

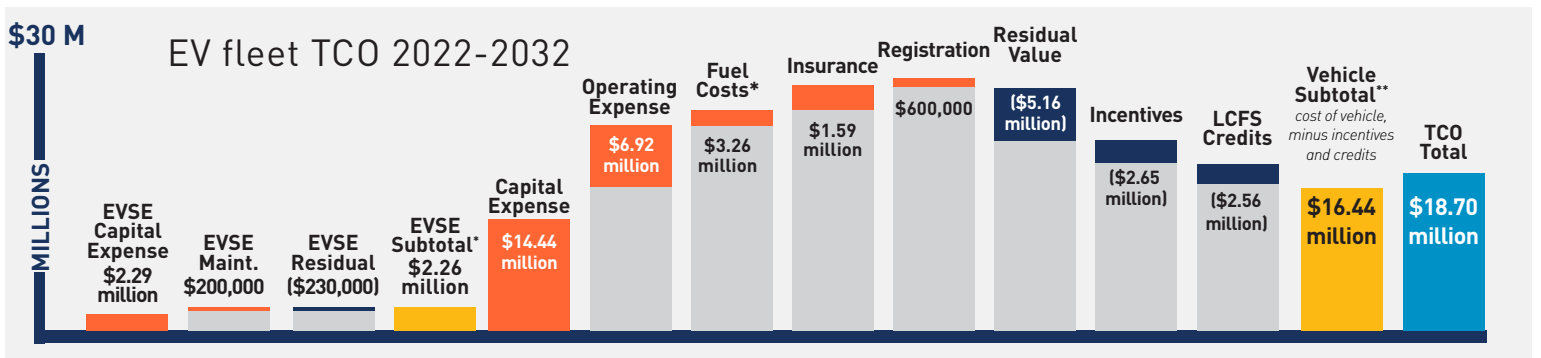
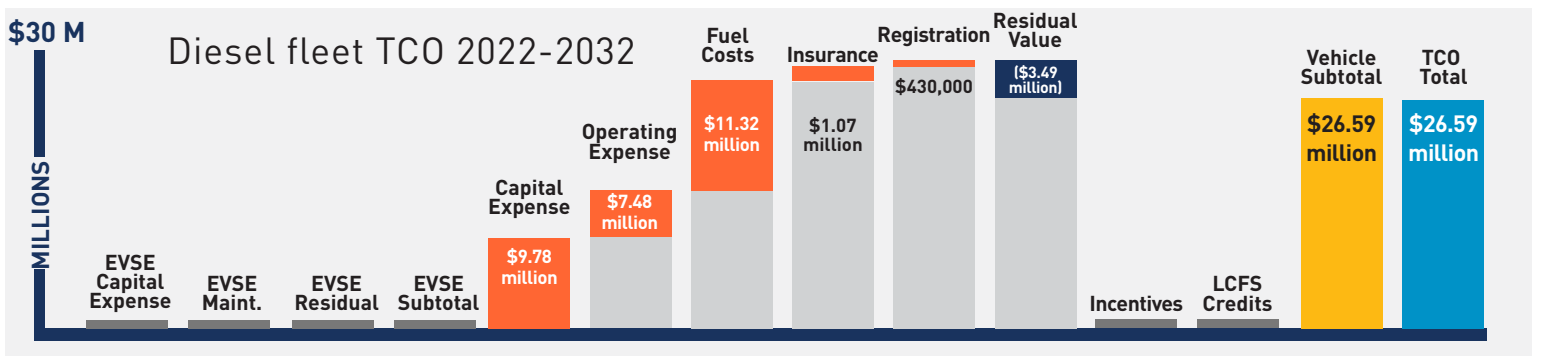


# Calculating Total Cost of Ownership (TCO) for Your Transit EV Fleet



Given their daily use and proximity to the public, transit agencies can benefit from electric buses to help reduce harmful vehicle emissions while lowering the cost of fleet operation. While electric vehicles (EVs) require higher upfront costs to procure transit buses and invest in the necessary electric vehicle supply equipment (EVSE), they also provide reduced maintenance and fuel costs. When vehicle and infrastructure incentives, as well as LCFS credits, are factored in, electric transit buses can provide fleets even more cost savings when deploying EVs. A complete TCO analysis can be complex, particularly for transit agencies that are new to electrification. This fact sheet provides a sample TCO analysis of a diesel transit bus, compared to electric, and the key factors fleets should consider when developing their own analysis.

## TCO to transition a 20 vehicle fleet Comparing a diesel vs. electric transit bus



\*TCO calculation reflects infrastructure incentives and charger rebates available to transit fleets through the EV Fleet program, and energy savings available through the Business EV rate plans.

\*\*Vehicle subtotal before incentives totals \$26.81 million



# TCO assumptions

Residual value of vehicles straight line depreciation over 7 years

9.25% Sales tax

Insurance costs 3% of vehicle residual value

LCFS credit price \$120 per credit

**20**

VEHICLES

**120**

MILES/DAY

**327**

DAYS/YEAR OPERATION

**14**

YEAR AVG. VEHICLE LIFE

## Fuel Type

### DIESEL

### EV

Per Vehicle purchase cost (2020)

**\$477,000**

\$744,000

Fuel cost

\$6.22/gallon

**\$0.19/kWh**

Fuel efficiency

3.9 mpg

**0.48 kWh/mi**

Maintenance costs

\$0.85/mile

**\$0.78/mile**

Infrastructure purchase costs

**Negligible**

\$114,400/charger\*

Infrastructure maintenance costs

**Negligible**

\$1,100/charger per year

Purchase incentives

\$0

**\$132,000/vehicle**

\*Price of typical EVSE costs, does not reflect EV Fleet rebate available to transit fleets

## Concentrate transition of vehicles to further improve TCO

While replacing vehicles gradually over time has its benefits, concentrating the transition to EVs in a shorter period of time can improve TCO. This is primarily due to the cost of site improvements to add electrical service, upgrade switchgear, and install EVSE, which do not scale linearly with the number of EVs. More specifically, it is cheaper (per unit) to install ten chargers at a site than it is to install two.

Additionally, transit agencies currently have access to a variety of vehicle funding opportunities from agencies looking to encourage zero-emission technology now. These incentives may not be as widely available for fleets that wait to electrify.

Replace 20 vehicles at the same time

EV \$18.70 M

DIESEL \$26.59 M



Replace 20 vehicles over 10 years (two per year)

EV \$21.30 M

DIESEL \$23.25 M

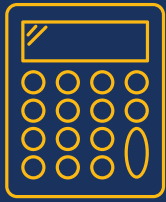


## Try our new EV Fleet Savings Calculator

Check your eligibility for PG&E's EV Fleet program, find available funding programs, and calculate fuel savings. [CLICK HERE FOR TOOL.](#)

# TCO factors to consider

01

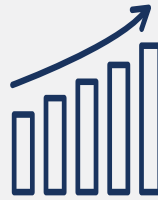


[Determine energy costs with our EV Fleet Savings Calculator](#)

## Fuel cost:

Typically, fleets can expect to save on fuel costs with EVs as the cost of electricity can be significantly less than traditional fuels. The time of day that you charge is often just as important as how much energy you use. PG&E can help you determine how to save with our Business EV rate plans.

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## Fuel efficiency:

EVs often use fuel more efficiently than traditional combustion engines, which could lead to fuel cost savings. Your vehicle manufacturer or dealer should be able to estimate the expected energy consumption for your duty cycles.

03

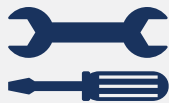


## Infrastructure costs:

EVSE, which includes the EV chargers, requires improvements to the existing site's electrical infrastructure, as well as periodic maintenance and service fees. These costs must be included in a TCO analysis. **PG&E's EV Fleet program offers transit agencies \$9,000 per electric bus as an infrastructure incentive, as well as, up to 50% rebate on the cost of the charger.**

[Find infrastructure incentives with our EV Fleet Savings Calculator](#)

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## Maintenance costs:

EVs can significantly reduce the cost of maintenance by eliminating common costs including oil changes, exhaust aftertreatment maintenance, spark plugs, fuel injectors, and transmission repairs.

05



## Purchase incentives:

Incentives can reduce EV and EVSE costs substantially, possibly by tens of thousands of dollars per vehicle. Incentive funding is not unlimited and often subject to competition, so early adopters are more likely to benefit from these incentives.

[Find funding with our summary of incentives for schools](#)

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## Sales tax:

The higher purchase price of EVs means that sales tax is also higher than conventional vehicles. Note, the Federal Excise Tax (12% of the vehicle price) only applies to Class 7 and Class 8 trucks, and shouldn't be added to lower weight class vehicles.

07

## LCFS credits:

EVs have great revenue potential under the California Low Carbon Fuel Standard Program (LCFS), which allows fleets to generate credits based on the GHG reductions they achieve using EVs. For example, a fleet with an electric transit bus can generate up to \$12,000, or more, annually under LCFS.

[Check out our LCFS fact sheet.](#) [And watch our recent webinar on how to earn revenue with LCFS](#)



To learn more, visit: [pge.com/evfleet](https://pge.com/evfleet)

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