Electric vehicle safety mauritius

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Electric Vehicles (EVs) are currently the hot talk in town. Do they make sense and if yes under what conditions? This article leverages on recent international studies and considers the matter within the Mauritian landscape under financial and environmental lenses.

Disclaimer 1: Due to the inherent format of a news-paper and the necessity to compact the information being published, this article 1.) has no claims to exhaustivity with regards to explaining the full context and the rationale behind all the assumptions which were made and 2.) makes use of some technical jargon which may not be understood by all without further references. The author has endeavored to be as didactic as possible though.

Disclaimer 3: The article compares two categories of EV, namely small car and compact SUV with an equivalent gasoline engine vehicle (also known as ICEV - Internal Combustion Engine Vehicle). While he has sought to be as objective as possible, the author accepts that this exercise carries an incompressible element of subjectivity.

a.4 scenarios are established, namely: 1.) Equivalent ICEV 2.) EV with no Renewable Energy Facility (REF) and therefore on-grid charging 3.) EV with an on-gridREFof5kWand4.) EV with an on-grid REF of 10kW.

b.1st Ownership period is set at 10 years. This is deemed reasonable with regards to 1.) having a sustainable approach to ownership and 2.) the improved quality of vehicles (both ICEV & EV).

c nancial calculations are computed at Present Value with a discount rate of 3%. In essence, the value of 1 rupee today is not the same as that of 1 rupee in the future due to depreciation. To do a sum total, future financial values have to be discounted at their present value with a discount rate which reflects "local financial markets performance".

e.Based on international research data, 1.) the depreciation curve is deemed to be the same for ICEV and EV, 2.) Insurance costs is set at 1.06 times higher for EV, 3.) Maintenance and Repair Costs is a function of mileage and is lower for EVs by 58% (0-80km range),53%(80- 160 km range) and 46% (160 - 320 km range).

h.Ownership and borrowing costs of REF are apportioned to the amount of power used to charge the EV in the TCO model as compared to the total power generated by the REF. The remaining costs are considered to be apportioned to domestic electrical consumption and are therefore not included.

i.The grid operator (CEB) will accept the connection and purchase of domestic Renewable Energy production facilities on a gross metering basis with prices of Rs 3.50/ kWh for purchase and Rs 8.77/kWh for selling during non-production hours.

j the absence of a national EV charging infrastructure (and the time it will take to be implemented), EV owners are expected to charge their EVs at home during after-office hours which correspond to non-production hours for their REF.

k.Current EV battery technologies have an ave- rage energy conversion efficiency of 88%, that is 1 kWh of energy billed from the grid represents 0.88 kWh of energy stored in the battery.

p.While loan subsidies can be obtained for EVs & REFs through some Financial institutions (FIs) which have green financing programmes (therefore these would lower the TCO for these items), the model does not include these elements in order to provide a fair comparison to all FIs.

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