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ENERGY

Communiqué

Power to change the world

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Waterloo Global Science Initiative

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Acknowledgements

Matt Jordan
Program Manager, Global Lighting and Energy Access Partnership, CLASP

Joachim Knebel
Head of Mechanical and Electrical Engineering, Karlsruhe Institute of Technology

Jose Daniel Lara
PhD Student, Renewable & Appropriate Energy Laboratory, UC Berkeley

Aaron Leopold
Global Energy Advocate, Practical Action

Daria Malyutina
Cost Engineer, OutSmart Independent Wind Asset Experts

Chiedza Mazaiwana
Power For All Campaign Manager, Practical Action Zimbabwe

Fred McBagonluri
Dean of Engineering, Ashesi University

Eli Mitchell-Larson
Director of Operations, SunFarmer

Nigel Moore
Manager, Global Programs and Initiatives, Waterloo Institute for Sustainable Energy

Michelle Myers
BA & BSc Student, University of Alberta

Kavita Myles
Senior Programme Coordinator, Integrated Sustainable Energy and Ecological Development Association

Djimingue Nanasta
Regional Coordinator for West Africa, International Network for Sustainable Energy

Jatin Nathwani
Professor, Ontario Research Chair and Executive Director, Waterloo Institute for Sustainable Energy, University of Waterloo

Crystal Okudo
Transaction Advisory Associate, GreenMax Capital Group

Aline Pacheco Pelucio
Technical Advisor to the Secretary of the Environment, State of São Paulo, Brazil

Aneri Patel
Executive Director, ENVenture

Ortwin Renn
Scientific Director, Institute for Advanced Sustainability Studies

Fredy Rios Silva
PhD Student, Karlsruhe Institute of Technology

Yuri Rugai Marinho
Director, Eccon Soluções Ambientais

Judith Sayers
Strategic Advisor, Sayers Strategic Advice

Taha Selim Ustun
Assistant Professor, Electrical and Computer Engineering, Carnegie Mellon University

Vagish Sharma
Project Manager, National Skill Development Corporation

Karl Skare
Director of New Business Initiatives, d.light design

Eryn Stewart
Program Manager, 20/20 Catalysts Program, Lumos Energy

Laura Sundblad
Capacity Building Specialist, Arc Finance

Billy Yarro
West Africa Energy Lead, Practical Action

Hisham Zerriffi
Associate Professor and Ivan Head South/North Research Chair, Liu Institute for Global Issues, University of British Columbia
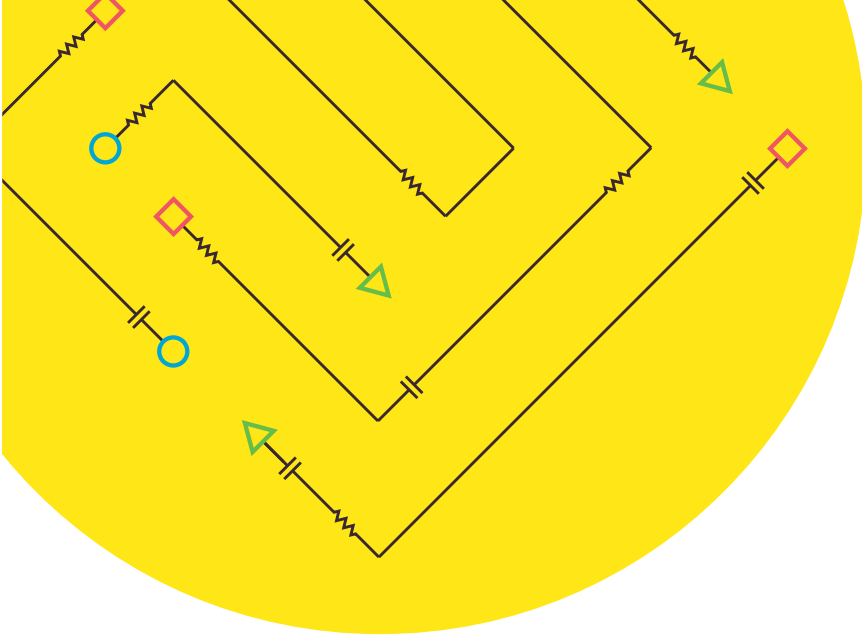
OpenAccess Energy Communiqué

Overview

We are living in a moment of great economic and social opportunity. Emerging technological, social and business innovations mean that it is now possible for more than 2 billion people to gain access to the energy resources that will radically transform their well-being through improvements in education, business, agriculture, healthcare and other spheres.

Although there are opportunities in opening access to many forms of energy, it is access to electricity that will bring the most substantive change to the largest number of people. The application of increasingly low-cost, modular renewable energy technologies to this emerging market also offers an opportunity to mitigate the effects of climate change and enable energy-poor communities to become hubs of transformative leadership in the global shift towards decarbonization.

Realizing action on universal electricity access is desirable on moral grounds, but it is also poised to create unprecedented business and economic opportunities. However, if we are to create the right conditions for over two billion people to transform their lives and opportunities through the power of electricity, we will need to understand, refine and develop current ideas, and create new partnerships that can catalyze breakthrough innovations and forge novel, creative alliances. This has been the aim of WGSI's OpenAccess Energy Summit.

At the Summit, an international, multigenerational team of researchers, practitioners, representatives of energy-poor communities, lawyers, government advisors and financiers assembled to identify high-leverage actions that could bring about universal electricity access. As a result of our discussions, we recommend implementing a number of strategies. Taken together they will create an enabling environment that allows the life-changing benefits of energy access to be realized and in turn, the economies of nations and integrity of our natural environment to be safeguarded. We lay out these strategies here and follow them with the steps we are already taking.

We hope you will want to join us.

Strategies

1. Create a supportive financial environment

We urgently need national frameworks to create financial models and partnerships that allow risks taken by entrepreneurs and innovators operating in the electricity access space to be shared by a wider set of bodies, such as governments, banks, community co-operatives, end-users and philanthropic organizations. Project practitioners should have access to training and mentorship so they can develop innovative business models and present a strong case to prospective investors. On the institutional side, we can create forums that will engender familiarity with and trust in energy access approaches and technologies, aiding an equitable evaluation of investment opportunities. There are opportunities to innovate in this space by, for example, agreeing on basic principles for financial models; developing training modules for transaction advisors interested in this space; and bundling similar transactions so as to increase attractiveness by reducing risks and transaction costs.

2. Allow a diversity of business models the opportunity to flourish

The diversity of market segments within the energy access space dictates that the provision of truly universal energy access will involve creating an environment where we let "a thousand flowers bloom" and experiment with myriad unique business models. This can happen if we create conditions, in terms of time horizons, spread of financial risk, stability of the regulatory environment and availability of capital investment, where new business models have a chance to evolve and adapt. Collaboration and co-creation with end-users during the development of energy access implementation models will push new service providers to provide maximal value rather than simply push end products in order to create quick profits.

3. Establish energy equity

Currently, a fractured policy and regulatory environment for energy access privileges grid based electricity. However, off-grid electrification solutions will play a necessary role in bringing energy to the places where it is needed most. A billion people have no access to electricity, and the International Energy Agency projects that almost half of these needs will need to be met by off-grid technology - an enormous market opportunity. Despite this, there is lack of political will and incentive to implement energy access programmes in energy-poor communities. We suggest that national governments and energy regulators adopt a set of guidelines and principles that allow them to ensure equity of access within a market based system and establish a coherent regulatory environment that 'levels the energy planning field' to allow innovative off-grid energy access solutions to reach their full potential. Implementation is envisioned through the development of a watchdog body (see below).

4. Ensure energy accountability

We recommend the creation of a body of experts, practitioners, and decision-makers to facilitate the formulation of approaches and actions that ensure investments in energy infrastructure are more responsive to the needs of energy poor communities. Despite a multitude of commitments to and action on universalizing access to modern energy services, there is an alarming lack of commitment by key actors such as decision-makers and planners to ensuring this access is equitable and just. This group could form under the umbrella of an existing organization.

5. Network energy-poor communities

Energy-poor communities have expressed a strong desire to establish connections with each other that will allow them to take active ownership of their energy future. A network linking energy poor communities locally, nationally and globally can connect community leaders, enhancing their access to ideas, programmes, researchers and technologies. Through the collaboration of a growing number of communities in the network, they can leverage greater financial, regulatory and technology resources. The result is a leadership role for these communities where they can develop their energy resources in a way that aligns with their cultural values, for which there appears to be a clear and urgent desire, especially in indigenous communities.

6. Create energy solutions with optimal value and impact

Energy access programmes can provide services of life-changing value to the end-user. However, energy-poor communities have often been provided with 'solutions' that do not reflect their individual and collective needs in a way that generates sustained buy-in and drives further demand. We envision an approach to energy access that places end-user value at the heart of global efforts, and as a first principle in the minds of all stakeholders. We recommend the uptake and expansion of three solutions. One involves bringing together community development practitioners across the energy access landscape. Advocacy organizations such as Power For All can compile and share case studies of best practices for product and community needs assessments that are driven by the principle of optimizing for end-user value. A second solution involves the expansion and re-casting of previous energy access awareness-raising campaigns to allow energy-poor communities to determine in a more collaborative fashion what energy services and products would be of the most value to the communities in question. The third solution is a radical overhaul of technology research, as discussed immediately below.

7. Embed energy research in energy-poor communities

Even now, technologies that enable low-cost electricity access in remote communities are maturing quickly. However, technology research institutions will be better equipped to deliver on the value principle if they radically scale opportunities for academic and practical exchange that allow for extended periods of cooperation on product/system development in consultation, co-creation and collaboration with end-user communities, while respecting the autonomy of these communities. This will result in the creation of energy access solutions that are appropriate in terms of functionality, longevity and robustness, ease of use, regulatory compliance, maintenance requirements and cost - making them attractive to investors, entrepreneurs and financiers.

8. Make energy education available and appropriate

There should be a common framing of energy education principles for students, decision-makers and the general public wherever they are in the world and whatever their energy access situation. This will allow energy-poor communities to raise their own leaders, owners, engineers, entrepreneurs and informed users of energy access solutions. Energy incubators and entrepreneurial ecosystems must be established in close proximity to energy-poor areas that they intend to transform. Well-structured education and skill-building resources will create demand for, and supply of, self-generated, self-sustaining, community or citizen-owned modern energy services.

Conclusions

As a result of the WGSI Summit team's work, we have already instigated a number of actions. For example, a working group of engineers associated with the team is working towards the creation of open-source, modular "plug-and-play" micro-grid solution technologies; financiers are developing new frameworks for investment, processes for developing business models and training for entrepreneurs; members of energy-poor communities are establishing connections that will enable them to share resources and action pathways; a cluster group is establishing the requirements for innovation ecosystems to thrive; a working group is drafting and collecting signatures towards a letter of intent to be sent to the United Nations' Sustainable Energy for All group, a measure to ensure we will working in alignment with all interested groups.

And this is only the beginning. Over the next few months we will consolidate our progress by creating a Blueprint document that digs deep into this territory, and by commencing a phase of impact activities that will create lasting and effective partnerships with like-minded organizations, facilitate exemplary practice and establish new opportunities for energy-poor communities. As we forge ahead with this project, we look forward to collaborations with the many stakeholders who will help turn this opportunity into a transformation.

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