ITDP
Institute for Transportation & Development Policy

From Santiago to Shenzhen:

Strategies on contracting and the procurement of electric buses

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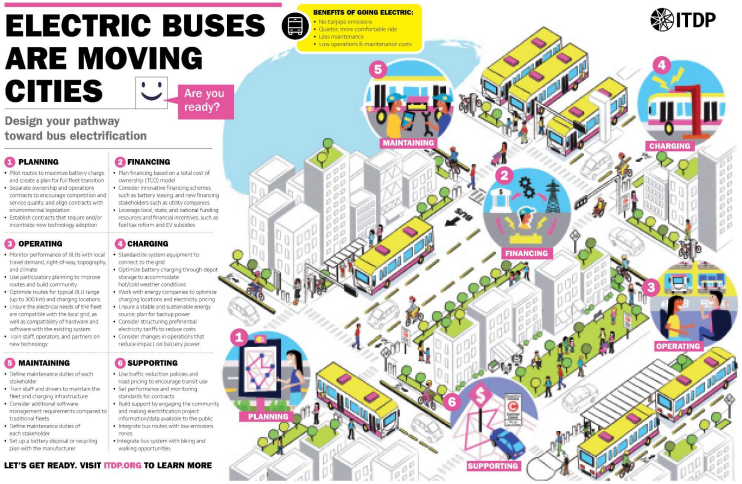
Battery Electric Buses (BEBs)

- Battery Electric Buses impact:
  - Environment
  - Health & Safety
  - Efficiency
  - Equity

- Why BEBs and why now?
  - Longer range
  - Cheaper
  - Improved understanding & decisions
  - More financing opportunities

Passengers wait for a bus in Rio de Janeiro, Brazil. SOURCE: Stefano Aguilar ITDP Brazil, Flickr.

Scope of Research

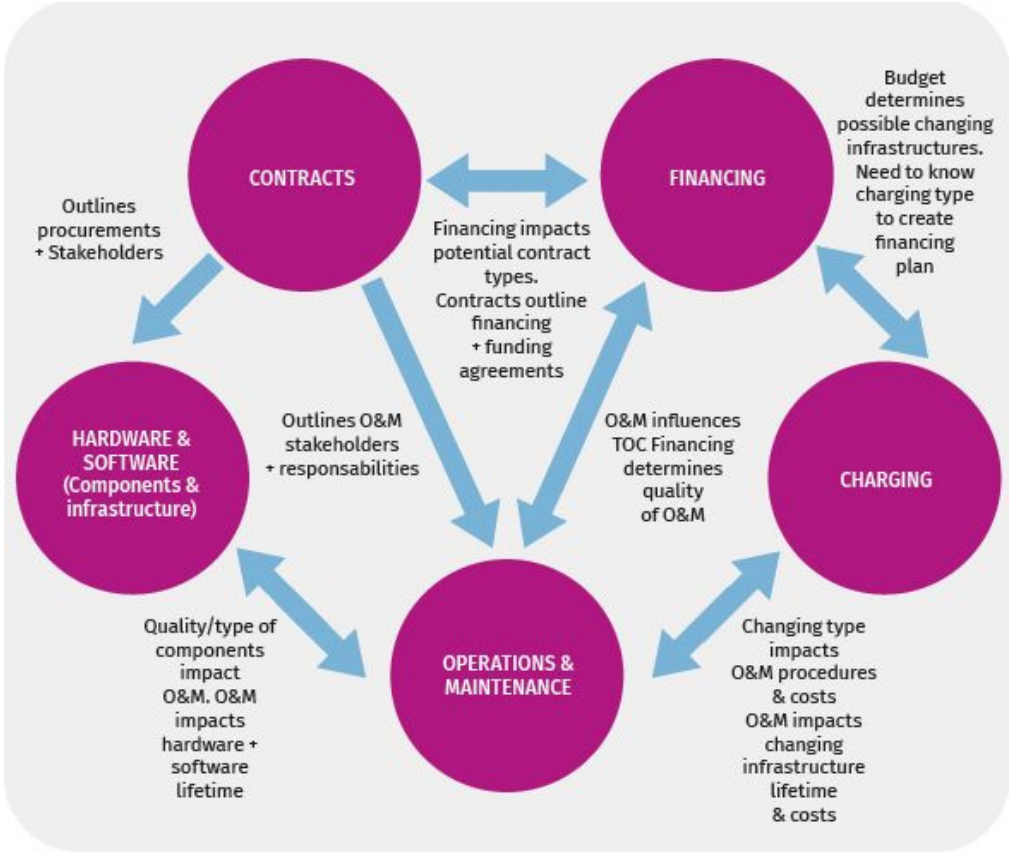


The report investigates the planning and implementation of BEBs from the following aspects:

- Existing technology
- Charging
- Pilots
- Contracts
- Financing & Funding
- Operations and maintenance
- Supportive Strategies

Battery Electric Bus Implementation

- E-bus implementation is an iterative process that will involve traditional and new stakeholders



Bus Operations Background

- Common Types of Operations Contracts
  - Service Contracts
  - Area Contracts (gross/net)
  - Route Contracts (gross/net)
  - Design Build Operate (DBO) Forms
  - Profit Sharing

An Olectra-BYD electric bus in Pune, India. SOURCE: ITDP India

E-bus Adoption

- E-bus Adoption:
  - Add Adoption incentives in contracts
  - Consider creating different contract timelines for different Bus operations

A pantograph charging station in Warsaw, Poland. SOURCE: Wistula, Wikimedia commons.

E-bus Performance and Protection

- E-bus Performance & Protection:
  - Tie cost and Life cycle guarantees to bus and battery performance
  - Tie battery-life degradation to vendor payment or battery replacement
  - Stipulate data collection and sharing requirements

An electric bus charging station in Gothenburg, Sweden. SOURCE: Andrzej Otrębski, CC BY-SA 4.0, Wikimedia commons

E-bus Environmental Goals

- Ebus Environmental Goals:
  - Align environmental legislation and create environmental requirements
  - Monitor and Evaluate Environmental Impacts
  - Create Clear penalties for not meeting environmental requirements

A cyclist rides next to an e-bus in Shanghai, China. SOURCE: Flickr, Ludger Heide

E-bus Infrastructure & Operability

- Ebus Infrastructure and Operability
  - Include charging infrastructure to interoperability requirements
  - Outline Bus depot requirements

An electric bus and plug-in charger in Shenzhen, China. SOURCE: ITDP China.

E-bus Care & Battery Life

- Ebus Care and Battery Life:
  - Include specific training requirements for operators using Battery Electric Buses
  - Include Maintenance Incentives

Driver training in China. SOURCE: Linuxthink, CC BY-SA 3.0, Wikimedia Commons

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- Full report
  - English
  - Portuguese (*coming soon*)
- Executive summary
  - English
  - Spanish
  - Portuguese (*coming soon*)

Thank you