



"The road ahead demands that appliances contribute to human prosperity and a more equitable world with minimal net impact on the planet."

Dear CLASP Partners,

Since 1999, CLASP has made appliances, lighting and equipment more energy efficient, focusing in our first decade on reducing energy demand and greenhouse gas emissions. In our second decade, the vision expanded to include how efficient, high-quality appliances deliver enhanced energy services to poor, under-electrified communities around the world.

As we enter our third decade, the natural disasters dominating the news leave little doubt that the window of opportunity to prevent climate catastrophe has narrowed. Simultaneously, we are in the grips of an evolving pandemic pushing millions into poverty and exacerbating social inequalities, with disproportionate impacts on women and girls.

In spite of stark challenges, there are reasons for hope: the cost of cleaner energy is plummeting and renewables are becoming the preferred choice for power generation and energy service delivery in many countries. Innovations in appliances like heat pumps and electric pressure cookers promise major emissions reductions. Globally, governments are making steady – though still insufficient – progress on appliance efficiency policy.

In 2021, through CLASP's initiatives, partnerships, and nearly completed strategic plan, we were once again challenged to expand how we conceive of our work, which now considers environmental protection and justice, adaptation, resilience and equity. The road ahead demands that appliances contribute to human prosperity and a more equitable world with minimal net impact on the planet. Most succinctly, CLASP is making appliances as 'planet-neutral' and 'people-positive' as possible.

Thank you for your partnership now and in the future.



Christine Egan
Chief Executive Officer



Prioritizing Actions for a More Sustainable World

CLASP addresses the urgent global issues of mitigating catastrophic climate change and delivering sustainable energy services to the world's poorest people, through energy-efficient appliances and equipment. In 2021, we supported ambitious commitments and dialogue at COP26, progressed climate policy in the world's highest emitting countries and tracked advances in solar appliances that enable people to cope with the effects of climate change and global shocks like the COVID-19 pandemic.

COP26

In November, governments met in Glasgow with the ambitious goal to define global efforts that keep the world from reaching the 1.5°C warming benchmark, a quickly approaching level of climate change that would mean devastating effects for people and the planet.

A Critical Moment for Climate Mitigation

Appliance and equipment energy efficiency stood out as a cost-effective, proven tool to cut carbon emissions. CLASP partnered with UK BEIS, the International Energy Agency and the SEAD Initiative to launch the **Product Efficiency Call to Action**. The Call to Action aimed to double the efficiency of four priority appliances that account for 40% of global electricity consumption. Now the largest ever global commitment to appliance energy efficiency, the campaign earned the signatures of 14 countries: Australia, Brazil, Chile, Colombia, Denmark, Germany, Ghana, India, Indonesia, Japan, Nigeria, South Korea, Sweden, United Kingdom. Their commitments are set to avoid 886 Mt of CO₂ emissions, equivalent to the output of 465 medium coal-fired power stations.

Off-Grid Appliances on the Adaptation Agenda

Our virtual and physical presence at COP26 gave CLASP an unprecedented opportunity to demonstrate the inextricable role of off-grid appliances in achieving a global clean energy transition. CLASP, as co-Secretariat of the Efficiency for Access Coalition, served as Energy Access & Resilience Theme Lead for the COP26 Resilience Hub. Our three events at the conference highlighted the talented people and organizations around the world who are creating clean energy innovations. Solar-powered appliances like fans, water pumps and cold rooms enable vulnerable communities to adapt to life in a changing climate. Coming out of the conference, Efficiency for Access was recognized as a leading initiative for international collaboration as part of the Glasgow Breakthrough on Power.





HM Government

CLASP coordinated a network of over 20 civil society organizations in support of the effort.



lea SEAD Gasp



Curbing Emissions with Ambitious Appliance Efficiency Policy



United States

Kicked off partnership with ASAP and NRDC to advocate for 50 ambitious appliance standards over four years.

Potential to avoid 1500 Mt CO₂ by 2050

Brazil

INMETRO updated their refrigerator energy efficiency label for the first time in 15 years, with support from CLASP and its partners in the Kigali Network.

9.7 Mt CO₂ avoided by 2030



Appliance energy efficiency policy is one of the fastest, most cost-effective ways to cut greenhouse gas emissions and decarbonize the building sector. CLASP support to governments led to new policies passed and committed to in 2021.

Pakistan

Among the top five countries facing extreme cooling needs, Pakistan announced they will develop a National Cooling Action Plan to ensure sustainable infrastructure growth. This work was supported by local NGO Hima^Verte and CLASP.





India

Bureau of Energy
Efficiency adopted two
policies regulating
increasingly popular
ultra-high-definition TVs
and hugely inefficient
air compressors, a result
of close collaboration
with CLASP.

15 Mt CO₂ avoided by 2030

Indonesia

With CLASP support, launched efficiency policies for three highly used appliances: rice cookers, fans and refrigerators.

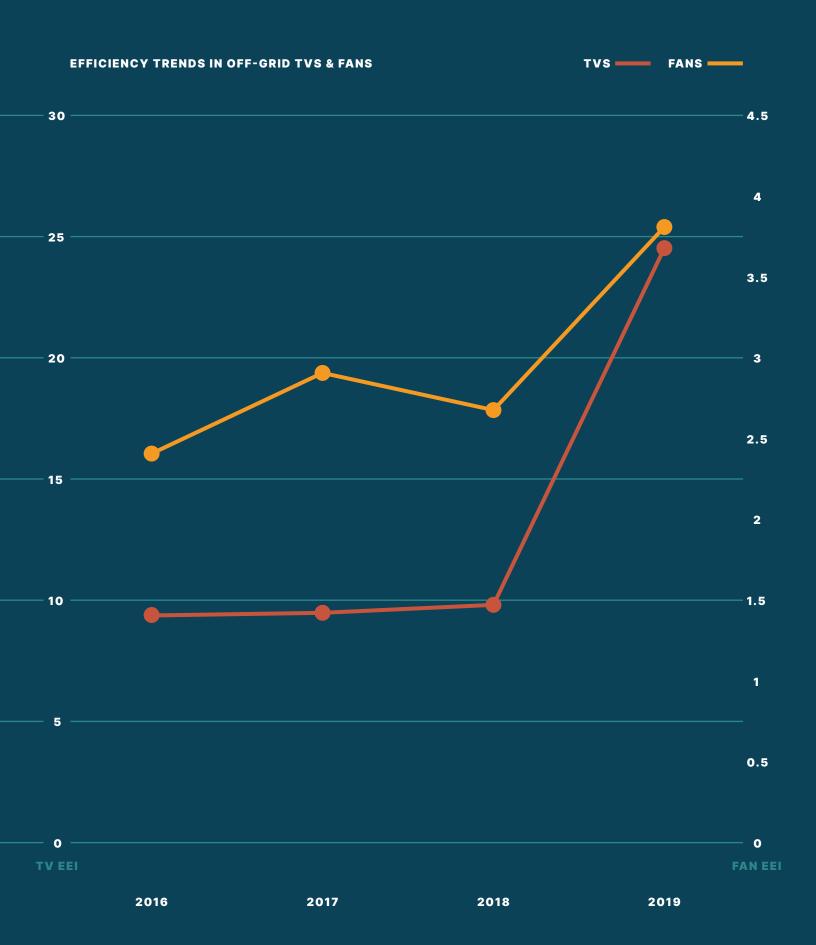
10.7 Mt CO₂ avoided by 2030

Solar Appliances Are Becoming More Efficient & Affordable

Improvements in energy efficiency and price enable energy-poor communities to access and power a wider array of appliances capable of improving quality of life and income potential. In January, CLASP published the second iteration of the **Appliance Data Trends report**, with updated performance, efficiency, and pricing trends for solar TVs, fans, refrigerators, solar water pumps, and early market insights for electric pressure cookers. Due in part to the CLASP-coordinated Efficiency for Access Coalition and Global LEAP Awards, near-to-market products are more affordable and efficient today compared to five years ago.

- TVs are 48% more efficient and 44% cheaper than models tested in 2016, even with increases in screen size.
- Fans are 43% more efficient than models assessed two years ago, enabling better cooling service without increased cost.









CLASP embarked on a landmark campaign to phase out toxic fluorescent lighting, stimulated innovations in and markets for clean cooking solutions and produced groundbreaking research

on off-grid clinic electrification and consumer satisfaction with solar-powered appliances.

Ending Toxic Lighting Together

CLASP launched the <u>Clean Lighting Coalition</u>, a global campaign to phase out toxic, mercury-containing fluorescent lighting, in favor of efficient LEDs. Vulnerable people are at the greatest risk of the effects of mercury, a neurotoxin classified by the World Health Organization as a top ten chemical of major public health concern.

In April, the Africa region proposed to phase out virtually all fluorescents globally by 2025 through the Minamata Convention on Mercury. Over the year, CLiC brought together global experts in climate and public health to support the Africa region's proposal.



A global transition to LED lighting would eliminate 232 metric tonnes of mercury, avoid 3.5 Gt of CO₂ emissions and save \$1 trillion USD in electricity bills by 2050.



"With the proposed amendment to the Minamata Convention and implementation of national-level regulations to phase out fluorescent lighting by 2025, countries can accelerate the transition to LED lighting technology to benefit people and the planet."

Professor Shuji Nakamura

Nobel Prize for Physics (2014), Inventor of Blue Light LED



"Switching to LEDs in early care and learning settings will reduce hazardous mercury exposure, lower electricity bills and protect the environment from harmful greenhouse gas emissions."

Hester Paul

M.S. National Director, Eco Healthy Childcare



"Over the past decade, the availability, price and performance of LEDs have improved to the point where they are considered the most cost-effective and reliable lighting option. It's time to replace our outdated, toxic bulbs with clean LEDs for a better lighting experience."

Alicia Culver

Executive Director, Responsible Purchasing Network



"Transitioning to LEDs is a big opportunity for lighting companies. In Rwanda, where we manufacture LEDs, consumers are embracing this modern technology whose prices have reduced drastically over the last couple of years."

Suresh Negi

General Manager, Operations, Sahasra Rwanda

Harnessing Clean Cooking to Empower and Equalize

Millions of women and children are exposed to harmful cooking pollutants, which cause around four million deaths per year. Due to traditional gender roles, women are two to four times more likely than men to suffer health impacts caused by dirty cooking fuels. Electric pressure cookers (EPCs) can improve the wellbeing of women and children by increasing nutritional intake and eliminating air pollution from open fires. They also reduce the time women spend collecting fuel, unlocking opportunities to pursue business or educational activities.



Gathering Insights from Everyday Kenyan Cooks

In March, CLASP announced the results of the inaugural Global LEAP Awards Competition for Electric Pressure Cookers. Nine winning and finalist cookers underwent an innovative usability testing process, where everyday cooks from Kenyan households evaluated appliance performance under real-life conditions. This testing will inform consumer-focused EPC designs and promote the uptake of this high-potential technology. Together, the 2021 Usability Testing Buyer's Guide and the EPC Buyer's Guide encapsulate the latest field and laboratory testing insights for best-in-class EPCs.

- CLASP helped equip nearly 5,000 Kenyan households with highly energy-efficient, award-winning electric pressure cookers.
- To date, our Global LEAP financing facility has disbursed \$4 million USD to boost off-grid appliance markets.



First-of-its-kind Report on Solar-Powered Medical Equipment & Clinic Electrification

Without energy, clinicians cannot utilize basic diagnostic tools, maintain inventories of critical medicines and vaccines or access information relevant to patient care. As a result, patients suffer: mothers give birth in the dark, babies are born without neonatal warmers and preventative care for a wide range of treatable conditions is unavailable. In March, CLASP published a <u>seminal research report</u> on the role of solar medical equipment in clinic electrification efforts. The report presents a preliminary assessment of barriers to large-scale deployment of medical equipment in off- and weak-grid clinics, along with actionable recommendations.



A holistic approach to clinic electrification that pairs appropriately designed, solar-powered medical equipment alongside the provision of energy systems is crucial to the development of more sustainable and effective health systems.

"We need to build a convergence between health and energy experts, especially when it comes to appliances. We need each of these groups to demystify what they do for the other."

Huda Jaffer

SELCO Foundation Director

Quality-verified Solar Solutions Earn High Consumer Satisfaction

CLASP, on behalf of <u>VeraSol</u>, found that more than a decade of concerted, sustained efforts to promote quality solar products in Kenya is paying off. Through over 3,100 interviews, <u>the landmark study</u> highlights consumer experiences with quality-verified vs. non-quality verified solar products. VeraSol quality assurance was developed to safeguard poor people's investments, and this study gives concrete proof of the program's effectiveness from end users themselves.





28% of Kenyan households (3,372,044 households) have access to at least one stand-alone off-grid solar product, with 21% using it as the primary source of lighting. Credit: Sunny Money - Kenya, Corrie Wingate

"Years of quality assurance and consumer awareness support have had their intended impact and led to Kenya's consumers being more discerning when purchasing solar products, which could be a significant factor in driving the high levels of user satisfaction."

Dana Rysankova

Global Lead for Energy Access, World Bank



Cutting Edge Solutions to Urgent Global Issues

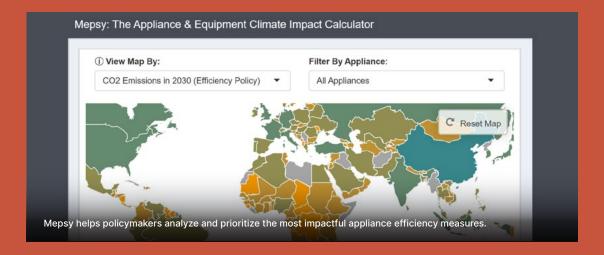
As timelines dwindle for addressing the urgent effects of climate change and alleviating energy poverty, CLASP is developing innovative solutions to empower fast, smart decisions. This past year, CLASP unveiled two new policy tools, pushed heat pumps into the spotlight and published roadmaps for life-changing solar appliances.

New Tools Enable Fast Climate Action

Analytical tools that accelerate policy have long been too difficult or expensive to use and customize. To address these issues and make rigorous analysis fast and accessible, CLASP launched two new digital solutions: Mepsy and the CLASP Policy Resource Center (CPRC).

Mepsy models the impacts of energy and carbon reduction policies for the most highly-consumptive appliances.

Mepsy's dynamic, user-friendly interface guides researchers and policymakers in identifying policy opportunities and analyzing their energy and carbon impacts.



- The Mepsy model includes data for 162 countries and six of the top energy-using appliances –ACs, space heating equipment, refrigerator-freezers, electric motors, TVs and fans.
- "By providing user-friendly access to comprehensive, up-to-date data and a world-class calculation engine, Mepsy advances policies that benefit consumers and the climate."

The CLASP Policy Resource Center is a global hub for information on energy efficiency, water efficiency and quality policies for appliances and equipment.



- The CPRC holds over 1,400 efficiency policies across 130 economies, making it the most comprehensive global platform of its kind.
- Visitors to the CPRC can develop customizable, aggregated lists of policies, or examine individual policies in more detail.
- "An evolution of CLASP's S&L Database, the CPRC can drive more informed, ambitious, and timely climate action by putting appliance policy information at the fingertips of decision-makers."

Lauren BoucherCLASP Senior Associate

The Building of the Future is Electric

In the US, heating and cooling account for 51% of household energy use. Electric heat pumps are now four times more efficient than traditional equipment. They heat and cool homes and buildings, expediting the transition away from fossil fuels while providing myriad social and economic benefits. CLASP's groundbreaking report '3H Hybrid Heat Homes' offered a roadmap to increase the share of electric heat pumps on the US market from 11% to 44% in just 10 years.



CLASP's <u>3H Report</u> Heats Up US Electrification Dialogue

The New York Times

"We found that a relatively small investment of around \$3 billion to \$12 billion nationwide could have a big impact on energy use...It's hard to find many ideas with that much bang for the buck."



"Their analysis calls for a supply-side intervention to make heat pumps affordable and universally available, instead of a demand-side approach that relies on consumers to seek out heat pumps."



"CLASP, Harvard University, and Nate
Adams of HVAC 2.0 are working together
on a policy proposal that would pay
HVAC manufacturers to stop making air
conditioners and only make heat pumps.
The numbers that are coming back on
it early are looking quite good, showing
substantial societal benefits, about 5-to1 on the low side."

Surfacing Insights on the Evolving Solar Appliances Market

CLASP and partners, on behalf of Efficiency for Access, launched a series of Solar Appliance

<u>Technology Briefs</u> that synthesize the latest market intelligence and pathways to scale for the 11 offgrid technologies most likely to catalyze energy access and advance progress on the UN Sustainable Development Goals. These analyses help companies, investors and other decision-makers keep pace with the ever-changing appliances market.

MARKET READINESS OF 11 KEY TECHNOLOGIES

н	ORIZON	EMERGING	NEAR-TO- MARKET
***	Agricultural Cold Storage	Solar Water Pumps	Fans
	Milling Equipment	Refrigerators	Televisions
	Electric Pressure Cookers		
	E-Mobility		

ENABLING TECHNOLOGY



ICT Equipment



Interoperability



Permanent Magnet Motors



Walk-in Cold Rooms

Cold rooms play a critical role in developing countries, where postharvest food losses can be as high as 40%. Establishing cold chains as extensive and reliable as those in industrialized countries would enable developing countries to raise food supply by 15%.



Solar Water Pumps

Approximately 95% of farmland in Sub-Saharan Africa is rainfed and reliant on unpredictable weather patterns. Solar water pumps—a clean, modern irrigation solution—can increase yields by two to three-fold.



Fans

Fans are one of the most common appliances in the world, with over 290 million on- and off-grid units sold globally in 2019. With positive trends in off-grid fan affordability and efficiency, demand is predicted to grow, especially as global temperatures rise.



Permanent Magnet Motors

Households switching from conventional appliances to permanent magnet motor appliances will save 30% on the net cost of their solar energy system. Introducing permanent magnet motors in a broader range of off-grid appliances will play a crucial role in appliance access.



Working Together for a Better World

CLASP's staff, board, and donors are all essential parts of an ecosystem, each critical to fulfilling our mission. In 2021, CLASP grew our team, board and funding sources. We also made strides towards diversity, equity, and inclusion and enhanced team benefits, in service of our goal of providing a healthy and just place to work.

Prioritizing Team Wellness & Cohesion

In the second year of the pandemic, CLASP introduced several new supports for our team:

- Five additional mental health days when the whole team is off work;
- A monthly wellness stipend that can be used for anything —therapy, fitness, child care, etc.;
- Enhanced global medical benefits and long-term life and disability insurance for all employees and
- Six virtual and safety-conscious in-person events to connect people, sponsored by the CLASP Social Committee.



Progress Report: Diversity, Equity & Inclusion

CLASP advanced several DEI efforts in 2021.



We now partner with DEI-forward recruiting agencies to apply DEI expertise and practices to our hiring process.



The staff volunteer-led DEI Committee facilitates organization-wide training and development on topics like genderneutral pronouns and mitigating implicit bias in hiring.



Program teams have integrated equity issues into their work, like affordability for lower-income consumers, and many have developed equity-specific annual metrics.

Board of Directors



Stephen WielBoard Chair



John R. Mollet
Board Secretary



Sujeesh Krishnan Board Treasurer



Aníbal Almeida



Molly Singer



Demba Diop



Hillary McMahon



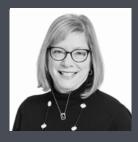
Joyita Mukherjee



Rose Mutiso



Marie-Vincente Pasdeloup



Merrill Shugoll



Mirka Della Cava



Astrid Vermeer

In 2021, CLASP welcomed new board member Astrid Vermeer, who joined the Finance Committee

Senior Leadership



Christine EganChief Executive Officer



Fred ShermanChief Operations
Officer



Corinne SchneiderChief Communications
& Development Officer



Eric GibbsChief of Climate
Programs



Steve PantanoChief of Research



Sam GrantDirector, Clean
Energy Access



Naté Harris Human Resources Director



James Wakaba East Africa Director



Bishal Thapa India Director

"For many developing countries, energy efficiency offers a pathway to development and prosperity. CLASP in India provides me an opportunity to translate that opportunity into real impacts that help to uplift the lives of many in South Asia."



Amanda UpshawChief of Staff

Staff New staff in 2021





Abby Kuria Coordinator, Clean **Energy Access**



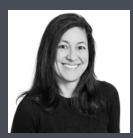
Alexia Ross Coordinator, Communications



Amanda Upshaw Chief of Staff, Leadership



Ana 'Luli' Sosa Senior Associate, Clean Energy Access



Ana Maria Carreño Sr. Manager, Climate



Andrea Testa Legal & Contracts Manager



Angellah Wekongo Coordinator, Clean Energy Access



Ari Reeves Director, Clean Energy Access



Asif Hassan Sr. Associate, Clean Energy Access



Catherine Muiruri Associate, Operations



Claudia Hernandez Associate, Communications



Colin Taylor Manager, Climate



Daniel Holman Digital Media Intern, Communications



Elisa Lai Manager, Clean Energy Access



Francis Ndonga Associate, Climate



Hannah Blair Sr. Associate, Communications



James WakabaEast Africa Director,
Leadership



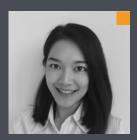
Jeff Stottlemyer Sr. Manager, Clean Energy Access



Jenny Corry Smith Sr. Manager, Clean Energy Access



Jenny MandelSr. Associate,
Communications



Jiayi ZhangAssociate, Climate



Jillian WebberResearcher, Climate



Joanie CokerManager,
Communications



Jorge Alvarez Sr. Associate, Operations



Karishma JosephSr. Associate,
Communications

"The collective impact of appliances on the climate was something I'd never fathomed earlier. Working across our Asia programs has been phenomenal in helping me learn about energy equity and diversity. With all our planning for 2022, we're in for a great year and I am excited to watch it all come to fruition!"



Katherine Hasan Associate, Climate



Katriana DubytzCoordinator, Climate



Kishore Kumar Sr. Associate, Climate



Lauren Boucher Sr. Associate, Research



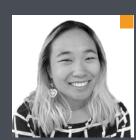
Lina Kelpsaite Manager, Climate



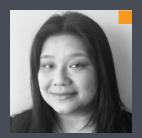
Lisa KahuthuCoordinator,
Communications



Makena Ireri Manager, Clean Energy Access



Margaret Mowrer Coordinator, Communications

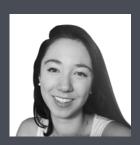


Lucy LaiAssociate, Operations

"I love that CLASP emphasizes making an impact at every level of the organization."



Marie Baton Europe Lead, Climate



Marion KudlaFellow, Communications



Martha WakoliSr. Associate, Climate

"I'm particularly excited at the potential that this work holds in helping countries like my home-country Kenya set up and improve energy efficiency policies."



Matt Malinowski Sr. Manager, Climate



Michael Mwangi Maina Associate, Clean Energy Access



Michael ScholandSr. Program Advisor,
Climate



Monica WambuiSr. Associate, Clean
Energy Access



Moumita Chandra Associate, Climate



Nanik Rahmawati Indonesia Manager, Climate



Naté Harris Human Resources Director, Leadership



Neha Dhengra Manager, Climate



Nicole KearneySr. Manager, Climate



Nya Abagi Manager, Clean Energy Access



PK Mukherjee Sr. Advisor, Climate



Rebecca Schloemann Sr. Associate, Climate



Qianqian Cui Associate, Climate

"I firmly believe that to be the best, you have to learn from the best. [The team] is super dedicated in their respective fields of expertise."



Riley MacDonald Associate, Clean Energy Access



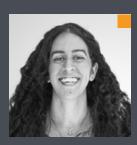
Ruth Kimani Associate, Clean Energy Access



Sam Grant
Director, Clean
Energy Access



Sara Demartini Associate, Climate



Shirin Mavandad Associate, Research



Siena Hacker Associate, Clean Energy Access



Steven ZengChina Lead, Climate



Sumedha Awasthy Associate, Clean Energy Access



Travis Richardson Intern, Climate



Tyo WibisonoAssociate, Climate

"CLASP's support for governmental policies motivates me to work harder—seeing how our efforts can have a big impact."



Wendy HadoSr. Associate, Clean
Energy Access



Wendy Wen
Controller, Operations



Win NjuehAssociate,
Communications



Yasemin Erboy RuffManager, Clean
Energy Access



Donors

- Anonymous (1)
- Aspen Global Change Institute / Crux Alliance
- Carbon Trust
- Center for Applied Environmental Law and Policy
- Climate Imperative Foundation
- ClimateWorks Foundation
- DOEN Foundation
- European Climate Foundation
- German Government's International Development Agency (GIZ)
- German National Metrology Institute (PTB)
- Good Energies Foundation
- Hewlett Foundation
- IKEA Foundation
- KPMG
- Loughborough University
- The John D. and CatherineT. MacArthur Foundation

- Renewable Energy and Energy Efficiency Partnership
- Resilient Africa Network at Makerere University
- Rockefeller Foundation
- Stantec
- Sustainable Energy for All
- Tetra Tech
- Tilia Fund
- UK aid
- United Nations Environmental
 Programme via the United Nations
 Office in Nairobi
- United Nations Foundation
- United Nations Industrial Development Organization
- Sequoia Climate Fund
- World Bank/International Finance Corporation

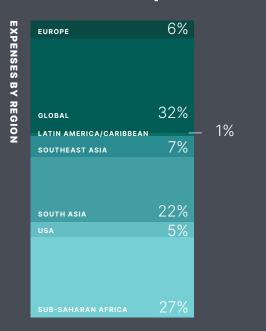
Financials

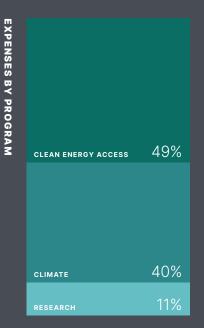
2021 Revenue

REVENU	MULTILATS / INTERNATIONAL INSTITUTIONS	13%
EBY	NATIONAL INSTITUTIONS	12%
D O N	OTHER (E.G. PARTNER NGOs)	7%
REVENUE BY DONOR TYPE		
	PHILANTHROPY / FOUNDATIONS	66%

Total: \$16,877,815.84

2021 Expenses





Total: \$16,513,748.17



TRANSPARENCY









COLLABORATION







SERVICE







IMPACT





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