ACCELERATING ELECTRIC VEHICLE UPTAKE IN CHINA AND INDIA

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HOW CAN COMPARATIVE ANALYSIS IMPROVE OUR UNDERSTANDING OF “RAPID SWITCH” IN DIFFERENT COUNTRIES?
SET THE SCENE: CHINA & INDIA

Rationale for EVs

Socioeconomic underpinnings
- Rapid growth
- Urbanization
- Inequality

Technology leadership

Air pollution

Climate

Congestion

Energy security
STATUS QUO: CHINA LEADING THE WAY, INDIA AT EARLY STAGE

Electric car stock
(BEV and PHEV, thousand)

Market Share

IEA. Global EV outlook 2017
STATUS QUO: CHINA LEADING THE WAY, INDIA AT EARLY STAGE

McKinsey Electric Vehicle Index

Demand side

Supply side
NEAR-TERM PRIORITIES: CUSTOMIZE EV POLICY BASED ON CURRENT MARKETS AND INSTITUTIONS

India:

- Take the lead in electrifying 2-wheelers & rickshaws
- Foster early adoption of 4-wheelers by premium customers & ride-sharing companies
- Implement incentive schemes (Faster Adoption and Manufacturing of Electric Vehicles)
- Improve coordination among ministries
- ...

China (327 million)

India (210 million)
NEAR-TERM PRIORITIES: CUSTOMIZE EV POLICY BASED ON CURRENT MARKETS AND INSTITUTIONS

China:

• Manage the overcrowded manufacturing industry
• Ensure continued sales of EVs with reduced subsidy
• Impose a national ban on internal combustion engine cars
• Implement the new energy vehicle credit mandate
• Scale up electric buses beyond pilot cities
• Improving charging infrastructure
• …

Photo: Informal “fly line” charging in Beijing. Credit: Rob Earley
LONG-TERM PERSPECTIVE: LAYING THE COMMON FOUNDATIONS FOR ELECTRIC MOBILITY TRANSFORMATION

• Role of EV in the broader transport strategy

• **Grid implications**: EV charging demand vs. Peak demand vs. Renewable generation curve
  → Time-of-day electricity pricing; Business model for utilities

• **Charging infrastructure**: Private vs. publicly accessible charging
  → Building code & permits; Regulatory framework for electricity distribution; Local land use policies & traffic regulations

• **Innovation of key technologies**: e.g. Battery