

## Hong Kong Not Ready for Electric Cars, Yet By Mahum Shaikh (3L)



Electric cars have been a hot topic in Hong Kong. There has been endless discussion on whether or not electric cars should be more widely used in Hong Kong. Some parties claim there are numerous advantages from electric cars, for example, they are more environmentally friendly. Opposing parties claim all these advantages are myths. In my opinion, Hong Kong is not ready for electric cars just yet.

Supporters of electric cars strongly advocate for them, saying they are the ultimate solution to our environmental problems. True, they do not emit toxic gases like carbon dioxide or carbon monoxide, but saying they are completely clean is wrong. By looking at this issue more closely, in the environmental aspect, we find that electric cars are not as environmentally friendly as we think they are. When electric cars run out of battery, they need to be recharged; electricity is used. Electricity is produced by the burning of fossil fuels, like coal or oil. Greenhouse gases are produced. This shows that even though electric cars do not emit smoke on roads, they still damage the environment when recharging.

Again in the environmental aspect, the manufacturing of electric cars does a lot of harm. Producing electric cars has a lot of dire consequences for Hong Kong's already suffering environment. A study conducted by the Norwegian University of Science and Technology reveals that "the "global warming potential" of the process used to make electric cars is twice that of conventional cars"<sup>1</sup> This shows that instead of being good for the environment, electric cars are actually harmful.

Money is a very important factor in this capitalist city. In our market economy, prices are determined by demand and supply. The higher the price, the less the quantity demanded. Electric cars are "significantly more expensive than conventional (...) vehicles due to additional cost"<sup>2</sup>. Because of the mountain-high prices of electric cars, not many people would be willing to pay so much. Apart from the cars themselves, the batteries are also outrageously pricey. The frequent recharging and maintenance of the batteries means sky-high costs. This would discourage Hong Kongers from purchasing them. The HKSAR government's "encouragement" alone is not enough to compel people to change their choices of cars.

And also, in the economic aspect, electric cars are not as beneficial as other cars. Internal combustion vehicles form a big industry in Hong Kong. There are many petrol station workers, mechanics, and other professionals related to the use of these cars. There are numerous jobs linked with the usage of these vehicles. Electric cars would fail to benefit the economy that way. There won't be many new jobs, or any other economic perks of that sort.

Assessing the situation in the technological aspect, Hong Kong is not ready for electric cars. Electric cars have not been around for a long time, and were only introduced to Hong Kong in 2010. The electric car is a technology completely foreign and new to Hong Kong, thus, we do not have the technology required to accommodate the electric vehicles just yet. These cars need frequent recharging, but Hong Kong lacks public or private charging infrastructures required. Hong Kong also lacks professionals, for example mechanics and technicians specializing in the repairing electric cars. The city does not have the technology just yet.

Hong Kong is, geographically, an inappropriate place to have people driving around in electric cars. Hong Kong has a hilly relief and lacks flat lands. Electric cars get slower when going uphill and more energy is used at that time. This would be a major obstacle in the smooth operation and widespread acceptance of electric vehicles. These cars are not made to be towed upslope.

It is also important to remember that the government cannot expect people to follow its suggestions

regarding electric cars, especially because these suggestions are only voluntary. If the Hong Kong government really thinks that the widespread use of electric cars is a step forward for the city, the government would have to do a lot more than just to “encourage” the people to buy electric cars. The government would have to pass some laws, create new legislation, and make this policy mandatory, if it really wants all of the people to comply, for the betterment of the city.

Electric cars are also literally bad for health. Some drivers using electric cars developed Range Anxiety. Range Anxiety is “the fear that when an all-electric car’s battery runs out, the driver will find him or herself stranded on a roadside with no way of charging up”<sup>3</sup> Electric cars give drivers high levels of stress, and this can be dangerous, especially when drivers are on the packed roads of Hong Kong.

Hong Kong is a commercial hub, and is a very fast-paced city. Hong Kong is “a city that never sleeps”. Hong Kong people are always on the move; they are busy people. A disadvantage of the electrical cars is that they take far too long to charge. They take from 10 to 19.5 hours to fully charge before they are ready to be used. These cars hold people back, and do not fit into the quick-paced environment of our city.

Nonetheless, it is true that electric cars do have their own advantages. Firstly, from an economic view point, the electric cars may actually help Hong Kong's economy. Electric cars are unexplored economic opportunities. With their emergence, a whole new industry can be flourished. This new industry would attract investment, and there would also be more job opportunities.

Electric cars are not all bad in the environmental aspect either. Most of Hong Kong's pollution is caused by the release of toxic gases by transportation. The API of roadsides is high all year round. Electric cars can alleviate the problem of pollution on roads, since they produce none while active. They can play a vital role in helping resolve the environmental problems of Hong Kong. Hong Kong is in desperate need of less pollution on roads, since we are surrounded by roads.

In conclusion, there are a lot of blown-up myths surrounding electric cars. They are said to be 100% clean, and affordable. But in reality, this is not completely the case. In the environmental aspect, the production of electric cars is very polluting and their frequent recharging of batteries also consumes a lot of fossil fuels. Other reasons why they are not beneficial to Hong Kong are that they are very expensive, the city lacks the technology to accommodate them, the city is geographically unsuitable for them, they literally cause health problems, and they take too long to recharge. Yet, there are good things about electric cars, and it is worthwhile for Hong Kong to wait, and get itself ready for them, because they do have benefits. It is only at present that the Hong Kong government should not encourage people to use electric cars, but by all means, should wait until Hong Kong is ready.

**Should the HKSAR Government take the lead  
to encourage the usage of electric car in Hong Kong?**

**By Olivia Lam 3L**



Do you feel the earth keeps warming up recently? Do you notice the skies in Hong Kong are getting more obscure? Do you feel like you do not dare to inhale when you are standing at the roadside in Causeway Bay? Your answers to all these questions must be yes, and so do I! You are right. The air pollution problem in Hong Kong is getting more severe than we could imagine. Imagine yourself carrying an oxygen supply everywhere for the second half of your life...Trust me, electric cars are the solution to this immense air pollution problem we are now confronting in Hong Kong. Since HKSAR Government, with adequate capital, can offer aid to the citizens who wish to buy an electric car, beyond doubt, HKSAR Government should be the precursor in encouraging the usage of electric cars, so that all of us and our next generation could enjoy the pleasure of aromatic air in Hong Kong.

According to the Environmental Protection Department of HKSAR Government, road transport “is the second largest air pollution source in Hong Kong, accounting for about 37% of the local respirable suspended particulates and nitrogen oxides each and 6% of sulphur dioxide.” Does the figure flabbergast you? Electric cars as a clean mean of transportation are developed to help reducing the environmental impact brought by road transport.

By appearance, an electric car is not much different from any private car you could see in the street; the main difference is that the internal combustion engines are replaced by an electric motor; while the driving force is usually the battery. Electric cars are the ideal cars. Firstly and most importantly, they are environmental friendly. Electric cars are driven by electricity, unlike the traditional automobiles which are driven by internal combustion engine. As a result, they do not emit tailpipe pollutants, and so the greenhouse gas emission, including carbon dioxide, could be reduced immensely. This proves that electric cars are vital in easing the air pollution problem in Hong Kong. Besides, electric cars generate almost no noise, and in a densely populated place like Hong Kong, electric car is a blessing especially for those who live next to roads and requires quietness for sleep!

Secondly, electric cars are much more energy efficient. A study in America indicated that cars using internal combustion engines convert only about 18% of the fuel energy to kinetic energy; while the figure could reach as much as 80% for car installed with electric motor. The efficiency is further enhanced for electric cars equipped with regenerative braking system where part of the

energy lost during braking is captured and reused! In Hong Kong, where huge amount of energy is required to meet the rapid speed of economic development, not any single joule of energy should be wasted unnecessary. Therefore electric cars are effective in saving energy which could be channelled to other uses.

Thirdly, closely connected with its superior efficiency in converting energy, in a longer run electric cars save money, because they don't use petrol and oil; this fact appeals to all drivers since it also means they could save the money they use to purchase petrol every week. For diesel cars, you need \$1 to 2 per kilometre, only paying for the fuel; while for electric cars, the running cost is only \$0.15 to 0.2 per kilometre. A penny saved is a penny earned; of course every driver would like to save the money.

Fourthly, not using petrol also implies that the dependence on foreign oil could be lessened. The oil reserves are mainly concentrated in the Middle East, and Hong Kong is lack of natural resources; that shows that Hong Kong is now vulnerable to any sudden rise in oil price and supply disruption. Electric cars are certainly a solution to the concerns of citizens and HKSAR Government.

However, you may ask, "There are numerous options other than electric cars!" Yes, bingo. But wait until you see my explanation of why electric cars are still the best options among the other alternatives. First, let's talk about a rival of electric cars—hybrid cars. Hybrid cars have two engines: the traditional internal combustion engine and an electric motor. Fossil fuels would be combusted in addition to electricity when it is not sufficient for accelerating the car or because of the long distance travelled. It seems an excellent option since it could remove the worry of the drivers that electricity would run out suddenly in the middle of the road; but think deeply, hybrid cars still rely on the combustion of fossil fuels, so it is not the best method for the long term good of Hong Kong. However, hybrid cars could serve as a stepping stone in the mass switch from conventional cars to electric cars, and provide adequate time for scientists to develop better battery for electric cars. We should keep ourselves long sighted, and electric cars should gradually replace hybrid cars in the near future.

Secondly, some people might even argue, "Why don't we develop other new engines with fewer disadvantages? Like now we have hydrogen cars and solar cars!" Rome was not built in one day, same for new engines. Developing new engines is not the work of a decade, scientists, experts and governments could be spending billions of dollars and huge efforts in developing one new engine! So why don't we focus on the electric cars in front of us, which are already well-developed with mature technology of production? The early history of electric cars could date

back to the 1890s. The early electric cars could already exceed the speed of 100km/h! Whereas hydrogen cars, i.e. the cars using hydrogen as the fuels, have only become popular in the near decades, and it is a very new technology, of course not mature enough to compete with electric cars. For solar cars, they are not even a competitor of electric cars, since the technology is too new, and unpractical and unreliable due to the unstable weather. The answer is right in front of you – all we need is electric cars.

However, things do not always go smoothly. In promoting electric cars, HKSAR could meet a lot of hindrance, owing to the disadvantages of electric cars criticized by many experts and citizens.

Firstly, some people complained that switching to use electric cars could even cost more money than continue driving the conventional cars. According to University of Hong Kong, an electric car costs two to three times as much as a conventional car using petrol. Mainly because of the costly lithium-ion battery pack, they are the driving force of the electric cars. Unfortunately, these batteries have short life spans; they have to be replaced after about four years. Many drivers actually prefer to buy a new car rather than replacing the expensive battery. Actually the price should not be a problem, since driving electric cars could be cheaper than driving the conventional cars. It is because, as I mentioned above, electric cars use energy more efficiently. Also, the petrol price in Hong Kong is so high, currently HK\$17 per litre, due to the high taxes; while electric cars don't need petrol. Moreover, mass production could lower the installation price of electric cars. In addition, HKSAR government offer tempting low taxes to Hong Kong citizens for installing electric cars, this means you could be free from the high transportation tax in Hong Kong.

Secondly, some environmentalists also claim that electric cars do not eliminate pollution problem, it even make it worse because the source of pollution is shifted to the power plants which generate electricity for electric cars. However, according to Eric Cheng, an electrical engineering professor in Hong Kong Polytechnic University, the filters of power plants could perform three to four times better than the small ones in conventional cars, which means they release less pollutants.

Thirdly, many drivers are anxious that their electric cars would run out of battery before they reach the destinations, which is about the problem of short distance ranges. However, it is not a main concern for Hong Kong drivers. Since the electric cars can travel 100 to 150 kilometres on one charge, and the distance from the east to the west of Hong Kong is only about 50 kilometres;

so Hong Kong drivers could finish their journey without needing to find an electric cars charging station.

To prove that electric cars are suitable for Hong Kong, we could take United States as an example. US have the largest fleet of plug-in electric vehicles in the world; more than 73,000 highway-capable plug-in electric cars have been sold since 2010. Electric cars market in US is active and competitive. There are numerous electric cars models that you could choose from different companies, such as the Nissan Leaf and Chevrolet Volt. These electric cars will play a significant role in easing air pollution problem in US in a longer run.

For government incentives, US introduced several policies including Energy Improvement and Extension Act of 2008, and the American Clean Energy and Security Act of 2009 to grant tax credit to electric cars. The total amount of the tax credit allowed for a new electric car is US\$7,500. The US government is also very supportive of the development of electric cars and batteries. It has pledged US\$2.4 billion for the innovative development, and set up 13, 967 charging station in the country.

HKSAR government should take US counterpart as a reference in taking the lead in encouraging the use of electric cars. By providing more attractive incentives to the research institutions, business sectors and drivers, a strong footing will be created for the use of electric cars to flourish in Hong Kong, as that in the US. The government should formulate a clear and detailed policy which includes providing more incentives to the drivers; the policy should include substantially reducing the First Registration Tax and subsidies for replacing their cars for electric cars. The government should also set a target of number of electric cars charging stations to be built in the coming years. All these measure would lessen the worries of the drivers and thus encourage them to purchase electric cars, which in turn would stimulate private sectors to offer more and better deals, and research institutions to input more resources to develop more efficient, long lasting electric motor engine.

In conclusion, for the sake of the environment of Hong Kong in the future, and for our future generation, HKSAR Government should definitely take the lead to encourage the usage of electric car in Hong Kong, so that more and more people could benefit from the exquisite electric cars.

(1774 WORDS)

**'Should the HKSAR government take the lead to encourage the use of electric car in Hong Kong?'**  
**BY Kelly Ho 5L**

Hong Kong is renowned for its beautiful skyline drawn by shimmering skyscrapers, which echoes with the charming view of the Victoria Harbour. This is my impression of Hong Kong from my fading childhood memory.

I can hardly convince myself that the view of the Victoria Harbour I see now is so different from the one in my memory. Where is the famed skyline? Blurred by smog. Where are the glimmering skyscrapers? I can barely see them under a thick layer of polluted air.

It is sad to notice the air quality in Hong Kong has declined so much within these years. I am sure many of the citizens in Hong Kong are aware of this problem. The poor air quality has not only affected the health of the general public, it particularly puts respiratory disease patients in a great health risk. Besides, many professionals, businessmen or even just tourists are scared off by the poor air quality and lose their interest in coming to our city. Local residents also seem to think this problem is getting unbearable as many of them are considering moving to other cities where the air is cleaner. As a result, air pollution is a major concern in Hong Kong since it provokes a wide range of unfavourable consequences that will eventually push Hong Kong away from its international reputation.

Among the sites of air pollution in Hong Kong, the roadside is the most serious site. According to the Environmental Protection Department, the traffic accounts for almost 90% of the source of roadside pollution, and hence if the government can ease this problem, Hong Kong's air quality may be able to be greatly improved. The HKSAR government addresses the problem of roadside pollution and has implemented several policies to tackle it. For instance, the vehicle idling ban was launched in 2011, of which drivers are required to switch off their car engines if they park their car on the roadside for more than 3 minutes. This is one of the examples to demonstrate the government successfully reduces gas emission from vehicles. Besides, according to an overview on air quality and air pollution control in Hong Kong published by the Environmental Protection Department, other policies have also been launched to alleviate the pollution problem, for instance the incentive programme to replace diesel taxis or light buses with liquefied petroleum gas vehicles and stepping up the control on smoky vehicles. These measures have been effective in improving the roadside air quality. Some achievements include the number of smoky vehicles spotted has been reduced by about 80%, comparing the situation in 2011 with that of 1999.

With the achievements of those policies, the government becomes more determined to stop Hong Kong from choking polluted air. The emergence of electric cars draws the attention of the HKSAR government to use it as a new way to relieve the air pollution problem.

In fact, citizens in Hong Kong realize the urgency of easing the problem of air pollution, and they are also willing to contribute to environmental protection. However, despite their enthusiasm for protecting the environment, the use of electric cars remains unpopular in Hong Kong. According to a piece of online news article 'Who Killed The Electric Car?' published by *HK knows Hong Kong*, There are only 96 electric cars registered in Hong Kong. There are many obstacles faced by drivers when they consider whether or not to switch from conventional cars to electric cars. Some of these obstacles can actually be overcome with the help of the government. Hence, in my opinion, the HKSAR government should take the lead to encourage the usage of electric cars in Hong Kong.

The focus of the question is not whether the use of electric cars is beneficial, because the answer is quite obvious. We understand the advantages brought by the use of electric cars and the government is very certain to support this new kind of vehicle. Yet, at the end of the day, even people realize the positive impacts of electric car, many of them still have reservation towards it. So if the public seems to reject the use of electric cars, should the government continue to take the lead to promote an idea that has not been well-received? The answer is still 'yes'.

The HKSAR government should continue to take the lead to promote the usage of electric car in Hong Kong because electric cars have definite benefits to the society. Electric cars can lower roadside emission since it does not emit as much carbon dioxide as conventional cars do. With less polluting gas emission, the air quality along the roadside can be improved. This is something that benefits the entire society, no matter you are men or women, rich or poor because everyone breathe in an air that is cleaner, and it is better for everyone's health.

Moreover, if the HKSAR government takes the lead and lead Hong Kong citizens in using electric cars, it will certainly receive prestige as a 'technologically advanced international metropolis'. Hong Kong has to maintain its status in the globe, and if the government succeeds in encouraging citizens to use electric cars, it will surely impress the rest of the world that a small city can be as cutting-edge as powerful countries like the US and the UK.

After looking at the benefits of electric cars in short, it is crucial for me to highlight the significance of our topic. By saying 'take the lead', it is in fact delving into the role of the government in a society. In my opinion, the government has the responsibility to be a role model for its citizens. The use of electric cars is not popular among citizens, and if the government solely convinces the public with words but not action, it would not be persuasive enough. The most effective way for the government to encourage citizens to use electric cars is by using them first. An action is often far more influential than words. The government has been using electric cars since 2011, as mentioned in 'Who Killed The Electric Car?' published by *HK knows Hong Kong*, they are only using 22 electric cars. As a result, the government should replace more cars of

government officials with electric cars to demonstrate to the public that the government is willing to try new things and bare the risks with the citizens.

Besides, the government can exert its influence on other transports companies such as the KMB to extend the use of electric cars to public transport. Since the benefit of using electric cars as private cars may not be significant or obvious, it would be better to involve public transports such as buses and minibuses in the usage of electric vehicles. Only the government would have the power and authority to stress public transports company to be part of this green plan. A reasonable amount of government pressure may be effective to urge public transport owners to consider the use of electric cars or simply vehicles which are less polluting. When the public sees electric vehicles more often, it may persuade to get one as their private car. Thus the success of promoting the usage of electric cars relies on the government's effort since it can exercise its influence on transportation companies.

In addition, no one in the society shares an equal power and influence as the government does. The government has financial power, which can be used to offer incentives to motivate usage of electric cars. Although car companies also offer incentives to their customers who purchase electric cars, their incentive programme is far less comprehensive than that being offered by the government. Car companies can only provide their customers with discounts for buying electric cars, or discount for replacing battery and maintenance. Yet, the government can do much more. The government is able to offer tax deduction, improve electric infrastructure by installing more electric vehicle chargers in government car parks and provide funding for subsidizing the purchase of electric vehicles. Therefore, the government has to take to lead and provide as much incentives as possible to interested users of electric vehicles.

Furthermore, it is interesting to notice some citizens refuse to use electric vehicles simply because they cannot reflect a high social status. Unlike Mercedes-Benz, BMW, Audi and Jaguar, electric vehicles are rather basic and domestic, hence they sometimes fail to attract citizens who pursue a consumerist life. This should not be a major reason to hinder people from using electric cars, and hence the government should take the lead to use electric cars to elevate their status, from an environmentally friendly domestic car to a 'government's special'.

To conclude, I think the HKSAR government should take the lead to encourage the usage of electric cars. Electric cars have undeniable benefits, especially to our environment. It can effectively ease the air pollution problem in Hong Kong and allow Hong Kong to preserve its status as a world class advanced city. By exerting pressure on the business sector, the government can motivate public transports to support the use of electric cars. Also, with the government's resources, it can provide comprehensive incentives to the public and help interested users of electric vehicles to overcome financial constraints. The government has great power and resources, and hence it should make use of them wisely and lead citizens onto the road to a health and green life.

**Should the HKSAR government take the lead to encourage the usage of electric car in Hong Kong?**

By Mary Lam (5A)



The HKSAR government should definitely take the lead to encourage the usage of electric cars in Hong Kong because the gains are potentially huge. However, various hurdles must first be scaled before these gains materialise.

Greenhouse gas emissions from the many diesel-driven vehicles moving on the roads are mainly responsible for the air pollution that has become a major public concern in Hong Kong. In fact, the air quality in our city continues to deteriorate, largely because government efforts to cut car emissions have remained ineffective and not feasible. A recent survey revealed that 96% of Hong Kong people felt uncomfortable with their eyes, noses and throats while 37% people had breathing problems and 30% had skin problem due to the worsening air pollution. In short, good air quality is vital to human health. We are clearly in desperate need for a better option rather than carrying on using cars that run on traditional internal combustion engines.

Health is wealth, and in light of such an urgent need to upkeep clean air for roadside users, electric cars is most surely a helpful green solution. In recent years, electric cars have been hailed as vehicles of the future. They are emission-free and unlike existing vehicles, they produce no harmful pollutants at the tailpipe from the on-board source of power, such as particulates, hydrocarbons, carbon monoxide, lead, and various oxides of nitrogen. Since they have zero harmful emissions, they are expected to improve roadside air quality and support the development of a low-carbon, green economy. These benefits that electric cars will bring are extremely important in Hong Kong nowadays, as the impacts of aggravating air pollution are becoming more obvious, such as leading to the generally deteriorating health of citizens and surging public expenditure on the healthcare sector, which in turn is exerting an increasingly heavy burden on taxpayers, causing the continued loss of hours of productive work owing to health problems, as well as becoming a disincentive for investors and high-grade professionals to make Hong Kong as their ideal investment or workplace choice, all of which may pose the threat of a "labour drain" or "money drain" in our city.

Given that car owners are unlikely to suddenly abandon their vehicles and start using the mass transport system, switching to electric cars seems to be one of the most feasible solutions to the problem of air pollution in Hong Kong. Insofar as our government plays a pivotal role in safeguarding community-wide health and well-being, it is imperative that they put their seal of approval on emission-free vehicles like electric cars.

Electric cars have even more benefits compared with diesel vehicles. First, electric cars are much more energy efficient than diesel vehicles, meaning they do not require much energy input to produce a lot of output. For electric car motors, energy efficiency can reach 85-90% since a magnetic field is embedded to power the car, thus serving an energy-saving function. Importantly, they do not consume energy while at rest. For fuel motors on the other hand, efficiency rates only reach around 15-20% since

they only generate energy after a process that involves combustion and burning, which itself requires a lot of energy to initiate. As a result, most of the energy is wasted as heat. What is more, in times of volatile oil prices and high fuel taxes, electric car drivers can make big savings on fuel and fuel charges, and such welcome gains should prompt both the government and drivers in general to go for green cars, electric cars being one such model.

Second, electric cars do not require gear changes, which makes driving comparatively more difficult for gasoline cars. The former are easy to operate and are suitable vehicles for women drivers. Since they can indirectly promote more equal opportunities between men and women, and Hong Kong is a society where equality is highly valued, the government should push for more common usage of electric cars.

To conclude, increased concerns over the environmental impact of gasoline cars, higher gasoline prices and fuel taxes, improvements in battery technology, and the considerable long-term economic benefits, such as job and wealth creation that can be derived from the production of electric vehicles, are some of the prominent reasons why the HKSAR government should lead the local community in switching to electric cars.

Despite their potential benefits, widespread usage of electric cars in Hong Kong is facing various limitations, which in turn discourages the adoption of electric vehicles. One of the most notable hurdles would be their high cost. They cost much higher than gasoline vehicles due to the additional cost of their lithium-ion battery pack. Most of the running cost of an electric vehicle comes from the maintenance of the expensive battery pack and its regular replacement. The high purchase price is hindering the mass transition from gasoline cars to electric cars. Besides, there is still much confusion about how long one would have to own such a vehicle to realize cost savings on fuel, compared with a vehicle powered by an internal combustion engine. Also, the resale value of electric vehicles is another financial consideration that weighs heavily on consumers' minds.

So in order for drivers to develop an appetite for these electric cars, the HKSAR government should mobilise manpower and resources and increase funding of the whole process from R&D to production to implementation, thus actively resolving the hurdles illustrated above. Take these two examples. In London, there are governmental incentives like waiver of the congestion charge and free parking for electric vehicles to get people to switch from gasoline to electric vehicles; the United States government has pledged a tax credit of up to \$7,500 towards the purchase of fully electric vehicles. Secondly, in France, drivers will get a subsidy of as much as \$6,500 for buying an electric vehicle... Both are examples of advanced countries playing a forward-thinking leading role in making the electric vehicle market a reality. Our government can play the same role and achieve the same benefits too, namely by providing incentives like cutting fuel taxes, providing free parking, lifting restrictions like setting designated areas for electric vehicles, and introducing additional fees for polluting diesel cars.

Furthermore, as many Hong Kong people are not familiar with electric vehicles and they are worried about the new technology, they need to be shown that electric cars are better than petrol cars. That brings us to the role of education, which is provided by the government. The government can

emphasize the advantages of using an electric car relative to a diesel one through advertising in different media like through radio and television broadcasting, newspapers, brochures and leaflets.

Apart from the above advantages, the government should also emphasize the following points, for example, the point that the charging process of electric cars is cleaner and faster than filling a tank with gasoline. In addition, in case citizens are worried that they could hardly bear the cost of purchasing electric vehicles, the government should remind them that battery prices are coming down with mass production and are expected to drop further in the future. Moreover, electric vehicles are cheaper to maintain despite high initial costs since an electric vehicle's motor has only around 5 moving parts, compared to a gasoline car that has hundreds of parts in its internal combustion engine.

Education is so important in order to get people to gain a deeper understanding of what electric vehicles are all about and to know the urgency of switching to electric vehicles, knowing full well how very poor the air quality is in Hong Kong. Only the government has adequate capital and resources to invest in education, so the government has to take the lead to highlight the many reasons and benefits of using electric and other green vehicles as well as actually encouraging the use of electric cars in our city.

By so doing, the government will re-double producers' interest in investing in electric vehicles if they find that profits can be derived from investing in electric cars, thus helping to expanding the electric vehicle industry in Hong Kong. This also helps to establish the image and reputation of Hong Kong as a world-class city which heavily develops its economy while at the same time, is willing to take up the responsibility of caring about the environment, which is also beneficial to the whole world, since global warming can be delayed by replacing diesel cars with electric cars.

Other than the monetary concerns, there are also ongoing debates about the convenience of using electric cars since the introduction of these vehicles call for a change in mindset. Drivers need to change their habits and have to think about the time and place for charging. They have to calculate the durability and longevity of their car batteries, and always plan ahead to reserve a couple of hours to charge the batteries. They may not be able to drive as freely because it is important to carefully monitor their routes. Otherwise, if it runs out of energy, the car will just stall.

But there is a way out. For instance, electric car batteries can be charged the standard and quick way. Standard charging means connecting the plug to a socket for 5 to 8 hours, after which the car will be ready to drive for 100 to 150 kilometres before it needs another recharge. And there is a quick charger, and the battery can get 80% charged after just 10-20 minutes. In terms of charging infrastructure, indeed Hong Kong is not doing badly at all.

At present, there are about 260 standard charging points throughout the city. However, there are only 3 quick chargers: in Ap Lei Chau, Jordan and Hong Kong Science Park. If the government really wants to facilitate the future development of electric vehicles in our city and enhance public confidence in using these vehicles, the government should aim at putting in place a comprehensive public electric vehicle charging network across all 18 districts and increase the number of quick chargers to a significantly larger extent. As quick chargers require a lot more electricity, the huge electricity costs may add to the burden of

users, the government can consider offering subsidies and allocating a considerable sum of money for research and development to study the possibility of extending electric car battery life.

Through conducting researches, the government is also likely to provide evidence such as credible and reliable statistics to show the public that on average, Hong Kong people drive for short journeys which do not require high mileage and so electric cars would be able to satisfy their driving needs. Research and development are best supported by the government, since it has an extensive research network and large information base, which facilitate more effective factually accurate, and reliable results.

After giving valid reasons as to why we should use electric cars, the government can take the lead as far as serving as environmental role models go. Namely, they can urge not only top government officials but the sizeable civil service in general to switch to electric cars in their everyday use. At the end of the day, actions speak louder than words, and a positive domino effect may well follow, thus creating a green driving trend!

Last but not least, the government, as the leader of our city has to show its leadership by striving to strengthen the co-operation between the government and electric vehicle manufacturers. For example, inviting major electric car manufacturers and agents around the world to present their promotion plans, and encouraging them to introduce a greater variety of models to Hong Kong. The government must try to facilitate investors to set up electric vehicle factories in Hong Kong and develop Hong Kong into a production base for electric vehicles, thus local engineers and technicians for electric cars can be trained.

In the past, the government's lack of enthusiasm for alternative clean cars is understandable because they were either impractical or achieved only little improvements that were deemed to be too insignificant to "deserve" the allocation of public funds. But the introduction of practical electric cars may change all that, given the growing maturity of the battery technology. It is time for our government to take the lead to establish policies and economic incentives to overcome existing barriers, promote the sales of electric cars, fund further development of electric vehicles, as well as develop more cost-effective battery technology and their components.

The age of clean cars is here and now, and it is only with government backing that we can make this a reality and be a beckon of light for other cities to do the same.



SENIOR:  
2<sup>nd</sup> runner-up

**Should the HKSAR government take the lead  
to encourage the usage of electric car in Hong Kong?**

**By Carina Yu 5L**

The HKSAR government should indeed take the lead to encourage the usage of electric car in Hong Kong. Firstly, electric car is beneficial to the deteriorating air quality, and is completely feasible to be driven in Hong Kong. Secondly, the government is the only body able to take the lead as it has both motivation and financial power. Thirdly, electric car is a developing global trend, and the government is obliged to respond to this phenomenon for Hong Kong's international status quo.

**Electric cars- the brake to air pollution**

How could the Pearl of the Orient shine when clouded by thick, polluted air? According to the University of Hong Kong, the air pollution in Hong Kong has exceeded the limit imposed by the World Health Organization, and lead to some 3200 deaths every year. This has undermined Hong Kong's role as the Asia financial center and tourism hub, as business executives relocates and tourists refuse to come due to health concerns. Air pollution is an urgent problem that must be tackled immediately, and the usage of electric car is one of the measures that could alleviate this problem.

Would the usage of electric car be the remedy to this case? In Hong Kong, vehicles run on diesel oil and Liquefied petroleum gas contribute to 80%, 25%, 25% and 15% of the territory-wide emission of carbon oxide (CO), respirable suspended particulates (RSP), nitrogen oxides (NOx) and carbon dioxide (CO<sub>2</sub>) respectively. With electric car's zero-emission nature, roadside air pollution would definitely reduce sharply once it is widely used. Also, Hong Kong depends on mostly nuclear power and natural gas instead of coal to generate electricity (23% of electricity is generated by nuclear power, whereas 33% is generated by natural gas, according to EMSD and HK electric respectively) , which are both clean energy sources, thus the pollution created by the electricity generation for fueling electric cars is minimum. Encouraging usage of electric car can certainly alleviate air pollution effectively.

On the practical side, usage of electric car is highly feasible in Hong Kong. Take our fully electrically driven car- mycar (developed by The Hong Kong Polytechnic University and EuAuto Technology Limited) as an example, it can travel a distance of 110km on flat roads and reach a maximum speed of 64km/h when fully charged, which is more than sufficient for a normal driver to travel around a compact city like Hong Kong. It requires only six to eight hours to be fully charged, which can be done from any regular sockets. There are also 10 charging stations available in the Central and Western, Southern and Eastern Districts. Furthermore, mycar costs 97,000 Hong Kong dollars, and its fuel cost is only 20% of its petrol counterpart. These data show that electric car is not only green, but functional, easy to charge and affordable.

Of course, electric car is not perfect. As suggested by an official in the Agriculture, Fisheries and Conservation Department who used electric car through a phone interview on 8<sup>th</sup> January, 2013, she found it slow and inefficient when travelling over fields and steep mountains. Also, it cannot replace vehicles that need to travel long distance such as trucks used for shipping goods. Yet considering that the

majority do not have such specific needs, encouraging the usage of electric car would be able to improve air quality.

### **Government- fueled to take the lead**

Under the premise that encouraging the usage of electric car is a possible and sustainable measure, the questions left would be which means could encourage usage of electric car, and whether the HKSAR government should take the lead. The requirements for one to take the initiative and bear the risk for this project would be motivation and economic power.

Only the HKSAR government has the two key factors at the same time. It is motivated to solve the air pollution problem in Hong Kong as it is the government's responsibility is to answer citizens' call for better air quality. The HKSAR also has a relatively high financial stability with no debts or deficit, in fact, according to Ernest and Young, it is estimated that there would be a fiscal surplus of HK\$53 billion - HK\$58 billion in 2012. This shows that the government is able to launch a series of measure to encourage the usage of electric car. For example, it can provide subsidies to those who buy electric cars or even provide free electricity charging services to encourage purchase of electric cars; supported by advertisements that highlight the reasonable price and functionality of electric cars.

For private enterprises, although they play an important role in manufacturing and selling electric cars in large scale, they lack incentives to work towards the goal of improving air quality as their ultimate aim is to maximize profit, so there are potential dangers that the firms may abandon the project as soon as they find it not marketable, or producing electric cars of lower quality to reduce production cost. Therefore, private firms with ulterior motives should not take the lead in encouraging usage of electric cars; instead they should take a co-operative role for example working side-by-side with the government to develop electric vehicles.

As for the environment protection organizations such as The Conservancy Association, although they are eager to spread the green message and are very experienced in promotion campaign for environmental-friendly products, they may have problems with finance when dealing with such a luxurious good. Therefore, environment protection organizations should not take the lead in encouraging usage of electric cars; instead, they should take a supportive role such as promoting the scheme launched by the government in their publications.

### **Driving towards a greener future**

Some may criticize the need for the government to encourage usage of electric car. There are other means to tackle the air pollution problem, such as making the installation of filters (which can reduce release of particulates) compulsory to diesel cars. As resources are limited, isn't it better off to focus on promoting concrete measures rather than an infant industry? Indeed, investing into electric cars is very risky, as the result depends on consumers' perspective towards electric cars and their demand for it. To add on, the effect of the measure would not be apparent upon launching; as it takes a lot of time for people to warm up with this idea, and it is impossible for people to replace their car in a short period. During this long term project, the government also needs to continuously create related facilities such as charging stations and sponsor related technological development money need to be spent. Does it worth it?

Yes! Although there are risks of wasting time and money, electric mobility is surely going to be the global trend in the future. According to an article in Reuters, developed countries around the world as Germany, the United States and the United Kingdom are already setting up electric cars initiatives to make electric cars more accessible and popular in 2009-2010. Hong Kong must also not miss this golden opportunity of investment, and prepare to catch up the pace through encouraging the usage of electric car so to remain competitive, especially when Taiwan, a rival in Asia, was aiming to be the leader in the electric car market with its large electronics and information technology sectors and automobile industry. Encouraging the usage of electric car also enhances the image of Hong Kong as it showcases Hong Kong's soft power in terms of technological advancement.

### **Conclusion**

Once again, electric cars are beneficial to the environment, economy and public health. The president of Rochester Institute of Technology even described electric cars as "Our Future", illustrating the importance of encouraging the usage of electric car corresponding to the future trend. Therefore, The HKSAR government, in a position to lead Hong Kong to sustainable development, should take the lead to encourage the usage of electric car in Hong Kong.