Building renovation - not only good for the climate. What are the additional benefits worth?

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Executive Summary of the Trialog on September 5, 2019

Topic and background

The Trialog "Building renovation - not only good for the climate. What are the additional benefits worth?" was the kick-off for the 15-month project "Multiple benefits as a driver of energy-efficient building renovation". The project is jointly implemented by the HUMBOLDT-VIADRINA Governance Platform (HVGP) and the Buildings Performance Institute Europe (BPIE) and funded by the German Federal Foundation for the Environment (DBU). The background of the project is that there is an urgent need to renovate more buildings in order to reach the climate targets. One reason for the low renovation rate in Germany is the lack of incentives for building owners. Investment decisions are mostly based on a cost-benefit calculation that usually only takes into account the energy costs saved which in many cases are not high enough to trigger major investments. This is where the project steps in to develop ideas for quantifying and monetizing the multiple benefits of energy-efficient building renovation. If it is possible to quantify non-energy benefits such as better health or climate protection, specific target groups, e.g. investors and building owners, will be provided with an instrument for taking these benefits into account in their own decision-making processes. This would help in credibly communicating them to stakeholders such as tenants and housing companies alike.

The fundamental aim is to bring more clarity into the public debate on the diverse benefits of energy-efficient renovation. The Trialog- and workshop series therefore brings together the perspectives of stakeholders from the public sector, the business sector, organised civil society and academia. The goal is to discuss multiple benefits of building renovation in order to jointly develop ideas for methods to quantify them.

The kick-off Trialog took place on September 5, 2019 in Berlin. Three core questions formed the starting point for the discussion:

1.) Health, comfort, value enhancement, climate protection requirements - what are the additional benefits of energy-efficient renovation and for whom are
they relevant? Do the various benefits currently play a role in investment decisions?

2.) What approaches and models exist to make multiple benefits measurable? What opportunities do these models offer? What are obstacles to quantify multiple benefits?

3.) Which stakeholders should participate in the development of economic quantification models?

Participants

A total of 46 people took part in the Trialog at the Allianz Forum in Berlin. 67 people had registered for the event. Business was the largest stakeholder group with a total of 19 people. This group included companies in the industry such as Velux or Rockwool, and associations such as deneff or BDEW as well as energy consultants and representatives of banks, hence the large number of participants.

From academia a total of 9 representatives took part. The participating institutions included TU Munich, Agora Energiewende and the German Advisory Council on the Environment. In addition, representatives of the project partner BPIE took part in the Trialog.

The organised civil society was represented by 10 persons, including the Berlin Tenants' Association, Deutsche Umwelthilfe, Nabu and the consumer association. Three persons from the project partner HVGP took part.

Seven persons from the public sector participated. Representatives came from the Ministry for the energy transition in Schleswig-Holstein, the Berlin Senate Department for the Environment, Transport and Climate Protection, the City of Gelsenkirchen and KfW.

Results

Overall, the participants welcomed the approach of the project to seek higher renovation rates via the visualization and quantification of non-energetic benefits such as increased comfort or better climate protection. However, it was pointed out that the arguments for multiple benefits only get through to home owners who are already open to invest in building retrofitting. For many private owners, in particular for the owner-occupiers, the focus is more on increased comfort and the functionality of the property and less a rational cost-benefit calculation. Up to date the participants considered climate protection, value enhancement and value preservation of the property as the most important benefits for investment decisions. For the future, the participants expected health and climate protection to become even more relevant.

Some of the stakeholders perceive the concept of multiple benefits as abstract. So far, there are more models for quantifying the added value at the level of society as a whole rather than at the microeconomic level for the respective target groups. Nevertheless, there are also quantification approaches for individual benefits at the building level: The contribution to climate protection can be determined by the amount of energy consumed when operating the building,
resource protection can be assessed by life cycle assessment of building materials and health protection via air quality sensors in the apartments. However, the challenge remains to break down macroeconomic models to the individual level. Another challenge is to harmonise and integrate the existing approaches within a common quantification model.

The discussion on quantification approaches for energetic building renovation mostly takes place against the background of fundamental tensions related to building retrofitting. The areas of tension discussed by the participants do not represent a general assessment of the societal debate but highlight individual perspectives. One conflict mentioned is the tension between a positive balance of energy-efficient building renovation for the society as a whole versus an uncertain economic assessment at individual level. Another tension arises due to the fact that building-owners who do not live in the property themselves only indirectly profit from additional benefits such as health through higher resident satisfaction. Therefore, they typically do not include them in their cost-benefit analyses on building renovation. Another tension arises from the split incentive dilemma: The tenants of renovated apartments benefit from the reduced energy costs and in addition by a higher level of comfort and better air quality. At the same time they usually have to bear the costs of an increased rent after the renovation measures. Finally, it was pointed out that the quality and user orientation of renovations are not always satisfying. If these two aspects are not adequately addressed, negative effects such as mold or reduced incidence of light may occur. Basically, if all stakeholders are involved in the planning process, renovation measures can and should be carried out in such a way that all parties involved benefit.

Against this background, the following recommendations for action and communication can be derived from the contributions of the participants:

- All stakeholders should become aware of the requirements of a climate-neutral building stock in 2050.
- There is a need for a new economic calculation that takes into account multiple benefits.
- Funding programmes should take multiple benefits into account in public procurement guidelines.
- Certifications for buildings and building materials that offer additional benefits could contribute to the approach of visualizing and quantifying multiple benefits.
- Participation culture: Planning and implementation of renovation measures should take place in consultation with the users. This allows conflicts of objectives to be identified at an early stage and mitigated, if possible.
- Real estate companies think and "calculate" differently from private owners and therefore require individually adapted communication strategies.
Well-trained consultants who can advise on funding, resource efficiency, circular economy and additional benefits are necessary. Many owners are overwhelmed by the "jungle" of information on retrofitting options and funding programmes.

Open questions within the project

- How can multiple benefits be broken down from the macroeconomic level to the individual level so that they can be taken into account in cost-benefit calculations? How do multiple benefits reach the stakeholders? How do multiple benefits feed into academic research?
- How can the information on the additional benefits of energy-efficient building renovation be tailored and communicated to specific target groups?

The Trialog-concept

Trialogs organize a process of understanding between stakeholders from the public sector, the business sector, organized civil society and academia, in order to find widely acceptable solutions to societal challenges oriented towards the common good. In our Trialog events participants profoundly discuss current societal questions on a certain topic and are asked to take into account the different perspectives of the stakeholder groups and substantiate their point of view. The topics and questions of our Trialogs are developed together with our clients and cooperating partners. Trialogs are led by an experienced host and take place under the Chatham House Rule. In that way Trialogs allow for the necessary confidentiality to integrate all perspectives of the participants in the discussion – regardless of diverging power positions. As a follow-up, the transcript of the discussion is analyzed by means of qualitative social research approaches with the aim to demonstrate corridors of consensus for broadly accepted solutions to societal challenges. Our Trialogs bring together scientific-analytic research with societal knowledge gained on experience and societal requirements to decision-making- and problem-solving-processes. In that way, a rich basis for understanding is established which allows a change of perspectives and a broader process for understanding. This discussion format fosters, in the long term, an increased and better understood use of research results, a better-informed society as-well-as sustainable political decisions.

A full-length report of the Trialog is available in German language in the library on our website.

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