

2021 IMPACT REPORT



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LETTER FROM THE CEO

Hello from New York,

In 2021, BioLite reached an additional **two million** individuals with clean energy access – that means over **3.6 million people** now have safe, reliable ways to cook, charge, and light their daily lives with BioLite solutions. For context, this is double the reach we achieved in 2020, a compelling indication that our organization is successfully building a self-propelling system of change through our products and distribution.

But scale is just one aspect of impact – quantity is paramount, but so is the quality of the change we are affecting. We are reaching individuals, but are we serving people who didn't have strong existing options? When we reach them, are their lives for the better? According to our partners and third party data, the answer is a resounding **YES**.

In a recent report published by the independent impact measurement company 60 Decibels, **94% of BioLite cookstove customers said their lives had improved because of BioLite**.

More than **85% of all solar systems in** homes in Malawi are from BioLite, a geography that had been previously underserved with one of the lowest electrification rates in sub-Saharan Africa.

Creating solutions that actually change lives is central to our mission and the motivating force behind our team's continual commitment to solving hard problems – and this was especially true in another highly disruptive year like 2021: operations teammates battling supply chain challenges, designers and engineers continuing to develop, prototype, and test in remote capacities, sales and marketing developing mobile and digital solutions to empower our partners and customers, and finance working tirelessly to support the business and help us achieve our commitment to affordable, reliable products for everyone. To the BioLite Team, thank you for your ongoing dedication and good energy.

Inside this report, you'll see the numbers above and more brought to life through a combination of data visualization and storytelling; of big milestones and personal anecdotes. That's the humbling responsibility we have here at BioLite: the continual mission to achieve scale while remembering that true impact happens on the individual level.

To the BioLite community reading this report, thank you for being a part of this journey. We are well on our way to realizing our vision of reaching 20 million people by 2025 and we could not do it without you.

In Good Energy,

Jonathan Cedar

**IMPACT
BY THE
NUMBERS**

GLOBAL IMPACT

PEOPLE ACCESSING CLEANER ENERGY

In 2021, we reached an additional 2 million individuals with clean energy, doubling our reach from 2020. This year over year scale puts us on track to reach our goal of serving 20 million people by 2025.

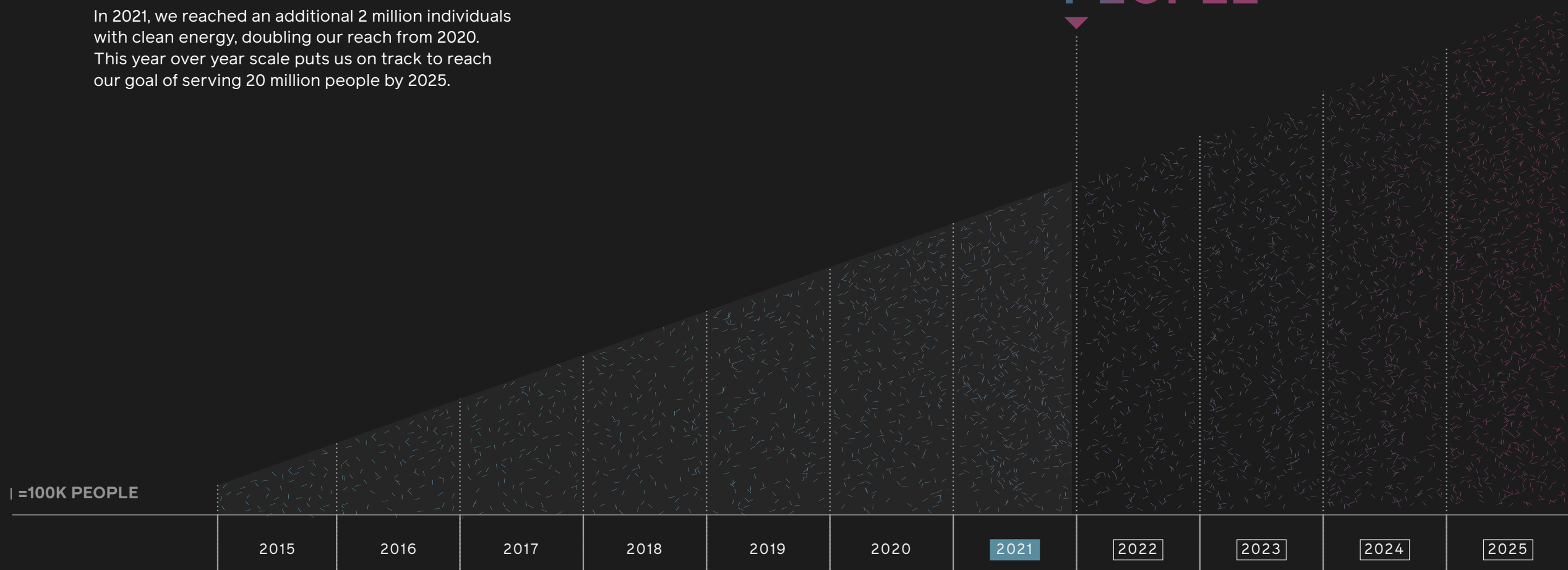
2021 ACTUAL

3.6 M
PEOPLE

2025 GOAL

20 M PEOPLE

| =100K PEOPLE



CLIMATE IMPACT

TONS OF CO₂e OFFSET

◀ **718,964**
TONS

BioLite's clean-burning wood and charcoal stoves dramatically reduce smoke when compared to a traditional open fire. On average, a BioLite stove saves 3 tons of CO₂e per year. Not only does this mean cleaner, healthier homes for our customers, but also a healthier planet for everyone.

FOR PERSPECTIVE

718,964 tons of CO₂e is like taking **155,000 cars** off the road for an entire year.

2017

2018

2019

2020

◀ **2021**

ENERGY IMPACT

INSTALLED ENERGY CAPACITY

This represents the cumulative total of all active BioLite SolarHome 620, 5000, and HomeStove products currently generating usable electricity. This big number translates into small everyday actions like phones staying charged, more hours for studying, running a business, or spending time with family.

► 2021

4,368
KW

► 2020

1,700
KW

► 2019

650
KW

► 2018

434 KW

FINANCIAL IMPACT

FUEL SAVINGS (\$)

These savings takes into account a reduction in wood, charcoal and kerosene. Because our stoves are more efficient than traditional open fires, they require less fuel. The lighting in our SolarHome systems replaces the need for dirty, expensive kerosene lamps. This means our customers spend less time gathering fuel and can pocket those savings.

\$176.86M

2021

FOR PERSPECTIVE

Customers who live below the poverty line are earning less than **\$3.20 a day**. Saving **\$173 annually** using BioLite products is like getting 14% of their income back.



An Expanded CookStove Portfolio

In 2019 Ecozoom became a part of the BioLite Family of Products, expanding our lineup of clean cookstoves available to customers. Pictured here is the Dura, a popular model that delivers efficient burning and cost-savings.

CORPORATE SUSTAINABILITY SUMMARY

BioLite's 2021 carbon footprint analysis reveals some key conclusions and trends. First, use of BioLite's products result in a significant reduction in greenhouse gas emissions compared to emissions produced from BioLite operations. In fact, each ton of CO₂e released into the atmosphere from BioLite operations during 2012-2021 results in a reduction of approximately 19.4 tons CO₂e in emissions through 2021 from the use of cookstoves sold in emerging markets.

Download the full 2021 Sustainability Report at:

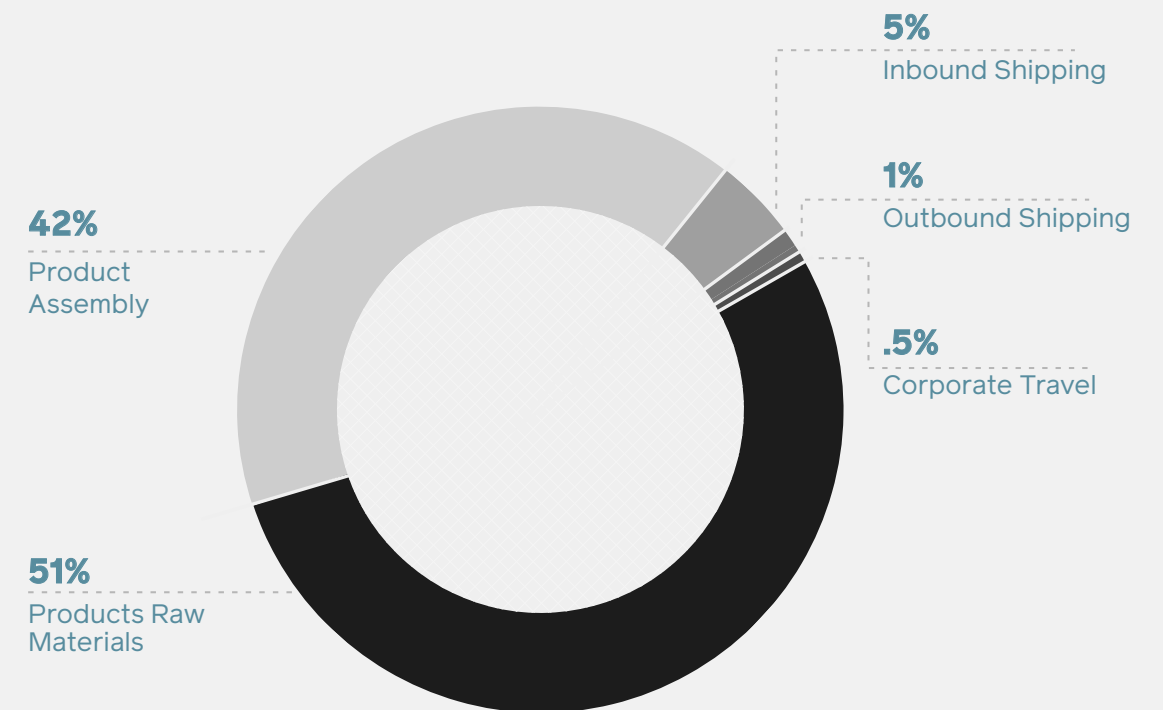


[BioLiteEnergy.com/Impact2021](https://www.bioliteenergy.com/Impact2021)

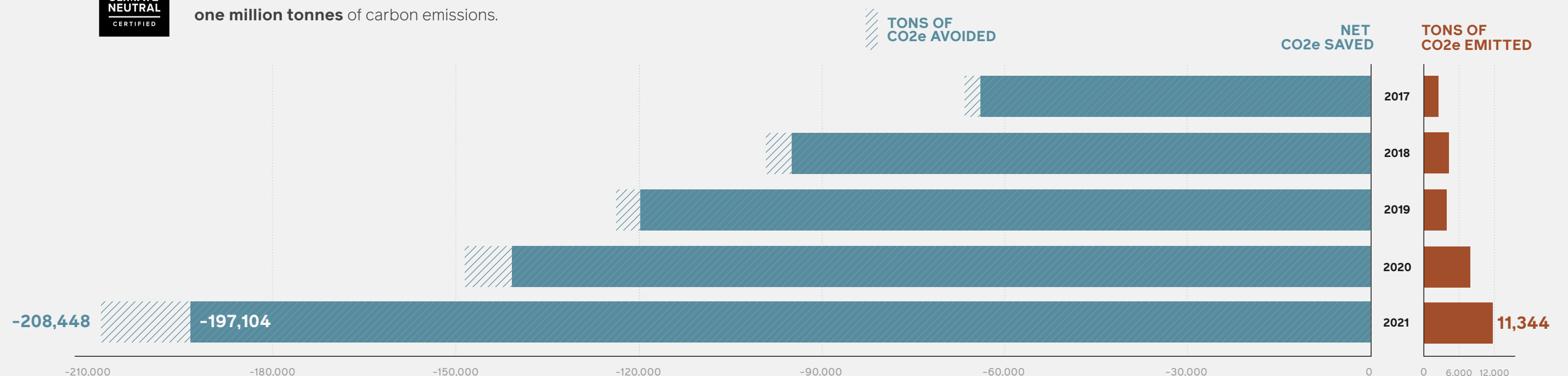


BioLite is proudly **Climate Neutral Certified**, committed to measuring, reducing and offsetting our annual carbon footprint. Collectively in 2021, BioLite and fellow certified brands will eliminate more than **one million tonnes** of carbon emissions.

2021 Emissions By Function



Lifecycle Carbon Impact, Past 5 Years



2021 HIGHLIGHTS

In 2021, BioLite was honored to receive the prestigious **National Design Award** from Cooper Hewitt, the Smithsonian Design Museum. This award celebrates BioLite's role in using the power of design to change the world through its physical consumer products.

Humbled to earn such a recognition, BioLite is especially proud to see this award alongside reports such as the **60 Decibels** CookStove report, a 2021 analysis showing that our products are actually creating the impact they were designed to achieve.



BioLite won the National Design Award in the category of Product Design.



DESIGNING FOR IMPACT

CONFIRMING THE IMPACT

60 Decibels, an end-to-end measurement impact company, conducted an independent survey of BioLite cookstove customers in Kenya in 2021.

As CEO Jonathan Cedar puts it: "If you look at the needs of marginalized users, you can understand the problem space more comprehensively, identifying pain points and ultimately making more universally beneficial products for a whole gamut of customers."

60__decibels

Key takeaways from the 60 Decibels cookstove report

SAVINGS

50%

of customers mention having expenses reduced, 28% report being less stressed, 27% talk about saving time.

QUALITY OF LIFE

94%

of customers said their life had improved because of BioLite, with 55% of all customers reporting it had 'very much improved'.

DIFFERENTIATED

78%

of customers say they could not easily find a 'good alternative' to the BioLite stove, even though 57% were aware of other stoves.

USING CARBON MARKETS TO MAKE STOVES MORE AFFORDABLE

Thanks to the hard work of our combustion and mechanical engineers, BioLite Cookstoves dramatically reduce smoke and require less fuel due to a more efficient burn. This means fewer greenhouse gas emissions released into the atmosphere and fewer trees cut down – as a result, BioLite projects have been registered under The Gold Standard, the United Nations Framework Convention on Climate Change and other governing bodies as a certified carbon-reducing solution and we earn carbon credits for every stove in use.

BioLite is able to sell these credits to organizations, sovereign nations, and other entities seeking to reduce their carbon footprint. The proceeds enable us to directly offset the cost to end-customers, making the stove more affordable to a larger population of those who need it most.

Carbon revenues fund about **40% of the cost** of a charcoal stove...

...which means our customers get a premium product at only **60% of the typical cost.**



JUSTICE, EQUITY, DIVERSITY AND INCLUSION AT BIOLITE

JEDI & Usawa (Equity) Committee Highlights

- Continued engagement with DEI Consultant (Nadia Jones of Culture Cypher) to build a sustainable working group structure for long-term viability of JEDI participation.
- Company-wide Unconscious Bias Training conducted with optional follow-up discussion session.
- Kicked off new Community Conversations programming with presentation and discussion on Ethical Travel.
- Improved medical coverage, expense policy, and transparency around recruitment on Kenya team, work advocated by Usawa committee.

Company Updates and Continued Work

- Launched company-wide Engagement & Inclusion surveys (formerly conducted separately by offices).
- Operations Code of Conduct formally introduced and required from all manufacturing partners and component vendors.
- Continued use of language bias filter and blind screening policy in company recruitment.

Looking ahead to 2022

- Implementing peer and upward feedback program.
- Improved reporting on employee demographics outside of mid-year inclusion survey.
- New JEDI working groups solidified around Trainings, Community Conversations, and Company-Wide Communications.

Representation In Front and Behind The Lens

Building a network of creatives and talent that reflect a more inclusive and representative outdoors. Commitment to minimum 40% of all our marketing library to be developed with diverse partners.



BioLite Annual \$10K Employee Matching Fund

BioLite matches employee donations to organizations our team believes are promoting a more just and equitable world.



Gear To Get Outside

Gear donations made to partner organizations like Latino Outdoors, LatinxHiker and Camping To Connect to facilitate camp outs for first-time outdoor adventurers.




Grantmaking & Fundraising

In Spring 2021, we hosted a matching fundraising event for documentary film Expedition Reclamation (now screening in 2022: [BraveSpaceProject.org](https://bravespaceproject.org)).



STORIES OF IMPACT

ELECTRIFYING MALAWI WITH YELLOW SOLAR

 MALAWI, EAST AFRICA

In 2017 only 11% of the population in Malawi was electrified, one of the lowest energy access rates in the world. As one of the poorest countries in sub-Saharan Africa, Malawi was overlooked and underserved with solar lighting and charging solutions, highlighting a paradox emergent in the world of solar: in an industry dedicated to reaching customers most in need of off-grid energy alternatives, the lowest income households are often left behind – that is, until Yellow Solar decided to do something about it.

Yellow Solar is a company that pairs mobile technology with highly organized sales networks to deliver energy and finance solutions to the poorest households. Seeing mobile devices as a game-changing resource for both sales and affordability, Yellow has a sophisticated technology platform that empowers agents to train up, process their sales, and track their inventory as well as enable customers to participate in PayGo installments so they can complete their purchase over time, all right from their phones.

The end result of this innovative work is a model that substantially reduces costs of distribution, one of the key barriers to operating in lower income geographies. Overcoming this challenge, Yellow was committed to bringing safe, reliable energy to Malawi, they just needed the right product partner to complete the picture.

"It was clear from our first meeting in 2018 that BioLite was interested in building an enduring partnership," says Yellow CEO Mike Heyink, "we knew these were the people we wanted to work with for the long term and our subsequent success together really came down to a perfect product market fit."

That market fit was a combination of affordability, access, and quality. Working together, both Yellow and BioLite found ways to reduce costs, creating viable price-points for the Malawi market; thanks to Yellow's successful training and management of over 1,000 sales agents through their mobile platform, the organization was able to reach

nearly every district in Malawi; and through BioLite's continual commitment to high-performance and durable product development, the customer experience has been overwhelmingly positive:

"I was afraid after my agent had left but I have never had an issue with my solar, it lights my shop till when I close and still has power in the morning for me to listen to radio before the sun is out," says Kateme Brenda, a Yellow Solar customer and BioLite SolarHome 620 user.

Not only does the SolarHome 620 provide multi-area lighting and FM radio, it also charges customers' phones, a critical detail in staying connected to everyday life including the ability to make mobile payment installations towards full ownership of their systems. In addition to customer satisfaction, BioLite's dependability and responsiveness has also contributed to a strong foundation of trust among Yellow agents and teammates, providing confidence in the products they work so hard to sell.

Fast forward to today and more than 85% of all SolarHome solutions installed in Malawi are from BioLite with hundreds of thousands of units providing safe, reliable solar lighting and charging to off-grid households.

BioLite is incredibly proud of our successful partnership with Yellow Solar and we look forward to our continued work of transforming energy access in Malawi as well as venturing into new countries in 2022, helping thousands of households take their first step on the energy ladder.



"Because Biolite products are sellable, easy to use, I have made many sales that got me income to own a motorcycle, I am now looking to own a house

MUKONO SADAT, YELLOW SOLAR AGENT



FINDING PEACE, LEADERSHIP, AND COMMUNITY IN THE OUTDOORS

NEW YORK, UNITED STATES

“When I was growing up, people I knew didn’t go camping.”

This quote comes from Devaughn, a New York City resident who, until recently, had never been on a camping trip or even a day hike.

“The city has a lot of things,” says Devaughn, “At home I’m hearing music, food cooking, cars driving by, people screaming out their windows, but I can’t really go anywhere to escape it.”

Devaughn’s experience is one shared by many people of color living in city surroundings; the intensity and constant stimulation of a dense urban environment can be exhilarating, the buzz of being of a city resident. But when that intensity is paired with a lack of access to green spaces and outdoor settings, it can take a real toll on both mental and physical well-being.

“I always fantasized about being in a quiet place alone,” says Devaughn. Thanks to **Camping to Connect**, he has found that quiet place.

Camping to Connect is a local NYC experiential learning and mentorship program for underserved young men between 12-18 years old from inner-city communities. Their transformative BIPOC-led (Black, Indigenous, and People of Color) mentorship program fosters leadership, brotherhood,

and inclusion in the outdoors. Since 2017, Camping to Connect has directly impacted over 700 young lives through 70+ workshops, career panels, day hikes, and camping experiences. They organize camping trips to places such as the Delaware Water Gap, Harriman State Park, and even Governor’s Island. Camping to Connect’s president, Manny Alamonte, aspires to “create a paradigm shift in how BIPOC young men see themselves, changing the narrative of who “belongs” in outdoor spaces, and addressing the issue of nature deficiency in urban youth.”

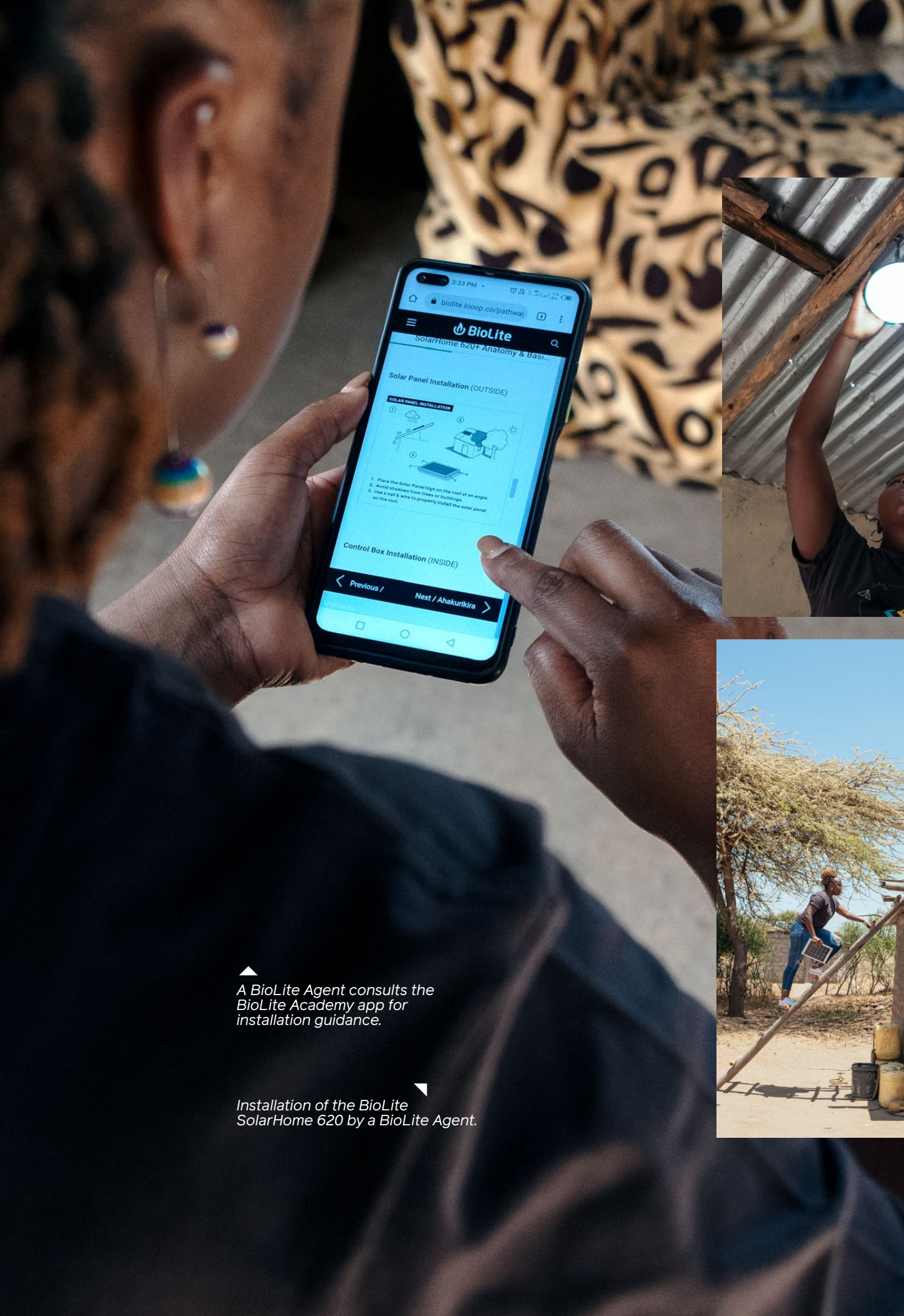
Distance to a park, lack of transportation, and building a gear library are some of the greatest functional barriers to entry that disproportionately impact BIPOC communities in the ability to experience time in nature. BioLite has been proud to support Camping to Connect since 2018, supplying the organization with grants and gear to make trips more safe, enjoyable, and connected. From headlamps to light the way after the sun goes down to smokeless fire pits to gather around after a long day, BioLite seeks to help participants feel more at home in the outdoors, especially during those critical first-time experiences. With positive trips under their belt, many participants go on to share their growing love of nature with their family and friends, and make it a priority to build it into their future.

Yelitza, mother to one of the participants, recalls going on a hike with her son after he attended the program. “It was my first hike ever. It was

challenging at times, but mostly serene and beautiful. My interest increased a lot when Jonathan started hiking and camping with Camping to Connect. Nature has an incredible way of calming your thoughts to truly be in the moment.” Additionally, a former participant from 2018, Ryan. V, has gone on to become a leader for the program. He says “I feel like being around nature, my mind is more at peace.”

To learn more about Camping to Connect and how you can help support, visit their [website](#) and check out the [trailer for their upcoming film Wood Hood](#) which will be premiering in May 2022 at the Mountainfilm Festival in Telluride, Colorado.





▲ A BioLite Agent consults the BioLite Academy app for installation guidance.

▼ Installation of the BioLite SolarHome 620 by a BioLite Agent.



TRAINING AT SCALE WITH BIOLITE ACADEMY

📍 NAIROBI, KENYA

BioLite's work in Emerging Markets has always centered around strong relationships with distribution partners who, in turn, have their own last-mile agents to support sales and installation for BioLite customers. With the potential for thousands of agents to be representing BioLite across 20+ countries, the challenge arose: how do we create an engaging, consistent training experience that enables an agent in Rwanda and an agent in Kenya to feel like they were in the same exact training session? With this question in mind, we created BioLite Academy.

BioLite Academy is our self-paced, mobile-enabled learning platform launched in 2021 that quickly educates and on-boards our partners on the sales, distribution, and installation of our products. Like so much of BioLite's work in emerging markets, it is deeply rooted in understanding the end-user and his or her environment. In building this particular solution, the end user was our agent and we needed to uncover the real-world capacity and constraints of their daily life in the field.

You Can't Do Mobile Without Remembering Data

Our agents aren't sitting behind a desk all day – they're constantly on the road in remote locations and the phones in their pockets are our best chance of reaching them with useful information. That said, the connectivity to deliver that information became a major consideration in our platform and content development. With wi-fi being an unpredictable resource, we had to design a system that required very low data so costs of interacting with BioLite Academy were

minimal. This directly informed how we built chapter content, utilizing refined text and imagery instead of data-consuming video, audio, or GIFs.

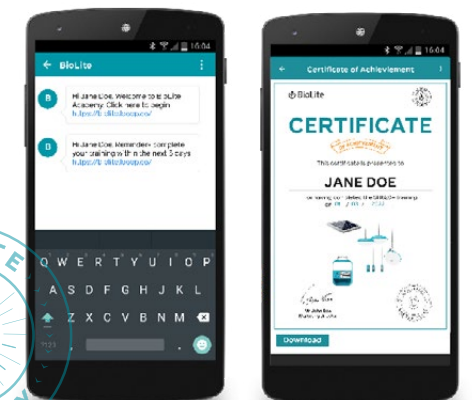
Self Guided, But With A Nudge

While designing the curriculum itself, we knew the information had to be easy to digest and retainable. We proceeded to break the content into small segments, enabling our agents to build training sessions into their personalized schedules and go at their own pace. Knowing distractions and disruptions are a part of daily life, we integrated an automatic SMS system to gently remind agents at strategic times to continue where they last left off and ultimately complete their certification.

Retention, Certification, and Validation

Each chapter requires small levels of interaction (such as scrolling and proceeding to the next screen) to ensure agents are reading all the way through. At the end of each chapter, agents are tested with a short quiz to ensure they have retained the most important information. When all coursework is finished, agents receive a certificate of completion delivered straight to their phones, now equipped with knowledge that benefits both them and their customers.

With hundreds of agents now having completed BioLite Academy, BioLite is proud to report an incredibly high satisfaction rate among agents, with 98% finding the program useful. As one agent put it in his feedback, "All the information was very clear and understood. Congratulations BioLite Academy"



“My family and neighbors keep asking me where they can get a TV like this. I am constantly recommending my BioLite solar.”

BENDETTA, BIOLITE SOLARHOME 620 & SOLARHOME 5000 CUSTOMER

▲ Bendetta getting a demonstration of her new SolarHome 5000 from a BioLite Agent.

Bendetta and her family watching their new solar-powered television. ►

FEELING PROUD AND CONNECTED WITH BIOLITE SOLARHOME

📍 MACHAKOS, KENYA

Two hours outside of Nairobi, Bendetta lives with her family and farms maize on a large plot of land. Mother to six children and grandmother to six grandchildren, her days are busy and full: starting at 6am she thanks God for another healthy day and goes on to accomplish a seemingly never-ending list of tasks for her farm, her family, and her home. While her routine is packed with cleaning, cow-milking, food prep, and farming, she never feels alone thanks to her BioLite SolarHome 5000 and 620 systems.

With its easy-hang setup, Bendetta is able to remove her SolarHome 620 console from her home and bring it with her to the farm to play radio while she is working her crops. Her favorite channel? The Christian Gospel where she can sing along.

When she returns home, she finds it filled with her children and neighbors, often gathered around to watch local programming on her solar-powered television. “My children used to go to other people’s homes who had a TV and would be gone for many hours,” Says Benedetta, “but now they can stay home with me to watch and it gives me peace to know they are safe.”

In addition to feeling more connected with her family, Bendetta feels more connected to local news and information that impacts her livelihood and her community. Prior to owning her radio and TV systems, her only source of news came from a local women’s group – now she is able to supplement that information with reports from a Kikamba-language news channel that speaks about her local area as well as broader events in Kenya. She feels proud to host her family and neighbors alike to watch these programs all together.



Bendetta’s experience is exactly the type of customer journey that BioLite expandable solar home systems are designed for; initially starting with the entry-level SolarHome 620, Bendetta was able to take her first step onto the energy ladder and replace expensive, inefficient paraffin lighting with power from the sun. Gone were the days her children would miss out on schoolwork because they couldn’t afford enough paraffin to keep the lights going at night – instead, the nights stayed bright and Bendetta began to save, eventually working her way up to her next purchase, the SolarHome 5000, bringing even more power and lighting into her home in addition to the television that has transformed her evenings.

“My family and neighbors keep asking me where they can get a TV like this,” says Bendetta happily. “I am constantly recommending my BioLite solar.”



LOOKING AHEAD TO 2022

2022 marks 10 years of BioLite products out in the world, changing the way people adventure and live away from the grid.

As we look ahead to another ambitious year of growth across new geographies and categories, we are grateful to the BioLite community for helping us grow from a game-changing stove startup to an end-to-end energy company.

Thank you for helping us build a future that is bright for everyone.



◀ Co-founders Jonathan Cedar and Alec Drummond with early BioLite prototypes of CampStove and HomeStove models



▲ Today, hundreds of thousands of customers across 40 countries use BioLite headlamps, lanterns, panels, and stoves to power their outdoor adventure

► Millions of individuals are using SolarHome systems and BioLite Cookstove solutions to cook, charge, and light daily life safely and reliably.





For more information on the methods and calculations presented, view our full 2021 Environmental Sustainability Report at [BioLiteEnergy.com/Impact2021](https://www.bioliteenergy.com/Impact2021).