Abstract

In studies of large scale systems innovations or technological transitions niches have been given a prominent role as incubators for the seeds of future technological systems. It is often argued that immature technologies rely on niches for their development, before they are able to compete in mainstream markets. This paper combines insights from economic theory and from technology studies to formulate a framework for understanding the dynamics of technological change in niches, and applies this framework to the case of fuel cell auxiliary power units (APUs). We conclude that the choice of technology for APUs will be of critical importance in determining the role this market could have in shaping future developments in hydrogen and fuel cells. However, a number of factors are not strictly dependent on the technology used in fuel cells APUs. These comprise factors influencing external economies of scale, network effects, the behaviour of user and expectations.

Keywords: Niches, Technological Transitions, Auxiliary Power Units (APUs), Hydrogen Economy, Fuel Cells.