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Report describing Innovative Climate Finance Assessment and Knowledge Development

Authors : Mrs. Sabine SCHNEIDER (FS), Rahul INGLE; Alokanda NATH

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Summary

D7.3 is the design specification for the Finance Guidance Tool which supports the Mission cities in navigating the financing resources available to the cities. The tool supports the cities in the development and implementation of the Investment Plan under the Climate City Contract (CCC), by navigating them towards funding and financing sources and instruments. The tool will be incorporated on the Missions Platform and will be available for the cities as an online tool. It provides an overview of existing finance instruments, funding programmes and opportunities and city-focussed initiatives in Europe. This document includes the current specification of: ? Back-end database ? Decision Support Algorithm ? Front-end user interface design

Approval

Date	By
2022-09-26 20:25:14	Mr. Asen CHARLIYSKI (BwB)
2022-10-11 20:36:47	Mr. Thomas OSDOBA (CKIC)



Finance Guidance Tool

Deliverable D7.3

Version N°2

Authors: Rahul Ingle (FS), Alokanda Nath (FS), Sabine Schneider (FS)



Disclaimer

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Abbreviations and acronyms

Acronym	Description
WP	Work Package
NZC	Net Zero Cities
CCC	Climate City Contract
FGT	Finance Guidance Tool

Summary

D7.3 is the design specification for the Finance Guidance Tool which supports the Mission cities in navigating the financing resources available to the cities. The tool supports the cities in the development and implementation of the Investment Plan under the Climate City Contract (CCC), by navigating them towards funding and financing sources and instruments. The tool will be incorporated on the Missions Platform and will be available for the cities as an online tool. It provides an overview of existing finance instruments, funding programmes and opportunities and city-focussed initiatives in Europe.

This document includes the current specification of:

- Back-end database
- Decision Support Algorithm
- Front-end user interface design

Keywords

Finance Guidance Tool, supporting tool, financing the ambition, climate neutral, finance and funding, database, searchable tool



1 Introduction

The purpose of this document is to outline the concept for the “Finance Guidance Tool”, which is part of the supporting tools surrounding the task to “Finance the Ambition” under the EU mission’s 100 Climate-Neutral and Smart Cities by 2030. City finance landscapes differ greatly from one another and yet they are united in that they face similar obstacles in their quest towards net zero. One of the major challenges is the significant funding gap that needs to be addressed when enabling the transition towards cities’ climate neutrality. To bridge this gap, it is a prerequisite that the cities are aware of and understand the different financing and funding options available to them, given their unique city context. This knowledge will support the building of a strong basis for informed investment planning for climate neutrality, a major pillar under the Mission.

2 Background

The Finance Guidance Tool is being developed to support the Mission Cities in the overall task of developing an Investment Plan under the Climate City Contract that will enable the Mission Cities to receive the EU “Mission Label”. This label will grant cities better access to EU resources and institutions.

The Finance Guidance Tool will support the city in achieving an overview of how its specific capital position could link to potential financing and funding sources. It provides an overview of existing instruments, funding programmes & opportunities and city-focussed initiatives in Europe. It also functions as a basis for guiding the cities towards private sector capital opportunities and developing inspiration for innovative financing instruments and approaches.

2.1 Net Zero Cities Mission Portal

The WP3 of the Net Zero Cities Mission has developed the Mission Portal to assist the cities through their journey toward climate neutrality. The Portal is composed of a set of interconnected modules, which interlink with each other via front-end links, and a common back-end database and tagging structure. Whilst some of the Portal is available to any user, certain parts of the portal are accessible specifically to Mission Cities to facilitate their journey towards climate neutrality by 2030. This feature supports the ambition of the Mission to function as an enabler of the EU 2050 climate goal. An overview and basic description for each module is shown below.



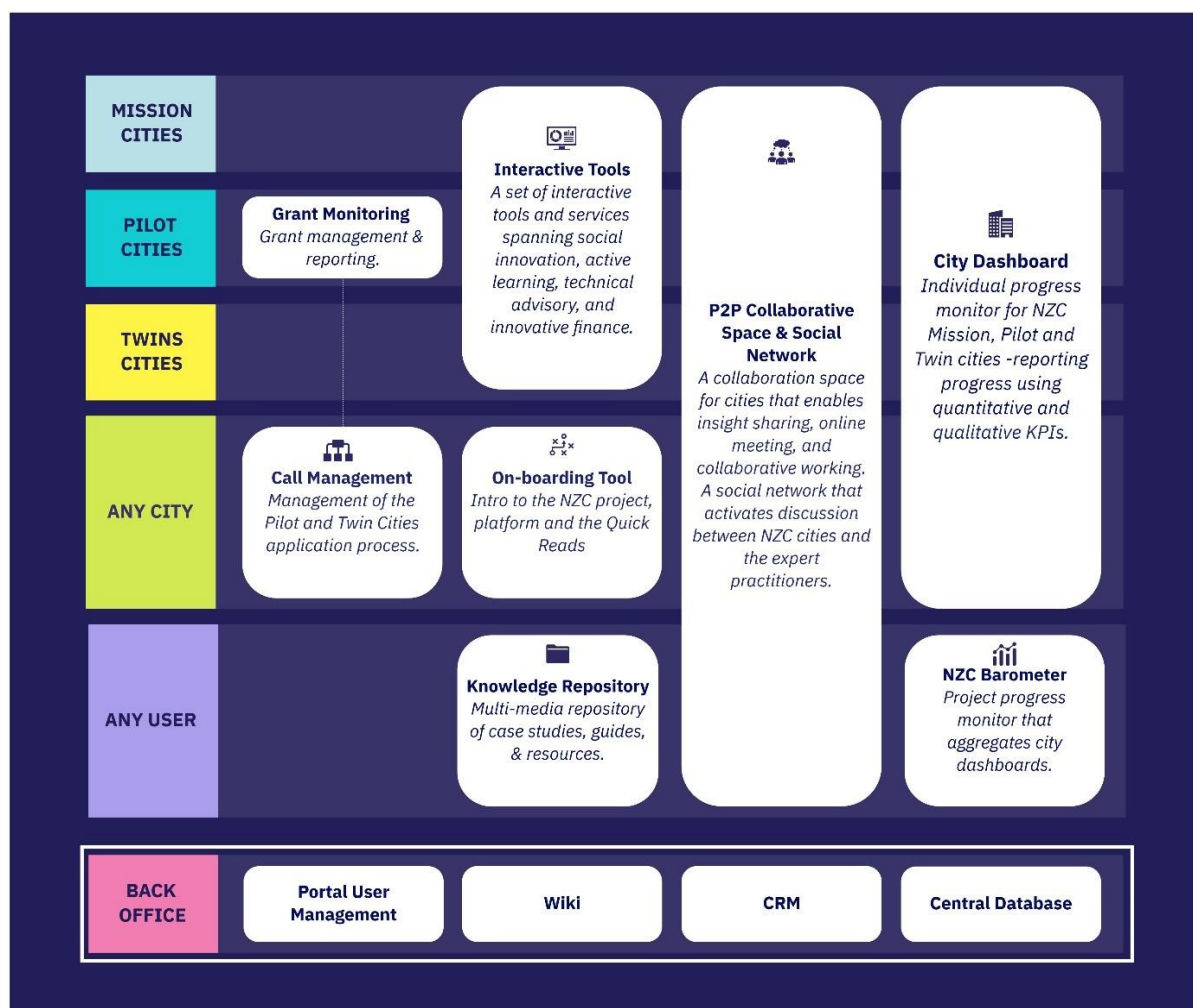


Figure 1: The Mission Portal will feature different modules and tools, of which the Finance Guidance Tool will be accessible to Mission, Pilot, and Twin Cities (Source: NZC)

The Portal will include the following functions

1. Knowledge Repository Module, a multi-media repository of resources aimed at supporting the platform users and cities to progress towards carbon neutrality. The Knowledge Repository is at the centre of the One-Stop-Shop Ambition of the Mission Implementation Plan. It allows users to browse all resources, view *featured content* and find relevant content using features such as *search, tags and filters*.
2. P2P collaboration space and Social Network Module provides registered users and cities to create profiles, interact and access information
3. Onboarding Module will be the city's first touchpoint with the project and the Mission Platform.
4. City Dashboard Module aims to enable the cities to display their progress towards Net Zero carbon emissions
5. NZC Barometer Module will provide a high-level aggregation of data from all cities, to assess the progress of the Mission in achieving its objective of climate neutrality in the 100 Mission Cities by 2030 and will be updated on an annual basis.
6. Call and Grant Management Module will specifically support service delivery of the Pilot Cities and Twin Cities programmes with the functionality required to open and receive proposals against the Pilot Call to Action



7. Interactive tools and Modules will evolve through a process of service review with cities and a co-design process to develop new tools and content. The Finance Guidance Tool outlined in this report falls within this last category.

2.2 Access information

Building on earlier NZC work, such a preliminary assessment and characterisation of the existing capital ecosystem that was compiled in the D7.1 report, “City climate finance: landscape, barriers and best practices”, as well as information gathered at City Panel sessions, the Finance Guidance Tool (FGT) aims to support the city in navigating potential finance sources in the process of Action and Investment Plan development. It does so by outlining different funding resources and financial products.

The Mission’s portal aims to make information related to financing resources saved in the Knowledge Repository easily accessible to cities. Cities seeking information on financing resources approach the portal in three ways (s. Figure 2).

1. Need an overview of all financial products
2. Information on a specific Financing product
3. Need assistance in navigating the financing products to identify the best suited financial products

Based on these perceived user needs, the following solutions have been identified

1. Funding resources page with links to existing financing products, instruments, and funding programmes
2. Search via tag function in the Knowledge Repository for financing products
3. A Finance Guidance Tool

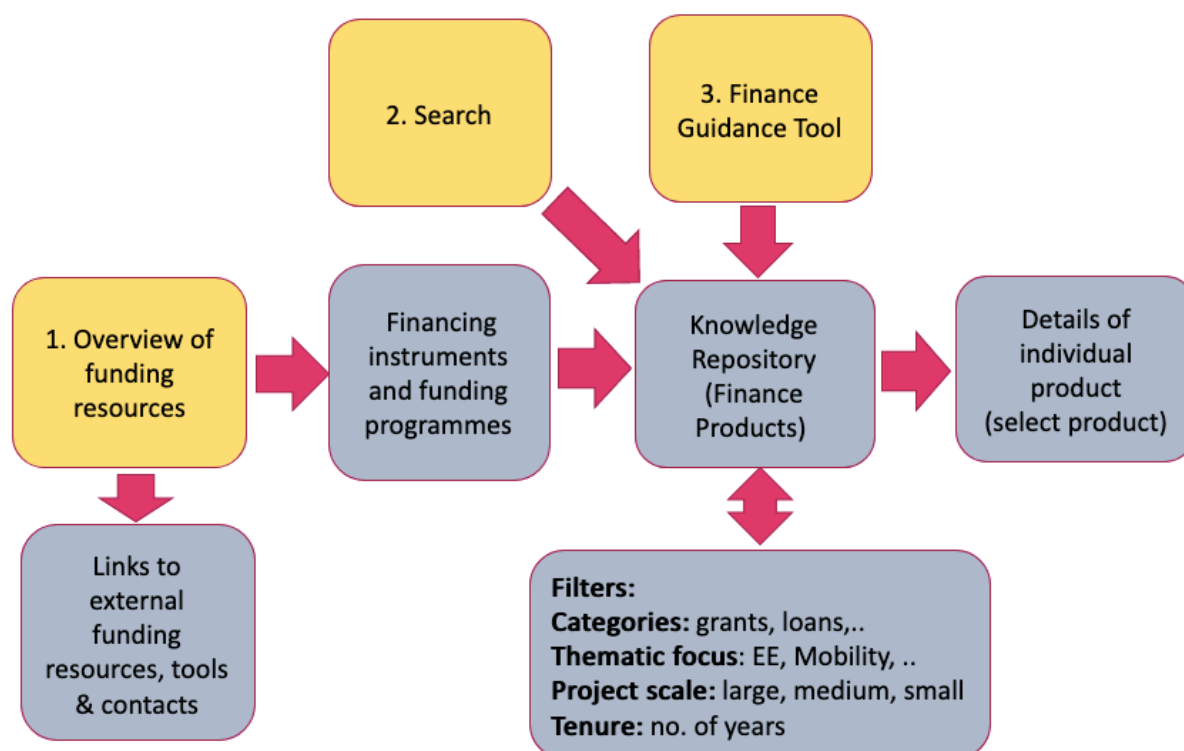


Figure 2: Access Information on the Missions Portal (Source: FS)

3 Finance Guidance Tool

This section provides detailed information on the purpose, logical structure, and methodology behind the development of the tool. The tool once developed will assist the Mission cities throughout the development of their investment plans and beyond.

3.1 Purpose

The Finance Guidance Tool aims to support the cities in navigating the complex landscape of financing options to fund its climate neutrality interventions. In this endeavour, it provides the cities with:

1. an overview of existing financing instruments of the European Union implemented in partnership with public and private institutions.
2. information on funding programmes and opportunities offered by the EU between 2021-2027 under Multiannual Financial Framework and Next Generation EU
3. information on City-focused initiatives in Europe that could assist the cities
4. An overview of financial products available for cities to explore from public and private financial institutions
5. Access to innovative financing approaches and Best Practices

3.2 Concept

The Finance guidance tool is conceived as an interactive online tool to guide the cities in exploring financing resources beyond the traditionally used sources. The tool uses a step-by-step questionnaire to identify the financing needs of the cities and based on the responses suggests financing products that the city could consider to finance the climate neutral projects and actions. The tool is intended to be simple, easy to comprehend and quick to access information.



3.3 Logical structure and methodology

As an interactive online tool, it has a backend and a frontend part. The backend consists of a database and the decision support algorithm while the frontend consists of the user interface imbedded in the NZC portal.

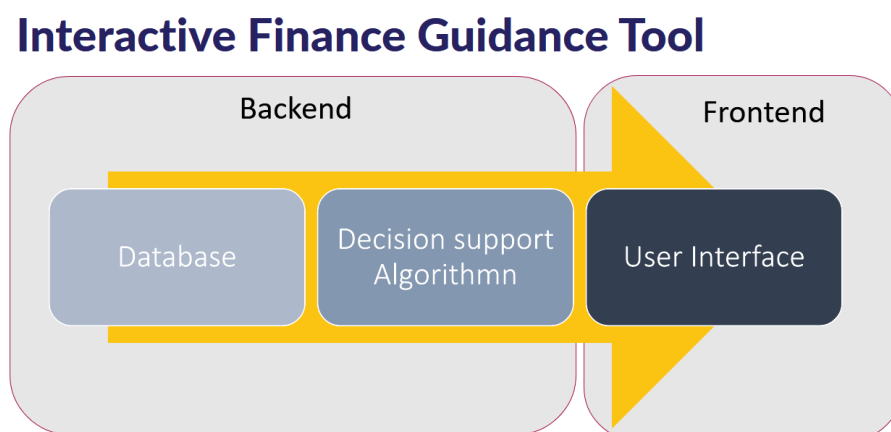


Figure 3: Interactive Finance Guidance Tool (Source: FS)

3.3.1 Backend database

The backend database consists of a comprehensive list of capital sources. This includes a wide range of options, including funding resources, which are defined by their lack of repayment conditions, as well as finance instruments, which group together sources of capital that require repayment. In this sense, funding sources are commonly public capital sources, whereas finance instruments are associated with private capital sources.

Within the database of the FGT, each financial product is linked with a brief information overview consisting of the product definition, positive and negative attributes, the scale of the project they ideally finance, related products and a link for detailed information of the product in the Knowledge Repository.

To ensure the database can be edited post launch of the tool it is foreseen to either have a reoccurring re-upload of a revised version of the backend database, or, alternatively, to create a backend input mask to upload the information manually to the database when needed. Depending on the complexity of IT development regarding the backend input mask and update frequency of the backend information, either of these options will be chosen as the tool evolves.

3.3.2 Decision support algorithm

The decision support algorithm is designed in a way to facilitate easy guidance of the city through financial products. The following logical approach is pursued.

Step 1: Group the financial products into categories based on funding and financing type. For example, self-financing, grants, debt, equity etc.

Step 2: Formulate a category question (A)

Step 3: Formulate funding question/sub question (B) for each individual financial product in each category

Step 4: The financing ladder as proposed by Novikova et al (2017) suggests the hierarchy in the choice of financing products by cities – first budget financing, followed by public funds and lastly commercial financing based on the associated advantages and risks. Using the financing ladder as the methodological basis, the categories and their associated questions are arranged in an ascending order. The aim is to provide results of financial products in order of preferences suggested by the finance ladder.

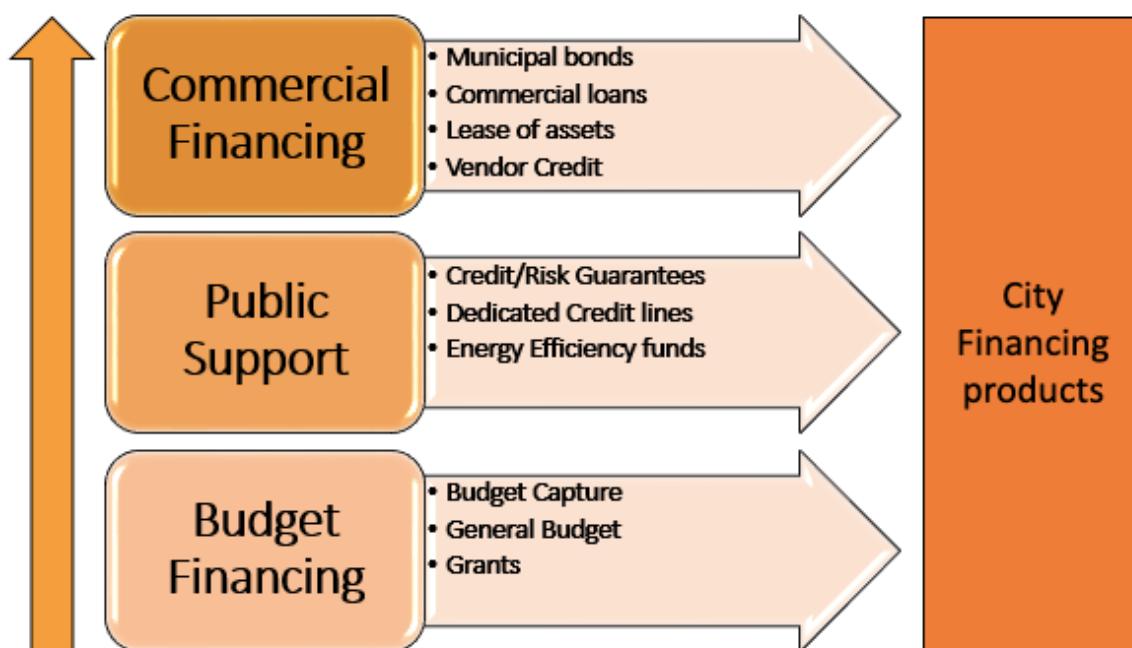


Figure 4: Finance Ladder (Source: Novikova et al, 2017)

Step 5: Each category question (A) is provided with an option of ‘Yes’ or ‘No’ response. If the response to the category question is ‘Yes’ then proceed to funding question (B). If the response to the category question (A) is ‘No’ then move to the next category question (A). The funding question (B) leads to the type of financing product. Irrespective of the response to the funding question (B) proceed to the next funding question (B). When all the funding questions are exhausted then proceed to the next Category question.

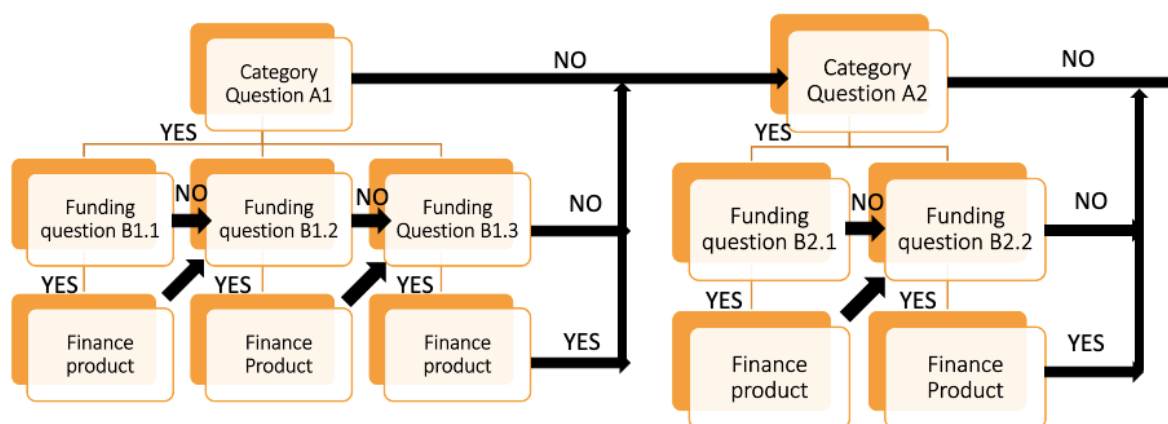


Figure 5: Support Algorithm (Source: FS)

Step 6: Create filters by tagging question related to financial products associated with that filter (e.g., according to sectors)

3.3.3 User interface – Frontend

The user interface will be integrated within the Mission’s Platform under the interactive tools module. The front-end consists of an input mask and an output mask.

The input mask needs to be filled in by the city user by supplying the information requested. The city-related information can be inserted by the user. Filters such as sector or scale of the project can be selected by using the drop-down menu. Based on the filters the questions and related funding products will be sorted out. Once the user has responded to all the questions, an output will be generated provided by the decision algorithm.

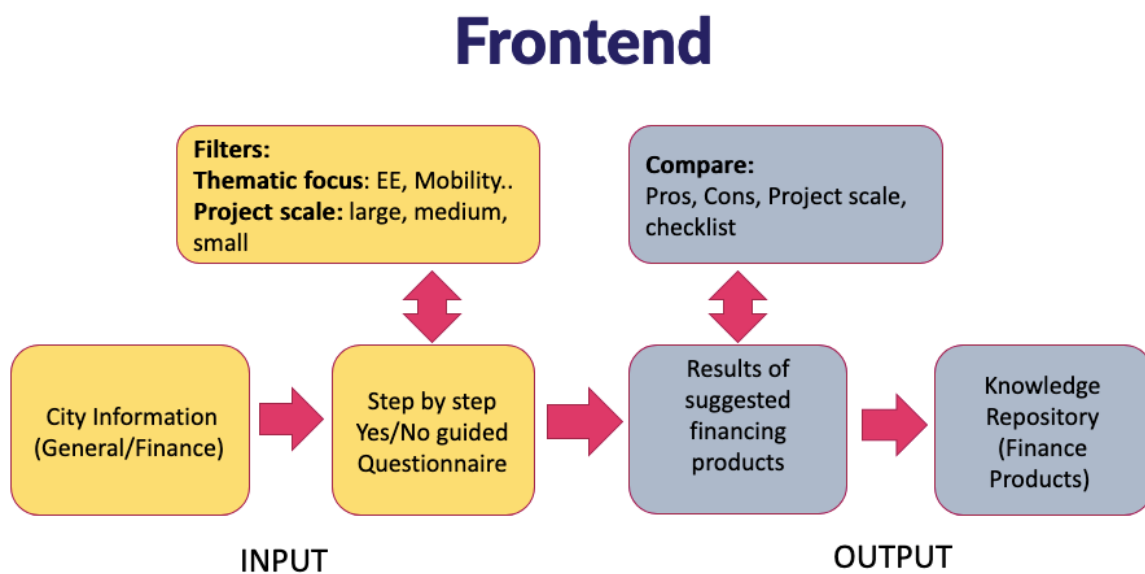


Figure 6: Frontend logic Finance Guidance Tool (Source: FS)

The output consists of all financial products suggested by the Finance Guidance Tool based on the responses to the questions. The products will be displayed with related information on positive and negative attributes, the scale of projects financed and links for detailed information in the Knowledge Repository.

	Pros	Cons	Type of project financed	Related products
Intracting fund	<ol style="list-style-type: none"> 1. can reuse capital; 2. do not need external capital; 3. cooperate within their units; 4. pay no interest on capital; 	<ol style="list-style-type: none"> 1. can reuse capital; 2. do not need external capital; 3. cooperate within their units; 4. pay no interest on capital; 	<ol style="list-style-type: none"> 1. any project, including small-scale and not attractive to private investors; 	
Revolving Fund	<ol style="list-style-type: none"> 1. can reuse capital; 2. can design a self-sustaining fund with a long-term orientation; 3. may attract private investment; 	<ol style="list-style-type: none"> 1. face high transaction costs for the fund; 2. must allocate manpower for the duration of the whole project; 3. may experience tensions if private and public capital is merged; 	<ol style="list-style-type: none"> 1. long-term projects with multiple objectives in medium to large size municipalities; if municipalities are small, they can merge their funds; 	
Concessional loan	<ol style="list-style-type: none"> 1. pay low-interest rates; 2. can access capital; 3. can combine this model with others (e.g., a revolving fund); 	<ol style="list-style-type: none"> 1. still pay interest on capital; 	<ol style="list-style-type: none"> 1. particularly accessible for public energy efficiency projects; 	Green investment loans
Municipal Bonds	<ol style="list-style-type: none"> 1. can access capital at a lower cost than that available from commercial bank loans; 	<ol style="list-style-type: none"> 1. carry costs of extensive preparation; 2. needs either a good credit rating or access to a bond agency; 	<ol style="list-style-type: none"> 1. medium- to large-scale financially sustainable projects; 	Municipal Bonds, Green Bonds, Sustainability Bonds, Sustainability linked Bonds, Mini Bonds

Figure 7: Frontend output showing results of suggested financing products (Source: NZC)

3.3.4 Trial and testing

The tool is presently in the development phase. Mock trials have been conducted within the team of consortium partners working on the tool, as well as with NZC city advisors. In the next phase, the tool will be tested with a small group of cities and presented to the Practitioners City for their feedback. The comments and recommendations will be incorporated before launching the tool.

3.4 Potential for augmentation and elaboration

The FGT is foreseen as an important contribution to the Missions platform and is considered a work in progress. The funding resources, in particular, will be updated gradually starting with public funds. The tool will be used to monitor financing and the accuracy of suggestions. Based on research and data collected, the tool can be upgraded with advanced features throughout the implementation period of Net Zero Cities Mission.

3.5 City interaction

The tool is intended to assist the cities through the preparation and implementation of the Investment plan. The tool will be assessed at regular intervals based on the needs and demands of the cities. It is foreseen that cities would have an opportunity to provide feedback on the Missions platform. This feedback will be then incorporated in upgrading the tool.



4 Outlook and timeline

4.1 Outlook

Another potential option, which is not yet foreseen in the NZC project plan, is to further develop the tool to accommodate cities throughout the process of developing the Investment Plans and beyond by expanding the tool. A best-case goal of this option is integrating the Mission Cities' Investment Plans within the platform. However, at this stage this option is only hypothetical and would need further outlining in the project plan as well as further conceptualization and development.

Such a proposed Phase 2 development of a finance guidance and implementation tool may focus on:

1. Incorporating filters to refine search results
2. Policies, regulations and enabling environment at national level (potentially by linking city dossiers)
3. Check list of application criteria for funding and financing products
4. More information on private sector funding sources within city boundaries
5. Financing landscape tool for monitoring capital planning, aligned with Investment Plans

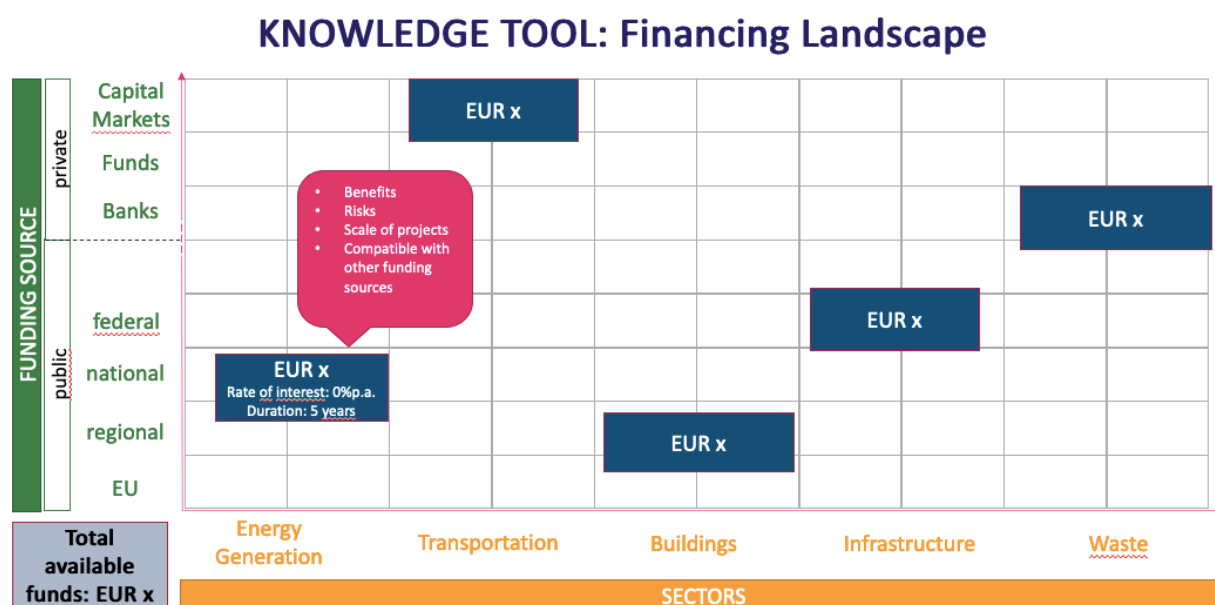


Figure 8: Finance Landscape Tool (Source: FS)

4.2 Timeline

The operational build of the Finance Guidance Tool takes place in different stages, to meet the following milestones:

- **Stage 1** Development of decision algorithm and backend content
 - Deadline: September 2022 (M11)
 - Responsibility: FS and WP7 partners
- **Stage 2** Technical integration into the NZC platform
 - Deadline: Beginning of November 2022 (M13)
 - Responsibility LGI/WP3 with content support by FS and WP7 partners



Table 1: Timeline

Stage and details	Deadline
Stage 1 <ul style="list-style-type: none"> - Concept and design of the FGT - Development of the Decision Support Algorithm - Development of the Backend of the online FGT - Creation of preliminary database (to be continuously updated, more information on public and private sector financing resources, enabling environment and policies to be added on an ongoing basis) 	16 th September 2022
Deliverable 7.3 Report	30 th September 2022
Stage 1 Feedback <ul style="list-style-type: none"> - City advisor feedback - WP7 partner and NZC consortium member feedback - City feedback via online survey and city practitioner panel 	14 th October 2022
Stage 2 <ul style="list-style-type: none"> - Integration into the platform, including user interface, technical (IT) development 	7 th November 2022



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