Submission to the Clean Car Discount Scheme Consultation

20 August 2019
By Strategic Lift Ltd.

The intention of the Clean Car Discount Scheme is to tax high emissions vehicles and provide a rebate on low emissions vehicles, including electric vehicles (EVs).

There are two pieces of work underway via the Ministry for the Environment that might have an interest in the outcome of the consultation:

1. E-Waste Stewardship Programme (as it pertains to large stationary and EV batteries i.e. the work of the Battery Industry Group), and
2. Second-Life EV Batteries Project, being carried out by Strategic Lift Ltd.

Our objective in making this submission is to bring to the attention of the decision-makers that there is work underway regarding the life-cycle of EV batteries, as mentioned above, and raise the possibility that in the structure of the Clean Car Discount as it concerns electric vehicles, it could be beneficial for the conditions of the rebate to give the Government some rights (or the vehicle owner some obligations) regarding the eventual disposition of the EV battery.

Because:

1) the above-mentioned work is not yet well advanced; but
2) the deadline for submissions to the Clean Car Discount consultation is 20 August 2019, and
3) the Clean Car Discount programme will not go into effect until 2021,

it is suggested that consideration be given to ensuring the objectives of minimising waste to landfill, in the form of used EV batteries, are provided for in the final design of the Clean Car Discount scheme. Specific recommendations could come later when the above work is completed (both expected within the coming twelve months).

There is substantial work going on around the world into the life cycle of EV batteries. Of particular interest is the fact that over time the EV battery gradually degrades and holds less charge than when it was new. This can be converted to a question of range: a vehicle that could travel (say) 300 km on a single charge, after a few years may only be able to travel 240 km on a single charge. As the range decreases, (at about 2% per year but this varies) the usefulness of the vehicle (with its current battery) potentially diminishes, depending on the needs of the operator of the vehicle. For an operator who requires a range of 250 km per day, in the above case, the battery would have outlived its usefulness in the car but is still capable of holding sufficient charge that it could be re-deployed in a different type of storage environment.

An overview posted by the McKinsey Center for Future Mobility (April 2019)[1] explains that there are three options at the end of an EV battery's first life: dispose; recycle the valuable metals; or reuse. McKinsey anticipates that disposal (to landfill) will most likely happen to batteries that have been damaged, or if they are in regions that lack necessary market structure for recycle or reuse. They note that regulations might prevent mass disposal. However, if the economics of recycle and or reuse do not stack up, there is a risk that

[1] Second-life EV batteries: The newest value pool in energy storage, McKinsey Center for Future Mobility, April 2019

batteries will be stacked up, in a no-man's land between end of EV life and disposal. This is an outcome that would benefit no one.

Due to the profile of imported used vehicles into New Zealand, there is already a potentially growing quantity of end-of-EV-life batteries. For example, as shown in Table 1, the fleet of 2011 model-year vehicles (already 8 years old) has grown by 11.5% (124) to 1,202 units during 2019. While the precise end-of-EV-life point will be determined by individual needs of owners, the batteries in these recently imported old vehicles are much closer to their end-of-EV-life than those of newer model-years. It is not yet clear how this potential coming wave of end-of-EV-life batteries will be prevented from going to landfill or being stored long-term awaiting an economic disposition. Further imports of used EVs will exacerbate this issue.

Table 1: New Zealand EV fleet statistics 31 July 2019

New Zealand EV fleet by Model Year and Year of Import. 31 July 2019. Excludes cancels/lapses*.

	Model Years										
Import Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Grand Total
2010	10										10
2011		17									17
2012		2	26								28
2013		18	3	17							38
2014	2	34	26	5	257						324
2015		82	56	29	30	307					504
2016	3	188	100	130	196	154	746				1,517
2017	10	299	262	269	429	711	528	1,181			3,689
2018	3	438	521	785	760	533	678	205	1,666		5,589
2019**	3	124	315	496	690	238	274	222	82	1,269	3,713
Grand Total	31	1,202	1,309	1,731	2,362	1,943	2,226	1,608	1,748	1,269	15,429

*Excludes cancels/lapses in registration that total 150 to end July 2019 across all model years.

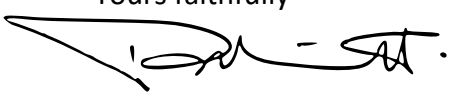
**Year to date to the end of July. Statistics derived from MOT data.

In response to this challenge, the NZ Battery Industry Group (B.I.G.) has been formed with representatives across the large battery value chain. Its two aims are to:

- Design a product stewardship scheme for large batteries that will ensure the collection of large batteries and where possible, their reuse as part of a circular economy, before eventual recycling
- Develop safety guidance for use, handling and logistics of second-life batteries

In addition, the provision of a rebate on the purchase of an EV could provide an ideal opportunity to create an obligation that could help ensure the responsible reuse and end-of-life recycling of EV batteries. It is recommended that potential creation of such an obligation be taken into account in the design of the rebate scheme, where possible synchronised with the findings or follow-up decisions made as a result of the above-mentioned stewardship and second-life projects.

Yours faithfully



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