

Sustainability and energy

A living laboratory for sustainability innovation

- ASU is home to the nation's first **school of sustainability** where students complete a course of study that emphasizes experiential learning, research with faculty, corporate and entrepreneurial models, community service, and leadership development.
- **The Julie Ann Wrigley Global Institute of Sustainability and Innovation** is a hub for ASU's sustainability research initiatives — implementing, extending, sharing and promoting sustainable practices locally, nationally, even globally.

ASU is leading by example

- Funded by the Department of Energy, ASU's partnership with Carbon Collect has yielded a passive carbon-capture system that can be scaled to help balance the world's carbon budget. The technology, known as **MechanicalTree**, captures CO₂ from the air and converts it to CO₂ that can be economically stored or converted into synthetic fuel and other products.
- ASU's **solar portfolio** is the largest of any university in the U.S. ASU has more than 24-MWdc of photovoltaic (PV), concentrated photovoltaic (CPV) and solar thermal solar systems equaling nearly 50% of ASU's present peak daytime load.
- ASU has **over 65 LEED-certified building projects**; seven LEED Platinum, 30+ LEED Gold, and 20+ LEED Silver-certified. Any new ASU construction sets LEED Silver as a minimum rating, with LEED Platinum as the goal.

The ASU advantage

ASU has received a Platinum rating from the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment and Rating System. Times Higher Education Impact Rankings, the only global performance tables that assess universities against the United Nations' Sustainable Development Goals, ranks ASU fifth in the world (out of 766 institutions) and first in the U.S. for sustainability.





Labs and research centers

- **The Center for Bioenergy and Photosynthesis** carries out research designed to use biological and biologically-based artificial systems to address societal energy needs in a sustainable manner (emphasis on solar energy conversion and bioinspired energy transformation to meet human needs).
- **The National Science Foundation Water & Environmental Technology Center** at ASU promotes scientific research that will ensure the quality of water by pooling the resources of the university and industry.
- **ASU's Swette Center for Sustainable Food Systems** takes a holistic and transdisciplinary approach to addressing challenges that consider water and energy use, carbon footprint and nutrition, innovations in agtech, and the well-being and livelihood of farmers and others working in food systems.
- **Photovoltaic Reliability Lab (ASU-PRL)** is a premier self-sustaining institution researching and predicting the lifetime of solar photovoltaic (PV) modules for various climatic conditions by applying statistical tools to field and accelerated stress testing data. ASU-PRL works with various research laboratories, industry partners and funding agencies across the globe over various module and component reliability topics.
- **The Solar Power Laboratory** stands out as having some of the most experienced researchers in the field. State-of-the-art facilities serve as a staging ground for the new technologies and ideas that will advance us towards a more sustainable society.
- **The Defect Engineering for Energy Conversion Technologies Lab (DETECT Lab)** focuses on establishing efficient photovoltaics technologies based on Earth-abundant and environmentally benign materials with potential for improving product performance, reliability and manufacturability.

Ultra materials for a resilient, smart electricity grid

ULTRA is a partnership between the U.S. Department of Energy and multiple research institutions where multidisciplinary scientific teams work together to develop a knowledge base of ultra-wide band gap (UWBG) materials and properties that can help reinvent the electricity grid.

QESST Lab

The Quantum Energy and Sustainable Solar Technologies (QESST) Lab is an engineering research center sponsored by the National Science Foundation and the U.S. Department of Energy, focused on advancing photovoltaic science, technology and education in order to address one of society's greatest challenges: sustainably transforming electricity generation to meet the growing demand for energy.

Global Consortium for Sustainability Outcomes

With support from the Global Consortium for Sustainability Outcomes (GCSO), research teams at ASU are collaborating with companies and nonprofits around the globe to upgrade their capacity to design green energy initiatives with outsized social impact. Participating partners learn new ways to integrate social value creation into the design, construction, and operation of renewable energy projects.

ASU is a founding signatory of the American College and University Presidents' Climate Commitment



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To learn more:

oed@asu.edu 480-727-6347

**#1 in the U.S.
for innovation**

ASU ahead of MIT and Stanford

— U.S. News & World Report, 7 years, 2016–2022

