

SE 2050 Program Requirements Guidance Document

You've made the commitment, now what?

This document is intended to help guide you through the program requirements. The SE 2050 Commitment entails three primary requirements:

1. *Upon joining:* Commitment Letter from Firm Leadership.
2. *Within six months and annually:* Embodied Carbon Action Plan (ECAP) - details below.
3. *Within one year and annually:* Submit project data to SE 2050 database. See Section 2 for reporting details.

Each of these requirements serves an important purpose. The Commitment Letter voices support of the Program and affirms a commitment to act.

The ECAP lays out a plan for making embodied carbon reductions. Whether your firm is just beginning to think about embodied carbon or has completed hundreds of LCAs, this Program is designed to provide an educational foundation of sustainable structural design and construction. Structural engineers need to be and will be engaged in embodied carbon tracking to measure, better understand, and reduce the impact of materials related to structural system selection.

Finally, reporting building structural system data to a database brings the entire industry forward by making embodied carbon benchmarking and reduction targets possible -- All with the aim to help lead the industry to net-zero embodied carbon buildings by 2050.

Commitment Letter from Firm Leadership

The SE 2050 Commitment letter is intended to certify commitment to the goals of the Program by firm leadership and acknowledgement of Commitment deliverables.

The letter simply requires:

- Statement certifying your firm is committed to the goals of the SE 2050 Commitment Program
- Signature from company leadership
- Narrative describing why you have chosen to commit

You may provide your own commitment letter or choose to use a template provided on the SE 2050 website.

Embodied Carbon Action Plan (ECAP)

There are many ways to meet our collective goal of reducing embodied carbon, and likewise the ECAP will be different for every firm and vary based on project type, location, size, and any number of other factors. This is a long-term commitment requiring more than short-term thinking. An ECAP is necessary to engage our profession in reducing embodied carbon in structures and tracking progress with reduction goals.

Here's how:

- Inspire and empower individuals through **education** to take action within your firm
- Measure and **report** embodied carbon to support the establishment of a baseline for various archetypes, inform industry trends, and allow the industry to establish appropriate annual embodied carbon reduction targets
- Provide a clear and concise **strategy** for your firm to set specific and measurable goals to assess progress and track overall reduction
- **Advocate** and communicate with clients, the design community, and the public the sustainable actions of the firm and help advance firm culture around embodied carbon reductions.

SE 2050 is here to help. The resources on this website will help you and your company develop an ECAP. Firms who join SE 2050 are required to provide an ECAP **within six months of commitment**.

Action Plan Requirements

The ECAP is composed of four sections: Education, Reporting, Reduction Strategy, and Advocacy and is central to your SE 2050 Commitment. ECAPs are unique to each firm and are required to be updated annually to reflect adjustments of your firm's embodied-carbon reduction best practices, advances in technology, changes in public policy, and other circumstances.

Each firm is best suited to develop its plan to fit within the firm's structure. The Program has baseline requirements that all firms have to provide along with additional "electives" for each section. **Electives are not required**, but are intended to encourage further creative embodied carbon reduction and spur innovation. A narrative of each elective undertaken should be written or in some form acknowledged in the annual ECAP.

All ECAPs will be made public. SE 2050 will provide the option to use a checklist form consisting of the items outlined in the Program Requirements Guidance Document. This form is intended to provide greater access to a wide array of firms seeking to make embodied carbon reductions.

Be sure to check out SE2050.org for published ECAPs of other firms as well as a sample template.

1. Education

The first step to increased engagement within your firm is through education. We all should strive to understand the impacts of our design decisions and their effects on our environment.

REQUIRED (All):

- Distribute firm-wide announcement of your firm’s pledge to join the SE 2050 Commitment.**
- Provide a brief narrative describing how your firm is promoting a firm-wide education program for embodied carbon reduction and the firm’s commitment to SE 2050.**
- Nominate an Embodied Carbon Reduction Champion¹ for your firm. Include a brief profile in your ECAP.**
- Set a date within the first year to present the “Embodied Carbon 101” Webinar to your firm. Incorporate this information into your orientation/on-boarding programs.**
- Minimum (1) additional elective to educate your firm about embodied carbon and a narrative of its significance.**

ELECTIVES (Min. (1) required, recommended to achieve (4) per year):

- Have one representative of your firm (any employee) attend quarterly external education programs (e.g. webinar, workshop) provided by SE 2050, Carbon Leadership Forum (CLF), or other embodied carbon resources.
- Share the SE 2050 [library of resources](#) with technical staff.
- Share embodied carbon reduction strategies with your firm as outlined in [Top 10 Carbon Reducing Actions for Structural Engineers](#) document produced by SE 2050.
- Nominate a minimum of (1) employee per office to participate in a CLF Community Hub.
- Provide narrative outlining plans for minimum (2) firm-wide presentations per year on the topic of embodied carbon
- Present the document, “How to measure and report embodied carbon” to all technical staff.
- Attend a presentation or demo of an LCA-based tool used to calculate embodied carbon.
- Initiate an embodied carbon interest group within your firm and provide a narrative of their goals.
- Provide a narrative of how the Embodied Carbon Reduction Champion will engage embodied carbon reduction at each office. (intended for multi-office firms)
- Other actions you feel appropriate and a narrative for why.

¹The Embodied Carbon Reduction Champion will act as point person and advocate of the Program. Please be sure to provide contact information and notify SE 2050 if the designated individual changes.

2. Reporting

Quality data is essential to making informed decisions and setting important benchmarks and the development of appropriate embodied carbon reduction targets. The SE 2050 database is a central component to building a successful Commitment Program and reaching our collective embodied carbon reduction goals by 2050.

REQUIRED (All):

- Provide a narrative on how your firm plans to measure, track, and report embodied carbon data.** Here are some considerations you may want to include:
 - How will you calculate embodied carbon for structural materials? Do you have access to product- or region-specific EPDs?
 - What commercially available LCA software will you be using to quantify embodied carbon?
 - What life cycle analysis (LCA) methodology will you use? Define where you plan to delineate scope (e.g. A1-A5 or whole life cycle), communicate inherent assumptions, etc.
 - How will you extract material quantities and how often? (currently for internal use and not required in SE 2050 Database)
- Describe the internal training for embodied carbon measurement you provided or will provide.**
- Submit an annual minimum of (2) projects per U.S structural office or (5) total projects for the firm to the SE 2050 Database.²**

ELECTIVES (Not required, recommended to achieve (1) per year):

- Submit **all** projects to the SE 2050 Database
- For a project submitted to the database, ask the Architect or Owner if the project has a carbon budget or if there are established project sustainability goals at the project kickoff meeting.
- Meet your target average embodied carbon reduction from the previous year.
- Other actions you feel appropriate and a narrative for why.

² Firms are expected to follow with the spirit of the Program. International projects may be included. Projects delivered by international offices are acceptable, but do not count toward the U.S. total required. Additional exclusions include offices established for the primary purpose of construction administration and offices with less than (5) full-time employees.

3. Embodied Carbon Reduction Strategies

Embodied carbon reduction of structural materials is the ultimate goal of the SE 2050 program. As a starting point, you will have access to the SE 2050 project database and Program resources to identify and set strategies. This section also serves to share lessons learned and incite innovation. Demonstrate leadership by not only applying, but developing best practices, and actively collaborate with the design community. This is our profession's opportunity to take action and make an impact.

REQUIRED (All):

- Set a goal for the coming year and an implementation narrative. For second year's ECAP and beyond, describe successes and misses to help the program improve. Qualitative goals are encouraged for the first year.**
- For second year's ECAP and beyond, provide a narrative about what you have learned about embodied carbon reduction in the past year.**
- Minimum (1) additional elective you undertook to reduce embodied carbon in your designs, why you chose the elective and its significance.**

ELECTIVES (Min. (1) required, recommended to achieve (4) per year):

- Incorporate data visualization into your ECAP. How are you looking at data to make informed design decisions and communicate design options to your clients?
- Provide a project case study in your ECAP that captures a reduction of embodied carbon or some lessons learned.
- Create a project-specific embodied carbon reduction plan.
- Complete a system embodied carbon design comparison study during the project concept phase.
- Participate in a project LEED design charrette and speak to potential design considerations impacting embodied carbon.
- Calculate your firm average benchmark for embodied carbon.
- Update your specifications and incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements.
- Get a new Environmental Product Declaration (EPD) created on a project.
- Incorporate biogenic materials on at least one project annually.
- Collaborate with your concrete supplier to reduce embodied carbon in a mix design.
- Work with a contractor during material procurement to meet an embodied carbon performance criteria on at least (1) project.

- Provide a narrative of how circular economy has been used on your projects. Incorporate re-use or design for deconstruction into at least one project.
- Quantify construction waste reduction on a project.
- Integrate embodied carbon mitigation strategies in your General Notes.
- Other actions you feel appropriate and a narrative for why.

4. Advocacy

True change can only come with industry-wide adoption. Plan opportunities to share your experience and knowledge within your firm, with your design community, and beyond. Host a webinar or lunch 'n learn, attend a conference, connect with the SEI Sustainability Committee, or reach out to manufacturers and policy-makers. This section recognizes that our impact reaches beyond any one firm.

REQUIRED (All):

- Provide a narrative about how you plan to share knowledge and data to accelerate adoption of embodied carbon reduction.**
- Describe the value of SE 2050 to clients. At your option, attach any associated marketing materials.**
- Declare your firm as a member of the SE 2050 commitment on boilerplate proposal language.**

ELECTIVES (Not required, recommended to achieve (2) per year):

- Provide a narrative about how you plan to share knowledge and data to accelerate adoption of embodied carbon reduction.
- Give a quarterly external presentation on embodied carbon (Tip: Get connected at a CLF local hub near you!).
- Discuss with the Owner / Client the option of requiring that some of the structural materials come with facility-specific or product-specific EPDs.
- Share education opportunities with clients.
- Provide a narrative of how you have encouraged industry and policy change incentivizing availability of low-carbon and carbon sequestration materials.
- Start an embodied carbon community of practice or mentorship program in your office.
- Mentor a firm new to the embodied carbon space.
- Share your best case studies in your ECAP.
- Publish a case study or article on embodied carbon.
- Give an external presentation about embodied carbon that demonstrates a project success or lessons learned.
- Share your commitment to SE 2050 on your company website.
- Other action you feel appropriate and a narrative for why.