

## **Abstract**

In this paper, we explicitly incorporate the impact that realized investment in new infrastructure has on adoption speed in a real options framework for investment decisions and analyze the consequences of this dependence for optimal investment. For the adoption diffusion process, we use a modified Generalized Bass Model. As an illustration, we apply the combined model to the case of the introduction of hydrogen- cars in the Netherlands. We perform a scenario analysis for six different infrastructure investment strategies combined with four different parameterizations. The results show that ignoring the potential interaction between the speed with which the required infrastructure will become available and the adoption process may lead to sub-optimal decisions with respect to the optimal timing of investment spending as well as with respect to the assessment of the feasibility of the project in general.