

Building with Biomass



Transforming buildings from a carbon problem to a climate **solution**.

Construction of buildings has a huge environmental impact.

- **2 trillion + square feet** of new construction and renovation will be required by 2050 to accommodate new urban populations.
- **Half** of emissions from this construction will take the form of embodied carbon – the emissions associated with the manufacturing, use, and disposal of building materials.
- **30%** of global end-use emissions are from the industrial sector, half of which is from just two sectors: cement and steel.
- Industrial emissions have large environmental health impacts that **fall disproportionately on the frontline communities adjacent to manufacturing facilities**.

The building sector, as a primary consumer of materials, has the potential to be a market driver to support innovative material solutions, both reducing impact of conventional materials and storing carbon in long-life building products.

Carbon-storing materials are a key opportunity

Bio-based (plant-based) building materials that store carbon can significantly reduce these emissions, yet carbon-storing materials manufacturers currently struggle to gain traction at scale.



Plants store carbon throughout their life.



Plants are harvested and made into building materials, bringing jobs to rural communities.



The CO₂ in materials is stored until the building is demolished.

The Building with Biomass Solution

Building with Biomass will address challenges faced by current manufacturers through piloting **regional biomass ecosystems** – closed-loop systems where bio-based materials are harvested, manufactured, and used within a single region that can be repeated in communities around the globe. These regional biomass ecosystems will reduce emissions and environmental health impacts and prioritize climate justice for frontline communities.

Bold The first phase of this project has the potential to save **90,000 metric tons (mt) of CO₂**, and carbon storage of **10,000-20,000 mt CO₂ by 2026**.

Cross-Cutting Simultaneously impacts high-opportunity sectors: industry, buildings and transportation.

Scalable Early proof of concept models serve as templates to adapt and scale in communities across the world, helping buildings store gigatons of CO₂ by 2050.

The Right Team to Make it Happen

The **Carbon Leadership Forum** and our partners, **Building Transparency**, the **Endeavor Centre**, **Just Solutions Collective**, and the **University of Colorado Boulder** have the drive, experience and expertise required to lead a scientifically informed and politically strategic collaborative campaign with building professionals and other environmental advocates to scale bio-based materials in construction.



For over ten years the CLF has been convening, educating and enabling a diverse community of thousands of leaders to radically reduce the embodied carbon emissions associated with building materials and construction. This work has been made possible through regular collaboration and collective leadership with the other Building with Biomass partners. Together, we bring decades of experience from education, building firms, and social justice advocacy to drive systemic and just solutions to decarbonize buildings and industry.

How We'll Get There



Build Community for Impact

Enable connections between building industry partners and rural community groups to develop regional opportunities to scale the marketplace for bio-based materials



Improve Carbon Data & Methods

Develop robust data that allows designers, builders and policymakers to easily compare the footprint of bio-based materials with materials that are more commonly used today



Inform Practice and Policy

Inform standards, green building programs, and policies that support broader bio-based material use through model language, CJ assessments, and education.

+ Cross-cutting focus on Open Source Solutions and Climate Justice (CJ) Frameworks

Global impact: System transformation

Template deployed to spur regional carbon storing material ecosystems

What You Can Do to Help

\$1 Million funds the development of fundamental research and partnership building to create a climate justice framework and best understand community impacts and priorities related to bio-based solutions to reduce carbon.

\$5 Million funds the development of the climate justice framework (described above), the first pilot project of the regional biomass ecosystem model in Washington state, and the first iteration of a replicable template.

\$10 Million funds the initial pilot, a second pilot in another state that incorporates learnings from Washington, and the creation of a template for a third project and subsequent iterations of this bio-based ecosystem model.