Bi-Partisan Federal Infrastructure Deal Puts $15B into Electric Buses and EV Charging Infrastructure

After months of wrangling with the GOP minority in the Senate, President Joe Biden and Senate Democrats announced the successful negotiation of the $1.2 trillion Bipartisan Infrastructure Framework. While the framework did not deliver the $15B for charging infrastructure and $45B for school and public transit bus electrification that the originally-proposed Infrastructure Proposal did, it does include $7.5B for a national network of electric vehicle chargers and $7.5B for electric school buses and public transit buses. Also as importantly, the idea of a federal tax on EVs (which would have been implemented as a surcharge) also appears to have been eliminated from the bill.

The bill now proceeds to a House-Senate reconciliation committee, which will attempt to put together a final bill that will keep onboard both progressive House Democrats and Republican Senators. This may be a challenge, as the progressive Democrats see a variety of important items missing that the Republican senators have vowed to keep out of the bill, including additional taxes to pay for the infrastructure package. This process is expected to (potentially) take months to complete, which means we might have a signed bill by the end of the summer.

With a smaller amount of funding, the bipartisan infrastructure framework will focus a significant portion of the electrification efforts on rural and disadvantaged communities, which have been shown to disproportionately suffer from the air pollution caused by internal combustion vehicles. The amount of funding proposed still represents a record for federal government investment into electrification and the charging infrastructure that is required to support all of the new electric vehicles. With its focus on “buy American”, the funding should also generate a significant number of new jobs in the clean-tech industry.
BYD Sells 195 Double-Decker Electric Buses to Transport for London

Even traditional designs can be updated. Transport for London’s venerable double-decker buses, long a symbol of the city as much as Tower Bridge or other landmarks, are now being electrified. Alexander Dennis (ADL), a part of the NFI group, has partnered with BYD UK to deliver 195 electric buses to Transport for London (TfL).

As Paul Davies, ADL President & Managing Director, stated, “RATP Dev London’s record order is a resounding vote of confidence in our British-built electric buses and ADL’s proven ability to tailor these to authorities and operators’ requirements. These buses will build on our pioneering work in support of Transport for London’s Bus Safety Standard with a focus on safety for drivers, passengers and other road users.”

BYD UK and ADL will start the delivery of the electric buses this summer, and will enable TfL to convert fifteen of their routes to be fully-electric with zero emissions by 2022 (25% of the fleet). The move is a part of TfL’s plan to make the UK capital’s public transport emission-free by 2037. The purchase consists of orders for 127 double-decker buses (BYD ADL Enviro400EVs) and 68 single-decker buses (BYD ADL Enviro200EVs).

BMW CEO Looks to Keep ICEs Alive In Spite of EU Regulatory Direction

Can vehicles powered by battery electric, hybrid powerplants, and internal combustion engines (ICEs) all share the same platform? BMW’s CEO Oliver Zipse would like you to think so. An early pioneer in electrification with the i3 introduction in 2013, BMW’s progress on electric vehicles had seemed to be stalled during much of the “naught” decade, even compared to other (historically conservative) German passenger carmakers such as Mercedes and VW. However,
BMW sees the focus on common platforms, which many critics claim will impact EV performance, as a benefit to its customers and as a way to maintain BMW’s “look”.

“If you look at what’s happening in the market with these (all-electric) platforms, the cars all look alike,” said Zipse in a recent boardroom interview with Reuters. “BMW serves very specific, high-paying customers, I think they don’t want cars who all look alike.” Zipse said that improvements in ICE technology should help significantly reduce greenhouse gas and other pollutant emissions from these vehicles. In the meanwhile, BMW is working on an all-electric passenger car platform that they plan to launch in 2025. Note that this is just in the nick of time for BMW, since many European regulators are pushing stiff pollution regulations that could effectively ban ICEs by 2025. While Zipse complains about BMW's market cap being lower than its equity value (especially when compared to Tesla), he might want to look into the mirror to better understand what is driving this undervaluation.

Apparently, Electric Freight Trains Aren’t Just for Kids and Neal Young
For those of you who remember having an electric train under your Christmas tree, one of the more interesting stories of a hobby driving an investment was when famed musician Neal Young invested in Lionel trains and developed the Trainmaster Command Control in 1994. However, “scaling up” electric trains to human-size has (until recently) only been successful for light rail and passenger trains, but not for the mile-long freight trains. That is now changing with the introduction of battery-electric locomotives. In an example of this, Wabtec (long a leader in conventionally-powered locomotives) recently completed a trial of its FLXdrive battery-electric locomotive with BNSF Railway and the San Joaquin Valley Air Pollution Control District. The FLXdrive locomotive, which weights 430,000 lbs, utilizes a 2.4MWh battery array with approximately 20,000 lithium-ion cells. The locomotive can output up to 4,400 horsepower for 30-40 minutes, and is capable of a maximum speed of 75 MPH. It also utilizes regenerative braking to further increase efficiency.

For places with significant air pollution, eliminating diesel locomotives could be of great benefit. In the trial tests, the FLXdrive locomotive reduced greenhouse gases by 69 tons (compared to a diesel locomotive), and sported an 11% increase in energy efficiency. The next version of the FLXdrive locomotive will have more than 6MWh of battery capacity, and promises to increase energy efficiency and air pollution reductions by up to 30%. Who said that electric trains are just for kids?
Proterra Wins Electric Bus Bid for Miami-Dade Transit Agency

Hot off of a SPAC deal that saw them trading on the NASDAQ earlier this month, Proterra announced a deal to deliver 42 Proterra ZX5+ electric transit buses and 75 Proterra 125kW DC fast chargers to the Miami-Dade Transit District. The buses and chargers will be spread across three transit bus depots, and brings the number of Proterra electric buses in the Miami-Dade transit fleet to 75 (Rhombus Energy Solutions builds the Power Control System pictured for Proterra).

Quick Notes from the Electric Vehicle (EV) / Energy Storage Ecosystem

- GM and Ford dealers warily prepare for the EV transition
- Lightning Day Shows Off Lightning eMotors’ Electric Vehicles
- California PUC opens ‘mother of all proceedings’ to prepare the grid for new wave of DERs
- First Student Bidco Inc. and First Transit Parent inc. Announce Offering of $800M of Senior Secured Notes

About Rhombus Energy Solutions

Rhombus develops and manufactures next-generation bi-directional electric vehicle charging infrastructure, high-efficiency power conversion systems and energy management system (EMS) software for vehicle-to-grid (V2G) capable electric vehicle fleet charging, energy storage and microgrid applications. The high reliability of our solutions is the result of decades of experience developing high-power systems for a variety of applications and deployment scenarios, including UL-1741-SA system-to-grid solutions. For more information, please visit www.rhombusenergy.com.