



IEEE **Humanitarian Technologies**

2023 Annual Report

[ieee.org/humanitarian-tech](https://www.ieee.org/humanitarian-tech)





IEEE Humanitarian Technologies: Engineering a Better World for All

Table of Contents

- 03 A Letter from the 2023 – 2024 IEEE Humanitarian Technologies Board (HTB) Chair
- 04 IEEE Humanitarian Technologies and The IEEE Humanitarian Technologies Board
- 05 2023 HTB Achievements
- 06 HTB Events and HTB Looks to the Future
- 07 The IEEE Humanitarian Technologies Consortium of Programs
- 15 Funded Project Highlights
- 16 Opportunities to Get Involved with HTB
- 17 The 2023 IEEE Humanitarian Technologies Board, Board Coordinator, and Staff Support

A Letter from the 2023 – 2024 IEEE Humanitarian Technologies Board Chair



Dear Friends,

It is with great pleasure that I welcome you to read the first IEEE Humanitarian Technologies Annual Report, showcasing the consortium of programs that have benefited not only IEEE members and volunteers in 2023, but so many individuals in underserved communities around the world.

HTB, formerly the IEEE Humanitarian Activities Committee (HAC), was elevated to a board in November 2022. In its first full year of operations, HTB focused on creating the infrastructure for fulfilling its expanded mandate approved by the IEEE Board of Directors. HTB has made significant advances in many areas this year, which you will see throughout the pages of this report. In addition to developing its new role of providing support, oversight, best practices, coordination, and unified messaging for humanitarian technologies activities across IEEE, HTB also continued to improve and refine the programs that were inherited from its predecessor.

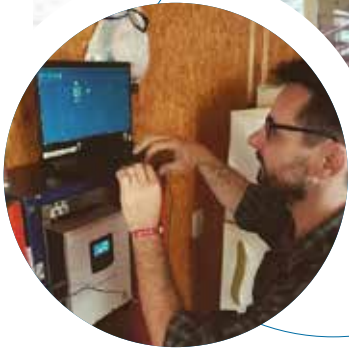
I take this opportunity to share my utmost gratitude for the IEEE Board of Directors, my fellow Humanitarian Technologies Board members, the HTB committee members, and all program volunteers for their treasured contributions, which have allowed HTB to achieve its current success.

Please take this opportunity to learn about the incredible impact that IEEE Humanitarian Technologies had in 2023. At this juncture, I invite all readers to come forward and join hands so that together we create a sustainable impact to benefit and transform humanity today, tomorrow, and always.

Sincerely,

Lwanga Herbert

Lwanga Herbert
2023 – 2024 IEEE Humanitarian
Technologies Board Chair



The IEEE Humanitarian Technologies Board

IEEE Humanitarian Technologies

IEEE Humanitarian Technologies (HT) is a consortium of programs and initiatives, supported by a global network of volunteers and technical professionals, focused on applying technology to solve the world's most pressing problems.

In keeping with the IEEE mission of advancing technology for the benefit of humanity, IEEE HT provides the framework, best practices, and tools for developing and deploying innovative solutions to advance sustainable development goals globally — while achieving social and environmental impact locally.

This report will show how IEEE HT programs complement each other and leverage the strength and reach of the IEEE network to make a difference in local communities around the globe.

Within an IEEE context, humanitarian technology activities are defined as those IEEE programs and activities focused principally on applying science, engineering, and technology to satisfy the unaddressed social needs of specific communities that are not adequately served by existing government, commercial, or non-commercial services. The IEEE Humanitarian Technologies Board is at the forefront of a diverse consortium of humanitarian and philanthropic programs with a vision to inspire and empower IEEE volunteers around the world carrying out and supporting impactful humanitarian technology activities at the local level.

The IEEE HTB mission is to support impactful and ethically informed volunteer-led initiatives, programs and projects, and mutually beneficial partnerships, as well as to inform policy formulation that harness technology and innovation to address societal challenges (including disaster recovery) in a responsive, effective, and sustainable way.

2023 HTB Achievements

HTB, formerly the IEEE Humanitarian Activities Committee, was elevated to a board in November 2022. In its first full year of operations, HTB focused on developing its new role of providing support, oversight, and best practices; enhancing and expanding collaboration; and continuously improving its programs and activities.

HTB developed initial recommendations to customize best practices and impact metrics from the humanitarian technology space for IEEE and its programs. While HTB expects this to be a multi-year endeavor, the vital work of creating the foundation to measure the impact of various programs' activities and contributions is well underway, including:



Description and synthesis of existing impact assessment and reporting conducted by each individual program.



Identification of opportunities for improvement in impact assessment data collection and reporting across all programs.



Recommendations for cohesive impact assessment and reporting structures across all IEEE humanitarian technologies programs to expand and deepen the tracking of humanitarian, social, and environmental impact metrics.

These recommendations shaped the creation of an initial best practices framework shared by the six major humanitarian programs featured in this report to highlight impact.

HTB created a visual identity for "IEEE Humanitarian Technologies" to represent the consortium of programs and the board, as well as unify, consolidate, and amplify messaging for audiences within and beyond

IEEE. A landing page is available on the IEEE website ([ieee.org/humanitarian-tech](https://www.ieee.org/humanitarian-tech)) and an expanded website with additional resources and information is coming soon. The website will create a shared space with information about the multiple opportunities that IEEE has to engage and contribute to its humanitarian programs, aggregate impact metrics and success stories across the different programs, and include a calendar of relevant events both internal and external to IEEE.

Additionally, HTB also worked to build its staff support team in 2023 to fulfill the expanded mandate of overseeing and supporting broader humanitarian technology activities across the institute. After careful consideration, a Senior Director of Humanitarian Technology Activities was hired mid-year: Mariela Machado Fantacchiotti. Mariela has extensive experience building, deploying, and scaling international programs at the intersection of technology, social/environmental impact, and public policy in the private sector, public sector, and academia.



Enhancing and Expanding Partnerships and Collaborations within IEEE

In 2023, HTB focused on coordinating, collaborating, and partnering with a number of IEEE organizational units and entities to ensure understanding of other programs working in the humanitarian technologies space. An important achievement that reflects HTB's commitment to collaborate across IEEE were the collaborative calls for project proposals held with the

IEEE Communications Society, IEEE Region 8, and the IEEE Signal Processing Society. These funding opportunities provide unique opportunities for engagement for IEEE members and volunteers in leveraging their technological skills to address a local challenge in their respective community.

This year the long-term relationship between HTB and the IEEE Foundation, the philanthropic partner of IEEE, was further deepened by the establishment of the \$1,000,000 HTB Endowment Fund. Thanks to the generous bequest from Ms. Dorothy Percival, widow of late IEEE Life Member Alan Percival, the IEEE Foundation was able to launch the new HTB fund in August 2023. Starting in 2024, HTB will support approximately four to six more humanitarian technology projects each year, helping to meet the growing demand and enhancing the importance of humanitarian technology initiatives within the IEEE community. For more details about the new HTB Endowment Fund, visit the IEEE Foundation website.



HTB Events

For the first time in three years, HTB offered a call for events proposals to provide an opportunity for HTB to raise awareness of the role of technologists in sustainable development, train participants on project planning and proposal submission, and widely promote HTB's work. The 12 events selected, which took place in seven IEEE Regions, were sponsored at up to US\$10,000 and included: the Global Humanitarian Technology Conference, the Region 10 Humanitarian Technology Conference, the International Humanitarian Technology Conference, IEEE PES/IAS PowerAfrica Conference, the IEEE International Symposium on Technology and Society, and IEEE Rising Stars.

HTB Looks to the Future

As 2023 drew to a close, HTB began building a four-year strategic plan with areas of focus to shape its goals and objectives for 2024 and the future. HTB defined these initial four pillars as strategic areas of focus for 2024 and the basis for the future strategy:



ADVANCING TECHNOLOGY FOR GOOD

HTB supports impactful and ethically informed volunteer-led programs and projects that address societal challenges through humanitarian engineering expertise to advance the UN Sustainable Development Goals.



AWARENESS AND UNIFIED COMMUNICATIONS

HTB raises awareness of engineering and technology's role in sustainable development and amplifies the opportunities for IEEE members in this space to increase impact and reach.



BEST PRACTICES AND FRAMEWORKS

HTB provides support, infrastructure, and oversight for humanitarian technology programs at IEEE and develops educational and capacity-building materials to promote best practices.



PARTNERSHIPS AND ECOSYSTEM

HTB collaborates across and beyond IEEE to foster opportunities and capitalize on mutually beneficial collaboration and knowledge-sharing.

With the investment of time and effort of its volunteer leaders and staff support, HTB is well poised to guide and support humanitarian technology activities across the institute, share meaningful insight into effective best practices, and leverage the strength and reach of the IEEE network to address sustainable development challenges. HTB aims to become the hub for the younger generation of volunteers from across the globe who want to leverage technology for the benefit of their local communities to solve their most pressing challenges.



IEEE Humanitarian Technologies Consortium Programs

There are many programs across IEEE active in the humanitarian technologies space, but this report will highlight those with a mission focused on humanitarian efforts. A summary of each program's accomplishments and impact in 2023 can be found in the following sections.

Important disclaimer: The impact metrics and data points included for 2023's report have not been verified independently by HTB. For 2024, HTB has created a detailed impact assessment and oversight plan to gather impact and financial metrics for upcoming years.



The IEEE Empower a Billion Lives (EBL) competition is agnostic to energy sources, technologies, and business models. Solutions are evaluated on their technical innovation, impact, and business viability to scale to one billion customers rapidly and sustainably. Developed in 2016, the competition is aimed at fostering innovation to develop regionally relevant, holistic solutions that leverage 21st-century technologies with exponentially declining prices. The competition is completely open to all, and since 2017, 575 teams have registered and 120 have competed.

Teams must develop solutions that achieve at least 200 Wh/day of energy and include some productive function. Solutions need to be affordable for communities where people make less than US\$2.15/day; flexible; initially small and expandable; easy to install, use and maintain; interoperable across vendors; as well as address lifecycle and e-waste issues. The second round of EBL concluded with a Global Final on 21 March 2023 where US\$425,000 in prizes was awarded.

EBL 2019 and 2023 teams continue to deploy their solutions, attract equity investments, partner with other EBL teams for scientific collaboration and last-mile access, and win global prizes. EBL's reputation and rigorous qualification process helped winning teams attract millions of dollars from agencies, companies, and venture capital firms, and receive governmental, technical, and financial support. A small sampling of the impact of EBL's nearly 50 teams includes:

- **EBL 2023 Grand Prize Winner** — Nanoé, has installed 1,257 nanogrids with 5,000 clients in 290 villages in Madagascar.*
- **Automatic Centric Track — Green Empowerment** — Winner Green Empowerment has 247, has 247 community infrastructure projects and provides access to energy and water to 122 schools and clinics.*
- **2019 Best Emerging Utility Solution** — Track winner Team Entrepreneurs de Monde (EDM), a last-mile team, partnered with Okra for their Cambodian project. Now operating in 12 countries and integrating capabilities beyond energy that must be met for energy to provide productive, income-generating solutions for people, EDM has over 180,000 beneficiaries.*

EBL 2025 will be open for submissions of concept papers on July 1, 2024, and full proposals are due on February 28, 2025. Accepted teams will then field-test solutions in an energy access community. The Global Final will be in December 2025 in Johannesburg, South Africa. EBL 2025 is adding new tracks, including Clean Cooking and Local Entrepreneurship, which includes Last-Mile Distribution and Leave No One Behind.

EBL 2025 invites volunteers and reviewers to join the Empower a Billion Lives Community by visiting empowerabillionlives.org.

*These numbers have not been verified by HTB



EPICS^{IN}IEEE

EPICS (Engineering Projects in Community Service) in IEEE was brought to IEEE in 2009 from the Purdue University EPICS Model for engineering service learning projects with funding from the IEEE New Initiatives Committee (NIC). Today, the EPICS in IEEE program provides US\$1,000 – US\$10,000 grants for prototyping and project materials for service learning projects where university students work hand-in-hand with a community organization to solve a community challenge using engineering and technology. EPICS in IEEE helps fulfill the IEEE core purpose of fostering technological innovation and excellence for humanity. In addition to funding, the program provides support, mentorship, and visibility for engineering projects in four core categories of community improvement: Environment, Access and Abilities, Education, and Human Services.

In 2023, the EPICS in IEEE Committee received a record 190 proposals and awarded US\$160,000 for 39 service learning projects — a 20% acceptance rate, achieving a program milestone of awarding a total of USD \$1 million in project funding since 2009. The funded projects include over 800 students, 46% of whom identify as female, and 240 IEEE members. Forty-one percent of projects come from IEEE Student Branches. Twenty-three of the funded projects are part of the EPICS in IEEE Access and Abilities Competition, supported by the Jon C. Taenzer Fund from the IEEE Foundation. For more information, check out the [2023 EPICS in IEEE Annual Report](#). Prior to 2022, EPICS in IEEE awarded funds to an average of 11 projects per year. (Note that during the years of the pandemic, the number of project proposals received was very low. In 2022, 27 projects were awarded funding; more information on them is available in the 2022 EPICS in IEEE Annual Report. Due to the



increase in the number of projects and limited funding available, being selected for EPICS in IEEE funding is highly competitive.

Over the past two years, the EPICS in IEEE Committee and staff have made significant improvements to streamline the program's processes and procedures to accommodate the increase in projects. This includes the addition of quarterly project reporting, post-project reporting, implementation of a mentoring program, content distribution strategy, proposal review process updates (creation of a rubric, ranking system, and reviewer recruitment), and resource creation for student teams.

In addition, 2023 was a successful year for the EPICS in IEEE partnership strategy both for maintaining partnerships and confirming new program partners (Instrumentation and Measurement Society, Solid-State Circuits Society, the Antennas and Propagation Society, and the Industry Applications Society). EPICS in IEEE celebrates its 15th anniversary in 2024.



MOVE DISASTER RELIEF & OUTREACH

AN IEEE GLOBAL PROGRAM

IEEE MOVE is an emergency relief program committed to assisting victims of natural disasters with short-term communications, computer, and power solutions. The IEEE MOVE truck is deployed to respond to hardest hit disaster areas and can quickly set up temporary operations and provide the power and communications required to initiate services to the people affected by the disaster. MOVE is supported by donations through the IEEE Foundation and staffed by a network of hundreds of IEEE volunteers who crosstrain with the American Red Cross.

Explore the IEEE-USA MOVE truck in virtual reality:
ewh.ieee.org/ieee/move/vr/

When not at disasters, IEEE MOVE provides public outreach and STEM education at schools, universities, public events, and IEEE events. The large truck draws interest to IEEE from over 50,000 people annually. In 2023, the MOVE team supported 25 outreach and conferences across the US, including the Atlanta Science Festival where the team gave over 700 tours of the truck. For additional information, visit: move.ieeeusa.org.

In preparation for the hurricane season in the United States, both trucks underwent maintenance checks and some upgrades and were ready to offer support during the aftermath of Hurricanes Idalia and Lee and the Mississippi tornados. Both trucks are equipped with Starlink capability, the world's first and largest satellite constellation using a low Earth orbit to high-speed, low-latency internet. This terminal allows MOVE to have a portable satellite link for the internet that supports disaster relief efforts in areas where traditional communications are not available. The unit is portable and can be used anywhere in the US, providing additional redundancy with the mounted geostationary satellite unit.

*These numbers have not been verified by HTB



Training is crucial for MOVE volunteers, and an operations training class and a driver class were held to ensure that there are enough team members to support either truck when needed. MOVE also organized monthly "Tech Talk" sessions to facilitate training and development.

MOVE Outreach India is a collaboration between IEEE MOVE and the IEEE India Council to provide emergency relief committed to assisting victims of natural disasters with short-term communications and power solutions. In 2023, the team initiated planning to launch a modular MOVE model in India to provide relief in the face of natural disasters that India is particularly prone to — floods, cyclones, droughts, earthquakes, and landslides. Their MOVE vehicle will begin its service in 2024.

The MOVE Puerto Rico team conducted outreach events and talks, prepared kits for the local hurricane season, tested its three antennas, expanded its collaboration network, and arranged for its volunteers to complete important training and certification to continue its mission. The antennas were tested with the help of dozens of IEEE volunteers, radio amateurs, professors, and university personnel using the Near Vertical Incident Skywave (NVIS) propagation method, allowing for successful communication between municipalities of Puerto Rico.





IEEE SIGHT

Special Interest Group on Humanitarian Technology

IEEE Special Interest Group on Humanitarian Technology (SIGHT) is a global network of more than 48,000 individuals in 130 countries who partner with underserved communities and local organizations to implement group projects that utilize technology to tackle key challenges the community is facing. Members have the opportunity to learn about the program and gain ideas for their own activities. IEEE Members and non-members alike may join SIGHT, which can be one of the first steps to getting involved with humanitarian technology activities within IEEE. There are also 224 SIGHT Groups in 54 countries that partner with underserved communities and local organizations to leverage technology for sustainable development.

SIGHT membership increased by nearly 40% in 2023 and has steadily added a growing number of new members each year since the individual membership was established in 2016. Many times, those who participate in SIGHT find it to be a rewarding experience that allows for gaining hands-on knowledge, improving technical skills, networking, and making positive change in the local community.

In 2023, SIGHT received 20 new SIGHT Group petitions from eight countries, including the first petition received from Tanzania. SIGHT Groups are entities composed of at least six IEEE members who come together to learn about sustainable development, build relationships within their local communities, and implement projects that utilize technology to tackle key challenges their community is facing.

The IEEE SIGHT Volunteer of the Year and the IEEE SIGHT Group of the Year Awards recognize individuals and SIGHT Groups that have made outstanding contributions to IEEE SIGHT and their local communities. The 2022 volunteer recipient was Dr. Jawad Y. Siddiqui, the Section Group was the IEEE Kerala Section SIGHT Group, and the Student Branch Group was the IEEE ESPRIT SB SIGHT Group.





Power a Village, Empower Community

IEEE Smart Village (ISV) has grown far beyond its initial aspiration of deploying solar electric systems to the energy deprived.

Now with 15 IEEE Societies on its governing board, ISV's primary mission is to improve livelihoods in underserved communities, by growing local enterprises based on the productive use of any IEEE and other technologies, often on a foundation of renewable energy. ISV does this by developing self-sustaining and scalable enterprises that provide long-lasting benefits to the communities, with IEEE volunteers playing an instrumental role.

Since its inception in 2009, ISV has funded 44 enterprises totaling US\$5.54 million, and impacted the lives of over 2 million* people in Africa, China, Latin America, and South Asia. In 2022 – 2023, ISV committed US\$1.2 million to 19 new enterprises, which will start to show results in the next few years.

ISV's secondary mission is to develop capacity to support its primary mission. ISV is doing this through education programs, conferences, mentorship, networking, digital and print media, and other

activities. The secondary mission is for the benefit of all stakeholders including in-country applicants, volunteers, and ISV and IEEE staff, membership, leadership, and donors.

ISV is run and managed by a dedicated team of passionate volunteers, supported by a half-time IEEE administrative staff position. Volunteer work extends beyond initial technology deployment. IEEE members provide a broad range of support from pre-application to post-contract phases. This plays a critical role in nurturing the sustainability of the enterprises in communities where such capacity is seriously limited. For long-lived impact, this requires volunteer mentoring and monitoring on community engagement, business planning and operation, enterprise governance, etc. Such work is generally perceived to be outside the purview of IEEE expertise, and few humanitarian initiatives provide this level of long-term assistance.

In 2022 – 2023, ISV organized conferences in Africa, China, Latin America, and South Asia, and held student contests and started student centers that contributed to the development of about 1,000 students and young professionals. It started an innovative Vocational Awareness Initiative to expose young teens to hands-on skills, preparing them for an increasingly electrified future to fight climate change. Initial pilots address about 2,000 students, with the long-term vision of reaching across schools in several countries.





The IEEE REACH Program comprises free, interdisciplinary online open educational resources for pre-university educators housed on a single website. Through the lens of history, the program focuses on the role of technology in society. The resources include inquiry-design-based lesson plans; background information; primary and secondary sources; short, engaging videos for the students; and hands-on activities. Everything is fully downloadable, so that it does not need to be streamed in the classroom if there are bandwidth issues. IEEE REACH thereby boosts technology and engineering literacy, as well as soft skills such as critical thinking, attributes that are essential for students to succeed in today's world, and especially in the technology sector. At the same time, it raises students' awareness of and interest in STEM.

REACH was originally developed in the US context, with an understanding that it would also be applicable to the educational systems and career paths in other developed nations. Since 2012, IEEE and UNESCO (Paris) have been collaborating on expanding capacity for science and engineering education in Africa, and in 2020 REACH was brought in to work with the IEEE/UNESCO team, originally by conducting a pilot in Uganda that was extremely successful. Work has continued in parallel on expanding content, expanding the program in the US, and expanding the work in Africa and other areas where education is a humanitarian priority.

As for 2023, the 14,000 site users exceed the 12,000 for 2022. In addition, newsletter subscribers have now exceeded 2,000 for the first time, while maintaining high engagement with a 33% open rate. REACH's

tenth inquiry unit, Information Theory, was launched in 2023.

REACH external presentations and exhibits in North America in 2023 included the Arizona Department of Education, National Council for the Social Studies, and The Council of State Social Studies Specialists. Internal IEEE presentations included IEEE Region 8, IEEE Region 9, IEEE Africon, IEEE Women in Engineering Committee, IEEE Sections Congress, IEEE Education Week, and the IEEE Global Humanitarian Technology Conference.

In 2023, REACH was invited to present in a UNESCO side-session at the eighth annual UN Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals (STI Forum) held in New York City, in May 2023 during the 2023 session of the UN Economic and Social Council (ECOSOC); REACH was invited to exhibit at IEEE AFRICON 2023; and REACH was invited, along with the IEEE/UNESCO team, by UNESCO's Education Sector to participate in an invitation-only "Expert meeting on Learning Sciences," held in October in Paris. In addition, in 2023 REACH began working with volunteers from IEEE Region 9 to explore translating the site into Spanish, which could then serve as a model for other local languages.





In 2023, HTB held a call for project proposals to support IEEE member grassroots projects that utilize technology to address pressing needs of the members' local communities with up to US\$10,000.

This call for proposals received 179 proposals from IEEE members in 23 countries. After a thorough evaluation process involving two rounds of reviews with different teams of volunteers, 35 projects were selected for funding. The projects will take place in 17 countries in four IEEE Regions.

Given HTB's proven experience, in 2023 the HTB Partnerships Ad-Hoc Committee was ready to offer a replicable model for collaborative calls for proposals as an option for working together with Regions, Societies, and other IEEE entities. Holding a call for project proposals with HTB allows other IEEE entities to take advantage of HTB expertise and infrastructure and provide opportunities for their members to conduct humanitarian technology projects.

In conjunction with the IEEE Communications Society (ComSoc), HTB held the "Internet for All" Call for Proposals to address the digital divide. The call for proposals was also made possible by the IEEE Foundation, as the funds awarded were from the donor-supported IEEE SIGHT Fund. Despite this being the first year of the collaboration, 24 proposals were received. After careful consideration, six projects from six different countries were awarded over US\$64,000. ComSoc and HTB have already decided to hold another call for proposals on this topic in 2024.

HTB held a call for proposals with IEEE Region 8 through its Humanitarian Activities Committee

Community Support Program. This funding opportunity was created to support SIGHT Groups (and prospective SIGHT Groups) in Region 8 that want to address local community challenges through creative technological solutions. A similar call for proposals was offered in 2022 and received five submissions. In 2023, 29 proposals were submitted and six were selected to receive up to US\$6,000 to implement their projects.

Finally, HTB also offered a call with the Signal Processing Society (SPS) to support humanitarian technology projects in SPS Chapters that utilize signal processing technologies to address local community challenges. Four projects from India and Malaysia were awarded funding from India and Malaysia; these include a proposed solution for an automatic water distribution irrigation network and an intelligent waste management system on a campus.

All together, HTB received 251 project proposals from 29 countries over the course of the year and awarded over US\$380,000 to the 52 projects selected for funding.



Funded Project Highlights



Argentina

PROJECT: Women Empowerment in a Rural School in the Puerta del Sol Village

DESCRIPTION: IEEE members and student members from the Argentina Section partnered with a rural school in the province of San Luis, Argentina to set up a community garden, cheese production operations, and refrigeration system to empower residents to engage in new income-generating activities. The team enhanced an existing microgrid with a larger battery bank to allow the operation of the water pumping system, established a solar-powered drip irrigation system for the efficient use of water, repaired the school's WiFi panel and antenna, and repaired a refrigerator for a local cheese producer.

Malaysia

PROJECT: Energize the Fishing Village Community Hall with a Rooftop Solar Photovoltaic (PV) System

DESCRIPTION: On Tuba Island, Malaysia, IEEE volunteers installed a solar energy plant to power a local community hall to benefit 400 residents of the community. Tuba Island, nestled near Langkawi Island in Malaysia, harbors a thriving fishing community.

The community hall is off the coast of the island and is accessible by a 15-minute ride from Tuba Island. It serves as a focal point for daily interactions and occasional gatherings, but did not have an existing power supply. Through collaborative efforts and meticulous planning with local state representatives, the project team successfully installed a 4kW solar panel system. This milestone marks a significant step forward, as the villagers now have access to electricity sourced entirely from solar energy. With this renewable energy solution in place, the community hall becomes a beacon



of sustainable progress, allowing residents to fully enjoy its amenities while embracing environmentally friendly practices. The project not only met immediate electricity needs but also contributed to long-term environmental sustainability and resilience.

Overall, the installation of solar panels on the community hall represents a transformative success, addressing critical needs, promoting sustainability, and empowering a remote and underserved community to thrive.

Nigeria

PROJECT: Renewable Energy-Powered Solutions for Umuchie Eziana

DESCRIPTION: IEEE members of the Nigeria Section based this project on the effective utilization of solar energy to improve livelihoods in the community of Umuchie Eziana in Nigeria. The team installed 25 standalone solar streetlight units to improve security and encourage night activities in the community. Also, a solar-powered water borehole scheme (with eight water outlets) was implemented as part of the project to improve access to clean water. Over 600 people are directly benefiting from the project outputs.



Opportunities to Get Involved with IEEE HT

The consortium of IEEE HT programs leverages the strength and reach of the IEEE network to make a difference in local communities around the globe. There are many ways to get involved, including:

- Volunteering time and skills to ongoing initiatives
- Applying for funding to deploy an innovation technology solution that solves a local challenge
- Donating money to the IEEE Foundation to support the work of each program
- Spreading the word about IEEE HT and encouraging others to get involved

Write to at **htb-office@ieee.org** with your ideas to get involved and collaborate, or visit **ieee.org/humanitarian-tech**.

IEEE Humanitarian Technologies Board Members

Lwanga Herbert, Chair

Sampathkumar Veeraraghavan (Immediate Past Chair)

Simay Akar

Katherine August

Peter Clout

Miriam Cunningham

Jing Dong

David Durocher

Mohamed Essaaidi

Stephanie Gillespie

Tim Gitau

Elizabeth Johnston

Darwin Jose Raju

Karen Panetta

Magdalena Salazar Palma

Lucia Pia Torres

Board of Directors Coordinator

Claudio Cañizares, IEEE Director

Professional Staff

Mariela Machado Fantacchiotti

Senior Director, Humanitarian Technology Activities (August 2023 – present)

Julianna Pichardo

Humanitarian Activities & Sustainable Development Manager

Betsy Toland

Finance & Operations Administrator



IEEE ———
Humanitarian
Technologies

445 Hoes Lane, Piscataway, NJ 08854-4141 USA
ieee.org/humanitarian-tech • htb-office@ieee.org

