



Valentine Fagan



## IS JAMAICA'S ENTRY INTO THE ELECTRIC VEHICLE MARKET A GOOD IDEA?

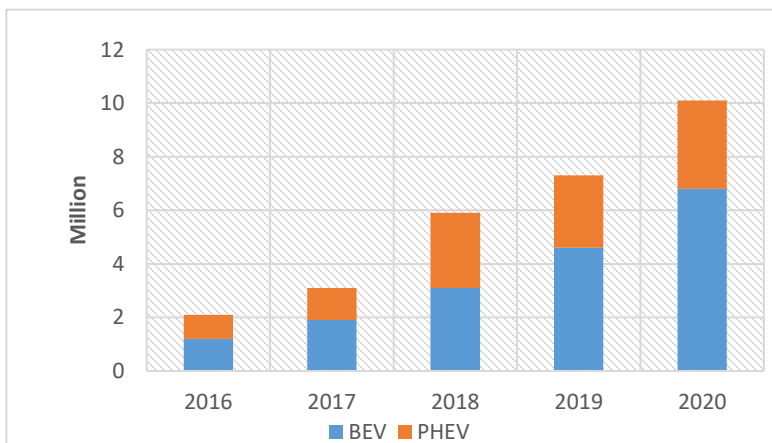
by Valentine Fagan, Professional Engineer, Power System Consultant and Chairman, Office of Utilities Regulation (OUR) Electric Vehicle Working Group.

The Office of Utilities Regulation (OUR) has a statutory responsibility to regulate the provision of specified utility services (electricity, telecommunications, water and sewerage). This is done under the provisions of the OUR Act and where applicable, sector specific legislation and regulatory instruments. A critical aspect of the OUR's mandate is to ensure the provision of economically priced and reliable utility services to Jamaican consumers.

As part of its forward-looking approach to regulation, the OUR has noted the trends and promises of Electricity Vehicle (EV) technology to ensure that the local electricity sector is primed to take full advantage of emerging opportunities. The OUR has developed preliminary recommendations that are currently the focus of public consultation from research into markets that are successfully adopting EVs.

Globally, EVs are becoming increasingly popular as environmentally and economically viable alternative means of transportation. According to the International Energy Agency (IEA), global EV sales grew in 2020, even while the rest of the vehicle market sales contracted by 19% from the economic fallout of the Coronavirus pandemic. The IEA projects that globally, the number of battery-powered and hybrid vehicles could increase from 10 million in 2020 to nearly 140 million by 2030.

Figure 1: The growth trend of Electric Vehicle (Plug-in Hybrid Electric Vehicles (PHEV) and Battery Electric Vehicles (BEV)) stock in the major global markets.



A major factor fuelling the rapid EV growth is the announcement by world leading motor vehicle manufacturers that they will be moving away from manufacturing internal combustion engine (ICE) vehicles to manufacturing EVs.

The introduction of EVs in Jamaica is in the very embryonic stage, while over the past 10 years, some regional countries have been gaining positive experience in the adoption of EVs. According to the Tax Administration Jamaica (TAJ), Jamaica had approximately 536,000 ICE motor cars registered in 2018 whereas only 10 EVs are registered. It is, however, encouraging that three public charging stations were installed since the beginning of this year. With over 400 EVs, Barbados is one of the world's top users on a per capita basis (Forbes, December 2018). The Cayman Islands has 44 fully electric cars and 31 hybrids registered and licenced. These are supported by 15 operational EV free charging stations.

### Investor Considerations

Among the more evident benefits of EVs are lower operating costs, greater energy efficiency and security and positive environmental impact as they contain fewer harmful pollutants. However, there are some barriers to EV ownership, including the cost of acquisition (estimated to be about 30% higher compared to ICE vehicles), availability of public charging infrastructure, the discarding of old batteries and knowledge of, and confidence in EVs.

In fashioning an EV policy there are a number of factors, stakeholders and perspectives to consider. For investors who are considering this market, they will want to ensure that they are making the right decisions. Uncertain or underdeveloped regulatory policies related to investments in and deployment of charging infrastructure are of concern for investors and the electricity utility. Jamaica's current position with respect to fast EV uptake is summarized in the following quick Strengths Weaknesses Opportunities Threats analysis.

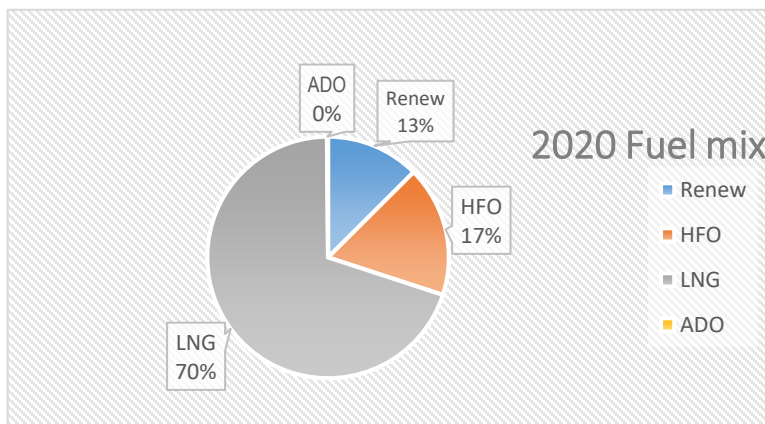
### Strengths

The adoption of EVs in the transport sector aligns with the National Energy Policy goals for secure energy supply, efficient use of energy and minimizing the environmental impacts of energy production and utilization.

Jamaica has a modern electricity sector with infrastructure whose operations are governed by strong regulations that support transparency, equity and good environmental stewardship.

Prior to 2016, heavy fuel oil (HFO) generated over 90% of Jamaica's electricity. Since 2017, that sector has been transformed with the replacement of old inefficient HFO burning plants with modern, more efficient and cleaner natural gas burning plants. Further, more renewable power generating plants were added to the generation mix. The current fuel mix gives the extent of this transformation. The system operator, as part of its smart grid modernization, has also replaced the majority of customers' meters with modern advance metering to support smart charging of EVs.

Figure 2: Jamaica's Fuel Mix as at 2020



Jamaica also has a well-defined and extensive road network and the electricity grid is accessible by over 95% of the population. The electricity supply infrastructure generally follows along the main and arterial roads.

Globally, private chargers accounted for about 90% (6.5 million) of the worldwide light duty vehicle chargers in 2019. Across many EV markets, private homes and workplace charging are the preferred locations. The minimum infrastructure for home charging, namely a compatible electrical socket and charger plug, already exists in most Jamaican houses.

The country's transportation sector is also mature, and governed by regulations, with a network of dealerships and support services.

Jamaica, therefore has the basic infrastructure to facilitate EV adoption and this should form the primary infrastructure upon which the electrification of the transportation sector would rely.

### **Weaknesses**

The low public awareness of EVs in general and their potential benefits is a cause for concern. Public awareness initiatives are required to inform the public of the benefits and challenges of EV ownership. A consumer survey carried out by the OUR EV Working Group, indicates that the Jamaican consumers are generally unaware of the EV technology and the benefits of owning EVs.

The affordability of an EV is a major issue given the higher initial price compared to an ICE. The relatively low per capita income in Jamaica will exacerbate the issue of affordability.

Concerns about the relative prices of electricity and gasoline will impact the choice to acquire an EV.

Uncertain or underdeveloped regulatory policies related to investments in, and deployment of charging infrastructure are concerns. These issues must be adequately addressed to facilitate deployment of the required charging infrastructure to reduce the 'range anxiety' (the average distance per full charge) concerns of consumers while allowing for investors to participate in providing competitive charging service.

### **Opportunities**

The timely intervention of regulatory and policy agencies to remove the impediment to EV take up, presents opportunities to remove obstacles to EV take up in a timely and responsible manner. The average age of the motor cars in Jamaica is estimated at about ten years. This provides a good opportunity to sensitize potential new vehicle buyers to EVs.

Potential exists to introduce more renewable energy sources to the energy mix, resulting in more renewable sources becoming a part of the transport mix, and in significant reduction of fuel import for the transportation sector.

JPS is already deploying charging infrastructure and the OUR has approved EV charging tariff for public charging infrastructure. The Ministry of Science Energy and Technology (MSET) has a target of EV take up of 10% of the transport mix by 2030.

The Inter-American Development Bank (IDB) electro-mobility initiative to assist the Government to develop a strategic framework for electric mobility to inform policy and support a seamless transition to battery electric vehicles (BEVs) is currently underway. These actions provide opportunities to stimulate the sustainable EV take up.

### **Threats**

In jurisdictions where EV take up is successful, government initiative played a critical role. With respect to new technologies, historically governments' inaction or procrastination in introducing enabling policies, while simultaneously removing bureaucratic obstacles, can stall development for decades – this is a threat. It is therefore important that the government moves decisively to create an environment that boosts investors' and consumers' confidence, enhancing EV up-take.

A major threat is electricity theft, which is manifested in high system losses and is also a major risk to the viability of the electricity sector. The wide-scale adoption of EVs may open avenues for unscrupulous consumers to illegally abstract electricity for EV charging.

### **Recommended actions to overcoming barriers to deployment**

The GOJ must play a critical role in facilitating the large-scale penetration of EVs. The degree of involvement should potentially encompass, *inter alia*; providing enabling regulations and policies, fiscal and non-fiscal incentives, and establishing environmental mandates and targets for EV penetration levels.

The following initiatives are recommended to overcome/remove the main barriers to EV ownership identified and to incentivize EV take-up.

### **Recommended Initiatives**

- (1) The implementation of public charging infrastructure will require identifying and removing or amending inhibiting legislative and regulatory provisions, while simultaneously introducing enhancing ones.
- (2) Incentive are needed to offset the price differential to purchase EVs as against ICE vehicles. A range of policy options and measures are available to reduce the upfront cost of acquiring EV as demonstrated in other jurisdictions. For example, the provision of financial support from the government, either through grants/subsidies or one-off concessions such as reduction/removal of customs/import duty costs. Less direct financial measures to incentivize EV take-up, including the provision of free dedicated public parking, toll free access or reduced toll fees.
- (3) The GOJ is encouraged to employ policies to mandate the reduction of adverse environmental conditions due to ICE vehicles. Since EVs are known to be less harmful on the environment, one strategy that could be considered is the establishment of environmental and/or fuel efficiency standards for ICE vehicles that are aligned to GOJ's goal for a healthy environment. Similar to its renewable energy portfolio target, the GOJ may also consider establishing progressive targets for EV penetration in the transportation mix, starting with public sector entities.
- (4) Consideration must be given to the implementation of a robust island wide public education and stakeholders consultation programmes about EVs and for concerns about it to be addressed.
- (5) In keeping with the provisions of Jamaica's Motor Vehicle Import Policy, consideration should be given to implementing measures to encourage the importation of EV models by dealers. This can be achieved with special provision for groups that are allowed to import motor vehicles. For example, financial and non-financial incentives could be provided to importers for EVs that will be used in the public passenger transportation sector, government ministries and private sector companies.
- (6) EV dealers should be required to have staff that are trained and certified to carry out maintenance and repairs. The HEART academy and the government vocational training institutes should be encouraged to participate in such programs to train and retrain service personnel in electro- mobility technology with assistance from EV manufacturers. In order to provide assurance to consumers regarding the maintenance and repair of EVs, consideration should be given to requiring EV dealers to maintain adequate inventory of replacement spare parts and trained service personnel.

## Conclusion

Having reviewed the best practices and business models in countries that are successfully introducing EVs in their transport mix, and having analysed the local regulations and requirements, the conclusion is that Jamaica is in a good place to fast track the uptake of EVs. The basic infrastructural requirements of electricity and roads are in place, given the transformation that has taken place in the electricity sector and the build-out of the road network. There is also a clear commitment to facilitating EVs as evidenced by the recent OUR rate determination for public EV charging rates, and the recent roll out of charging stations by the utility and investors. A tariff framework is in place.

Investors have also signalled that they are willing to participate if the necessary enabling regulations and incentives are in place. If Jamaica is to avoid falling further behind in the trend towards greater EV penetration then quick policy, regulatory, and fiscal interventions are required to facilitate and support uptake of EVs. The GOJ needs to facilitate the successful integration of EVs in the transport system. Government's timely action or inaction can make the difference in the outcome for EV take up. The race is also on to ensure that Jamaica does not become the dumping ground for abandoned ICE vehicles.

Based on our analyses, we are confident that Jamaica can support rapid integration of EVs and with the proper enabling regulations the rapid EV uptake can be given the green light.

-30-

We welcome feedback at: [publicaffairs@our.org.jm](mailto:publicaffairs@our.org.jm)