Targeting hydrogen Society: Toyota's next step

Zhang xiaodong

TaixingpowerSupplyCompany toJiangsuelectricpowerCompany,taixing225400,Jiangsu,the

Abstract: in our New Energy vehicle field, still for difficulty in the end is the development of pure electric, or plugged in problems with the hybrid car, close to, on page session Tokyo Motor Show, Toyota Displays the Hydrogen Energy fuel battery concept vehicle TOYOTAPCVPLUS.

Keywords; Targeting hydrogen; Toyota's next step

Why Toyota is in the process of mixing technology started by When the outside world is watching, turn to development of the so-called "hydrogen Energy car"? from hybrid to hydrogen power, Toyota How to pulse new energy auto development strategy?

1. Hybrid Opportunity Creation

from 1997 year launch hybrid car prismanice, sales outlets for Toyota cars in countries and regions, up to 2015 year 7 Endof, ,,Toyota hybrids Global cumulative sales have burst break, million, reach 804.8 million.

from 1997 Year Month Toyota starts selling global First production hybrid Prius, with same level compared to cars with fuel engines, canto dramatically reduce fuel consumption while promoting power, and with no external charge, No need to replace battery, No additional maintenance and other advantages, are listed as the most mature energy-saving technologies of the moment."

base on hybrid, Toyota can also to derive several other new energy models, via increase external charge function, can derive plug-in hybrid car, from plug-in hybrid remove engine from car, increase battery capacity, can also develop a pure electric vehicle. But in abundant field eyes, Pure EV can only satisfy City the need for a short trip to the town.

But once you add fuel to a pure electric car battery, become fuel cell hybrid steam car. According to this idea, Toyota Motor through product tired battery, Motor etc Core Technology build Basic technology for the company's new energy vehicle so,

Toyota also positioned the hybrid technology as its Core Environmental technologies for the century.

A person in the industry close to Toyota is on the Energy reporter says, Toyota's dual-motora hybrid system with has other car companies that cannot exceed More technology.

Other car companies such as BMW, Mercedes-Benz also publish Insert electric hybrid car, but plug-in blending The Force is a vehicle that append the plug in function on a mixed basis, type, lack of hybrid technical experience, want it is not easy to overtake Toyota in this area.

2. Why is cold in the market?

in the United States, a Toyota, people will think of the Prius, in China, speaking of Toyota, people First reaction is Camry, a car hobbyto "Energy" "Reporter said, ten years ago, that is 2005 year, best-selling Toyota Prius with hot-selling rings in countries around the world enter China, on the heat that time only special car enthusiasts and returnees know this model is. Common consumption can be said to be unheard of. Besides at the time The price of the Prius can be purchased at the entry level medium Luxury car.

The main failure of the Prius in China is This is high price. Although Toyota's hybrid technology is
excellent, However, this is not a reason to promotemake Chinese consumers buy it reasons, SimilartoSounds are ubiquitous in car forums.

First timeout of the cold after this, against China Market, Toyota chooses to change the policy, finally, along with Toyota's localization strategy, Toyota LowerThe overall positioning of hybrid models, steer into mixed version of Lexus soon, RexaKyushu plant with excellent workmanship and technology to capture high-end consumer groups in China. China Market officially recognized mixed version Lexus.

Then Toyota continued to force the introduction of a variety of mixed car model in Lexus CT Th Enter domestic Market after, Toyota Hybrid models finally open in China start with after, accompanying this trend, year 4 months, Toyota President Akio Toyoda announces, Toyota Changshu Research and Development Center with twopartners National Research and Development Center "Troika", period year 3 Month publication "Cloud Move Schedule", from that time, heavy Toyota car for many years (China) Investment LLC division only started to actually exercise his car sales responsibilities — that's to get more people to know about Toyota Hybrid Technology.

2015 Year, Toyota and Leiling mix The version is listed with the page million yuan price vs Euro-European cars 1.4 Tor 1.6 price for version, the models more advantageous, for hybrid walk tokey effect wins

Toyota considers, while the pure electric car makes the lower cost relatively less, but mixed requirements for Chinese families in power models for previous in home, all-electric cars are still just cityiest tools for Transport. This is mainly because, battery tech Development Latency, to a large extent restrict the pure mileage for electric cars on long distance travelers face, hybrid models still have unmatched Advantages D

But for the public transport system, Pure electric car has more room for development. Heavy truck, bus vehicles need to be equipped with fuel cells, to satisfy overloads and the need for long-distance transportation. Once added new energy technology application, can effectively reduce large mobile intersection Tools dependency on petroleum products.

Post-natal, is often criticized for shrinking quality, but for Corolla and Leiling two models, , Mixed System imported version of the Prius The dynamic system is consistent. All two models use hp 1.8L Atkinson engine, and aA high-power motor with deep mixing can be implemented by the.

as the core of Toyota Hybrid technology -------- Original

E-CVT The variable-speed drive bridge is also not absent.

Hybrid vehicle localization can be said to be abundant Tian's real step in China, but homemade mixed all power cards Laura and Leiling charm, still pending cityfield check.

=Miraican be the next subversion Sex Products?

Is in the current big car companies are keen to research Pure EV case, Toyota performance near "insensitive".

When people are spitting Toyota too conservative, When you are holding on to a blend, Toyota select intro sell fuel cell vehicles by announcing the sale (FCV) Miraito counter this assertion with the factproof, Toyota in New Energy vehicle development Area header Bujianangnian.

But why is Toyota so cold to All-electric cars mo? the fuel cell vehicle being developed can be heavy now Toyota's glorious past?

at this year's Shanghai auto Show, Toyota Media generation The table describes the company at the end of last year, on the fuel cell vehicles listed in Japan Mirai, and say, exactly based on hybrid core technology, Toyota can create Mirai.

Mirai Fuel Cell Group Volumes small, performance High, maximum output power 114kW (a) PS, volume output density 3.1kW/L *, Step-Up Converters and high-pressure hydrogen fuel tanks, etc. also successfully implemented miniaturization and lightweight. Toyota says it's Reliability, Environment characteristics and collision Security

Basic Technical issues resolved.

A fuel cell vehicle makes hydrogen and oxygen in the air chemical reaction, car itself can edge power generation
edgetravel. No need to be equipped with an existing electric vehicle. Large drive battery, the Endurance can also be significantly promote. This is the biggest difference from pure electric cars.

With Miraican an example, in 3 minutes or so, full hydrogen, driving about 650 km, and even if the is discharged with a quick charge, all-electric car full 80% also need minutes. Change to homev Power Supply, and cannot use for a short time. Second, The fuel cell vehicle will not be occupied by the battery the huge empty room. In addition, driving performance is not inferior. Total and say, Fuel cell vehicles on the energy chain, driving attributes, to achieve pure electric environment, quick benefits, while using convenient, Endurance Better than pure electric cars.

Consider further, Miraican also be used as a power car use. Use a different sales appliance to change the power generation voltage, Miraican occur 9kW power to be used as homepower supply 0.

According to Toyota's assumptions, to 2030 Year car Society will go to "era. this concept, the car is based on this vision, for future car shapes State to explore. in Toyota's vision, fuel battery cars are no longer simply energy-consuming mobile workers. The with also has the role of regional distributed power.

It is currently Mirai, the price is 723.6 million Yuenmeta. provided by the Ministry of Economic and Industry of Japan."Japanese FCV, auto car benefits user is only pay no. 52 million Yen. Toyota will take the lead from the first construction hydrogenation station and other infrastructure of Tokyo, Ancient House, Osaka, North Kyushu four regions, Toyota Store and Toyota Stores start selling. Toyota wants to take the fuel cell car as a successor to the hybrid car Key Technology-trained. Intent+ points obvious.

But, a technology in the industry that does not want to be named personnel to Energy reporter says, "This model can promote, ultimately depends on infrastructure Construction of the. The Outlook is not clear, and now see, Toyota in the end is the first expansion of hydrogen fuel battery Car sales, or do you want to set the foundation first apply network? There are some controversies with. The

: Bet 2050 Strategy

2015 Year Ten Month Day, Toyota releases the Toyota Environment Challenge 2050 Strategy, to implement this strategy, Toyota has developed the current Line Schedule that is, 6 no. "Toyota Environmental governance plan (following abbreviation: """).

Plan will be the 2016 year to 2020 Year. The five-year plan for the IS enforced strategy to clear dosay, for implementation challenges, Toyota from Energy Saving and Fuel Diversification Countermeasures Point of view, with HEV technology is core, Push FCV A new generation of auto technology development and speed up popularization.

According to this plan, Toyota will continue to promote hydrogen fuel cell model, strive for 2020 year after let hydrogen fuel cell models sell more globally than current salesvolume at least grow ten times. They year sales reached 3 million more. in the Fuel diversification countermeasures Section, Toyota has used hybrid technology as its core technology to open the development of a new generation of cars by [], which include to develop the batteries required for all new generation cars, Powerkey technologies for machine. These are all available outward plug-in plug-in hybrid vehicles, electric car, extended core technologies such as fuel cell vehicles.

Shows, Toyota will, as always, insist on hybrid and fuel cell two routes product Direction, electric cars are excluded from corporate war fare slightly outside.

But that does not mean that Toyota gave up the Power move ""This core concept in the future, Toyota new generation car development, improve the technology of the"" Level is critical. for lifting plug-in mixing Force model performance and extended pure electric Auto mileage development with energy density Big, Easy high voltage and high temperature compatibility. Characters of the full solid battery, such as a new generation of batteries.

But is this idea compatible with the new energy car Big trends? Can Toyota continue to lead the World auto industry? now look at, no answer case.

References


