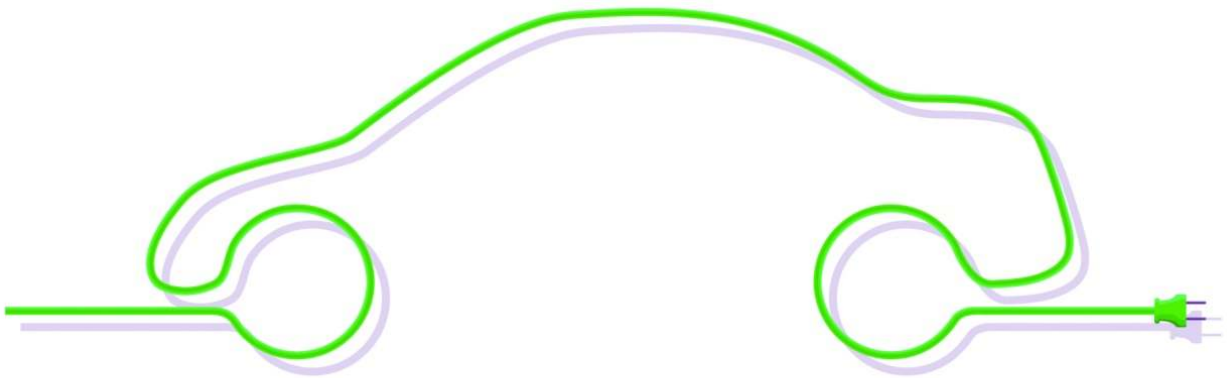
Deloitte.

Electric vehicles

Brazilians' opinion on their use and viability



June 2012

Summary

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2. Groups interested in buying an electric vehicle
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Survey methodology and application

Electric Vehicle Survey

Survey methodology and application

Electric vehicles (EVs) have been around since the early days of the automotive industry. In recent years, however, with the rise in oil prices and growing concerns about the environment, the interest in EVs has increased worldwide. Consumers are looking for a transportation alternative that is cheaper and “greener” while having the same performance of a traditional car.

Electric cars arrived in Brazil in 2007 and since then 72 electric vehicles have been licensed. A small number when compared to the total number of vehicles licensed in Brazil, which in 2011 was 34.8 million. From this total, 32.9 million are light vehicles, 1.5 million are trucks, and 354,000 are buses.

Electric Vehicle Survey

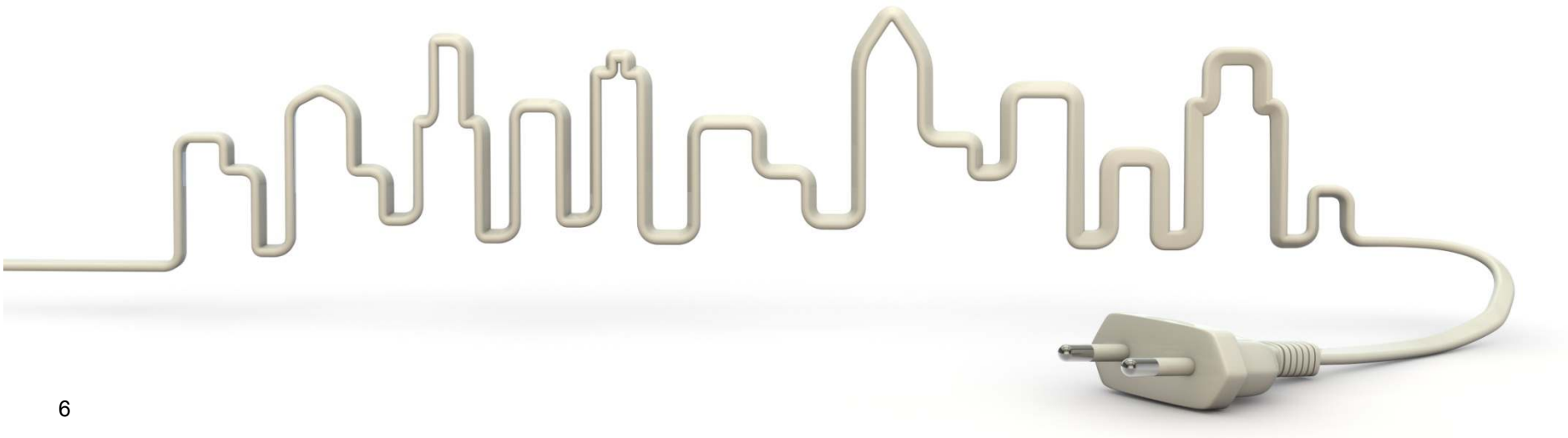
Survey methodology and application

Because of this new reality, **Deloitte conducted an extensive worldwide survey to assess the profile of possible EV buyers. The survey, conducted between November 2010 and May 2011, was responded to by 13,000 people in 17 countries (Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, India, Italy, Japan, Korea, Spain, Taiwan, Turkey, United Kingdom, and United States), through an on-line questionnaire. In addition to assessing the willing and intention to buy, it raised questions related to the sale of such vehicles, including price, and their performance, such are recharge time.**

In Brazil alone, we had 530 respondents, of which 50 percent were men and 50 percent women, over 18 year old, who hold an A, B and C category driver's license.

According to Gartner, a research company**, in 2011, 995,000 electric cars were sold worldwide, and in the past 12 months this number has exceeded one million.**

Groups interested in buying an EV



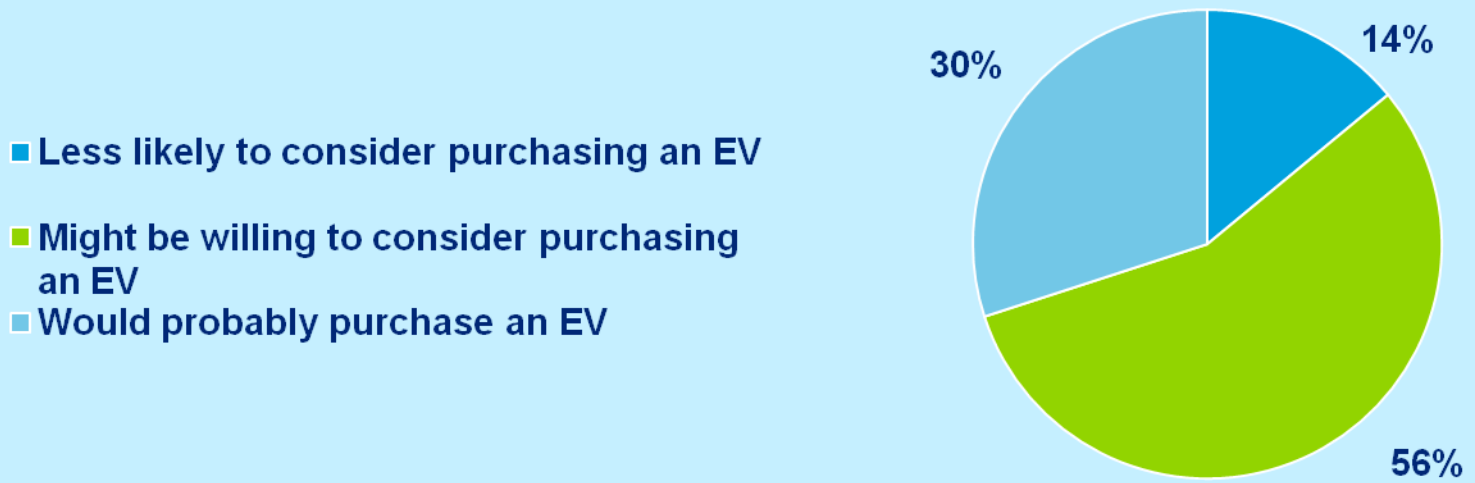
Electric Vehicle Survey

Interest in buying electric vehicles

Considering the next change or purchase of a vehicle, 30 percent of total respondents said they would probable buy an electric vehicle (EV). And 56 percent would consider buying an EV.

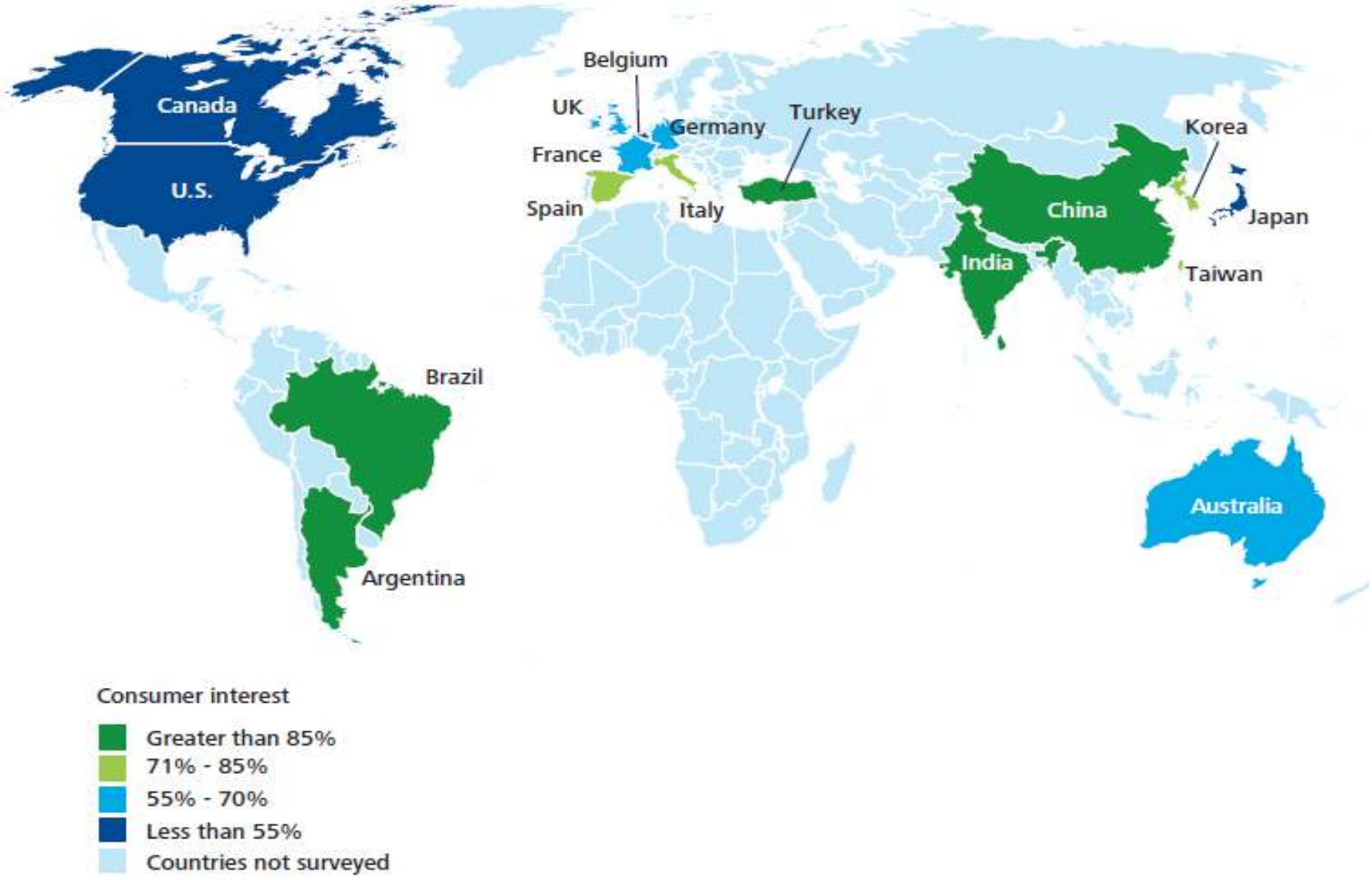
If they decided to buy an EV, 33 percent of the Brazilian respondents said that their preferred car would be a medium-sized sedan, 19 percent a small sedan, and 16 percent would choose a hatch.

Results in Brazil



Electric Vehicle Survey

Worldwide Results



Electric Vehicle Survey

Profile of the group that would probably buy an EV

The respondents in the group that would probably buy an EV (30%) view themselves as aware of the importance of preserving the environment, technology savvy, and opinion makers.

They also have a positive opinion about electric vehicles, consider them "green", convenient, safe, and easy to use.

Despite seeing themselves as opinion makers, these respondents are sensitive to government incentives and the cost of charging/recharging the car.

They also say that an EV is better in terms of quality, fuel efficiency, residual value and safety.

Profile of the group that would probably buy an EV (30%)				
EV perception	**Education**	**EV knowledge**	**Monthly income**	**Gender**
Environment friendly	53% graduates or +	24% vast knowledge	50% > US$2,600 (R$/US$ = 1.66; average dollar quotation in November 2010-May 2011)	53% men

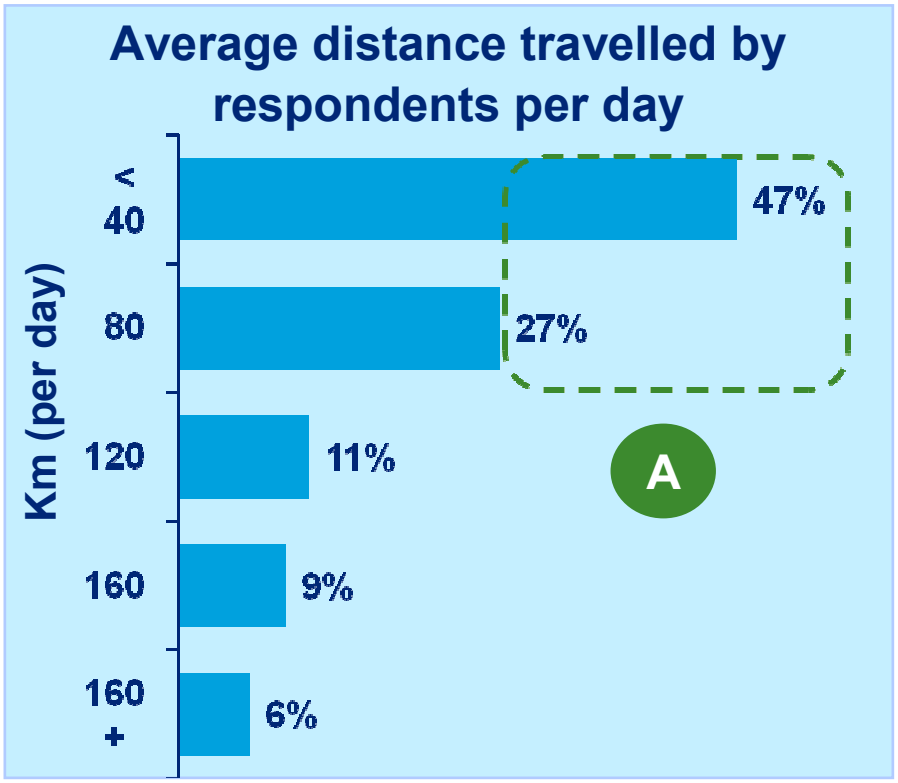
Range, capacity and recharge

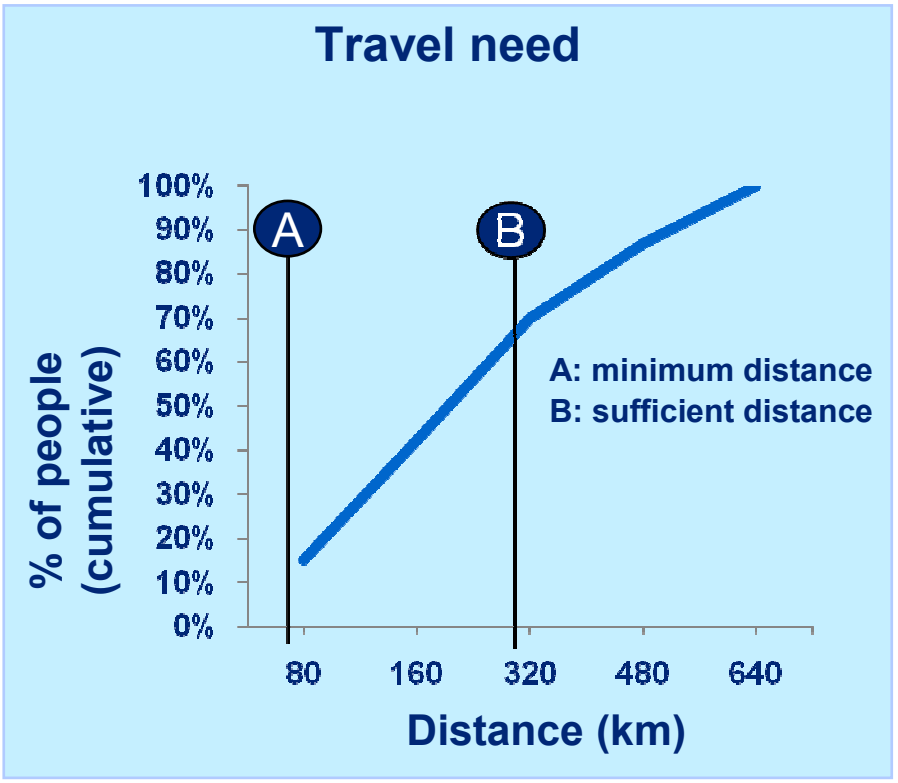
Electric Vehicle Survey

Travelling range

The average distance travelled by car for around 74 percent of respondents is lower than 80 km/day (on business days, travelling to and from work).

For 70 percent of the sample, firstly an EV must be capable of travelling 320 km (battery life) and then they would start thinking of the possibility of buying this type of car.





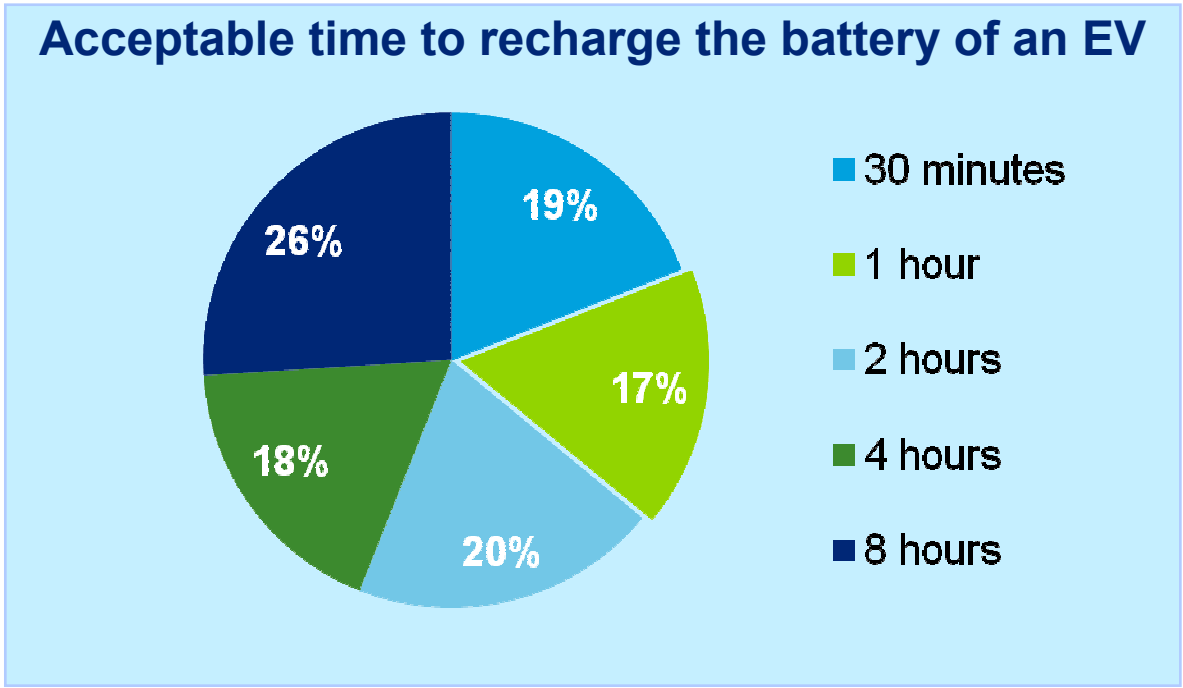
Electric Vehicle Survey

Expected battery life

As regards the time expected by respondents to recharge the battery of an electric vehicle, the largest group (26 percent) says that they would wait up to 8 hours for the recharge. As for the smallest group (17 percent), they would wait up one hour to recharge a battery.

As regards the site where such recharge should be made, 93 percent consider the practicality of recharging an EV at home **as important or extremely important.**

But many do not have or unaware of the need of having a 240 volt outlet, with charging capacity.



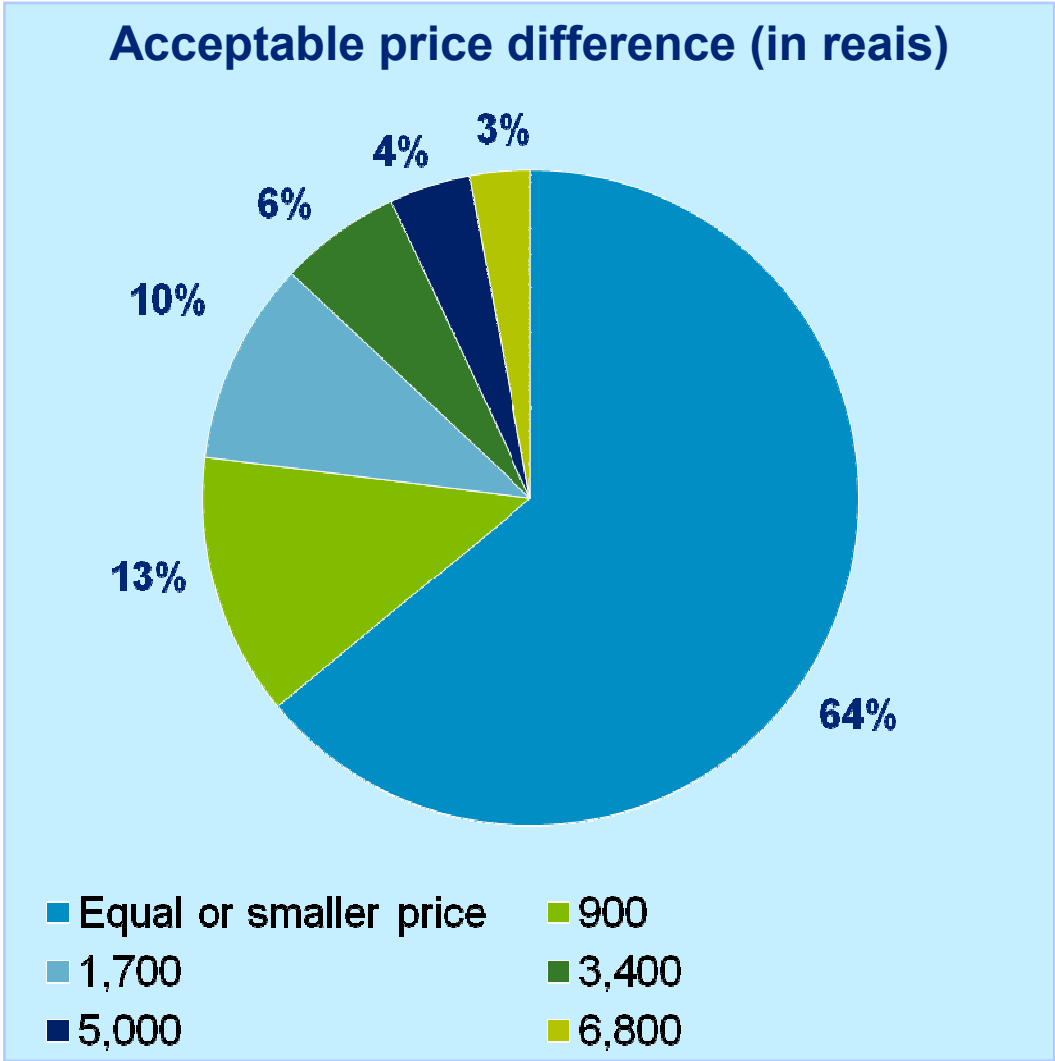
How much consumers are willing to pay

Electric Vehicle Survey

Price expectation of those “willing to consider purchasing an EV”

How much are consumers willing to pay

64 percent, also among those who would consider buying an EV, expect to pay for an EV the same price of a traditional vehicle* or even less.



*Traditional vehicle: running on fuel

Electric Vehicle Survey

Fuel – how strong an influence is fuel price

The survey pointed out that in countries like Brazil fuel prices will probably make consumers more prone to buying an electric vehicle.

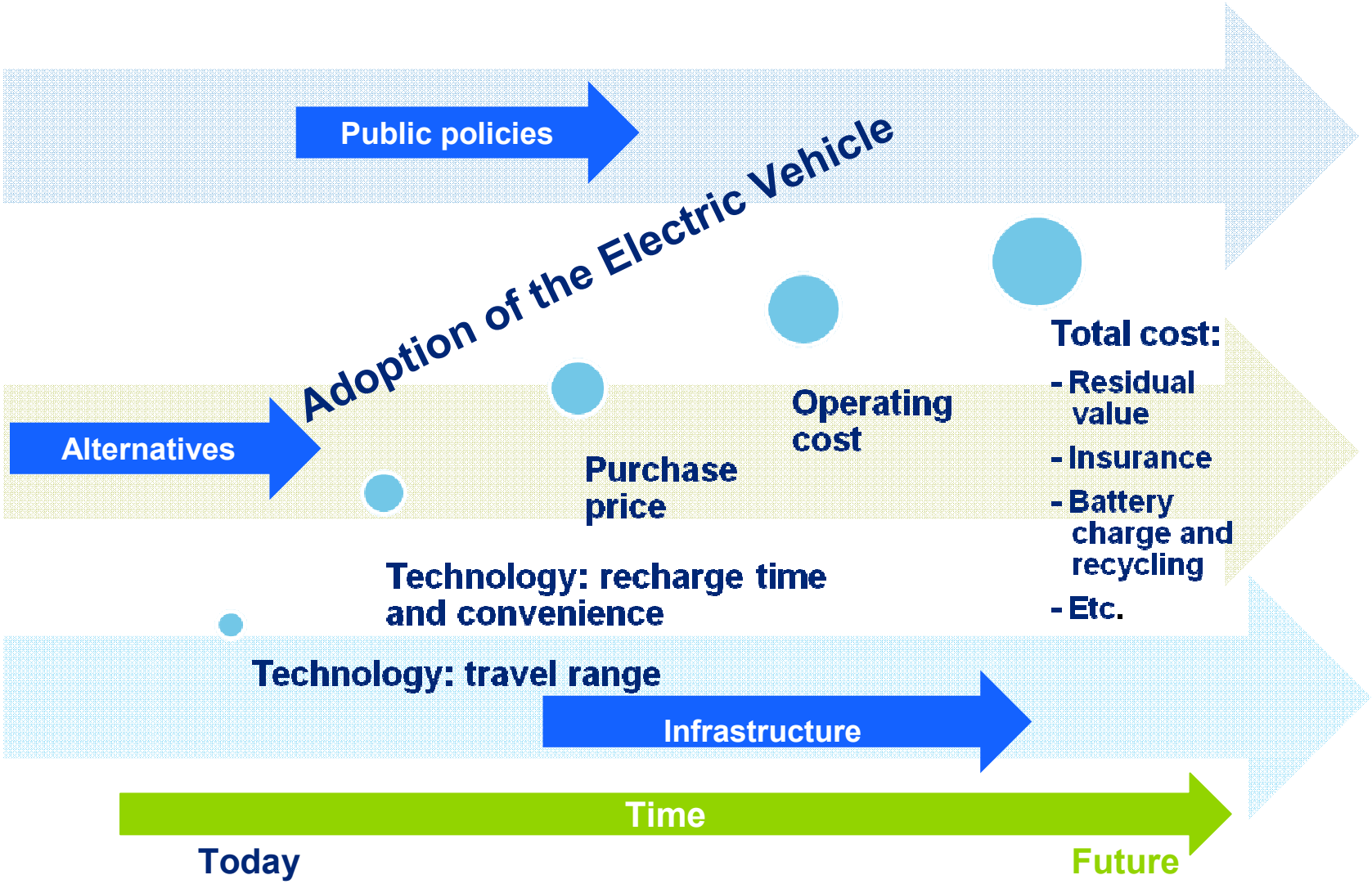
Conditions for a possible purchase of an EV:

- If traditional vehicles' average mileage were 32 km per liter, 79 percent of respondents would probably not consider the use of an EV.
- If the gasoline price increased steeply, respondents would probably consider purchasing/leasing an EV.
- If it cost around R$4.30 per liter, 89 percent of respondents would seriously consider using an EV.

What is keeping EVs from being adopted

Electric Vehicle Survey

What is keeping EVs to be adopted



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

Main findings

Electric Vehicle Survey

Main findings

Most of the Brazilian respondents think that the EVs are better than the traditional cars in the following aspects: environmental impacts (88%) and technology (66%).

Purchase of an EC is contingent to its costs. The purchase price and the charging costs should be the same or very close to those of traditional vehicles.

Easy charging and travelling capacity per charge are also factors that influence the purchase decision.

Electric Vehicle Survey

Main findings

The respondents do not say they are willing to pay more for an EV. However, 64 percent say they would pay the same they pay for a traditional vehicle.

If the price of gasoline increases to more than R$4.30 per liter, consumers would be more likely to using an electric vehicle.

Traditional vehicles have the advantage regarding: purchase price (51%); refueling convenience/easiness (48%); repair and maintenance cost (41%).