



מרכז האוניברסיטה העברית לקיימות
The Hebrew University Center for Sustainability
مركز الجامعة العبرية للاستدامة

Scientific Progress

A transition to a sustainable, efficient and affordable energy supply is a necessary initial step for adapting to climate change. Prof. Lioz Etgar (Institute of Chemistry) and Prof. Amir Sa'ar (The Racah Institute of Physics) are collaborating in a research project with the aim of developing unique photovoltaic solar cells that apply hybrid concepts from different photovoltaic technologies. Their research focuses on developing innovative semiconductor nanostructures and molecular materials for the production of solar cells.

Understanding and addressing the geopolitics of renewable energy adoption in different regions is necessary to ensure that these technologies do not cause conflict. Prof. Itay Fischhendler from the Department of Geography and Prof. Ayal Kimhi (Robert H. Smith Faculty of Agriculture, Food and Environment) are collaborating on a project that aims to defuse the tension between solar farms and agricultural land use. This project stems from the conflict between the increase in use of utility-scale solar energy and agricultural land use. The Leonard Davis Institute for International Relations holds a Geopolitics and Energy Research Group led by Dr. Lior Herman, whose mission is to promote research on the interrelations between energy and geopolitics and collaborate in international research and public initiatives.

Community Impact

Innovation in the energy sector is necessary for transitioning to affordable and renewable energy. Faculty members at HUJI's Institute of Chemistry opened a number of renewable energy companies. Hydro X, a spinoff company stemming from the research of Prof. Yoel Sasson (Casali Center of Applied Chemistry) has developed green hydrogen energy storage technology which enables storing and transporting hydrogen in a safe, cost-effective way. SOLRA, a company based on research by Prof. Lioz Etgar of the Institute of Chemistry, has developed printable semi-transparent solar cells that can be used as solar windows, enabling scalability, ease of production, and recyclability.

Prof. Shlomo Magdassi and Prof. Daniel Mandler (Institute of Chemistry) developed solar coatings that harvest solar energy and convert it into heat and electricity. These coatings are used in California, providing electricity for over 100,000 homes.

Studies and Learning Initiatives

The Advanced School for Environmental Studies offers a range of courses related to clean and renewable energies. In 2021 a unique, three-day academic tour was held following the wind turbines in the Golan, as part of the multidisciplinary course "Interprofessional Workshop on Environmental Problems," held under the guidance of Prof. Itay Fischhendler (Department of Geography) and attorney Eran Ettinger. The workshop dealt with the tensions between ecology and clean energy.

Prof. Einat Aharonov and Prof. Carynelisa Haspel (Institute of Earth Sciences) teach a course on "Energy and the Environment," focusing on the physical and chemical processes associated with fossil fuel and renewable/alternative energy sources, and the influence of energy use on the environment, health, and the Earth's climate. Prof. Aharonov specializes in oil and gas formation and extraction. She is active in a volunteer-based organization called 'Homeland Guards,' which strives to meet Israel's greenhouse gas emissions reduction targets. In addition, it ensures that national investments and decisions are made, while being aware that natural gas is as harmful as coal given its high level of methane emissions, and demanding a shift to renewable energies. Dr. Lior Herman of the Department of International Relations gave a talk in The Sophie Davis Forum on "Gender, Conflict Resolution and Peace," regarding the transition to renewable energies and geopolitical security.

Actions on Campus

HUJI operates the "Green Campus" initiative, in which administrative and academic staff work together with students to promote awareness of sustainability and environment preservation within HUJI's campuses. The initiative, led by Prof. Nadav Katz (Racah Institute of Physics) works to promote projects of energy efficiency, energy monitoring and transitioning towards renewable energies, and other initiatives, in cooperation with various bodies within the university.

As part of their work, the initiative supported the 5.5 million NIS investment of HUJI for the on-campus installation of solar panels with a capacity of 1.2 Megawatts. At its peak, this renewable source of energy accounts for 12% of the campus's energy consumption, generating electricity from solar energy. Two new buildings at the university were built to the LEED-SILVER standard (the highest American standard for green construction). This standard of building ensures the maximal energy efficiency of lighting, heating, ventilation, and air conditioning.