study are presented to the population.

	1	2	3	4	5
Energy educational trail.					
Students at the centre of the energy transition.					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Sub-topic 6: Finance

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 6.

- **Publicly funded Solar Energy:** crowd investing in renewable energies with aim of installation of a photovoltaic plant on communal buildings. Grant an energy-saving fee to investors for a time certain time period. The local energy cooperative provides the necessary equipment on a lease contract with project duration.
- **Safeguarding pension fund assets of Thalwil employees sustainably:** Sustainably investing pension fund assets of public sector employees and influence through active exercise of shareholder rights. The City of Zurich's Environmental Master Plan stipulates that staff pension fund assets be invested "taking sustainability criteria into account". Since 2003, the pension fund has reflected this in its investment policy by actively fulfilling its role as a shareholder through its voting rights and through a dialog with companies.

	1	2	3	4	5
Publicly funded Solar Energy.					
Safeguarding pension fund assets of Thalwil employees sustainably.					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

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Thank you for your participation in this first round of the Delphi study. There will be two more rounds in the coming weeks and it is very important for the success of the project that you continue to participate in the additional rounds.

Thank you for your support!

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Initial Delphi Questionnaires Territory: Western Macedonia

INVITATION: Delphi participants information sheet

What is the purpose of the study? Why have I been chosen? etc. – one week before the Delphi starts.

SECTION ONE: Short Introduction

Explanation of the study and project, goals and objectives related to the policy focus, Declaration of anonymity, names and addresses of methodological and tutorial partners, and consent to participate.

SECTION TWO - Participants Characteristics

Age	*"Please specify your year of birth."*
Gender	*"Please specify your gender."*
Highest educational qualification	*"Please specify your Highest educational qualification"*
Area of responsibility (in the Territory)	*"Please indicate your area of responsibility":* (e.g., Municipal authorities (including municipal council, Municipal administration, Research (including academic research), Business and economy etc.) • Researcher (academia, research institution) • Civil society organisation (NGO) • Territorial policy maker (local, regional, national) • Business sector (companies, chambers of commerce and industry, sectoral associations)
Personal Identifier: To track a person's information over time, it is important to create a Personal Identifier at the beginning.	○ *A) "*Please write down the day of the month on which your father was born as a 2-digit number (e.g., 01, 22, 30)" – the first 2 letters of your father's first name (e.g. TR) ○ B) "Please write down the day of the month on which you were born as a 2-digit number (e.g., 06, 12, 25)"

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SECTION THREE – Panellists' Input for Policy Objectives (Open Questions)	
Policy Objective 1 ***Transforming and strengthening the competitiveness of existing companies that need support for their transition to a zero-emission economy by 2030***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 1."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 1." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 1." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 1? (Please think of creative solutions).
Policy Objective 2 ***Establishment and attraction of new companies that create jobs and lead to economic diversification, modernisation and transformation of the existing production model***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 2."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 2." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 2." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 2? (Please think of creative solutions).
Policy Objective 3 ***Linking research with production, promoting start-up entrepreneurship, and creating spin-offs***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 3."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 3." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 3." (Please think of short-, medium- and long-term measures)

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	What do you think would be an unconventional solution to achieve the policy objective 3? (Please think of creative solutions).
Policy Objective 4 ***Improving energy efficiency in economically available "clean" energy systems and infrastructures***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 4."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 4." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 4." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 4? (Please think of creative solutions).
Policy Objective 5 ***Strengthen affordable and clean energy systems and infrastructures, including storage technologies***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 5."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 5." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 5." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 5? (Please think of creative solutions).
	Barriers: "From your perspective, please describe potential barriers to achieving policy objective 6."
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 6." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and

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Policy Objective 6 ***Restoration of degraded areas and facilities and change of their use***	*thus to achieve policy objective 6." (Please think of short-, medium- and long-term measures)*
	What do you think would be an unconventional solution to achieve the policy objective 6? (Please think of creative solutions).
Policy Objective 7 ***Upgrading the skills and retraining (upskilling & reskilling) of the employees of the companies that need support for their transition to the economy of zero pollutants***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 7."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 7." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 7." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 7? (Please think of creative solutions).
Policy Objective 8 ***Development of supportive digital infrastructures and services of smart communities***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 8."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 8." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 8." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 8? (Please think of creative solutions).
Policy Objective 9 ***Development of an effective just transition governance system with the involvement of regional structures in governance***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 9."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 9." (Please think of short-, medium- and long-term measures)

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	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 9." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 9? (Please think of creative solutions).
Policy Objective 10 ***Development of an effective social dialogue between the actors of the quadruple helix***	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 10."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 10." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 10." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 10? (Please think of creative solutions).
Policy objective 11 **Development of a social safety framework**	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 11."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 11." (Please think of short-, medium- and long-term measures)
	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 11." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 11? (Please think of creative solutions).
Policy Objective 12 **Hydrogen technologies and use in post-coal regions**	*Barriers: "From your perspective, please describe potential barriers to achieving policy objective 12."*
	Solutions: "Please outline possible measures to overcome the barriers and to achieve the policy objective 12." (Please think of short-, medium- and long-term measures)

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	Solutions linked to RRI/ AIRR: "Please outline possible measures to better integrate RRI/ AIRR dimensions in the topic area and thus to achieve policy objective 12." (Please think of short-, medium- and long-term measures)
	What do you think would be an unconventional solution to achieve the policy objective 12? (Please think of creative solutions).

SECTION FOUR - Evaluation of Best Practice Solutions (Closed questions)

Policy Objective 1 ***Transforming and strengthening the competitiveness of existing companies that need support for their transition to a zero-emission economy by 2030***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 1.* **Best Practice Solution 1 for Policy Objective 1:** An effective and properly planned Carbon dioxide ETS (Emissions Trading Systems) in China significantly boosts financial development and subsidizing unemployed workers, build up green, low-carbon economy and promote social equity **Best Practice Solution 2 for Policy Objective 1:** Ease business adaptation to post-coal transition by urging businesses in Czech Republic to implement new technologies and energy sources. Such measures are guaranteed Feed-in-Tariffs and Premiums for electricity of Renewable Energy Sources and Biofuel obligation **Best Practice Solution 3 for Policy Objective 1:** The Research and Innovation Portal is a tool developed from the Support Structure of the RWM, which has as a general purpose to support entrepreneurship and innovation, taking into account the course of the energy transition in the region. Regarding the Research and Innovation Portal, businesses will benefit from the portal through gaining information and networking opportunities, while the regional authority will monitor the image of the region through the innovation

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	indicators that will be recorded and will be able to make informed decisions. **Best Practice Solution 4 for Policy Objective 1:** The **Integrated Information System (IIS)** of the region of Western Macedonia is created to provide the software infrastructure in functionality so that multi-criteria data set analyses can be implemented. This is an experimental application of modern IT techniques which have not been applied in another similar structure in Greece. **Best Practice Solution 5 for Policy Objective 1:** The **Employment Enhancement and Monitoring Portal** is a tool for conducting primary employment research, helping to monitor employment trends and highlight business needs and available resources. It encourages the coupling of companies with the appropriate staff and the data of ergasiaRWM in combination with the data of the system from Ergani, OAED and the IIS will provide substantial monitoring of the development of employment. It is a substantial development of the oldest successful portal, ergasiakozani, with current purposes on the one hand to serve the whole region and on the other hand to collect and utilise data on the needs of companies in trained staff and availability. This tool is proposed as of major importance in the development model of the region, given the unemployment that will arise from the period of the energy transition. **Best Practice Solution 6 for Policy Objective 1:** The Investor Support Network (ISN) is a tool developed from the Support Structure of the RWM. The role and services of ISN is to create a friendly environment in which the entrepreneur feels it is worth the risk, to invest his money and to have the RWM support. Moreover, the services include the provision of personalized information, networking opportunities, funding opportunities, bureaucratic summary forms, grievance redressal issues, business discovery data collection, monthly reports of complaints and bureaucratic procedures corrective actions. Semi-annual (or annual) progress reports on potential

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investments and meetings with qualified staff from the region will be scheduled, depending on the criteria to be determined.

Best Practice Solution 7 for Policy Objective 1:

Strong and stable carbon pricing policies or subsidies are needed to improve the returns on investment in green infrastructure projects and reflect the true long-term costs of economic development. Carbon pricing, regulatory interventions and robust support to not yet-competitive low-carbon alternatives could provide consistent signals.

Best Practice Solution 8 for Policy Objective 1:

A structural adjustment measure for Germany was the subsidies for the creation of clusters to strengthen local industries. Some examples are the industrial clusters of IT in Cluj-Napoca or Sofia.

	1	2	3	4	5
1. Implementation of an effective Carbon dioxide ETS system					
2. Offer financial incentives for green technologies' implementation					
3. Research and Innovation Portal					
4. Integrated Information System (IIS)					
5. Employment Enhancement and Monitoring Portal					
6. Investor Support Network (ISN)					
7. Align investment incentives and disincentives to support a low-carbon agenda					
8. Creation of clusters to strengthen local industries					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

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Policy objective 2

Establishment and attraction of new companies that create jobs and lead to economic diversification, modernisation and transformation of the existing production model

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 2.

Best Practice Solution 1 for Policy Objective 2:

Offering land in Saarland - Germany by the regional government leads to the settlement and expansion of suppliers in specific industries and enlargement of the local business cycle.

Best Practice Solution 2 for Policy Objective 2:

The Saarland followed a new path, establishing research facilities connected to information technology (IT), bio- & nanotechnology, as well as medicine to develop an innovation-intense and growth-oriented economy.

Best Practice Solution 3 for Policy Objective 2:

Integrating universities in and research facilities in Ruhr district, Germany, with networks of companies and other institutions creates competitive and resilient structures that keep companies in the region and attract new ones. The example also of the Plovdiv economic zone in Bulgaria shows how businesses establish themselves when framework conditions are right.

Best Practice Solution 4 for Policy Objective 2:

Attraction of new industries in Saarland which seek employees with a similar skillset of coal workers.

	1	2	3	4	5
1. Offer land by the regional government for location of new businesses and relocation of existing local businesses					
2. IT, bio- & nanotechnology, as well as medicine facilities					
3. Strengthening research infrastructures, innovation hubs, coworking spaces					
4. Call for employees with a similar skillset with coal workers					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

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Policy objective 3 ***Linking research with production, promoting start-up entrepreneurship, and creating spin-offs***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 3.* **Best Practice Solution 1 for Policy Objective 3:** Strengthening innovative business activities in coal-transition regions in Greece, by the creation of local business parks. **Best Practice Solution 2 for Policy Objective 3:** Establishment of universities in the coal-transition regions of Holland - such as Open Universities - and growth of tertiary schools contribute to the local human capital building necessary for participation in innovative businesses. **Best Practice Solution 3 for Policy Objective 3:** Develop ICT, transport and Environmental Infrastructure in EU NUTS3 regions (e.g., Green Data-Centres, Supercomputers) **Best Practice Solution 4 for Policy Objective 3:** Measures for financial reactivation of the Spanish coal-mining towns of Aragón, Asturias, Castilla y León and Castilla-La Mancha include the setup of new innovative businesses or activation of existing ones. Investors can be either firms, individuals or associations of ex-workers. Financial support ranges from 30.000€ to 100.000€. **Best Practice Solution 5 for Policy Objective 3:** Ease business adaptation to post-coal transition by urging businesses in Czech Republic to implement new technologies and energy sources. Such measures are guaranteed Feed-in-Tariffs and Premiums for electricity of Renewable Energy Sources and Biofuel obligation.

	1	2	3	4	5
1. Innovation Zone Establishment					
2. Academy Institutes Establishment					
3. Creation of a Green Datacentre and Supercomputer					
4. Financial support for start-ups					
5. Development of start-ups and spin-offs					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

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Policy objective 4 ***Improving energy efficiency in economically available "clean" energy systems and infrastructures***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 4.* **Best Practice Solutions 1,2,3 for Policy Objective 4:** Transition plans for alternative development projects in the mining regions. These typically include infrastructures and the restoration of degraded areas due to the mining activities in the mining towns of Aragón, Asturias, Castilla y León and Castilla-La Mancha (Spain). The infrastructure includes improvement of equipment related to transformation and electrification centres and supply of gas, lighting and hydro infrastructures, provision and renewal of telecommunication lines and renewable energy projects in public buildings, creation and equipment provision of business incubators and technological development centres. **Best Practice Solution 4 for Policy Objective 4:** Improved infrastructure in energy community of Ruhr – Germany improves connectedness with other metropolitan areas. Infrastructure around mines does not help

	1	2	3	4	5
1. Energy upgrades of local public infrastructure					
2. Energy upgrades of office buildings and production units					
3. Energy upgrades of public / municipal buildings					
4. Supporting energy communities					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 5 ***Strengthen affordable and clean energy systems and infrastructures, including storage technologies***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 5.* **Best Practice Solutions 1,2 for Policy Objective 5:** Increased investment in China in renewable energy sources as well as energy storage is an effective post-coal measure. Coal regions usually have well-developed power grids as a result of their large generation capacities. They could be used to speed up the integration of renewable energy and storage solutions. **Best Practice Solutions 3,4 for Policy Objective 5**

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	Develop ICT, transport and Environmental Infrastructure in EU NUTS3 regions (e.g., Green Data-Centres, Supercomputers).

	1	2	3	4	5
1. H2 Innovation Hub and Energy Saving					
2. Development of smart energy systems					
3. Construction of heating and / or cooling units with heat pumps and RES					
4. Promotion of electric / propulsion with clean fuels and development of charging and supply networks.					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 6 ***Restoration of degraded areas and facilities and change of their use***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 6.* **Best Practice Solution 1 for Policy Objective 6:** The Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft (LMBV) has restored and reclaimed decommissioned lignite mining facilities left behind by former East Germany in the Lusatian and Central German mining regions for over 20 years. This happened on behalf of and was financed by the German federal government and its states. The achieved reclamation and remediation of former lignite mining facilities has been a success story. Their activities have created safe landscapes that offer new perspectives – not only for the people who live and work there, but also for the landscapes themselves as they offer new possibilities for usage. In 2014 GVV (Gesellschaft zur Verwahrung und Verwertung von stillgelegten Bergwerksbetrieben mbH) merged with LMBV and now performs backfilling and securing of decommissioned potassium, spar, and ore mines as a business unit within LMBV. (LMBV, 2017). **Best Practice Solution 2 for Policy Objective 6:** A tested re-deployment activity in Chinese regions can be a new public programme for environmental restoration for regions

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accommodating ex-coal workers with similar skills. The funding can originate from tax on pollution and carbon emissions.

Best Practice Solution 3 for Policy Objective 6:

Energy crops on degraded land may offer other opportunities.

Best Practice Solution 4 for Policy Objective 6:

Land may well become a key to success because in coal regions land is typically owned or controlled by a single owner, often the state, that could provide it for free and waive administration fees and barriers with a single government or parliamentary decision, thereby further reducing the cost of installation.

Best Practice Solutions 5,6,7 for Policy Objective 6:

The Siemens CEO for renewable energy expects wind to be one of the 'winners' of the recovery. Governments increasingly seem to understand that former mine sites can be reconverted to renewable energy generation, such as wind or Solarparks, or re-used for geothermal energy or hydropower applications.

	1	2	3	4	5
1. Soil restoration and land use adjustment					
2. Air pollution and biodiversity monitoring					
3. Energy crops on degraded land					
4. Free provision of land					
5. Wind Park development					
6. Solar Park development					
7. Geothermal energy or hydropower applications					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

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Policy objective 7 ***Upgrading the skills and retraining (upskilling & reskilling) of the employees of the companies that need support for their transition to the economy of zero pollutants***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 7.* **Best Practice Solutions 1,2,3 for Policy Objective 7:** The central government of the People's Republic of China provides free employment guidance, job placement, training, consultation, and other services to coal ex-workers. The less skilled workforce will need additional retraining to equip them for the needs of a future diversified local economy. **Best Practice Solutions 4,5 for Policy Objective 7:** Developing low carbon industrial clusters in coal regions could absorb, retain and expand this valuable expertise, which otherwise could be dispersed and lost. Due to similar skillset, coal workers are ideally fitted for covering unfilled positions in the RES sector. The skills of coal workers (e.g. durability in hazardous environments, employment of manual & sophisticated technologies) are sought after in the solar photovoltaic (PV) & wind industries, being particularly transferable to the occupations of solar PV installer/technician & wind-farm/wind turbine technician. Thus, coal workers can avoid the lengthy training (~2 years) currently on offer by existing VET courses, requiring only a short course or on-the-job training.

	1	2	3	4	5
1. Counselling - Training and Employment Actions					
2. Business subsidy programme for the employment of the unemployed					
3. Special preparation programme for unemployed young people, aged 18-29					
4. Short courses or on-the-job training.					
5. Develop a novel curriculum & tailored training content to facilitate coal workers' reorientation to the RES industry.					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 8	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 8.*

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Development of supportive digital infrastructures and services of smart communities	**Best Practice Solution 1 for Policy Objective 8:** The Integrated Information System (IIS) of the region of Western Macedonia is created to provide the software infrastructure in functionality so that multi-criteria data set analyses can be implemented. This is an experimental application of modern IT techniques which have not been applied in another similar structure in Greece. **Best Practice Solution 2 for Policy Objective 8:** According to the Master plan the vision for the "next day" in Western Macedonia, there should be a utilisation of the comparative advantages of the region, such as sustainable tourism and smart agriculture. **Best Practice Solution 3 for Policy Objective 8:** World bank proposes closing of global knowledge gaps on approaches and measures to implement coal sector transitions, such as case for reskilling, mobility, and market demand.

	1	2	3	4	5
1. Integrated Information System					
2. Development of applications and solutions for smart tourism and culture					
3. Investing in smart and sustainable local mobility					

(1= **Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)**

Policy objective 9 ***Development of an effective just transition governance system with the involvement of regional structures in governance***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 9.* **Best Practice Solution 1 for Policy Objective 9:** Strengthening existing laws/regulations in Australia with respect to closure notice periods, workforce transition planning, and stakeholder consultation processes. **Best Practice Solution 2 for Policy Objective 9:** Create new or alter existing organisations in Australia to increase the level of cooperation between various stakeholders

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so to create an effective just transition plan (Just Transition Observatory).

Best Practice Solution 3 for Policy Objective 9:

Over the last decades of structural policy in the Ruhr area, many different formats to manage and govern the process have been tried. While in the beginning, support programmes were defined by the state government (consulting only a few stakeholders, mainly industry and labour unions), in later years much more participatory processes have been set-up. It was generally acknowledged that elements of participatory design increased the acceptance of measures and improved their usefulness to the inhabitants of the region (Scheck, et al., 2013).

Best Practice Solution 4 for Policy Objective 9:

Shape – Upgrade the regional innovation system – probably based on a hybrid of 'national regionalised' 'regionally networked', and 'territorially rooted' solutions of RIS in NUTS3 regions.

Best Practice Solution 5 for Policy Objective 9:

A just and in-time transition requires financial resources and a fair distribution of the responsibilities for the costs. In the German case, most of the subsidies for the Ruhr and Saarland were financed through the national budget. As future coal phase-outs are expected to mostly involve political decisions motivated by global climate change concerns, costs should not only be borne by the regions but rather by the whole country, if not internationally. Furthermore, it is necessary to implement measures that secure enough financial resources from coal companies to cover the costs caused by their operations (e.g., recultivation costs and compensation of relocated settlements).

	1	2	3	4	5

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1. Improve regulation framework					
2. Just Transition Observatory					
3. Multilevel system of government					
4. Decision making, and planning shifted to a more regional level					
5. Financial resources for just-transition					

(1= Unimportant, 2= Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 10 ***Development of an effective social dialogue between the actors of the quadruple helix***	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 10.* **Best Practice Solution 1 for Policy Objective 10:** Initiative for Coal regions in transition foresees Stakeholder dialogue: strategies and projects are discussed with a wider stakeholder community including NGOs, trade unions and industry. • Collective brainstorming: exchange on best practices and experiences from other sectors and project ideas are brought into the discussion. • Guidance on available EU funds: Commission services provide information on funds and programmes to support transition in coal regions • Monitoring progress made by pilot regions • High-level political dialogue: policymakers provide recommendations on how to ensure an enabling policy framework, including the new MFF. **Best Practice Solution 2 for Policy Objective 10:** According to the European Code of Conduct on Partnership Member States are required include public authorities, economic and social partners and bodies representing civil society, including environmental partners, community based and voluntary organisations, which can significantly influence

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	or be significantly affected by the implementation of the Partnership Agreement and programmes.

	1	2	3	4	5
1. Development of an open dialogue digital platform					
2. Systematic consultation between social partners					

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy objective 11 **Development of a social safety framework**	*Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 11.* **Best Practice Solutions 1,2 for Policy Objective 11:** The German hard coal financing law foresees employment protection plans applied for every coal employee in Germany, who is more than 42 years of age. These plans include: • 3 years working in decommissioning • Receive payments for another 5 years until the pension age of 62 in 2027" • Promote voluntarily termination of coal-related jobs in the post-coal transition regions of Spain in the public sector, by directly compensating workers in the sector (35.000 euros of total compensation to each worker). **Best Practice Solution 3 for Policy Objective 11:** Early retirement in China of coal electricity capacity and cancellation of the ongoing build-up of existing coal projects promotes a more effective transition. **Best Practice Solution 4 for Policy Objective 11:** Reduce financial obligations such as VAT charges. through green programmes that are promoted in Czech Republic post-coal transition regions.

	1	2	3	4	5

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1. Direct payments, subsidies, compensations for current and past coal workers						
2. Decommissioning work status or transfer to another public organisations						
3. Early-stage or voluntary retirement status						
4. Indirect financial incentives for local communities (direct and indirect tax reduction, insurance contributions reduction, loan provisions)						

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Policy Objective 12

Hydrogen technologies and use in post-coal regions

Please read the statements listed below. To what extent do you think the following measures are important to achieve the policy objective 12.

Best Practice Solution 1 for Policy Objective 12:

The German environment ministry and the government of the state of Brandenburg have opened a new research institution for climate-friendly synthetic fuels. Researchers and companies will cooperate in the Lab to make it an "international hub for green hydrogen and its derivatives".

Best Practice Solution 2 for Policy Objective 12:

Blue Med: Motor Oil's project on the production of blue hydrogen of very low carbon footprint and green hydrogen designed to finish in 2025. The project foresees the creation of a cluster for full production cycle of blue and green hydrogen for transportation, distribution and use in industry and transports.

Best Practice Solution 3 for Policy Objective 12:

H2CAT TANKS: A B&T Composites project of the construction of innovative high-pressure tanks from complex materials and carbon fibres for Hydrogen storage, specifically for the transportation sector.

	1	2	3	4	5

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1. Development of a new green hydrogen lab						
2.Construction of Hydrogen production units						
3. Storage and usage of green hydrogen						

(1=Unimportant, 2=Somewhat unimportant, 3=Undecided, 4=Somewhat important, 5=Important)

Do you have any further comments or solution options you want to share? (open question in the end to provide panellists again the chance to contribute something if they want)	

Thank you for your participation in this first round of the Delphi study. There will be two more rounds in the coming weeks, and it is very important for the success of the project that you continue to participate in the additional rounds.

Thank you for your support!

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Conclusions

The purpose of the Deliverable 3.1 is to provide information about the Initial Delphi Questionnaire for the four territories of RRI-LEADERS, i.e. for Sabadell, Sofia, Thalwil and Western Macedonia. We used (i) Best Practice Analysis with Scientific Literature and Practice Literature, (ii) the specification of policy objectives, (iii) qualitative system analysis, and (iv) the development of a common structure for the Initial Delphi Questionnaire in order to arrive at a first version of the Initial Delphi Questionnaire for all territories.

It became clear that:

- The Questionnaires needed to be developed by the methodological partners and the territorial partners in tandem in order to bundle knowledge and expertise from science and practice
- Due to the differing policy foci in the territories the Initial Delphi Questionnaires look quite differently concerning the policy objectives and best practices that are suitable for the territories and the policy foci.

The Initial Delphi Questionnaires will be implemented in the software solution “Unipark” in the specific languages and then will undergo a pilot test (part of Task 3.1) in order to enhance the questionnaire concerning comprehensibility and preciseness.

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