

## Exploring Energy Solutions • [jkcliburn@cliburnenergy.com](mailto:jkcliburn@cliburnenergy.com) Could agrivoltaics help with farm, food, and climate issues in Illinois?



### What are agrivoltaics?

**Agrivoltaics** refers to the simultaneous use of land for solar electricity generation and agricultural production of crops, livestock, and/or livestock products. It describes a small but growing focus of R&D aimed to align diverse interests in rural communities, e.g., increasing ways to get farm returns on investment, to manage risks, to protect soils and natural resources, to secure local benefits in negotiations with utilities and solar developers, to increase access to local food, and to support innovations that can sustain future generations.

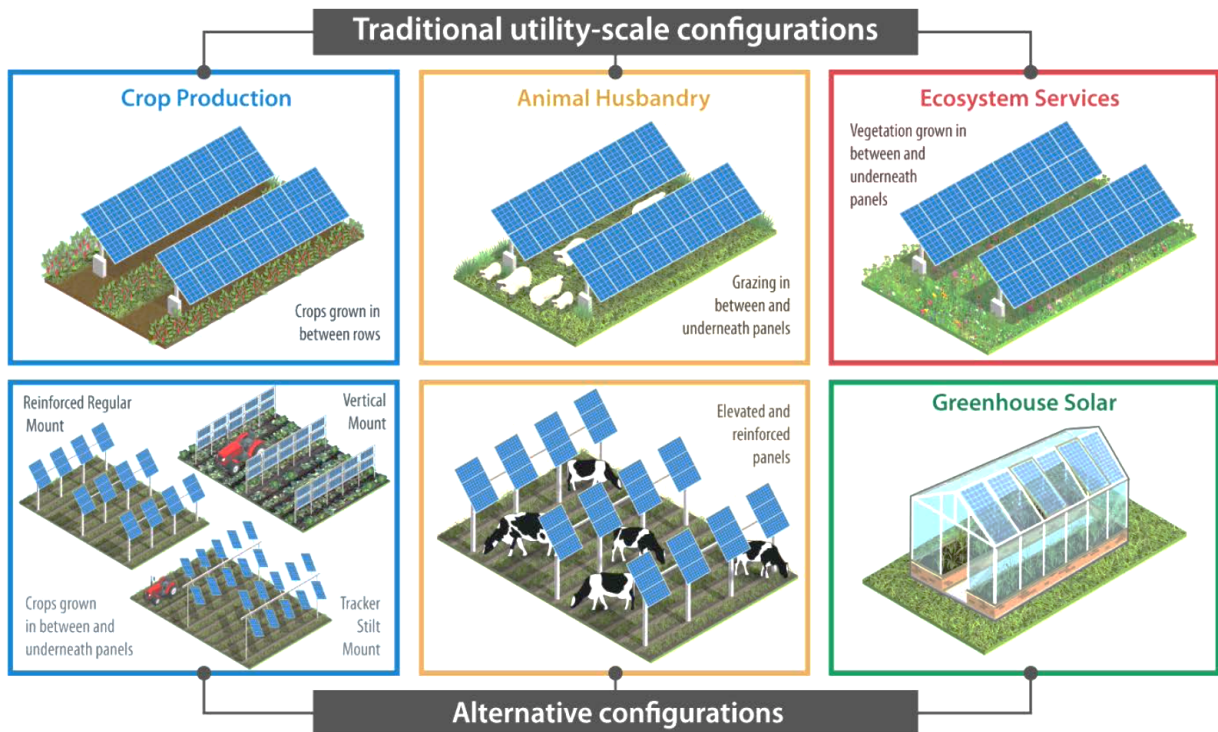
**Above:** Dr. Madhu Khanna, center, of the University of Illinois (Champaign) leads a multi-state institute to study the potential of agrivoltaics across diverse climates.

### What Makes Agrivoltaics different from other rural solar installations?

- Installation without permanently disturbing soils; easier to restore in future years
- Solar tracking or vertical installation of panels allows varying light and shade and supports options to get farm equipment through the field
- Use of “bi-facial” translucent panels lets some light through the panel itself
- Matching panel height and configuration to specific crops
- Care with electrical conduit and connections
- Expecting slightly less profit from each, solar and crops, but dual-use of the field still puts the profit per acre ahead
- Encourages farmers to set aside part of their land for agrivoltaics as a hedge
- Encourages more innovation towards long-term sustainability

### What are Some of the Most Promising Developments in Agrivoltaics?

- Keeping the local farm economy and culture vibrant for the next generation
- Proven cost-effective for small livestock, forage, pollinators
- Proven cost-effective for small to mid-scale horticulture (lowers risk for truck farmers or specialty farmers of high-value fruits and vegetables)
- While corn and bean rotations may not work using current corn hybrids, new, shorter corn hybrids that do not shade solar panels are emerging
- Ag researchers, including those at U of I, foresee more robotic equipment that may be sized perfectly to work in dual-use agrivoltaics fields.



Source: NREL ([NLR.gov](https://www.nrel.gov))

More sources:

<https://scapes.illinois.edu/>

Macknick, Jordan, Heidi Hartmann, Greg Barron-Gafford, et al. 2022. *The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study*. Golden, CO: National Renewable Energy Laboratory. <https://www.nrel.gov/docs/fy22osti/83566.pdf>.

Science Friday podcast

<https://www.wnycstudios.org/podcasts/science-friday/articles/the-growing-experiment-of-putting-solar-panels-on-farmland>

Save the Farm, Save the Future film <https://www.youtube.com/watch?v=PmK3v90CzpY>

<https://www.ilga.gov/Legislation/BillStatus?GAID=18&DocNum=4830&DocTypeID=HB&LegId=166076&SessionID=114>