The EV Opportunity: Unique Perspectives

March 27, 2018
Agenda

• Portfolio Approach
• Specific considerations
• Targeted analysis
• REV demonstration activities
• Test and learn
Portfolio Approach

- Home Charging
- Curbside Charging
- Workplace Charging
- Public Quick Charging
- Multi-Unit Dwelling Charging
- Transit Bus Charging
- Medium Duty Fleet Charging
- School Bus Charging

The key is utilization!
Specific Considerations

- Garage orphans – home, curbside
- Renewable penetration - workplace
- Access to dedicated charging – public quick charging
- Density of MUDs – combined approach
- Mass transit electrification – subway and bus
- Fleet products and penetration rates
- City and municipal ownership – school bus
TCO model indicates imminent break-even of EV

Most cost competitive powertrain from TCO perspective (incl. subsidies, upper line: subsidies discontinued after 2020, lower: continued)

| 1 | City bus |
| 2 | School bus (type C) | 1 |
| 3 | Taxi | 2 |
| 4a | Distribution van FedEx |
| 4b | Distribution van UPS |
| 5 | Ride-hailing car |
| 6a | Passenger car NYC home charging |
| 6b | Passenger car NYC curbside charging |
| 6c | Passenger car non-NYC Serv. Ter. |

Source: TCO model Stahl Automotive Consulting

1 Without VTG
2 Including yellow/medallion taxis, boro taxis

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Although Fuel Prices have the Largest Impact on TCO, Con Edison could Influence EV penetration Mostly via Electricity Prices

Bars display the percentage change of the TCO gap in relation to the EV TCO p.a. for a 10% change of the variable

**Fuel price increase**

**Electricity price decrease**

**Battery cost decrease**

**Interest rate decrease (private or corporate buyer)**

**Real-life electricity consumption decrease**

**Use case**

1. City bus (MTA)  
2. School bus (type C)  
3. Taxi  
4a. Distr. van (FedEx)  
4b. Distr. van (UPS)  
5. Ride-hailing car  
6a. Pass. car home  
6b. Pass. car curb side  
6c. Pass. car non-NYC

**Reference EV powertrain**

- BEV
- PHEV

Source: Team
REV Demos and the way forward

- $25M allocated out of $130M for EV demonstration projects
- Focus on portfolio approach in six areas:
  - Smart home charging – 80% of charging requires effective load management
  - Curbside – establish efficacy and franchise rules through demonstration
  - Transit bus – in-depot and on-route charging with potential for network load diversity
  - School bus – idle summer assets align well with v2g from batteries
  - Fast charge hubs – dense vertical MUDs and scarcity of land
  - Proactive system planning and design – DER hosting capacity aligns with EV load
Test and learn

- Nobody has all the answers
- Ability to test models
- Expand stakeholder engagement
- Learn from demonstrations
- Modify and adjust as we go
- Utilize learnings to inform future offerings and business models
Thank You!

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