

Carbon Leadership Forum Embodied Carbon Policy Educational Series

Overview

Policymakers are taking the lead from building industry practices, tools, and projects to begin implementing a variety of policies to reduce embodied carbon on government-funded and private sector projects. The CLF Regional Hubs are uniquely positioned to act as local knowledge leaders related to embodied carbon, providing technical guidance to climate policy organizations or agencies and identifying opportunities for new policies.

Goal

The goal of this policy training series for CLF Regional Hubs is to:

1. Familiarize CLF members with core embodied carbon policy concepts and frameworks
2. Introduce case studies of existing policies
3. Instigate conversations about the unique regional or local policy context for each Hub, such as:
 - Identifying local/regional policy opportunities for addressing embodied carbon
 - Hearing from local/regional organizations and government agencies who are leading (or poised to lead) on developing and implementing embodied carbon policies
 - Allowing for targeted education opportunities for local/regional groups
4. Prepare CLF members to act as local knowledge leaders on embodied carbon policy

Format

The training series consist of six interactive sessions, each with 2 key components:

1. Introductory video recordings (and slide decks) introducing the policy topic and core concepts
2. Follow-up activity/discussion guide related to each topic
3. Suggestions for types of live speakers are described. Reach out directly to the CLF Policy Team to request contacts for individuals.

CLF will share the recordings and activities on our website in June 2022. CLF Regional Hubs can choose when (and which) sessions to host based on their own meeting cadence and priorities. See below for example event schedules.

Sessions

1. [Introduction to the Embodied Carbon Policy Landscape](#)
2. [Embodied Carbon & Climate Action Plans](#)
3. [Embodied Carbon & Procurement Policies](#)
4. [Embodied Carbon & Building Codes](#)
5. [Embodied Carbon & Zoning and City Incentive Programs](#)

6. [Embodied Carbon & Reuse and Deconstruction](#)

Additional sessions may be added in the future if this format proves to be successful.

Session 1: Introduction to the Embodied Carbon Policy Landscape

Session Description

Policies targeting reduced embodied carbon are relatively new, and they come in many different forms that vary by the jurisdiction and goals of policymakers. Topics include:

1. Why Embodied Carbon?
2. Overview of Types of Policies
3. Core Concepts
4. Growing Policy Landscape
5. Opportunities for Informing Policy Development (as a CLF Hub)

Learning Objectives

- Define embodied carbon and provide examples of strategies for reducing embodied carbon in the built environment.
- Identify opportunities and current precedents for reducing embodied carbon through policy at the federal, state, and local level.
- Contribute knowledgeably to the development of embodied carbon policies in your own company, city, or state.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~40-60 minutes)
 - Introductions (5-10 minutes)
 - Embodied Carbon Strategies (10-15 minutes)
 - Regional Policy Opportunities (15-20 minutes)
 - Opportunities for Engagement (10-15 minutes)

Note: This session does not include example speakers because it is designed to be used in combination with other sessions, for which example speakers are provided, or as a standalone with the discussion activity.

Session 2: Embodied Carbon & Climate Action Plans

Session Description

City and regional climate action plans (CAPs) should include an assessment of embodied carbon, targets for reduction, and a timeline and strategies for meeting those targets. Including targets and strategies in climate action plans is a key foundation to developing further policies to reduce embodied carbon and maximizing opportunities for synergies with other climate strategies. Topics include:

1. Climate Action Plans (CAPs)
2. Greenhouse Gas Inventories
3. Integrating Embodied Carbon into CAPs
4. Case Studies
5. Development Process and Stakeholders

Learning Objectives

- Understand what CAPs are and what stakeholders are involved in the development.
- Identify multiple strategies included in CAPs that incorporate embodied carbon goals and targets.
- Identify key differences between Production-Based Inventories and Consumption-Based Inventories.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~45 minutes)
 - Explore Your City/Region's Most Recent Climate Action Plan (CAP) (~15 minutes)
 - Brainstorming Activity 1: Targets (~10 minutes)
 - Brainstorming Activity 2: Strategies (~15 minutes)

Suggestions for Identifying Live Speakers

Reaching out to your city or county's sustainability/environment/climate/air quality department is likely the best way to find a local contact who can speak to your region's climate action plan. If not, they may be able to tell you who to reach out to in another department.

Reach out to the CLF team to ask if we have a contact for your region.

Session 3: Embodied Carbon & Procurement Policy

Session Description

Procurement policies (often referred to as ‘green procurement policies’ or in some cases ‘Buy Clean’) aim to leverage the purchasing power of public agencies to achieve environmental or social outcomes. In the case of embodied carbon, the goal of procurement policies is often to help create a market for lower-carbon options in the broader construction materials market while aligning public purchasing with existing social and environmental goals. This session explores:

1. Why Procurement
2. Key Components
 - a. Scope
 - b. Disclosure
 - c. Limits
 - d. Incentives
 - e. Compliance
3. Case Studies
4. Development Process and Stakeholders

Learning Objectives

- Understand how procurement policies can be a way to address carbon emissions in the public sector.
- Identify different stakeholders who may be involved in the process.
- Understand the five key components of procurement policies.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~40 minutes total)
 - Introductions (5 minutes)
 - Main Activity (Miro Board included): ‘Design a procurement policy for Carbonville’ (~30 minutes)
 - Vote and conversation: (~10 minutes)

Suggestions for Identifying Live Speakers

State/provincial and local government agencies may have an individual or team responsible for leading sustainable procurement. Asking them to share an overview of current initiatives is a great way to understand how embodied carbon fits within their current practices and plans.

Examples of NGOs and advocacy organizations that frequently speak on the topic of embodied carbon and procurement policy:

- Blue Green Alliance (US) or Clean Energy Canada
- RMI
- ACEEE

- Building Transparency
- Open Air Collective
- NRDC

Session 4: Embodied Carbon & Building Codes

Session Description

Over the past few decades, advancements in building energy codes—and in the underlying research on reducing operational energy consumption and related GHG emissions—have stimulated changes in building design and operation. In contrast, embodied carbon has been largely excluded from building codes until the last few years. Amendments to the code may establish prescriptive or performance-based paths to reducing embodied carbon of specific construction materials or whole buildings. This session explores:

1. Building Codes
2. Materials: Code Pathways and Case Studies
3. Buildings: Code Pathways

Learning Objectives

- List a few examples of how building codes differ in different geographies (city, state, country).
- Understand how embodied carbon measures can fit into different code areas (building, plumbing, green code, etc.).
- Understand the difference between the Materials and code pathway and the Buildings and code pathway.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~50 minutes)
 - Introductions and Warm-up Miro activity
 - Main activity (Miro link included): Design your own low embodied carbon code (~35 minutes)
 - Voting and discussion (~10 minutes)

Suggestions for Identifying Live Speakers

Understanding the code development process for your state/province or city is a critical first step in understanding how embodied carbon could be integrated into your regional building code. This may be an area of expertise that a current member of your Regional Hub already has from working to integrate operational carbon or other requirements into the code. If not, your state or city AIA Chapter or local green building organization may be a good place to start to ask for guidance (and/or a presentation) on how and when to engage in the code development process.

There are many organizations leading on climate advocacy related to local and state building codes. Engaging these groups is a great way to broaden their agenda to include embodied carbon.

In addition, a few organizations have begun to explicitly address how embodied carbon could be integrated into the code, including:

- New Buildings Institute
- RMI
- State/City AIA Chapter

Session 5: Embodied Carbon & Zoning and City Incentive Programs

Session Description

Zoning and land use policies can narrow the range of emissions early on with long-term impact. It is a key time to influence designers, and it provides different advantages than codes in the scope of a policy. Decisions made in these phases have very high potential impact, starting from choosing the land to zone and to build on, moving to determining constraints for density, massing and height. Cities in particular are in a great position to implement regulations that are in line with local capabilities and available solutions, along with purchasing power, more closely than on the national scale. This session explores:

1. City Zoning and Incentive Programs
2. Integrating Embodied Carbon
3. Case Studies

Learning Objectives

- Understand why cities are in a great position to implement regulations around zoning compared to on a national scale.
- Understand the difference between prescriptive based approaches and performance based approaches for including embodied carbon in policies.
- Name a few case studies or examples of how zoning and city incentives have been implemented to reduce embodied carbon.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~40 minutes)
 - Introductions
 - Embodied Carbon Reduction Strategies (!10-15 minutes)
 - Project Incentives (~10 minutes)
 - Explore Your Region's Current Zoning and Incentive Programs (~10min)

Suggestions for Identifying Live Speakers

Municipal governments have a number of departments that are responsible for city regulations, incentives, and educational programs. While the exact names vary, relevant departments often include

- Environment & Sustainability
- Planning & Development
- Building Construction & Inspections / Permitting

Reaching out to individuals from these departments to see if they would be open to sharing sustainability initiatives related to buildings and construction and whether embodied carbon fits into existing programs or plans could be a great way to get involved with the local municipalities and brainstorm ideas together.

Session 6: Embodied Carbon & Reuse and Deconstruction Policies

Session Description

Extending the life of a material or building avoids extraction and manufacturing emissions from creating a new one and saving embodied carbon. Reuse and deconstruction has many co-benefits such as creating jobs and adding new regional markets for the removal, sale, and distribution of salvaged materials. There are multiple ways policy can move the needle of reuse and deconstruction. This session explores:

1. Reuse & Embodied Carbon
2. Policy Opportunities
3. Case Studies
4. Development Process and Stakeholders

Learning Objectives

- Identify an environmental, economic, and social impact of deconstruction and reuse policies.
- Understand different opportunities for deconstruction and reuse policies and government led programs.
- Understand local conditions and questions to ask before introducing a deconstruction and reuse ordinance.

Resources

- [Presentation Recording](#)
- [Presentation Slides](#)
- [Discussion Activity](#) (~40 minutes)
 - Introductions (~5 Minutes)
 - Strategies and barriers (~10-15 Minutes)
 - Policy opportunities (~5-10 Minutes)
 - Communicating benefits of Reuse and Deconstruction (~10 minutes)

Suggestions for Identifying Live Speakers

Identifying speakers on reuse and deconstruction depends on which type of policy your Regional Hub is interested in learning more about.

- All for Reuse ([Meet the Team here](#))
- [Zero Net Carbon Collaboration for Existing and Historic Building](#)
- Climate Heritage Network

Additionally, look for:

- Design firms with reuse experience (varies by region)
- Deconstruction contractors

- City/State Officials: In addition to the local departments suggested in the [city zoning and incentive programs](#) section above, look for a contact at your region's Waste and/or Materials Management department
- *Additional suggestions welcome!*

Event Templates Menu

This section provides a menu of different suggested formats of workshops. Each template below includes a description, timing suggestions, and example.

- [Template A: Working Group Session](#) (~75-90 min)
- [Template B: Webinar + Follow-up Working Session](#) (2 sessions, 60-75 min each)
- [Template C: Workshop/Topic Deep Dive Series](#) (~90 minutes)
- [Template D: Day Long Workshop](#) (Day-long event, ideally in-person)

These example agendas are intended to inspire conversation as to what type of event would be most productive or relevant for your Regional Hub. The best option will depend on questions such as:

- *What size audience do you expect (or desire)?*
- *Will this be a virtual event or in-person?*
- *Will this focus on current CLF Regional Hub members or bring in additional stakeholders?*
- *Are there local green building organizations that may want to partner?*
- *Would you like to partner with other CLF Regional Hubs?*

Template A: Working Group Session

Description

Template A is the simplest/most informal of the event templates included. This template is well suited to act as the agenda for a regularly scheduled meeting of your Regional Hub and could easily work as an in-person or virtual event.

Timing	Agenda Item	Format Note
Before Event: <i>Session 1: Introduction to the EC Policy Landscape and/or one of Sessions 2-6 are shared ahead of time. Attendees are expected to have watched ahead and come ready to discuss.</i>		
15 min	Welcome and Warm-Up Discussion: Thoughts and Questions about Recordings	Led by CLF Hub Member
40-60 min*	Discussion Activity <i>*Length of activities vary from about 40-60 minutes, see resources for each session above for more details</i>	Break into 3-5 person groups (unless <10 total)
15 min	Report Out from each Breakout Group	CLF Hub member calls on each group
10 min	Close Out / Discussion of Next Steps	CLF Hub member

Example

For example, if your Hub would like to have a working session to discuss [Climate Action Plans](#) in your region, the agenda may look like this:

Before meeting: *Links to the Session 1 (Intro to the EC Policy Landscape) + Session 2 (Climate Action Plans) recordings are shared with all attendees*

4:00pm Welcome and Warm-up Discussion (Thoughts/Discussion on Session 1 and 2 Recordings)

4:15pm Discussion Activity: [Climate Action Plans](#)

5:00pm Report Out from each Group

5:15pm Next Steps Discussion

- *When was your CAP last updated/published?*
- *Is there any information on the website about when it will next be updated, or what the leading agency is?*
- *Is there any information on the stakeholder engagement process? For example, is there a technical committee for stakeholder participation, or only a public comment period?*

Template B: Webinar + Follow-up Working Session

Description

Template B is made up of two parts. Part 1 follows a typical ~1 hour webinar session with 3 speakers and a Q&A. Part 2 is a follow-up workshop session that will build off of what was learned during the webinar. The audience for Part 1 and Part 2 may be different: Part 1 may be widely disseminated, whereas Part 2 could focus on just your CLF Regional Hub members.

Similar to Template A, this template is well suited to act as the agenda for regularly scheduled meetings of your Regional Hub and could easily work both as an in-person or virtual event.

Part 1: Webinar (60 minutes)

Timing	Agenda Item	Format Note
5 min	Welcome + Objectives/Agenda <i>*Be sure to note follow-up working session</i>	Led by CLF Hub member
15 min	CLF Policy Presentation / Recording <i>(Select one of sessions 2-6)</i>	CLF Recording or Live Speaker
15 min	<u>Presentation: Case Study</u> <i>Hear from an organization on examples of this policy that already exist</i>	Live Speaker <i>(See example speaker list for selected session)</i>
15 min	<u>Presentation: Regional Policy Development Opportunities</u> <i>Hear from a local/regional speaker on opportunities for advancing this policy locally</i>	
10 min	Live Speaker Q&A	CLF Hub member

Part 2: Workshop Session (60-75 minutes)

Timing	Agenda Item	Format Note
5 min	Welcome and Webinar Recap	CLF Hub Member
40-60 min*	Discussion Activity <i>*Length of activities vary from about 40-60 minutes, see resources for each session above for more details</i>	Break into 3-5 person groups (unless <10 total)
15 min	Report Out from each Breakout Group	CLF Hub member calls on each group
10 min	Close Out / Discussion of Next Steps	CLF Hub member

Example

For example, if your Hub would like to have a working session to discuss [Procurement Policy](#), the agenda may look like this:

Before meeting (optional): *Session 1 (Intro to the EC Policy Landscape) recording shared ahead with all attendees as a 'pre-watch']*

Event 1: September 1

12:00pm Welcome from CLF Regional Hub Policy Lead

12:05pm Recording of [Session 3: Procurement Policy](#)

12:20pm Case Study Presentation on existing Buy Clean policy [*Colorado, California, Oregon, City of Portland, Port Authority of New York and New Jersey, etc.*]

12:35pm Presentation from City/State/Province official [from where Regional Hub is located] on ongoing sustainable procurement initiatives

12:50pm Live Speaker Q&A

Event 2: October 1 (Next regular meeting)

12:00pm Welcome and Webinar Recap

12:05pm Discussion Activity: [Procurement Policy](#)

12:45pm [Report Out](#)

12:50pm [Next Steps](#)

Template C: Workshop/Topic Deep Dive [Series]

Description

Template C is a single, 1.5-2 hour workshop on one policy area that includes a CLF presentation and case study speaker, but still leaves time for a discussion activity. Template C is well-suited as an in-person or virtual event. This template would be well-suited to a 5-part series that follows along the 6 sessions provided by CLF.

Timing	Agenda Item	Lead
5 min	Welcome + Objectives/Agenda	Led by CLF Hub member
15 min	CLF Policy Presentation / Recording <i>(Select one of sessions 2-6. Recording could also be shared ahead of time to shorten event length)</i>	CLF Recording or Live Speaker
15-20 min	Presentation, followed by Speaker Q&A <i>(See example speaker list for selected session)</i>	Live Speaker
40-60 min*	Discussion Activity [include short break if 60 min] <i>*Length of activities vary from about 40-60 minutes, see resources for each session above for more details</i>	Break into 3-5 person groups (unless <10 total)
15 min	Report Out from each Breakout Group	CLF Hub member calls on each group
10 min	Close Out / Discussion of Next Steps	CLF Hub member

Example

For example, if your Hub would like to have a working session to discuss [Embodied Carbon and Codes](#), the agenda may look like this:

Before meeting (optional): *Session 1 (Intro to the EC Policy Landscape) recording shared ahead with all attendees as a ‘pre-watch’]*

5:00pm Welcome from CLF Regional Hub Policy Lead

5:05pm Recording of [Session 4: Building Codes](#)

5:20pm Case Study Presentation from a member of Bay Area Air Quality Management District working group on the development of the [Low Carbon Concrete Code](#)

5:30pm Speaker Q&A

5:35pm Discussion Activity: [Building Codes](#) [including 5 minute break at 6pm]

6:20pm Report Out from Each Breakout Group

6:30pm Close Out/Discussion of Next Steps

Template D: Day-Long Workshop

Description

Template D is a day-long workshop for bringing together a broader group of regional stakeholders to dive into embodied carbon policy and build new relationships, ideally in-person. CLF Regional Hubs may want to collaborate with other local green building or climate organizations to co-host the event and further strengthen regional interest and collaboration opportunities.

Timing	Agenda Item	Format Note
10:00	Welcome + Overview of Agenda	Led by Organizer
10:10	Presentation A: Introduction to Embodied Carbon and Policy	CLF Hub Speaker (<i>can use CLF slides/notes if desired</i>)
10:30	<i>10 minute Break</i>	
10:40	Panel A: Embodied Carbon Policy Topic A <ul style="list-style-type: none"> ● Introductions (5 min) ● Speaker 1 (10-12 min) - NGO/Advocacy Organization ● Speaker 2 (10-12 min) - AEC Professional ● Speaker 3 (10-12 min) - City/State Official 	Live (<i>see example speaker list</i>)
11:20	Moderated Q&A	Moderated by CLF Hub member
11:30	<i>45 minute Lunch Break</i>	
12:15	Discussion Activity 1	3-5 person breakout groups
1:00	Report Out	1 person/group
1:20	<i>10 minute Break</i>	
1:30	Panel B: Embodied Carbon Policy Topic B <ul style="list-style-type: none"> ● Introductions (5 min) ● Speaker 1 (10-12 min) - CLF Hub Member (<i>could leverage CLF slides</i>) ● Speaker 2 (10-12 min) - City/State Official ● Speaker 3 (10-12 min) - NGO/Advocacy Organization ● Speaker 4 (10-12 min) - AEC Professional 	Live (<i>see example speaker list</i>)
2:20	Moderated Q&A	Moderated by CLF Hub member
2:30	<i>15 minute Break</i>	
2:45	Discussion Activity 2	3-5 person breakout groups
3:30	Report Out	1 person/group
3:45	Close Out / Event Wrap-Up	Led by Organizer
4:00	<i>Happy Hour!</i>	

Example

For example, if your Hub would like to have a day-long working session to discuss [Embodied carbon, Zoning, and Reuse](#), the agenda may look like this:

Before meeting (optional): *Session 1 (Intro to the EC Policy Landscape) recording shared ahead with all attendees as a 'pre-watch']*

10:00am Welcome from CLF Regional Hub Policy Lead

10:10pm Recording (or presentation) of [Introduction to Embodied Carbon and Policy](#)

10:40am Panel A: [Zoning and City Incentive Programs](#)

11:20am Moderated Q&A

12:15pm Discussion Activity: [Zoning and City Incentive Programs](#)

1:00pm Report Out from Each Breakout Group

1:30pm Panel B: [Reuse and Deconstruction](#)

2:20pm Moderated Q&A

2:45pm Discussion Activity 2: [Reuse and Deconstruction](#)

3:30pm Report out

3:45pm Close out/Event Wrap up