

## RESORT MUNICIPALITY OF WHISTLER – STEP CODE ADOPTION ENGAGEMENT SUMMARY

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**DATE:** November 24<sup>th</sup>, 2021

**LOCATION:** Zoom

**ATTENDANCE:**

- **Consultant Team:** Madi Kennedy and Marshall Duer-Balkind
  - **Client Team:** Luisa Burhenne, John Chapman, Louis-Felix Renaud-Tremblay, Joe Mooney, Jay Klassen, Heather Beresford
  - **Number of participants:** 21
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The Resort Municipality of Whistler held an industry engagement on November 24<sup>th</sup> to present their proposed approach for BC Energy Step Code adoption with a low carbon energy system (LCES) compliance pathway. With the recent Provincial announcement of the upcoming integration of GHGI targets in the BC Energy Step Code, RMOW also proposed an alternative approach if the Province grants local governments the authority to set GHGI targets for new buildings in the near term.

Table 1 summarizes the feedback received through the industry engagement. The breakout groups were organized by Part 3 buildings (group #1) and Part 9 buildings (groups #2 and #3). Most of the feedback received was not building specific and referred more broadly to the proposed approach; where feedback applied to a particular building type, it was noted in the engagement summary. The feedback summarized in the description column is roughly ordered by relevance. This was determined by the number of times a particular point was noted on the Mural board.

*Table 1. Engagement Summary*

Question	Theme	Description
<b>Question #1:</b> What are the benefits of the proposed approach?	<b>Carbon Reduction</b>	<ul style="list-style-type: none"> <li>• Proposed approach will result in GHG emissions reductions and reduce the use of fossil fuels.</li> <li>• Proposed approach will drive the industry to low carbon energy strategies.</li> </ul>
	<b>Flexibility</b>	<ul style="list-style-type: none"> <li>• Provides flexibility by providing two compliance pathways.</li> </ul>
	<b>Cost Effectiveness</b>	<ul style="list-style-type: none"> <li>• Heat pumps can provide operational cost savings.</li> <li>• Meeting Step 5 only costs \$20k/house more than Step 3.</li> <li>• It will become a straightforward decision to choose a LCES as the perceived additional cost for electric heating and DHW will easily be offset by the much higher cost for a step 5 home.</li> </ul>
	<b>Industry Readiness</b>	<ul style="list-style-type: none"> <li>• A large portion of the industry is ready to build to the top step with LCES.</li> <li>• Cold climate can easily operate in Whistler's climate (particularly if they are right-sized and properly installed).</li> </ul>
	<b>Resilience</b>	<ul style="list-style-type: none"> <li>• Heat pumps can increase resilience by addressing the need for cooling.</li> <li>• High-performance envelopes can improve resilience with power outages.</li> </ul>

<b>Question #2:</b> What are the pitfalls and challenges of the proposed approach?	<b>Electricity Grid Capacity</b>	<ul style="list-style-type: none"> <li>• Increase in LCES may require electrical service upgrades to meet additional electricity load.</li> <li>• Natural gas back-up is needed to ensure reliability.</li> <li>• Baseboard heating needs to be replaced by heat pumps to free up electricity grid capacity.</li> </ul>
	<b>Meeting Climate Targets</b>	<ul style="list-style-type: none"> <li>• Proposed approach is insufficient to meet the climate target.</li> <li>• Proposed approach is not moving fast enough or with sufficient ambition.</li> </ul>
	<b>Cost</b>	<ul style="list-style-type: none"> <li>• There are additional costs associated with meeting the proposed approach.</li> </ul>
	<b>Industry Capacity</b>	<ul style="list-style-type: none"> <li>• Not all trades and contractors are ready to build to the proposed level of performance and need more time to catch up.</li> </ul>
	<b>Technical</b>	<ul style="list-style-type: none"> <li>• In Canada, high-performance windows are difficult to procure and expensive. Many builders are still getting windows from Europe.</li> <li>• There is a need to incorporate passive cooling measures into building design. This conflicts with the preference for large windows in Whistler.</li> <li>• HOT 2000 requires the use of a default COP for air to water heat pumps that are not representative of actual performance.</li> <li>• HOT 2000 cannot accurately calculate the required cooling load.</li> <li>• It can be difficult for commercial buildings and small homes to meet the top step of Step Code.</li> <li>• Back-up systems could be used as primary systems once the building is in operation.</li> <li>• The long-term viability of LCES: will they need to be replaced more frequently?</li> </ul>
<b>Question #3:</b> Which pathway would you opt to use?	<b>Top Step with LCES</b>	<ul style="list-style-type: none"> <li>• Many buildings in Whistler are already meeting the top step with LCES.</li> </ul>
	<b>Lower Cost Option</b>	<ul style="list-style-type: none"> <li>• The pathways selected will depend on the client. Many clients will prefer the cheapest option, which is likely the LCES pathway.</li> </ul>
	<b>Bias for Natural Gas</b>	<ul style="list-style-type: none"> <li>• Some builders and building owners have had bad experiences with mis sized or improperly installed heat pumps and prefer to use natural gas.</li> </ul>
	<b>LCES for Resilience</b>	<ul style="list-style-type: none"> <li>• Some builders and building owners will prefer LCES pathway to incorporate cooling with the use of a heat pump.</li> </ul>
<b>Question #4</b> What are key considerations for phase-in?	<b>Education</b>	<ul style="list-style-type: none"> <li>• There is a need for education for homeowners on the cost of efficient low-carbon buildings. Homeowners need to understand the tradeoffs of meeting their aesthetic and functionality needs and performance requirements within budget.</li> <li>• There is a need to communicate the non-carbon and energy benefits of efficient low-carbon buildings to home and building owners.</li> </ul>
	<b>Industry Capacity</b>	<ul style="list-style-type: none"> <li>• There is a need for additional HVAC installers for heat pump installations in Whistler.</li> </ul>

	<b>Technical</b>	<ul style="list-style-type: none"> <li>• The performance gap between design and operation needs to be addressed.</li> <li>• Supply of LCES compliant HVAC equipment with the increased use of these systems.</li> <li>• The impact on embodied carbon when building to Step 5 (see Chris Magwood report).</li> <li>• Electrical code requires a sufficient load to allow all electrical equipment to run at maximum capacity simultaneously. Load management systems can significantly decrease capacity needs; however, the Electrical Code does not consider this.</li> <li>• Increasing electrification (e.g., heating and EV charging) would require electrical capacity upgrades.</li> </ul>
	<b>Phase-in</b>	<ul style="list-style-type: none"> <li>• The approach needs to give industry time to adjust.</li> <li>• The approach is reasonable and will provide time to the industry to adapt.</li> <li>• Phase-in should be accelerated to meet the urgency of the climate emergency.</li> <li>• The implication of building size for equity and affordability issues.</li> </ul>
	<b>Incentives</b>	<ul style="list-style-type: none"> <li>• The permit process time is too long.</li> <li>• Increase permitting costs associated with the proposed approach.</li> <li>• Provide incentives or additional support for Passive House buildings.</li> </ul>
<b>Question #5</b> Are there any additional supports needed for compliance and implementation?	<b>Education</b>	<ul style="list-style-type: none"> <li>• Provide education for home and building owners on the costs and benefits of low-carbon energy-efficient homes.</li> </ul>
	<b>Capacity Building</b>	<ul style="list-style-type: none"> <li>• Connect trades and contractors to training and upskilling program.</li> <li>• Train more HVAC installers for heat pump installation.</li> </ul>
	<b>Resilience</b>	<ul style="list-style-type: none"> <li>• Consider the need for ventilation/filtration to protect residents from forest fire smoke.</li> <li>• Consider the additional needs for cooling as temperatures increase.</li> </ul>
	<b>Incentives</b>	<ul style="list-style-type: none"> <li>• Provide incentives for post-occupancy evaluation.</li> <li>• Provide permit fast-tracking for early adopters.</li> </ul>
	<b>Technical</b>	<ul style="list-style-type: none"> <li>• Provide modelling guidelines (consider HOT 2000 shortcomings).</li> <li>• Consider exemptions for buildings that are sensitive to the external environment (i.e., buildings located in the alpine on north-facing slopes).</li> <li>• Consider providing flexibility for suites, carriage houses and auxiliary buildings.</li> </ul>