

Efficiency for Access Design Challenge prototypes

Appliance prototypes for off-grid settings designed by teams of university students to help accelerate clean energy access.

Prototypen van apparaten voor omgevingen zonder netaansluiting ontworpen door teams van studenten om toegang tot schone energie te helpen versnellen.

Hosted by: Efficiency for Access Coalition

Project Information (EN)

Overview

Delivered by Efficiency for Access with the support of Engineers Without Borders UK, the Efficiency for Access Design Challenge is a global, multi-disciplinary competition that empowers teams of university students to help accelerate clean energy access. It is funded by UK aid and the IKEA Foundation. Now in its third year, the Efficiency for Access Design Challenge enables students to create affordable and energy-efficient appliances and technologies for low to middle income countries. By inspiring students, the Challenge aims to foster innovation in the off-grid appliance sector. The competition also seeks to improve the job prospects of participating students by giving them experience in designing appliances. Throughout the year, the Efficiency for Access Design Challenge team ran webinars, networking and interactive events for students, which aimed to enhance their understanding of the off-grid appliance sector. Student teams were also paired with experts in the off-grid appliance sector who provided them with structured guidance to create their projects.

Prototypes

Student teams from 13 universities in Bangladesh, India, Kenya, Uganda, and the United Kingdom developed projects that focused on technologies including water pumps, grain mills, vegetable dryers, hydroponic systems, electric cooking, water purification, vaccine refrigeration, oxygen concentrators, solar home systems or cooling. Student teams were able to create digital or physical prototypes of their ideas. The students approached their designs from a project-based learning lens and considered innovation, social and scalability criteria. The designs not only seek to contribute to Sustainable Development Goal 7 – Affordable and clean energy access, but also work towards other SDGs.

Participants

The exhibition showcases a selection of the prototypes created by 23 student teams from the following 13 universities in Europe, South Asia, and Sub-Saharan Africa: Gulu University (Uganda) Independent University, Bangladesh (Bangladesh) Jomo Kenyatta University of Agriculture and Technology (Kenya) Loughborough University (UK) Makerere University (Uganda) Moi University (Kenya) Swansea University (UK) TERI School of Advanced Studies (India) University of Bristol (UK) University of Nairobi (Kenya) University of Strathclyde (UK) University of Bath (UK) UCL (UK)

Projectinformatie (NL)

Overzicht

Efficiency for Access is een wereldwijde, multidisciplinaire ontwerpwedstrijd die teams van studenten de kans biedt om de toegang tot schone energie te helpen versnellen. Het wordt gefinancierd door UK aid de IKEA Foundation. Om iedereen duurzame energie te kunnen bieden, moeten we snel de efficiëntie en betaalbaarheid van hoogwaardige apparaten verbeteren. Voor de wedstrijd worden teams van studenten uitgenodigd om betaalbare en hoogwaardige apparaten zonder netaansluiting en de technologieën die dat mogelijk maken te ontwikkelen. Door studenten samen te brengen en te inspireren, wordt de innovatie in de sector voor apparaten zonder netaansluiting bevordert. De studenten hebben deelgenomen aan een serie webinars en konden samenwerken met deskundigen

uit de 'off-grid'-sector die hen bijstonden bij de ontwikkeling van innovatieve ontwerpen.

Prototypen

Teams van studenten afkomstig van 13 universiteiten in Bangladesh, India, Kenia, Uganda en het Verenigd Koninkrijk ontwikkelden hun projecten met verschillende technologieën: zonnewaterpompen, graanmolens, groentedrogers, hydrocultuursystemen, elektrisch koken, waterzuivering, vaccinkoeling, zuurstofconcentratoren, zonne-thuissystemen of koeling. De teams ontwikkelden een fysiek of digitaal prototype van hun ideeën. De studenten gingen op basis van projectgebaseerd leren aan de slag met hun ontwerpen en hielden rekening met innovatie-, sociale en schaalbaarheidscriteria. De ontwerpen voldoen aan doel 7 van de duurzame ontwikkelingsdoelen (SDG): toegang tot betaalbare energie, maar zijn ook intrinsiek verbonden met andere SDG's.

Deelnemers

De voorstelling bestaat uit de prototypen van 23 teams van studenten van de volgende 13 universiteiten in Zuid-Azië, Afrika ten zuiden van de Sahara en Europa: Gulu University (Uganda) Independent University, Bangladesh (Bangladesh) Jomo Kenyatta University of Agriculture and Technology (Kenia) Loughborough University (VK) Makerere University (Uganda) Moi University (Kenia) Swansea University (VK) TERI School of Advanced Studies (India) University of Bristol (VK) University of Nairobi (Kenia) University of Strathclyde (VK) University of Bath (VK) UCL (VK)

Image List

Filename	Caption	Credit
prototype-team-2020-12-solar-hydroponic-system_1629819104.jpg	Prototype of a solar hydroponic system	Team 2020-12
prototype-team-2020-17-solar-grain-mill_1629819121.jpg	Prototype of a solar grain mill	Team 2020-17
prototype-team-2020-28-kettle_1629819129.jpg	Prototype of a kettle	Team 2020-28
prototype-team-2020-34-solar-fish-dryer_1629819144.jpg	Prototype of a solar fish dryer	

The images above are included in the ZIP under /images.