



Private Company

# Value-generating technologies for roofing systems

## Background

As a global leader in advanced roofing solutions, we design and manufacture systems that protect buildings in residential, commercial, and industrial sectors. Commercial rooftops represent one of the largest underutilized assets in the built environment. Often spanning thousands of square feet and exposed to direct sunlight and airflow, these surfaces offer untapped potential for creating new revenue streams, particularly in large commercial buildings. While solar panels have become more common in recent years, they represent just one of many possibilities for activating rooftop space.

Emerging concepts include vertical wind units at roof edges, leasing to telecom and 5G infrastructure providers, rainwater harvesting systems that offer stormwater credits or irrigation savings, low-maintenance rooftop beekeeping, and even carbon-capturing coatings or modular systems that convert rooftop exposure into environmental assets. Yet few of these innovations are optimized for commercial roofs built with single-ply membranes like EPDM (ethylene propylene diene monomer), TPO (thermoplastic polyolefin) and PVC (polyvinyl chloride). These materials, while lightweight and cost-effective, require durable, flexible, and non-invasive solutions that do not compromise waterproofing, insulation, or structural integrity. Many existing technologies provide little or no value to the building owner. They typically require heavy equipment, complex anchoring, or roof penetrations that are incompatible with these membrane systems, leaving building owners with limited options.

By identifying innovative concepts that generate measurable economic value on low slope roofs, we aim to unlock a new layer of cash flow for building owners by transforming commercial rooftops into sources of long-term economic and environmental return.



## **What we're looking for**

We are seeking innovative, revenue-generating solutions that can be deployed on commercial rooftops constructed with single-ply membrane materials such as EPDM, TPO, or PVC. Solutions may range from physical systems and modular technologies to service-based or hybrid approaches, but they must be compatible with the constraints and characteristics of low slope roofing. Ideal solutions will generate direct income or quantifiable benefits for building owners, whether through product output, environmental credits, leasing opportunities, or other creative models.

### **Solutions of interest include:**

- Photocatalytic roof coatings that convert CO<sub>2</sub> using sunlight
- Rooftop micro-reactors for capturing and converting CO<sub>2</sub>
- Integrated PV and CO<sub>2</sub> conversion systems
- Modular green roof trays with root barriers
- Low-profile rooftop beekeeping systems
- Rainwater harvesting platforms
- Ballasted telecom antenna mounts
- Atmospheric water harvesting panels for drinking water reuse
- Carbon credit-generating rooftop systems via air purification units

### **Our must-have requirements are:**

- Strong rationale for revenue generation, cost-offsetting potential, carbon credit eligibility or other measurable benefits
- Scalable to cover large commercial roof areas (e.g., modular or clustered)
- Compatible with EPDM, TPO, PVC, or similar single-ply roofing membranes, without compromising roof performance

### **Our nice-to-have's are:**

- Durable for long-term rooftop exposure with minimal maintenance needs
- Lightweight designs that add negligible structural load
- Modularity that allows phased implementation across buildings

### **What's out of scope:**

- Conventional solar power generation technologies



## **Acceptable technology readiness levels (TRL): Levels 5-9**

1. Basic principles observed
2. Concept development
3. Experimental proof of concept
4. Validated in lab conditions
5. Validated in relevant environment
6. Demonstrated in relevant environment
7. Regulatory approval
8. Product in production
9. Product in market

## **What we can offer you**

### **Eligible partnership models:**

- Co-development
- Licensing
- Sponsored research
- Supply/purchase

### **Benefits:**

#### **Sponsored Research**

Up to \$100,000 for the first year, with the potential for an extension based on project progress and outcomes.

#### **Expertise**

Internal expertise in the R&D labs and with the R&D chemists and engineers.

#### **Data**

We can provide existing data, and any support needed with collecting data and subsequent analysis.

#### **Facilities and Services**

Access to relevant equipment and lab capabilities.

Please contact the University of South Florida Technology Transfer office representative for submission – Karla Schramm at [kschramm@usf.edu](mailto:kschramm@usf.edu)