

## Review of TEDI targets for houses

This document provides a summary of the proposed plan to address questions and issues that have been brought to the Energy Step Code Council regarding Thermal Energy Demand Intensity (TEDI) targets, as well as some other technical matters related to Energy Step Code requirements for Part 9 buildings.

This document is provided for information and discussion purposes by the Chair of the Energy Step Code Council. For any questions about this action planning document and how to be involved, please contact [building.safety@gov.bc.ca](mailto:building.safety@gov.bc.ca).

### Background:

The TEDI targets in the Energy Step code were updated in 2018 based on feedback from industry (need for cooling energy budget), and analysis by BC Housing related to small buildings and anomalies in climate zones 5 and 6 that allowed for Step 3 TEDI to be achieved with less than prescriptive minimum envelope performance. A consultation summary, technical analysis, and cost implications of the 2018 Metrics Update is available on [EnergyStepCode.ca](http://EnergyStepCode.ca).

### Feedback:

#### **Step 2 and 3 TEDI in Climate Zones 5/6:**

The Building and Safety Standards Branch has received feedback from builders, building officials, and energy advisors that some projects that significantly exceed the minimum prescriptive requirements are failing to meet Step 2. Feedback has come primarily from climate zones 5 and 6 where TEDI was increased most in the 2018 Metrics Update.

Some specific project examples have been provided by homebuilders and after initial review by BC Housing, the Building and Safety Standards Branch, and the Technical Subcommittee Chairs, three categories of possible issues were identified:

1. **Design** – possible issues with design decisions on some of the homes that may be making it difficult to achieve a step 3 TEDI.
2. **Modelling** – some issues may relate to interpretation issues for energy modelling or issues with ERS requirements for how to treat spaces like heated crawl spaces that exaggerate energy efficiency impact and may skew modelling results for step code compliance.
3. **Building Code** – the TEDI targets may be too onerous for some or all building types, and the issue of TEDI targets in colder parts of a climate zone may be causing difficulty in achieving targets.

#### **TEDI at the Edges of Climate Zones:**

Recent analysis by the federal government has shown that TEDI targets should be adjusted by heating degree day, not by climate zone, to achieve more equitable outcomes in all communities. The current approach to TEDI makes it easier to achieve in warmer parts of the climate zone and harder in colder



parts of the climate zone. This makes for a noticeable change in construction requirements in neighbouring communities that border climate zones – the building in the colder climate zone would have less insulation to achieve the same step as the house in the warmer climate zone.

#### Possible solutions under consideration:

##### **Building Code (possible for Dec 2019)**

- Collaborate with CHBA BC regional chapters, EAs, and building officials to ensure that any changes are fully consulted and informed by early experience in the field.
- Consider amending the TEDI targets for specific housing types or climate zones to achieve the outcomes anticipated and communicated in 2018.
- Produce technical bulletins or any other non-regulatory documents required to clarify any changes to the targets.
- Propose a formula for TEDI that would create a sloped line, not steps, as heating degree days increase.

##### **Design (Spring 2020)**

- Identify key design choices that create a barrier to TEDI compliance
  - Communicate this info to local governments for consideration in DP area policies
  - Work with design community through ASTT BC to address common practices that may be creating challenges
  - Work with builders to improve the BC Housing builder guide to emphasize key decisions that will maximize TEDI outcomes and minimize cost.

##### **Modelling (Timeline TBD)**

- Work with NRCan to identify possible changes to ERS and modelling requirements to avoid dramatically different outcomes based on minor decisions (e.g. window orientation, including heated crawlspace, etc.).
- Consider any interim measures such as bulletins or other official guidance in BC to help address issues prior to official changes to ERS by NRCan.

#### Next Steps:

- Gather specific examples where TEDI is an issue, including HOT2000 files if possible.
- Support engagement with CHBA BC members to test out proposed solutions on real projects with energy advisors prior to making final proposal to the Energy Step Code Council.
- Analysis of common issues between projects by a steering committee including CHBA BC, NRCan, NRC, BSSB, BC Housing, BOABC, local governments, and EA representation.

#### Proposed Schedule:

- June – Information gathering and problem definition
- July – Steering committee to conduct analysis and propose possible changes/solutions



- Late July/August – wider consultation on proposed solutions, including workshop(s) with CHBA BC and energy advisors to test solutions on realistic designs.
- August – prepare communication materials for proposed changes
- September – seek Energy Step Code Council support for proposed changes
- December – likely effective date of any proposed changes to the Building Code

Other issues being addressed this summer in parallel to the TEDI discussions:

- Further communication regarding what is required in Step 1 with clear visuals and plain language.
- Townhouse airtightness testing procedures are being clarified to enable Energy Step Code compliance and EnerGuide Rating System compliance.