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China US Taxi Electrification Program

October 25th, 2009

Why taxis?

Taxis are cultural icons that feature:

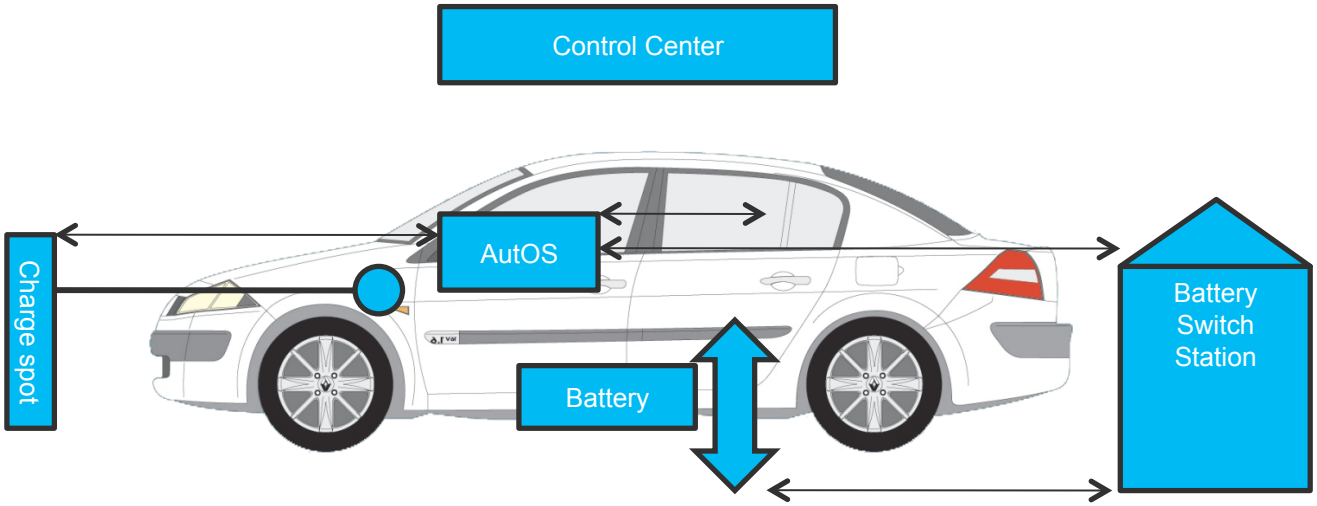
High mileage

Highly polluting

Highly regulated

Highly sensitive to rising fuel costs

BPLC electric taxi offering



- Personal charge spots at driver home or taxi depot
- Battery exchange infrastructure throughout service territory allows for 24/7 driving
- Control center & AutOS allows for centralized, online dispatch capability for taxi operators
- AutOS supports energy-aware navigation and energy management for taxi driving

BPLC will introduce world's first electric taxi with switchable battery in Tokyo, Japan Q1 2010

- Japan's Ministry of Economy, Trade, and Industry awarded Better Place grant to pilot EV taxi program in Tokyo
- Pilot paves way for broad incorporation of zero-emission EV technology into Tokyo's 60,000 taxi fleet
- While taxis comprise only 2% of vehicle population, they account for ~ 20% of all passenger vehicle emissions

Multiple companies partnering in taxi demonstration:

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BPLC will oversee project, and will install and operate a battery switch station in high-traffic Roppongi Hills neighborhood

NIHON KOTSU

Tokyo's largest taxi operator will incorporate multiple switchable battery EVs into its taxi fleet

TOKYO R&D

Automotive engineering specialist will supply EVs, based on commercially available vehicles, with battery switch mechanism

Renault's ZE Fluence will be first EV capable of meeting rigorous demands of taxi market

- Full-size 5-seat passenger sedan with spacious interior (length: 4,820mm; width 1,672mm)
- ~24 kWh lithium ion battery allows for ~160km driving range on single charge
- Switchable battery provides infinite range extension; switch time < 5 minutes
- Regenerative braking increases energy efficiency and reduces brake maintenance

China US Taxi Electrification Program (CUTEP)

Leadership on Environment and Innovation!

- Shanghai
  - Marvel of growth
  - Technology center
- San Francisco Bay Area
  - Hub of innovation
  - Early adopters
- Beijing and DC
  - Government seat
  - Globally recognized capital

Highest mileage vehicles provide the best vantage point to the future!

Electrification of Taxi Fleet Opportunities

Opportunity to establish EV center of excellence

- High visibility project will attract significant international attention
- Each taxi will provide an EV experience to thousands of passengers annually
- Develop clusters of adjacent EV businesses such as academic R&D centers; battery manufacturing, servicing, and recycling industries; and EV software development businesses

Opportunity to reduce GHG emissions and reduce dependence on oil

- >30 metric tons of CO2 equivalents released annually by each taxi

Opportunity to reduce dependence on oil

- 3000 gallons of fuel consumed annually by each taxi

Opportunity to improve air quality and health rating of city

- ~ 35.7 mT of NOx, 547 mT of carbon monoxide, and 47.6mT VOC emitted annually by each taxi
- Improved air quality can dramatically reduce incidence of respiratory illnesses

Program Elements

Vehicles - 20 switchable EV's from GM, SAIC, and Cherry (based on target market)

Battery Switch Stations - 4 stations, one per city located in a key transportation hub

Potential partners:

- Yellow Cab SF
- Yellow Checker SJ
- DC Airport cabs
- Shanghai and Beijing – TBD

Budget: estimated at $25 million for deployment and running through 2011

- Infrastructure - $12m
- Deployment - $5m
- Vehicles - $3m
- Personnel - $2.5m
- Contingencies - $2.5m

Overview of US/China Taxi Electrification Program

Objectives

- Demonstrate environmental and economical leadership
- Set the stage for the worlds largest fleet EV deployment
- Significantly reduce GHG, smog emissions and diesel imports
- Establish these cities as EV centers of excellence

Better Place role

- Deploy and manage enabling infrastructure and software:
  - Battery Switching Stations (BSS) and Service & Control Centre (SCC)
  - Own and service batteries
  - Provide high-touch customer service to taxi operators / drivers

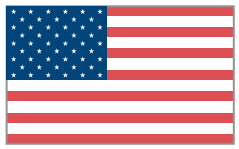
Key Stakeholders

- Local Gov/Municipalities
  - Marketing and Communications
  - Real Estate and Permitting
  - Policy and Regulation
- Car OEMs in China and US
- Taxi Operator
  - Driver Selection
  - Operational Enablement
- Utility to provide renewable power

Timeline and Key Milestones

	Timing	Key milestones
1 Plan	Nov 2009	• Establish scope (# taxi's, switch stations, locations, partners) • Define marketing plan (launch venue, key messages, participants) • Operational plan (goals, measurements, resources, milestones)
2 Announce	Nov 2009	• Introduce concept during Obama's visit in China • Complete partnership agreements and long-lead procurement • Finalize government funding and project management
3 Phase I	Q1 2010	• Secure real-estate locations and permits for BSS & SCC • Deploy switch stations in Shanghai and SF Bay Area • Conduct comprehensive system testing with demo taxi fleet
4 Phase II	Q2 2010	• Deploy switch stations in Beijing and DC • Conduct comprehensive system testing • Hold simultaneous launch events

Governments around the world introducing extensive electric vehicle support programs

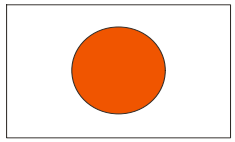


USA

- US$7,500 consumer tax credit on EV purchases
- US$2B grants for advanced battery manufacturing
- US$400M for electrification of transportation
- Michigan: US$535M tax credits for R&D on advanced batteries

China

- US$8,800 rebate per car for 60,000 municipal vehicles in 13 cities
- US$1.5B to support R&D and tech innovation for EVs and parts (including battery)



Japan

- US$7,000 subsidy for EV purchases
- Grants for battery switch and taxi demonstration programs

EU

- Rebates of €3,000-€5,000 on EV purchases in some European countries
- France: US$2.2B to fund EV infrastructure deployment; US$550M to fund R&D
- U.K.: US$155M into EV research and development (still pending)

Denmark

- Vehicle tax of 105% for the first 76,400 DKK ($14,000), and additional 180% tax on each additional Krona, with EVs exempt from Vehicle tax
- Additional circulation tax with rates that depend on fuel efficiency standards

Aggressive EV support programs also launched in Canada, Australia, Israel, South Korea and other countries

Commitments from both US and China Governments

1. **Continuation/expansion of tax incentives for green vehicles**

2. **Federal grants to pay for initial taxi demonstration program**

3. **Low interest loans to finance infrastructure investment (and/or large scale battery purchase)**

4. **Access to real-estate in key high-traffic areas to deploy battery switch stations (e.g. Airports)**

5. **Federal incentives or mandates for taxi companies to accelerate EV adoption**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