

Gaining traction:
Will consumers ride the
electric vehicle wave?

Electric vehicle consumer
survey results for China, U.S.,
Europe and Japan

April 2011

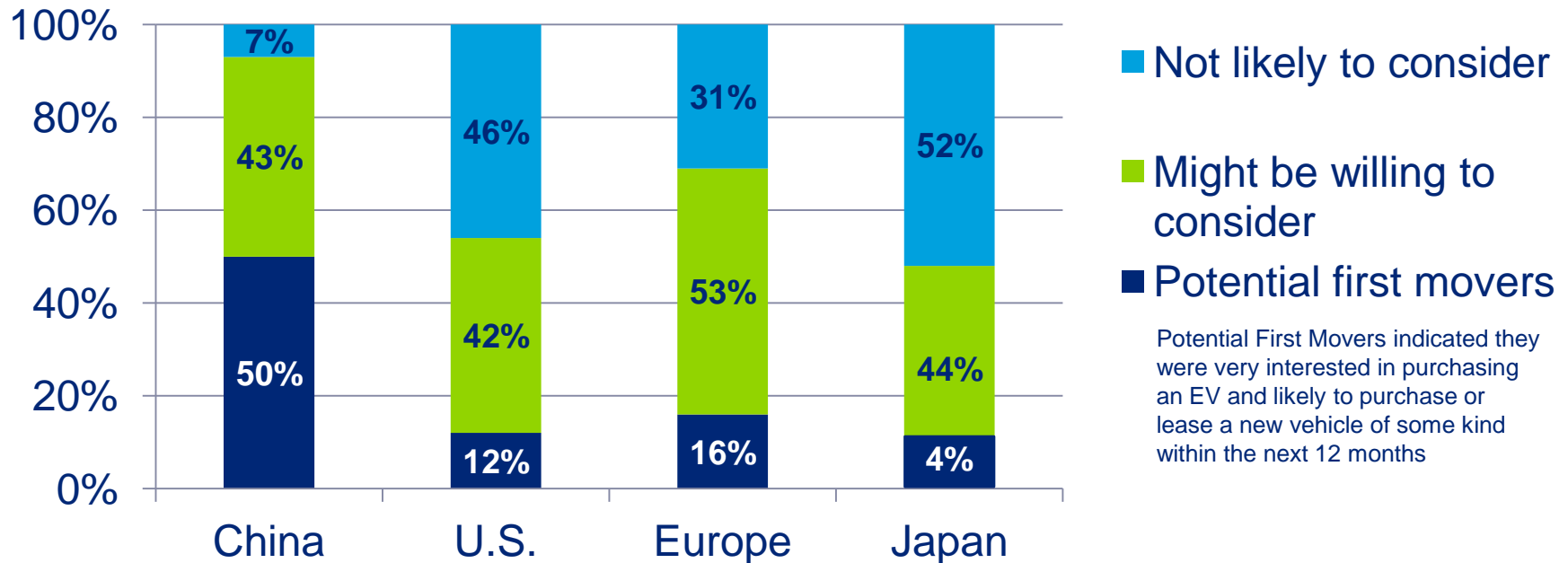


The survey was completed online by 12,559 adults in 16 countries around the world from November 2010 through March 2011

For the purpose of this presentation, we are focusing on the following regions:

- China: 1163 participants from 22 major urban areas
- United States: 1007 participants
- Europe: 4760 participants across seven countries – Belgium, France, Germany, Italy, Spain, Turkey, and the UK
- Japan: 2075 participants

Consumer Segmentation Profiles for Electric Vehicles



Chinese ‘potential first movers’ identify themselves as more highly educated and very knowledgeable of EVs

Potential first movers profile						
Country	EV Perception	Education	EV Knowledge	Location	Income	Gender
China	“Green and Clean”	86% BA or higher	63% Very Knowledgeable	Urban	36% >400,000 RMB	48% Male
U.S.	“Green and Clean”	38% BA or higher	37% Very Knowledgeable	Urban/ Suburban	57% <\$50,000	60% Male
Europe	“Green and Clean”	46% BA or higher	23% Very Knowledgeable	Urban	42% <€20,000	57% Male
Japan	“Green and Clean”	54% BA or higher	36% Very Knowledgeable	Urban/ Suburban	51% > 5.8M ¥	54% Male

Common characteristics across all four regions:

- Consider themselves to be environmentally conscious, tech savvy, trendsetters, and politically active.
- They viewed the EVs much higher in positive dimensions such as being cool, convenient, safe, stylish, and a good value.
- This group sees themselves as trendsetters but are also sensitive to governmental incentives and gas mileage / cost to charge considerations.

The ‘might be willing to consider’ groups tend to be less educated*, less knowledgeable of EVs, and have lower incomes* than the ‘potential first movers’

Might be willing to consider profile						
Country	EV Perception	Education	EV Knowledge	Location	Income	Gender
China	“Green and Clean”	74% BA or higher	24% Very Knowledgeable	Urban/ Suburban	22% >400,000 RMB	54% Male
U.S.	“Green and Clean”	37% BA or higher	9% Very Knowledgeable	Suburban	56% <\$50,000	51% Male
Europe	“Green and Clean”	37% BA or higher	8% Very Knowledgeable	Urban	33% <€20,000	49% Male
Japan	“Green and Clean”	58% BA or higher	22% Very Knowledgeable	Urban/ Suburban	56% > 5.8M ¥	67% Male

*Note: Japanese ‘Might be willing to consider’ respondents were higher educated and had higher incomes than the Japanese ‘Potential first movers’

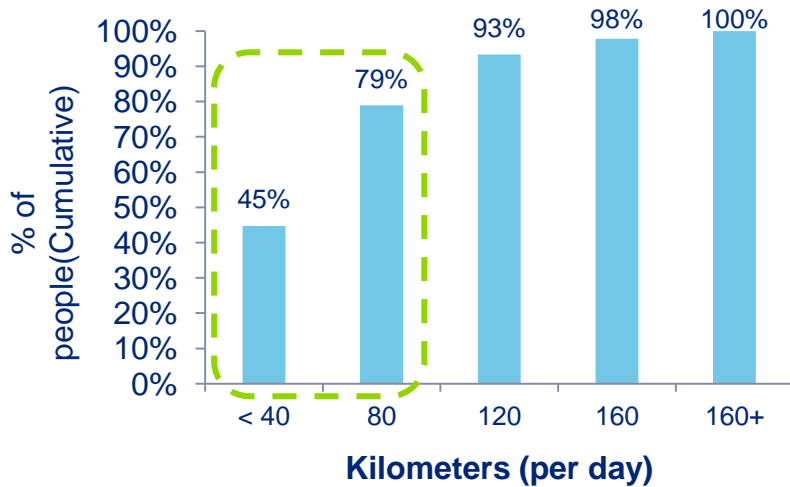
Common characteristics across all four regions:

- Might be willing to consider are also concerned about the environment, somewhat knowledgeable of EVs, and tend to be less urban.
- Though this group views EVs as ‘Green and Clean’ they also feel EVs are expensive to buy.

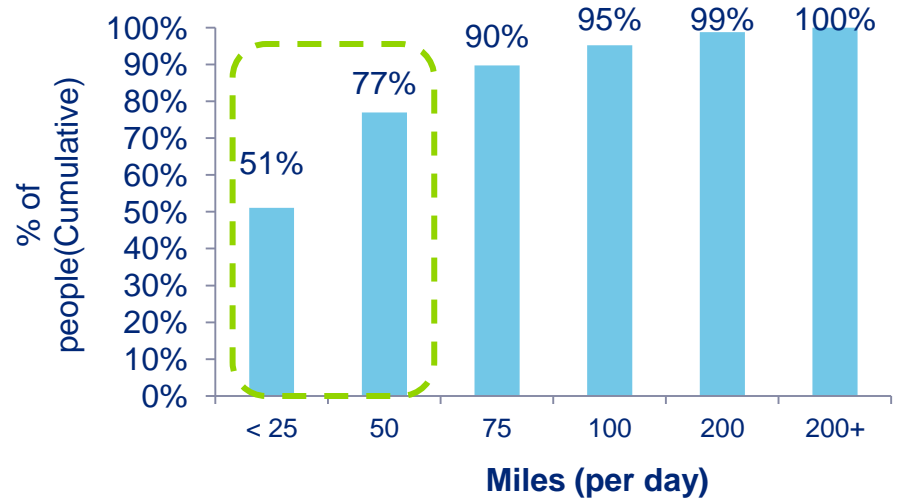
Typical daily driving distance of respondents

Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey, 2011.

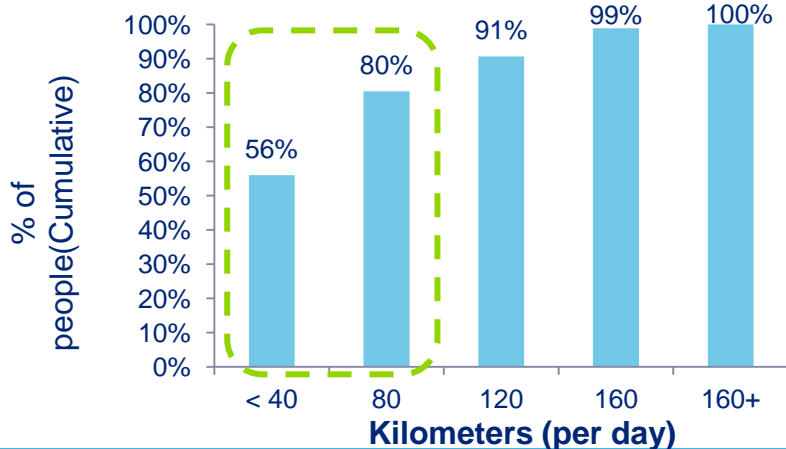
China



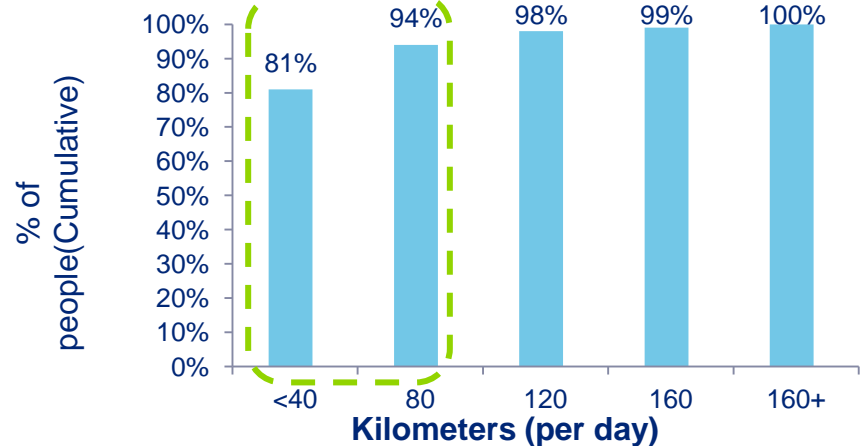
United States



Europe



Japan

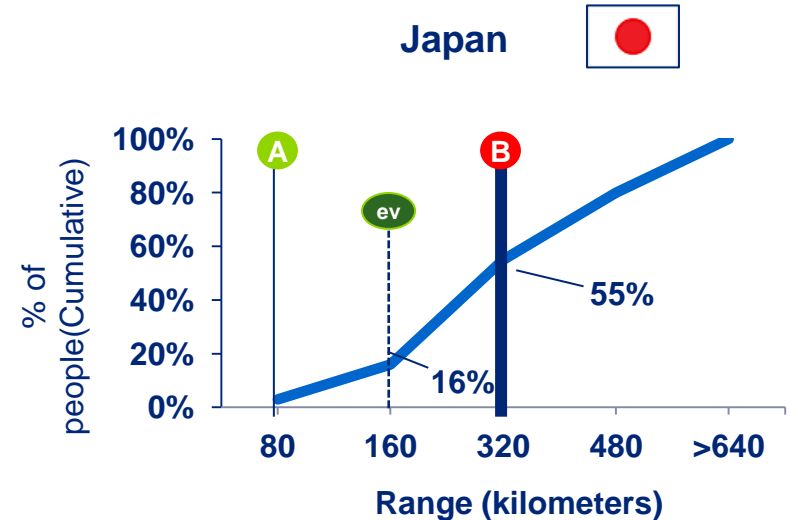
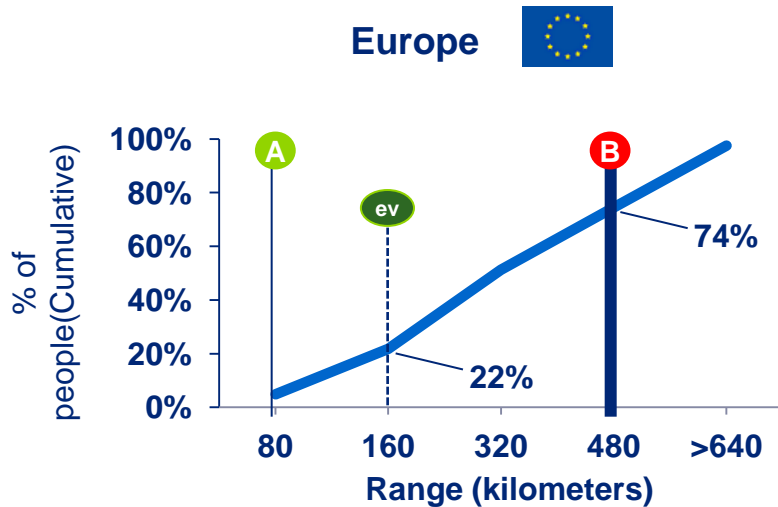
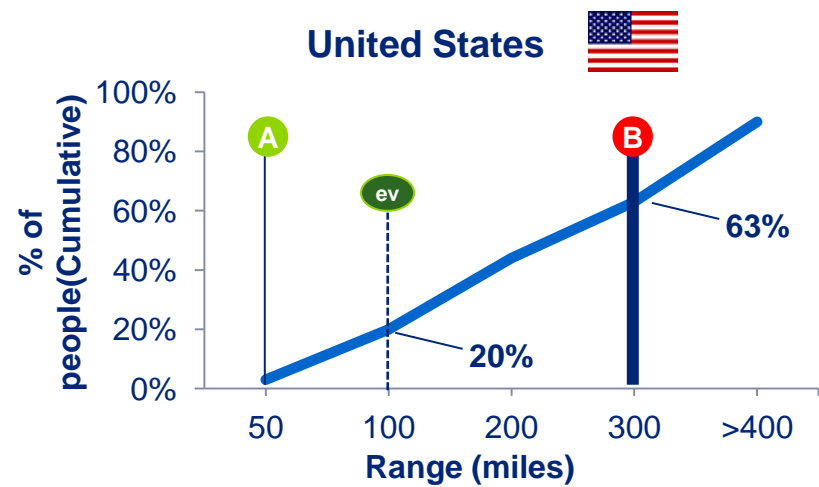
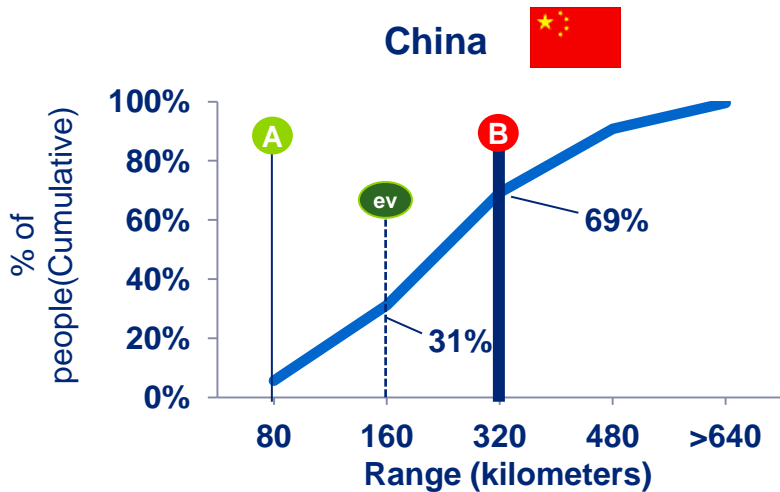


Actual driving range is less than 80 kilometers a day for roughly 80% of individuals across the regions...

Respondents' expectations for EV range before re-charging

A Typical driving distance (for ~80% of respondents)

B Consumer expectations on range

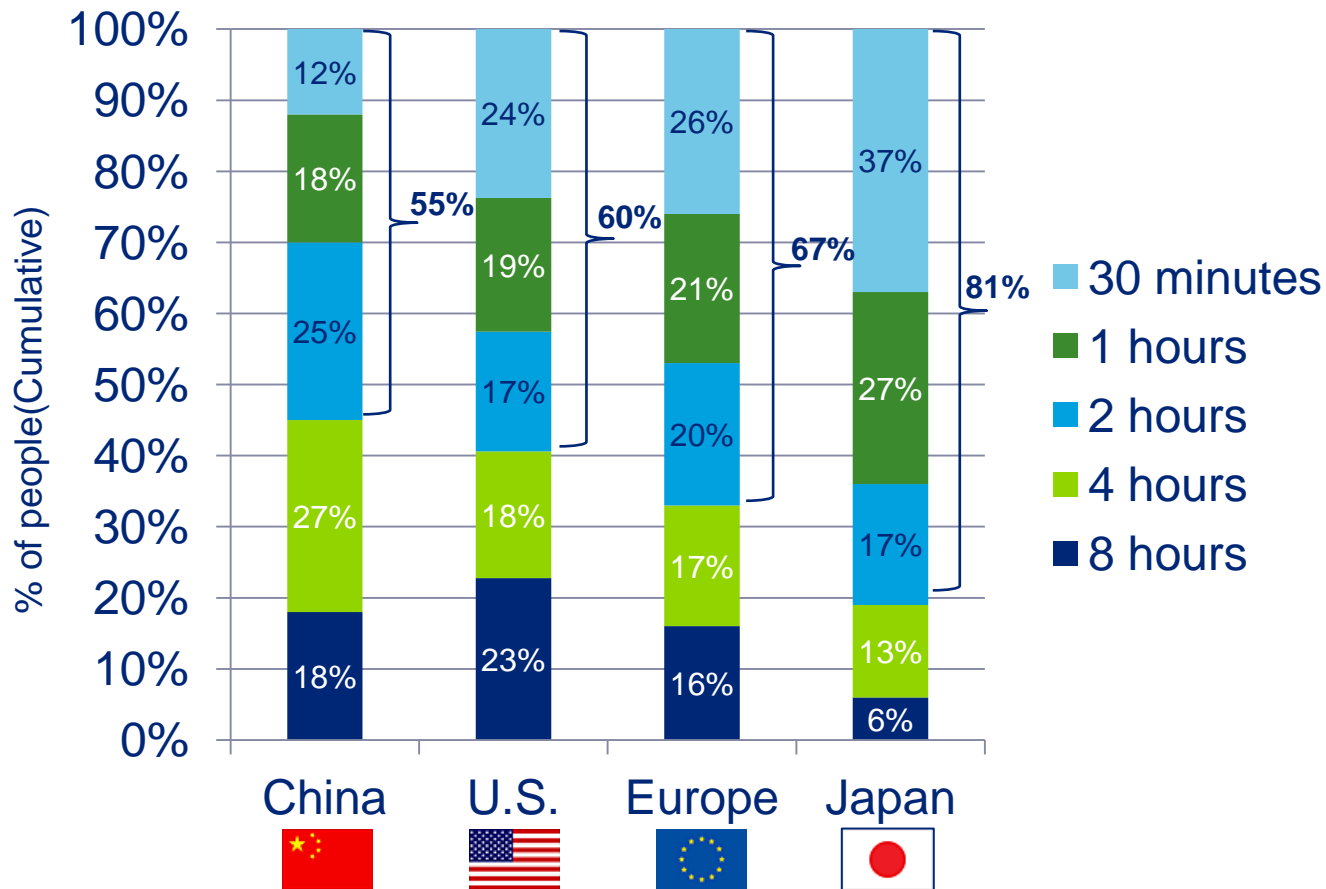


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey, 2011.

Consumer range expectations are 2-3 times current market offerings

Charge time for EVs of 2 hours or less is expected by the majority of individuals

Longest Acceptable Time to Fully Recharge EV Battery

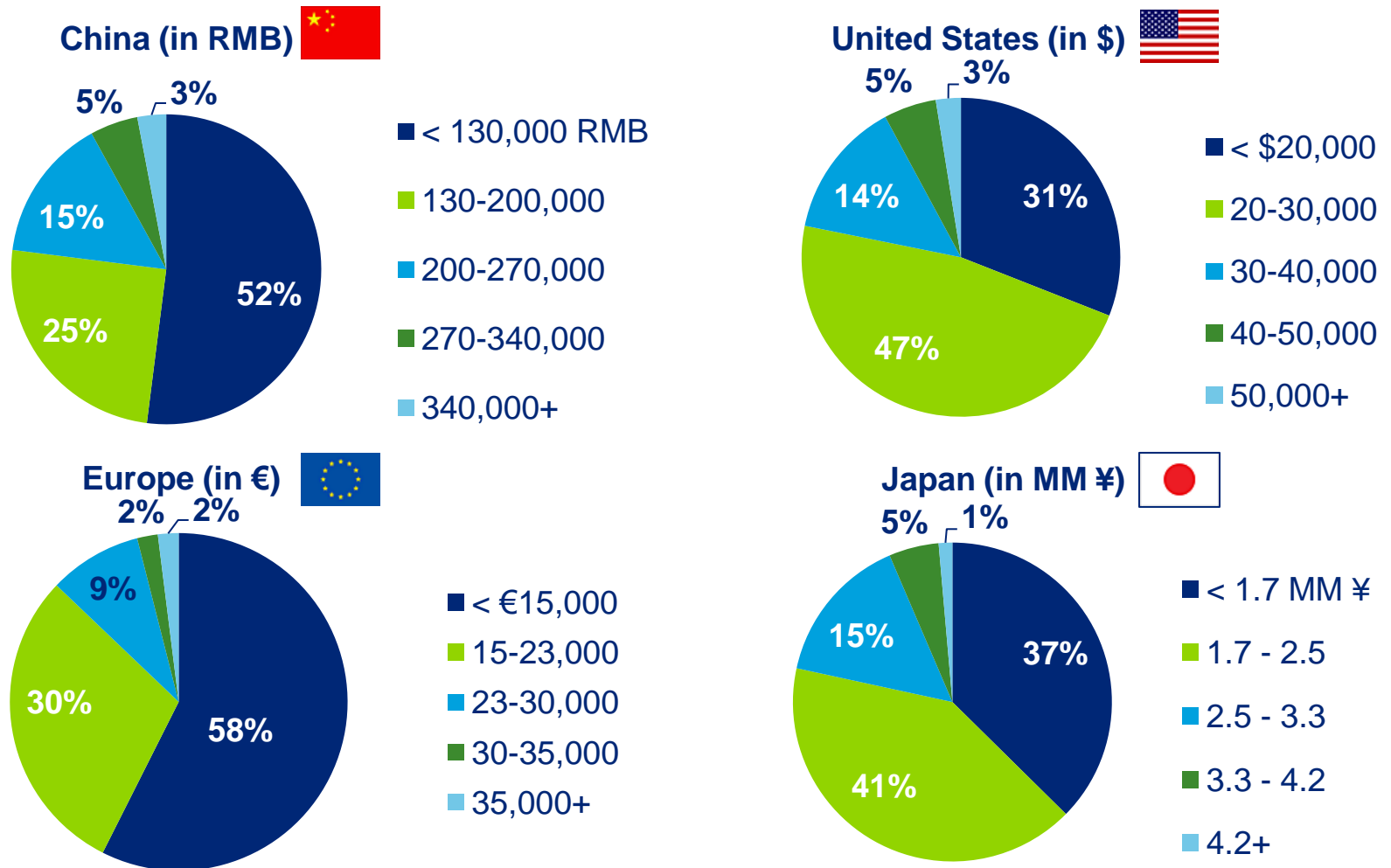


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey, 2011.

Given the current recharge typically takes eight hours, charge time expectations may also be an issue.

Consumers have a low expectation for purchase price across the regions.

Expected Purchase Price of an EV After Government Incentives

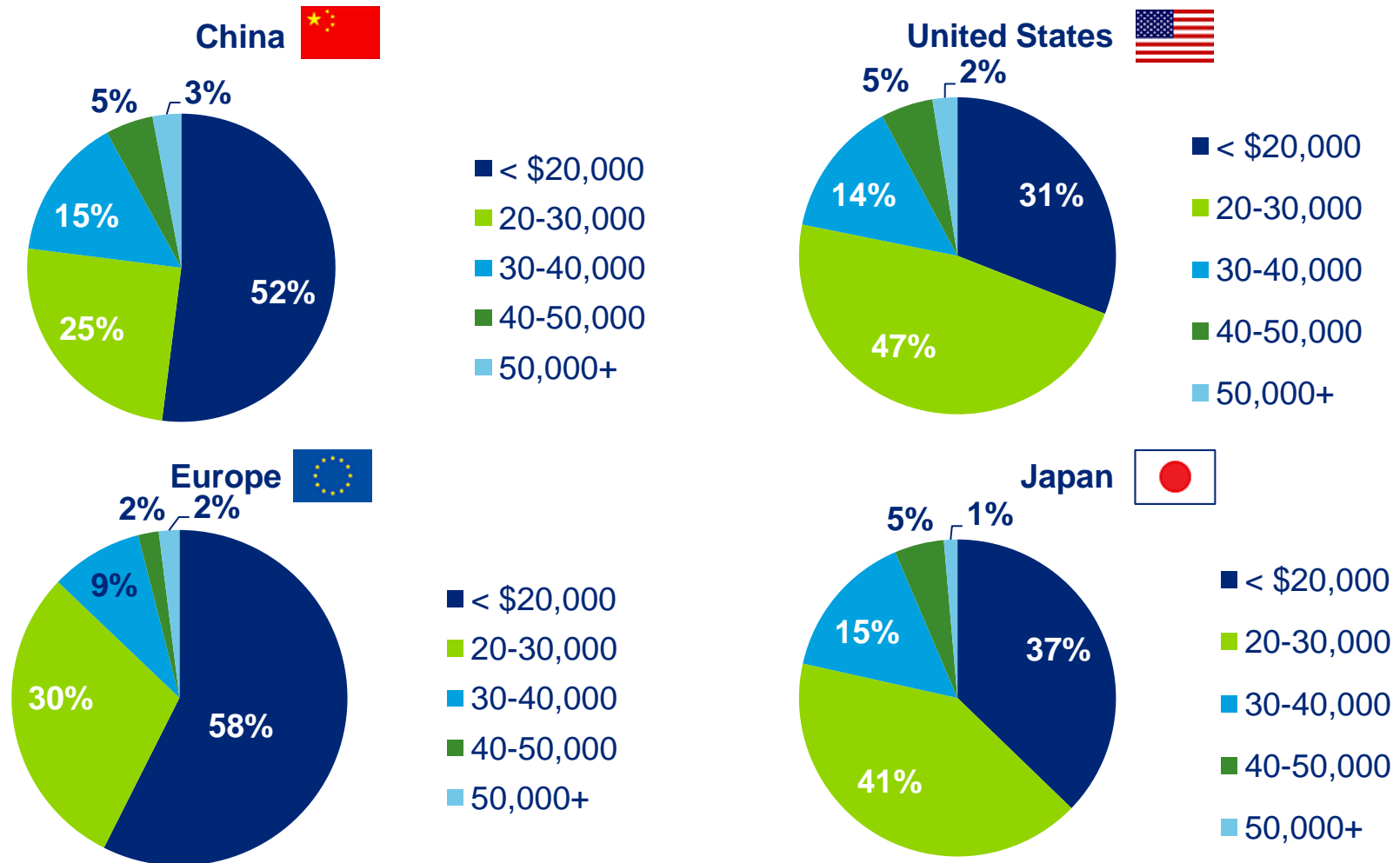


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011.

Purchase price expectations represent a challenge for OEMs and Government Leaders

Consumers have a low expectation for purchase price across the regions.

Expected Purchase Price of an EV After Government Incentives (in U.S. \$*)

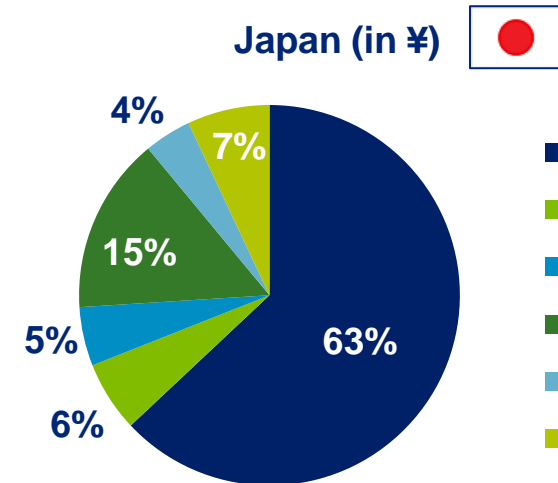
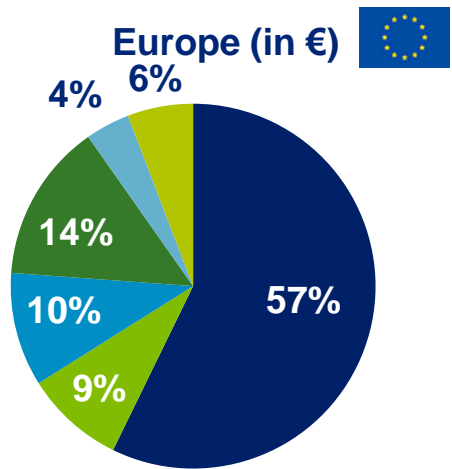
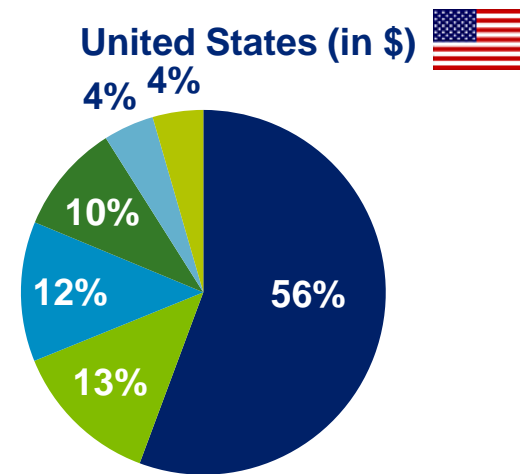
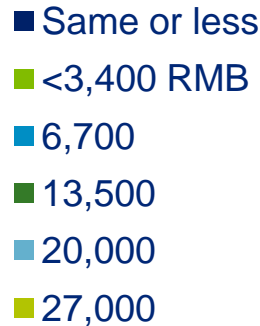
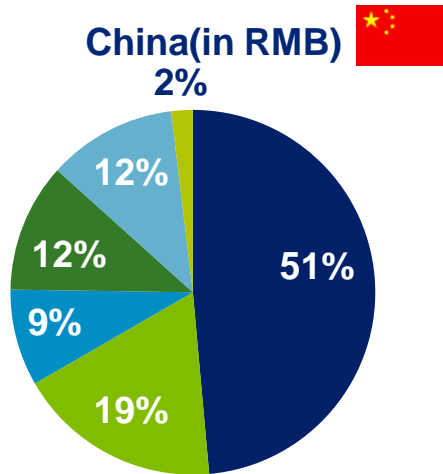


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011. *Conversion to U.S. Dollars is an approximation for categorization purposes.

Purchase price expectations represent a challenge for OEMs and Government Leaders

Consumers are NOT willing to pay much, if any, of a price premium.

Acceptable Price Premium

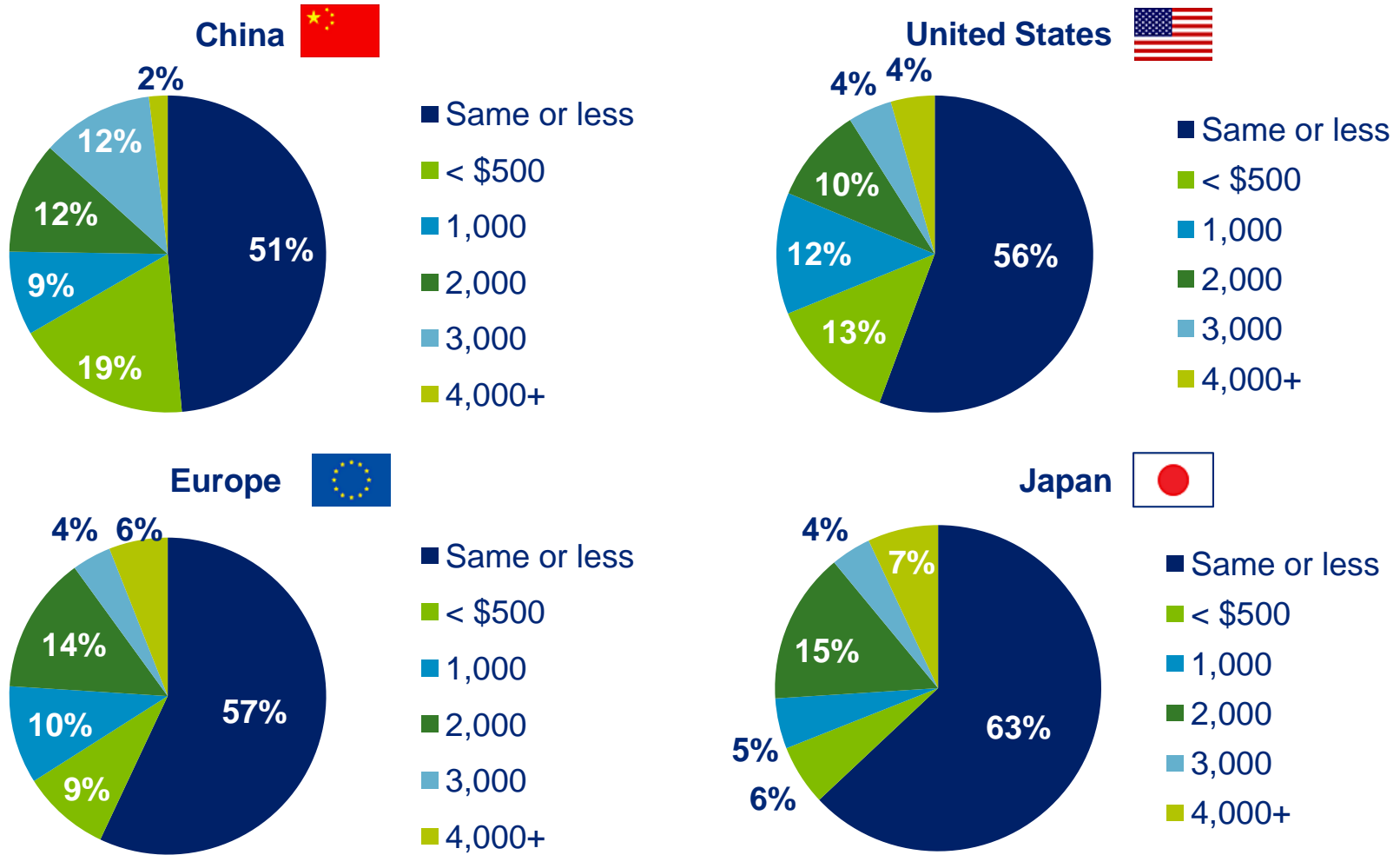


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Acceptable Price Premium (in U.S. \$*)

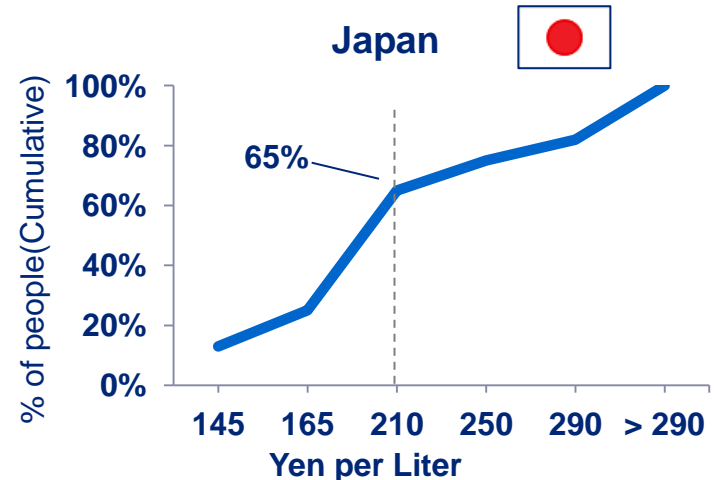
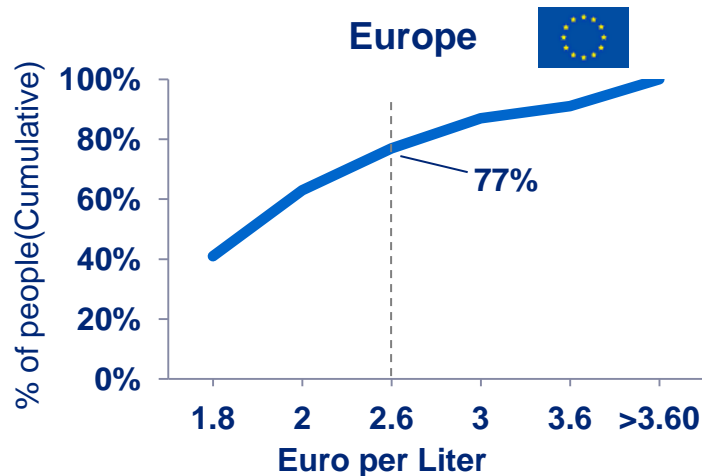
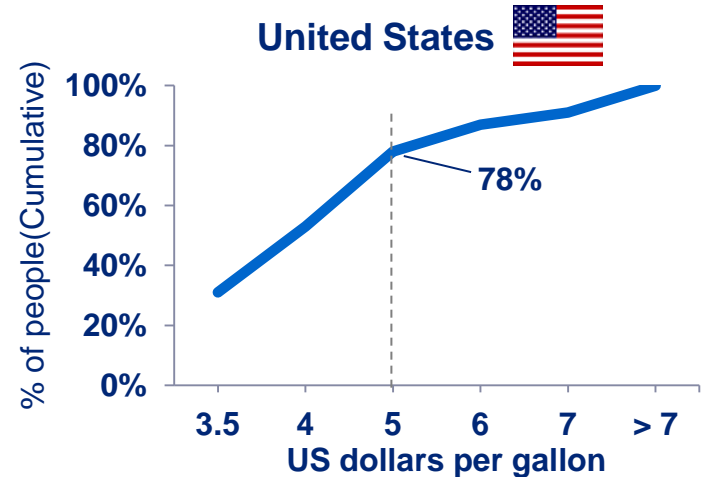
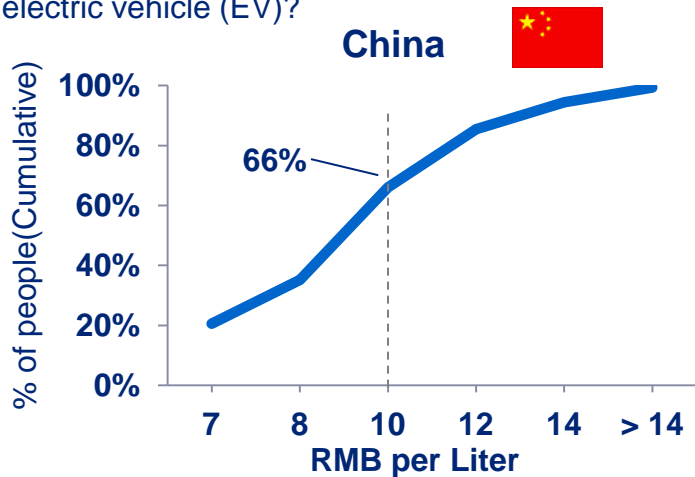


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Purchase price expectations represent a challenge for OEMs and Government Leaders

The higher the price of fuel...the MORE interested consumers are in EVs

Question: At what price for a liter of gasoline or diesel would you be much MORE likely to consider buying or leasing an electric vehicle (EV)?

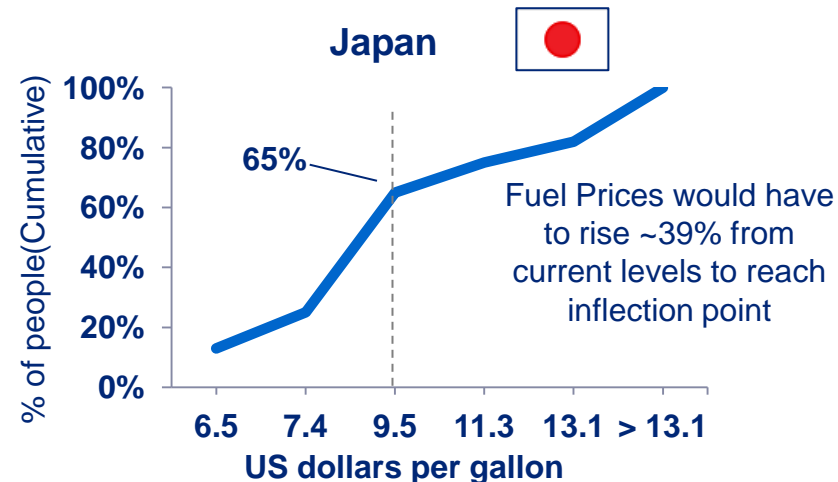
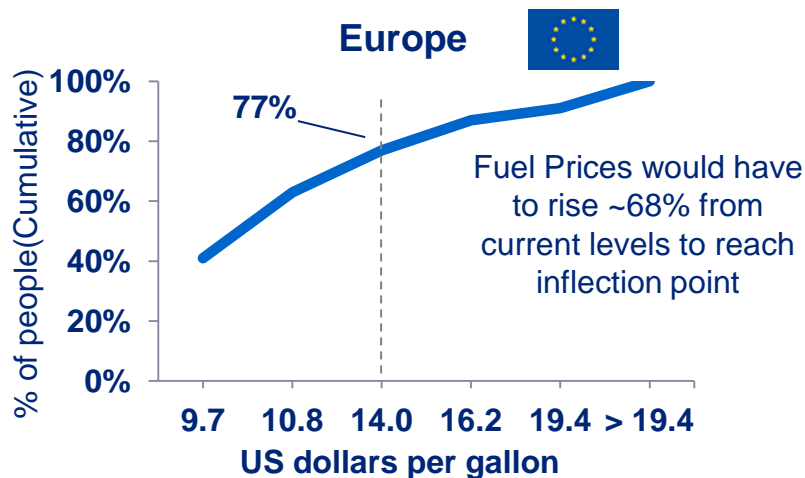
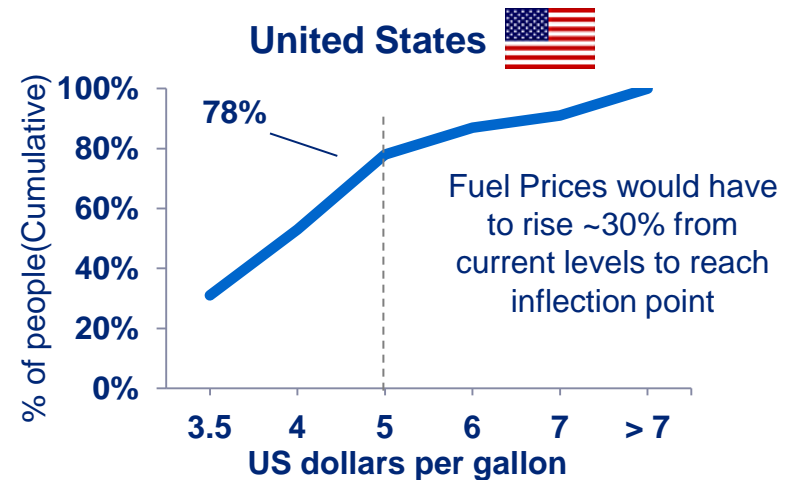
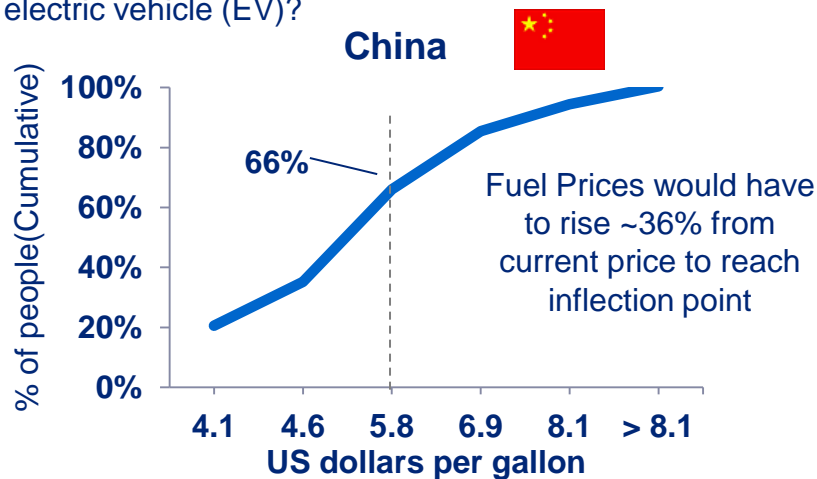


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011.

Rising fuel prices would enhance the attractiveness of EV adoption

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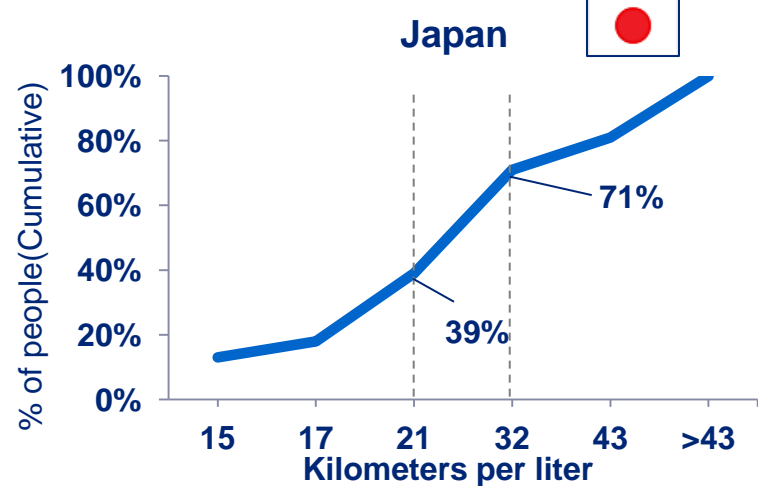
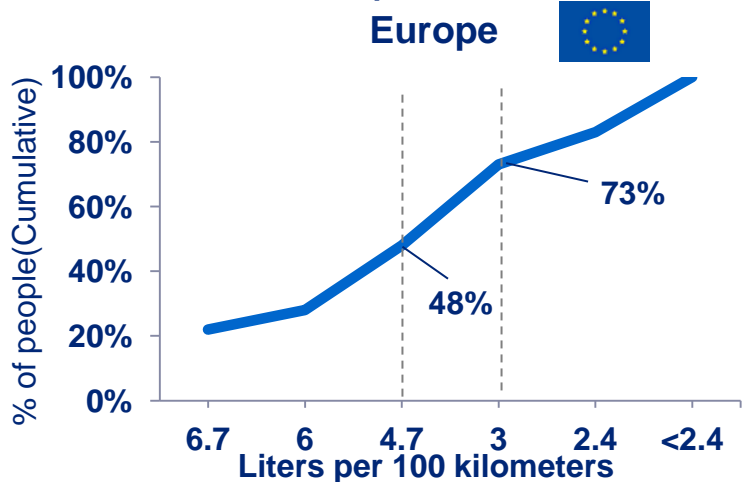
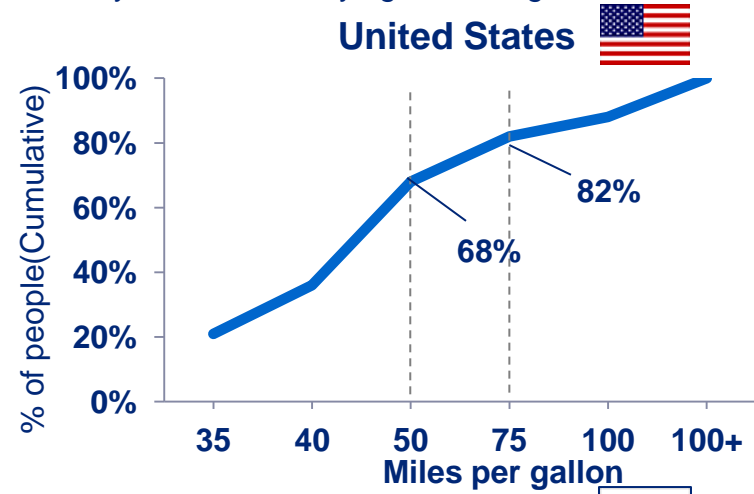
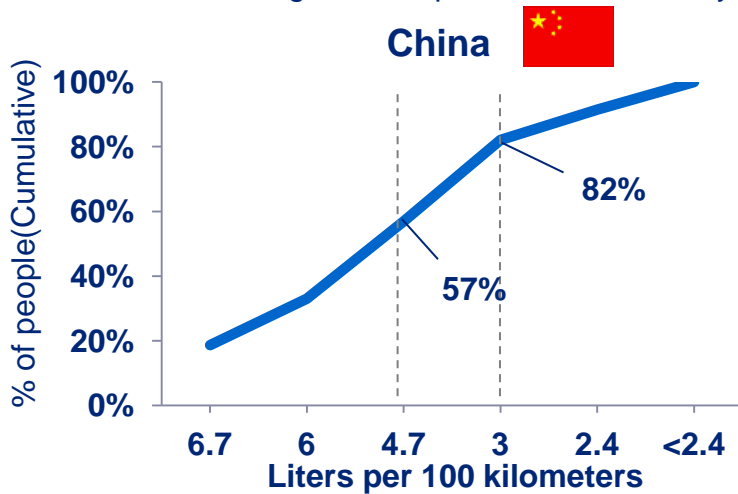


Source: DTTI Global Manufacturing Industry group, Global electric vehicle survey, 2011.

Rising fuel prices would enhance the attractiveness of EV adoption

But...the better the fuel mileage of gasoline powered ICEs, the LESS interested consumers become in EVs

Question: If vehicles with gasoline or diesel engines of the size, performance, and other features you prefer were able to achieve the following, at what point would it make you much LESS likely to consider buying or leasing an EV?

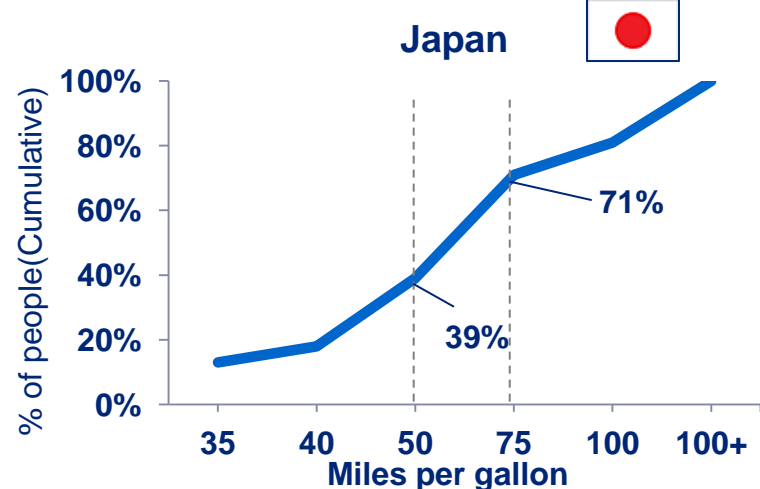
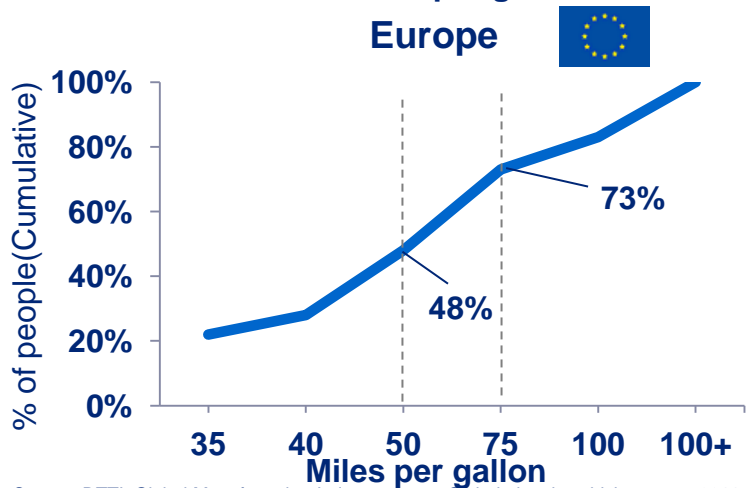
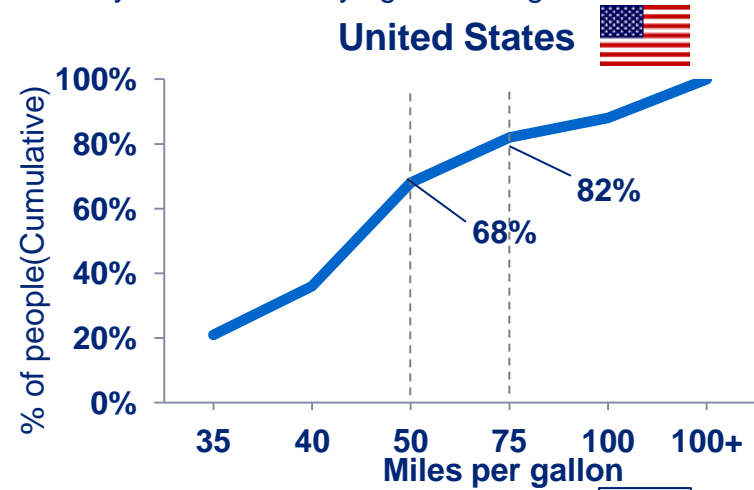
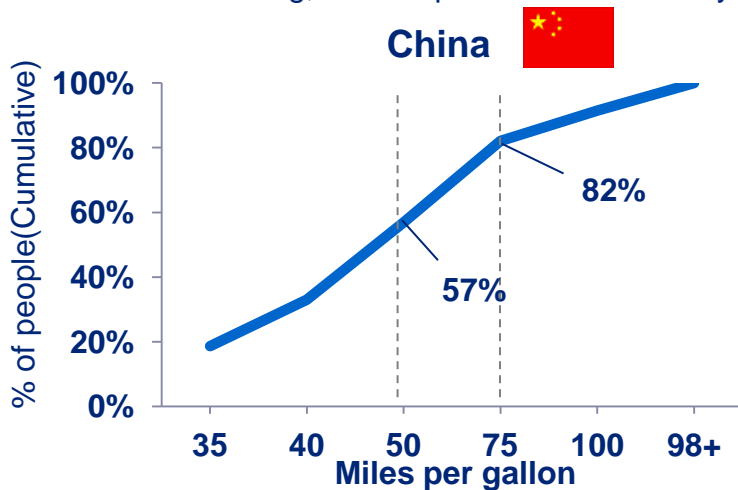


Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011.

ICE Fuel efficiency advancements will also have a significant influence on EV adoption

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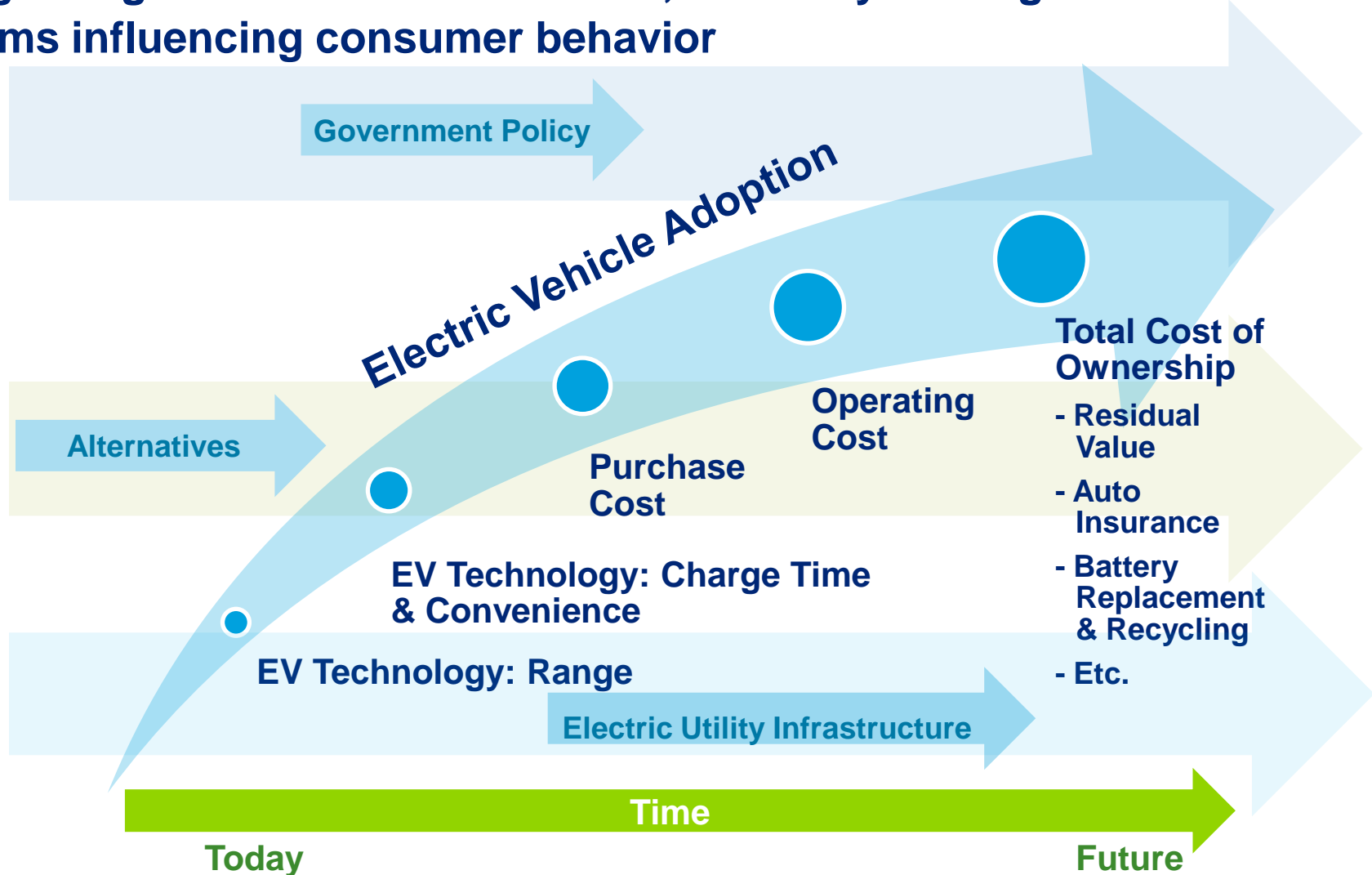
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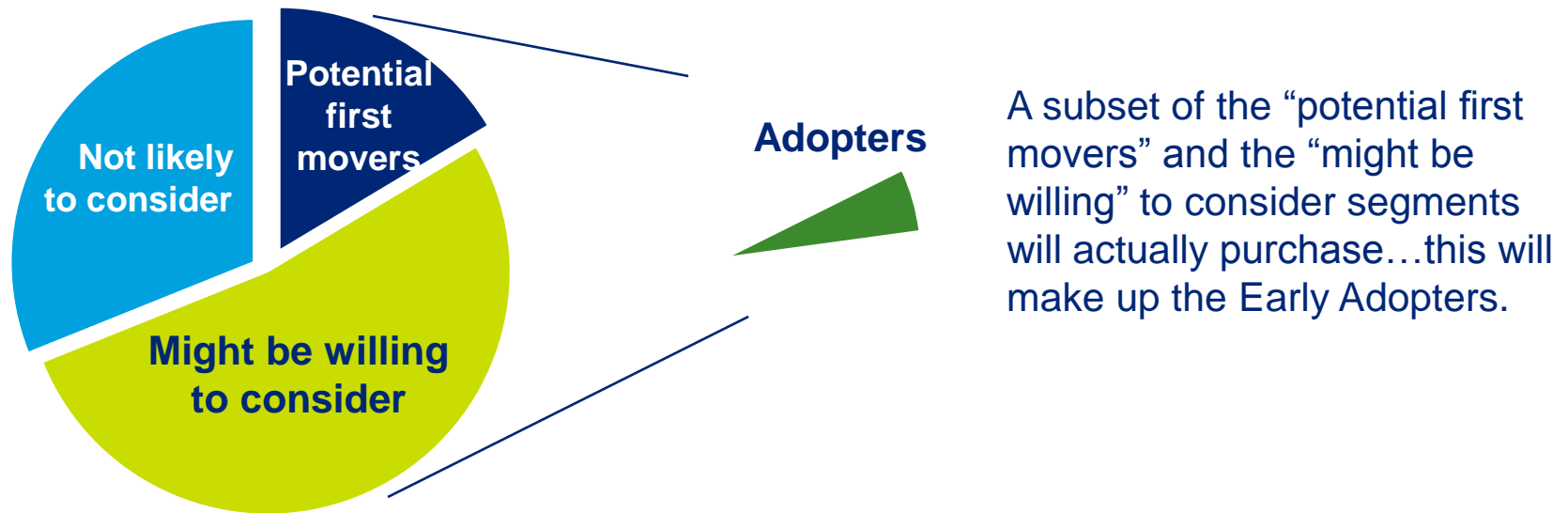
ICE Fuel efficiency advancements will also have a significant influence on EV adoption

The adoption of EVs over the next decade will be shaped by a number of factors....some dealing with EV technology advancements, others regarding environmental concerns, but many dealing with other critical items influencing consumer behavior



Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011.

Consumers are interested in EVs? But will they buy?



Source: DTTL Global Manufacturing Industry group. Global electric vehicle survey. 2011.

Key Takeaways

- Around the world a significant percentage of consumers are identified as either potential first movers or might be willing to consider an EV consumers: ranging from a combined low of 48% in Japan to as high as 93% in China.
- But, when consumers responses regarding their current expectations for EV range, charge time, purchase price and other considerations are screened against today’s EV market offerings, the actual percentage of consumers whose expectations will be met today drop to less than 4% in most major automobile markets around the world.
- Over the coming decade, government policies as much or more than EV technology will determine consumer adoption rates.



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