

Auf dem Weg zur Elektromobilität: Ein internationaler Blick auf Märkte und Entwicklungen

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*5. Fachkonferenz Elektromobilität vor Ort, Leipzig
27. Februar 2018*

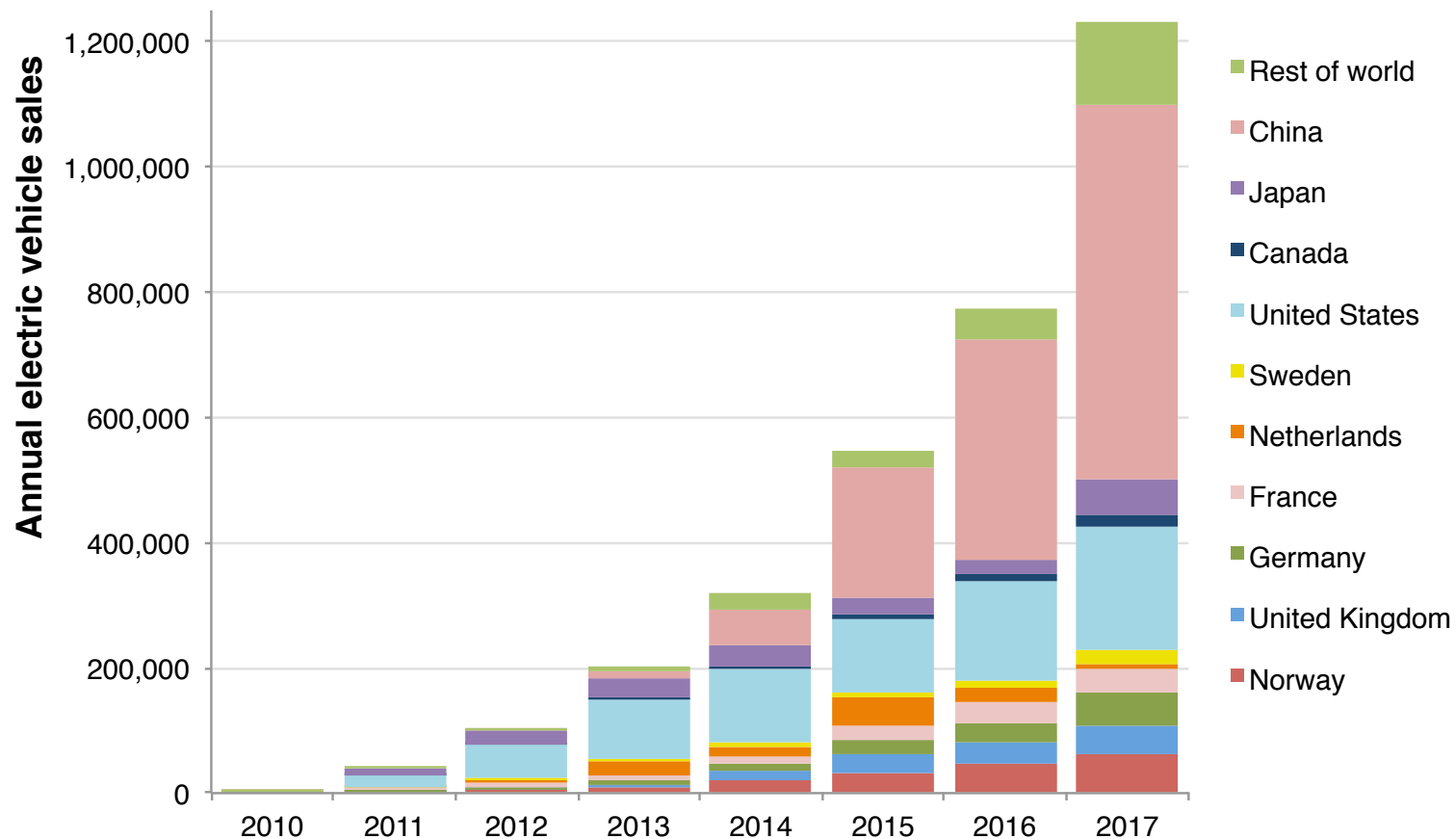


Outline

- Global developments
 - EV sales by region
- A few details from recent analysis
 - What is driving electric vehicle uptake in the U.S. markets?
 - How much public charging infrastructure is needed?
 - What can we learn from the top global EV markets?
- Reflections, lessons learned

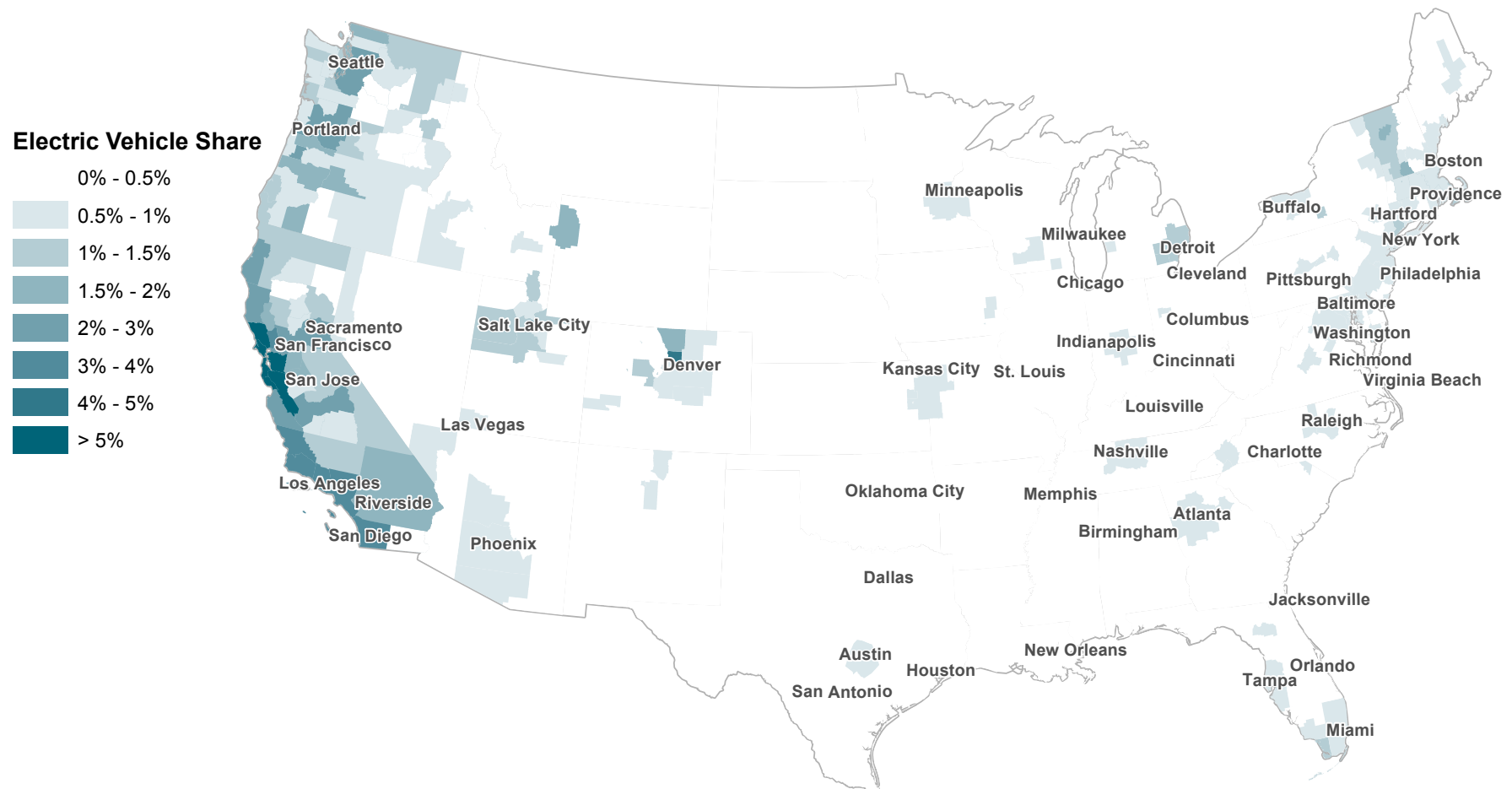
Global electric vehicle sales

- Through 2017, cumulative global light-duty EV sales passed 3.2 million
 - Mostly the sales are in China, U.S., and Europe
 - These markets have a complex system of regulation, incentives, charging, local action



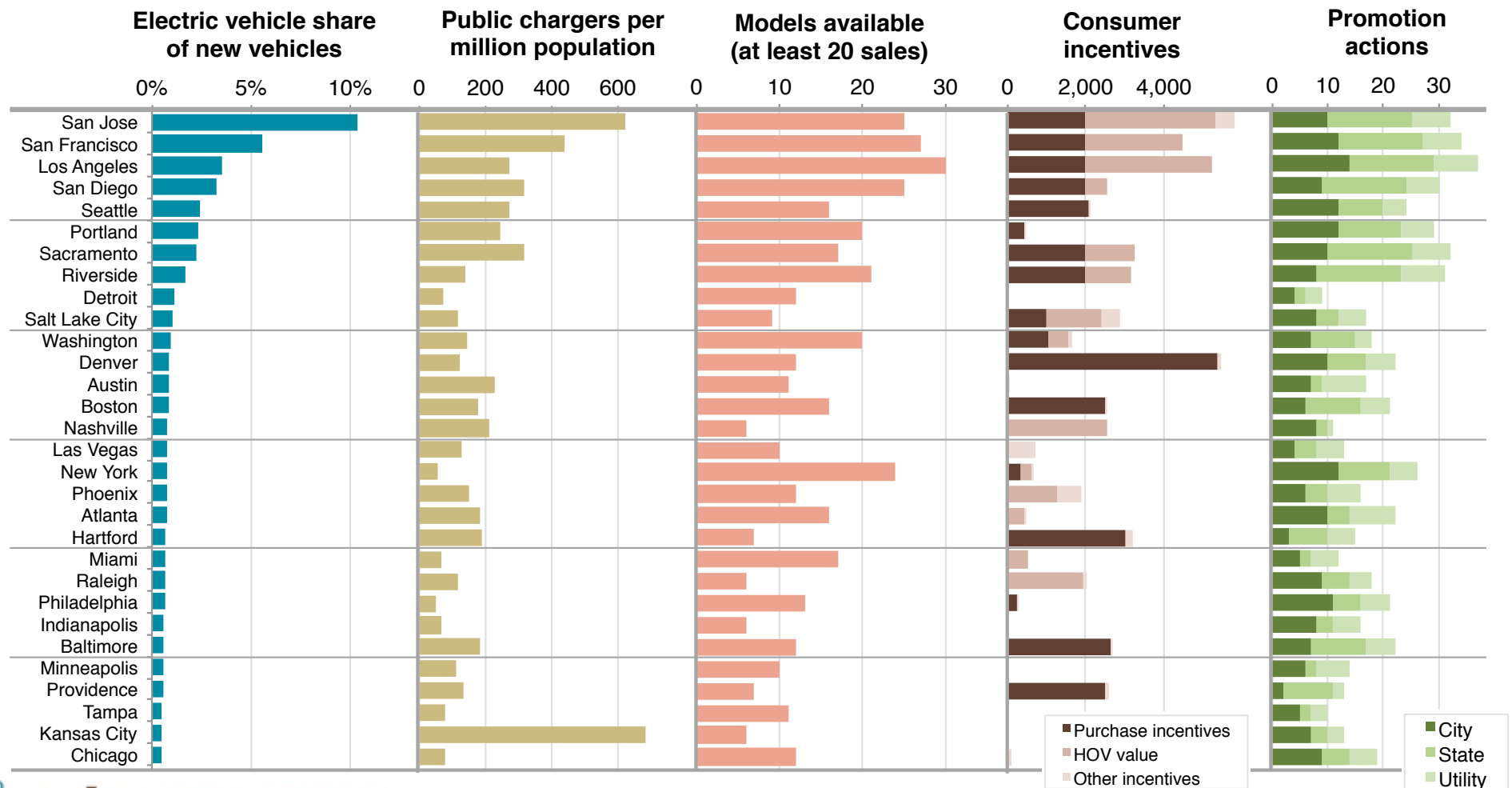
What is driving electric vehicle uptake in the U.S.?

- California policies are working and increasingly getting adopted more widely
 - Top markets address prevailing barriers: Models availability (with ZEV regulation), cost (incentives), convenience (charging infrastructure), awareness (local actions)



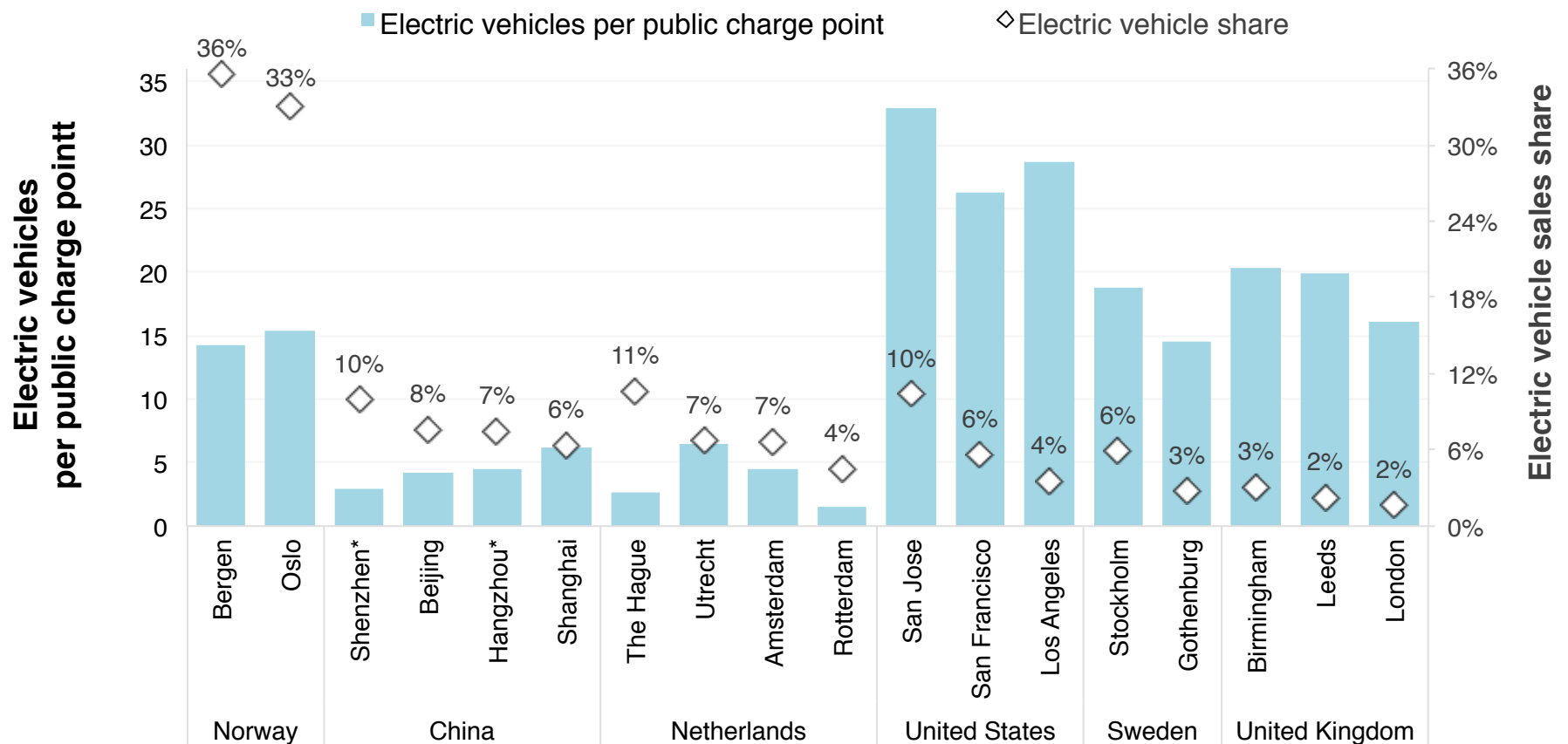
Electric vehicle uptake and underlying factors in the U.S.

- Leading markets tend to have more extensive public charging, more EV models, greater consumer incentives, and more local promotion actions



Is there a global EV-per-public-charger benchmark?

- Looking at the top EV markets, the EV-per-charger ratio varies greatly
 - China/Netherlands 2-7; Norway/Sweden/UK ~15-20; California ~30



Leading global EV markets keep innovating

- These 20 markets account for 40% of global electric vehicle sales
 - These areas represent just 3% of the world population and 8% of global vehicle sales
 - The markets have combination of national, state, city, and utility policies and actions



Reflections and lessons learned

- Global and U.S. experience show what it takes to launch the market
 - Regulation: Long-term CO₂ + EV regulations ensure investment, model availability
 - Incentives: Address short-term (~5 year) market cost barrier
 - Charging infrastructure: Provide convenience, consumer confidence, education
 - Utilities: Provide charging infrastructure (home, workplace, public) at low cost
 - Cities: Promote electric vehicles locally (urban restrictions, preferential access)
- Lessons learned on the transition to electric
 - Just one of the above actions is insufficient; comprehensive action needed
 - Stable regulatory/incentive policy is key; uncertain/shifting policy is disruptive
 - To grow charging infrastructure, encourage many stakeholders to engage

Contact

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ICCT electric vehicle page: <http://theicct.org/electric-vehicles>

EV world capitals report: <http://www.theicct.org/publications/EV-capitals-of-the-world-2017>

U.S. city EV report: <http://www.theicct.org/leading-us-city-electric-vehicle-2016>

ZEV Alliance: <http://www.zevalliance.org>

Acknowledgements

Work by Peter Slowik, Dale Hall, Hongyang Cui, Lingzhi Jin, Marissa Moultak, Nic Lutsey

Supported by ZEV Alliance governments, The 11th Hour Project of the Schmidt Family Foundation, the ClimateWorks Foundation, Josh and Anita Bekenstein

World EV capitals

**Analysis of top electric
vehicle markets
through 2016**

Diverse local policies underway to meet EV goals

Policy or program	Model city	Details	Other cities
City fleet goal	Los Angeles	Half of city fleet electric as of 2017	Oslo, Amsterdam, San Jose, New York, San Diego, Shenzhen
Taxi electrification	Beijing	Replacing all 69,000 city taxis with NEVs through government subsidies	Taiyuan, London, Amsterdam, Hangzhou, Tianjin, Shenzhen
Electric car sharing program	Paris	Autolib' program contains 4,000 cars and 6,000 charge points	Shanghai, Los Angeles, Amsterdam, London, Hangzhou
Public bus electrification	Shenzhen	All buses zero-emission by end of 2017	Qingdao, Tianjin, Hangzhou, Los Angeles, London
Free public charging	Oslo	Free charging with renewable energy at all Level 2 charge points	Stockholm
EV-friendly building and parking codes	London	1 in 5 parking spaces must have an EV charge point	San Francisco, Los Angeles, New York, Hangzhou, Shenzhen
Carpool or bus lane access	San Francisco	Electric vehicles may use carpool lanes and do not pay bridge tolls	Los Angeles, San Jose, Oslo, Bergen, San Diego
Vehicle registration benefits	Shanghai	NEVs bypass expensive license plate lottery system	Beijing, Shenzhen
Parking benefits	Amsterdam	Electric vehicles obtain free parking spot in city center	Shanghai, Utrecht, Oslo, San Jose
Local purchase incentives	Shenzhen	Local subsidies of \$8,800 for BEVs, \$5,100 for PHEVs	Beijing, Shanghai, the Hague