



# ZERO EMISSION BUSES

Vehicles, above all else, have historically represented America's problem with dirty oil. About 40% of US greenhouse gas emissions, which are hastening climate disruption, are from oil consumption.<sup>1</sup> As diesel buses age, they become increasingly less efficient. A switch to zero emission buses, which require no gasoline and emit no tailpipe pollution, presents a critical opportunity to slash pollution, reduce oil dependence, and make our cities safer.

## WHAT ARE THEY?

A zero emission bus uses electricity to power a battery, and a number of companies are manufacturing zero emission buses that operate without overhead wires. This means no gasoline, no dirty oil changes, no internal combustion engine, no dirty exhaust. They charge up in anywhere between five and 360 minutes and go between 30 and 155 miles between charges, depending on the model. Some cities are also investing in hydrogen fuel cell buses. Zero emission buses are a clean and quiet way to get around in noisy cities like Worcester, MA; Seattle, WA; Los Angeles, CA; and the many other locations where they are committed or already in operation.

## CLEAN

The push for cleaner transportation is as much about cleaning our urban air as it is preventing global climate disruption. Because buses operate in cities, each time a dirty diesel bus is replaced by a zero emission one, it has an entirely positive effect on urban air quality. Diesel, compressed natural gas (CNG), and hybrid electric buses

are significant sources of pollutants—diesel exhaust contains more than forty toxic air contaminants that in some cases can cause and/or worsen diseases such as asthma and cancer, disproportionately harming low-income neighborhoods and communities of color in cities nationwide.<sup>2</sup>

## CHEAPER TO FUEL AND MAINTAIN

Each zero emission bus can cost hundreds of thousands of dollars per year less to fuel than diesel and CNG buses.<sup>3</sup> With many fewer moving parts, electric buses are both cheaper and easier to maintain.<sup>4</sup> While upfront costs are higher, there are creative financing and grant programs available that—coupled with lower fueling and maintenance costs—make zero emission buses a smart financial investment.

## ENVIRONMENTALLY FRIENDLY

Each zero emission bus will reduce carbon emissions by upwards of 270,000 pounds per year compared to diesel and CNG buses. These improvements factor in the emissions from the electricity used to power the buses. And as we shift to cleaner sources of electricity, battery electric or fuel cell buses (especially when the hydrogen is derived from solar power) become even cleaner over time.

## REDUCE OIL DEPENDENCE

Zero emission buses rely on electricity from domestic sources of energy and keep the energy-related profits and jobs rooted here in the US.

## ENDNOTES

<sup>1</sup> <http://priceofoil.org/thepriceofoil/global-warming/>

<sup>2</sup> OEHHA Air: Health Effects of Diesel Exhaust.

<sup>3</sup> "Electric buses at Stanford". Stanford University, Stanford, CA. Slide 9.

<sup>4</sup> "Frequently Asked Questions (about Electric and Hybrid-electric Buses)."University of Tennessee, Chattanooga College of Engineering & Computer Science. University of Tennessee, Chattanooga Center for Energy, Transportation, and the Environment, 2015.

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