Response to the Office of Utilities Regulation
Stakeholders Consultation Document
Proposals for a Regulatory Framework to Facilitate the Penetration of Electric Vehicles in Jamaica

EVPower Jamaica
June 22, 2021

Attention: OUR EV Task Force

Introduction

In introducing the study, the OUR has given statistics on the uptake of electric vehicles globally, with data being pulled from the IEA. The information from IEA has been dated in 2019. However, in the same breadth, the information polled from the TAJ indicates 10 BEVs being registered in the country as at the end of 2018. It will be prudent for the OUR to continue to monitor this number, both for the presence of BEVs and PHEVs. Our empirical evidence suggests between 50-100 electric vehicles present in Jamaica as of June 2021, following discussions with local dealers and EV owners.

The Level 1 and Level 2 charging power requirements are listed as 3.6kW and 6.6kW by the OUR, respectively. We petition the OUR to detail the source of this information. Our empirical evidence suggests the Level 2, for example, to have a power rating up to 7.7kW. This figure may cascade to other calculations within the Document.

Legal Framework

The examination of the legal framework of the sector includes, inter alia, a review of sectoral oversight from the OUR. The extent to which the sector may be directly overseen by the OUR is summed up in the question of whether EVSE can be construed as the "supply" of electricity, or as a "utility service". We contest that EVSE infrastructure cannot be seen as a utility function, and therefore cannot be directly regulated by the OUR. However, we do accept that as a research function, the OUR has the ambit to review this sector, as it will impact the electricity grid.

Overview of Electric Vehicle Technology

We consider the OUR's definition of electric vehicles (EVs) as given on page 8: "*…a vehicle which uses one or more electric motors for propulsion.*" While this definition will include battery electric vehicles as well as hybrid electric vehicles, the document goes on to interchange BEVs and EVs throughout, rather than as a combination of all plug-in electric vehicles. The first instance of this is indicated on p. 30 of the Consultation Document. The scope of the study, therefore, must be explicitly stated by the OUR, or otherwise have the language updated to indicate what portion of the EV market is being referred to here. If EVs throughout the document are being considered as solely battery electric vehicles, we request that PHEVs be included in the study, as they also have a bearing on the areas of economic and environmental assessment, grid impact, and the overall transportation sector.

Advantages and Barriers to EV Ownership

We accept and concur with the OUR's proposed advantages to EV ownership. We would venture to include the possibility of using EVs as a back-up source of power. The environmental benefits

of these vehicles were also noticeably absent from the OUR's document and are as much a benefit to environmentally conscious individuals as to the society on aggregate.

Regarding barriers to EV ownership, the OUR referred to the economic benefits which are brought about through "relatively high usage (p. 32)" for an EV compared to an ICEV. It would be prudent for the OUR to quantify what is considered "relatively high usage", perhaps in intended mileage or financial terms. Notwithstanding, the OUR's comments on usage are noted from Chapter 9.

We consider the OUR's admission that some 80-90% of charging is done at home, with the balance being done as top-up charging during travel. To this end, the OUR's point on charging time, though valid, requires the approach of informing the public on charge times on the road. This will allow customers to make better decisions on route planning and contact time at charging hubs, rather than relying solely on the introduction of ultra-fast charging stations. As has been evidenced in many markets, chargers with DC fast charging capability prove extremely expensive for installation and maintenance and are not always practical in nascent markets.

The OUR refers to an electric vehicle survey conducted by the Office to determine general consumer awareness on the topic. However, no reference is given to the target audience, time frame or full results from this survey. We request that these results be made available for review. Additionally, if the survey was conducted before 2019, it will be prudent for the OUR to conduct the survey again, to determine whether there has been an increase in consumer awareness with various advancements in the market and the information space. Finally, the OUR indicates an approximately 57% moderate to high awareness of EVs in the market (23% and 34% respectively). It is unclear whether this could be construed as a "low awareness" in the market.

Review of Jamaica's Transportation Sector

The OUR's comments in this section are appropriate. While range anxiety is not explicitly mentioned in this section of the document, it is critical for Jamaicans to realise that range anxiety is less of a concern locally. This, as EV ranges continue to increase annually with battery improvements, along with the relatively small size of our island. Range anxiety is a greater phenomenon for mainland countries and territories.

Benchmarking of International Regulatory Practices

We note the Minister's declaration of approximately 10% of transportation expected to be powered by electric vehicles by 2030. However, this does not directly indicate a growth rate for the sector. We would inquire whether a growth rate was considered by the OUR in this study and what that expected growth rate would be. If the status quo is observed, this target may not be easily reached.

The case studies indicated in this section are appropriate, and rightly include a mix of regional and international studies. We would inquire, in ranking the number of charging stations in a country, whether the number of EVs in each country would also be similarly ranked. We would also petition the OUR to provide information on countries where EV uptake has been stymied, and what strategies have (or have not) been put in place in these countries. The negative experiences of our other global neighbours will help to inform policy as much as those with positive experiences.

The example of Barbados has been viewed with interest. Megapower, the leading EV sales company in that country, offers charging based on time spent at the charging station rather than the sale of electricity. We also note BPL's position of no contest to this strategy.

The incentives proposed are generally appropriate and will form a good basis for EV uptake within the Jamaican ecosystem. However, we have found studies where some of these strategies employed in other territories are either inappropriate or ineffective. One such study ranks the introduction of zero-emission vehicle targets (ZEVs) as well as financial incentives as the most critical factors in determining EV uptake on a broad scale. In particular, the inclusion of Government procurement goals, while listed by the OUR as "one of the fastest ways of improving the level of EV penetration", has proven unsuccessful in differentiating EV uptake within other jurisdictions. Additionally, the introduction of free public charging offered by the Government, while a noble suggestion, may not serve the Government well in the short to medium term due to the high prices for EVSE. It is more strongly recommended that the Government engage private sector players to ensure market uptake. The supply of EV infrastructure for Government agencies should be open to private companies through MOUs or open tender also.

Benchmark of Business Models for EV Charging Infrastructure Ownership

We note well the independent business model framework for EVSE ownership. Of the studies published in the OUR Consultation Document, this framework appears to be the most favoured. The model will more likely drive business and competition in the sector, ensuring the best possible rates for the end user. Additionally, utility participation in the space may afford the utility a market advantage. The utility may floor their rates to the tariff rate, thereby providing a price which is deemed unbeatable by new players. To this end, it may be prohibitive for new players to enter the space. We therefore recommend that the utility participates in the space at arms-length.

Much of the discussion in this section centres around whether the utility should be the only authorised entity within the EVSE market. The core argument here refers to the "supply" of electricity, as defined by the Electricity Act (2015): "the activities involved in the sale of electricity to consumers". However, we consider the following thoughts:

(a) If this definition were to be taken to its extent, any entity which services lead acid batteries, for example, may be construed as "supplying electricity" when recharging these batteries. Similar examples may be found throughout various sectors. Notwithstanding the comparative scale of these entities to the burgeoning EV market, the supply of electricity cannot be applied to entities of this regard, where a specific connection is required for a specific device to be recharged. Such a designation is neither logical nor practically enforceable by the OUR.
(b) The example of Megapower in Barbados is also brought to the fore, with a time-based charging model (rather than energy-based) being central to that business's operations. Companies wishing to enter the EVSE market may look to this model for advice, without contravening a more stringent interpretation to the provisions of the Electricity Act.
(c) As indicated in the OUR's document, the precedent has been set to construe EV charging as a service, rather than as a utility. This pertains in various jurisdictions despite no expressed statement enshrined in law. An excerpt from the Consultation Document reads, *"While the customer is using electricity, this is incidental to the transaction."*

Further to this, if supply is to be designated a utility function, we consider the experience of Kentucky, USA. A similar ruling there regarding EVSE determination held that "*the defining*

characteristic of a public utility is service to, or readiness to serve, an indefinite public, which has a legal right to demand the utility's service." Because charging station service is "*limited to a specific, defined class of persons*" who own EVs, charging ports would not qualify.

EVSE, therefore, are not to be considered a public utility and thus exempt from the definition of supply.

Relevant Legal and Regulatory Framework

The OUR has adequately examined the use of legislation in the EV sector. However, it has not been thoroughly proven that the OUR has sectoral oversight for the EV and EVSE markets, as they do not constitute utility provision. The matters on the "supply of electricity" as discussed above apply.

In examining possibilities under the current framework, the OUR refers to Government procurement as a potential strategy for improving the levels of EV penetration. However, studies conducted by the Center for American Progress indicated that there was no significant difference between states which had this policy and states without. This strategy, therefore, does little to effectively increase the EV penetration in the transportation sector.

Assessment of the Economic and Environmental Benefits of EVs

We note the OUR's study done on three common vehicles of similar size and range. However, a more comprehensive study may be ventured to obtain a fuller picture of EV lifetime costs. Additional manufacturers, models and features should be considered here. The OUR may also consider advising on how the figures were modelled, the assumptions taken, and whether fuel inflation and renewable impact on the grid were considered in the study.

Through the study conducted by the OUR, the largest factor in the 10% surcharge for EV ownership comes from the purchase cost. Therefore, it is critical that the Government moves to reduce this price as a priority, through the reduction of levies and fees, as well as the provision of subsidies.

Potential Impact of EV Charging on the Electricity Grid

The OUR's comments in this section are appropriate. We note that the provisions from this section must be integrated into the next iteration of the Integrated Resource Plan (IRP). Attention is also placed here on capacity expansion as mandated by the IRP. The OUR is petitioned to advise whether this additional demand was considered over the lifetime of the study.

Responses to OUR Consultation Questions

Q1 (a) What are your views on the relevance of the identified barriers to EV ownership in our jurisdiction?

The barriers here are relevant, but most are easily mitigated and can be dealt with in the short term. The most critical parameters include the treatment of battery disposal and stranded ICEVs. Each of these will require legislative and policy updates.

(b) Are there other relevant barriers not contemplated? If so, please provide details.

Another barrier may be seen with car dealerships. Dealers may be concerned with the up-front costs for staff training and retooling or equipping their service stations to handle the new vehicles. Charge connection types, if not adequately handled by the Government, may also prove a barrier. The experiences of Europe (with standard CCS2

chargers) and the US (with varied charging standards) are evoked here, with the European market growing more rapidly because of standardization.

(c) What measures would you suggest to surmount these barriers?

The OUR should consider ensuring public awareness through an information campaign. The Government should ensure that proper policy and legislation is in place to ensure the availability of public charging infrastructure. The private sector should also be engaged. The task cannot be undertaken solely by the utility and/or the Government – private sector buy-in is needed.

Dealerships may also be offered grants or other financial incentives to assist in staff training. The Government must also investigate standardising the charger connections for the country, or otherwise educate consumers on the types available locally.

Q2 (a) What are your views on the appropriateness of Jamaica's Road Network to support the location of charging infrastructure for EVs?

It is anticipated that EVSE infrastructure will be placed along major thoroughfares to target the larges cross-section of the market. To this end, the road network is appropriate, though upgrades may be needed in some quarters. Road works such as repairs, paving, and in some cases widening may be appropriate or required.

(b) What would you consider to be an appropriate distance between EV charging stations in Jamaica to mitigate range anxiety?

We would recommend between 50km and 120km. This allows for some 20-50% of the average range in travelling and is based on the experience of developed markets. The recommendation comes from the use of top-up charging on the road, with 80-90% of charging being done at home.

(c) Should the Jamaican Motor Vehicle Registry be allowed to share EV registration and owners' location with JPS?

We consider that to be private information and therefore not subject to sharing. Further, an EV may be registered in one area of the country but primarily used in another, making the information of null use. The OUR and Government may consider instead a survey to estimate EV density in some areas. However, if this information is shared, it should be shared with all parties in the EV / EVSE market to prevent anti-competitiveness.

(d) If the response to (c) is positive, do you think privacy concerns will act as a barrier to EV ownership?

Such a response will indeed yield privacy concerns, which may become an additional barrier to EV ownership.

Q3 (a) Do you think that the GOJ and its agencies are doing enough to encourage the uptake of EVs? Please provide detailed reasons for your response.

The Government should endeavour to ensure stronger policy direction for the sector. The lack of clear policy does very little to spur the sector's growth. The reduction of barriers to ownership is also needed, with the up-front cost being too high for most Jamaicans to purchase an EV. Per the information in a later section of the Consultation Document, this cost may be as high as 30% when compared to a similar ICEV. It is also currently cheaper to import an ICEV – even one that is 5 years old – than a new EV. It is therefore prudent for the Government to place financial incentives to both individuals and corporations for EV uptake. Finally, public education and training are urgently

required to support the value chain for EV purchase, servicing, and maintenance. This should not be limited to EV supplier staff – a readily available service / contract team could position themselves in the market in this way. This is particularly critical in the infancy of this market.

(b) What steps, in your view, are required to implement the proposed incentives / approaches?

On the matter of financial incentives, a reduction in levies and fees for EVs is warranted. The Government may examine these measures to reduce up-front costs for EV purchase, with vehicle lifetime use (not including purchase) already being cheaper for EVs than ICEVs. Additionally, the Government may choose to work with the private sector to carve out additional financial benefits to EV users with financial institutions, such as reduced insurance and financing rates. The Government should also work with private sector players for the establishment of EVSE networks.

(c) What are your views on the proposed approaches and incentives (considerations) to encourage EV take-up locally?

The proposed approaches are largely appropriate, and credence is given to the implementation of financial and environmental incentives for EV uptake. However, the inclusion of public sector internal targets and free public charging has not proven effective in other jurisdictions. The single largest determinant for EV uptake in other markets has been the introduction of zero-emission vehicle targets (ZEVs). The Government must therefore consider this in their strategy.

(d) Are there any other appropriate incentives and/or approaches not identified? Please provide details.

These have been discussed in the responses to parts (b) and (c) of this question.

(e) Do you share the view that the GOJ should mandate EV targets for its own vehicle fleet?

Yes, the Government must do this to partake of EV benefits. However, this on its own will not increase the uptake of EVs in the general market. The Government may also deem it best to partner with private investors to withstand costs.

(f) What difficulties do you think the GOJ will experience in implementing the proposed incentives or adopting the proposed approaches?

The Government may expect a pushback from ICEV users and importers, as well as a sudden high demand for EVSE. Public awareness and infrastructure establishment will be critical here. For the latter, financing will likely become an issue. The Government is urged to work with private investors on this, and to create the required environment by instituting firm, clear, and stable policy. The Government may also consider a phased approach in instituting these incentives for the public.

Q4 (a) What policy options adopted in other mature EV markets would be appropriate for Jamaica?

The Government should regard EVSE investment as an unregulated service. This will allow private investors to own and operate the infrastructure. The Government may also look to standardizing charger connection standards for interoperability within the system.

(b) What other challenges can you identify that may be unique to Jamaica and would require a different set of policy options or variations to other jurisdictions?

The age limit for imported vehicles was increased from five years to six years in November 2019, resulting in an influx of older, less expensive used ICEVs that are an easier sell in the mass market. This policy must be reviewed urgently and reversed.

(c) What are your views on the appropriateness of the integrated and independent business models in Jamaica?

The independent model is most appropriate in driving competitiveness in the EVSE market. The integrated model may be anti-competitive if there is no stipulation or target placed on the utility for charger placement.

(d) Are you of the view that both approaches are permissible in Jamaica? Please provide reasons for your answer.

The two approaches appear to be mutually exclusive. Further, the integrated model creates an anti-competitive environment which may hinder EV uptake.

(e) If you are of the view that neither of the approaches in (d) is applicable, what business models for infrastructure ownership do you think would be suitable for Jamaica to successfully deploy EV charging infrastructure?

A time-based service could be applied as is the case with Megapower in Barbados. The service could be applied after the meter.

Q5 (a) What are your views on utility participation in the EV charging market?

Our main concern relates to the issue of competition, price manipulation and the unfair advantage held by the utility being the primary supplier of electricity to the charging stations. The utility, being the sole supplier, holds a key advantage unavailable to third party investors in that they can undercut competitors based on price. Through this inherent advantage and economies of scale, it would be unlikely that any immediate impact of revenue loss would be detrimental to their broader operations. Consequently, potential investors relying solely on the revenue from charging stations would experience obvious difficulties pertaining to their ability to continue in the space.

We do agree that the utility should be allowed to pursue the market, as it is their right to do so. However, they must be either subject to certain restrictions, such as participating as an independent player rather than as a utility, or the other players be given additional benefits as deemed fit, to level the playing field. We deem this congruent with the provisions of the utility's licence as well. We believe the Fair Trading Commission should facilitate this, and not the OUR, as the provision of EV charging is to be deemed a service and not as a utility function. The OUR still has a role to play in monitoring the pricing mechanism for the utility to ensure that no deliberate actions are being taken to manipulate prices. The service rates (tariffs) for EVSE infrastructure must also be clearly stated.

(b) What, in your view, would be the benefits or disadvantages to utility participation in Jamaica?

The utility may disadvantage the market through the flooring of prices/rates for their EVSE. This is anti-competitive. It is recommended that the utility, if it does participate in the market, do so through a subsidiary or affiliate company, and conduct the transaction at arms-length.

Further, within the Jamaican context, the utility sometimes has a bad reputation for bills perceived higher than they ought to be for electricity. In entering the space, the utility may breed concern among some quarters that the electricity bills received by the

common man will be higher. This may discourage persons from purchasing EVs, again stymieing the market.

Of note, the arguments on this and other documents and other forums surrounds the utility being the sole supplier of EVSE infrastructure to the country. While it may be understandable in some quarters, this is an apparent bias on the part of the regulator and the Government.

(c) What are your views on charging activities being considered a 'supply of electricity' under the current legislative and regulatory framework?

Neither legal provisions nor precedent hold EVSE as electricity supply, particularly if charging is done after the meter. If it does, any entity charging any battery (including entities which do so as part of their core service model) may be construed as supplying electricity. This is both illogical and impractical for the OUR to enforce. However, we do agree that this must be explicitly excluded in the provisions of the Act for full clarity.

We maintain that JPS should reserve control of transmission and distribution to ensure alignment and simplicity of connection. However, if supply is listed as exclusive to the utility, it creates yet another monopoly in the electricity market on a whole, which proves to be anti-competitive.

(d) Do you think the current electricity regulatory framework facilitates or hinders the private ownership and deployment of EV charging infrastructure? Please provide detailed reasons for your response.

The current regulatory framework is inadequate to facilitate or hinder the ownership and deployment of EV charging infrastructure. As it stands, the framework is grossly construed to indicate EVSE development as the provision of a service, rather than as a utility function.

(e) In your view, do you think that there are aspects of the regulatory framework that can facilitate the rapid uptake of EVs? If yes, what aspects?

The current framework does not provide adequate provision for the rapid uptake of EVs. Legislation and policy are required to ensure full deployment of the EV market.

(f) What appropriate steps should the GOJ take to expressly exempt charging activity under the current legal and regulatory framework?

The Ministry of Energy is currently reviewing the Electricity Act (2015). This is an opportunity for the EVSE market to be declared legally exempt from the definitions of electricity supply. While we do not agree that EVSE ownership constitutes supply, we do acknowledge that enshrining this into law is a good step in ensuring market security, diversity, and competitiveness.

(g) What are your views on regulation of EV charging activities?

EVSE should be regulated to inspire confidence in the sector and ensure standardization and interoperability. Standardization could take the form of adherence to international standards, as well as definitions for EVSE connectors. However, the OUR should not be the entity to regulate the market, as EVSE usage is not construed as the supply of a utility service. The OUR may give affiliate oversight to the sector in the development of a more resilient electrical grid.

Q7 (a) Do you agree with the strategies proposed to incentivise EV penetration under the current regulatory framework?

We do not agree with these strategies. They are either impractical due to restrictive cost and the need to recover capital, or ineffective because they do not provide a real difference between jurisdictions with these policies/strategies and those without. Further, the reliance on solely the input of the Government and the utility is a meagre approach to the issue.

(b) In your view, what regulatory initiatives can be employed in short order to incentivise EV take-up?

Among the strongest strategies in other jurisdictions are financial incentives and ZEV targets. Additionally, the Government should move to facilitate private sector involvement and investment for publicly available charging stations.

(c) What, in your view, are the challenges to any of the proposals identified?

The cost of developing an EVSE network is prohibitive and requires high levels of investment and capital. Further, there is an expectation of return on investment, preventing the Government or any other entity from offering free charging. Finally, the Government will not be likely able to compete against other players in the market such as the utility or any other private sector entity.

(d) In your view, what additional strategies can be employed to encourage EV take-up under the current regulatory framework?

The Government should move to expressly include private sector players in the EV and EVSE market. Regulation should also establish financial and environmental benefits and incentives for EV importation.

Q8 (a) Do you think that more EVs in the system will significantly reduce the dependence on imported fuel? If yes, how? If no, why not?

Petrol used by motor vehicles now accounts for a significant portion of fuel imports for the country. The progressive uptake of EVs in the transportation market will continually reduce the dependence on imported fuel. However, the degree to which this is achieved will depend on the share of EVs in the market over time. Additionally, the next generation additions to the grid (using natural gas and renewables) should help to keep this in line.

(b) Do you agree that largescale EV adoption will significantly reduce greenhouse gas emissions in the environment? If yes, how? If no, why not?

Yes, an increase in EV penetration, particularly of BEV penetration, will reduce greenhouse gases for Jamaica. A study may be broached in this regard.

(c) Do you agree that largescale EV adoption will have a positive impact on the economy? If yes, how? If no, why not?

Yes, increased numbers of EVs in the market may assist in stabilising energy supply and therefore fuel costs, while also minimising foreign exchange through the purchase of fuel for ICEVs. This will be dependent on scale. A study may be broached in this regard.

(d) The economic assessment carried out indicated that the payback period is more attractive for EVs travelling a high number of miles. Do you think that EVs would be more economical for public passenger vehicles than private vehicles?

This is possible, but the Government still needs to reduce the cost of ownership for the private vehicle owners. A minimum parity is needed.

Q9 (a) What are your views on the effect of large-scale EV adoption on the electricity supply system?

System demand will increase as EV adoption increases. Planning for this increase in demand will therefore be critical.

(b) What do you think of charging of EVs at home and workplaces?

Home charging should take up 80% of demand for logical or prudent users. Work charging should have a lower uptake. This is consistent with the positioning of developed markets and cements the model of 10-20% top-up charging during travel.

(c) Do you think high adoption of EVs in Jamaica will reduce your electricity bill?

Increased energy demand can yield more efficient plant use and reduce the aggregate cost of power.

(d) Do you believe that the use of smart grid charging will allow for a greater penetration level of EVs when compared to uncontrolled charging? If yes, how? If no, why not?

Yes, the use of smart charging strategies will increase the reliability of supply and reduce the risk of adverse grid effects.

(e) What are your views on the effects of TOU billing on EV charging behaviour?

The use of TOU rates is an effective method of ensuring stability in grid demand and serves to make EV charging less costly.

(f) What incentives should be offered for EV private home charging?

Incentives here could include TOU benefits, rebates on energy usage, as well as EVSE purchase concessions.

(g) Do you think that a TOU tariff option would reduce the impact of charging load on the grid? What else do you think should be considered to smooth the demand spike that EV charging is expected to produce?

Yes, a TOU option will be critical to achieving this. Regional grid planning may also prove useful.

(h) How should the utility plan for increased uptake of EVs?

The utility should look to bolster grid resilience through comprehensive grid studies. The IRP should also be consulted in this regard. Generation infrastructure, though important, is not currently critical, as the country currently has capacity exceeding the peak requirement.