Top Climate and Energy Proposals

April 2020
About This Collection

Lever for Change is excited to present an opportunity to fund the top climate and energy proposals from the second round of 100&Change, the John D. and Catherine T. MacArthur Foundation’s $100 million global competition. 100&Change will fund a single proposal that will make measurable progress toward solving a significant problem. Each proposal was assessed using four criteria: impactful, evidence-based, feasible, and durable, and was rigorously evaluated, undergoing MacArthur’s initial administrative review, a Peer-to-Peer review, an evaluation by an external panel of judges, and a technical review by specialists whose expertise was matched to the project. The organizations featured in this collection are among 100&Change’s Top100 which are the highest-scoring proposals selected out of more than 750 vetted applications submitted from over 85 countries. Lever for Change’s Bold Solutions Network currently showcases the Top100, and will be periodically updated to include other highly-rated, vetted proposals that emerge from Lever for Change competitions. This collection of top proposals provides donors with an innovative approach to finding and funding effective organizations working to protect the environment and build climate resilience for the future.

Navigating this Collection

Below is a summary of ways to engage with the selected proposals in this collection:

- Top applicants submitted 2-page factsheets to summarize their projects and promote their work. Under each proposal listed on the Table of Contents, you can click on the page numbers to jump directly to the selected 2-page factsheet.

- Additionally, organizations submitted 90-second videos to describe their projects. You can view each video by clicking on the “project video” link under each proposal, or you can watch a playlist of all the project videos by clicking the link at the top of the Table of Contents page.

- To view a summary of information that was captured during the application process, you can visit the project’s Bold Solutions Network online profile page, which is also linked under each project in the Table of Contents.

Next Steps

These organizations are ready to solve critical problems and are seeking resources to make it happen. Donors who are interested in providing significant financial support to Bold Solutions Network proposals should contact Dana Rice, Vice President of Philanthropy, at ddrice@leverforchange.macfound.org.

Learn More

If there is a particular project you are interested in learning more about, we’d be happy to provide supplemental information and analyses to allow you to dig deeper into the proposal. We can also create additional curated lists if you are interested in exploring top proposals in another issue area.

Connect with Bold Solutions Network Organizations

We are happy to help broker connections to the organizations featured in this collection or any of the organizations you see on the Bold Solutions Network.

Support Bold Solutions Network Proposals

If there is a particular proposal you are ready to fund, we can answer questions you may have about how to best support the project and/or organization.
To view a video playlist of the proposals in the order that they appear in this booklet, please click here.

Please note, proposal order is alphabetical by organization; not reflective of ranking.

Climate Policy Initiative
Global Innovation Lab for Climate Finance: Driving a Sustainable Economy
View factsheet on pages 4-5

Massachusetts Institute of Technology
Reinventing Climate Change Adaptation for Bangladesh and the World
View factsheet on pages 8-9

Feeding America
Food Rescue to Feed Hungry People and Protect the Environment
View factsheet on pages 6-7

New Energy Nexus
25x25: Ending Energy Poverty Faster
View factsheet on pages 12-13

MSI-US
Amplifying Women's Power and Leadership to Build Climate Resilience
View factsheet on pages 10-11

Oceans Network Canada
Solid Carbon- A Climate Mitigation Partnership Advancing Stable Negative Emissions
View factsheet on pages 14-15
BACKGROUND

One of this century’s biggest challenges is achieving economic growth that lifts people out of poverty while dramatically reducing environmental harm. To avert major and irreversible consequences of climate change - which disproportionately hurt the world’s poorest - we must reduce greenhouse gas emissions by 80% by 2050.

Technologies, businesses, and development models already exist that can address this challenge but they require trillions of dollars to scale and achieve economy-wide transformation. Many of the measures underpinning this transition, including energy efficiency, renewable energy, sustainable transport, climate-smart agriculture, and curbing deforestation, face specific barriers to attracting investment. And while climate investment is increasing, it falls far short of global needs under a 1.5 °C scenario. The annual average tracked finance for climate change mitigation and adaptation grew 25% in 2017-18, reaching $579 billion (CPI 2019). However, estimates of the investment required to achieve the low-carbon transition range from $1.6 trillion to $3.8 trillion annually, for supply-side energy system investments alone (IPCC 2018).

DRIVING SUSTAINABLE INVESTMENT

Established in 2014, the Global Innovation Lab for Climate Finance (the Lab) is a network of some of the world’s largest investors that identifies, develops, and launches transformative and sustainable financial solutions and businesses.

Each year through a highly-competitive open call, the Lab selects the most promising sustainable finance ideas to tackle some of the most difficult sustainable development challenges and provides an unparalleled program to drive ideas from concept to reality.

The selected ideas receive guidance and support from the Lab Members, high-level leaders from both the public and private sectors, who offer their expertise, political capital, and financial capital. We also give proponents extensive technical support, in-kind resources and investor visibility to accelerate their idea and build credibility.

In five years, the Lab has launched 41 initiatives that have mobilized $2.07 billion, representing a leverage ratio of $200 for every $1 funders have invested in the Lab Secretariat. We want to scale this proven approach to more regions and sectors to rapidly address one of the most pressing issues of our time.
THE OPPORTUNITY

The Lab seeks $10 million to support the development of 40 new sustainable finance instruments. They have the potential to collectively mobilize $2 billion in investments for climate change mitigation and adaptation in developing countries.

<table>
<thead>
<tr>
<th>GRANT SUPPORT</th>
<th>$1mn</th>
<th>$5mn</th>
<th>$10mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUSTAINABLE FINANCE INSTRUMENTS</td>
<td>4</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>POTENTIAL CATALYZED INVESTMENT</td>
<td>$200mn</td>
<td>$1bn</td>
<td>$2bn</td>
</tr>
</tbody>
</table>

GLOBAL AND REGIONAL SYNERGIES

The Lab has focused extensively on building networks and solutions within the emerging economies vulnerable to climate change. Regional programs have been active in India, since 2015, and Brazil, since 2016. There is also an increasing presence in Sub-Saharan countries.

THE LAB IN ACTION

The initiatives below were incubated by the Lab and are now having major impacts around the world, solving key financing challenges and mobilizing millions in investment for mitigation and adaptation projects.

CLIMATE INVESTOR ONE
A financing facility that raised $850mn for early-stage development of renewable energy projects in developing countries, including a 116MW rooftop solar project and a 42MW run-of-river hydro project.

THE WATER FINANCING FACILITY
A bond to mobilize domestic investment into climate compatible water sector projects through the local market, to shift the way the water sector is being financed in order to increase global access to water and sanitation. It has secured $15.4mn in investment from seven sources.

LONG-TERM FX RISK MANAGEMENT
A mechanism to address currency and interest rate risk – helping overcome major barriers to investment in renewable energy and climate-relevant projects in developing countries. It has hedged $250mn of climate-related investment in 11 countries.

ENERGY SAVINGS INSURANCE
A product for projected energy savings for efficiency projects undertaken by small and medium enterprises. Energy Savings Insurance now has projects in seven Latin American countries that will target thousands of businesses.

CRAFT
Climate Resilience and Adaptation Finance and Technology Transfer Facility (CRAFT) is the first commercial investment vehicle to focus on technologies and solutions for climate adaptation. It reached first close at more than $75mn.

GREEN FIDC
A tool that allows clean energy and energy efficiency projects to secure financing based on future cash flows from energy sales. Two pilots are underway to finance up to 750 MW of distributed and community solar systems in Brazil.
TRANSFORMING FOOD RESCUE TO END HUNGER AND MITIGATE CLIMATE CHANGE

Climate change threatens food security, yet food waste is responsible for 8% of global emissions. In America, 72 billion pounds of food are wasted each year, while 37 million Americans struggle with hunger. Reducing food waste can mitigate climate change and feed hungry people but change at scale requires dramatic acceleration of food rescue.

OUR GOAL
RESCUE 5 BILLION POUNDS OF FOOD ANNUALLY

Feeding America rescues food that would otherwise go to waste, putting it to its highest and best use: feeding people struggling with hunger. We will transform our supply chain to elevate our food rescue from 3.5 billion pounds annually to 5 billion pounds by 2025. Through this increase, we will capture more food, more effectively, and abate harmful carbon emissions in the process. Our solution has three critical components:

- Create regional food-sourcing hubs to rescue nutritious foods with high carbon intensity, especially protein and dairy.
- Transform our technology platform to allow sustained, streamlined planning, rescue and delivery of food.
- Distribute food more equitably, by strengthening our client data tracking platform Service Insights to identify the most vulnerable populations and optimizing food delivery through innovative interventions like online or mobile pantries.

OUR VISION
A HUNGER-FREE AMERICA & A MAJOR CLIMATE CHANGE SOLUTION

<table>
<thead>
<tr>
<th>TODAY</th>
<th>2025 GOAL</th>
<th>2030 GOAL</th>
<th>2050 CUMULATIVE TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5B pounds food rescue</td>
<td>5B pounds food rescue</td>
<td>7B pounds food rescue</td>
<td>200B pounds food rescue</td>
</tr>
<tr>
<td>Carbon footprint 11.3B kg CO2 per year</td>
<td>Carbon footprint 18B kg CO2 per year</td>
<td>Carbon footprint 25.5B kg CO2 per year</td>
<td>Carbon footprint 750B kg CO2</td>
</tr>
<tr>
<td>Prevent emissions equivalent of 2.4M cars</td>
<td>Prevent emissions equivalent of more than 3.8M cars</td>
<td>Prevent emissions equivalent of 5.4M cars</td>
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</tr>
</tbody>
</table>

If food waste were a country, it would be the THIRD HIGHEST emitter after the U.S. and China.

FEBRUARY 2020

Lever For Change
MOBILIZING THE POWER OF OUR NETWORK

Feeding America has a national network of 200 food banks and 60,000 agencies. Our strength comes from the strong network of relationships each food bank builds with its community. The key to transforming our food rescue operation is connecting these community networks together, to remove boundaries and limitations and share food rescue opportunities across our national footprint.

These connections will elevate our impact from local success into national-scale change, revolutionizing our mission to end hunger.

INVESTING IN OUR WORK

Feeding America is building a consortium of partners who will not only invest in this project, but who can help us sharpen our vision by leveraging their knowledge and spheres of influence. We seek total funding of $100 million to deliver on our vision, comprised of opportunities to fund at varying levels:

$1 MILLION
Support food access programs for children, seniors, and working families

$5 MILLION
To reach the most vulnerable people through Service Insights, our data analytics program (15 food banks)

$10 MILLION
To rescue more food through MealConnect, our digital food rescue app (100 food banks)

FEEDING AMERICA IS UNIQUELY POSITIONED TO END HUNGER & MITIGATE CLIMATE CHANGE

NATIONAL SCALE
Operate in every county and Congressional district in the U.S.

PRIVATE SECTOR PARTNERSHIPS
Deep relationships with food processors, agribusiness, manufacturers and retailers, including Walmart, General Mills, Starbucks and other Fortune 100 companies

LEADERSHIP
Our Food Security Council, co-chaired by the CEOs of Kroger and Procter & Gamble, provides strategic expertise on leveraging technology to double our food rescue

GLOBAL INFLUENCE
Feeding America leads the upward trajectory of global food waste rescue as a member of the Global Foodbanking Network, responsible for 60% of total food rescued by its 30 member countries

For more information, please contact Nikki Drevich, Managing Director of Foundation Relations at ndrevich@feedingamerica.org or +1 (202) 836 - 9128.

YOUR INVESTMENT IN ACTION

@feedingamerica | facebook.com/feedingamerica

www.feedingamerica.org
Reinventing Climate Change Adaptation

BRAC AND MIT WILL EMPOWER COMMUNITIES TO BETTER PLAN FOR AND RESPOND TO CLIMATE CHANGE

BANGLADESH – A Nexus of Climate Risk

- Bangladesh is experiencing extreme heat waves, rising seas, pervasive flooding, and storms
- Estimates suggest that by 2050, climate change will displace 1 in 7 people in Bangladesh
- The growing crisis requires a new, proactive approach to climate resilience

Our Solution is CREWSnet: The Climate Resilience Early Warning System Network

Early warning and decision support systems are proven tools for saving lives and reducing suffering. CREWSnet combines state-of-the-art climate and socioeconomic forecasting techniques with resilience technologies and strategies to empower communities, diversify livelihoods, and save lives.

CREWSnet creates a comprehensive framework for predicting climate impact and creating scalable resilience strategies for communities worldwide:

- **Next-Generation Forecasting & Information Sharing**: Community-scale forecasting that enables a fundamental change in climate resilience, empowering families to interpret local climatic changes and plan for their futures
- **Enabling Proactive Adaptation**: Community-based resilience options that span agriculture, livelihoods, infrastructure, education, and financing
- **Driving Community Action**: Highly-localized forecasting that enables communities to tailor their own decisions about relocation
- **Scaling Worldwide**: Iterative refinement of CREWSnet forecasting, information sharing, and resilience technologies that creates a solution that is readily adaptable for global use
- **CREWSnet Growth**: A global open-source capability, to be implemented with partners around the world

February 2020
CREWSnet: Predicting Impacts, Designing Strategies, and Enabling Resilience

The CREWSnet system will significantly enhance forecasting resolution of local climate impacts, enabling community-based decisions in resiliency planning. This approach uses predictions from state-of-the-art modeling techniques to present options for proactive adaptation. By applying an iterative, feedback-based process that incorporates current local climate change conditions, community indicators, and resiliency actions, CREWSnet will enable these communities to adopt a pragmatic adaptation path that is tailored to their specific needs in the agriculture, economic, healthcare, education, and infrastructure sectors until a sustainable solution is achieved.

Partnering for Impact

BRAC and MIT are seeking forward-thinking and impact-driven partners motivated to apply next-generation technologies to climate change adaptation, urban development, and other community empowerment needs. With your support of $5 – $10 million, BRAC and MIT will initially focus on Satkhira, located in southwestern Bangladesh and one of the world's most climate and socially vulnerable regions. MIT will integrate its innovative, localized forecasting, information sharing, and resilience technologies into BRAC's holistic humanitarian, climate, and urban development programs. With local collaboration, the BRAC-MIT team will continuously monitor and refine resilience programs and innovations to build sustainable systems. The ultimate goal is to engage public, private, and non-profit partners in other high-risk geographies to scale these solutions across Bangladesh and the world.

For further discussions, please contact:
Ashley Toombs, Director of External Affairs at BRAC USA (ashley@bracusa.org)
John Aldridge, Assistant Leader of the HA/DR Systems Group at MIT Lincoln Laboratory (aldridgej@ll.mit.edu)
Dr. Elfatih Eltahir, Professor of Hydrology and Climate at MIT (eltahir@mit.edu)

For more information, please visit the CREWSnet website at crewsnet.mit.edu.
Amplifying women’s power and leadership to build climate resilience

February 2020

Background

We are in a climate crisis, and it is not gender neutral. Women and girls bear the brunt of the impact. In rural Kenya, Malawi and Nigeria, where agriculture is the primary livelihood and women are the primary food producers, the impact of the climate crisis is acute. They face pervasive inequalities in accessing health care—contraception in particular; credit; farming supplies; and land for food production. Women are also excluded from their rightful place at decision-making tables.

We estimate that in these three countries:

- 15 million farm families are in peril because of poverty, hunger and reliance on sporadic rainfall for water
- 13 million women who don’t want to get pregnant can’t access contraception

MSI knows that women will change the world for the better if they get the chance to control their own lives.

That’s why we’re partnering with One Acre Fund, Population Media Center and Global Fund for Women to amplify the power, strength and skills of rural women in Kenya, Malawi and Nigeria so that they can build more food-secure, climate-resilient communities.

Our 100&Change Bold Solution

Collaborating across sectors our team will:

- Expand access to comprehensive sexual and reproductive health information and services for 1.3 million people.
- Improve the lives of 2.1 million smallholder farmers through access to credit, farm inputs and training on climate-smart farming techniques.
- Elevate self-led women’s groups to secure rights related to reproductive, economic and climate justice.
- Harness the power of storytelling, reaching millions of people, to normalize knowledge, behaviors and practices that advance community resilience.
Opportunities to Invest

Globally, only .01 percent of grant dollars supports projects addressing both climate change and women’s rights despite the fact that Project Drawdown, the world’s leading source of climate solutions, shows that women- and girl-centered approaches are among the 100 best solutions to reverse global warming. With additional funding, our team can scale up this approach and reach many more vulnerable communities:

- With a $1 million investment, we will focus resources in one country to maximize impact.
- With a $5 or $10 million investment, we will support activities in all three focus countries to:
  - Build capacity by training the public sector to deliver reproductive health services for the long term.
  - Expand access to climate-smart products, such as solar lights, through One Acre Fund’s distribution network—which distributed 250,000 solar devices in 2019—to promote sustainable rural electrification.
  - Increase support for frontline gender justice movements to build deep and lasting power to build resilient communities.
  - Expand capacity in storytelling for behavior change through hands-on workshops, creating a scalable approach to dramatic content aimed at changing social behavior.

Additional Farmers and Contraceptive Users Reached by Investment Level

<table>
<thead>
<tr>
<th>Investment Level</th>
<th>Additional Farmers</th>
<th>Additional Contraceptive Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 million</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$5 million</td>
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</tr>
<tr>
<td>$10 million</td>
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The Dream Team

Our team brings together best in class organizations in a holistic, rights-based, integrated solution to support female smallholder farmers to build resilient families, farms and communities.

100&Change Wise Head Panel Reviewers called us “The Dream Team” and agree: the impact will be far-reaching, multi-generational and widely scalable.

Our team has:

- Extensive service delivery and farmer networks
- Deep infrastructure in rural areas
- Strong alliances with frontline women’s groups
- Proven communication platforms to connect remote communities
- Track records of catalyzing and scaling systemic change

MSI, the team lead, provides high-quality contraception and safe abortion services to 14 million people per year across 37 countries, travelling the last mile to reach even the most rural and under-served communities.

One Acre Fund reaches more than 1 million smallholder farmers with the resources they need to grow their way out of hunger and poverty and build climate resilience. Within one season, farmers typically increase their income by 50% or more.

Global Fund for Women has fueled powerful movements for gender justice as well as climate and economic justice for more than 30 years, impacting the lives of hundreds of thousands of people in 2018 alone.

Population Media Center has broadcast in more than 50 countries, supporting over 500 million people to live healthier, more just lives.

Contact Us

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Director, Foundation Relations, MSI US
Meghan.Blake@mariestopes.org
www.msi-us.org
+1 202-601-2825

1,500,000
1,000,000
500,000
0
$1 million $5 million $10 million
# of additional contraceptive users
# of additional farmers
25x25: Ending Energy Poverty Faster

The 25x25 Electricity Access Acceleration Collaborative will work to bring decentralized renewable energy to 25 emerging markets, ending energy poverty in those markets by 2025.

What is Energy Poverty?
Nearly a billion people are trapped in energy poverty in Africa and Asia, mostly living in rural and peri-urban areas. Energy poverty—the lack of affordable, safe and reliable energy—forces people to use kerosene, diesel and other expensive, hazardous fossil fuels. Energy poverty marginalizes people and limits the ability of entire generations to achieve their potential.

The Problem
Despite a global focus on Sustainable Development Goal (SDG) 7—ensuring access to affordable, reliable, sustainable and modern energy—energy poverty remains one of the most intractable problems today. If the majority of donors, investors and governments continue to invest in centralized power plants and long-distance transmission that can take a decade to build, then millions will remain trapped in energy poverty.

The Choice
Decentralized renewable energy (DRE), including mini-grids and home solar systems, directly engages energy impoverished individuals in creating their own power. From Bangladesh to Zimbabwe, energy poor consumers have proven by the millions that they can—and will—opt for DRE solutions when given the choice and the right political and financial support in place.

The Solution
Achievement of SDG7 demands rapid, coordinated, collective action. To accelerate universal access, we must transform legacy energy frameworks and build new ecosystems in energy-poor countries that leverage political will, activism and renewable technology by engaging local change-makers.
25x25: Ending Energy Poverty Faster

**The Beneficiaries**
The ultimate beneficiaries of 25x25’s solution will be individuals who gain access to affordable, clean and reliable power, enabling them to transform their lives. Beneficiaries will also include governments and the wider population, who will benefit from a growing economy, creation of new jobs and opportunities for growth. In the longer term, the work of 25x25 will transform the energy sector in 25 countries, with the ultimate goal of achieving 100% electrification, and transforming millions of the energy poor into millions of energy-rich.

**The Goal**
The 25x25 Collaborative’s ultimate goal is to accelerate the achievement of SDG7, ensuring access for all to affordable, reliable, and sustainable energy by 2030. In addition to our 100&Change plans, our collaborative has plans for effectively using a range of investments, as described below.

<table>
<thead>
<tr>
<th>Amount</th>
<th>Action</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 Million</td>
<td>1 country + lessons learned + fundraising for additional countries (1-2 years)</td>
<td>Replication of results from Sierra Leone pilot; compilation of lessons</td>
</tr>
<tr>
<td>$5 Million</td>
<td>Hub + 2 countries + fundraising (2-3 years)</td>
<td>Test regional hub approach; replication of pilot in 2+ new markets</td>
</tr>
<tr>
<td>$10 Million</td>
<td>3-5 countries + 2 hubs + campaign in a box + fundraising (2-5 years)</td>
<td>Replication of pilot and hub approaches; Toolkit creation for other target countries to use and replicate</td>
</tr>
</tbody>
</table>

**The 25x25 Collaborative**
The 25x25 Electricity Access Acceleration Collaborative (25x25) is a group of organizations – Duke University, Hivos, New Energy Nexus, Practical Action and Power for All, with the support of SNV and the United Nations Industrial Development Organization (UNIDO) - committed to accelerating universal electricity access with decentralized renewable energy.

Website: [https://www.powerforall.org/campaigns/25x25](https://www.powerforall.org/campaigns/25x25)
Contact: development@newenergynexus.com and info@powerforall.org
Date of publication: February 2020
Solid Carbon: A Negative Emissions Solution

We have to cut emissions, but that’s not enough
Attitudes about emissions reduction and clean technology are changing around the world, yet greenhouse gas emissions continue to increase to record levels. Even with progress made towards new alternatives to fossil fuels, climate change demands advanced technologies that will permanently and safely sequester carbon dioxide.

We need negative emission technologies
Negative emission technologies like Solid Carbon need to be deployed on a global scale. Solid Carbon combines direct air capture of carbon dioxide with its permanent removal by pumping the gas into rock beneath the ocean floor—all powered with renewable energy. This technology has huge potential to scale globally to reverse the course of massive volumes of emissions that are not being reversed quickly enough.

Solid Carbon can remove emissions and safely secure them forever
Solid Carbon will demonstrate the vast capacity for capture of carbon dioxide and its permanent removal safely beneath the ocean floor. Science has proven that carbon dioxide chemically reacts rapidly with basalt and turns it into rock. The Solid Carbon solution is ocean-based because greater than 90% of the basalt on Earth is in the ocean, providing us with a vast reservoir for irreversible removal of carbon dioxide.

How Solid Carbon works:

1. Capture carbon dioxide
   Pull CO₂ out of the atmosphere.

2. Pump below seafloor
   Pump CO₂ down through the water column into the sub seafloor.

3. Turn into rock
   In a short amount of time, the CO₂ becomes rock.
We can put CO₂ back where it belongs:
Solid Carbon brings six proven technologies together with cutting edge expertise to create a fully-integrated system, targeting wide-spread industrial deployment by 2040.

### Project funding accelerates

<table>
<thead>
<tr>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1M</td>
<td>Implement a stakeholder engagement plan and add research capability on CO₂ sequestration below the seafloor.</td>
</tr>
<tr>
<td>$5M</td>
<td>Development and testing of field instruments, sensors, and remote surveys to validate safe, long-term removal into sub-seafloor basalt reservoirs.</td>
</tr>
<tr>
<td>$10M</td>
<td>Co-fund a field demonstration for future large-scale production and global deployment.</td>
</tr>
</tbody>
</table>

### Project timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2025</td>
<td>Initial demonstration on site.</td>
</tr>
<tr>
<td>2030</td>
<td>Design prototype and manufacturing process.</td>
</tr>
<tr>
<td>2035</td>
<td>Begin manufacturing and operations.</td>
</tr>
<tr>
<td>2040</td>
<td>Wide-scale deployment.</td>
</tr>
</tbody>
</table>

### International experts, scientists and researchers

Led by Ocean Networks Canada, the project team comprises U.S. and Canadian researchers and industry partners including:

- City of Port Alberni
- Columbia University
- University of Victoria
- Institute for Integrated Energy Systems
- DP Group Limited
- National Consortium for Indigenous Economic Development
- Lengkeek Vessel Engineering Inc.
- Pacific Institute for Climate Solutions
- Stratford Managers Corporation
On an island viewed as a natural paradise, one in three people dies prematurely from pollution.

More than malnutrition or any communicable disease, pollution is claiming tens of thousands of lives each year, accounting for three times more deaths than HIV, tuberculosis, and malaria combined. The Malagasy have rallied to end this crisis by partnering with the Solve Pollution Network to implement the world’s first Health and Pollution Action Plan. This five-year plan enables us to reduce exposure to pollution and improve health, changing the course of Madagascar’s future and leading the way for other countries to solve pollution.

OUTCOMES

<table>
<thead>
<tr>
<th>PREVENT PREMATURE DEATH</th>
<th>PROTECT BIODIVERSITY</th>
<th>REDUCE CLIMATE IMPACTS</th>
<th>REVEAL CAUSES OF ILLNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 in 3</td>
<td>80%</td>
<td></td>
<td></td>
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</table>

1 in 3 people in Madagascar dies early from pollution.

80% of species in Madagascar exist nowhere else.

Pollution is the root of the climate crisis.

The links between pollution and disease are not well understood.

HEALTH AND POLLUTION ACTION PLAN - MADAGASCAR

POLLUTION ACTION

**Indoor Air**
Replace charcoal-burning stoves with clean fuels and technology

**Outdoor Air**
Monitor and reduce emissions from vehicles, industry, and forest fires

**Soil and Water**
Identify sources causing harm and clean up contaminated soil and water

ENDURING IMPACT

**Knowledge and Education**
Reveal chemical and biological links between pollution and health; educate the public and workforce

**Resources and Networks**
Develop commercial and institutional infrastructure to protect the environment and improve health care

**Policies and Processes**
Partner with government and civil society to implement effective and sustainable approaches
SOLVING POLLUTION, STARTING HERE

This comprehensive program scales with investment. In five years:

- **$5M** implements our systems approach in the worst-affected zone, improving health for at least **half a million people**
- **$10M** expands our reach to several communities, improving health for at least **1.1 million people**
- **$100M** improves the health of approximately **13 million people** - half the population of Madagascar - and builds coalitions to sustain our mission

With support from people and organizations committed to saving lives and protecting natural resources, our work is expanding across the globe in partnership with countries that are already preparing to solve pollution.

Nine other countries have initiated Health and Pollution Action Plans. Dozens more, including India and Azerbaijan, have requested assistance.

Work in Madagascar begins the process of solving pollution worldwide through grassroots commitment and expert partnership.

solvepollution.iu.edu

Document creation date: January 15, 2020
A Global Paradox

Energy Access

Lack of Energy Access sustains the vicious cycle of poverty.

Our energy system is vast in scope (extracting > 570 Exajoules per year) but remains persistent in its indifference to the basic needs of a 1/3 third of humanity.

- **2.5 Billion** with no clean cooking fuels, of which
- **1.2 Billion** lack electricity contributing to an annual mortality impact of **4 Million** (exceeding the death toll of Malaria, AIDS and TB combined)

Climate Threat

Currently, **70 Million** refugees are in camps worldwide fleeing conflict

Climate threat and natural disasters increase pressures on migration and displacement of people

Our Values

We believe neither accident of birth, nor circumstances beyond one’s control – arising from conflict or climate disasters – should condemn our fellow citizens to a life of despair and deprivations.

We believe access to energy is the critical enabler; a ‘hand-up’ for economic empowerment.

Our Goals

Bring hope and opportunity to the displaced and the dispossessed

- Break the cycle of poverty
- Community-scale energy systems for social value creation
- Sustain the environment
- Enhance healthy well-being

Our Plan

Accelerate adoption of clean energy solutions

- Aim for global scalability
- Build human capacity for positive change

PROJECT SPECIFICS

Impacts > 0.5 Million lives

Provide electricity and energy services for clean cooking, water, education, health, mobility

Align technology with social innovations: educational, environmental, cultural goals

Games as learning tools for children, skills development and micro enterprises

PARTNERSHIPS FOR SUCCESS

University of Waterloo (Canada) and Karlsruhe Institute of Technology (Germany) has **150** members, **50** institutions in **30** countries

A global consortium of partners to amplify, animate and advance all UN Sustainable Development Goals in a holistic manner through SDG # 7

ASU, MIT, UC Berkeley (USA), Oxford (UK), KIT, IASS, iiDevelopment GmbH (Germany), KPLC, Africa Mini-Grid Dev (Kenya), Mandulis Energy (Uganda), TTM (Spain), USAID, TESFA-iig (Switzerland), EEUA (India), Clean Tech Hub (Nigeria), NPC (South Africa), Energy Action Partners (Malaysia), WGSI (Canada)
To reach >1 Billion with no access, investment required is ~$500 Billion/10 years

MacArthur success transforms our ideas into a ‘global extension service’ for cost effective clean energy investment decisions.

Success: Impacts > 500,000 people
Deliverables as promised in application
- Deliver household electricity needs at Tier 3 level (1 kWh, 200 W, 8 hrs)
- Validate platform for cost effective energy solutions in humanitarian contexts and unique geographies
- Full scale energy services support for water, cooking, education, health, mobility
- Multiples sites (Uganda and Kenya)

Scope: Focus local to national and global partnerships:
- Village pilots scaled to national strategies
- Reduced barriers for SMEs
- Service Value Maps for global scale
- 4- sites Targeted countries (Uganda and Kenya)

Impacts:
- > 300,000 people

Deliverables:
- ‘Fit-for-Purpose’ clean energy projects for business and national plans
- Each site (100 kWh Battery storage, 100 kW solar PV, 4 EV trikes +1 EV tractor, 10,000 TLUDs, 400 HITCH learning platforms + critical electricity for health clinics

Scope: Focus ‘Peer-to-Peer’ learning:
- Build capacity for community scale clean energy solutions (electricity + heat)
- Bridges between host communities and refugee camps (Youth, women, minorities)
- Two sites

Impacts:
- > 200,000 people

Deliverables:
- Expand scale (learning platforms; low cost clean cooking, waste biomass, e-trikes +1e-tractor, 100 kWh battery storage)
- Create diverse partnerships + Small medium enterprises (SMEs)
- Skills training for Entrepreneurs

Scope: Focus on vulnerable women and children:
- Education & Health
- Micro-enterprises for women
- One site only (Adjumani, Uganda)

Impacts:
- > 50,000 people

Deliverables:
- HITCH Learning Platform & Games for Children for distant, dispersed communities, 100 units
- Clean Cooking TLUD Stoves 10,000 units
- Emergency Light ‘Solar Suitcases’ 10 units

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Clean Cooking (Top-Lit Up-Draft ‘TLUD’ Stoves)

University of Waterloo
Visit www.Solutions.LeverforChange.org to explore more Bold Solutions. To learn more about Lever for Change or inquire about our services, please visit www.LeverforChange.org or contact us directly at info@leverforchange.org.