FACT SHEET

Contact Us
US-ChinaR2ZE@dot.gov

STATUS OF ZERO EMISSION BUS DEPLOYMENT IN CHINA

China's integration of "new energy" vehicles – the Chinese term that includes battery electric, hybrid electric, fuel cell electric, and alternative fuel technologies[1] - into transit fleets has become a primary focus following the development of national goals to address harmful emissions concerns. In the Ministry of Transport's 2015 Implementation Opinions Concerning Hastening the Promotion and Usage of New Energy Vehicles Within the Transportation Sector (关于加快推进新能源汽车在交通运输行业推广应用的实施意见) China has set a goal of having at least 300,000 new energy public buses and taxies in operation by 2020.[2]

China has already deployed hundreds of zero emission buses in hundreds in cities like Nanjing and Shenzhen. Yet, buses in hundreds of cities like new energy buses still only account for 4% of the entire Chinese bus fleet.[3]

Public transit fleets are impacted by government activity and are in a better position to respond to government efforts to promote zero emission buses. The Chinese government has released plans to reduce national greenhouse gas and air pollution emissions and improve air quality and has targeted the transportation sector as a major part of this strategy. This is illustrated by the increase in the number of electric buses to nearly 50% of total new energy buses in 2014 in response to a subsidy available for electric buses that is 50,000 RMB (approximately 7,700 USD) more than the government subsidy for plug-in hybrid electric buses.

According to a report by Morgan Stanley, a financial consulting firm, China is projected to increase its production and operation of electric buses from 2016 onward.[4] While China has been focusing on the manufacturing of both electric cars and buses, the following factors have pushed the focus toward e-buses:

The vehicle purchase tax on conventional cars has been cut, increasing competition with e-cars. No such tax reduction has been reported for buses.

E-car charging facilities for public use are limited with slow construction trends. Public transit operations have fixed routes which would make charging facility installation easier to plan and construct.

Many new energy car manufacturers do not have the scale or brand name to promote their cars. In comparison, bus manufacturers have a higher national and global profile.

A less stringent new energy bus purchase subsidy policy is expected to be implemented in 2016.[5]

The need for bus replacement for aging fleets coupled with current trends of urbanization support e-bus growth.

RACE to Zero emissions

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STATUS OF ZERO EMISSION BUS DEPLOYMENT IN AMERICA

The United States' Federal Transit Administration has initiated several programs to help fund projects toward the development and advancement of zero emission bus technology. The National Fuel Cell Bus Program (NFCBP), from 2008 to 2013, funded projects that obtained and demonstrated fuel cell buses to facilitate market development, reduce transit bus emissions, and promote a globally competitive industry for fuel cell buses[6]. NFCBP was succeeded by the Low to No Emission Vehicle Deployment Program (LoNo Program)[7]. Other sources of federal funding included, but are not limited to, the Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) Program[8] and the Clean Fuels Grant Program[9]. States also offer additional sources of funding for local transit projects.

As of 2016, the United States has over 300 individual zero emission buses operating in transit fleets throughout the nation. Several public transit agencies in California have taken strides toward electrifying a majority of their fleets: SunLine Transit has participated in a demonstration of the American Fuel Cell Bus, a fuel cell bus manufactured completely in the United States, and Antelope Valley Transit Authority plans to convert their entire fleet from diesel to 100% electric by 2018[10].

Elsewhere, zero emission buses are also deployed in transit agencies in the northern Midwest and northern East Coast and some southern states. There is a notable absence of zero emission buses in central United States.

One major obstacle to further electrification is the cost of zero emission buses, which can be more than double that of conventional diesel buses. Though zero emission buses are proven to have lower maintenance costs and better fuel economy that reduces costs over the long term, transit agencies have expressed concern over the high capital costs. However, with the availability of federal, state, and local funding, transit agencies may be able to overcome this obstacle and subsequently, once the volume of and demand for zero emission buses rises, the overall purchase price of zero emissions buses should fall, making the technology competitive with conventional diesel buses.

[1] *http://cleantechnica.com/2015/03/23/china-prioritizes-clean-energy-public-transport/*
[2] *http://cleantechnica.com/2015/03/23/china-prioritizes-clean-energy-public-transport/*
[3] *http://www.eenews.net/stories/1059996556*
[4] *Morgan Stanley, China Autos & Auto Parts, October 28,2015*
[5] *http://greenerideal.com/vehicles/0122-china-to-increase-subsidies-for-electric-vehicles/*
[6] *https://www.fta.dot.gov/research-innovation/about-national-fuel-cell-bus-program*
[7] *https://www.fta.dot.gov/funding/grants/low-or-no-emission-vehicle-deployment-program-5339c*
[8] *https://www.fta.dot.gov/funding/grants/tigger-program*
[9] *https://www.fta.dot.gov/funding/grants/clean-fuels-grant-program-5308*
[10] *http://www.avta.com/index.aspx?page=482*