



Connecting Our  
Communities

# Link Transit's Battery Electric Bus and Fast Charger Projects



April 2017



# Federal Grants to Link Transit

- \$2.95 mil. “ARRA” TIGGER I Grant (2009)
- \$2.5 mil TIGGER III Grant (2011)
- \$3.77 mil. Lo/No Grant (2016)



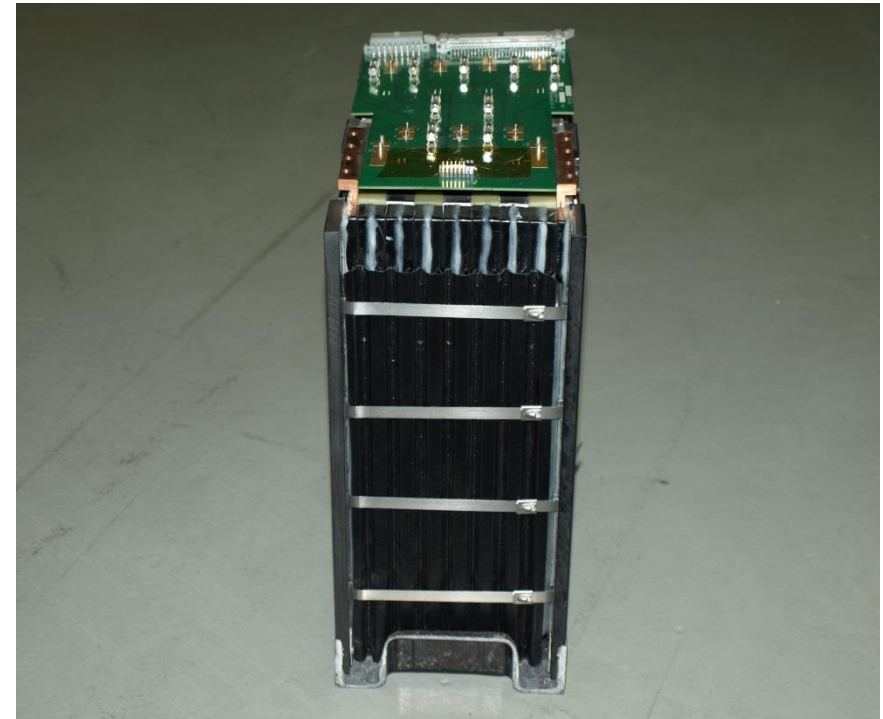
# Ebus 22' Trolleys



[www.linktransit.com](http://www.linktransit.com)

# EBus with Altair Nano Lithium-ion Titanate Batteries

- LiTiO<sub>2</sub> batteries
- 256 - 2.3v batteries
- Glycol cooled
- 588 volt
- 25.6 KW
- 23 mile range



# EBus with Nickel-Cadmium Batteries

- NiCd batteries
- 490 – 1.2 v batteries
- Glycol cooled
- 588 volt
- 35 KW
- 35 mile range



# EBus with China Aviation Li-ion Iron Phosphate Batteries

- LiFePO<sub>4</sub> batteries
- 188 – 3.2 v batteries
- Air cooled
- 601 volt
- 90 KW
- 90 mile range



# Ebus 50kW Slow Charger



# Ebus Robotic Fast Charger





# Trolley Fast Charge



# Ebus Current Situation

- Fast Chargers de-energized pending circuit board decision
- Buses in use using slow-chargers
- 60 mile practical range
- In use about ½ of day



# BYD 35' Transit Bus



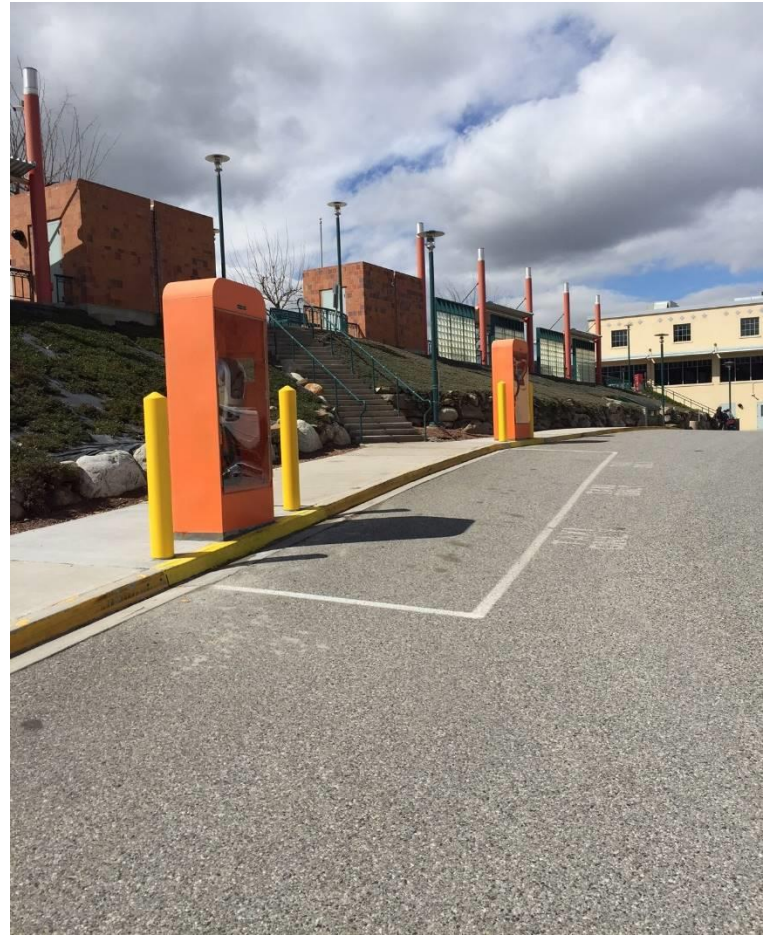
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# BYD Bus with BYD Lithium-ion Iron Phosphate Batteries

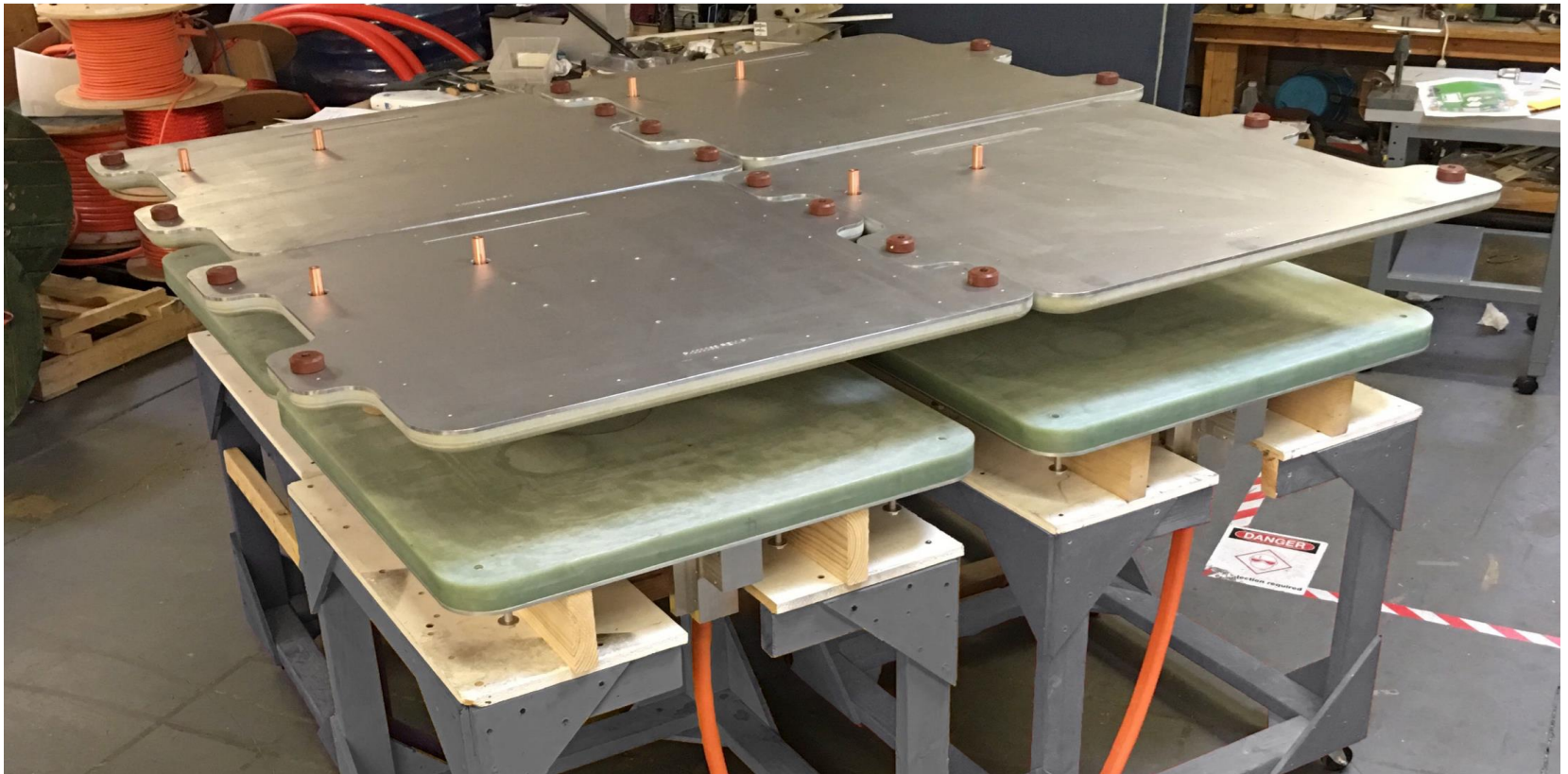
- LiPO<sub>4</sub> Battery
- 160 - 3.2 v cells
- Air cooled
- 512 volt
- 270 Kwh
- 165 mile range



# BYD 85KW Wired Charger



# Momentum Dynamics 200KW Magnetic Inductive Charger



# Monthly Energy Cost Comparisons

**Electric:**

**\$285 per month**

2530 KW @ \$0.11/kwh

**Diesel:**

**\$1,381 per month**

429 gallons @ \$3.22 per gal

