

CORPORATE CARBON NEUTRAL 2032 PLAN

RECOMMENDATIONS

1. That the Corporate Carbon Neutral 2032 Plan be approved.
2. That Class 4 cost estimates for Scenario 2 (Efficiency and Improvement) and Scenario 3 (Acceleration) for light-duty fleet, buildings and facility assets be developed.
3. That a maximum of \$30,000 be funded from the Corporate Climate Action Reserve Fund to develop the estimates.
4. That the results of the cost estimate be reported to the Board.

BACKGROUND

The Board approved up to a \$50,000 allocation for the preparation of a Corporate Carbon Neutral 2032 Plan (CCNP) that completed by Associated Engineering (AE)¹.

In September 2020, the Board received a CCNP progress report² and directed the draft Corporate Carbon Neutral 2032 Plan report be referred to the Climate Action Technical Advisory Committee (CATAC) for comment.³ CATAC has provided its comments (Attachment 2).

Regional District of Nanaimo (RDN) departments participated in a collaborative, multi-criteria analysis approach to develop guiding principles (Attachment 1, Section 2.3) and specific actions required to support corporate carbon neutrality by 2032 (Attachment 1, Section 5). Guiding principles direct how actions are to be implemented, for example, safeguarding service delivery, being fiscally responsible, and avoiding outsourcing of emissions to other jurisdictions. The actions themselves address specific technology changes required for carbon neutrality (e.g., fleet electrification) as well as existing barriers to implementation (e.g., need for integration of emission reduction actions into financial planning cycles). The actions form the core of the plan and detail the diverse changes required to achieve zero carbon.

Recognizing that resources may not be available to proceed with all actions immediately, the CCNP also includes 4 different technology scenarios that could be followed to achieve corporate carbon neutrality by 2032 (Attachment 1, Section 5 and Appendix A). Each scenario shows the impacts on emission reductions when specific actions or technologies from the plan are prioritized over others and implemented to different extents. The 4

¹ Resolution #19-412

² Resolution #20-346

³ Resolution #20-347

technology scenarios deliberately range from minimum to maximum intervention. By costing out scenarios, the RDN can gain a better understanding of which activities to prioritize, approximate costs of doing so, and resulting impacts on emissions. This process will also provide early direction on what types of projects the RDN should prioritize in fiscal planning.

The four technology scenarios set out in the CCNP are:

1. **Renewable Fuel:** reduce emissions only by changing fuel supply (to renewable natural gas and the use of renewable diesel) and replacing aging passenger vehicles with hybrids. This scenario requires little change to equipment and no energy efficiency measures to be undertaken.
2. **Efficiency and Improvement:** implement energy efficiency measures and improve space heating and hot water provision through the use of heat-pumps, expand decarbonisation of light-duty vehicles, and modest biofuel use in heavy-duty vehicles.
3. **Acceleration:** eliminate greenhouse gas emissions from all space heating and hot water, electrification for all light-duty vehicles, expanded biofuel use in heavy-duty vehicles.
4. **Zero Emission:** eliminate all operational emissions; implement all actions above and add solar power to zero-out emissions from grid supplied electricity; 100% electric fleet for light duty and 100% biofuels/renewable diesel for all heavy-duty vehicles.

Table 1. Summary of technology scenario outcomes

	Scenario 1 Renewable Fuels	Scenario 2 Efficiency and Improvement	Scenario 3 Acceleration	Scenario 4 Zero Emission
Remaining emissions to offset	440	1659	862	0
Remaining offset cost liability (annual cost at \$20/tCO ₂ e)	\$11,000	\$41,500	\$21,500	\$0
Relative Cost*	\$\$	\$\$\$	\$\$\$\$	\$\$\$\$\$\$

*Costing is not included in the CCNP Plan development scope so only relative cost can be provided at present.

CATAC comments (Attachment 2) support implementation of Scenario 3 (Acceleration) as a stretch option and Scenario 2 (Efficiency and Improvement) as a minimum, pending the outcome of the recommended costing analysis. The CCNP 2032 Plan notes that while Scenario 1 (Renewable Fuels) may be the best choice to reduce emissions at a lower cost, it has low feasibility due to lack of an appropriate regional renewable fuels market. Scenario 4 (Zero Carbon) has both low feasibility and high incremental cost to eliminate the last emissions. For these reasons, Scenarios 1 and 4 are not recommended.

If funds are approved by the Board for the Class 4 cost estimate, AE recommends costing only scenario actions that can be implemented in the near term, which due to the lack of an appropriate biodiesel market, are light-duty fleet, buildings, and facilities. The technical options/costs for the balance of emissions, which are primarily heavy-duty fleet, will be revisited in approximately 2025 when market-ready technologies are more likely to be available for this sector. Costing light-duty fleet, buildings and facilities assets prioritizes approaches and actions that are currently feasible. Costing near-term actions supports a more informed selection of which scenario to pursue, provides general budget requirements, and allows the RDN to more effectively implement the CCNP.

FINANCIAL IMPLICATIONS

Based on existing RDN facility audits, Table 2 shows an estimated range of professional fees required to increase the level of costing detail for scenarios 2 and 3 of the CCNP plan. An estimate in the Class 4 range will help select between scenarios and will provide a reasonable sense of budgets required for implementation and will support the integration of carbon reduction measures with financial planning. A maximum cost of \$30,000 is recommended as adequate for this type of work.

Table 2. Estimate class descriptions and costs to deliver the estimate

Estimate class	Name	Accuracy Range	Purpose	Project definition level	Professional Fees (\$ Range)
Class 5	Order of magnitude	L: -20% to -50% H: +30% to +100%	Screening or feasibility	0% to 2%	0-10,000
Class 4	Intermediate	L: -15% to -30% H: +20% to +50%	Concept study or feasibility	1% to 15%	10,000-175,000
Class 3	Preliminary	L: -10% to -20% H: +10% to +30%	Budget, authorization, or control	10% to 40%	150,000-275,000
Class 2	Substantive	L: -5% to -15% H: +5% to +20%	Control or bid/tender	30% to 70%	250,000-350,000
Class 1	Definitive	L: -3% to -10% H: +3% to +15%	Check estimate or bid/tender	50% to 100%	325,000-400,00+

Up to \$30,000 will be required from the Corporate Climate Action Reserve Fund (CCARF) to cost the selected scenarios. Costing will improve future budget planning for departments charged with implementing CCNP actions and allow better integration into capital planning cycles. The current CCARF balance is \$758,743.

STRATEGIC PLAN ALIGNMENT

Climate Change - Review and update corporate emissions plan and greenhouse gas (GHG) reduction strategy.

REVIEWED BY:

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ATTACHMENTS:

1. RDN Corporate Carbon Neutral 2032 Plan
2. Climate Action Technical Advisory Committee Comments on Draft RDN Corporate Carbon Neutral 2032 Plan