

## Accelerating Investment in Electric Transit Buses: Harnessing a Utility Tariff to Drive out Diesel

Transit agencies around the world are looking for ways to buy zero-emission electric buses to replace diesel buses, eliminating their air and noise pollution. Electric bus manufacturers have recently reached cost parity with diesel buses in key markets when evaluated on a lifecycle basis, yet the upfront cost premium can be above 50%, creating a barrier for procurement. Because many transit agencies are operating in financially constrained conditions, a financing solution would be needed to accelerate retirement of diesel buses in favor of zero-emission transit.

### Harnessing a utility's business model can accelerate investment

Utilities have sold electricity for nearly a century under a terms of service agreement called a tariff, and in the last decade, innovations in the field of energy efficiency for buildings have yielded an opt-in tariff for upgrades like better lighting or heat pumps. These *utility tariffed on-bill programs* accelerate investment in cost effective upgrades by resolving the upfront cost for customers and providing net benefits from the start.

When applied to the transportation sector, these tariffed on-bill programs **can break through the upfront cost barrier** for batteries and charging stations by allowing a utility to finance the equipment that drives the premium cost of electric buses.

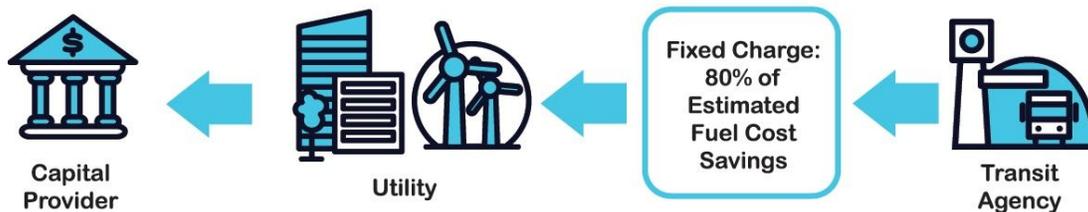
### Here's how it works:

1. The **utility** establishes a terms of service agreement (a tariff) for investing in the battery and charging station for each new electric bus sought by a transit agency in its service area.



2. The **transit agency** (e.g. EV owner) opts in to the tariff, allowing the utility to put a fixed charge for cost recovery on the monthly bill at the charging station. The charge is capped at a level below the estimated savings, so *net costs are lower than a diesel bus*.

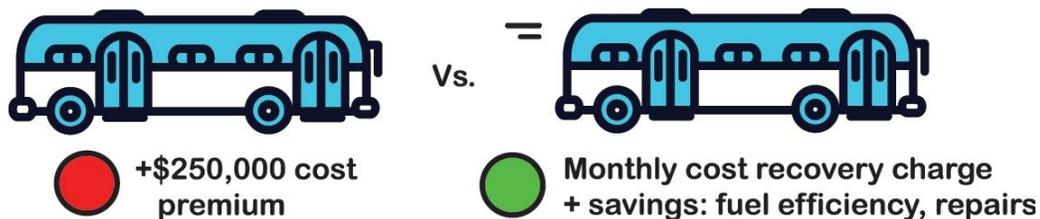
3. The **utility** recovers its costs within the warranty period<sup>1</sup> of the battery and charging station.



### Benefits to Transit Agencies and Utilities

For transit agencies that participate, the utility pays for energy saving upgrades to the bus fleet, and the transit authority pays nothing upfront for the premium cost of the zero-emission electric bus. The transit authority has no loan, no lien, and no debt associated with this transaction; just lower costs of operation and a better bus fleet. When the utility recovers its costs, the monthly charges end, and when the transit agency has exhausted a battery used for on-board storage, the utility may buy them back for re-use as stationary storage.

The utility gains ~\$100,000 in new sales over the life of each electric bus that displaces a diesel bus, and bus riders and communities served by both the utility and the transit agency are then spared the hazards of air pollution and the nuisance of noise pollution produced by diesel buses.



### About Clean Energy Works

Clean Energy Works focuses on opening the clean energy economy to all through widespread adoption of utility inclusive financing using PAYS. We also provide advisory services to policy-makers, public interest groups, and companies interested in rapidly scaling up investment in clean energy solutions. Our work on financing energy efficiency in buildings won a Fire Award in 2015 for high-impact innovation at the Bloomberg New Energy Finance Future of Energy Summit, and the concept of harnessing the strength and scale of utilities in the transportation sector won both a top award from the Climate Strategies Accelerator in 2017 and a selection by the Global Lab for Climate Finance as a top finance instrument in 2018.

<sup>1</sup> Equipment eligible for utility investment must be covered by a warranty that spans the cost recovery period. Manufacturers bear the costs for repair or remedy without exposing a utility or its customer to technology risk. For electric buses, the standard coverage for battery storage is 12 years.