



Stakeholder interaction methodology and schedule

D8.1

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Table of Contents

General information about this document	3
1 Introduction	5
2 The purposes of stakeholder interaction in LOCALISED	6
3 Stakeholder mapping methodology and first analysis	7
3.1 The wise co-decide on the kind of content and tools	10
3.2 The users co-design specific functionalities and the form of the tools	11
3.3 A community of interest supports transfer and replication	13
4 Stakeholder interaction methodology	14
4.1 Methods repertoire	15
4.2 Continuity and Documentation	19
4.3 Comparability of results	20
4.4 Minimum set of information to be obtained in any stakeholder interaction	21
4.5 Stakeholder interaction for the co-design of the tools	22
4.5.1 Timeframe and preconditions	22
4.5.2 Personae	23
4.5.3 Stakeholder journey mapping and first prototyping	24
4.5.4 Focus group, wider test audience and internal task force	25
4.5.5 Sessions and the process of rapid prototyping	26
5 Stakeholder interaction schedule	29
References	30

1 Introduction

The LOCALISED project's unique **ambition** is to smartly unify existing research and provide deep insights into the impact of climate change and the energy transition, in order to tailor technical measure sets and policy recommendations instead of averages or case studies for all European regions and cities and related businesses. By applying a well selected set of models and approaches, the LOCALISED team will produce the information and recommendations needed by municipalities, individuals and businesses in the transition towards carbon neutrality and adaptation, in particular for those who do not have the knowledge and capacity to crunch data or do their own modelling.

In order to succeed in this endeavour, it is necessary to understand very well the specific **needs** of the users of these services, as key stakeholders of the value-chain, differentiated along dimensions like group, experience, country and size of the administration or company. The understanding we gain needs to be shared in the consortium. This document aims to be supportive in achieving these goals.

The main LOCALISED **outputs** are the Decarbonisation Profiler and the Net-Zero Business Consultant. These web applications will integrate various other project results, such as the Risk Assessment and Energy Impact tool, the Vulnerability Map of Industries or the semi-automated templates for dynamic Sustainable Energy and Climate Action Plans (SECAPs) and the Blueprint for Climate Citizen Councils in Regions and Cities.

This report will present the methodology and time plan for the stakeholder mapping and interaction for the tool's co-design¹. As the deliverable is presented at an early stage of the project, it needs to be flexible and adaptable enough in order to not be counteracted by project results and developments or to limit them from the outset. The aim is therefore to formulate basic principles that will be differentiated and concretised in the further course of the project and in the concrete interaction of the responsible partners with stakeholders.

In line with the above, the document is addressed to all partners who are involved in the interaction with stakeholders during the course of the project and who report respective results. It will be updated at appropriate points in time to include what the consortium has learned.

While section 2 explains the purpose of stakeholder interaction for the project, section 3 deals with the question "Who?": A description of the stakeholder mapping method to be used is followed by a first rough breakdown in different groups for the

¹ The DoA mentions the terms co-design, co-creation and co-development in this regard. "Co-creation is an act of collective creativity that is experienced and performed jointly by a group of people. Co-design is collective creativity that is applied across the whole span of a design process. This means that co-design is a specific instance of co-creation." (Sanders and Simons). Co-design and co-creation can be subsumed under the term "co-development".

implementation of the mappings in the course of the first stakeholder involvement phase (See also Task 9.1). Section 4 provides a stakeholder interaction methods repertoire and specifies procedures and approaches for coordinating the interactions. It also includes a detailed procedure for the stakeholder interaction for the co-design of the tools in phase two. Section 5 provides an overview of the chronological sequence of stakeholder interaction measures and their interdependencies, while section 6 formulates conclusions.

2 The purposes of stakeholder interaction in LOCALISED

The purpose of stakeholder interaction in LOCALISED is to understand the questions and needs of the end users of the project's results and services, which is a prerequisite to make the decarbonisation and adaptation knowledge included therein relevant, widely applicable and practically useful for them. In this sense, interaction with stakeholders is essential for the project's success and will greatly increase the likelihood that the LOCALISED outputs and tools will be widely used.

Understanding the **target user's requirements** for the type of information/knowledge and for their presentation includes asking (a) what information and knowledge is relevant in terms of the ability to influence specific circumstances, (b) what information and knowledge is missing or already available, (c) how can it be presented and validated to be considered in decision-making. Furthermore, it is important to query the current experience level and skills of the target users.

Three different stakeholder interaction phases can be distinguished:

1. In the **first phase** we want to co-decide on what kind of data and insights are relevant and useful in the transformation process we are considering and what kind of tool should be built for delivering them.
2. In the **second phase** we want to co-design the specific functionalities and the form of the tools.
3. In the **third phase** we want stakeholders to support the wide use (transfer and replication) of the LOCALISED tools.

The project will deliver results and services for *all* cities/regions at the NUTS 3 administrative level and for businesses at NUTS 2 level in Europe. In order for those results to be relevant and useful for such a big and diverse target group, it is particularly important to involve a diverse group of individuals also from outside the consortium's usual networks whom we can ask about data and knowledge needs specific for their challenges in managing the energy transition and climate impacts locally. In the first phase the responsible consortium partners for WPs 5, 6, 7 will carry out this involvement with the help of other local consortium partners and associated partners and with

coordination guidance of CMF. In the second phase, CMF and CMCC will lead the co-design processes for the web tools supported by all consortium and associated partners. The third phase will be led by OGUT.

Since LOCALISED will involve very different stakeholders and will cover different regions with different characteristics and will use different fora to gather information and knowledge about needs, the following considerations are formulated to be adaptable to the described different circumstances.

3 Stakeholder mapping methodology and first analysis

For planning the LOCALISED stakeholder interaction, and for assigning which stakeholders shall be engaged in which LOCALISED activities, they need to be identified and categorised according to several dimensions and criteria (such as group, experience, country or size of the administration/company, as mentioned above) through a stakeholder mapping exercise. The results of this exercise – the stakeholder maps – will support the consortium partners in prioritising and engaging stakeholders, be it directly or in reaching out to organisations and associations that help in doing so.²

Process and methodology

The stakeholder mapping, planned to be completed in a first version by the end of September 2022 will follow an iterative **process** based on the following steps:

- Identification of stakeholders based on the screening made during the proposal writing, and reported below. Basically, the categories to involve have been already selected by the project partners before the submission.
- A revision of the categories already selected according to the project needs. Such a revision will be performed through a careful analysis of project objectives and outcomes and a desk research will be used to verify that relevant stakeholders will be engaged in the activities. Once the categories are refined, the stakeholder groups will be presented to the consortium and completed by their feedback, in particular from the three administrative partners (planned by the end of July). In parallel, a snowball sampling will be conducted within the consortium, in order to ask the partners to suggest additional categories or specific contacts. Snowball sampling is a technique used in sociology and statistics to start from selected subjects asking to provide referrals to recruit samples required for a research study. Aim of the sampling is to engage all project partners asking them to provide relevant contacts to engage in the project activities. If needed, in a

² The completion of the group of organisations that are already associate partners of the project will be supported by a call for interest carried out by OGUT in the context of Task 9.2.

8.1 - Stakeholder interaction methodology and schedule

second iteration, these contacts will be asked to provide additional contacts in order to enlarge the target groups.

- Final feedback and input by the partners will validate the map of stakeholder groups gathering (by the end of September).

All these steps will be done in line with the ethical requirements and GDPR rules as defined in D1.2 as well as the Gender and Diversity plan (D1.5).

The stakeholder mapping activity will be further supported by T6 by providing a stakeholder mapping matrix and related guidelines for gathering contributions by all LOCALISED partners. The stakeholder mapping itself will be implemented by partners in charge of interactions, e.g. UT and FZJ for WP4, IREC for WP5, ÖGUT for WP6, CMCC for WP7. An important criterion for the mapping is the overall aim to engage cities, regions and businesses that have not started or just started mitigation and adaptation planning. T6 will follow the process and provide advice as needed.

First analysis

The main stakeholder categories identified in the LOCALISED Description of Action as targets for the project's activities, results and outputs are local and regional authorities, their citizens and businesses in Europe. They have the need for information on challenges and benefits of decarbonisation at a finer resolution of regions, and translate them to the level of individuals as well. In addition, they need information about interactions between adaptation and mitigation measures at local and regional level.

As can be deduced from the different purposes of stakeholder interaction in LOCALISED formulated in the previous chapter, stakeholders can be usefully divided into three groups for different purposes of interaction and feedback (see Figure 1):

1. The **first group** ("the wise") comprises people who have experience and deep knowledge in local decarbonisation and adaptation planning processes. They shall inform LOCALISED research in the work packages that will produce integrated decarbonisation and adaptation pathways, including viable combinations and best practices of sectoral mitigation and adaptation measures, early in the project on what type of answers are needed at local level for decarbonisation and adaptation planning and, hence, what kind of tools are to be built.
2. The **second group** ("the users") consists of potential future users of the tools that co-design the actual web application in the second half of the project.
3. A **third group** (which partly overlaps with the first group) forms the community of interest for LOCALISED results and outputs. Communication, dissemination and exploitation activities will be targeted for involving this group (see D9.1).

8.1 - Stakeholder interaction methodology and schedule

Each group needs to be further studied. However, it can be derived (see also the Dissemination and Communication Strategy, D9.1) from this first analysis that members of group 1 have a high interest and a high influence because they are part of thematic networks of local and regional administrations and businesses with a high competence and also an interest in learning about new tools for their members and transferring them. Members of group 2 have a high interest, but less influence. They are the main users of the tools, e.g. technicians in local and regional administrations or businesses or sectorial agencies who are in charge of implementing policies or planning the distribution of subsidies. Members of group 3 have lower influence and interest, e.g. journalists and members of media outlets or civil society organisations, the general public, climate activists, etc. but they can be multipliers and promoters of results, without necessarily being experts in the field.

While the first two groups are addressed in this document, the mapping and involvement of the third group is described in the Dissemination and Communication Strategy (D9.1) and, at a later stage in the project, in the Exploitation and Sustainability Strategy (D9.3).

In the following paragraphs, the three groups are described in detail, including their level of involvement in the project.

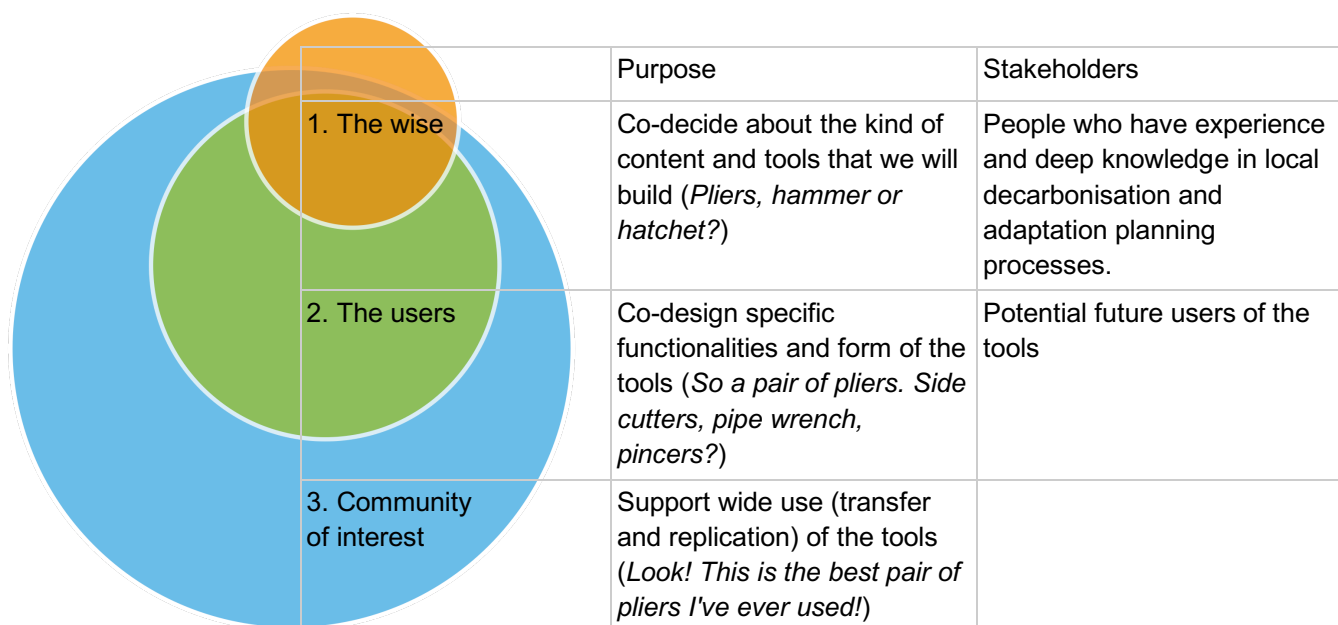


Figure 1: LOCALISED stakeholder groups

3.1 The wise co-decide on the kind of content and tools

From the first phase of stakeholder interaction, the LOCALISED consortium wants to understand what kind of data and insights would be most relevant and useful in the transformation processes we are considering and what kind of tool should be built for delivering them. To speak in a tool metaphor: do we need pliers, a hammer or a hatchet? This includes co-deciding about the functionality and the different elements of the Decarbonisation Profiler and the Net-Zero Business Consultant, about which additional elements would be useful and about which results they shall optimally produce. To this end, people who have experience and deep knowledge in planning decarbonisation and adaptation measures or processes and integrating those into local governance in NUTS3 regions and smaller cities or in businesses are of particular interest. Also individuals, that have access to these people of interest, are part of this first group of stakeholders, hence either experienced persons from municipalities, regional administrations and businesses, or representatives of associations and networks of municipalities, regional administrations and businesses.

The first people to interact with to understand what the content and purpose of the Decarbonisation Profiler shall be should be stakeholders from the two large partner cities in the consortium, Vienna and Barcelona. Through their membership in the consortium, access is good and feedback will be substantial and rapid. Furthermore, the two cities are already well advanced in the planning of the decarbonisation and adaptation process and can thus also already judge first successes and failures retrospectively. They are in a position to say what kind of information, assessment or service would have helped them if it had already been available. Moreover, due to their size, the Ajuntament de Barcelona and the City of Vienna have more possibilities and internal resources and capabilities than most of the final target regions/cities and serve to research optimal planning or best practice. It is always important to keep in mind that our final target group should not be frightened or discouraged by the means and resources necessary for the implementation of certain analyses or bundles of measures. Stakeholders of this group, representing public administrations and businesses, are:

- Networks of cities and regions at European and national level, such as ICLEI, Covenant of Mayors, Fedarene and Österreichischer Städte-, oder Gemeindebund, Austrian national smart city stakeholder platform, Àrea Metropolitana de Barcelona, Catalonia 2030, Spanish Federation of Municipalities and Provinces (FEMP), respectively
- Small and medium sized cities and NUTS 3 administrations who already have implemented mitigation and adaptation plans
- Business associations at regional level

8.1 - Stakeholder interaction methodology and schedule

- The two LOCALISED city partners, the city of Vienna and the city of Barcelona. The city of Vienna is mainly involved through the Department for Energy Planning which initiates and designs the development of Vienna's energy systems. The city of Barcelona is presented by the Agenda 2030 Department which is aligning municipal policies with the SDGs, including climate actions. Strategic persons will be identified and invited to the co-design process which have relevant functions in regard to decarbonisation planning and related participatory activities of their citizens

A more detailed mapping will be done in the next months (see mapping process and methodology at the beginning of this chapter), in order to enlarge the group and cover e.g. missing geographical or sectoral areas, etc. which then should be involved in a second engagement round.

For the co-design of the Net-Zero Business Consultant tool, we engage the main associate partners of LOCALISED, namely Assolombarda (Italy), The Baltic Eco-Energy Cluster (Gdansk, Poland), and ecoplus, the Business Agency of Lower Austria. These associations provide not only access to a wide network of industries in Europe, but also valuable insights into what kind of tools and interactions would be most useful for their members. Through interaction with these three main associate partners, we also aim at covering the main economic activities and business categories within the EU (e.g., energy, manufacturing, agriculture and transportation). The initial phase of establishing regular communication channels with these entities started in the proposal development phase. Within the first year of the project (by September 2022), we reach out to the network of member companies within these business clusters and identify interested companies and organisations who will serve as stakeholders in the co-design of different capabilities and functionalities of the Net-Zero Business Consultant tool.

3.2 The users co-design specific functionalities and the form of the tools

The second stakeholder group includes potential future users of the LOCALISED tools, i.e., members of administrations of small and middle-sized cities/regions and of businesses. People who work directly with decarbonisation and/or adaptation, whose function in their host organisation is to take care of the planning and implementation of such measures and projects. This means that we will select individuals who, by virtue of their role in these organisations, have a personal responsibility for local compliance with national and European emission reduction and adaptation targets, and also for ensuring that appropriate measures are implemented.

For co-designing the Decarbonisation Profiler, we will search for people in public administrations and public technical bodies, but also in consultancies and sectoral associations (as they are the ones more interested on "large-scale" planning and

8.1 - Stakeholder interaction methodology and schedule

management), that are responsible for urban planning, energy planning, transport planning, especially those facing limited resources or lacking information. These individuals may be intrinsically interested and motivated or by external requirements.

For co-designing the Net-Zero Business Consultant tool, a group of businesses will be chosen which can represent the sectoral and geographical diversity within the EU industries. For example, most Assolombarda member companies represent the manufacturing sector in western/northern Europe, while BEEC's cluster include small and medium size bioenergy companies in eastern Europe. The members of the ecoplus clusters on the other hand, include a variety of companies involved in food, manufacturing, and mobility. The broad sectoral and geographical coverage of such networks allow us to co-develop two key functions of the Net-Zero Business Consultant, namely the climate change vulnerability index for key business sectors, and the mitigation/adaptation option explorer. These functionalities will be calibrated and incorporated in the final tool within the second year of the project (M12-M24).

This is not a final user definition since it is partly subject to results from the first stakeholder interaction phase (answering the "What kind of tool is needed?" question). We, hence, approach defining users here by iterative convergence. However, this initial definition and associated personae, see the respective subsection in section 4.5 below, will serve as the starting point of drafting the web applications. This draft will be converted into a clickable "dummy" application that can be used to involve these stakeholders to decide about the specific design of the functionalities of the planned tools, so in the project co-design and testing.

Within LOCALISED, the people to be involved in this group will be determined by the Metropolitan Area Gdansk-Gdynia-Sopot (MAGGS) as well as by the members of the LOCALISED associated partners. So far these are:

Public administration:

- City of Sopot
- Federal Region of Carinthia
- Austrian Association of Cities and Towns
- Bezirk Schöneberg-Tempelhof (tbc.)

Businesses (sectoral/geographical coverage):

- Assolombarda(Manufacturing/Northern Europe)
- BEEC (Energy/Eastern Europe)
- ecoplus (Food/Central Europe)
- Business Agency Vienna (Mobility/Central Europe)

As the target number of associated partners is ten in total, two other associated partners will be identified, possibly from a network of public administrations in countries in which

LOCALISED is not represented through a partner. The involvement of further organisations might be considered, through OGUT expected developments, if there is additional interest.

3.3 A community of interest supports transfer and replication

LOCALISED will have an impact if the results, outcomes and outputs are widely disseminated and used. This will be ensured through organisations that have a wide reach to potential users. Note that the following stakeholders are partly the same as in the first group, but as the purpose of their involvement is different (and so are the tasks and activities), they are listed again here.

- Interested scientists and researchers from academic institutions and research centres, e.g. climate, mitigation and energy modellers, urban planning, policy and governance, social, adaptation and behaviour scientists, participation and gender research, who aim to tackle large-scale scientific or societal problems for which existing approaches, methods and technologies need to be further developed and which are using the published results and datasets for further research
- European institutions which are coordinating knowledge platforms in the field, e.g. the EEA with the Climate Adapt platform and the European Commission's Directorate-Generals involved in the implementation of the European Green Deal: Climate Action; Environment; Energy; AGRI; Internal Market; Industry, Entrepreneurship and SMEs; Mobility and Transport; Economic and Financial Affairs; Research and Innovation
- Networks of cities and regions at national or European level, through which we can arrive to futures users (the list will be further elaborated):
 - European: ICLEI, Covenant of Mayors, Fedareme, Eurocities
 - National level: Österreichischer Städte-, oder Gemeindebund, Austrian national smart city stakeholder platform, Àrea Metropolitana de Barcelona, Catalonia 2030, Spanish Federation of Municipalities and Provinces (FEMP) on regional and national level or partner MAGGS as an umbrella organisation of three cities.
- Business associations at national and European levels, e.g., national business associations, BusinessEurope, and the European Business Association.

Parts of these networks are already involved, for example as associated partners, or by being members of the Advisory Board. The project will establish a community of interest on LOCALISED results and outputs with these organisations with dedicated communication, dissemination and exploitation activities (see D9.1). For example, the

broader national and European business associations will be engaged in the third year of the project (M24-M36) to assess the applicability and relevance of the project outcome at a larger scale and to provide feedback to improve and fine tune the Net-Zero Business Consultant tool to be fully launched and be made publicly available in the last year of the project (M36-M48).

4 Stakeholder interaction methodology

The methodology needs to ensure that the results of stakeholder interactions are collected and processed in such a way that they can actually find their way into the content and design of the services/tools LOCALISED is going to deliver.

On the other hand, it must be ensured that results of the interactions, that cannot be directly translated into the functionality or the design of the tools, are nevertheless incorporated into the project and in the results, for example in corresponding best practice material or in communicative elements, e.g. from the continuous storytelling. Here it is important to define and implement documentation logistics with the partners involved. In all interactions it is important to get an understanding of how locally or situationally specific a specific piece of feedback is or how generalisable and transferable it is to other situations. This is especially true for best/worst practice examples. To enable other users to repeat successes or prevent failures, it is important to query the underlying conditions for success.

The needs of the target users of the tools will be incorporated into the tools' design both indirectly through assessments by organisations and alliances/associations that are familiar with the needs of the users, and by addressing the users directly, especially in the second phase of the interaction.

Some stakeholders are partners in the consortium, others are closely tied to LOCALISED partners, still others have yet to be found through stakeholder mappings. Against this background, it stands to reason that the outcomes of the various stakeholder interactions targeted by the LOCALISED project will differ not only in terms of the information requested – businesses and local authorities and their citizens will have different interests – but also in terms of the formats and ways in which the information is collected and provided. Consequently, fixed elements for the documentation of interactions must be defined and considered accordingly during implementation. A first draft of such a minimum requirements catalogue can be found below.

In order to link with additional stakeholders, partners will (i) tap into their networks to create a multiplier effect (ii) increase the advertisement of the project through online mailing lists (iii) promoting thematic sessions in conferences to attract stakeholders and (iv) liaise with local organisers of events in the specific business field and promote side events and participation.

To ensure that all stakeholders can contribute to their specific role in the best possible way, it is important to use adequate methods as part of the stakeholder interaction process. Stakeholder interaction methods can be divided into categories related to the timing of the interaction on the one hand, and into quantitative (e.g. questionnaires) and qualitative methods (e.g. workshops) on the other. Furthermore, the intensity levels of interaction are: Inform, Listen, Consult, Involve, Collaborate (e.g. Cariani, R. (n. d.) *Concept for Stakeholders Engagement*).

To determine the best tools for a stakeholder interaction process it is useful to consider the following questions:

How do the targeted stakeholders usually receive information, what are their communication channels?

→ This question is useful in considering how and where to address the stakeholders and which methodology to choose.

What are the time constraints of your target audience?

→ This question is useful in considering which methods are suitable for which stakeholder as all stakeholders will have different availability in reference to time and how much effort they can put into the interaction.

What is realistic and resource effective to produce at a particular stage of the project?

→ Before planning any stakeholder interaction, it is of course always necessary to plan the resource expense (e.g. State of Queensland, Department of Infrastructure, Local Government and Planning (July 2021). *Community engagement toolkit for planning*).

These questions can also be reconsidered when evaluating the results of the methods.

4.1 Methods repertoire

As the LOCALISED project will target stakeholder groups with a different purpose in different phases of the project, the methods chosen to be presented in this deliverable cover a wide range of possibilities stakeholder interaction has to offer. In general, the more resource-intensive a method is, the more important the stakeholders you want to reach should be. Moreover, researchers also have to take into consideration how much time their stakeholders may have at their disposal to participate in the stakeholder interaction. To ensure a working and beneficial stakeholder interaction it is crucial that all stakeholders are targeted with suitable methods (Amaeshi, K. M. & Crane A. 2005, p. 253).

Questionnaires

Digital surveys and questionnaires can be used to gather input from a wide variety of stakeholders prior to any personal interaction such as a workshop. This method is easily scalable with respect to the number of stakeholders involved, it is less labour intensive than other two-way communication strategies and it will work for many stakeholders. Many stakeholders, however, may wish for a more in-depth communication method. Questionnaires can be implemented on various platforms as for example Microsoft Forms which is in line with the European General Data Protection Regulation (GDPR) (State of Queensland July 2021, p. 34 f.).

- Questionnaires are useful to interact with a **bigger group** of stakeholders at the same time and receive **comparable results**.
- Questionnaires are useful especially in the beginning of the project but can also be implemented at a later stage when quantitative data is needed.
- The Method is less time-consuming than Interviews or Workshops.
- Before sending a questionnaire out to all stakeholders ensure that the questions are well posed and elicit the anticipated responses.

Interviews

Interviews can be conducted individually or in small groups and can take place virtually (video call or telephone) or in person. Interviews provide an opportunity for personal, structured and open dialogue. Interviews allow for a more in-depth conversation with key stakeholders and provide an opportunity to listen to their views in detail. While this method is engaging, it is also time-consuming. Therefore, stakeholders invited to personal interviews must be carefully selected and the interviewers must be aware in advance of what they want to learn from the stakeholders (Sedmak 2021).

Different Types of Interviews:

Structured Interviews - A list of pre-determined questions is asked to the respondent and the questions are not altered during the interview.

Semi-Structured Interviews - are a mix of structured and unstructured interviews. The interviewer has a set of prepared questions but can also ask follow up questions if something interesting is said by the respondent.

Unstructured Interviews - Unstructured interviews are close to a regular conversation between people. The interviewer does not prepare questions but will of course still record the conversation to analyse it later on. Unstructured interviews are not recommendable if certain information about a topic shall be generated and later be comparable.

8.1 - Stakeholder interaction methodology and schedule

- Interviews are more time consuming than for example questionnaires and therefore not suitable for all stakeholders.
- Interviews are **ideal for stakeholders which are very important for the project**, to get to know their ideas and needs exactly.
- Interviews are useful at any stage of the project.
- To make interviews comparable it is useful to develop a basic set of questions which definitely have to be asked during the interview.

Workshops & Focus Groups

Workshops and focus groups are a more intense interaction with stakeholders and can help develop a common goal for the project and understand what the stakeholders really need. In the LOCALISED project, workshops can be useful for all stakeholders, as they offer the opportunity to let opinions collide and open up new discourses, which in turn can determine the direction of the project (Sedmak 2021 & State of Queensland, July 2021, p. 34 f.).

- Workshops and Focus Groups are rather time-consuming methods.
- Workshops and Focus Groups can be useful for all stakeholders as they open up a space to let opinions collide and create new discourses.
- Focus Groups and Workshops **bring different stakeholders together** and are therefore not useful at the beginning of a project but rather in the middle or at the end - It is important to get to know the stakeholders and exchange knowledge face to face (e.g. through an Interview) before interacting in a group.

Open Discussions & Group Sessions

Open discussions or group meetings can involve several stakeholder groups at the same time, which makes them an interesting method to bring together the two stakeholder groups from the different phases of the project. Such meetings can be held virtually or in person and provide an opportunity for a two-way discussion between stakeholders and project partners. This method allows multiple stakeholders at the same time to have a structured, yet organic conversation (State of Queensland, July 2021, p. 35 f.).

- Open Discussions and Group Sessions are less time consuming than Workshops and Focus Groups.
- Are useful in the middle or at the end of a project as it is not ideal to get to know the stakeholders in detail but to create common ground and ideas.

Other more specific methods that could be interesting in the further course of the LOCALISED project and which are also partly foreseen in the co-design of the tools are:

- Serious Gaming

8.1 - Stakeholder interaction methodology and schedule

- Serious Games can be played in groups and can be used to develop narratives or ideas in general referring the topic of the game
- Serious Games are often used within educational context and in design thinking processes.
- Field Usability & Testing
 - Stakeholders can of course not only be integrated into the development process but also into testing of the developed product - for Localised the platforms - to ensure that these are beneficial for the stakeholders.
- Delphi Method
 - The Delphi method is a structured multi-stage survey with the aim of building consensus. In this process, a group of experts gives answers and assessments to a catalogue of theses or questions. These results are then summarised.
 - More information: https://www.researchgate.net/publication/305909817_Delphi_Method
- Multi-Criteria-Mapping (MCM)
 - MCM is an interactive, multicriteria appraisal method for exploring contrasting perspectives on complex, uncertain and contested issues. It aims to help 'open up' technical assessment by systematically 'mapping' the practical implications of alternative options, knowledge, framings and values.
 - More Information: <https://www.multicriteriamapping.com/about>

Depending on their involvement and their capacities, different stakeholders can of course be engaged at multiple points during the project duration but it is of high importance that all communication with the stakeholders is transparent and both parties have the feeling that they benefit from the interaction (Sedmak 2021). Moreover, stakeholder interaction does not end with the final result of the project but can also be useful in the exploitation phase.

The interaction methodology will be adapted in the first half of 2023, in the second half of 2024 to ensure that it fits in the best way possible to the stakeholders as well as to the needs of the project which can change over time as it proceeds.

First Group „The Wise“ - People with experience and knowledge	Second Group „The Users“ - Potential future Users	Third Group - Community of Interest
Workshops & Focus Sessions (Second half of the project)	Questionnaires	Questionnaires
Face-to-Face Interviews (Structured or Semi-Structured)	Workshops & Focus Sessions (Second half of the project)	Field Usability & Testing
Open Discussions and Group Sessions	Group Interviews (Structured or Semi-Structured)	If applicable: Group Interviews
Delphi Method	Open Discussions and Group Sessions	
	Serious Gaming	
	Multi-Criteria-Mapping	

Table 1: Suitability of interaction methods for the different LOCALISED stakeholder groups

4.2 Continuity and Documentation

For a good stakeholder engagement and interaction practice it is crucial to continuously evaluate stakeholder feedback as well as the effectiveness of the chosen methodology. Stakeholder interaction is about creating a lasting relationship that benefits both parties, not about one-sided benefits. One element of this is informing stakeholders about what happened with their critique, suggestions and recommendations within the consortium. How they were used and incorporated into LOCALISED research and/or products, or for what reason they were discarded or not considered, if applicable.

To ensure that the interaction process will be successful throughout the project duration, each work package dealing with stakeholder interaction will have to set up a structure for the evaluation of the interactions results as well as evaluate and adapt the methodology at least once every year for each stakeholder group that was defined in the stakeholder mappings. These need to be put to the PIK server structure which makes the documents accessible in a structured way and ensures that nothing gets lost.

To ensure that the interaction process will be successful and comparable throughout the project duration, all work packages dealing with stakeholder interaction will have to use the same tools for the evaluation and analysis. The main tool for the evaluation and documentation will be spreadsheets. All tables have to be uploaded to the Localised Cloud @PIK to ensure that everyone from the consortium has access but they must not be shared with a third party.

The stakeholder interaction methodology has to be re-evaluated and then updated at least once every year for each stakeholder group that has been defined in the stakeholder mappings. The documentation must, of course, comply with the requirements of data protection law. All partners must note that this data is only accessible within the consortium and is only used within the framework of the project. Further use or storage outside the virtual project space is not permitted.

Besides general information such as name and institution/region/administration/company, the input and the occasion will also be recorded. It must be stated whether the person agrees to be contacted by the partners for queries or for the assessment and evaluation of the instruments, and if so, the corresponding contact details can be recorded. In addition, the participants are asked whether they may be informed about the further course of the project.

If possible, information should be provided on whether the stakeholder is more relevant for mitigation or adaptation measures. Further information can be documented without following a specific format; in the case of participation in surveys through questionnaires or recordings and transcriptions, these will be linked accordingly. At the latest in month 12, it will be determined whether further categories can be derived from the inputs collected by then.

Stakeholders who are involved in the project process are also potential multipliers for the tools. It is extremely important for stakeholders to know that their input is valued. Feedback on specific interactions and requests must be given, even if contributions are rejected. In this case, reasons should be given for the sake of transparency. The documentation must therefore also make it comprehensible whether and how an input was brought in or, if not, for what reasons (see the following Section 4.3, Comparability of results). The Climate Media Factory will develop a draft interaction protocol based on further discussions and first experiences with the ongoing stakeholder interactions.

4.3 Comparability of results

A stakeholder interaction strategy can only be successful and, in particular, it can only be beneficial for the whole consortium if the results of all interactions are documented, analysed and compared. Therefore, all meetings, for example, shall be recorded and summarised in oriented minutes (or transcribed if appropriate) and shared internally. The team decides in advance whether it makes sense to only take notes or to record a meeting, and in the latter case, if it is also transcribed. However, it must always be ensured that all important information is recorded at the end.

As these recordings and transcriptions might include sensible information it is important that they are in line with the GDPR in general and specifically with the data protection

rules of the project. In particular, this information must not be published anywhere and must not be made available to a third party.

This ensures that everyone in the consortium who interacts with the stakeholders has access to all relevant information that was previously shared. This is important on the one hand to ensure reliable communication and progress and, on the other hand, to prevent stakeholders from being frustrated by being asked the same thing several times.

Furthermore, to ensure that interaction with each stakeholder provides at least the most important and most needed information, a set of basic questions has been developed (see section 4.4), which must always be answered in detail by each stakeholder involved in the interaction. Details on how the results of the interaction will be analysed and compared can also be found below.

4.4 Minimum set of information to be obtained in any stakeholder interaction

Information is requested from stakeholders in different interaction formats. Of course, all information is helpful and important to consider in the design of the tool. There cannot be too much information in this respect. Due to the diversity of the stakeholders addressed and the diversity of their origins, much of the information will be difficult to compare in terms of quantitative evaluation. The basic questions formulated in the following, should be asked in each stakeholder interaction. Evaluating the answers over the entire course of the project will give an overview over which areas and topics and perspectives are not sufficiently covered and represented. The questions are formulated such that they can be asked regardless of the format chosen - from questionnaires to one-on-one meetings.

- What is your main area of activity and specific function? (“Development of energy-related concepts and energy strategies and coordination of spatial energy planning in a city administration” or “B2B networking of businesses in Italy and abroad around technological sustainability solutions”, for example)
- Can your main area of activity be assigned to a specific sector? (Land-Use, Transport, Energy...)
- What is your sphere of influence with respect to climate change mitigation and adaptation, in terms of planning, procurement, regulation, communication?
- What kind of information or knowledge do you think might be useful for you when planning and implementing climate change mitigation and adaptation measures?

The following question is not relevant for evaluation, but is quite essential for the uptake of the project results and should therefore also be addressed to every single stakeholder in the course of the project.

- How does data/information need to be available and validated so that it can be considered in decision-making processes?

4.5 Stakeholder interaction for the co-design of the tools

*End users adopt technology that is perceived as valuable and meaningful.*³

While stakeholder interaction in terms of content and functionality aims to gain knowledge about information and data needs of the stakeholders, stakeholder interaction for the co-design of the tools aims to find the best way to present these knowledge in terms of hierarchy, ranking and prioritisation of information presentation, usability, user experience, application/device preferences of the target group, interaction metaphors and conventions in terms of usability, testing and validation and many more. This can already be described very concretely at this stage because - unlike the other stakeholder interactions - the involvement of stakeholders in the development of the tool does not take place in different forums or with different objectives or at different times.

While an overarching co-creation approach applies to the whole process of developing the tools, the concrete design of the web applications in terms of structure, presentation and interface will follow a more specific co-design approach. As these stakeholders are neither graphical user interaction experts nor programmers or designers, the tool will not be developed by these stakeholders, but validated, evaluated, tested and assessed by them. The challenge with the complex and ambitious idea of the LOCALISED tools is that stakeholders may not even know exactly what they want or need in terms of functionality and usability. The use of fictional personae, the creation of usage scenarios and stakeholder journey mapping, as well as ongoing rapid prototyping are established methods for tool design and will also be used for the development of the LOCALISED tools. They differ from the methods mentioned in 4.1 since they are only targeting the development of an interface. The following outlines how and with what kind of iteration the joint development of the tools will proceed.

4.5.1 Timeframe and preconditions

The development and implementation of the LOCALISED Decarbonisation Profiler will start in month 19, the development and implementation of the LOCALISED Net-Zero

³ Steele Gray C, Irfan Khan A, McKillop I, Sharpe S, Cott C. User-centred co-design with multiple user groups: The case of the electronic Patient Reported Outcome (ePRO) mobile application and portal. *International Journal of Integrated Care*. 2019;19(4):439. DOI: <http://doi.org/10.5334/ijic.s3439>

Business Consultant in month 25. When starting the development of the tools, the project already gained a lot of knowledge about the different stakeholders and their needs. From this we will uncover the needs and requirements of the stakeholder, we will have a first idea what they value and how to best address these needs. A first set of needs will be available in month 12 a final version in month 18, D8.4 "Initial insights from stakeholder interaction following the LOCALISED methodology." This will be analysed and will lead to the first step of the development, the creation of persona.

4.5.2 Personae

User personae are archetypical users whose goals and characteristics represent the needs of a larger group of users.⁴ Such descriptions include behaviour patterns, goals, skills, attitudes, and background information, as well as the environment in which a persona operates. The development of these personae starts in line with the beginning of the stakeholder interaction and based on the stakeholder mapping and will be further elaborated. The personae are designed to correspond to the range of possible users of the tools. A first version will be in place in month 13. This will happen and be discussed in close cooperation with related partners via sharing the written profiles with the consortium and will be reworked by CMF to a final version in month 14.

Exemplary personae for the Decarbonisation Profiler

- A. Svetlana, local policy maker
 - Use case: drafting decarbonisation policies aligned with EU funding
 - Politician or advisor depending on the administration size
 - Needs quick answers for an EU proposal
 - 45 years old, female

- B. Ulrike, urban planner in a city administration
 - Topics: urban sprawl, energy
 - Intrinsically motivated
 - Planning horizon: 2050
 - 55 years old, female

- C. Alejandro, regional/local activist
 - Founder of citizen action group for net-zero region/city
 - Use case: Looking for information on measures to push to the city council
 - Planning horizon: 2035
 - 35 years old, teacher, male

Exemplary persona for the Net-zero Business Consultant

Giacomo, olive oil producer

⁴ <https://xd.adobe.com/ideas/process/user-research/putting-personae-to-work-in-ux-design/>

8.1 - Stakeholder interaction methodology and schedule

- Use case: Looking for information about vulnerability of his business to future climate change
- Planning horizon: 2040
- 47 years old, entrepreneur, male

4.5.3 Stakeholder journey mapping and first prototyping

Based on the personae, a first stakeholder journey mapping will be created in month 15.

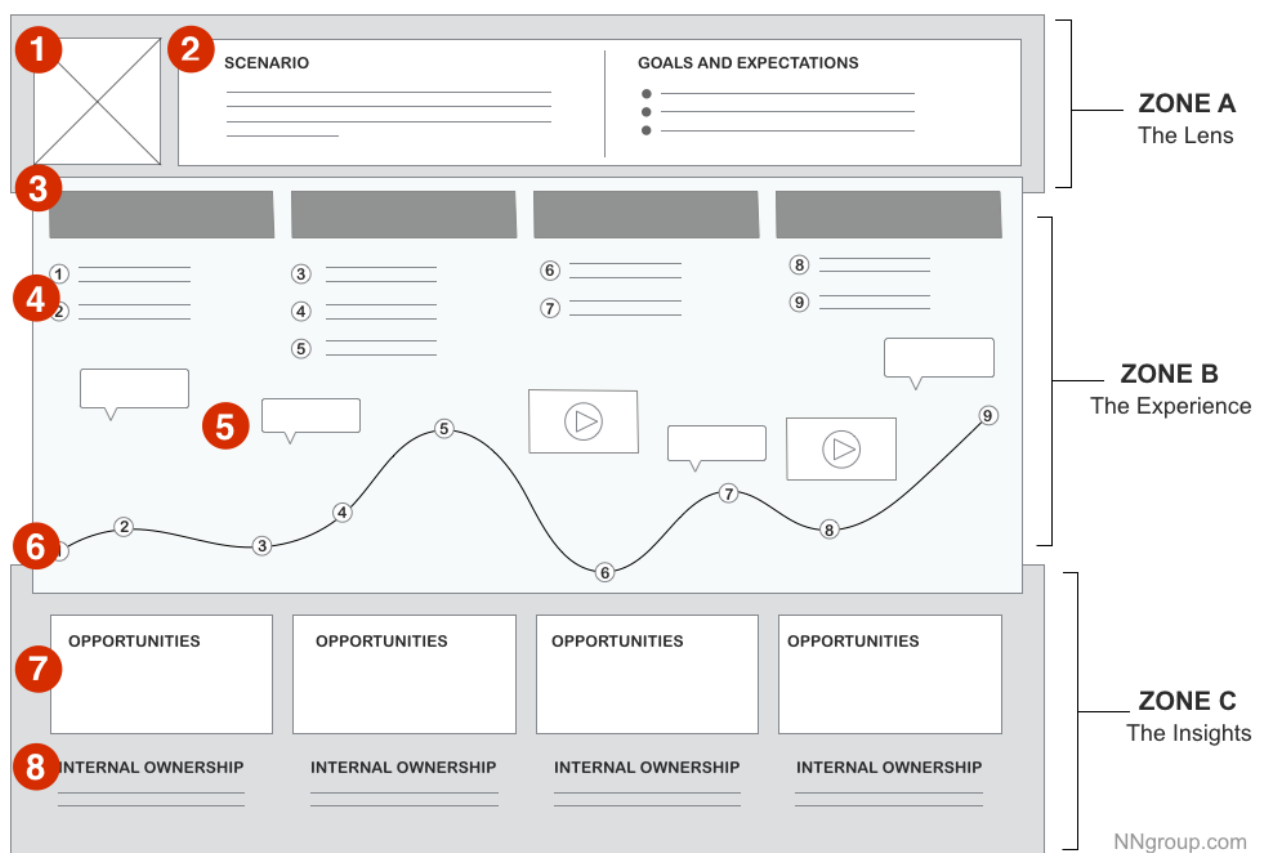


Figure 2: "A user journey map template.", source: nngroup

This will be led by the question: "For what purpose would this persona use the tool and how?". And: "How can we learn about the user processes in the scope of the project, that is, the activities a user needs to perform to achieve a certain goal? How can we gather the essential steps and stages of the user process and the experiences accompanying them? How do we identify where in the process user research is needed?"⁵ The results are, of course, only assumptions and hypotheses at first, but they

⁵ Endmann, Anja and Keßner, Daniela. "User Journey Mapping – A Method in User Experience Design" i-com, vol. 15, no. 1, 2016, pp. 105-110. <https://doi.org/10.1515/icom-2016-0010>

8.1 - Stakeholder interaction methodology and schedule

are based on the interactions that have taken place with stakeholders and the personae derived from them. The result will be a first prototype. This prototype suggests (a) possible functions and representations of the application, (b) different degrees of complexity and (c) possible ways of interaction. In order to be efficient, this prototype will only partly be online and will not have a sufficient design. It is only a template for the first stakeholder co-design session with the focus group.

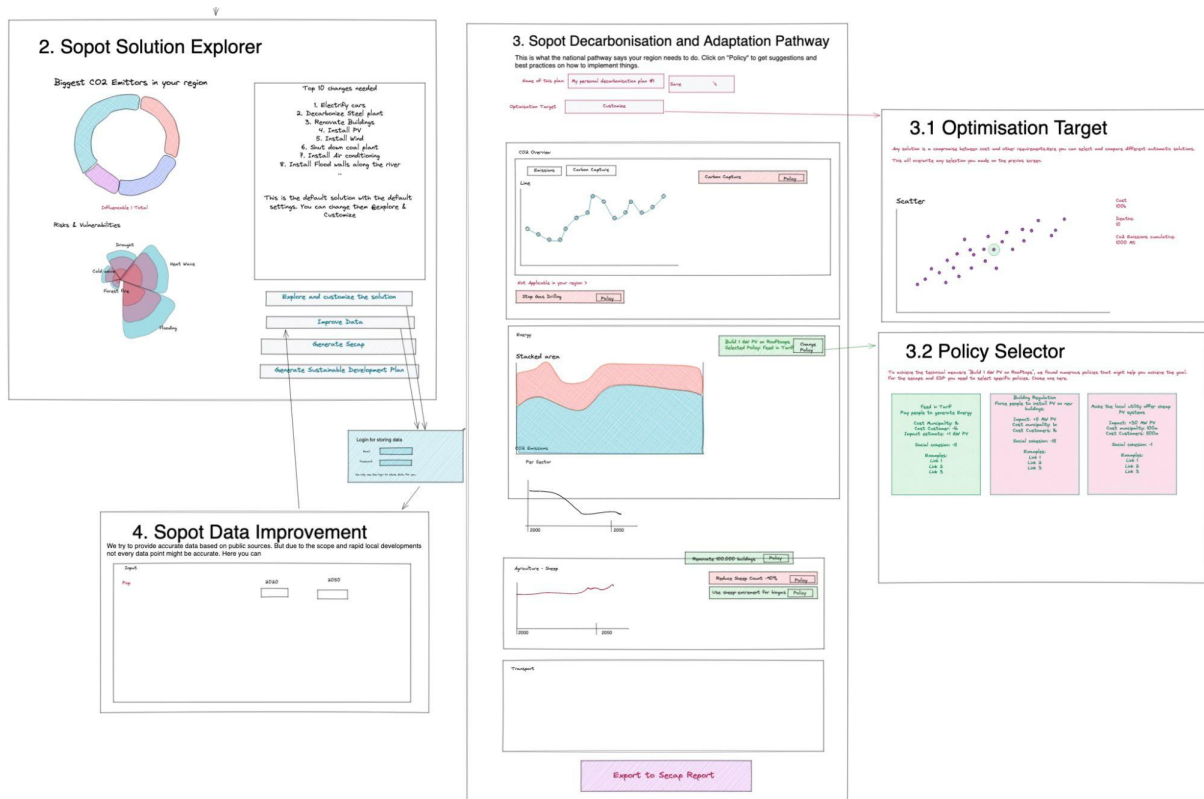


Figure 3: Wireframing sketches for the Decarbonisation and Adaptation Profiler (internal excalidraw board exercise)

4.5.4 Focus group, wider test audience and internal task force

Focus group

There are two main fora for the stakeholder co-design. A focus group and a wider test audience. The focus group consists of the stakeholder in terms of city representatives within the project and some well collected stakeholder from outside the consortium. Those are recruited from the stakeholder group 2. This focus group should represent the main target groups and not exceed 12 persons. These must give a strong commitment to join several sessions and to provide regular feedback. Every session, except the first one, will not exceed 1 hour due to raising the chance everybody will participate. In total 3 sessions with the focus group are planned for now. In addition, the members will receive updates of the tool or single elements. This co-design will happen in both online and offline sessions.

The wider test audience

The wider test audience also comprises individuals from stakeholder group 2, chosen with the help of the respective stakeholder mapping. They will be regularly informed about the development and asked for input via questionnaires in mailings. On the one hand, this serves to get feedback on the design of the tool, on the other hand, the participants should be interested in the development and progress of the tools, involved in the process and thus activated as possible multipliers to be part of stakeholder group 3, the community of interest.

The internal task force

The internal task force will consist of individual partners of the consortium curated by CMF in month 13, who want to be kept up to date regarding the development of the tools and who want to accompany the process in detail. This task force comes together when it comes to the question of how stakeholder input and feedback is to be implemented in concrete terms. A prerequisite for participation in this task force is the agreement to provide the corresponding time resources at the appropriate times. Additionally or alternative: whenever there is a question on how to integrate the feedback in concrete terms the decision simply falls on the WP leaders better placed to take a decision with a note to the coordination? For the development process, it is important that feedback comes at the time when decisions are made about certain developments, as these entail follow-up developments and a late change would have many effects that would hinder the efficiency of the overall process. In order to be open to suggestions for as long as possible, an attempt is made not to work on the tools in a linear fashion, but to gradually bring together individual design silos under a flexible overall concept. But there are time and conceptual limits to non-linear processing.

4.5.5 Sessions and the process of rapid prototyping

Session 1 (online/offline, 4 hours)

Especially at the beginning of development, the principle of "rapid prototyping - fail fast" will guide the process. Many system components are presented to the participants at a low level, which are quickly evaluated and just as quickly discarded in parts. Building on the feedback, many more versions and approaches are presented until a rough design guideline emerges. This will partly take place live during the sessions. For this, appropriate applications must be considered that allow a quick visual presentation. As things stand, the Figma web application⁶ will be used for this.

⁶ <https://www.figma.com/community/file/958689878534959674>

8.1 - Stakeholder interaction methodology and schedule

The aim is to determine which information is interesting and necessary and in which order of priority. And which setting options are needed to present results according to the respective needs.

Another important point is whether there are application and device preferences that can be generalised for the target group.

- Which devices are mainly used?
- What software references are there and what interaction metaphors do they use?
- Are there preferred conventions in terms of usability?

In addition, there will be a number of other questions that will be discussed. For example:

- Is a connection to social media appropriate and desirable?
- Should results be issued in a special format?
- What depth of information makes sense?

Another central question is what the tools must have as sources and in their appearance in order to be credible. The ambitious goal of the tools is to actually find their way into decision-making processes. A prerequisite for this is that the tools are perceived as scientifically valid and reliable.

- Do participating institutions have to be prominently displayed?
- Do personal guarantees from recognised scientific capacities help?

At the level of detail:

- How detailed must the assumptions underlying the model be referenced and explained?
- How can own data sets be fed in, in which data formats are they available?
- What is useful and important in terms of accompanying material?
- What communicative interaction possibilities do the tools have to offer?

Furthermore, various design mood boards are presented. This will give us a feeling of how different designs are perceived. These will correspond to attributes such as "very serious" to "playful". In addition, different charting libraries will be presented. Of course, the preference for certain designs is always very subjective. The final decision on the design will be made by the responsible partners in the consortium. But at least a rough direction can be distilled from the feedback.

The aim of the first session is to gain as much as possible input from various perspectives. Based on these a first - still very rough - prototype will be programmed: Version 0.

Session 2 (online, 1 hour)

Version 0 will be the main subject for the second session.

- Are the expectations met?
- Has information been processed correctly?
- What was overlooked and what needs detailed elaboration?

After a brief explanation and specification of questions, the prototype is evaluated using online surveys.

In addition, a final design is presented that should be changed in detail but no longer in principle.

Based on the feedback of the second session version 1 will be developed. This version will have nearly full functionality (but without API-connection) and will be widely evaluated also by the consortium partners, focus group and the wider test audience. This will be accompanied by a questionnaire focussing on usability. Usability only includes the actual use, and not the upstream and downstream phases. After two weeks a second questionnaire will be disseminated and ask for wider user experience. User experience encompasses the complete experience that a user has with a product, starting with the imagination about the use of the product before the actual use, through the actual use to the processing of the experienced use.

The evaluations are the basis for version 2.

Session 3 (online, 1,5 hours)

Version 2 is presented. This version will have all the essential functionalities and designs. Suggestions for this version should no longer be of a fundamental nature, but rather relate to details of functionality and design. After a final evaluation of this version by the participants, the third session will mainly be about reviewing accompanying materials, instructions for use and textual information. In addition, an attempt will be made to win over the participants as multipliers and ambassadors and maybe testimonials and to think together with them about possibilities and fora for dissemination as discussed with the Stakeholders supporting the wide use (transfer and replication) of the LOCALISED tools

This version is passed on to the wider test audience not so much for review as for their perusal. The request for feedback relates more to gross functional and content errors or misleading presentation.

5 Stakeholder interaction schedule

In this section, some temporal aspects of the stakeholder interaction phases are addressed.

Phase one already started in the first half year of the project with bilateral one-on-one communications and local bilateral meetings of project partners. It will run until the end of the second project year (September 2023) in order to give enough time for all Tasks in WP5 to be able to appreciate this interaction and incorporate feedback.

The second phase of stakeholder interaction partly overlaps with phase one. It will be prepared already at the end of 2022 and will operationally start in month 19, just after the completion of deliverable 8.4, "Initial insights from stakeholder interaction following the LOCALISED methodology" in month 18. The phase will run until month 39, in itself subdivided into sub-phases.

The final phase of stakeholder interaction to build up a community of interest will start only in month 37, but will strongly base in phases one and two.

A graphical overview can be seen in the gantt chart below, Figure 4, juxtaposed with relevant tasks, deliverables and milestones.

Stakeholder interaction phases		21	2022				2023				2024				2025		
		M1-3	M4-6	M7-9	M10-12	M13-15	M16-18	M19-21	M22-24	M25-27	M28-30	M31-33	M34-36	M37-39	M40-42	M43-45	M46-48
First phase of stakeholder interaction: The wise co-decide on what kind of data and insights are relevant and useful / what kind of tools should be built			FIRST PHASE														
Second phase of stakeholder interaction: The users co-design the specific functionalities and the form of the tools							SECOND PHASE										
Third phase: Community of interests supports the wide use of the tools													THIRD PHASE				
Related Tasks and Milestones		Leader															
T4.2: Modelling, Regional Target Matching for mitigation and Best Practices	FZJ												D4.3				
T4.4: Application programming interface	CMF								D4.2								
T5.1: SECAP definitions through oriented SDG indicators	IREC				D5.1												
T5.2: Baseline Emission Inventory (BEI) and the Risks and Vulnerabilities Assessment (RVA) templates	IREC								D5.2								
T5.3: Buildings and energy strategies linked to renovation wave policies and climate change mitigation initiatives, including financial mechanisms	CMCC										D5.3						
T5.4: Strategies to monitor mid to long term scenarios: climate change adaptation and mitigation strategies at local and regional level	IREC												D5.4				
T5.5: Adaptation of the service to territory public stakeholders	IREC														D5.5		
T7.2: Assessing the cost and benefit of adopting emerging decarbonization technologies at regional level	CMCC											D7.2					
T8.1: Coordination of user engagement, tools co-design, testing and validation	CMF		D8.1				D8.4										
T8.2: Development and implementation of the LOCALISED Decarbonisation Profiler	CMF														D8.2		
T8.3: Development and implementation of the LOCALISED Net-Zero Business Consultant	CMCC													D8.3			
Milestones			1, 2	3, 4		5, 6	7					8, 9	10, 11	12, 13	14		

Figure 4: Stakeholder interaction phases schedule

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