DEC 2020


# EGYPT: PROMOTING ELECTRIC VEHICLES FOR TRANSPORATION

## CASE STUDY/INSIGHT



E2020-12-05

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Fuel consumption from the transportation sector is one of the key sources of GHG emissions the world over. This is because all kinds of transport modes (bikes, cars, buses, trucks, shipping, etc.) almost depend on the liquid fossil fuels such as petrol, diesel and gaseous fossil fuels like CNG for its operation, which are highly GHG emissive when burnt in the vehicle engines. The developed and developing countries are facing severe air pollution issues due to increasing vehicle use resulting in heavy traffic in the cities and towns.

To improve the transport sector efficiency, as a first step, the Government of Egypt passed a law limiting all commercial vehicles using fossil fuel and older than 20 years, from the operation. However, the enforcement of the law was weak due to the practical limitations like a financial burden to the vehicle owners and limited facility to dispose of the old vehicles in an environmentally safe method.

The Government of Egypt partnered with the World Bank to address these concerns. The innovative scheme for scrapping old vehicles was designed. As per the scheme, the vehicle owners will receive an incentive for surrendering the old vehicle and buy an energy-efficient new CNG or electric vehicle as a replacement. The required infrastructure for scrapping the old vehicles was also developed. Within the timeframe of 10 years, the project was very successful in replacing more than 50% of the old vehicles with new energy-efficient ones under this scheme. Since the commercial taxies form a significant portion of the commercial fleet in Egypt, the focus of the project was on these commercial taxies. The new energy-efficient taxis resulted in 25% less energy consumption and thus lesser GHG emissions as well.

As a next step, the Government of Egypt is now working on replacing the old and inefficient buses operating between the towns/cities with modern and clean electric buses.

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Electric energy is much cleaner and less polluting than fossil fuels. However, the promotion of electric buses requires dedicated infrastructure such as charging stations, transmission and distribution infrastructure along the operation roadways, etc.

The main types of electric buses are 100% electric buses and hybrid electric buses (electric + fossil fuel). Several options must be evaluated for replacing the existing fossil fuel buses with electric buses. One option is to retrofit fossil fuel vehicle with battery and electric equipment to convert them into electrically operated vehicles. The second option is to locally manufacture electric buses and the third is to import electric buses from other developed nations. In the case of second and third options, the older buses must be scrapped in an environmentally safe and sound manner. Even in the case of electric buses, special attention is needed in recycling the used batteries which have a lifetime of around 5-6 years.

This is a climate change project designed to reduce the global carbon footprint. The project reduced a significant amount of GHG emissions every year.