

Case #1

Climate solutions for Copenhagen

Crowdsourcing solutions across borders

START DATE	2015
LOCATION	Copenhagen, Denmark
THEME	Urban Transitions
LEAD CONTACT	Per Boesgaard, Coordinator of Partnerships and Innovation, City of Copenhagen
STAKEHOLDERS	Private & Public



Case Study Overview

In 2015, Climate-KIC Nordic and the City of Copenhagen initiated an Open Innovation Call, 'Climate Solutions for Copenhagen' with the intention of providing the city with new sustainable solutions to tackle environmental problems such as flood prevention, encouraging energy efficient buildings, smart city solutions and the mitigating the urban heat island effect^[1]. At the Open Innovation Call the best proposals were selected, and participants asked to pitch to City Officials who then shortlisted the proposals they wanted to support. Climate-KIC played a key role in the process, by drawing on its large European network to identify relevant solutions from across the continent and connecting them to stakeholders who could either utilise or develop them (e.g., cities or businesses). The 'Climate Solutions for Copenhagen' call was

deemed a success and the experiences gained from the event are now being used to implement a similar process in the Swedish cities of Gothenburg and Malmo.

This case study highlights how 'Climate Solutions for Copenhagen' enabled stakeholders to source and co-develop sustainable solutions for the city. Building on this, the case study then elaborates further the benefits of the Open Innovation process for city officials looking for new ideas, as well as for SMEs, who can gain access to decision makers and communicate their sustainability solutions for the city.

Obtaining: Using the European Network to crowdsource solutions

The impetus for the Open Innovation Call in Copenhagen was the publication of the municipality's new climate strategy, the 'Copenhagen

[1] Open Innovation Call for the City of Copenhagen, Climate-KIC website: www.climate-kic.org/events/open-innovation-call-for-the-city-of-copenhagen/ – Accessed 2nd Dec 2017



Climate Plan 2025' which announced that the city would be carbon neutral by 2025. Beyond this headline policy, the plan focused on: developing smart city design; energy optimisation of buildings; flood protection, and, storm water management as key areas of concern. Based on these focus

areas, Climate-KIC Nordic and the City of Copenhagen produced a list of the sustainability challenges to be targeted through 'Climate Solutions for Copenhagen'. Once refined, these challenges developed into an open call for suitable solutions, sent out across Climate-KIC's European-wide network. The objective was to find the best and most suitable solutions for Copenhagen readily available at a planning and project level. Thus, in order to facilitate the right type of solutions, Climate-KIC and the City of Copenhagen put a lot of effort into specifying the challenges in as much detail as possible, in order to ensure relevance for both the city and the solution providers.

Through the open call, 'Climate Solutions for Copenhagen' received 57 applications originating from 12 different countries. Of the 57 solution providers, approximately 50% were businesses (e.g., SMEs), 25% were larger companies and the remaining 25% were researchers. From the initial 57, 15 of the strongest proposals were shortlisted and proposers invited to Copenhagen on 2nd October 2015 to pitch their ideas. Upon arrival, each 'finalist' received pitch training. The judging panel consisted of a politician, a municipal decision-maker, a business developer and a project manager from Climate-KIC Nordic. The audience consisted of approximately 100 invited guests from investment companies, the municipality and local organisations that work within sustainable solution development.

Unlike standard pitch competitions, 'Climate Solutions for Copenhagen' was not designed to announce winners or give out awards. The participants pitched to be part of a continuing collaboration with the City of Copenhagen, as well as investors who were interested in the

Ultimately, the Open Innovation event was designed to provide all parties with a meaningful match, the solution providers with a new customer and the city with a solution

solutions. The Open Innovation pitching event provided all parties with a meaningful match: Solution providers matched with customers and the municipality matched with solutions.

Integrating: Adapting the innovative solutions

Specifying the challenges was pivotal for the next stage of the Open Innovation Call and was evident in the fact that 14 out of the original 15 'finalists' who pitched in October 2015, were given the green light to continue collaborating with the municipality. Following the selection of the finalists, the next step was to integrate the solutions into the municipality's plan. Due to the municipality's complex technical systems and infrastructure developments, integration took longer than anticipated. Initial technical due diligence discovered that three of the participant's presented technologies which were incompatible with Copenhagen's pre-existing technical infrastructure and these could not continue beyond this stage.

Preliminary studies discovered that some of the technical solutions proposed could potentially work together – the solution providers decided to merge both of their ideas into one product,

the 'Green Energy Package'. Both solution providers now run a joint venture selling this package which is currently being developed in collaboration with the City of Copenhagen and Climate-KIC Nordic who are offering support to refine the package, identify suitable test sites and assist in linking the SME with investors.

Implementing: Bridging the gap between cities and ideas

To date, none of the solutions have been fully implemented. This represents a key learning point in the open innovation process: the implementation of sustainability solutions into a city takes time – it is a long-term objective, regardless of whether parties are working towards the same goal. This reality can be challenging for participants, such as start-ups, who are frequently dependent on generating cash flow in the short term. Furthermore, it is evident from

the call 'Climate Solutions for Copenhagen' that within large groups of stakeholders (each with their inherent organisational interests) good project management and continued follow-up is essential for the Open Innovation process to work effectively. Often this requires facilitators who can manage the process and maintain interest in the challenge.

Gaining political support, and the provision of adequate resources, are also necessities for bridging the gap between the integration and implementation stages of the Open Innovation Call. Copenhagen offered a unique learning experience and as a result, Climate-KIC Nordic is now working with the City of Gothenburg to ensure that the municipality's complex technical systems, and infrastructure developments, are prepared to incorporate the selected solutions. This is to enable solutions providers to implement their ideas in the short term, with the necessary financial and political commitment required.



Case Study Summary

The Open Innovation Call, 'Climate Solutions for Copenhagen' enabled the municipality to engage with international stakeholders (businesses, large corporates, researchers, etc.) to design and implement sustainability solutions in the city region. Although the process is still ongoing, they are key learning points to take away, that could potentially enhance Open Innovation Calls in other cities across Europe.

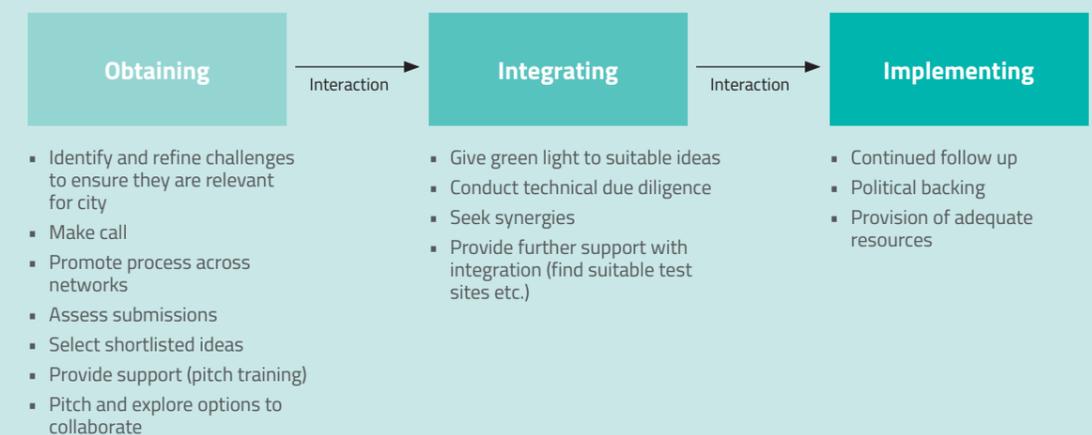
Challenges:

A number of key challenges (as well as opportunities) were identified. These are: to work with the municipality and ensure that both technical systems and infrastructure developments are compatible with sustainability solutions; to ensure the challenge has a clear vision and specification; that facilitators are required to match make and stimulate interest in the project; and, that good project management is essential for the Open Innovation Process to work effectively.

Results:

Although none of the solutions has been implemented, the process resulted in:

- Over 57 applications originating from 12 different countries
- 14 out of the original 15 'finalists' who pitched on 2nd October 2015, were given the green light to continue collaborating with the municipality.
- A joint venture has been established offering a 'Green Energy Package.'
- The municipality identified the need to update technical systems and infrastructure developments
- Climate-KIC Nordic learnt from the process, changing the Open Innovation Call in other European cities.



A System is Changing: From Administrators to Facilitators

By elaborating on the City of Copenhagen's experience of the Open Innovation Call, it is possible to highlight the municipality's key learning points as a result of hosting the event, as well as exploring the challenges faced by the organisers, Climate-KIC Nordic, during the process. This has been achieved by drawing on the municipality's experience first-hand, in particular the experiences of Per Boesgaard, Coordinator of Partnerships & Innovations, Climate Unit, City of Copenhagen.

Obtaining the Concept – include your colleagues, all of your colleagues

When asked why the City of Copenhagen joined the project Per Boesgaard explained: *"Being part of Open Innovation processes is important and inevitable for cities today. The technical development is moving very fast and as a municipality we have the possibility and responsibility to actually create real change and co-develop green solutions in close collaboration with start-ups and universities and our citizens. This is recognised and prioritised in Copenhagen. The challenge from inside the municipality has been to identify all the right people in the various departments and get them involved. When you are working to develop and implement new infrastructure solutions it usually doesn't only affect one person in one department, it will interfere with many different departments across the structure in the organisation. This was a rather big challenge and next time we are going to do this, which we are, we need to get everybody on board and make sure they have time to help the projects become a reality, before we even start the development!"*

"We need to be able to create an ownership to the ideas, before they are presented!"

Per continues, *"When we initiated this ambitious collaboration, it was a challenge to make people understand the process, because everything was so new, I was also lacking a set-up and a way to describe how we could work together and how this could help our development as a city!"*

In other words, it is necessary to encourage buy-in from all departments within the municipality to ensure that solution providers are given appropriate support to develop their idea into a product or service.

Integrating the Concept – create a sense of ownership

Per reflects on the timescales for the Open Innovation Call and the need to shorten these if they are to encourage start-ups and SMEs to develop sustainability solutions for Copenhagen.

"In order to get the municipality to move in the same direction we need to have everyone on board. All employees must have ownership of the project, if we are going to be able to implement the solutions. And even though Copenhagen is a large city there is a restriction as to how many solutions we're actually able to work with. In this project, we went from 57 to 15 to 14 solutions. In the future, when we were considering the solutions we need to be even more focused on what is realisable and when can it be realised ..."

In the current project, we managed to create a flow from obtaining the solutions to the development of



various integration scenarios. It did however take almost a year, which can be a difficult timeframe for especially smaller companies and start-ups. This is however, a very typical timeframe for a municipality. And most importantly we have to make sure that we have the facilities and resources to actually be able to implement the solutions."

Going forward the City of Copenhagen aims to be 'solutions ready' by developing facilities and resources.

Implementing the concept – Changing the system

At present, the City of Copenhagen is working to implement sustainability solutions. Following the pitching event, the successful proposals were partnered with relevant departments in the municipality. Reflecting on this, Per offered his advice to others planning an Open Innovation Call:

"It is very important to be aware of in this part of the process, to keep assisting the companies

in the dialogue in order for them to understand how a municipality work and how decisions are made. This is after all a political organisation. I'm really proud that we are actually able to carry it out and involve not only the many external partners with potential solutions for us, but also the many, many internal employees in the municipality, who have worked hard to make this a reality. However, in order to work in an Open Innovation framework in the future we need to change the system. We need to be able to work more openly. The system is not developed to fit with these types of processes and we are slowly in a process where we are moving towards being a platform, where the city's problems are put on display and everyone can come up with potential solutions. We are becoming facilitators now, before we were administrators."

The Open Innovation Call highlights how the role of municipalities has changed in recent years, from administrators (top-down decision-making), towards open facilitators (those sharing problems and co-developing solutions with stakeholders).

Co-Development for Mutual Benefits: Wattelse's (an SME's) experience of participating in 'Climate Solutions for Copenhagen'

This section explores the benefits Small to medium sized companies (SMEs) can gain by participating in the Open Innovation process. SMEs frequently find it difficult to gain access to city officials, even when they have developed innovative sustainability solutions that could be of value to the city. More often than not, when SMEs do have access to city officials, it doesn't guarantee that their idea will be implemented within their city or scaled up within other municipalities.

By elaborating on Wattelse's experience of the Open Innovation Call, it is possible to highlight the challenges an SME can face when collaborating with municipalities. Wattelse are a Swiss-based company have developed a product, the MONALYSE that aims to increase

the energy and resource efficiency of buildings by identifying physical deficiencies and optimisation measures^[2]. In 2015, Wattelse had already established themselves domestically and had developed a product that was both inexpensive and easy to implement, however, they had experienced difficulties opening dialogues with city officials. Elaborating on these challenges, Martin Hofer CEO of Wattelse contextualised the need for his product in Copenhagen and provided further insights regarding the benefits of Open Innovation process from an SME perspective:

'We want to work with Copenhagen. The lack of comfort and energy effectivity in buildings is a global topic

[2] Climate-KIC, Start ups, Wattelse website: www.climate-kic.org/start-ups/wattelse/ Accessed 2nd December 2017



and Copenhagen is one of the leading cities in driving sustainability. Therefore, the city was very relevant for us and to be chosen to apply the Wattelse-method in Copenhagen was a great pleasure.'

Getting obtained: Getting access to decision makers

Access to city officials represents a significant challenge for SMEs who wish to scale up and replicate their sustainability solutions. The lack of collaboration between these stakeholders to date, has hindered the development and implementation of sustainability ideas in cities, slowing down the growth of many SMEs.

Wattelse experienced this challenge first hand in 2015, when they tried to approach the City of Copenhagen to raise awareness of their new service. After several attempts to engage with the municipality Wattelse sought guidance and support from Climate-KIC Nordic, who were able to link up the SME with contacts at the City of Copenhagen. Following initial discussions, the municipality were interested in the services Wattelse proposed and after a month-long process, both stakeholders agreed to develop a joint Open Innovation Call to explore collaboration further.

Getting integrated: Testing the solution with the city

Wattelse's service proved to be of interest to the City of Copenhagen and both stakeholders are currently in the process of evaluating how to implement the solution within the city. In the first quarter of 2017, Wattelse concluded a scoping study with the City of Copenhagen, across selected municipal buildings that evaluated the potential integration of the service, assessed the budget and expected return on investment linked to the specific buildings. This

process ensures that the building infrastructure in Copenhagen is suitable for automated, big data analysis. The scoping study also enabled both stakeholders to understand any challenges associated with implementing the service. Martin Hofer explains how the Open Innovation process enabled the SME to collaborate with the City of Copenhagen:

'Being part of an Open Innovation process is a great chance for all of us. For the partners involved to get new opportunities and inspiration, for the start-ups to gain potential customers and visibility.'

Becoming Implemented: What is the actual value for a start-up/SME?

The main objective for any business is to foster collaborations that could ultimately lead to economic value (e.g. generating an income). From Wattelse's perspective, the Open Innovation process played a key role in integrating their service into the City of Copenhagen's building portfolio and thus could potentially lead to economic value for the SME in the future. However, not all value accrued from collaborating with the municipality will be strictly economic; working with the municipality can improve the credibility of Wattelse's service – a useful acquisition for business development in the future. Martin Hofer concludes:

'Having a local success story can open up the Danish market to further business opportunities. Our goal is to export our technology and skills to corporate partners to scale the environmental impact.'

The Open Innovation Call enabled the Swiss-based SME to apply their service within Copenhagen and paves the way for other businesses and start-ups to approach the City of Copenhagen with sustainability solutions.