Proposal:
Modification to Power Creation and Distribution Regulations:

Submission Relevant To:
Rachel Anne Notley, Premier of Alberta
Sara Marjorie Hoffman, Deputy Premier, Minister of Health
Brian Mason, Minister of Transportation / Minister of Infrastructure
David Manson Eggen, Minister of Education
Deron Bilous, Minister of Economic Development and Trade
Joseph Anthony Ceci, President of Treasury Board and Minister of Finance
Danielle Marie Larivee, Minister of Municipal Affairs
Margaret Ellen McCuaig-Boyd, Minister of Energy
Christina Gray, Minister of Labour
Marlin Robert Schmidt, Minister of Advanced Education
Brandy Lynn Payne, Associate Minister of Health
David Wheeler, Chair of Alberta Energy Efficiency Panel

Situation:
Some of the biggest arguments against mass adoption of EVs in Alberta are that the transition from combustion engines is just migrating from one fossil fuel source to another, and thereby creating a limited net gain. In 2015, Alberta used coal and natural gas for around 90% of the electrical power creation.

Electric vehicles make the most practical sense when they can be powered by renewable, non-GHGE sources. Seeing as the preferred location for charging is in the home setting, having renewable energy creation directly at the home would be the most practical for EV owners.

On a larger scale, if every rooftop had solar for power production, it would offset the requirement of the coal and natural gas and massively reduce GHGE in Alberta. It would minimize the investments required to establish clean energy systems infrastructure, stimulate the economy as skilled tradespeople and builders installed the solar arrays, diversify the Alberta Energy Portfolio away from the stigma of the oil sector to a sustainable green energy that could be sold all over Alberta, Canada and even internationally.

Problem:
While renewable energy is more available than ever for installation and power creation, limitations on the amount of power created and the inability to sell or distribute that power is a stumbling block within Alberta. Creation of electricity is limited to that equal of what you consume, and does not include offsets for riders or other fees. Redistribution or resale of electrical power by the general public is not allowed in the regulatory process. In essence, this creates a protected monopoly and leaves Albertans in a GHGE trap long-term.

All homes must be connected to the grid legally within the cities and municipalities of Alberta, and the homeowner/resident must pay for service of power, infrastructure fees and taxes.

To install a photovoltaic solar electric (aka PV) system, it is required that an application for microgeneration of power be submitted. Part of this application is an agreement stating any electrical power created over that used by the household goes to the power company and that said power company does not have to pay for the power. This application agreement also states that if the owner of the PV system creates more power than used on a regular basis, the PV permit can be withdrawn, effectively shutting down the solar array.

The average limitation of a solar array for installation is around 5kW, where the average home requirement for electricity is a 7kW array. This ensures that the homeowner is unable to get away from paying for electrical service even if they are willing to make the investment. The limitations lengthen the payback time of the investment. If extra power is created, it goes free of charge to the power company for resale and the array is then under scrutiny for being shut down.

With the adoption of an EV on an already established construct, there is no room for modification or enhancement of the solar array to accommodate the extra electrical demand within the permitting process or legislation.

Green Power Generation Credits (carbon credits) for the solar structure that could be sold to GHGE generating companies to offset carbon emissions are given to the power companies rather than to the owner of the array, negating the sale of them as yet another means of the homeowner getting payback and instead rewarding the power companies.

Unlike the USA and Australia, where there are grants and tax deductions for the implementation of PV systems, Alberta offerings went strictly to municipalities and farms with no such offerings for the average urban homeowner or business. This limits the number of people willing to make the investment in renewable energy and stagnates the industry as a whole.

Wind generation at this point is virtually outlawed within cities except for the power companies, due to land use and permitting.

Key Analysis:
New technologies such are providing cheaper and better methods of creating renewable energy and products such as the Tesla Power Wall are now enabling the homeowner to create energy and store it in a battery, able to be used for EV charging, home electrical backup and even power collection and distribution to the grid during peak hours.

Although the technology is getting better, the limitations imposed by legislation make implementation if not impossible, expensive and impractical for the average consumer.

Recommendation:
Revision of the legislation is paramount for making a transition to renewable energy in Alberta. The general public and businesses should be able to establish renewable energy systems, with the ability to sell that power to the power distribution companies at a fair rate – equal to that of large scale power companies. Limitations and restrictions of power creation sizes (outside of location where infrastructure is unable to handle the loads until the infrastructure can accommodate) should be abolished.

Incentives and rebates should also be offered for home owners and businesses for the purchase and installation of renewable energy systems in Alberta. Additionally rebates and incentives should be offered for technology such as the Tesla Power Wall for power storage and distribution.

Agreements in the microgeneration application should be nullified for already installed arrays.

Land use amendments allowing for rural and urban development for solar and wind energy generation should be implemented.

Allowance should be made for electricity created to be sold at the same rate as other power generations systems by businesses and general public.

Green Power Generation Credits (carbon credits) should be awarded to the owner of the array and allowed to sell in the open market or sold directly to the Alberta Government as a tax rebate.

Justification:
By modifying the legislation, the Federal, Provincial and Municipal governments can make implementing solar and wind energy more palatable and fair for everyone. The renewable energy market can act as a means of extra power generation for the general public, cut the costs of infrastructure for government and power companies as a whole, and create a fair electrical sales market for power generation.

The implementation of these suggested changes will offer an increase the adoption of electric vehicle ownership.

EV Ownership and use will lower greenhouse gas emissions (by potentially 23% using 2015 statistics) and cut noise pollution which will reduce healthcare costs.

Infrastructure development will create jobs for skilled Alberta workers stimulating the economy.

The demand for skilled labour will stimulate post-secondary education within the province.

Potential for green / eco- tourism on the new green highway.

Potential Funding:
The Alberta Energy Efficiency Panel is currently taking suggestions on how best to use the $645 Million

in funding earmarked for the agency. Using some of the funds available for these initiatives is perceived to be a perfect fit for the agency and the resources available.

There also seems to be an opportunity for funding from the Federal Government and Infrastructure Canada's $120 Billion investment over the next 10 years through Infraconsults, located at http://www.infraconsults.ca/.

Reference:
Electric Vehicle Adoption Proposal In Alberta – Terms of Reference – Version C1.0