



WHISTLER

REPORT | ADMINISTRATIVE REPORT TO COUNCIL

PRESENTED: November 3, 2020
REPORT: 20-109
FROM: Resort Experience
FILE: 5290
SUBJECT: CLEANBC COMMUNITIES FUND APPLICATION FOR SEA TO SKY ELECTRIC VEHICLE NETWORK EXPANSION

COMMENT/RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Resort Experience be endorsed.

RECOMMENDATION

That Council direct staff to submit an application to the CleanBC Communities Fund to fund 73.3 per cent of the proposed Sea to Sky Electric Vehicle Network Expansion project; and

That if the Sea to Sky Electric Vehicle Network Expansion project is successfully funded by the CleanBC Communities Fund in 2021-2022, the RMOW commits to funding a maximum of \$544,934 of project costs over four years from its capital reserves to cover 26.7 per cent of proponent share of eligible costs under the program.

REFERENCES

Appendix "A" – Site Plan for proposed charging stations in Whistler

Appendix "B" – Cost Estimate for proposed charging stations in Whistler

Appendix "C" – Letter of support from Squamish Lil'wat Cultural Center

PURPOSE OF REPORT

The purpose of this report is to describe a proposed grant application to the CleanBC Communities Fund for the installation of public electric vehicle infrastructure over the next four years, to outline the required matching funding by the RMOW, and to seek Council's support in advancing this application.

DISCUSSION

Background

Personal vehicle transport is Whistler's largest source of greenhouse gas (GHG) emissions, accounting for 70,827 tonnes of carbon dioxide equivalent (CO₂e) in 2019 (54 per cent of Whistler's community wide emissions) and is the main reason the community is off-track to achieving its climate targets. Whistler's ability to meet its long-term GHG reduction targets is thus very much dependent on achieving reductions in the mobile fuel sector from passenger and fleet vehicles. In fact, meeting emissions targets from passenger vehicles is expected to reduce community-based emissions by more than any other single source.

The Government of Canada is committed to working with all levels of government and industry stakeholders to lay the foundation for a coordinated approach to putting more zero-emission vehicles on the road. In accordance with this approach, the recently developed Climate Action Big Moves strategy identifies that increasing electric vehicle (EV) ownership and use are priority actions to lower GHG emissions from passenger vehicle transportation in Whistler.

A main barrier to broad EV adoption is reliable and convenient charging where people live and visit. Providing access to public charging is thus essential to increasing EV ownership and use in the entire the Sea to Sky corridor. Even as EV pricing comes down making ownership possible for more people, many households do not have access to charging at home or at work. In addition, Whistler is Canada's premier year-round leisure and meeting destination, and Whistler-Blackcomb is consistently rated the top ski resort in North America. Whistler receives approximately three million overnight and non-overnight visitors each year and tourism related GHG emissions in the Sea to Sky corridor are estimated at least 18 times total community emissions. Therefore, Whistler and neighboring communities can have an outsized impact in reducing GHG emissions beyond municipal borders by enabling publicly available electric vehicle infrastructure.

CleanBC Communities Fund

The CleanBC Communities Fund supports cost-sharing of infrastructure projects in communities across the province with eligible projects being public infrastructure (capital assets) owned by Local Governments, Indigenous communities, and/or private entities. The desired outcome of the fund is to increase access to clean energy transportation. Charging infrastructure that is owned by a public body and is for public use as described in the Sea to Sky application is fully within this scope. The level of federal and provincial contributions are 40 per cent and 33.33 per cent, respectively, with partners covering the remaining 26.67 per cent. See Table 1 for estimated capital investment costs.

The Resort Municipality of Whistler in conjunction with its partners - the District of Squamish, Village of Pemberton and Lil'Wat Nation - propose a to submit a funding application to the CleanBC Communities Fund for a significant expansion to the EV charging network in the Sea to Sky region. This project, entitled the 'Sea to Sky Electric Vehicle Network Expansion', is designed to address gaps in the public EV charging network in the Sea to Sky corridor so that charging is more equitable and accessible for both residents and the three million tourists that visit the area annually. Project goals will be primarily accomplished by adding EV charging infrastructure throughout the corridor at strategic locations so that it is available for both visitors and residents. The main objectives of the proposed project are to:

- I. Improve and upgrade electricity grid componentry such as transformers and electrical panels at strategically chosen EV charging locations along the Sea to Sky corridor, proactively considering future charging demand.
- II. Install 28 dual-port Level-2 and 15 Level 3 charging stations along the Sea to Sky corridor over four years, of which 16 Level 2 and 8 Level 3 charging stations will be located in Whistler.

Current state of public EV infrastructure in Whistler

Whistler has recently installed and commissioned 22 new Level 2 EV chargers in the Day Lots which were added to the previously existing four Level 2 chargers. The Day Lots serve as the main parking for mountain and village access and current EV charger parking stalls represent just 1.56 per cent of summer parking (1,666 total parking spots in Lots 1-5) and one per cent of winter parking (2,642 total parking spots in Lots 1-8). BC's zero emission vehicle mandate requires 15 per cent of new vehicle sales to be ZEVs by 2025, 30 per cent by 2030 and 100 per cent by 2040. EVs are expected to be one of the main options to comply with the ZEV mandate and with increasing offerings of more affordable and longer-range EV options, the pace of EV adoption is already trending higher than required by the

Estimated GHG Emission Reductions

The main purpose of this project is to reduce community-based GHG emissions and get back on track to achieving Whistler’s community wide GHG emission targets. Table 2 below describes the annual GHG emission reductions and total GHG emission reductions until year 2030 and the end of the project in year 2038 for all project partners in the Sea to Sky corridor and for Whistler only.

The net GHG emission reductions have been calculated by evaluating how many kilometers of internal combustion engine vehicles could be displaced with electric vehicles using the estimated energy dispensed from the proposed EV infrastructure. This methodology is in line with provincial guidance on estimating avoided GHG emissions from clean energy transportation projects. Note that these calculations only include GHG emissions reductions due to driving with a lower emission vehicle. The calculations do not include avoided GHG emissions related to construction of EV infrastructure compared to gas stations, nor indirectly avoided GHG emission due to an increase in EV ownership and use supported by the newly available infrastructure.

Table 2: GHG emission reduction for the total project and for Whistler

| GHG Emissions reduced in... | Total GHG Emissions (tCO ₂ e) |
|---|--|
| Sea to Sky corridor per year | - 1,403 |
| Sea to Sky corridor cumulative until 2030 | - 12,040 |
| Sea to Sky corridor cumulative until end of project | - 22,151 |
| Whistler per year | - 935 |
| Whistler cumulative until 2030 | - 8,027 |
| Whistler cumulative until end of project | - 14,767 |

This project will reduce community wide GHG emissions from passenger vehicle transport by 1.5 per cent each year and the GHG emission reductions from this project by 2030 represent around 12 per cent of the total reductions required to achieving the new 2030 climate goal of 50 per cent GHG reductions below 2007 levels.

POLICY CONSIDERATIONS

Official Community Plan

Community Vision

Whistler’s vision is to be a place where the community thrives, nature is protected, and guests are inspired. This project aims to remove the barriers for the community and guests to shift to lower carbon transportation and help to achieve Whistler’s climate goals. Therefore, this project is in alignment with Whistler’s vision.

Goals, Objectives and Policies

Increasing the availability of EV charging infrastructure aims to increase their share on Whistler’s roads and is aligned with the following goals, objectives, and policies of Whistler’s Official Community Plan’s (OCP’s).

10.2. Goal - Substantially reduce GHG emissions form vehicle and transportation

10.2.3. Objective – Increase integration of lower-impact technologies for community mobility

10.2.3.1. Policy – Integrate support for electric vehicle charging infrastructure into relevant municipal development policies, including electric vehicle-readiness requirements for parking areas and garages in new, or significant redevelopment, projects.

11.3. Goal - Minimize GHG emissions created by the transportation system

11.3.1. Objective – Support new technologies that reduce GHG emissions.

11.3.1.1 Policy – Support innovative technological advances in transportation that reduce GHG emissions and are appropriate to Whistler’s climate.

11.3.1.3 Policy - Support technology that promotes more efficient transportation choices.

Other Relevant Policies

The Sea to Sky EV Network Expansion and related CleanBC Communities Fund grant opportunity aligns with priority actions in Whistler’s Climate Action Big Moves Strategy, CECAP, the Official Community Plan (especially the Transportation and Energy chapters, goals 10.2 and 11.3), and priority actions from the Transportation Advisory Group.

BUDGET CONSIDERATIONS

RMOW staff asked PBX Engineering to provide a detailed quote for the project. Table 2 outlines the estimated capital investment cost for the proposed EV charger infrastructure, necessary electrical and civil work, and design work as quoted fixed fee to complete the project (Appendix “B”). All project work will be procured with a tender process to comply with RMOW procurement policies.

Table 3: Overview of estimated project cost

| Year | 2021 | 2022 | 2023 | 2024 | Total |
|--|-------------------|-------------------|-------------------|------------------|-------------------|
| Level 2 chargers Whistler | 4 | 6 | 4 | 2 | 16 |
| LDCFC Whistler | 1 | 4 | 3 | | 8 |
| Cost total project (from PBX site stud | \$ 291,179 | \$ 586,965 | \$ 424,490 | \$ 70,350 | \$ 1,372,983 |
| Engineering cost (5%) | \$ 14,559 | \$ 29,348 | \$ 21,224 | \$ 3,518 | \$ 68,649 |
| 40% contingency | \$ 122,295 | \$ 246,525 | \$ 178,286 | \$ 29,547 | \$ 576,653 |
| Climate Assessment | \$ 4,667 | | | | |
| Design study | \$ 18,000 | | | | |
| Total project cost | \$ 450,699 | \$ 862,838 | \$ 624,000 | \$103,415 | \$ 2,040,952 |
| Grant funding | \$ 330,363 | \$ 632,461 | \$ 457,392 | \$ 75,803 | \$ 1,496,018 |
| RMOW cost | \$ 120,337 | \$ 230,378 | \$ 166,608 | \$ 27,612 | \$ 544,934 |

In addition to the initial capital investment cost, operation, maintenance, and electricity service has to be taken into account. Table 4 below outlines the estimated annual operations and maintenance costs for the new EV infrastructure. In particular considerations around snow removal need to be considered as the EV chargers are being planned in areas that are not currently being cleared in the winter (three parks locations) or where hand shoveling might be required. One option to cover operational fees is to implement a charging cost structure beyond parking costs. Therefore, an RMOW EV charger operation and maintenance strategy is in the early stages of development with relevant RMOW staff.

Table 4: Estimated operational and maintenance cost per year after installation

| Operational cost item | Cost per charger /year | Total cost/ year |
|--|------------------------|------------------|
| Data acquisition to monitor usage | \$ 300 | \$ 7,200 |
| Maintenance and repairs | \$ 300 | \$ 7,200 |
| Electrical service | \$ 1,000 | \$ 24,000 |
| Snow clearing for chargers in 3 park locations | \$ 5,000 | \$ 15,000 |
| Snow hand shovelling | \$ 188 | \$ 3,000 |
| Total annual cost | \$ 6,788 | \$ 56,400 |

Table 5 below shows the estimated total project cost per tonne of CO₂e that the proposed project reduces in the Sea to Sky region which are estimated to be around \$112. This funding application offers an opportunity to leverage provincial and federal funding to reduce the cost per tonne of CO₂e that Whistler reduces to around \$29 which is very similar to the price of carbon offsets purchased on an annual basis by the RMOW and significantly lower than the BC carbon tax rate of \$40 per tonne of CO₂e.

Table 5: Estimated cost per tonne of CO₂e reduced

| Project Cost per GHG reduction | dollars/tCO ₂ e |
|---|----------------------------|
| Total project cost/ total cumulative GHG reductions | \$ 112.29 |
| RMOW project cost/ Whistler cumulative GHG reductions | \$ 29.11 |

COMMUNITY ENGAGEMENT AND CONSULTATION

This project is a partnership with the District of Squamish, the Village of Pemberton, and Lil'wat Nations. Regular meetings with all partners are being held and all partners collaborate on the CleanBC funding application.

The Squamish Lil'wat Cultural Centre has been informed of the grant opportunity and has provided a letter of support. (Appendix "C").

If the application is successful, RMOW staff will work with the Communications department to highlight Whistler's new charging infrastructure and create engaging content on the benefits of EV travel.

SUMMARY

The CleanBC Communities Fund is an important opportunity to leverage federal and provincial funding to build out the regional electric vehicle charging infrastructure for Whistler and the Sea to Sky corridor and help to reduce GHG emissions in Whistler's largest carbon emitting sector as we transition to the clean energy future.

Respectfully submitted,

Luisa Burhenne
 CLIMATE ACTION COORDINATOR

for
 Toni Metcalf
 INTERIM GENERAL MANAGER OF RESORT EXPERIENCE