

RESRB2017.0002

## Making our renewable energy sources research relevant for society

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### Abstract

Researchers, particular in the field of energy and climate, do not only want to follow their own research interest but also want to take a responsibility for climate change as one of the greatest societal challenges. Although everybody agrees how important technological innovations are for a transition towards a sustainable energy society, innovations only diffuse very slowly. While researchers in various settings came with numerous, promising innovations with a great potential to address climate change, it took for instance the OECD countries more than 40 years of developing sustainable energy technologies to reach a 10 % share of modern renewables. Literature provides us with many explanations why promising innovations are not used, like the mechanism of carbon-lock in. How could society, business and governments better benefit from renewable energy research? We will address this question from the perspective of the research community. We recognize that many problems and market barriers have to be solved by business and government actors on the market. But how can researchers that want their innovation to be used, better anticipate on these problems and barriers. A first aspect is to find out early what is needed in the market and what is prioritised by governments and what role research and innovations can play. A second aspect is how researcher can better show what they have to offer with their research given these needs. And a third aspects is the understanding of how innovations get to be used. These three aspects cannot easily be separated from each other. We will discuss how to find out what technologies might be needed and probable will be prioritised, by looking at examples of climate scenarios like the French Négawatt scenario. And what we can learn from the implementation of the Paris Agreement and EU Climate goals into national and regional agreements between a broad coalition of stakeholders in the Netherlands. And how this relates to the Dutch with national research programmes. Than we will illustrate how the potential of innovations can be showcased in real life experiments that form either protected market niches in the energy market or hybridisations with existing technologies. Particular we will address the importance of shared visions between researchers, government, business and other stakeholders in creating these niches, how researchers can contribute to the accumulation of niches in sustainable energy technologies and to the difference between linear innovation processes and niche accumulation.

### Keywords

renewable energy; policy; business