Re; VSI Response to BCUC Information Request No.1, June 7 2018

Scope A; Basis for Regulation

A.1 At present, the electrons that fuel electric vehicles are not taxed on a comparable basis with hydrocarbon molecules that fuel internal combustion vehicles. Therefore, the need is evident for regulation(s) that resolve the loss in tax revenues such that it can then be claimed that ELV charging stations 'operate in a competitive environment'.

A.2 Residential-based ELV charging stations are an extension of a 'natural monopoly' service as it generally does not make any economic sense for a competitor to build a competing supply grid. However, the monopoly should not deny opportunities for private investor-financed charging stations that pay a fee to the monopoly in order to access the grid.

Distributed generators who also own/operate micro-grids that can distribute to ELV charge stations and who also manufacture/distribute alternative fuels/hydrogen for fuel cell electric vehicles at those same ELV charge stations should also have the opportunity to 'wheel' such products into other grids for development of competing infrastructure or for supporting development of hydrogen-electric economy.

A.3 Comparably, as would be the case with hydrogen fueling station developments for fuel cell ELV's co-located with ELV charging stations, the BCUC should regulate station design for the services provided in order to ensure safety, efficiency and free market pricing.

Scope B; Rate Design and Setting

B.4 Demand charges and time-based rates are a disincentive to ELV ownership. Energy-based rates that can be uncoupled from a public utility's traditional cost of service model would incentivize ownership of an ELV and could be based on a 'per km-driven charge' that is similar to private auto insurance model that is now being offered (in Washington State). ELV electricity pricing also could result from charging station owners bidding into an auction of 'delivery supply capacity' that is similar to the way an owner of an oil (or water) pipeline charges producers.

B.5 An EV charging station rate should be based on a utility's commercial rate for grid access plus any markup or discount that results from changes in the wholesale price of electricity.

B.6 Public utilities should not include ELV charging stations in their regulated rate base if that base includes water rental fees or other fees that otherwise would not apply to a non-regulated entity.

B.7 The risk of cross subsidization from other rate classes to support ELV charging services could be reduced by applying a grid access fee or, by awarding a capacity credit to ELV owners who sell stored electricity to the grid

Further, the VSI-proposed "PUSHBC' business model could cross-subsidize ELV charge rate from sale of valuable ancillary services to the grid; by sales of arbitraged electricity on the open market; by sales of reclaimed effluent/seawater; by sales of SRP water/pipeline treatment-transport capacity; by leveraging solid/liquid wastes disposal fees and contaminated soils treatment/reclaim; by sales of productivity gains on NSR forestry lands and fire-drought-damaged lands; by sales of liquid hydrogen to a wide variety of consumers, including upgraded natural gas with bio-hythane/advanced bio fuel refineries, etc.

Other Matters – Please see Exhibit C14-3;

1.1 Building a 'Green Bond'/equity-financed investor-owned PUSH/multiple bulk energy storage complex at JOR or BM equipped with its own self-powered distributed generation-to-micro grid is likely to have higher initial costs to capitalize than a public-financed complex however, it would NOT have to account for (public utility) debt costs, water rental fees, carbon taxes, higher transmission losses and energy conversion costs in pricing/selling electricity/energy to ELV charging stations or for H2-powered FCELV's (and all of which is likely to result in lower energy transaction costs).

1.2 VSI's proposed combined infrastructure development model will have a capability to manufacture low cost baseload from low grade primary energy resources to further reduce financial risk.

1.3 The VSI 'model' also deals with the life cycle costs of ELV batteries as components of a circular economy (See; Australian Neometals, a Perth-based miner of lithium who recently proposed building a plant to recover raw materials including lithium, cobalt, nickel and copper from expired batteries/ELV's. 'We believe that recycling coveted metals from used electric vehicle batteries will be much more profitable than mining them'. With such an eco-industrial approach BC could dominate both ends of the value chain and produce all of the materials/recycled minerals that are needed to re- manufacture lithium batteries. We need to exploit a window of roughly two years before it is set where battery components will be re-manufactured and by whom. Teck-Tosco is already in the business but the need is to achieve economies of scale and to have facilities on the coast. However, this level of integrated systems operations has yet to be recognized in ELV charging station design, rate/revenue models or certification standards which do not explicitly cover or even address such life cycle costs/accessories or opportunities

1.4 BCUC needs to work towards a solicitation for a carbon-controlled/renewable hydrogen production facility in BC that capitalizes both its numerous ideal locations for PUSH plants and on California's 'HY-Step' program and the related knowledge/activities gained in developing codes and standards for its current network of 100 + private and public owned hydrogen fueling stations. While this is by no means a simple task, it is an appropriate expectation for two co-dependent industries (cars and fuel refineries) expecting to make the transition from a nascent, limited commercial presence to a mass-market deployment within five years (a comprehensive, multi-year program to scale-up hydrogen fueling Stations in concert with Electric Vehicle Charging).

1.5 In order to support rapid expansion of both ELV charging and FC-ELV fueling infrastructure BC needs to permit/engage in an 'all-of-the-above' energy strategy that includes carbon-controlled coal as well as modular nuclear plants that can leverage VSI's federal AQC license to handle low to mid-level rad wastes (via steam extruder solidification and/or electro-vitrification).

1.6 Proposed JOR-Vic and Britannia Mines multi-pipeline and elevated transit corridors have topo-geographic features also deemed ideal for co-building VSI hybrid municipal waste reclaim-treatment and PUSH-bulk energy storage plants that support rapid development of ELV Charging and Fuel Cell ELV Hydrogen Refuel station development along corridors, as well as large scale land-contained aquaculture-mariculture fisheries and related advanced bio fuels and silvicultural projects