CONFIDENTIAL

ERGO

Powering Sustainable Mobility

Presentation to Project Chambers

Hong Kong, July 22 2009

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Objectives for today

Introduce ERGO

Provide briefing on benefits of electric vehicles (EVs)

Discuss recent developments in global EV roll-out

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Who is ERGO?

Our Vision

Å Help bring electric cars to Hong Kong roads within the next 2 years

Å Provide drivers with a serious alternative to petrol that is both practical and cheap

Å Blue skies. Help improve the quality of air and quality of living

Our Business

Å Invest in promising new EV companies and technologies (cars, batteries, charging infrastructure)

Å Provide value-added advice and support to Government, Utilities and other interested stakeholders

Å Provide clean, cheap and reliable cars + charging solutions to meet the different needs of different users:

- ï Working closely to put suppliers / auto-makers in touch with end user demand. Where necessary, we help trial and de-risk this new technology
- ï Installing and operating charging stations to service drivers in Hong Kong and elsewhere, including securing charging locations and developing optimal model
- ï Working with high mileage drivers (e.g., taxi trade), providing suitable cars and charging

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A bright future for EVs in Hong Kong?

2009 Budget Speech welcomes Electric Vehicles (EVs) in Hong Kong

- Commitment to introduce EVs to Hong Kong market early, including adoption by government fleet as soon as possible
- Exemption from First Registration Tax until 31 March 2014
- Government to examine feasibility of providing recharging facilities in government car parks
- Steering committee to study the wider use of EVs in Hong Kong from the perspectives of economic development, town planning, industry, technology, environmental protection and transport

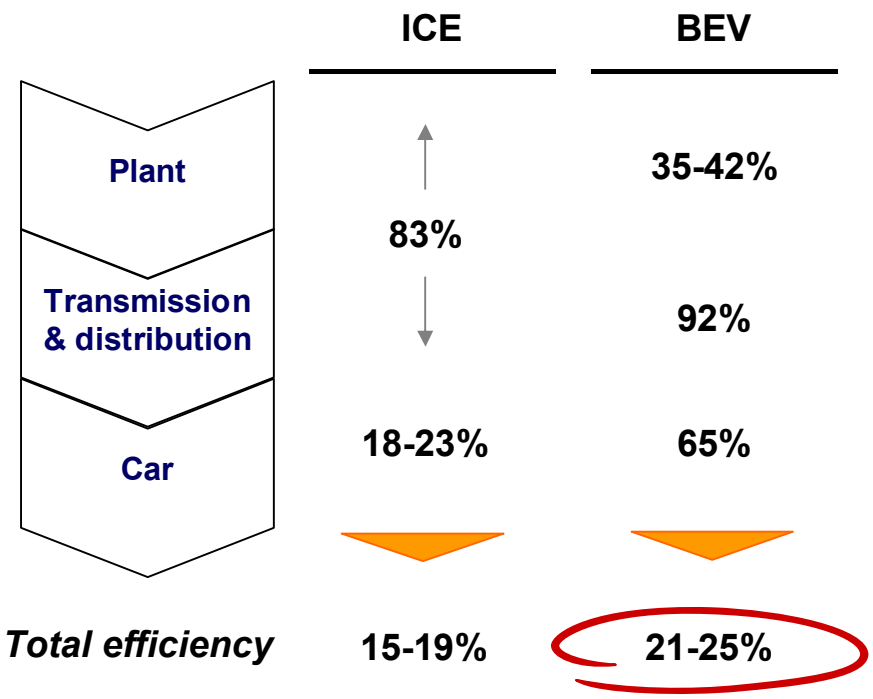
…Electric cars could help solve the problem and pla y a vital role in Hong Kong's future

1 **Increase energy efficiency**	Å Electric powertrain is more efficient than conventional combustion engines Å If all the vehicles in HK changed to electric vehicles, there is a potential to decrease HK's overall energy requirements by up to 9%
2 **Reduce oil dependency**	Å Today, transport has a high degree of dependency on limited fuel sources Å EV provides the opportunity in the future to reduce our reliance on oil, provides more flexibility to move to cleaner, cheaper, more renewable energy solutions
3 **Reduce CO2 emissions**	Å EV provides opportunity to reduce HK's CO2 emissions from transport by up to 30%
4 **Zero road-side emissions**	Å EV not only reduces emissions but also transfers the emissions from the tailpipe to the electricity plant: Å Much easier to manage the emissions from a single point Å Away from where people are living and breathing

1

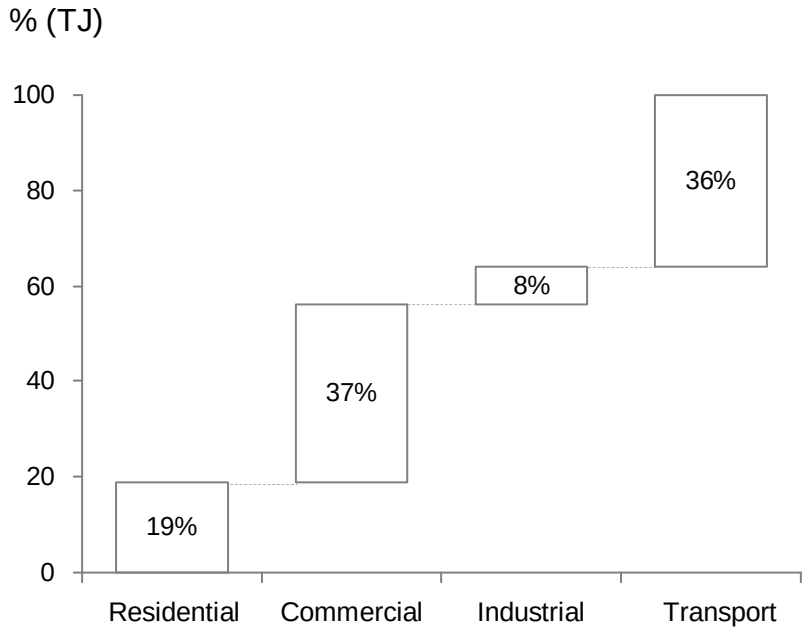
EV efficiency can potentially reduce HK energ y usage

ICE vs. BEV efficiency comparisons



~25% more efficient end-to-end

Transport is one of the largest users of energy in Hong Kong

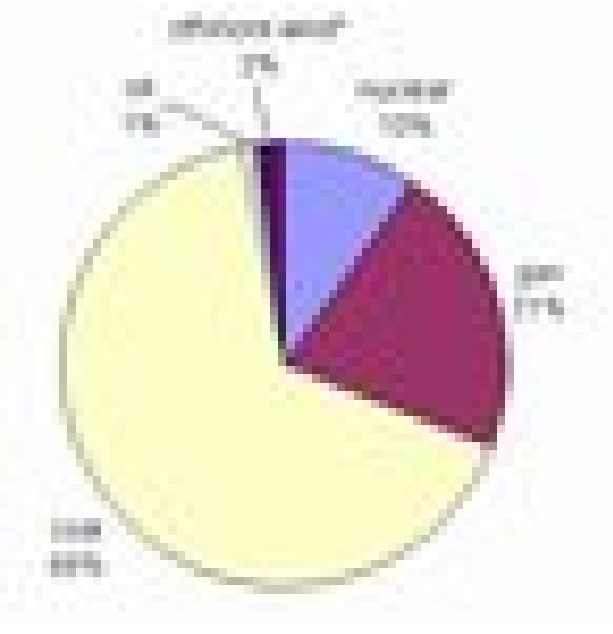


Energy use

2

Electric vehicles reduce dependency on a single fuel source

Oil derived
84%



- Today, transport is >84% dependent on a single source of energy
- With BEV, we have the opportunity to diversify to a much broader range of energy sources, including renewable and clean options
- No need for HK to build additional power stations given current spare capacity

*Includes wind farm under development by CLP

3

Reduce CO2 emissions from HK fleet in HK b y 20-35%

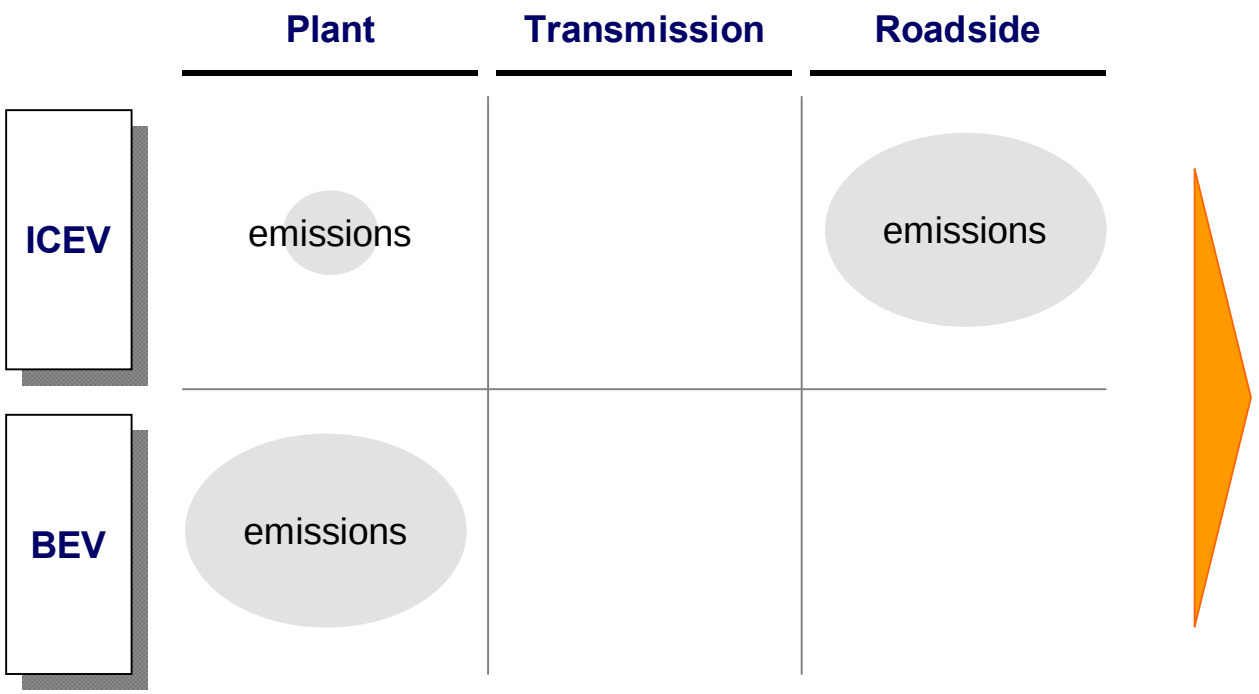
	Energy source	Co2 intensity of energy supply	T&D efficiency	Vehicle efficiency	Co2 intensity of motive energy (in Hong Kong only)
ICEV	Gasoline	242		18%	1344
	Diesel	248		23%	1078
HK BEV		530*	94%	65%	867

20-35% total reduction

*based on CLP carbon intensity of electricity generation in Hong Kong, 2007

4

A better environment for HK with zero roadside emissions



Key benefits of BEV

- Emissions are easier to manage when it is at a single source rather than at tailpipes of thousands of cars (e.g. Carbon Capture Sequestration)
- Emissions are away from where people are walking, living and breathing

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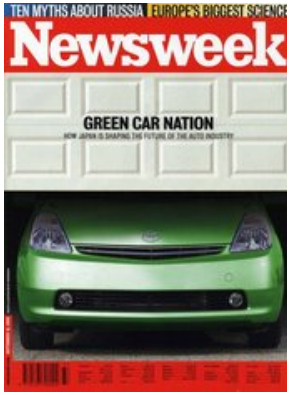
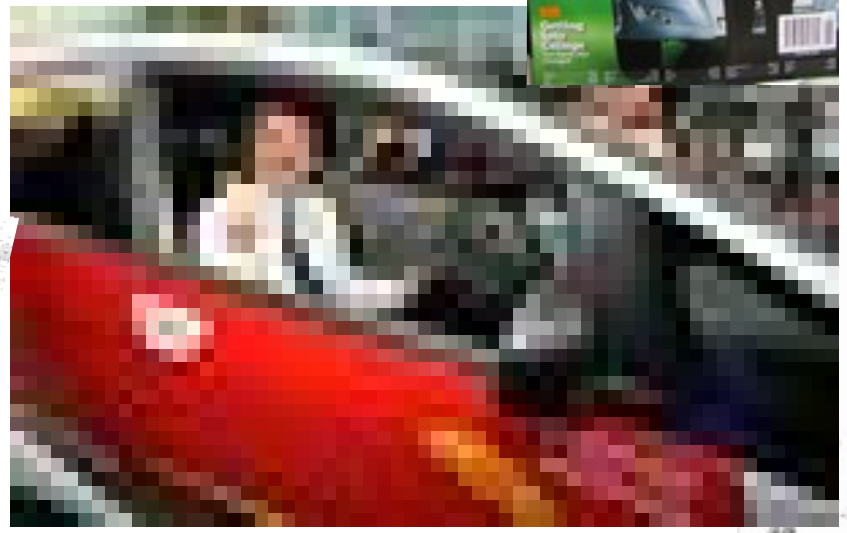
The mainstream press is "all over" electric cars…

Public is catching on to an emerging and powerful shift in the auto industry

A budget promise to explore the use of battery-powered cars has raised hopes of a green future. Now comes the hard part. writes **Sarah Monks**



Hybrids 'could help sell public' on electric cars



Carmaker BYD feels benefit of Buffett effect

Nissan plans big US electric car output

Major investments by auto makers into EV

Global industry consensus is forming around the strategic importance of EV

Renault-Nissan

EV launch in 2010, a complete line-up of 60 models by 2012 - $0.5-1Bn investment into EV

JV with NEC to produce battery packs

Partnership with Project Better Place to supply to Israel and Denmark

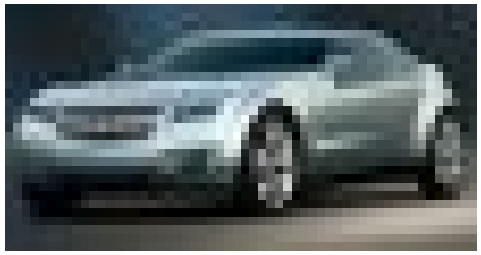
"It's really a new chapter in the life of this industry."
– Renault-Nissan CEO, Ghosn

General Motors

Chevy Volt plug-in hybrid with heavy investment:
Å200 engineers
Å50 designers
Å400 on related sybsystems

Target for 2010 together with other vehicles (Saturn will follow). All electric range of 64km planned

"The electrification of the automobile is inevitable"
– Vice Chairman of global development, Lutz



Toyota

Aim to sell 1M units of hybrids pa by 2010.

Next generation plug in hybrid to be ready by 2010

Battery JV with Panasonic with investment of ~US$190M

Working with French utility player EDF to explore roll-out in France and rest of Europe

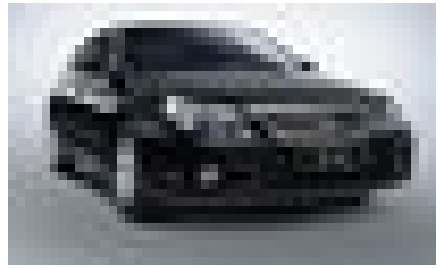
BYD

BYD is a world leader in advanced batteries and also makes over 150,000 cars a year

A few thousand PIH's will be produced in 2008, followed by low rate commercial production in 2009.

Pure BEV to begin low rate production in 2009/2010.

Planned 100km range for PIH and 300km for BEV.



First generation passenger vehicles are already showing great promise

BYD F3E

Range	**300 km**
Maximum speed	**160 km / h**
Charging time	**15 minutes (80%)**
Power	**220V 3-phase**

Mitsubishi iMiEV

Range	**120 km**
Maximum speed	**130 km / h**
Charging time	**30 minutes (80%)**
Power	**220V-50kW 3-phase**

Commercial vehicles have been developed and are already in operation in the UK

Don’t forget about public transport!

Hong Kong transport infrastructure has solid fundamentals

- Introduce trolley buses?
- Upgrade trams?

Leading cities worldwide investing in charging infrastructure

London: 250 stations by 2008

EDF partnered with Elektromotive to roll-out 250 public charging stations in UK by end of 2008:

- 200 charging stations in London, other 50 in rest of UK
- Londoners estimated to spend £1.2Bn on green vehicles in 2009

Israel: 10k by 2008, 500k by 2011

The Government of Israel has partnered with Project Better Place and Renault-Nissan in an ambitious plan for EV roll-out:

- Plans to install 500K charging stations by 2011 ï 1 for every 6 parking spaces in the country. 10K stations by end 2008
- 90% of cars driven less than 45 miles per day
- All major urban centers <100 miles apart

Denmark: 500k stations by 2011

Denmark is the second country to sign up to Project Better Place for EV roll-out under the same business model as Israel:

- Install 500k charging stations, 150 battery swap stations for longer journeys by 2011
- Supported by Danish utility Dong Energy
- Government support with tax breaks putting EV at $20K vs. average price of ICE car $60K

Tokyo: 150 stations

Tokyo Electric Power Company (TEPCO) plans to have 150 fast-charge stations in the Kanagawa prefecture

- Supported by 90% reduction in car tax and parking tax along with parking discount
- Partnered with parking lot operator Park24 to kit out 8 parking lots for pilot testing

But many challenges remain to be tackled …

A few issues no doubt being considered by the FSDs steering committee

- Public policy: Loss of momentum? Complacency about transport and air quality objectives? Need for more incentives or subsidies to encourage adoption due to high EV costs today? How are other governments incentivising shift to EVs?

- Vehicles: Can vehicles deliver performance / mileage the public expects? Bottlenecks in production? (only 30 iMiEVs in 2010) Cars are expensive (2-3x cost of normal gas powered cars)

- Batteries: Extremely expensive today. Will technology evolve quickly and make todayôs batteries obsolete tomorrow? Who will underwrite battery technology risk? How will we dispose of / recycle used batteries ï what is the environmental impact?

- Charging infrastructure: Land a most scarce resource. Massive upfront capex may be required to encourage adoption, should Government or should the private sector invest? What are the best charging models for Hong Kong, quick charge or battery swap? How do we develop a common charging protocol?