Abstract

In this paper, we contribute to the literature by including a knock-out barrier option in a compound real option model to take account of immediate project failure, a so-called sudden death. We apply the model to the case of hydrogen infrastructure development. In our case study, we find that even for the least conservative valuation method no profitable business case can be made for the development of hydrogen as a sustainable transportation mode. However, we do provide some suggestive scenarios that plausible tax schedules can be designed to overcome the starting problems for hydrogen infrastructure development. To the extent that sudden project failure would be predominantly caused by potential reversals in political support, a cheap way to make the development of hydrogen infrastructure – and other similar projects - more attractive would be to design credible long-term political commitments to this type of development.