

Energy and Resources Group Fall 2007 Colloquium Series (ER295)

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Behavioral Response to Fuel Cell Vehicle Fleet and Hydrogen Fueling

110 Barrows Hall / 4:00 p.m.

Transportation is a major contributor of carbon dioxide (CO₂) and other greenhouse gas emissions from human activity. It accounts for approximately 14% of total anthropogenic emissions globally and about 27% in the United States. Growing concern regarding the impacts of climate change, greenhouse gas emissions, and energy supply have led to innovations in automotive and fuel technology. However, behavioral response to the newest transportation technologies, such as hydrogen fuel cell vehicles (FCVs) and fueling infrastructure, is not well understood. This presentation examines the results of an exploratory F-Cell hydrogen fuel vehicle fleet study, which focused upon fleet drivers' attitudes and perceptions over a seven-month period in 2006. The study employed a longitudinal survey design, with three phases and one focus group.

The results of this study provide insights into participants' response to the FCV and hydrogen infrastructure over time and can help to inform further inquiry. Higher levels of hydrogen exposure are correlated with increased comfort with hydrogen, especially among those who were less experienced. Early adopters generally felt safer driving the F-Cell than later adopters. Respondents mostly felt safe refueling the F-Cell. As experience with the F-Cell increased, participants felt increasingly safe with the F-Cell. Driving range was considered a limitation. Furthermore, over the course of the study, participant perception of vehicle range increased due to learning.