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**Mineta Transportation Institute Survey:
Which Alternative-Fuel Vehicles Do People Prefer?**

Gasoline Vehicles Still on Top; Hybrid Electrics Gaining Popularity.

San Jose, Calif., July 5, 2011 – The [Mineta Transportation Institute](#) (MTI) has released a research report that explores consumer preferences among four different alternative-fuel vehicles (AFV) – hybrid electric vehicles (HEV), compressed natural gas (CNG) vehicles, hydrogen fuel cell (HFC) vehicles, and electric vehicles (EV). *Understanding Household Preferences for Alternative-Fuel Vehicle Technologies* was authored by Hilary Nixon, PhD, and Jean-Daniel Saphores, PhD. The findings indicate that, in general, gasoline-fueled vehicles are still preferred over AFVs; however, there is a strong interest in AFVs. No AFV type is overwhelmingly preferred, although HEVs seem to have an edge. The full report can be downloaded at www.transweb.sjsu.edu/project/2809.html

Using a panel rank-ordered mixed logit model, the researchers assessed the trade-offs people make between key AFV characteristics. They found that, in order to leave a person's utility unchanged, a \$1,000 increase in AFV cost must be compensated by either a \$300 savings in driving cost over 12,000 miles; a 17.5 mile increase in vehicle range; or a 7.8-minute decrease in total refueling time (e.g., finding a gas station and refueling).

Dr. Nixon said, "Although one-third of respondents ranked gasoline-fueled vehicles as their first choice, 20 percent of respondents ranked gasoline vehicles last, and there is a strong interest in AFVs. Although no AFV type is overwhelmingly preferred, HEVs seem to have an edge, which probably reflects the fact that a number of popular HEVs have been available for several years."

Full EVs are the least popular of the AFVs the respondents were asked to consider. In fact, they were ranked last by 40 percent of the respondents. The researchers say it is apparent that the current limitations of these vehicles (e.g., range and recharging time) are still a deterrent to their widespread household adoption.

"The vehicle range trade-off primarily concerns EVs, and it highlights the importance of range for our respondents," said Dr. Saphores. "The respondents also place a very high value on refueling convenience, which emphasizes the importance of providing enough refueling infrastructure to make AFVs a viable transportation option for households."

The research results have certain policy implications. Although the environmental benefits of AFVs are often touted by the media, this characteristic does not seem to be a determining factor when buyers make large purchases, such as motor vehicles. Economic concerns are their priority. Therefore, policymakers and manufacturers who would like to increase the market share for AFVs must make environmental issues a greater educational priority. More than one-quarter of the survey respondents were misinformed about the environmental impacts of motor vehicles or about current vehicle gas-mileage regulations. In particular, educating the public about the advantages of AFVs and the public health impacts of pollution from current vehicles will be necessary to increase support for AFVs.

The nationwide three-part, Internet-based survey of 835 households was administered in February and March 2010 by Knowledge Networks. The final report is available for free download from the Mineta Transportation Institute at www.transweb.sjsu.edu/project/2809.html

ABOUT THE AUTHORS

Dr. Hilary Nixon is an Associate Professor of Urban and Regional Planning at San José State University. Her research and teaching interests in environmental planning and policy focus on the relationship between environmental attitudes and behavior, particularly with respect to waste management and linkages between transportation and the environment. She has a BA from the University of Rochester in Environmental Management and a PhD in Planning, Policy, and Design from the University of California, Irvine.

Dr. Jean-Daniel Saphores is an Associate Professor of Civil and Environmental Engineering, Planning, and Economics at the University of California, Irvine. His research interests include understanding preferences for “green” products using discrete choice models, decision making under uncertainty using real options, and other environmental topics. He earned a BS in Civil Engineering and Applied Mathematics from Ecole Nationale des Ponts et Chaussées, Paris, an MS in Civil Engineering from the University of Colorado at Boulder, and an MS in Environmental Systems, an MA in Economics, and a PhD in Environmental Economics from Cornell University.

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The Mineta Transportation Institute (MTI) was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized under TEA-21 and again under SAFETEA-LU. The institute is funded by Congress through the US Department of Transportation’s (DOT) Research and Innovative Technology Administration, by the California Legislature through the Department of Transportation (Caltrans), and by other public and private grants and donations, including grants from the US Department of Homeland Security. DOT selected MTI as a National Center of Excellence following competitions in 2002 and 2006. The internationally respected members of the MTI Board of Trustees represent all major surface transportation modes. MTI’s focus on policy and management resulted from the Board’s assessment of the transportation industry’s unmet needs. That led directly to choosing the San José State University College of Business as the Institute’s home. MTI conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues. Visit www.transweb.sjsu.edu

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