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British Columbia (BC) Airports Decarbonization Study Executive Summary

Assessing emissions reductions opportunities at airports in BC

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Executive summary

The BC Airports Decarbonization Study aimed to assess emissions reductions opportunities across airports in BC. in line with the Ministry of Transportation and Transit's (MOTT) clean transportation objectives under CleanBC. The Decarbonization Study was structured to support BC. in comprehensively measuring emissions sources at BC airports and identifying actionable steps towards achieving net-zero emissions across the BC airport network.

Key Findings

Current decarbonization efforts: Significant efforts are underway with major airports like Vancouver International Airport (YVR), Victoria International Airport (YYJ) and Kelowna International Airport (YLW), and others having set climate targets and received Airport Carbon Accreditation (ACA). These efforts are complemented by the BC Aviation Council's (BCAC) Climate Committee, which facilitates industry-wide decarbonization initiatives. However, there are a large group of airports in the province that have not formally collected emissions data and need further support.

Total airports emissions (Scope 1 and Scope 2): Total scope 1 and scope 2 emissions from the reporting airports equal roughly 14,500 tonnes. Emissions range from fairly significant (YVR with just over 9,000 tonnes) to quite nominal (less than 20 tonnes). Excluding Vancouver, the average emissions are approximately 5,500 tonnes, so extrapolating out to include airports who did not submit data directly, airports in BC would annually total about 17,000 tonnes of greenhouse gas for scope 1 and scope 2 emissions only.

Main Scope 1 and Scope 2 emissions sources: Primary sources of emissions identified across participating airports include operations from buildings, vehicles, and ground service equipment.
Similarities among airport archetypes: As part of this Decarbonization Study, airports were grouped into 3 archetypes to leverage similar characteristics and inform initiative considerations. There are similarities within each group, which can help airports collaborate with other airports in their archetypes.

Decarbonization Opportunities

Scope 1 and 2 Initiatives: Potential reductions lie in transitioning to electric or hybrid vehicles for ground support, upgrading to energy-efficient building systems, switching to renewable diesel for heavy-duty equipment and back-up generators, and transitioning heating systems from natural gas to electric or renewable sources.

Scope 3 Initiatives: Significant opportunities exist in supporting the adoption of Sustainable Aviation Fuels (SAF), and electric aircraft, enhancing public transportation links, and promoting electric vehicle usage among airport users and staff.

Funding and Support: There is a need for targeted funding to support capital-intensive initiatives like infrastructure upgrades for electric vehicles and renewable energy systems. Collaborative

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Outcomes

There is momentum: Airports have been engaged through this Decarbonization Study and are eager to continue progressing on their emissions data collection and measurement. However, airports need help developing processes to finalize data collection, monitoring and reporting practices to better track progress, identify main sources of emissions, and implement decarbonization initiatives effectively. This report includes a **Path Forward** which includes necessary steps BCAC, BC Airports, and broader aviation stakeholders can take to support the sector's objectives.

Not all airports publicly report passenger volumes, especially smaller regional or municipal airports, but using an estimate based on available data and typical traffic patterns (2022-2023 data), data collected through this study represents over 98% of annual passenger volume in the province.[1]

There is a need for a formal collaboration hub: Many organizations are interested in supporting airport and aviation decarbonization, but there is a lack of a formal community of practice or hub. Its establishment could be used to share knowledge, resources, and accelerate the adoption of best practices in carbon management across all BC airports, cross industry as well as other partners outside of the industry.

Funding mechanisms can be expanded: There are a variety of existing government and non-government sources of funding for airports to access. There is an opportunity to develop a set of government and collaborative government-industry grants specifically for airport decarbonization

[1] Based on 2022-2023 data collected from BC regional airport annual reports, YVR 2023 annual report, and Transport Canada civil aviation statistics.

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projects that support both initial capital outlays and ongoing operational costs associated with innovative technologies. Existing funding programs focused on operational infrastructure and safety should not be undermined to advance this.

Continuing to support innovation will be important: Encouraging airports to invest in pilot projects for emerging technologies such as electric aircraft and hydrogen fuel infrastructure can potentially position BC as a leader in sustainable aviation.

There are quick wins that airports can consider in the short-term: Airports will need to prioritize the formalization of data collection and monitoring processes, as well as the conduction of feasibility studies and audits to further identify gaps and opportunities. However, there are initiatives that airports can work towards now based on options that are commercially viable today. For example, airports can switch to energy-efficient kitchen appliances, automated energy systems and LED lighting options to increase building efficiencies. In locations where electric charging infrastructure is available for easy integration, airports can explore pilot programs for smaller fleets of equipment, such as electric baggage tugs and sweepers. Airports with access to renewable diesel and biodiesel blends can reduce their emissions footprint by substituting these fuels for equipment currently using fossil diesel. Additionally, for airports where electrification for building decarbonization is not feasible in the short term, enrolling in the FortisBC RNG program presents another viable option.

Conclusion

The BC Airports Decarbonization Study has laid a foundation for understanding and advancing decarbonization of the aviation sector in BC With continued commitment from government, industry, and stakeholders, BC can achieve its ambitious sustainability goals, enhance climate action, and foster economic growth through efficient and innovative initiatives. This also supports priorities related to developing and expanding connectivity across the province, as outlined in the Ministry of Transportation and Transit's Mandate Letter. The provincial government is encouraged to consider these findings and recommendations to guide strategic decisions and policy formulations moving forward.

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