# SOLAR FARM SUMMIT

## 2025 DUAL-USE DESIGN CHALLENGE

*A student design challenge to inspire the next generation of pioneers and innovators at the intersection of energy, agriculture, and environment.*


**A collaboration between Solar Farm Summit and the InSPIRE Project**

# About the Challenge

The **Dual-Use Design Challenge** empowers students to capitalize on advances in solar technology to find solutions to real-world farm challenges. Dual-use solar array designs incorporate multiple elements to generate energy and produce agricultural goods and/or implement conservation practices.

Dual-use systems that either grow fruits, vegetables and grains and/or raise livestock underneath or alongside solar panels are known as **agrivoltaics systems**.

By contrast, dual-use systems that activate conservation strategies and produce ecosystem services, such as soil restoration and habitat creation, underneath or alongside solar panels are known as **ecovoltaics systems**.

Through combining problem-solving, creative thinking, farm knowledge and strong scientific principles, participants will design solutions that address pressing global issues like farmland preservation, energy production, and ecological performance.

With categories for K-2, 3-5, 6-8, 9-12 and post-secondary education, this challenge offers an inclusive platform for all students through young adult to showcase their learnings, talents, and solutions. Finalist and winning projects will be displayed and celebrated at the 2025 Solar Farm Summit, receiving prizes and national recognition.

*Gray's LAMBscaping sheep grazing in Virginia*

*Farmers harvesting crops at Jack's Solar Garden in Colorado*

*Dairy cows grazing at University of Minnesota Extension*

*Cantaloupe melons growing at Oregon State University*

*Broccoli growing in Massachusetts*

*Sheep moving from one pasture to another in Georgia*

*Thriving pollinator habitats in Minnesota*

*Chiltepin peppers at Manzo Elementary School in Arizona*

*Flowers blooming in Indiana*

# Why Participate?

*Lettuce growing at Jack's Solar Garden in Colorado*

## Design for Innovation

Break the mold with bold ideas for dual-use systems designed to cultivate humanity's brightest future by incorporating the latest advances in science, technology, engineering and math.

## Design for Resilience

Harness your vision to harden a farm's resilience by designing dual-use solutions that harvest added benefits such as saving water, protecting crops and improving yields.

## Design for Impact

Make the difference in the future of your farm, your community, or your region by designing agrivoltaic or ecovoltaic systems tailor-made to tackle real-world challenges.

## Design for Economics

Build opportunities to create new agricultural values or solve agribusiness problems by designing dual-use solutions that enhance farm economics.

## Design for Stewardship

Activate advanced resource conservation by designing dual-use system solutions that improve environmental health by incorporating ecosystem services such as native species habitat, nutrient cycling and natural resource protection.

*Various examples of models and designs of agrivoltaic and ecovoltaic systems.*

# Who Can Participate?

The challenge is open to students in grades K-12 and in post-secondary education in classrooms, homeschool programs, 4-H clubs, FFA chapters, STEM clubs, scout troops, summer and library programs, workforce training, or independent projects.

Challenges are tailored to grade spans—

- **K-2:** Design a farm that uses solar panels and grows food or raises animals at the same time.
- **3-5:** Come up with different ways that solar panels and farming can exist together and compare which solution works best.
- **6-8:** Develop a set of design criteria and constraints that could help farmers and engineers create a working dual-use solar farm.
- **9-12:** Evaluate an existing dual-use solar farm design or propose a new one that balances energy production and farm viability. Your solution must consider the real-world trade-offs farmers face, including cost, productivity, land use, and community acceptance.
- **Post-Secondary:** Using your knowledge in agriculture, business, engineering, skilled trades, education, environmental science, and/or natural resources, design an agrivoltaic or ecovoltaic solution that could be implemented. Your proposal should focus on one of the following career pathways:*
  - **Agribusiness Feasibility:** Financial models, revenue streams, cost-benefit analysis, and scalability.
  - **Animal and Plant Systems:** Farm plans for integrating crops and/or livestock under or around solar panels.
  - **Environmental Impact:** Effects on soil health, water conservation, biodiversity, and carbon sequestration.
  - **Structural and Technological Innovation:** Engineering solutions to maximize efficiency, optimize solar tracking, and/or integrate smart farming techniques.
  - **Education and Community Engagement:** Strategies for listening, discussing, informing and influencing stakeholders about the benefits of agrivoltaics.

Students can participate in the grade level as an individual or on a team.

Youth under 18 are able to attend the 2025 Solar Farm Summit exhibition for free and qualifying submissions from students in high school and post-secondary education will be eligible for complimentary admission to the full conference!

*Additional design prompt ideas can be found in the Resources folder.

## Spread the Word!

Want to get your school, club, or community involved? Use this ready-to-go letter to share the challenge with administrators, educators, and parents.

***Competing entries*** must be submitted by the end of June 11, 2025.

**Ready to submit your entry?**

**MAKE A SUBMISSION**

Entries for the ***showcase only*** must be submitted by the end of July 21, 2025

# How It Works

Follow these steps to bring your ideas to a bigger community:

### 1. Show Your Interest (optional)

Complete our intent to participate form to stay informed about challenge updates, resources and deadlines.

### 2. Create Your Project

Start with the design challenge details and resources we provide, then use your creativity and problem-solving skills to design an agrivoltaics or ecovoltaics solution that meets your grade-level challenge.

### 3. Submit Your Entry

Compete by submitting your final project by June 11 for a chance to win. If you'd prefer to simply showcase your work, submit by July 21.

### 4. Get Recognized

Finalists will be celebrated at the 2025 Solar Farm Summit on August 7, where winners will be announced and all projects displayed digitally and in-person (optional).

*Elementary students collecting plant data*

## Ready to get started?

**Express Your Intent** | **Access Resource Folder** | **Make a Submission**

**"The future's as bright as we build, grow and raise it."**

Dan French, Executive Producer at Solar Farm Summit

# Timeline

| Date | Event | When/Where |
|---|---|---|
| **March 6, 2025** | **Challenge Kickoff**<br><br>The Dual-Use Design Challenge officially opens! Educators and students are encouraged to get started on their projects. | Online |
| **June 11, 2025** | **Challenge Submission Deadline**<br><br>All competing projects must be submitted by this date to allow the judging panel adequate time to review and determine winners. | Online |
| **June 16 - 26, 2025** | **Judging Period**<br><br>Our expert judging panel will evaluate submissions based on creativity, scientific accuracy, practicality, presentation, and impact. | Online |
| **June 27, 2025** | **Finalists Notified**<br><br>Finalists will be notified and given additional information to prepare for the the in-person showcase (optional). | Online |
| **June 30, 2025** | **Digital Showcase Opens**<br><br>Explore the innovative solutions submitted by students from across the country in our online showcase. | Online |
| **July 21, 2025** | **Final Showcase Submission Deadline**<br><br>For those who wish to participate in the showcase without competing, this is the final date to submit projects to be featured at the summit. | Online |
| **August 7, 2025** | **Showcase and Winners Announced at SFS25**<br><br>Join us at the Solar Farm Summit to celebrate student innovation! Challenge winners will be announced and projects will be on display for summit attendees to explore. | **11:45am-12:45pm**<br><br>2025 Solar Farm Summit in Chicago, IL |

# Resources & Inspiration

We're here to help you succeed! Explore our curated collection of resources, tools, and activities to get your started—

## Agrivoltaics and Ecovoltaics Basics

Understand the principles and science behind these innovative systems.

## Real World Project Ideas and Examples

Find inspiration from real-world case studies and successful implementations.

## Interactive Activities

Educational activities for participants to explore solar energy, agriculture and ecosystem services.

## Expert Insights

Learn from leading professionals in energy, agriculture and environment.

## Curiosity Kick-Starters to Inspire Discovery

Questions to spark learning and engagement, particularly for younger students.

## Aligned with Academic Standards

Expectations for the K-12 divisions of the challenge can be connected to national academic standards, including the Next Generation Science Standards (NGSS), Common Core State Standards (CCSS), and Agricultural, Food, and Natural Resources Content Standards (AFNR). This alignment ensures that educators can easily integrate the challenge into classroom learning while supporting key educational objectives.

These resources will be regularly updated—register your interest to receive notifications when new materials are added!

**ACCESS RESOURCES**

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Dan French, Executive Producer at Solar Farm Summit

# More Information

## Submission Requirements

Make sure your submission meets the requirements for your grade-level—

- **Format -** Projects can include physical models, drawings, physical or digital designs, written reports, slides, videos or a combination.
- **Content -** Explain the concept, how it works, and its potential benefits. Post-secondary entries should include research methodology or innovative solutions.
- **Length -** Be clear and concise! Written components should not exceed 5 pages, and videos should be under 5 minutes.

**Deadlines**

- **Challenge Deadline:** June 11
- **Showcase-Only Deadline:** July 21

Submit your project via our online form by the appropriate deadline.

## Judging Criteria

Our panel of esteemed educators and experts will evaluate entries based on these key factors:

- **Creativity and Innovation -** How original and imaginative is the concept?
- **Scientific Accuracy -** Does the project reflect sound scientific principles and data?
- **Practicality and Feasibility -** Could the solution work in the real world, and does it address real challenges?
- **Presentation and Communication -** Is the project clear, well-organized, and visually engaging?
- **Impact and Potential -** How well does the project demonstrate its benefits for energy, agriculture, environment, and community?

Each submission will be scored on these criteria tailored for each grade span.

## Prizes & Recognition

We're rewarding innovation and creativity at every level with cash prizes and more:

- **Finalists -** All finalists will receive a certificate of achievement and have their work showcased at the 2025 Solar Farm Summit.
- **Winners -** Top projects in each division will receive cash prizes and other awards to support their education and further exploration of agrivoltaics or ecovoltaics.
- **Special Recognition -** Additional awards may be given for outstanding innovation, technical design, and impact potential.

Every participant will have the opportunity to share their vision and help shape the future of sustainable energy and agriculture!


## Important Privacy Information

This challenge is designed for students of all ages through young adults but requires submissions to be completed by an adult if under the age of 13. This ensures compliance with the Children's Online Privacy Protection Act (COPPA).

- Students under the age of 13 must have an adult submit the project on their behalf.
- School and contact information should only be provided in the designated fields below.
- Do not include student names, school names, or any other personal information in the body of the project response questions.
- Photos showing the face or recognizable characteristics of students require a signed photo release form. (Download the photo release form).
- Photos that do not require a release include:
    - Images of student prototypes only
    - Students' hands working on projects
    - Over-the-shoulder shots from behind students

By making a submission, you confirm that you are over the age of 12, or authorized as a parent, teacher, or mentor, and are submitting this project on behalf of the participating students.

Access forms and resources at
https://solarfarmsummit.com/student-design-challenge.

If you have questions, please reach out to:
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Solar Farm Summit
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# A Collaboration By

## About the Solar Farm Summit

The Solar Farm Summit is America's agrivoltaics conference and farming + solar exhibition, bringing together experts, farmers, researchers, and innovators to explore the future of agriculture and energy. Finalists in the Dual-Use Design Challenge will have the opportunity to showcase their projects at the 2025 Solar Farm Summit, win cash prizes, and receive public recognition as well as direct introduction to industry leaders and professionals on the cutting edge of agrivoltaics during the industry's most collaborative and constructive event.

## About the InSPIRE Project

The InSPIRE project (**In**novative **S**olar **P**ractices **I**ntegrated with **R**ural **E**conomies and **E**cosystems) is the nation's longest running and largest agrivoltaics research initiative. InSPIRE explores how solar energy can be co-developed with agriculture and native landscapes, conducting field research, providing data-driven insights, and convening experts across disciplines. By advancing our understanding of agrivoltaics and other dual-use solutions, InSPIRE supports the scaling of solar projects that benefit both landowners and ecosystems.

*If you would like to join us at the **2025 Solar Farm Summit in Chicago, IL August 4-7**, please visit our website to learn more information https://solarfarmsummit.com or reach out to us at admin@solarfarmsummit.com.*