



Meeting Notes	
Date	February 21, 12PM EST
Topic	RESNET Embodied Carbon Standard – Committee Kick-Off Meeting

Attendees					
✓	Jacob Atalla	✗	Scott Horowitz	✓	George Sullivan
✓	Betsy Ames	✓	Tracy Huynh	✓	Imran Syed
✓	Steve Baden	✓	Mark Johnson	✓	Yatharth Vaishnani
✓	Webley Bowles	✓	Nathan Kahre	✓	Brett Welch
✓	Matthew Brown	✓	Vladimir Kochkin	✗	Stacey Williams
✓	Michael Browne	✓	Chris Magwood	✓	Laura Woodford
✓	Andy Buccino	✓	Ryan Meres	✗	Matt Woundy
✓	Karla Butterfield	✓	Alexis Minniti		
✓	Nate Connors	✓	Gene Myers		
✓	Connor Dillon	✗	William Ranson		
✓	Bennett Doherty	✓	Ari Rapport		
✗	Lia Douillet	✗	Curt Rich		
✗	Sean Elliott	✓	Alexander Rees		
✗	Philip Fairey	✓	Sam Ruben		
✓	Asa Foss	✓	Nicholas Semon		
✓	David Goldstein	✓	Rachel Stern	✓	Present
✗	Eric Holt			✗	Not Present

No	Agenda Item	Presenter
1	Roll Call & Introductions	RM, RESNET
2	RESNET Anti-Trust Policy	SB, RESNET
3	Advisory Committee and Purpose	SB, RESNET
4	Embodied Carbon Presentation	CM, RMI
5	Open Discussion	All
6	Next Steps	CM, RMI



Decisions <input checked="" type="checkbox"/>	Action Items <input type="checkbox"/>
All voted in favor to pursue the development of the standard to measure embodied carbon by RESNET.	Steve Baden to report to the RESNET board about the approved motion and provide feedback once available about moving forward with developing the standard.

Meeting Overview

A roll call and quick introduction of meeting attendees was conducted. The purpose of this committee’s initial task is to answer the question whether a standard to measure the embodied carbon of low-rise residences is appropriate and whether or not RESNET should pursue it. A brief presentation about the scale of impact of low-rise residential embodied carbon emissions and the necessity of the standard was presented by Chris Magwood. Notable topics and suggestions brought up by the committee include:

- Importance of meeting widely referenced reporting standards like ISO
- Importance of ensuring more trustworthy and accurate EPDs
- Suggestion of a guidance document for implementation
- Clarifying that this Standard is focused solely on measurement; interpretation will be covered in a separate standard
- Emphasis on developing a simple, reasonable and attainable methodology and framework
- Preference to avoid creating additional work for raters and instead build on existing platform

A motion was put forth by Michael Browne and seconded by Sam Ruben. The rest of the committee voted unanimously in favor of RESNET pursuing the development of the Standard. The next step is to inform the RESNET Board of the decision and assemble the technical committee to begin the development of the Standard.

Detailed Meeting Notes



1. **Introductions, 15 min.**
2. **RESNET Anti-Trust Policy, 5 min.**
 - a. SB: Urge all to abide by anti-trust.
3. **Advisory Committee and Purpose, 5 min.**
 - a. SB: This committee represents a wide range of interest and expertise and help us on our path. Our board of directors met and discussed the issue of embodied carbon. We've already adopted carbon index based on operational carbon of homes. We identified a gap: the carbon embodied in the materials to construct a home. This group is to look at this issue and answer two questions:
 - i. Is a standard appropriate and needed for low-rise residential buildings.
 - ii. Should RESNET pursue this process to develop guidelines and standards?
 - b. SB: If we agree to pursue a standard, then we will begin the formal standard development process. This group will shift towards a review entity. A technical committee will take the lead on developing the draft.
 - c. SB: Before drafts go to public hearing it comes to this committee, and members can make comments prior to the public hearing.
4. **Embodied Carbon Presentation, 15 min.**
 - a. CM: Several important stakeholder groups need a standard
 - i. Many programs in the residential space starting to turn their eyes towards EC and how to measure it
 - ii. Builders and raters need the standard and many others in the states.
 - iii. We're seeing ESG reports noting difficulty measuring embodied carbon
 - b. CM: Why RESNET?
 - i. Low-rise sector is unique, functions differently from commercial
 - ii. Team of raters understands the unique aspects of the sector
 - iii. HERS raters already leaders in helping builders decarbonize operational carbon
 - iv. They're already assembled most if not all the data needed to perform the calculation
 - v. Workstream already fits into the current systems
 - vi. Can contribute to the carbon index
 - vii. Policymakers and homebuyers trust HERS ratings
 - c. CM: The impact of new home carbon
 - i. All studies on EC on homes in North America
 - ii. There is a methodology to calculate it
 - iii. The average quite consistent across the country (different climates)
 - iv. Emissions of low-rise residences is on the scale of fossil emissions of entire countries
 - v. Missing materials data is starting to become more available,

increases total impact of embodied carbon and making this effort more critical

- d. CM: Operational pathway exists and has been successful
 - i. There's a great pathway forward how to get down to zero
 - ii. We must think about how to do the same for embodied carbon
 - iii. The longer we wait to address embodied carbon, the more the embodied emissions are going to outweigh the operational emissions
 - iv. We want to make a downward slope for embodied emissions and show people how they can match their operational reductions with concurrent embodied reductions and bring both emissions down to zero in a reasonable amount of time
 - e. CM: There is a well-established starting point to begin deliberation towards a standard
 - i. Two established tools in Canadian market:
 - 1. Federal government: NRCAN MCE²
 - 2. BEAM tool by Builders for Climate Action
 - ii. Cities have used these tools for regulatory programs
 - iii. Tested by many builders, raters, and manufacturers
 - iv. Tools share the same methodology and dataset focused on material-related emissions
 - v. For this Standard, we can consider adjustments. Do we want to make any changes? Expand or narrow the scope?
 - vi. Tools have found best adoption in field of raters and energy modelers, another reason why RESNET is a great place for this to land
 - f. CM: Guiding principles
 - i. Based on reliable, verified data, getting comparable results
 - ii. Making it compatible with existing programs
 - iii. Make it simple, modular and adaptable and fulfill regulatory needs
 - iv. Questions for technical committee: system boundary, building elements, metrics, retrofit, timing of assessment, data sources
 - v. Main reason: figure out a consistent way to calculate embodied carbon; is not to say these are good numbers or bad numbers, but just to come up with a methodology that everyone can use to get to a number; the meaning of the numbers is a next step
- 5. Open Discussion, 15 min.**
- a. Ari R.: In the development of the standard, are we looking also at how to implement that data?
 - i. SB.: First step, we're just looking at how to measure it. Then we can leave it to other standards for implementation. The most important focus if it is pursued to go forward is just developing how to calculate it.



- b. George S.: Canada and the US are aligned to report to CCfD (Carbon Contracts for Difference); IFRS makes the accounting rules; Equator Principles selected the ISO 14024/25/26 for measurement which lays it out entirely for embodied carbon; if it doesn't meet the reporting standards, they're not going to use it at all.
 - i. CM: The ISO standard will be the foundation of all of this. The technical committee will take those ISO standards and come up with a methodology that works for HERS raters in particular. A lot of EC work is done on Bill of Materials in the commercial world. The Residential building industry doesn't work as much that way, and this standard will focus on the residential way of making material takeoffs.
 - ii. George S.: Land use change and tracing impacts along the supply chain among other aspects will be important to consider.
 - iii. CM: If the standard gets voted, the technical committee will be working on all of these items.
- c. Imran S.: Do we have similar tools like BEAM here in the U.S. that we can research them and prepare for the next meeting?
 - i. CM: BEAM can be and has been used for U.S. homes.
- d. David G.: We'll have to be strategic about letting perfect be the benefit of good. In one past experience, we were unable to move forward with another standard because no one trusted the EPDs. We need to ensure the data for EPDs is accurate enough to be used to make comparisons. There's a foundational step to get more trustworthy EPDs and incorporate time of use into industrial facilities that make materials.
 - i. CM: A very important aspect for the technical committee to explore. One thing is to look for the uncertainty factor approach for EPDs that the GSA is suggesting. This is already built into the EC3 tool. There are many things that the technical committee could look at as ways to go forward.
- e. Nick S.: Are there other ANSI standards that are developed specifically to other industries? Are we identifying that the residential sector is special enough to have a standard developed for it?
 - i. CM: It is a unique construction; answers will be comparable to other sectors, but the way we get to them will be unique to this sector.

- f. Webly B: Suggest to develop a guidance document for implementation (important of PCR's, this is part of a larger system, how this standard can be applied in different ways); guidance to use the standard could be really helpful.
 - g. Mike B.: There needs to be some informative guidance that goes along with the Standard. Think we should keep it as simple as possible. This doesn't have to be a part of 301, and I'd much rather see a new number that an organization can start to use when they're ready. I'd love to see the software adopt approaches where they can use average values of materials to have something to start with. As a HERS rater, I'm trying to make this an easy and natural transition, and fully in favor of moving forward.
 - h. Sam R.: Definitely in favor, curious how you see this standard interacting with other existing frameworks and regulations.
 - i. CM: This is a standard that residential homebuilder can use to meet requirements. It will be based on the ISO standards. Hoping the regulatory frameworks will specify this RESNET standard as the way to measure.
 - i. Jacob A.: Agree to start in ways that are attainable, economic and reasonable. What you're trying to do is the availability of an ecosystem that can be leveraged to do these things if done right. I'm in favor of what you proposed as a resolution.
 - j. Connor D: In favor of an ANSI standard being developed. Agree that it should be its own standard separate from 301. If we're going to consider doing a combined carbon index, we need to pull that calculation out of 301 and add it to this new ANSI standard.
 - k. Andy B: We don't to make additional work for raters and instead build on an existing platform. We've been working on a workflow and preparing a beta; currently getting clean outputs of building summaries out of RESNET software and inputting into BEAM tool and getting realistic and good quality outputs for a carbon intensity for a building. We are close to being able to roll it out for general use.
- 6. Next Steps, 5 min.**
- a. SB: Motion made by Mike.
 - b. Sam Ruben: seconded.
 - c. SB: Voting now will move this along faster. We could also do an electronic ballot or make another meeting later for more discussion. Is anyone not feeling comfortable voting today?
 - i. Silence.
 - d. SB: We can take a vote on it, voice vote. All those in favor say aye:
 - i. Multiple "aye's"
 - e. SB: Those opposed say nay:
 - i. Silence
 - f. SB: Those abstain:



- i. Silence
- g. SB: I will report to the board that recommendation and we will begin the process of developing the standard.
- h. SB: Maybe the first approach is to develop the guideline, that will be the determination of the RESNET board.