

OS biocombustíveis e o futuro da mobilidade

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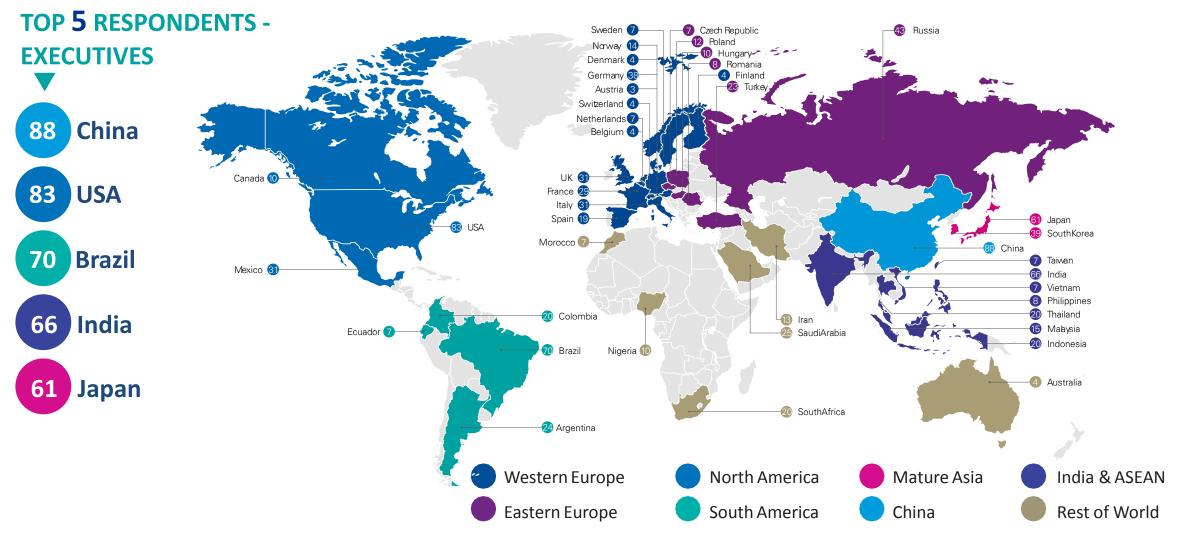
Automotive industry disruption 68% (72%) agree that traditional purchasing criteria will become irrelevant Autonomous driving: How will autonomous driving redefine utility of vehicles? AUTO VS. DIGITAL 71% (77%) agree that measuring market 78% (82%) believe FCEVs to SWARM SYSTEM shares based on unit sales is outdated INTELLIGENCE be the real breakthrough Customer value: In which units will MILES ARE INVESTMENT. Fuel cell: How to ensure companies measure success? CLOCKSPEED & safety with the fuel cell GOLD CO2 DILEMMA technology? PRODUCT PROFITABILITY Autonomous VS. CUSTOMER REVOLUTIONARY VALUE 1%) believe BEVs will fail due to driving POWERTRAINS infrastructure Driving Battery electric vehicles: Measuring Who will build up the charging 85% (88%) agree that the digital ecosystem technology infrastructure? SUCCESS will generate higher revenues than the car Executive Summary **EVOLUTIONARY** Digital ecosystem: What exactly is it that **POWERTRAINS** will generate higher revenues than the car? VIRTUAL CLOUD ECO-SYSTEM 65% (74%) agree that production in WE will be less than 5% by 2030 WESTERN PLATFORM-Western Europe (WE): What will EUROPE'S Regional happen if production in Western Digital IZATION DECLINE Europe will decline to < 5% Shift ecosystem SINGLE (88%) agree a single sign-on platform to MACROECONOMIC SIGN-ON be an absolute purchasing criterion CHANGES Data Platformization: How does this subordinate ZERO-ERROR platform integrating up- and downstream 76% (81%) agree China's global market EASE OF USE/ TOLERANCE SHIFT FROM MATURE elements look like? SEAMLESSNESS share will be above 40% by 2030 DATA IS MANAGEMENT TO GROWTH VS. RELEASABILITY MARKETS China: How will China shape the TRUST & DATA GOLD overall mobility market? TRUSTED 48% of consumers but only 22% of mobility service SECURITY 52% (51%) rank data privacy & security as DATA HUB providers believe that drivers are sole owner of data the most important purchasing criteria Data Ownership: How can stakeholders gain Data security: What can happen if data

security is not ensured?

consumers' trust to share their data.

Global Automotive Survey

For the 2017 survey we gathered the opinions of 953 executives from 42 countries.

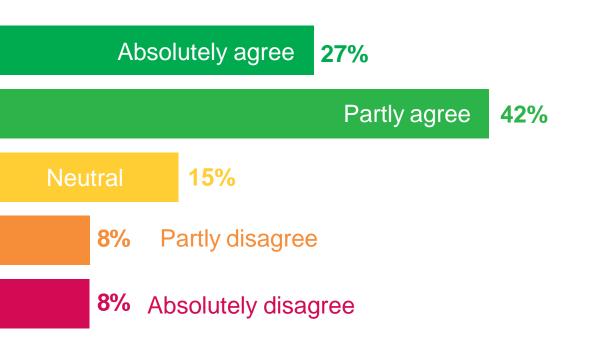


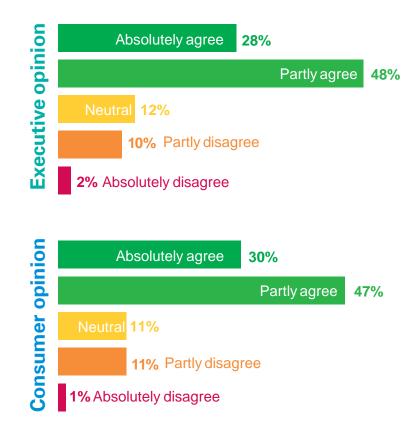
Note: Map shows number of respondents from each country | Source: KPMG's Global Automotive Executive Survey 2017



Fossil drivetrain technologies

Internal Combustion Engine (ICEs) will still be important for a long time.







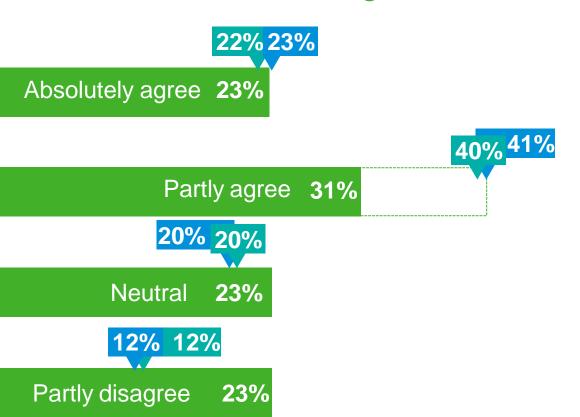


Executive BRAZIL

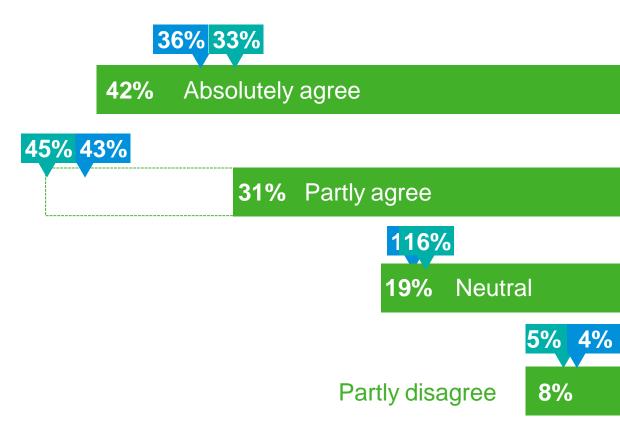
Executive GLOBAL

GLOBAL

Battery electric vehicle (BEVs) will fail due to infrastructure challenges.



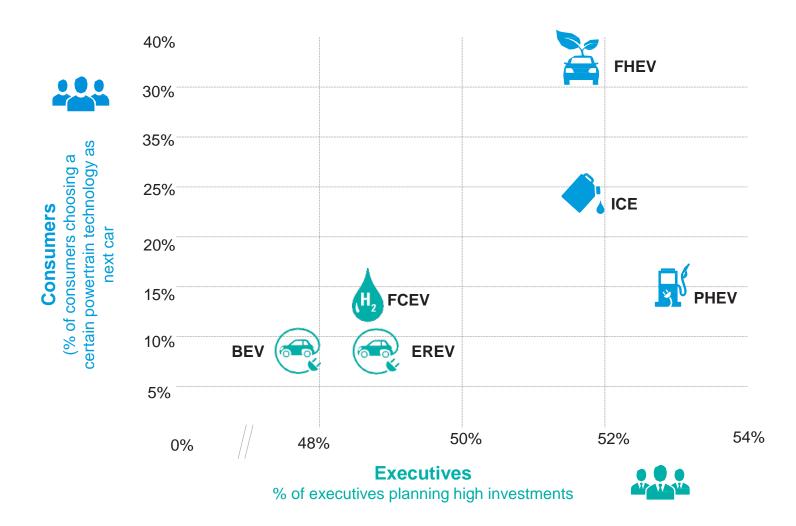
Full cell electric vehicle (FCEVs) will fail due to infrastructure challenges.







What powertrain technology to invest in and when to make the shift





FCEV (Fuel Cell EV)



BEV (Battery EV), **EREV** (Battery EV with Range Extender)



PHEV (Plugin Hybrid EV)



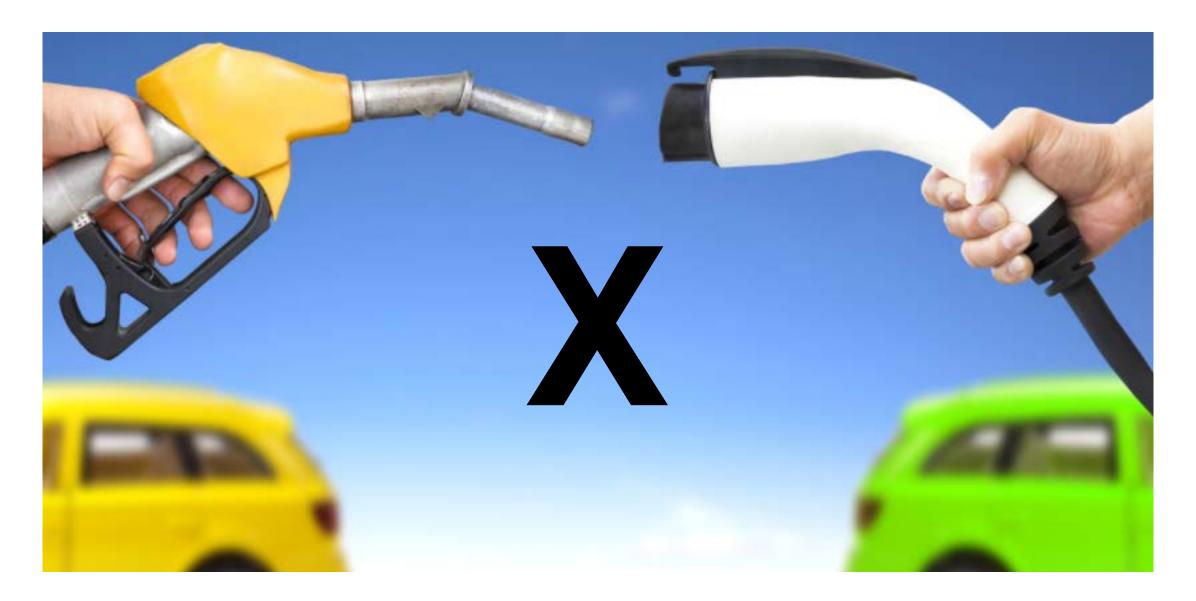
FHEV (Full Hybrid EV)



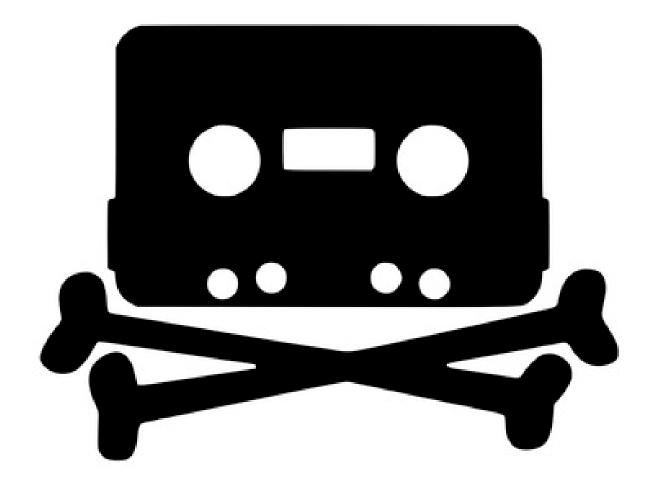
ICE (Gasoline/ Diesel)



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HOME TAPING IS KILLING MUSIC









Etanol: futuro garantido!













The Nobel Prize in Chemistry 2016

Jean-Pierre Sauvage, Sir J. Fraser Stoddart, Bernard L. Feringa



Press Release: The Nobel Prize in Chemistry 2016

5 October 2016

They developed the world's smallest machines

A tiny lift, artificial muscles and minuscule motors. The Nobel Prize in Chemistry 2016 is awarded to Jean-Pierre Sauvage, Sir J. Fraser Stoddart and Bernard L. Feringa for their design and production of molecular machines. They have developed molecules with controllable movements, which can perform a task when energy is added.

molecular chassis

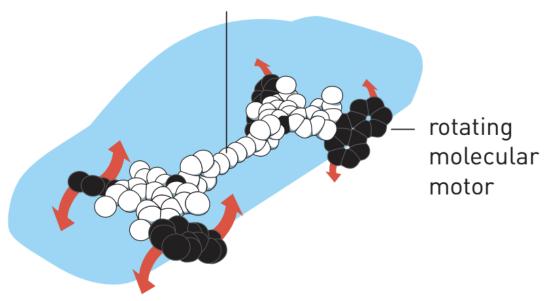


Figure 7. Ben Feringa's four-wheel drive nanocar.



Thank you

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