

4TU.Energy Symposium on Energy Transition in Horticulture

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The energy and horticulture sectors, each with long histories, are becoming increasingly interconnected due to the rapid advancement of energy transition in horticulture. However, despite established collaborative communities within each sector, communication and partnership between them remain limited. To address this gap, we organized the 4TU.Energy-funded 2-day Symposium on Energy Transition in Horticulture, aiming to foster collaboration, share insights, and build partnerships between the energy and horticulture industries.

The symposium focused on identifying challenges in horticulture during the energy transition, introducing renewable energy techniques to mitigate these issues, and creating a platform for stakeholders to connect. Growers contributed real-world production challenges and potential solutions, while researchers from both fields strategized and laid the groundwork for future collaborations.

Held on October 31 and November 1, 2024, the event brought together over 50 participants, including representatives from 20 energy and horticulture companies, as well as researchers from four technical universities. The program included keynote speeches, panel discussions, and breakout sessions on Day 1, followed by stakeholder presentations and visits to advanced greenhouses and companies on Day 2. These activities encouraged participants to exchange ideas on how innovative energy solutions can drive sustainability in horticulture.

While the symposium has concluded, it marks the start of a significant journey toward achieving sustainable energy transitions in horticulture. Notable follow-up actions have already been initiated:

- An Energy Transition in Horticulture consortium has been established to continue communication and explore collaborations through regular activities.
- A collaborative NWO OTP proposal was submitted in partnership with 4TU.Energy, Priva, Wageningen Greenhouse Horticulture Business Unit, JPFA (Japan Plant Factory Association), and Glastuinbouw Nederland.
- The PhD student Shuyi Peng from Wageningen University will continue researching renewable energy applications in vertical farming during a research stay at UPC (Spain), a leading group in this field.
- A future visit is planned to Universitat Politècnica de València (Spain) to explore collaborations in solar energy and heat pump applications in agriculture.
- An ongoing NWO KIC and FFAR joint proposal titled Greenhouses in Transitions (1st stage has been approved, 2nd stage is ongoing to combine all sub proposals into one), in collaborations with leading universities and industries in both the Netherlands and US.

This symposium has laid a strong foundation for ongoing innovation and cooperation between the energy and horticulture sectors. Together, we move forward with renewed momentum to create impactful solutions for a sustainable future.