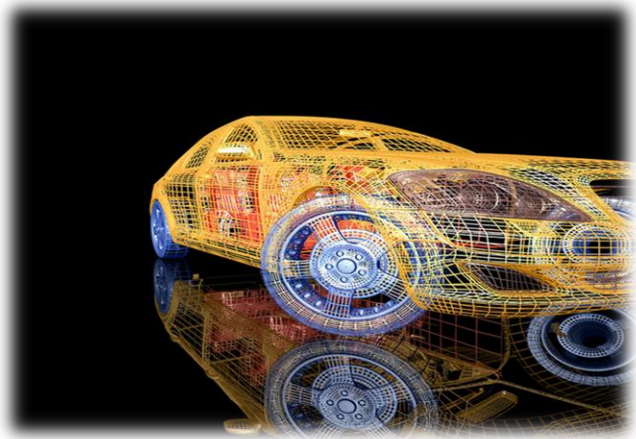


全球環保車市場之發展

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全球主要汽車製造商總是致力於開發品質精良的車款，期望藉此拓展市場、強化品牌銷售機會；但是，此一以傳統動力(→指汽柴油引擎動力)為主軸的汽車市場早已達到飽和的態勢。近年來，已開發市場對於環保議題的重視、進而促使各汽車消費大國制定愈趨嚴格排放廢氣的法規，例如：在世界第二大的汽車市場-中國，正在推行新的燃油經濟性法規；使得市場對於環保車的需求明顯增加並且也提供相關優惠措施，以中國市場為例，2013年5月，中國政府開始對電動車(EV)和插電式混合動力車(PHEV)進行價格補貼，目標期望在2020年有五百萬輛上路。



就目前汽車相關科技發展觀察，目前環保車大略可區分幾個主要的發展趨向，分別為電動車(Electric Vehicle)、氫燃料電池車(Fuel Cell Electric Vehicle)以及油電混合動力(Hybrid)...

1. 電動車(Electric Vehicle - EV)

電動車被預期是下一代的新興車款。2010年12月，Nissan推出了“LEAF”，一款具量產規模的電動車，導致其他汽車製造商亦紛紛效仿。但是，電動車銷售明顯受到電池性能不足以及充電站缺乏的限制，使得車輛無法行駛較長的距離；但是，顯著提高電池性能並非立即可解決的問題。因此，此一缺點使得大部分汽車製造商推遲大規模量產電動汽車的計劃。

即使Tesla目前藉由技術創新，已量產出行駛距離可比擬市面上汽油車之車款，但其售價仍偏高，導致目前產品仍只專屬於金字塔頂端客層，並無法效符合一般消費大眾的需求、進而融入一般大眾的日常生活中。

2. 氫燃料電池車(Fuel Cell Electric Vehicle - FCV)

氫燃料電池車也被認知為是一個可以替代電動車的選擇。它使用氫燃料電池，氫燃料電池車可以在加氫站填充氫氣，也因為行駛過程中只會排放“水”，因此，氫燃料電池車被視為終極環保汽車。除了零污染之外，更重要的是，單罐氫氣即可行駛達七百公里以上的路程，如此卓越的行駛距離也許會讓氫燃料電池車(FCV)的銷量超越電動車(EV)。

在氫燃料電池車上市初期，影響氫燃料電池汽車普及的因素包含：確保氫氣的穩定供應、訂定與汽油相當的氫氣價格以及建立完善的氫燃料供應網絡。因此，要讓氫燃料電池汽車進一步普及仍有許多問題待解決，但是業界普遍認為這比提升電動車的電池蓄電量要容易許多。

3. 油電混合動力(Hybrid)

因為純電動車(EVs)和氫燃料電池車(FCVs)的發展需要時間和鉅額的基礎建設投資，因此，短期內將不會有能取代傳統汽油動力的車款出現。然而，油電混合動力車(HEV)的市場競爭則日趨激烈，目前的發展則是以內燃機(即引擎)與電動馬達的動力輸出結合，以減少汽油使用量與廢氣排放量。



以 Toyota Prius 為例，車款在慢速的情況下只會使用電動馬達來行使，藉此提高燃料使用經濟性並減少廢氣排放。此外，插電式混合動力汽車(PHEV)則可以使用家用電源插座充電(註：考量充電效率，一般仍必須是高壓電規格，藉此縮短充電時間)，藉此增加純電動力下的行駛距離。但是，PHEV 仍然存在一些問題，主要是額外的零件(如：電池、馬達以及相關零組件)增加車體重量、居高不下的電池成本和可供使用的充電站不足等。

基於長期觀察汽車市場發展動態、及汽車相關科技的發展，Ipsos 進一步對於全球環保車未來的銷售成長進行預測(如下圖)，可以發現未來主流仍以油電混合動力(Hybrid)為主；值得注意的是，電動車(Electric Vehicle)則逐漸提高其在環保車的佔比、且可能於 2030 年達到整體環保車銷量的 2 成多。

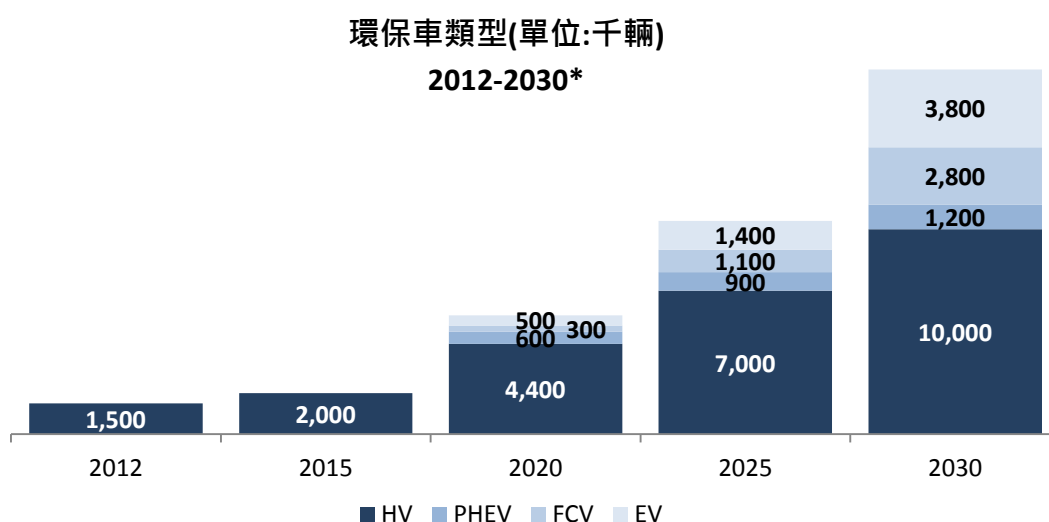


圖 1：預期環保汽車未來的銷售成長(2012-2030)

資料來源: Ipsos Business Consulting

註：2012 年並沒有燃料電池汽車(FCV)的銷售統計相關數據，而 PHEV 和 EV 則分別銷售 53,000 與 51,000 輛。

觀察台灣的電動車發展現狀，即使政府在過去數年積極提供優惠補貼電動載具(如：電動車、電動機車...等)的購買，但是礙於基礎建設缺乏、宣傳不力的情況下，導致電動載具仍無法有效讓民眾所接受。此外，即使電池技術有明顯突破的狀況下，民眾對於電動車的認知依然停留在過往行駛里程低、充電時間長的刻板印象；也因此目前電動車僅限於作為公部門的交通車、或是限制區域範圍內的接駁車，做為電動車示範運行的象徵。

從 2015 年法蘭克福車展觀察，環保車仍是全球主要汽車製造商的發展重點，畢竟在環保議題、能源耗竭的驅使下，開發環保替代車款已經是各大汽車製造商的未來永續發展的關鍵，但是除了技術的突破外，更重要的是政府的支持，尤其是對於相關基礎建設的投資以及相關法規的修訂。



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我們的行銷研究專家專門協助企業夥伴把市場趨勢轉換成產品競爭優勢，並持續提供創新的市場研究模組，幫助夥伴更有效運用管理市場研究預算。我們也善用利用科技和研討會，結合不同的資料整合知識，幫助企業獲得即時的市場洞察。

更多的資訊，請參考 <http://www.ipsos.com/marketing/>

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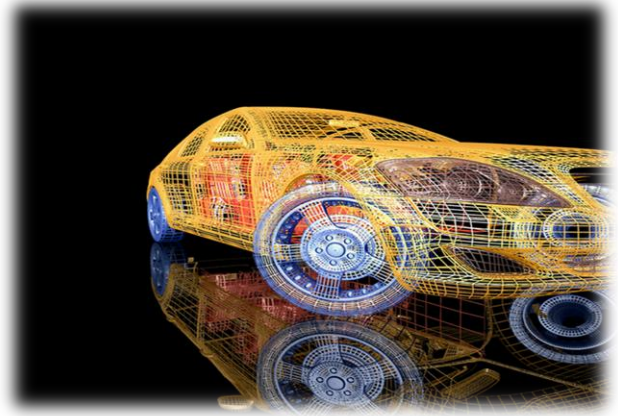
Eco Cars & Key Developments Within The Global Auto Industry

Ipsos Business Consulting

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Major automotive manufacturers have traditionally focused on developing high quality sophisticated vehicles for developed markets, which are reaching saturation point. More recently, environmental concerns are forcing governments to introduce increasingly stringent emissions regulations. For example, a new fuel economy regulation was introduced in China, the world's largest auto market, in May 2013. This regulation will see the government subsidize the sales price of electric and plug-in hybrid vehicles, with a target of having 5 million such vehicles on the road by 2020.



Regarding the development of automotive industry, Eco cars can be mainly separated as following dimensions, including Electric Vehicle, Fuel Cell Electric Vehicle, and Hybrid...

1. Electric Vehicle - EV

Electric vehicles were initially expected to be the driving force of next generation vehicles. In December 2010, Nissan launched the "Leaf", a mass-produced EV. Other automakers followed suit. However, sales are falling well short of forecasts. However, EV sales were seriously limited by the vehicle's inability to drive long distances due to insufficient battery performance and a lack of recharging stations. Significantly improving battery performance will take considerable time. This technological drawback has seen most manufacturers postpone plans to mass produce EVs.

Although Tesla had launched brand new model by its advanced technology, whose cruise distance is similar to that of gasoline car, the price of Tesla's model is too high, and only affordable by high-end consumers. For general public, Tesla's models have longer way to enter into their daily life due to price issue.

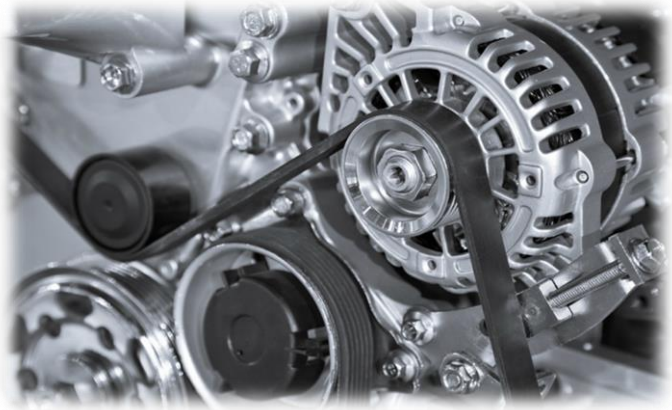
2. Fuel Cell Electric Vehicle - FCV

Fuel cell electric vehicles (FCV) are also attracting more attention as a viable alternative to EVs. Powered by hydrogen fuel cells, FCVs can fill up on hydrogen at hydrogen stations, similar to how gasoline-fueled vehicles top-up at gas stations. FCVs are seen by many as the ultimate eco car as they only emit water. More importantly, FCVs are able to travel distances of up to 700 kilometers on a single tank of hydrogen. The ability to travel further before refueling could see FCV sales overtake those of EVs.

Key factors that will affect the popularity of FCVs, especially in the initial launch period, include ensuring a stable supply of hydrogen, setting fuel prices on a par with gasoline and ensuring a network of hydrogen stations. It will take some time to resolve these issues, but the industry believes they will be achieved more quickly than solving the battery capacity problems that continue to restrict the viability of EVs.

3. Hybrid

Because EVs and FCVs both require time and significant investments in infrastructure, there will be no practical commercial alternative to conventional gasoline-powered vehicles for the near-to-medium term. However, competition is intensifying within the hybrid vehicle market. These cars combine an internal combustion engine with an electric motor to reduce the use of gasoline and lower emissions at the same time.



Hybrid electric vehicles (HEV) such as the Toyota Prius achieve high fuel economy and reduced emissions by using the electric motor when travelling at slower speeds. Plug-in hybrid vehicles (PHV), which can be recharged using household power outlets, have recently entered the market and increased the distance that can be travelled using an electric motor alone. However, a number of issues still remain with regard to PHVs such as a notable increase in car weight due to the greater number of parts, battery-associated costs and the low availability of recharging stations.

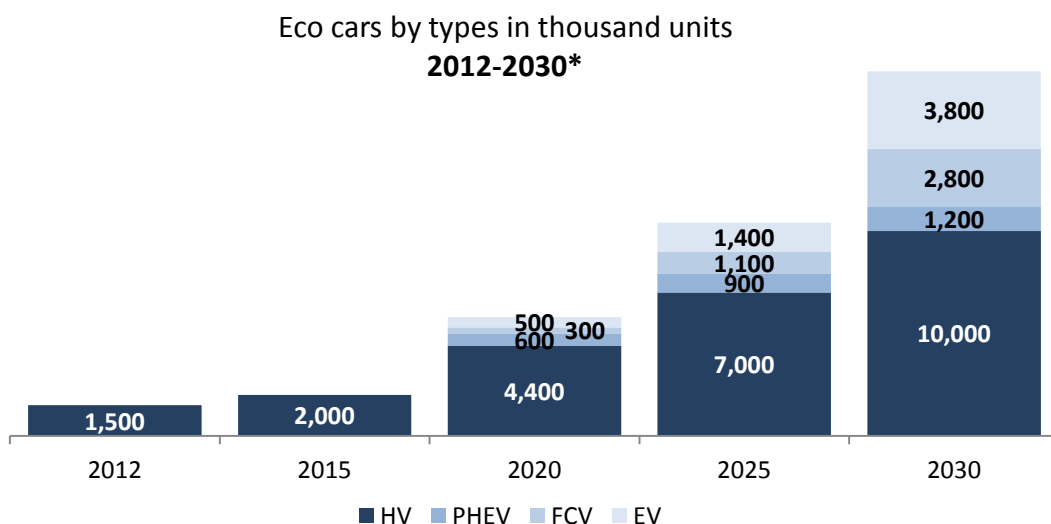


Figure-1 : Forecast sales growth for eco cars by type (2012-2030)

Source: Ipsos Business Consulting

PS: In 2012, there was no FCV statistics while PHV and EV were recorded as 53,000 and 51,000 units respectively.

Further reviewing the EV development in Taiwan, even if the government offered related subsidies when purchasing electric transportation (including electric vehicle and electric motor); however, the electric vehicles are still less acceptable because of lack of infrastructure and communication to the public. In addition, even though the technics of battery has got great progress, most of people have the stereotype that EVs have the limitation on cruise distance as well as longer re-charge time. So, in Taiwan, most of EVs are applied by officials or considered as shuttles in a closed-loop area.

Regarding 2015 IAA (Internationale Automobil-Ausstellung), it is found that Eco cars are still the key points for major automotive manufacturers due to eco-environment issues and exhaustion of natural resources. However, except for breakthrough of the technology of battery as well as related parts, government's supports play a more important role when promoting Eco cars, especially for the investment of infrastructure as well as amendment of the related regulation.



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