



### INTRODUCTION

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These factsheets have been developed within **Alkmaar ecosystem**, one of the Lighthouse Cities of POCITYF. These **multidisciplinary and complementary integrated solutions** focus on **incentiving citizens for co-creating, co-delivering and co-capturing value** by the smart city solutions demonstrated, **creating an open innovation ecosystem between different experimentation set-ups, empowering consumers to become 'prosumers'**.

In the factsheets you will find **key technical information** to replicate these solutions as well as **cultural heritage-related considerations** and the **impact on community**. The ambition is to make Europe the leading continent in the realization of a **self-sustainable, environmental-friendly and citizen-centred living environment** in urban districts.

Find more at <https://pocityf.eu/solutions>



ETT1



ETT2



ETT3



ETT4

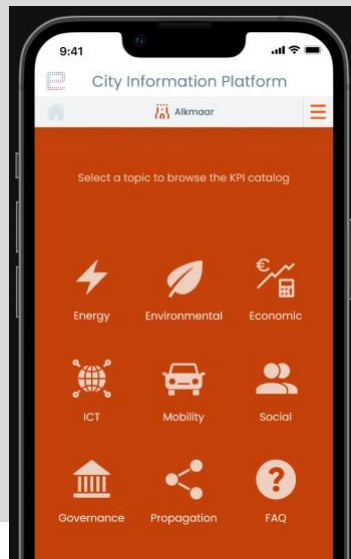
### ENERGY TRANSITION TRACK #4

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- City Information Platform
- TIPPING
- Eco-Acupuncture
- Handbook for housing corporations



This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement N° 864400.



## DESCRIPTION

Alkmaar's City Information Platform (CIP) is going to be a basis for encouraging dialogue and collaboration between (local) government, citizens and companies. The digital twin will present all available open data of the city of Alkmaar. By enabling data aggregation and monitoring we can improve the decision making by policy makers and local representatives, and improve the dialogue with our citizens.

The digital twin (our CIP) is based on open and standard-based IT platform architecture rules and application programming interfaces (APIs) and supports interoperability with external databases and data sources and which will offer an easy replication in other cities. The CIP is supported by a Data Governance Plan (DGP) to guarantee the right, secure and sustainable use of data. The DGP is crucial for building trust and participation among all stakeholders. Connected sensors will collect and communicate real-time data about mobility, air quality, noise, waste collection, energy, health, etc., and combine them with forecasts into a customizable dashboard on the platform, allowing different parties to monitor key performance indicators (KPIs). Companies can make use of the datalake to develop new services and test innovations, thus allowing Alkmaar to become a living lab for social innovations. At the same time the CIP will offer all the tools for new solutions and applications.

## INDICATORS

### POTENTIAL DEGREE OF USEFULNESS

High usefulness if data is clean

Already demonstrated in Lighthouse cities No

Cultural heritage compliance Yes

### PERFORMANCE

Ability to show several variables on energy data

COST To be defined

Features and behavior:

- 3d Light/Laser Detection and Ranging (LiDar) map, 3D basic map and 2D map
- Specific maps for specific issues
- Data from the subsurface, topsoil, air, social
- Interactive elements with residents (Participation and Energy data)
- Sensors created by residents visualized on the platform

## DIMENSION

CIP Web -> Dimension web  
CIP App -> Dimension mobile

## TIME

Installation time: several minutes  
Working time: 24h / per day

## SAFETY

The CIP follows the Dutch Information security protocol (BIO)

## SUSTAINABILITY

N.A.

## KEY REQUIREMENTS

Data gathering and data flow from Neroa to the data lake of Inholland has to run smoothly. The data lake of Inholland feeds the CIP.

## ENVISAGED DEMONSTRATION IN POCITYF

If applicable, here you can describe one or more real world use cases of your solution.



### LOCATION

Overview city centre of Alkmaar

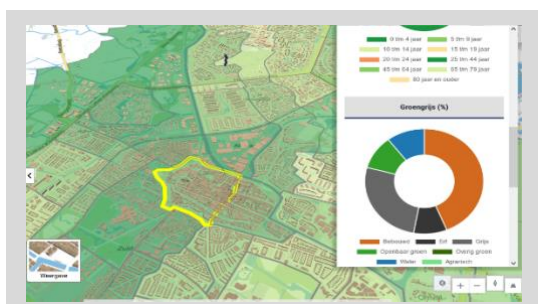
### TIMELINE

N.A.



### DETAILS

Overview of development plans and the impact on (near) real time data



### TARGETED OUTPUT

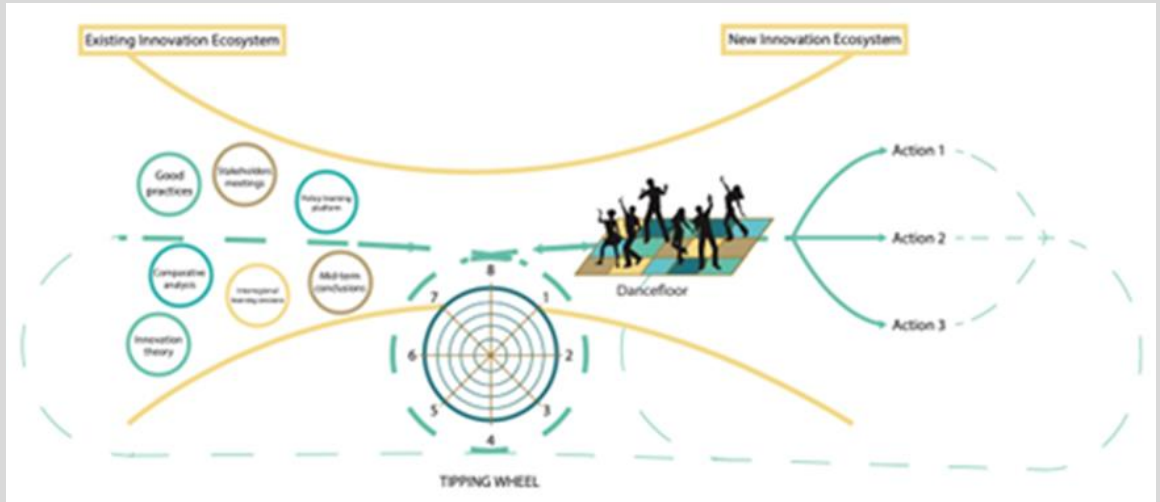
The CIP 1) provides municipalities and decision makers with an overview of all relevant city data on different fields, 2) will give insight for the inhabitants of Alkmaar to collect/view data in their neighborhood, and 3) will give insight for companies that want to use the data to develop smart propositions. By presenting effective insights based on cross domain data we expect better understanding, awareness and policymaking concerning the goal of POCITYF: a greener, smarter, more sustainable city. And specific insights in the PEBs and PEDs (the ones we are realizing within this project) help us to learn and to identify possibilities in the municipality.

## IMPACT ON COMMUNITY

The CIP will help inhabitants and companies of Alkmaar to collect, view and monitor their energy usage. In the mobile version the data will also provide answers how to improve the energy situation of the building.

## CULTURAL HERITAGE BUILDINGS COMPLIANT

This innovative element does not impact the cultural heritage of Alkmaar, so no negative impact is expected.



**DESCRIPTION**

The TIPPING approach, a tool for policy makers and managers, aims to improve and strengthen innovation policy and governance by integrating citizen engagement in the policy development process. It should lead to a new social-cultural practice, giving citizens and stakeholders an integral role in policy development. Thus, the purpose of TIPPING in Alkmaar is to bring together a large number of stakeholders, both physical and digital, who are active or interested in the development of a more sustainable historic city center. To jointly look into the current municipality's innovation policy and reflect on how local policies and initiatives can support a joint effort to achieve a path towards a sustainable and green historic city center of Alkmaar. In doing so, it aims to accelerate local innovation through shaping innovation policy in a participative and bottom-up manner.

Social innovation requires new ways to cooperate and methods that support it. The TIPPING method offers an approach to actively involve citizens and stakeholders in an unusual manner. Assuming that the municipality has an important role in the initial phase of a change process, the TIPPING method gives the municipality additional tools to actively involve citizens and transition stakeholders in shaping innovation policy. Thus, the application of the TIPPING method can play an important role for the municipality to bring together the so-called quadruple helix; government, industry, knowledge institutions and citizens, to jointly reflect on shaping policies to encourage green innovation.

The underlying idea behind the TIPPING method is that the knowledge and expertise for making the cultural and historical inner city more sustainable is largely present in the city itself. In order to determine the course for the energy transition in the city, it is therefore necessary to consult the direct and closely involved stakeholders. To match innovation policies with the needs and ambitions of the city as a basis for action.

**INDICATORS**

<p>POTENTIAL DEGREE OF USEFULNESS</p> <p>N.A.</p>	<p>Already demonstrated in Lighthouse cities Yes</p> <p>Cultural heritage compliance No</p>
<p>PERFORMANCE</p> <p>N.A.</p>	<p><b>COST</b></p> <p>To carry out method 5000-15000 euro</p> <p>To implement outcome Based on commitment municipality</p>
<p><b>DIMENSION</b></p> <p>N.A.</p>	<p><b>TIME</b></p> <p>To carry out method ±4 month</p>
<p><b>SAFETY</b></p> <p>N.A.</p>	<p><b>SUSTAINABILITY</b></p> <p>Yes, see description</p>

## KEY REQUIREMENTS

In order for TIPPING to work, it is necessary to have:

- Sufficient support within the municipality
- Sufficient number of participants to legitimize outcome
- Clear problem owner, who's problem are we trying to solve and how will we take the outcome further. To legitimize the method a predetermined plan should be in place on what will be done with the outcome of the approach, what is the process to implement the proposed roadmap.

## ENVISAGED DEMONSTRATION IN POCITYF

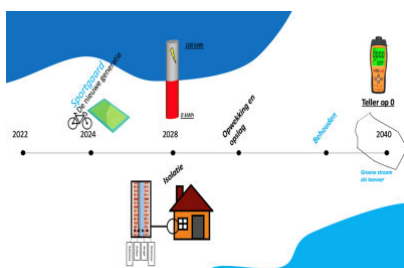


### LOCATION

Participants in action during the TIPPING-workshop in the Grote Kerk in Alkmaar, further discussing possible projects inspired by the positive dream.

### TIMELINE

Depends on the time taken to complete the steps.



### DETAILS

Originally TIPPING is designed as a creative tool used as innovation model to go from an existing to a new innovation ecosystem, using the TIPPING-wheel and the so called “dancefloor”, as illustrated. In Alkmaar and within POCITYF this is translated to a practical and pragmatic three step approach for the use in cities:

Step 1: Formulating the POCITYF dream - shaping an artistic shared dream of what a sustainable and energy neutral historic city of Alkmaar could look like, via the input gathered by digital participation campaign.

Step 2: TIPPING workshop - translating the shared dream into practical project ideas using the TIPPING-wheel

Step 3: Co-creation session - co-create a shared roadmap towards a green historic city of Alkmaar, translating ideas into projects.

(Picture: City of the future concept developed by students from InHolland during a student Hackathon)



### TARGETED OUTPUT

The Positive Dream artist impression resembling a roadmap to an energy neutral historic Alkmaar in 2040.

## IMPACT ON COMMUNITY

The TIPPING-approach addresses the need for inclusion and ownership of citizens and stakeholders in policy innovation. Using the strength and knowledge hidden within the social capital of the city. Moving from a top down to a more bottom-up and inclusive form of governance.

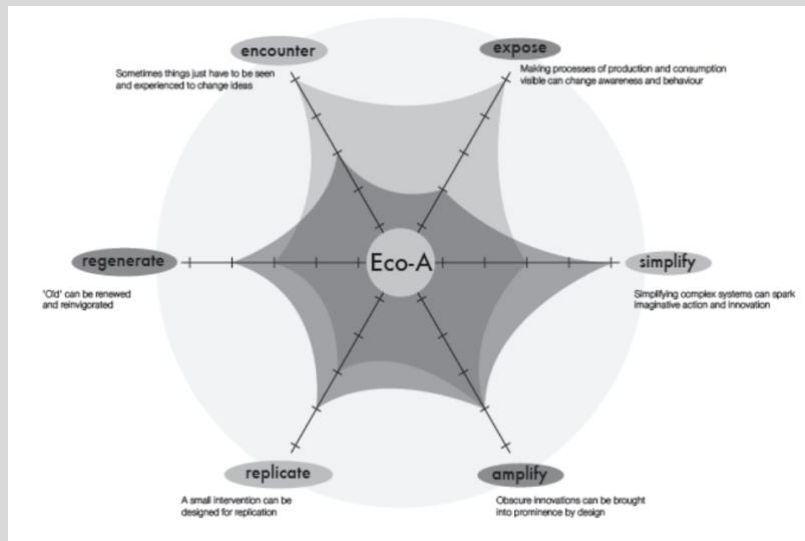
## CULTURAL HERITAGE BUILDINGS COMPLIANT

The first application of the TIPPING-method has successfully been performed in Alkmaar. Each step of the proposed three step approach has successfully been completed. The application of the method is meant as demo to develop a pragmatic interpretation of the original method to make it fit the urban city governance structure:

- For the first step a POCITYF dream has been formulated in collaboration with a local Artist based on the input delivered by citizens through an online participation campaign. Illustrating the possible future of how the historic city center of Alkmaar could look like in 2040. The participation campaign was kickstarted by the “City of the Future” concept for Alkmaar developed by students from InHolland during a student hackathon/ battle. The students received the second place and a reward of €500,- for the proposed concept. The Artist impression

combined all input and developed a positive dream which resembles a metro right to an energy neutral historic Alkmaar in 2040.

- During the interactive TIPPING-workshop, the second step, the participants came up with an extensive list of over 150 project ideas. Ranging from smart energy solutions to the need for better education. Subsequently, citizens could cast their votes online on their favourite top 5 projects.
- The final step of the method, to develop a roadmap toward a green historic Alkmaar, has not delivered the sought result. It has not resulted in the development of a sound roadmap of the top 5 projects, but has let to further discussion for citizen engagement. Two projects, sustainable transport and sustainability educations, are currently being discussed for further development.



## DESCRIPTION

Eco-acupuncture is a program to develop challenging long-term visions and trajectories for the city of Alkmaar on the topics of energy transition, circular economy, and sustainable city transport, by “exhibiting the future in the present”. Eco-acupuncture provides a method and structure to develop long term visions for small interventions in an existing urban precinct that can shift the community’s ideas of what is permissible, desirable and possible, and provide transformation points for a new trajectory to accelerate the development to a resilient low-carbon future.

Specifically, through the Eco-acupuncture program, between 4-8 long-term visions will be developed for the city of Alkmaar in the demo areas of Westrand, Canal Zone, Historical Center, and Boekelermeer, for small niche interventions in areas such as energy transition, circular economy, and sustainable city transport. Visions that intervene in the city’s existing ecosystem and breathe new energy, inspiration and life into it.

The long-term visions should be seen as interventions for the city and serve as a proposal for action. It is not a redevelopment program but a creative visual representation of possible change paths for small physical changes in the cityscape and educational opportunities while respecting current plans for urban development.

The proposed interventions can have different perspectives, for example, propose new uses for existing infrastructure. The interventions can be temporary in nature and propose a temporary intervention in the cityscape or it can be a new facility for a vacant or unused site, and it can be a re-filling of an existing building. Ultimately, all interventions/long-term visions are intended as tangible, visible expressions and design of the future city.

## INDICATORS

<ul style="list-style-type: none"> <li>● POTENTIAL DEGREE OF USEFULNESS</li> </ul>	<ul style="list-style-type: none"> <li>● Already demonstrated in Lighthouse cities No</li> <li>● Cultural heritage compliance Yes</li> </ul>
<ul style="list-style-type: none"> <li>● PERFORMANCE</li> </ul>	<ul style="list-style-type: none"> <li>● COST</li> </ul>
<ul style="list-style-type: none"> <li>● DIMENSION</li> </ul>	<ul style="list-style-type: none"> <li>● TIME</li> </ul>
<ul style="list-style-type: none"> <li>● SAFETY</li> </ul>	<ul style="list-style-type: none"> <li>● SUSTAINABILITY</li> </ul>
N.A.	€75.000 - €100.000
N.A.	Approximately 1 year
N.A.	Yes, see description

## KEY REQUIREMENTS

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In order to create and generate the small physical and transformative interventions based on the long-term visions for Alkmaar, an interactive and collaborative approach is used between the university, an innovation team and the community of Alkmaar. The community here is to be understood as a combination of the local council, its citizens and local organisations. By doing so, the approach and the visions created are supported by the university by means of research on future challenges Alkmaar might face. Through inclusion of students of the design academy there is a focus on education and knowledge generation. There is a “continuous” feedback loop with the community of Alkmaar and citizens are engaged in the creation of the future visions. The innovation team functions as the heart of the operation where the knowledge and work are collated, aggregated, processed and shaped. Focussed on the iterative process and interaction between the different stakeholders, collaborative trajectories of change are formed. All together to get to the demonstration of niche developments a five-step iterative process is followed:

Step 1: Analysis of site-specific challenges - Reviewing the specific environmental and social challenges that Alkmaar is expected to face within the next 25 year, as well as to identify possible public empty niche environments suited for the development of local physical interventions.

Step 2: Future (25y) visions workshops - Cooperative development of 25 years visions on the abovementioned topics led by the innovation team and participation by the community.

Step 3: Future visions design elaboration - Set up a design atelier for a multiple week design “marathon” to further design and enhance the developed vision. This period is characterised by among others a series of presentations, presentations of progress, engagement workshops, and opening hours for visitors from the municipality.

Step 4: Student research mapping and design concepts - A multidisciplinary group of students and designers continue to further develop and deepen the visions and trajectories.

Step 5: Exhibition on-site - To conclude the program an exhibition is held to share the “trajectories of change” with the city.

By doing so, the program responds to the lack of strategic visions on how to adapt and mitigate the impacts derived from climate change, as structural transformation from the fundamental systems supporting our (urban) livelihood is demanded. However, structural change within very static systems and communities is hard to set in motion. How to effectively initiate rapid change within cultural structures is a growing question and concern from governments, academia, and society. Eco-acupuncture aims to address this issue by offering a solution.

## ENVISAGED DEMONSTRATION IN POCITYF

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The full process should result in an outdoor exhibition in the historic centre of Alkmaar. Such that the results can be viewed and are exposed to all inhabitants, policy makers and tourists.

## IMPACT ON COMMUNITY

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Eco-Acupuncture is a complex method with involvement of universities, architects and designers at a high level. Normally performed by and under supervision of VEIL, Vectorian Eco-Innovation Lab. For POCITYF in Alkmaar, an adapted methodology is developed. The alternative version of the method does not differ in the process used compared to the original methodology; it differs in the fact that the cooperating partners are locally sources to better anchor the outcome and have local support. The partners involved in the method are as a rule from or around Alkmaar.

Impact on the community is therefore two-sided. Firstly, the community of Alkmaar is included in the process to think about shaping their city. Inclusion can lead to a sense of involvement improving the relationships between the different stakeholders and the city. Secondly, the outcome of the method should inspire to rethink shaping the city and alter the trajectory to accelerate the development to a resilient low-carbon future.

## CULTURAL HERITAGE BUILDINGS COMPLIANT

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Part of the Eco-Acupuncture method is to re-evaluate the added value of underused buildings or sites, derelict land, vacant buildings etc. and repurpose them through a future scope. Revitalising historic buildings to make them future proof can be part of the outcome. Hereby setting an example on the role of cultural heritage in the city of the future.





## DESCRIPTION

The goal of the workbook “Make sustainable together with tenants - Workbook for participation and communication for housing corporations” is to help housing corporations and the commercial and public organizations with which they collaborate in formulating a participation and communication strategy to realize a high engagement of tenants in energy transition projects. The workbook provides concrete steps for housing corporations to engage tenants in making the assets owned by housing corporations sustainable. It includes theory, examples from practice and methods and tools to be used in practice. Following the steps in the workbook results in a well thought through communication and participation strategy. By using this strategy energy transition projects on a local level can become more efficient and effective with higher degrees of tenant engagement.

This solution is addressing the human needs and values of tenants and formulates a participation and communication strategy that respects these needs and values. By doing so the solution engages tenants by addressing what is important to them, what drives them and makes sure that it fits the goals of other stakeholders as well. Human needs and values are identified through a value based analysis. The handbook and its methodology have been developed based on earlier experiences from projects from TNO and the housing corporations Woonwaard and Van Alckmaer and 5plus1. It has been written during application of the different methods and tools for tenant engagement in the projects Highrise and Bloemwijk, both part of the POCITYF project. The resulting participation and communication strategy must address and match firstly the needs of tenants and secondly the other stakeholders such as the housing corporation. The resulting participation and communication strategy should improve the engagement of tenants throughout the project and shorten the timelines of the project by better addressing the needs and values of tenants.

## INDICATORS

<ul style="list-style-type: none"> <li>POTENTIAL DEGREE OF USEFULNESS</li> </ul>	<ul style="list-style-type: none"> <li>Already demonstrated in Lighthouse cities Yes</li> <li>Cultural heritage compliance No</li> </ul>
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<ul style="list-style-type: none"> <li>PERFORMANCE</li> </ul>	<ul style="list-style-type: none"> <li>COST</li> </ul>
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<ul style="list-style-type: none"> <li>DIMENSION</li> </ul>	<ul style="list-style-type: none"> <li>TIME</li> </ul>
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<ul style="list-style-type: none"> <li>SAFETY</li> </ul>	<ul style="list-style-type: none"> <li>SUSTAINABILITY</li> </ul>
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## KEY REQUIREMENTS

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Summary of the step-by-step plan: in order to ensure the success of resident participation in sustainability projects, it is important to find out what is important to residents and to respond to that. By not only looking at the wishes regarding sustainability or energy but also at wishes regarding other themes (such as safety and quality of life), you will gain insight into so-called 'linking opportunities'. In the project, you can then create a combination of sustainability measures and measures on other themes. This makes it more interesting for residents to participate actively.

Preparation: Steps 1 and 2 Using various methods, you identify the residents and their context and look for linking opportunities. You consider which different resident target groups you can distinguish, possibly developing personas on this basis.

Draw up an approach: Steps 3 and 4 You draw up a participation strategy and a communication strategy, in line with the needs of the different resident target groups (or personas).

Implementation: Step 5 You monitor progress during the project. At the end of the project, you identify whether (new) residents still have questions and are satisfied with all the changes.

## IMPACT ON COMMUNITY

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- To make the energy transition a success, more and more must also be done to homes. Not only by homeowners, but also by housing corporations and tenants. Making homes more sustainable has a major impact on residents.
- In practice, we see that tenants often dread the changes. It is important for housing corporations to involve tenants in projects to make their homes more sustainable. It is also important to look beyond the theme of energy and to connect to themes that have priority for residents (such as quality of life and safety). Only then will residents agree to the plans and the execution process can also proceed smoothly.
- This manual helps housing corporations and the companies and (social) organisations they work with to make residents' homes more sustainable. These may be homes in an apartment complex, a neighbourhood or an entire district.

## OTHER COMMENTS - OPEN CONSIDERATIONS

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1. **LINK TO THE MANUAL:** [Becoming sustainable together with residents](#)