

Software Solution for CO₂ reduction planning and visualization of climate protection scenarios

This is a translation – for the original challenge description, contacts and submission got to:

<https://www.ioeb-innovationsplattform.at/challenges/detail/softwareloesung-fuer-planung-von-co2-reduktion-und-visualisierung-von-klimaschutzszenarien/>



An initiative of

 Federal Ministry
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Labour and Economy

 Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
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In cooperation with

BBG BUNDES
BESCHAFFUNG

Challenge Sponsor

Stadt Graz



Challenge

Many cities in Austria, including the consortium of the cities of Graz, Linz and Vienna participating in this Challenge, are already taking various measures to protect the climate, adapt to climate change and conserve resource consumption. The major challenge for cities is the constant or increasing energy consumption and the associated reduction of CO₂ emissions.

In the area of climate protection and climate change adaptation, the cities of Graz, Linz and Vienna would like to better plan activities internally with current environmental and energy data on the one hand and raise awareness and involve citizens more on the other. Monitoring and control of implemented measures are particularly important.

The goal is to be able to follow the reduction paths and to evaluate the achievement of these at an early stage. A comprehensive inventory of the urban greenhouse gas situation is an important basis for further considerations. In the next step, a good data preparation should be followed by a corresponding visualisation in relation to specific events and target groups.

Question

How can a digital solution look like with which cities can document, monitor and plan climate protection measures and CO₂ reductions and involve their citizens in a low-threshold way via visualisations?

Desired result

The new digital solution should support Austrian cities in creating greenhouse gas inventories, mapping reduction paths and planning and visualising climate protection measures more easily in the future, as well as monitoring them accordingly. For this purpose, the participating cities would like to get to know ideas, technical approaches and, if already available, digital solutions or reference projects from possible future cooperation partners in the course of current activities. The most important key points of a digital climate planning, monitoring and visualisation application are:

Module 1: Software application for climate change planning and resource use

- Development of a (generic) system model at City level, with selected parameters (e.g. from the areas of mobility, energy, housing, consumption, etc.)
- Possibility of drawing up a greenhouse gas balance
- Generating reduction paths according to defined/required reduction targets, taking into account corresponding measures and their effectiveness. Thereby, both the possibility to calculate or map reduction potentials and to present their effects in the possible path
- Use of data from various existing databases via an import and export function, ideally in .xlsx or .csv format
- Creation of modelling and performance of calculations
- Mapping of simulations/measures on the basis of comprehensible calculations
- Clear monitoring of emissions, reduction pathways and measures over time
- Evaluation of data and functional correlations
- Visualisation of data for different audiences
- Embedding the data or of the visualisation in existing Websites

Module 2: Tools that enable the participation of the citizens, such as

- City-level: Holistic visualisation of CO₂ emissions
- Monitoring and evaluation of these activities in order to be able to check climate protection measures for their social acceptability and effectiveness in the future before they are implemented.
- Low-threshold and simple presentation for communication with the public
- Within the framework of the interactive visualisation, citizens have the opportunity to change a clear number of parameters in order to be able to simulate and learn about the effects of their decisions directly.
- Appealing interface for citizens with info boxes and assistance, taking barrier-free accessibility into account.
- Activation of citizens through gamification

Additional requirements:

- Simple and intuitive usability both for people who want to get involved and for the initiating persons of the involved municipal departments of the cities
- Input system as flexible as possible, taking into account the data situation of Austrian cities
- Import data via interfaces
- Easy possibility of updating data
- Transparency of calculations and functional correlations
- Evaluation and export of data and graphical representations

The application should be expandable, so individual features should be able to be added on a modular basis. ICT security and data protection are of particular concern to cities and therefore play an essential role in both procurement and operation.

Basic compatibility and connectivity with existing systems and processes is desired. This includes the consideration of basic e-government standards. In addition, web accessibility standards according to WCAG 2.1 Level AA must be complied with.

Non-goals: Vendor lock-in

Call for proposals

The market exploration provides an opportunity to get to know interesting new things. It is intended to show where the opportunities are, which providers can bring to the market. It should illustrate the direction in which digitally supported climate protection planning and the visualisation of activities can be further developed together. The Challenge is therefore interested in submissions with:

- Software solution for the planning, documentation and monitoring on climate protection activities
- Tools to visualise CO₂ emission in both large- and small-scale city scenarios
- Smart approaches and concepts for a modular expandable application, e.g. with different modules, and plug-ins.

This online submission consists of:

- Description: Are you a provider of a climate application? Do you develop software and know what a solution for planning and visualising climate activities at city level might look like? Do you have an initial solution in the pipeline or a prototype in your sight? In any case, submit your solution proposal. You are also welcome to do this with cooperation partners. An early exchange helps all sides to turn the project idea into a procurement project. Think about the evaluation criteria and convince with comprehensible use cases and references!
- A summary of the innovation aspects and the decisive added value
- Confidential information for the jury (optional): In this text field you can enter information that you would like to share exclusively with the project owners. Alternatively, it is possible to send a pdf by E-Mail to the Moderator of the Challenge.
- A front cover, this is your visual identity in the overview of the submissions to this challenge. Optionally, you can also upload a file. This file should supplement the texts of the form elements, but not replace or repeat them! Use the file attachment for graphics, for example.

Important note: In the context of your online submission, please provide a brief presentation (max. 10 presentation slides or 4-5 A4 pages) of the conceptual ideas you have for the software solution and the solution approach you are pursuing. It is not necessary to elaborate detailed descriptions and precise technical details.

Submission for one of the two modules (e.g. software for city-internal climate protection planning or visualisation of climate protection scenarios) are possible; also submitting only an individual key functionality to be included in the application (e.g. gamification elements) is possible. Important for the challenge owner is that possibilities and limits regarding the modularity of the software is shown in the submission. When submitting, please also

consider the possibility of forming a consortium consisting of several project partners who offer a collaborative solution.

The **submission deadline** is: **19th of December 2022**

Benefits of the Challenge and further course of the project

With this challenge, the sponsor and co-sponsors receive an overview of:

- Possibilities for the design of a climate planning application
- Innovative tools for visualisation of scenarios and associated participation by citizens
- Potential partners for the realisation or suppliers and their perspective on the upcoming procurement project

The jury of internal experts then invites those companies to an innovation dialogue whose solutions stand out particularly positively in the evaluation criteria.

As a submitting company, please keep February 15th, 2023 free for the innovation dialogue.

For companies, this means: Participating in the Challenge puts you on the radar of the public purchaser. Your submission remains visible as your business card for other interested parties even after the Challenge is over. You put yourself in position for further public sector purchasing projects. If you are among the winners and are invited to the final innovation dialogue, you can present your solution at a market meeting. You will exchange ideas directly with the project managers.

This creates sensitivity and understanding on the part of the public client for suitable innovations and aspects that may have been neglected so far. This is important so that the public client can take innovative approaches into account in the possible purchasing project after the market investigation according to the Federal Procurement Act and initiate an implementation in line with the market.

The further project plan will depend on the results:

Your submission is an impulse. Depending on the complexity, necessary framework parameters, degree of maturity, expected costs and benefits, the sponsor will conclude the Challenge by deciding on the project design.

The objective is the procurement of an application or the award of a first version in accordance with BVerG 2018. Companies that did not participate in the market exploration challenge are also eligible for this.

Your Questions

Contact the moderator or post your question about the Challenge. Our moderators will check, research and publish your question together with the answer. This way, all potential participants are certain to receive the same information.

How to submit a solution/idea

Check the submission deadline (phase "Aufruf und Einreichungen"); click on the button "Lösung einreichen" on the top right side of the page.



- Beschreibung
Post a meaningful description (make references to the description of the challenge and evaluation criteria on the right side of the challenge page)
- Mehrwert
Highlight the benefits of your solution.
- Titelbild
Upload a picture to be displayed on the landing page of the challenge.
- Kooperationspartner
If you are handing in a joint contribution with other companies, this is where you make sure they are represented with logos and names.
- Dateien & Infos
If necessary in addition to the descriptions above: add pdf-files (e.g. existing product brochures). But: Keep your contribution manageable for the jury.
- Vertrauliche Infos
If necessary, place a confidential information for the jury, the sponsor and moderator (e.g. indication of approximate price range). All other parts of the contribution will be public.

Please be aware of the fact, that a challenge is market research / market engagement prior to a possible procurement. The challenge will not decide upon a contract award nor will it lead to any unfair advantage in a tender. Please balance your time and effort.

Contact Information

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