

# POLICY INNOVATION FOR BUILDING RENOVATION

How can policy innovation scale up the decarbonisation of the building stock in Europe?



Climate-KIC is supported by the EIT, a body of the European Union



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The study is sponsored by:



Published in December 2018 by the Buildings Performance Institute Europe (BPIE).

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# INTRODUCTION

The building sector accounts for 36% of Europe's CO<sub>2</sub> emissions and 40% of its energy consumption. Despite a great need and vast market potential, the pace and depth of energy renovations remain slow. Accelerating deep renovation<sup>1</sup> requires a systemic transformation of the construction sector, which can only be enabled by innovation in key areas like policy, technology, finance, governance, and market supply [1].

Several countries and local authorities have introduced innovative policies and programmes to stimulate deep renovation and reduce the CO<sub>2</sub> emissions of the building sector, yet a broad dissemination and application of these policies are not taking place. The exchange of information and experiences across regions is much lower than what would be desirable.

This project sets out the foundation for an acceleration and replication of innovative policies that enable a decarbonisation of the building stock. To achieve this goal, the project explores how policy innovation can be increased through the Building Policy Innovation Exchange (BPIX). The project also explores how to best support policymakers looking for guidance on how to develop 'state of the art' policies and implement ambitious renovation programmes.

These ideas were shared and discussed with city implementers, regional policymakers and people involved in innovative projects through a series of structured interviews, as well as a workshop held in Brussels on 12th December 2018. The objective of this briefing is to outline the concept of policy innovation and explore how it can be applied to deep renovation in Europe.

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<sup>1</sup> Deep renovation refers to a renovation that results in at least 60% energy savings compared to pre-renovation levels (European Commission)

# POLICY INNOVATION

Policy innovation is the action of creating new policies, regulations, services or processes when existing ones are perceived to be under-performing [1]. It generally refers to an approach aiming at creating added value and improving the effectiveness and efficacy of an existing policy to achieve a desired outcome, such as engaging the public in policy development, introducing suitable incentives, new evaluation methods, and innovative ways of funding. Innovative policies can be either small and incremental or large and radical, but what unites them is that they involve the realisation of new ideas, processes and practices that break with the past.

Policymaking is traditionally depicted as a linear process, which starts with identifying a problem and ends with an ex-post evaluation. Policymakers tend to respond to a problem with a “pre-coded” solution to quickly or easily solve the issue, an approach that offers little room for novelty. Research shows that most policy processes are detached from the people on the ground and lack the flexibility to adapt once underway. The Brookfield Institute identifies six problems with the traditional policy development process (illustrated in Figure 1) [2]:

- 1 Issue identification:** it is difficult to be innovative at the end of a process, and currently there is little room for problem definition and framing at an early stage.
- 2 Research & analysis:** quantifiable data is given more weight than soft data and is given priority over the “lived experience and needs of people impacted”.
- 3 Options development:** the public is questioned on what option they prefer rather than what their needs are.
- 4 Decision-making:** the various options are not sufficiently tested in the “real world”.
- 5 Implementation:** policy analysts and planners are often disconnected from those responsible for the implementation, resulting in policies based on untested hypotheses and unrealistic goals.
- 6 Evaluation:** the results of a policy evaluation are rarely used to adapt and improve the policy at hand. Policy evaluation could be embedded in the policy design and used by policymakers to learn and continuously improve a policy.

**Figure 1: Challenges faced in the traditional policy development cycle** (Source: Brookfield Institute, 2018, [2] colours adapted by BPIE)



Various elements of a policy can be regarded as innovative: (i) the goal of the policy (such as the renovation rate), (ii) the policy instrument used to achieve the goal (such as a new tax break on renovation works), (iii) the way the instrument is being calibrated (how the policy is designed, its application procedure, etc.), (iv) its financial framework (such as public/private partnership) and (v) how it's being governed (how it's managed, who takes decisions) [3].

Innovative policies often offer easy access to the services (including financing opportunities) they promote, avoiding the need to contact and deal with multiple administrations for one project. Simple, user-friendly services and communication are considered best practice.

Policymakers across Europe share similar challenges and make similar mistakes. In the buildings sector, there are several examples of ineffective strategies, misdirected campaigns and financial incentives that resulted in unintended consequences (e.g. high rates of free-riders), as well as regulatory policies which have created additional barriers rather than overcoming them. For example, in the UK, the interest rate for energy renovation loans included in the Green Deal<sup>2</sup> was set at 7%, which was much higher than market rates. As a result, the programme was unable to drive demand for energy renovation and was cancelled. In Bulgaria, the national programme for the energy renovation of multifamily buildings granted homeowners 100% non-refundable finance, creating a dependency on free public intervention which resulted in homeowners being resistant to the idea of private investment [4].

This paper outlines some ideas on how to get policy innovation for renovation right. The following sections will discuss four key components of policy innovation: its drivers, design, implementation and evaluation.

## WHAT DRIVES POLICY INNOVATION?

Policy innovation is driven by a combination of political leadership, competition and collaboration [5].

**Political leadership** is required to develop a new policy instrument and especially to make it successful, as it must be nurtured, pushed forward, and given meaning in specific contexts [3]. Successful policy entrepreneurs (or leaders) are equipped with bargaining power and strategic skills to push the policy through the political process [5]. For example, how the policy is described will determine much of its chance of success. By framing the problem in a certain way, it is possible to increase the political and public pressure and thus legitimise the policy innovation at hand.

**Competition** among politicians encourages them to develop an improved solution to an existing problem. In theory, the political group that develops the best solution will be rewarded with an uptake in votes in the next election. Yet, some researchers argue that competition can also hamper innovation because it delimits the exchange of knowledge and ideas, prevents resource pooling and increases the risk of failure [5].

**Collaboration** is important for the exchange of views and ideas, but also to gather support for the policy at hand. If people are involved in the process, they have a higher tendency to support its outcome. As renovation policies come with implications for

different areas (economic, environmental, social) and across departments (e.g. buildings and social housing, urban planning, finance), it is a good idea to involve the different players from the beginning. The same is true for stakeholders: the earlier they are involved in the policy process, the more they feel the "ownership" of the policy outcome and the more supportive they tend to be.



<sup>2</sup> The Green Deal was an energy efficiency savings scheme in the UK, which lasted between 2012 and 2015.

A constant challenge for energy efficiency policies is that policymakers tend to prioritise issues that are noticeable. In the environmental sphere, policies tackling problems such as air pollution appear to travel faster and further than those addressing less visible issues such as soil pollution. Politicians, and their supporters, are in general risk-averse and it can often be difficult for them to endorse policy innovations, as they can be disruptive of established interests or practices. In addition, the scarcity of impact assessments and evaluations supporting innovative policies makes them more vulnerable to criticism.

Existing successful policies can be used as examples to nurture and inspire policy innovation. Innovative policies could travel fast across regions and countries if the information about the policy was skilfully packaged and accessible to the right people. This could arm policy entrepreneurs and decision-makers with convincing arguments and foster competition and fruitful collaborations.

## THE DESIGN OF INNOVATIVE POLICIES

The concept of policy innovation is often used to refer to the development of new policies. In reality, new policies are rare; in most cases, “new policies” arise through the incremental development of existing policies.

Policy innovation can cover numerous features, like new ways of engaging the public (e.g. user-centred approach) or developing and testing new ideas at an early stage of the process (e.g. iterative prototyping). Policy innovation can also come from new methods for evaluating the efficacy and efficiency of an existing policy (e.g. behavioural science) or the consideration of new funding methods (e.g. crowdsourcing, on-bill financing, social finance) [2] [6]. Innovation in governance (for example, how the internal decision-making process is structured) can also trigger policy innovation.

Policy innovation is often the result of a collaboration between the public and private sector, while its success depends on the skills, qualifications, expertise, agility and determination of a policy entrepreneur. Boasson & Wettestad identify two types of entrepreneurs: tortoise and carpe diem. The tortoises (including civil servants, NGOs and industry actors) do the preparatory work, while the carpe diem entrepreneurs (politicians) associate themselves with the initiatives in a much more ad-hoc fashion, and often enter the process at a later stage [7]. Entrepreneurs also set “agendas that call for policy innovation, and [...] recruit, motivate, steer and support political, administrative, professional and social actors who innovate” [5].

Most new policies have been inspired by an existing policy from another country or region [8]. The policy must then be adjusted and adapted to a new setting, and in this process, improvements often occur, as new ideas and perspectives are added to the original policy. Countries and regions tend to borrow policies from neighbouring countries or those that share similar geography, culture or political systems. This is partly natural as we tend to look at things close to us, but at the same time it can be a limitation to policy exploration.

## THE IMPLEMENTATION OF INNOVATIVE POLICIES

Implementation is a crucial stage of the policymaking process. Policy implementation is where the goals and objectives of a policy are transformed into action, or “the process of the interactions between setting goals and the actions directed towards achieving them” [10]. At this stage the initial design of the policy is set and is being implemented by responsible agencies [2]. The existing literature suggests that during implementation, cities either compete or learn from each other. Once regions perceived as more innovative and advanced adopt a new policy, other cities and regions tend to follow their example [3]. The desire to be perceived as innovative and advanced compared with other regions can be a powerful motivation, as is the fear of being left behind; there is also less risk involved in implementing a policy that has already been tested [9].

During implementation several public institutions, organisations and stakeholders work together to put policies into action, in an attempt to attain pre-defined goals. Implementation involves a great number of actors, and active “involvement of concerned stakeholders as co-producer and engaging actors in the process, will enhance implementation success” [10]. This can be enhanced by innovative features such as an integrated service, where

different departments work together behind the scenes to make it easier for the users to access a service, or the use of innovative technologies to deliver the policy.

Officers in charge of design and implementation should work together and, when appropriate, test the new policy on a small scale before a wider roll-out. An ideal approach would be to start from a pilot programme on a smaller scale, where it is possible to identify critical issues, drawbacks and benefits, and then implement the tested idea on a larger scale.

Lack of acceptance and recognition of the policy can be a significant barrier to implementation. Early involvement of citizens in the design and testing of a policy will increase acceptability and the chances of successful implementation; barriers such as complexity or limited accessibility should be addressed at the beginning of the process.

The implementation process ought to include enough flexibility to be able to adjust to relevant feedback, connecting both the design process and the people affected by the policy (Figure 1).

### THE EVALUATION OF INNOVATIVE POLICIES

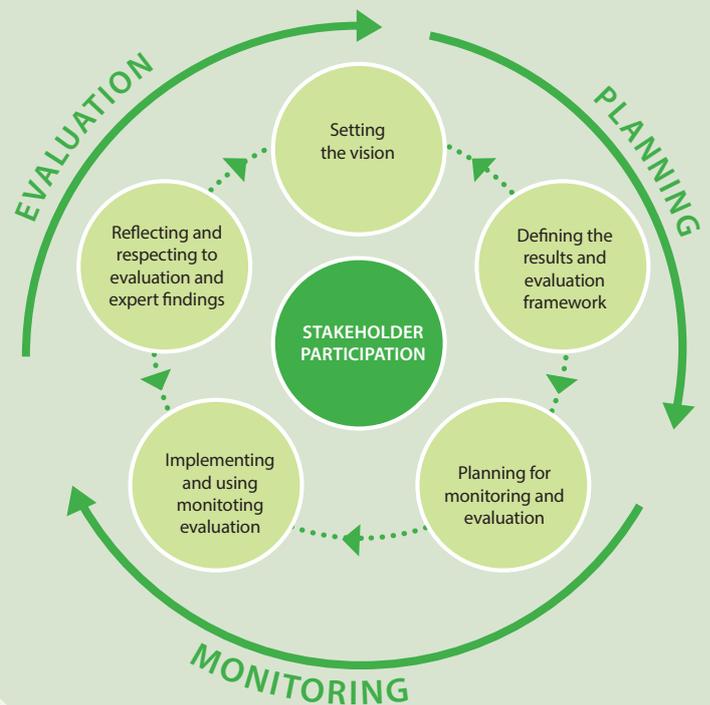
Evaluation is critical for understanding the merit and utility of a policy. To ensure it reaches its intended impacts, a new policy should be regularly evaluated, adapted and improved both at design and at implementation phase. The evaluation can help maximise the impact of a policy and produce insights that can be used in future policy planning processes.

Figure 2 illustrates the main steps of a policymaking process from an evaluation point of view: (i) set the vision, (ii) define the KPIs, (iii) decide how to monitor, (iv) implement and monitor, (v) reflect and reconsider. Today this process, which integrates evaluation from the design phase, is not systematically used in Europe and evaluation is often an afterthought rather than an established part of policy planning.

The literature suggests three questions that should be accounted for in the evaluation of a policy innovation [3]: (i) what does the policy add to the existing policy mix? (ii) who are the winners and losers from the policy? and (iii) how well does it contribute to the solution of the long-term problem?

If published, evaluations can also provide valuable information for other countries and regions that want to learn from the experience of those that have implemented similar policies and process. Without proper evaluations, it is difficult to discern exactly how and why a policy is successful or failing, hampering its potential for replication.

**Figure 2 The Evaluation Cycle**  
(Source: European Science Foundation)



# INNOVATION FOR RENOVATION: REAL LIFE CASES

Europe faces a profound challenge to meet its climate and energy goals: tripling the current rate and increasing the depth of renovation of its building stock. Currently 97% of the buildings in the EU need to be upgraded<sup>3</sup>. The urgency of this challenge is stressed by the reality of poor housing conditions causing high energy bills, health issues and a low quality of life. Policy innovation is expected to play a crucial role in the transition towards a sustainable energy system, including a healthy and decarbonised building stock.

Policy innovation in the field of deep renovation is currently inadequate, in terms of both actions taken and impacts achieved. This section highlights four real life innovative cases, which capture some of the elements described in previous sections.

## 1 CASE #1:



**The Dutch Energiesprong** is a well-known example of innovation in building renovation, showcasing how it is possible to drive transformational change in the renovation sector. Energiesprong introduced a new perspective on what deep renovation could achieve, with the aim to renovate blocks of houses to net-zero levels of energy consumption through a rapid on-site renovation process. The programme features the characteristics of innovation: an ambitious national goal (disconnect 170,000 houses from the gas grid every year), a pioneering solution (industrialised net-zero renovations) and a flexible adjustment (various actors are incentivised to find their own specific solution to push down the renovation cost, promoting competition).

The Energiesprong process also illustrates the importance of a comprehensive

preparation and the need for broad support. The project's success partly depended on a new financing idea (to pay renovation cost with the savings from lower energy bills), but this idea was not compliant with the existing regulatory framework. Thanks to dedicated policy entrepreneurs, the regulatory framework was adjusted to enable this type of financing, making the overall idea realisable.

The project broadly involves market actors: 140 companies, around half of all companies active in the Dutch construction industry, are involved. The competition to deliver the best and most cost-effective renovation solutions is crucial for the project development. The model is currently being replicated in France, Germany and the UK.

<sup>3</sup> <http://bpie.eu/publication/97-of-buildings-in-the-eu-need-to-be-upgraded>

# 2

CASE #2:



**The Swedish cities of Malmö and Borås** have developed “innovation platforms”, with the aim to foster collaboration around a more sustainable building stock. “The concept of innovation platforms implies formalised co-operation between actors (businesses, public organisations, research institutes, universities etc.) involved in research and innovation” [11]. One example of the positive outcomes of this new approach is the urban regeneration of the rundown suburb of Lindängen in Malmö, which

comprised an inclusive process involving multiple actors. Fourteen different administrations within the municipality are represented, and regular workshops with researchers, property owners and stakeholders are held. The collaborative approach makes sure that all relevant actors are involved and share a common vision for the neighbourhood [12]. The innovation platform is a great example of how it is possible to generate new ideas and gather support at local level.

# 3

CASE #3:

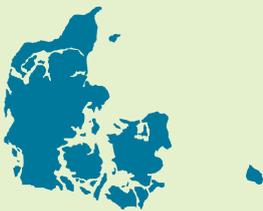


**The Living Lab Housing Renovation programme** in Flanders is fostering innovation through cross-governmental dialogue. Multiple actors are involved in the dialogue, including ministries and administrations of innovation, energy, (social) housing and financing, and local authorities. The main objective is to initiate innovative, scalable and replicable renovation concepts that make deep energy renovation affordable. The Living Lab programme plans research,

development and demonstration activities in eight pilot cases, representing the most common housing typologies in Flanders. Local governments, social housing corporations, research institutes and private actors from the construction value chain are involved. In addition to the pilot cases, a knowledge platform is being developed, responsible for the central coordination and monitoring of projects, quality control and knowledge management<sup>4</sup>.

# 4

CASE #4:



**BetterHome** is a “one stop shop” renovation service in Denmark, originating from a corporate initiative (begun by Rockwool, Velux, Grundfos and Danfoss). It has proven successful in boosting demand for holistic renovation by creating a burden-free experience for the building owner and offering a service that goes beyond replacing building components. The implementation of this model was possible thanks to the government’s decision to make building data publicly available, which allows installers to access essential information to tailor their renovation proposal to

a specific client. BetterHome has used innovative solutions to transform the work of building professionals, including digital guidance tools and continuous evaluation. The digital tools make the work easier for the professional and harmonise the renovation process (the variability in quality between different professionals is minimised). In addition, BetterHome continuously collects feedback from building owners to make sure they receive a good service. The data is then used to evaluate how the service can be improved [13].

<sup>4</sup> [www.kennisplatform-renovatatie.be](http://www.kennisplatform-renovatatie.be)

# DEFINING POLICY INNOVATION IN BUILDING RENOVATION

This section proposes a definition of policy innovation for building renovations and outlines an initial set of required elements of a successful policy innovation process. The definition and the criteria take into consideration the knowledge exchange with experts, policy entrepreneurs and local decision-makers consulted for this project.

## DEFINITION OF POLICY INNOVATION FOR BUILDING RENOVATIONS

A policy innovation for building renovation is a new policy, regulation, support scheme, programme or service that intends to increase the renovation rate (number of renovations undertaken) and/or renovation depth (magnitude of the energy saved).

The policy can be either small and incremental or large and radical, but it should involve the realisation of ideas, processes and practices that break with the past.

## KEY TAKEAWAYS FOR POLICY INNOVATION

The following section outlines key takeaways from the project, including discussions on policy definition, preparatory work, stakeholder engagement, collaboration across departments, use of digital tools and the potential value of a BPIX instrument. Some of the takeaways presented below are features found in specific stages of policy innovation described in this report, such as the design phase (e.g. the definition of the problem and objectives), while others can be found across several stages (e.g. building strong networks, stakeholder engagement, user experience exchange).



### Takeaway #1

Strong city commitment and clear targets (e.g. greenhouse-gas emissions, climate resilience) tend to trigger innovation.



### Takeaway #2

The problem and the objectives the policy is trying to address should be detailed before the policy design starts.



### Takeaway #3

Solid groundwork (including skill mapping, research on existing policies addressing similar issues) conducted before design increases the chances of success.

The main objective(s) of a new policy should be clearly defined at the beginning of the process. This can be challenging when policymakers tend to respond to a problem with a “pre-coded” solution, which has not been specifically designed for the problem at hand.

A renovation policy which has been designed to increase the quality and rate of renovation will differ from a renovation policy whose main intent is to stimulate the creation of local jobs. A well-designed policy can do both but needs to be planned accordingly. In the first case, the policy may explore capital-intensive solutions (such as premanufactured elements, 3D printing and robotics, financing schemes), which would be less interesting in the second example. Effective policies can be designed to achieve more than one objective (like reducing the climate impact of buildings and improving indoor environmental quality) but they require a clear definition of their objectives and a tailored approach. This is only possible through solid preparatory work and careful consideration of the needs of the policy recipients.

An instrument such as BPIX, by providing a searchable database of existing policies for deep renovation, could offer a much larger pool of options and help policymakers to find/develop innovative and more effective policies targeting different building types (e.g. public, commercial, residential, historic) or groups (e.g. owner/occupants, energy-poor neighbourhoods, etc.).

Testing the BPIX idea before further investing into it can also be considered “preparatory groundwork”. In this phase, we interviewed local authorities to find out what information they find useful and what is not available to them. This exploration will be used to develop the BPIX initiative to scale up policy innovation for renovation.



#### Takeaway #4

Building a strong network with local actors will increase trust in the process.



#### Takeaway #5

Capacity in local authorities is a key enabler of innovative policies.



#### Takeaway #6

The policy process should involve multiple actors (e.g. the groups that would benefit from the policy, citizens etc.) and departments to increase the chances of a well-designed and broadly supported policy.

Strong networks with key players in the region accelerate the development of new policies. Building public trust is key, and can be achieved through increasing transparency, accountability and citizen participation and engagement. This could involve, for example, creating public consultations, establishing focus groups, sharing information about the results of the consultations and reporting progress during the implementation.

Lack of capacity in local governments can be a barrier for policy innovation. The introduction of a new policy requires time and resources, which are often limited, especially in small municipalities. The availability of EU funds for research and innovation allows cities and municipalities to invest in capacity building and can further facilitate the development and testing of new policies.

In addition, solid preparatory work should include the assignment of the right people to design a specific policy, ensuring they are equipped with the necessary skills and tools to gather the inputs (including data, information, stakeholders' perspectives etc.). The development of a new policy requires early and adequate involvement of concerned actors and stakeholders, including business, academia, NGOs and civil society. In addition, policies should be aligned across departments at any government level, be it national, regional or local. For example, when drafting a renovation plan, health, energy, and urban development departments should be involved and their input integrated into the policy design. This would bring benefits to the community beyond energy savings and greenhouse-gas emissions reductions.

Dialogue and collaboration at an early stage within and across all levels of governance are crucial to support the policy innovations and changes (e.g. framework, process, incentives or measures promoted) that will enable the scaling up of deep energy renovation. This will further promote exchange and feedback on what works, what needs to be improved or what went wrong within the city and beyond. EU, national, regional and local governments have different roles in the renovation of the building stock, but all have a responsibility and an opportunity to foster new collaborations for deep energy renovations.



### Takeaway #7

Language is a crucial aspect of widespread replication and scaling up of innovative renovation policies

The concept of policy innovation in reference to renovation can have different meanings in different contexts. For some, innovation primarily refers to the promotion of new financial mechanisms, while for others it refers to innovative ways to involve stakeholders (e.g. by using innovation software platforms like [ideascale](https://ideascale.com))<sup>5</sup> or to provide a service (e.g. one stop shop). Agreeing on a shared definition of “innovation for renovation” and on the characteristics that should be featured in an innovative policy would avoid confusion and misunderstanding and would help sort policies accordingly.

The language in which information is available can also be a barrier: apart from EU institutional publications, which are available in all the official languages, most information about policies and best practices is only available in its original language and/or in English. This can hamper the effort to scale up renovation activities as policymakers, especially at local level, may not be able to access or fully understand the information. During our interviews, programmes like KfW were mentioned as being an inspiration, but the availability of most of the documentation in German only limited the possibility of local policymakers in other countries learning from it.

The BPIX initiative could function as a sorting system and a repository of innovative renovation policies from around Europe, enabling replication of successful policy innovations. Short descriptions of policies are already available but are often not detailed enough to assess their replicability, so systemic data gathering is required. Information to process includes which stakeholders are involved, regulatory requirements, if/how the policy is being evaluated and the costs of implementation.

The BPIX could facilitate a structured approach to support policymakers in finding and replicating innovative policies to scale up their renovation efforts. It could also provide guidance and knowledge on how the policy could be implemented, including which pitfalls to avoid. To guarantee a broad outreach and facilitate knowledge sharing, the information should be available in several languages.



### Takeaway #8

Continuously monitor, evaluate, and improve the policy to maximise the effect.

A new policy is rarely perfect from the start; there should therefore be room for continuous assessment, adaptation and improvement. A structured and formal evaluation process improves understanding of the merit, worth and usefulness of a policy. It further allows open feedback from users and stakeholders. Different types of testing (user-experience, prototyping, guerrilla testing and user testing) can be helpful when designing new products (e.g. building renovation passport) and a feedback loop approach can facilitate the continuous improvement of a new product or service.

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<sup>5</sup> <https://ideascale.com>

# CONCLUSIONS



This study outlined ideas on how to improve policy innovation for renovation. Policy innovation is challenging, and it requires novelty in all its stages including the design (and its drivers), the implementation and evaluation. Policymakers at local level would benefit from the availability of funds and from more and improved opportunities to share experience and learn from each other.



One of the main highlights of our research is that the learning experience is twofold, consisting of a virtual community (database, platform where information can be searched) and face-to-face experience to share learning (e.g. workshops, learning centres, training programmes targeting local decision-makers, etc.). These elements are complementary.



The BPIX initiative will further explore the opportunity to develop this model in the future.

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Climate-KIC is supported by the  
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