Student Design Competition

2025

The Future of Glass

University of Vermont
Casella Center for Circular Economy
and Sustainability

Table of Contents

Contents

1.0 Introduction

1.1 Purpose

The Student Design Competition (SDC) promotes interdisciplinary collaboration among students from business, engineering, environmental science, and related fields. By encouraging innovative, implementable ideas for repurposed materials within a circular economy framework, the SDC builds students' skills in design thinking, environmental assessment, and business.

1.2 Theme and Scope

The inaugural SDC focuses on alternative uses of **repurposed glass**. While many potential end uses exist for post-consumer glass, industry is especially interested in solutions that are both **technologically feasible** and **economically scalable**. The scope of this competition is to generate solutions that balance technical feasibility, environmental benefit, and potential for large-scale implementation.

1.3 Organizers and Sponsors

The SDC is organized by the Casella Center for Circular Economy and Sustainability, a research hub at the University of Vermont (UVM) that brings together researchers, students, industry leaders, and community partners to rethink how materials are used, reused, transformed, and valued across sectors.

2.0 Competition Overview

2.1 Timeline

- **Monday, October 27: Expert Panel and Kickoff (4:00-6:00 PM EST)**
  - 4:00-5:00: Expert Panel – Open to the public. Panelists include:
    - Kelton Bogasky, Area Sales Manager, *Casella Waste Systems, Inc.*
    - Josh Estey, Director of Operations, *Chittenden Solid Waste District (CSWD)*
    - Lizzy Elles, Operations Initiatives Manager, *Casella Waste Systems, Inc.*
    - Glenn Goodfellow, VP Business Development, *Le Maître Emballage Durable*

        - 5:00-6:00: Introduction to the challenges of the secondhand glass market and an overview of the competition. Additional time will be spent on team formation as needed.
- **Wednesday, October 29: Multidisciplinary Workshop (4:00-5:30 PM EST)**
  Short, 15-minute workshops to equip teams with foundational tools in:
    - Business Planning & Communication
    - Technical Design
    - Environmental Assessment
- **Wednesday, November 12: Q&A Working Session (5:00-6:00 PM EST)**
  Optional but recommended in-person session. Mentors will be available for general guidance (not direct proposal edits). At least one team member is encouraged to attend.
- **Wednesday, November 19: SDC Final Showcase (4:00-6:00 PM EST)**
  Teams present their proposals in an interactive, multi-phase evaluation:
    - **Phase I: Technical Feasibility** – *"How does it work?"*
    - **Phase II: Economic Viability** – *"How can the business scale?"*
    - **Phase III: Environmental Assessment** – *"What are the societal and environmental benefits?"*

2.2 Deliverables

- All work will be presented at the final showcase. The competition consists of three rounds evaluating the **technical, business, and environmental** components of each proposal.
- Teams may present in any format (PowerPoint, video, live demonstration, prototype, etc.).
- Creative freedom is encouraged, but time management is essential.

2.3 Team Eligibility

- Open to all undergraduate students, regardless of major.
- Teams must consist of four (4) members.
- Teams must include members from at least three (3) distinct UVM colleges or schools (e.g., Grossman, Rubenstein, CEMS, CALS, CAS, etc.).

2.4 Registration and Deadlines

Students must register and attend the Kickoff Event on October 27. Students unable to attend in person should contact the organizers (see section 7.0 for contact information).

3.0 Problem Statement

3.1 Context

Theoretically, glass is infinitely recyclable, yet millions of tons still end up in landfills each year. Current recycling systems face challenges such as contamination, high transportation costs, and limited end markets. Expanding the range of feasible, high value uses for repurposed glass can strengthen recycling infrastructure, reduce waste and material consumption, and contribute to a more circular economy.

3.2 Design Challenge

Develop a solution that utilizes repurposed glass in a way that is technically sound, environmentally beneficial, and economically scalable.

4.0 Rules and Requirements

- **Conduct**: Teams must follow all university guidelines, including the UVM Code of Student Conduct.
- **Originality**: All work must be original and created by team members. Guidance may be sought from mentors, but final proposals must be student driven.
- **Use of Resources**: External resources are permitted but must be properly cited. If AI tools are used, teams must disclose which tools were used and how they were applied.

5.0 Evaluation Criteria

Judges will include representatives from a variety of UVM departments, along with one industry expert and one student representative.

Teams will be evaluated on:

- Economic Viability
- Technical Feasibility
- Environmental Benefits
- Communication and Presentation
- Interdisciplinary Collaboration

A detailed scoring rubric will be provided during the competition.

6.0 Awards and Recognition

The 1st place team will receive a cash prize totaling $2,000.00 to be distributed equally among all team members ($500 per team member). Selected projects will be featured on the Casella Center website and social media platforms.

7.0 Contacts for Support and Questions

- **Competition Coordinator:** Madison Kacica, madison.kacica@uvm.edu
- **Lead Faculty Sponsor:** Dr. Eric Roy, eric.roy@uvm.edu