



The U.S. – China Race to Zero-Emissions Challenge

Zero-Emissions Buses for a Climate-Smart/Low-Carbon Future

Overview:

The U.S. - China Race to Zero Emissions (R2ZE) Challenge is a collaborative and friendly competition encouraging transit agencies in the U.S. and China to deploy innovative, advanced, non-polluting Zero Emission Buses (ZEBs) on the road in communities across the two countries. The Race directly supports the goals established by the U.S. - China Climate Change Working Group pursuant to the 2013 Joint Statement on Climate Change and in an effort to spur large-scale, cooperative efforts to address the climate challenge. The United States and China are two of the world's largest emitters of greenhouse gases, and in both countries, the transportation sector contributes substantially to these emissions. Through the R2ZE, the two countries aim to reduce greenhouse gas emissions while fostering demand for zero emission, heavy-duty vehicle technology. The winner(s) of the race will be the transit agencies with the highest percentage of operational ZEBs in their fleet in the year 2025. Transit agencies that made significant strides in deploying ZEBs will be recognized each year as we move toward the target year.

On June 3rd during the 8th U.S. - China Transportation Forum in Los Angeles, U.S. Department of Transportation and China's Ministry of Transport jointly announced the R2ZE Challenge and called-to-action cities / transit agencies to take measurable steps to reduce transit fleet bus greenhouse gas and air pollutant emissions through increased deployment and operation of ZEBs. This call-to-action not only aims to reduce greenhouse gas and criteria pollutant emissions, but also seeks to spur demand and technological innovation for zero-emission heavy-duty vehicles. The R2ZE Challenge will demonstrate that ZEBs can be cost-competitive and cost-effective when compared with diesel and other alternative fuel buses in terms of both operational and societal costs.

The number of ZEBs deployed in the U.S. will be tracked through fleets' self-reporting and shared on the R2ZE website alongside China's numbers. To be counted in the race, ZEBs need to be available and in service to the public on an annual basis. The percentage of ZEBs in an active fleet will be calculated by the number of ZEBs divided by the total active fleet in revenue service.

Race participants, government officials, manufacturers, and transit authorities, will be invited to take part in annual R2ZE meetings, where the U.S. and Chinese fleets will share their progress and discuss successful strategies and implementation. Transit agencies that made significant strides in deploying ZEBs will be recognized each year. The information about the progress made by each participant will be made public and will be accessible on the Race to Zero Emissions website.

The R2ZE is managed by the U.S. Department of Transportation and the China's Ministry of Transport.

Purpose:

The vast majorities of transit buses across the globe are fueled by diesel, and are often on the road for 10 years or more. Worldwide, buses consume more than 30 billion gallons of diesel and emit 390 million metric tons of CO₂, 6.2% of all transportation emissions. Further, unlike commercial vehicles, buses primarily operate through densely populated neighborhoods and commercial centers, directly exposing residents to hazardous tailpipe emissions impacting their health and welfare. A single diesel bus can produce 750 kg of nitrogen oxides (NO_x), a precursor to smog, in a year, and 13 kg of particulate matter, which is a carcinogen linked to heart disease. ZEBs are significantly less polluting alternative to diesel

fueled transit buses as they are the cleanest and most energy-efficient buses available, and can play a significant role in communities' efforts to reduce emissions and improve urban air quality.

The integration of cutting-edge, pollutant-reducing buses into transit agencies' fleets goes beyond the public transit sector. Historically, transit has been a test-bed for clean vehicle technologies, allowing new technologies the chance to mature before they are widely adopted and introduced to heavy-duty commercial fleets. As such, by jump-starting ZEB fleet deployments, the R2ZE Challenge will help to accelerate the growth of the zero-emission vehicle industry, not just in transit but in heavy-duty commercial fleets as well.

Race Description:

The R2ZE Challenge calls for a voluntary long-term commitment to expand green-energy transit fleets with a 2025 finish line and is open to all U.S. and China cities and transit agencies. The aspirational goal is to have at least 50% of agency's bus fleet made up of ZEBs (in revenue service) by 2025.

All transit agencies which voluntarily commit to strive towards the target will be recognized as R2ZE Challenge participants. Participants will be able to use the R2ZE logo in promotional materials, attend the annual summit and be featured in U.S.-China press releases and high-level speeches, as appropriate.

Each year, U.S. and China will select and recognize cities and transit agencies in the following categories:

- Transit agency showing the most improvement in a year
- Transit agency with the highest overall percentage of ZEBs in their fleet

If a transit agency acquired ZEBs prior to June 2016, those buses can be counted when determining progress towards the target. A transit agency, which is the primary service provider for multiple cities, can also qualify as a race participant. A city with one or more transit operators could also qualify.

The target shall be considered met when buses are deployed and remain in revenue service on an annual basis. A bus is in revenue service if it is available to the general public and there is an expectation of carrying passengers. For the purpose of this requirement, in revenue services includes layover and recovery time and time not in service due to routine maintenance and minor repairs. To determine what percentage of a fleet consist of zero emissions buses, the number of eligible ZEBs will be divided by the total active fleet; which includes all buses in revenue service as defined above and all spare buses. (ZEBs in Revenue Service / Active Fleet = % of ZEBs in Fleet.) Buses used only for emergency events will not be considered in this determination.