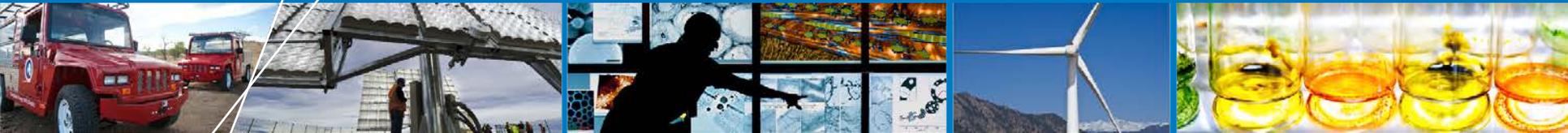


# Consumer Vehicle Technology Data



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**Project ID # VAN003**

This presentation does not contain any proprietary, confidential, or otherwise restricted information.

# Overview

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## Timeline

Effort has been on-going for more than 10 years

## Budget

VTP funding:

FY13: \$25,000

## Barriers

**VTP MYPP *Outreach, Deployment, and Analysis* barriers addressed:**

- Consumer reluctance to purchase new technologies
- Consumer sentiments inform VTP research, modeling, and priorities

## Partners

NREL, ANL, ORNL, Opinion Research Corporation (ORC)

# Objectives and Relevance

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**Objective:** Gather, analyze, and observe, consumer preference information using third-party reports and polling tools to understand key aspects of consumer decision making on advanced vehicle technologies to inform VTP activities and ultimately penetrate the market with VTP technologies.

**Relevance:** An informed understanding of the consumer allows VTP to achieve petroleum-use reduction goals through:

- Robust assumptions for consumer modeling, analysis, and research efforts
- Improved prioritization of tight program budgets to reflect opportunities that exist in the marketplace.

# Approach

- Develop VTP expertise in historical survey trends and the relationship of survey responses with observed consumer behaviors
- Maintain past survey results and make data available as appropriate
  - Survey results from December 2005 through January 2013 yet to be published
- Respond to VTP researcher requests to administer survey efforts
  - Opinion Research Corporation (ORC) conducts surveys of the general public



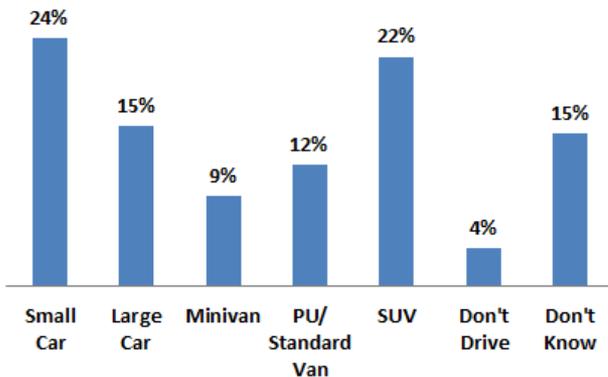
Summary Reports



# Accomplishments – Survey Results

## Consumer Settings: Define market potential

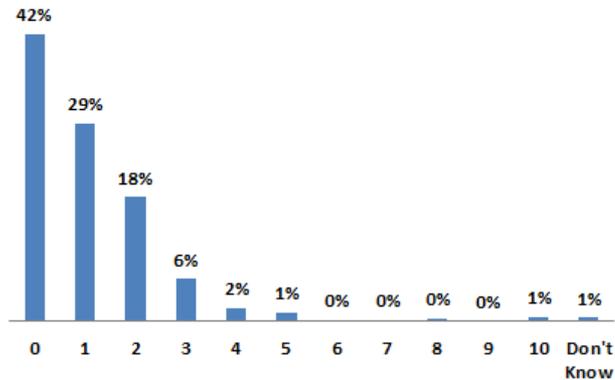
June 2006: For your next NEW household vehicle, which ONE of the following are you planning to purchase?



### Types of vehicles purchased

- Only 24% planned to purchase a small car
- How big of an impact can advanced small cars have?

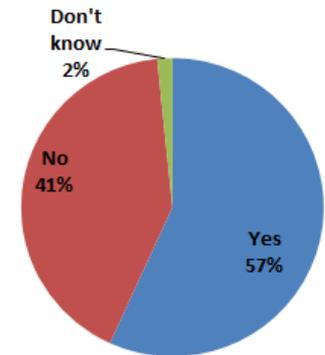
April 2007: How many BRAND NEW vehicles, including cars, pickups, vans and SUVs, has your household purchased since January 1, 2000?



### Frequency of purchases

- 42% had not purchased a new car during the last seven years
- Are consumers keeping cars longer?

April 2006: Based on where you can park this vehicle, could you consistently park it near an existing electrical outlet so that on MOST days it could be plugged in?



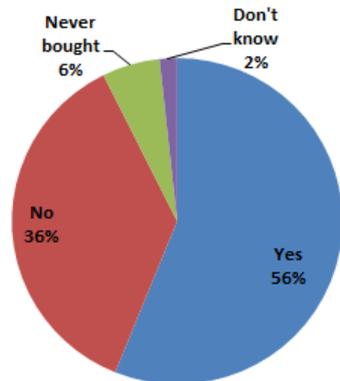
### Viability of an advanced technology

- 57% park near an outlet

# Accomplishments - Survey Results

## Market Perceptions: How do consumer views relate to observed behavior?

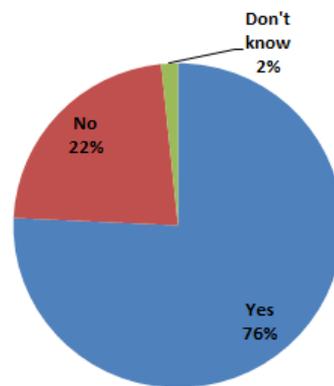
April 2007: Considering the last vehicle you bought, did you consider fuel economy when comparing different vehicles?



### Is fuel economy considered?

- A majority consider fuel economy

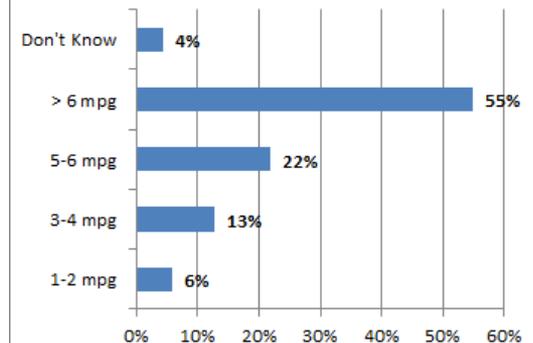
April 2007: Are you satisfied with the fuel economy of the last vehicle you bought?



### But is current fuel economy a problem?

- A larger majority are satisfied with current fuel economy

June 2011: When comparing two vehicles you might buy, how BIG DOES THE DIFFERENCE in their fuel economies have to be to make it an important factor in your decision?



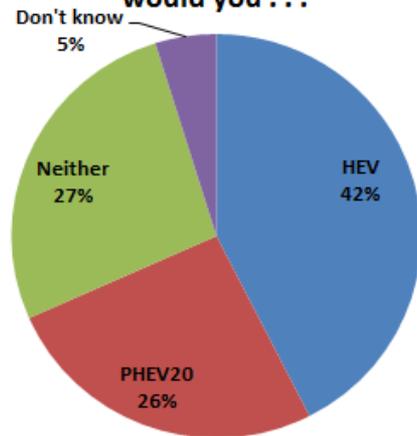
### Consumer expectations are high

- Consumers require a large difference in fuel economy to affect their behavior
- Most would require a fuel economy improvement that could be achieved only by a vehicle segment change

# Accomplishments - Survey Results

## Consumer sentiments towards specific technologies

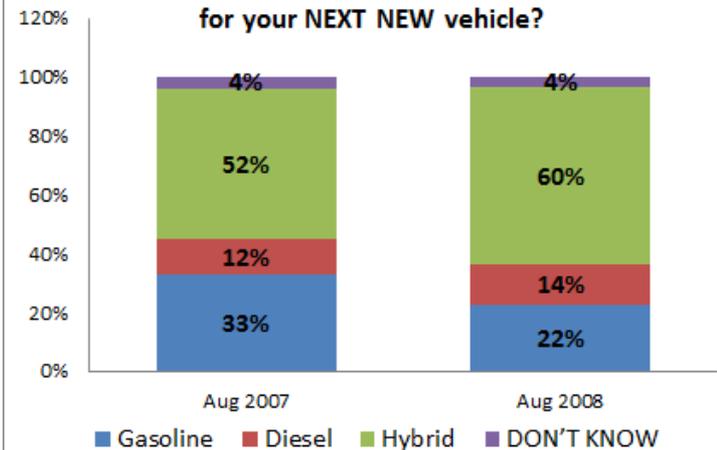
June 2006: Assuming that gasoline prices remain in the range of \$2.50 to \$3.00 per gallon, for your next new vehicle purchase, would you . . .



**Given 2006 fuel prices, would you consider a HEV/PHEV?**

- 68% would consider a HEV/HEV
- 27% would *not* consider these vehicles

August 2007/2008: Both a HYBRID vehicle and a clean DIESEL vehicle cost \$3,000 more than a GASOLINE vehicle and reduce your annual fuel use by 30%. What vehicle would you choose for your NEXT NEW vehicle?

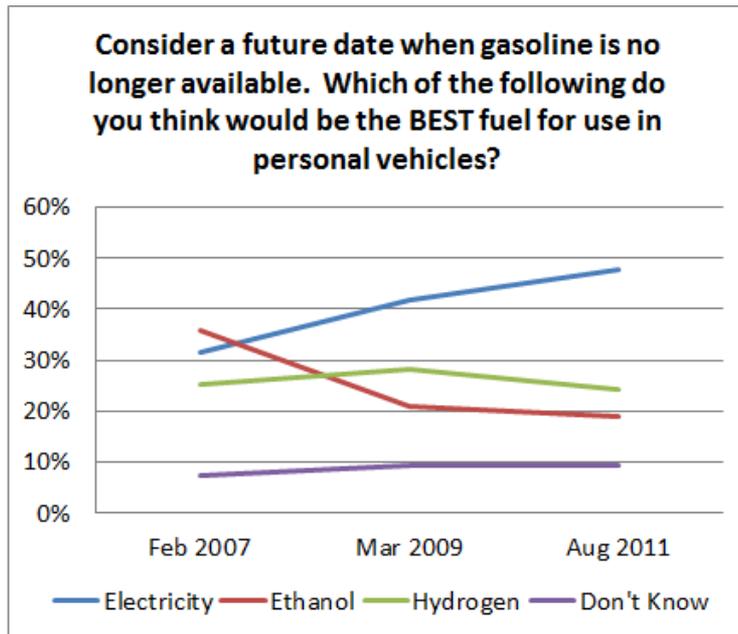


**How would you choose from available technologies?**

- Significant majority would prefer a hybrid vehicle to a diesel vehicle
- Time period covers the beginning of the economic downturn

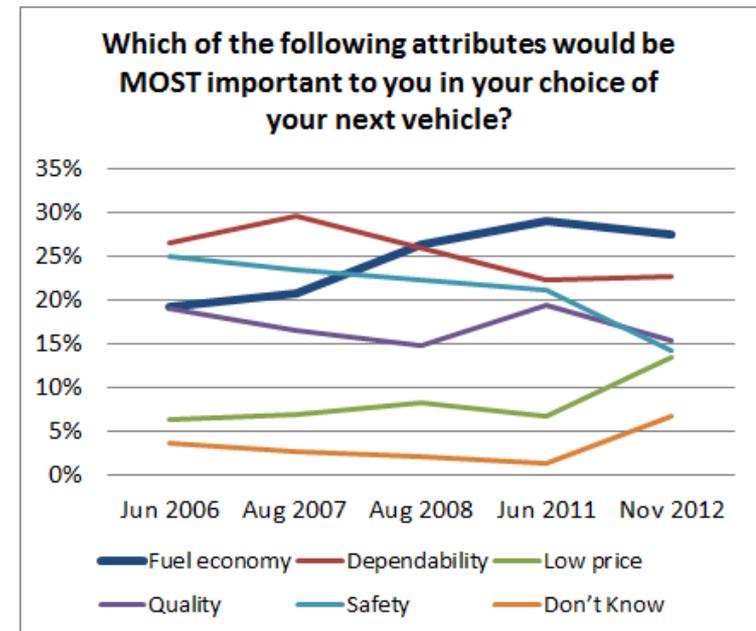
# Accomplishments - Survey Results

## How do consumer views change over time?



### Which technologies have public support?

- Interest in electricity is increasing
- Interest in ethanol is declining

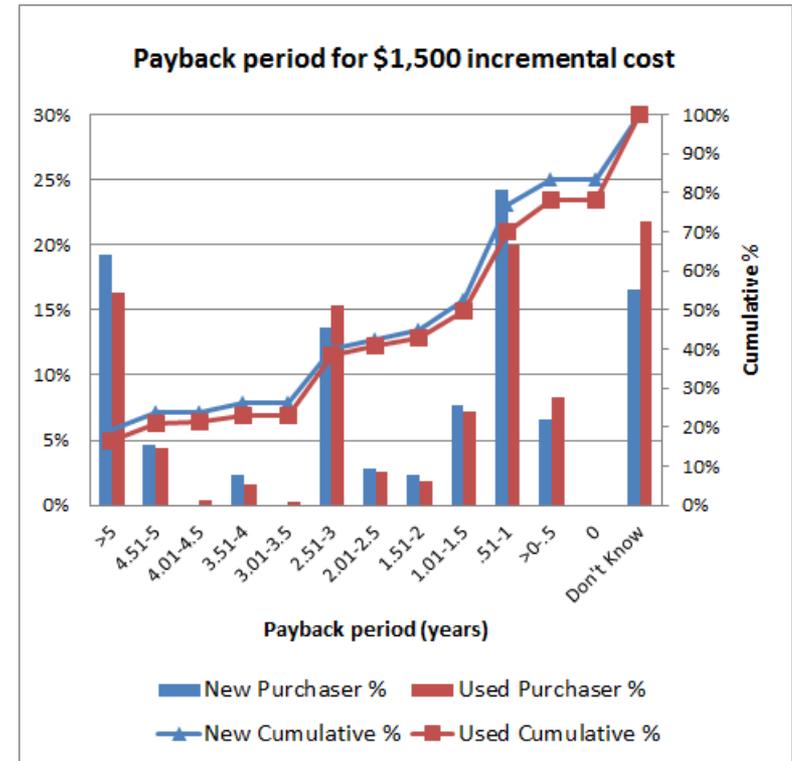
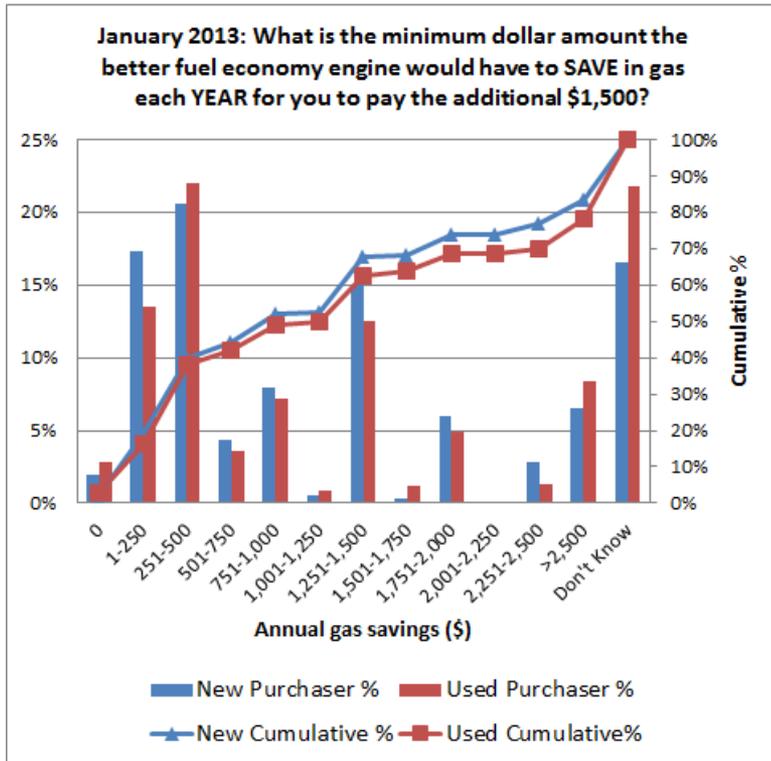


### Which vehicle attributes are most important?

- Fuel economy is highly rated, but...
- At what point in the purchase process do consumers consider fuel economy, relative to other attributes?

# Accomplishments - Survey Results

## Are consumers willing to pay for improved fuel economy?



- About 50% of consumers would be willing to pay \$1,500 upfront to achieve an annual savings of \$1,000 to \$1,200 or less.
- Roughly 50% of consumers are willing to pay upfront costs if the payback period is about 1 – 1.5 years or longer.

# Collaborations and Coordination with Other Institutions

- **VTP research efforts conducted by ORNL, ANL, and NREL scientists**
  - ORNL studies that have benefited from the consumer views data effort include those investigating consumer behavior trends and the price elasticity associated with acquiring and operating advanced vehicle technologies
- **Coordination with DOE vehicle deployment efforts**
  - Clean Cities, State and Fuel Providers, and FEMP
- **Opinion Research Corporation (ORC)**
  - Third party survey provider with expertise in survey data collection and survey development

# Proposed Future Work

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**Continued administration of new survey efforts and the maintenance of data from prior efforts**

**Develop a coordinated consumer views effort, drawing from the expertise of historical efforts, to enhance future studies**

- Compile unreported survey results in a technical report to be readily available to the broader community
- Investigate opportunities to partner with institutions with broad market knowledge and expertise
  - Auto OEMs, Pike Research, etc.

# Consumer Views Summary

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Investigation of consumer sentiments allows the VT Program to inform and contextualize efforts to deploy advanced vehicle technologies and support efficient transportation behaviors in an evolving marketplace.

The existing survey capability is flexible and can react to quick turnaround requests to address questions that arise from changes in marketplace dynamics and/or research focus areas.