



THE
SUSTAINABLE ENERGY FOR ALL
CHARRETTES
AMSTERDAM, NETHERLANDS, 18-20 JUNE 2019

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**2019 SEforALL
CHARRETTES
REPORT**

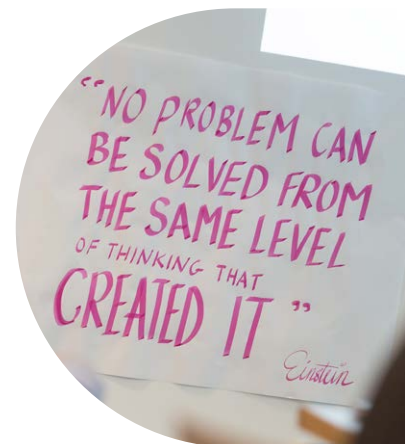


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FOREWORD



We have little more than a decade to achieve Sustainable Development Goal 7 (SDG7)—affordable, reliable, sustainable and modern energy for all. But progress is not moving at the scale and speed needed to make this goal a reality.

Existing approaches to energy access are not working well enough. Governments, businesses and NGOs all recognize and express the importance of bringing energy access to underserved groups, but action lags behind words.

We should not keep doing the same things, expecting different results. Understanding what needs to change and building partnerships to shift approaches to ensure universal access to electricity and clean cooking was the impetus for the Sustainable Energy for All (SEforALL) Charrettes. We created an event where the goal was to spark disruptive solutions. We eschewed keynote speeches and expert panels. Instead, participants were invited based on their ability to contribute new perspectives and a willingness to roll up their sleeves for two days of design-thinking.

We had no planned outcomes. We put our trust in the combined creativity, wisdom and experience of the participants. If potential solutions emerged, we wouldn't know if they would be consequential with a clear path to implementation. We took a risk. And we think it paid off.

As you will read in the coming pages, four charrettes were designed to address specific impediments to SDG7, and for each one, participants generated multiple disruptive solutions.

I am struck by both the depth and breadth of participants' thinking. The diversity within each charrette was clearly an advantage. Participants approached their designated topics from different angles, leading to comprehensive and cohesive solution sets. Nevertheless, each individual solution is rigorous, identifying concrete steps and the stakeholders needed to drive them. You will see several common themes across the solutions. First, we need bottom-up thinking to ensure precise needs are better met and to inform market participants and policy makers. We need to build collaborative platforms that allow different stakeholders to come together and have access to the same body of evidence for decision-making. Such platforms can help us overcome fragmentation in funding, so that markets can grow at speed and scale. We also need to view energy as a public good that provides the means for achieving other development priorities.

I encourage you to review each of the proposed solutions carefully. Executing each of them will require commitments from a much larger group than those who were assembled in Amsterdam for the charrettes. Be inspired by the proposed ideas and consider how your knowledge and resources might contribute to their development. Join in. With your help, we can go further and faster in bringing sustainable energy to all.



Rachel Kyte

Special Representative of the UN Secretary-General and
Chief Executive Officer of Sustainable Energy for All



EXECUTIVE SUMMARY

Over two intensive days in June, Sustainable Energy for All (SEforALL) brought together a diverse group of individuals to generate new ideas to help achieve Sustainable Development Goal 7 (SDG7) to ensure access to affordable, reliable, sustainable and modern energy for all by 2030. In four concurrent charrettes, participants used a design-thinking approach to address specific issues inhibiting the speed and scale needed to achieve access to electricity and to clean cooking. There were three mantras that guided the 2019 SEforALL Charrettes: be disruptive, be experimental and be visionary. This report provides the context for this approach and highlights the solutions presented at the end of the two days.

Each charrette group focused their efforts on one of four areas of inquiry, with the goal of each to generate one or more disruptive solutions and an

initial plan for implementation by the end of day two. All four accomplished that, with a range of comprehensive solutions presented.

Clean Cooking Charrette: What is required to create a sustainable, investable, private sector-led market for fuels for clean cooking?

This charrette centered on the issue of market viability and the widespread deployment of clean cooking solutions to reach the 2.9 billion people on the planet who currently do not have access. The solutions conceived include:

- Clean Cooking Market Catalyst, which seeks to align donors on a common vision and approach to prove the viability of and scale the clean cooking market.

- Clean Cooking Government Challenge Fund, which would incentivize governments to enable clean cooking by tackling policy and commitment barriers.
- The Next Generation Solutions Data Platform, which would provide an open, accurate and timely data platform to drive the decisions of investors, enterprises and governments to allocate resources and funding to viable and scalable solutions.

Data and Evidence Charrette: *How do we improve the data and evidence on who and where they are, what they need, and what is working and why in order to improve decision-making and speed progress?*

This charrette addressed the issues of how to identify, collect and utilize the right data for both the public and private sectors in order to drive the decision-making to scale up electrification. The solutions conceived include:

- Fulfilling Data Needs, which would focus on data collection that aligns the needs of delivery stakeholders with an informed view of the electricity user.
- Data Collection and Management, which would integrate different data sources into a single platform validated by peer-review and crowdsourcing.
- Disseminating Evidence, which would provide decision-makers with evidence and impact options for the systemic value of universal access to quality electricity.

Bridging the Gap Charrette: *What is required to bridge the gap between supply and demand for appropriate finance for electricity access in those countries with the largest energy access deficits—i.e. the high-impact countries (HICs)—to meet SDG7?*

The charrette explored instruments that could help bridge the gap between supply and demand for electricity access finance. The solutions conceived include:

- DFIs for Universal Energy Access, which would prioritize “development” in development finance in-

stitutions (DFIs) through an operational partnership focusing on the electrification target of SDG7.

- Energy Access for 100 Million People, which is envisioned as \$1 billion of first-loss capital showcased through an online platform and leveraging additional sources of capital.
- Domestic Finance for Energy Access, proposed as the Renewable Energy Access to Local (REAL) Finance Accelerators, which would mobilize domestic sources of finance for energy entrepreneurs.

Last Mile Charrette: *What changes are necessary within the finance sector (including development finance) to increase risk appetite to fund market-based last-mile electricity access?*

The priority of this charrette was on how to electrify those last-mile communities that won't be reached by business-as-usual approaches due to income, remoteness or social exclusion. The solutions conceived include:

- Last Mile First, which is premised on the notion that access to electricity is a public good and on country commitments to redirect fossil fuel subsidies to a Last Mile Service Fund.
- Leave No School or Clinic Behind, which would provide adequate and reliable electricity to power critical services for public health and education facilities.
- Mini-Grid Finance Platform Association, which seeks to expand the mini-grid financial product offering and close information gaps through improved coordination and knowledge sharing among mini-grid developers.

These proposed solutions will continue to be developed over the coming weeks and months by charrette participants and with support from SEforALL, but a broader network of partners will be needed to move them forward to implementation. This report highlights the opportunities for others to join these efforts and to contribute to achieving sustainable energy for all.



INTRODUCTION



António Luís Guerra Nunes Mexia,
 Chair of the SEforALL Administrative Board,
 CEO of Energias de Portugal (EDP).

The global community is not on track to achieve Sustainable Development Goal 7 (SDG7) to ensure access to affordable, reliable, sustainable and modern energy for all by 2030—as evidenced by *Tracking SDG7: The Energy Progress Report 2019*. Notably, 840 million people around the world still do not have access to electricity and 2.9 billion lack clean cooking solutions.

Recognizing that you cannot keep doing the same thing and expect different results, Sustainable Energy for All (SEforALL) held a set of charrettes in Amsterdam, Netherlands from 18-20 June 2019 to identify impactful but pragmatic solutions to accelerate progress on SDG7. Designed as intensive and collaborative working sessions, the charrettes brought together diverse groups of participants to look at issues in new ways, to challenge the status quo and generate new ideas in the areas of access to electricity and clean cooking.

This was not a typical conference or workshop. The SEforALL Charrettes were purposefully designed to produce 'disruptive solutions' for issues identified as inhibiting the speed and scale of progress needed to achieve SDG7. Four charrettes took place in parallel, with each group focusing their efforts on one of four areas of inquiry.

CHARRETTES QUESTIONS FOR INQUIRY

Clean Cooking: *What is required to create a sustainable, investable, private sector-led market for fuels for clean cooking?*

Data and Evidence: *While there is progress in securing electricity access, some countries which account for the majority of the 840 million people without access risk being left behind. How do we improve the data and evidence on who and where they are, what they need, and what is working and why in order to improve decision-making and speed progress?*

Bridging the Gap: *What is required to bridge the gap between supply and demand for appropriate finance for electricity access in high-impact countries to meet SDG7?*

Last Mile: *What changes are necessary within the finance sector (including development finance) to increase risk appetite to fund market-based last mile electricity access?*

Careful preparation was a key ingredient for the charrettes. A concept note and detailed background material for each of the four charrettes were provided to participants a few weeks in advance, followed by a video conference to further prepare participants and set expectations for the sessions. This preparation ensured participants arrived in Amsterdam with a shared knowledge base in addition to their own individual expertise, knowledge and perspective.

The intensive two-day sessions followed a design-thinking approach with professional facilitators leading each of the four groups. Each charrette also had a visual facilitator to create in real time graphic representations of the ideas generated. The approach was meant to tease out creativity and collective insights. Participants were forced out of their comfort zone, needing to reconcile diverging views and specializations within their groups for the sake of converging on the most impactful solutions. There were three mantras that guided the charrettes: be disruptive, be experimental and be visionary.

The challenge presented to participants in each charrette was to generate one or two disruptive solutions to their respective questions by the end of day two, along with initial action plans for implementation. While a general structure was common to all four of the charrettes, each followed a unique course during the two days to come up with their solutions.

This report provides highlights of the four charrettes, the context for their design and the solutions presented at the end of the two days. Engagement by charrette participants is expected to continue to take these solutions forward over the coming weeks and months, but support from a broader network of partners will be needed. Crucially, this report provides a view to those who were not in attendance in Amsterdam of the range of opportunities available to help implement these 'disruptive solutions' that will help bring sustainable energy to all.

The charrettes took place at the Eye Filmmuseum in Amsterdam. They were conducted under Chatham House Rule.



CLEAN COOKING CHARRETTE

QUESTION FOR INQUIRY

What is required to create a sustainable, investable, private sector-led market for fuels for clean cooking?

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THE ISSUE

According to the *2019 Tracking SDG7: The Energy Progress Report*, an estimated 2.9 billion people—two out of five people on the planet—do not have access to clean cooking solutions. Most of these people live in 20 high-impact countries across Asia and Sub-Saharan Africa.

Lack of access to clean cooking has significant adverse health consequences for end users and serious environmental impacts through depletion of finite biomass reserves and air pollution. In 2018, the World Health Organization estimated that approximately four million premature deaths per year result from exposure to household air pollution from cooking with solid fuels, of which 54 percent are among women and children. Climate-damaging emissions from traditional cooking represent 2 percent of global emissions, equivalent to those of the entire aviation industry.

Transitioning to cleaner fuels for cooking promises positive socioeconomic development outcomes and the opportunity for global progress against SDGs,

including those related to sustainable energy, improved health and well-being, gender equality, and climate action, among others.

Notwithstanding the potential benefits of clean cooking, data from *Energizing Finance: Understanding the Landscape 2018* reveal that finance to enable deployment of clean cooking solutions globally remains a major challenge. Tracked financial commitments for access to residential clean cooking solutions declined from an average of \$32 million per year in 2013-14 to \$30 million in 2015-16. This contrasts with the estimated \$4.4 billion annual investment required by 2030 to address the lack of access to clean cooking solutions for affected populations—a figure that does not include fuel costs or infrastructure investment, such as for storage or distribution. International finance represented at least 92 percent of total tracked financing commitments for clean cooking solutions in 2015-16, with 69 percent flowing from the public sector, nearly all of which was committed in the form of grants. Together, these figures indicate the market for clean cooking is far from commercially viable.

The Clean Cooking charrette centered on this issue of market viability. Participants were asked to envisage disruptive solutions that would overcome several existing, interrelated challenges to the widespread deployment of clean cooking solutions. One of these was the issue of affordability: there is significant experience with, and evidence of, a high inability and unwillingness to pay for clean fuels and appliances. For example, in Sub-Saharan Africa, roughly 50 percent of households rely on the free collection of biomass to meet their cooking fuel needs. Consumer behavior was another theme that participants probed, recognizing that clean cooking solutions must match customer needs to ensure adoption. An underlying question within this charrette was how to build foundations of data and evidence that would underpin market development and investment.

Participants in this charrette also explored questions such as how policy settings can support transitioning populations from traditional to cleaner cooking solutions and what business model, technology and financial innovation are required to extend financing available to move this market beyond grants to concessional and ultimately commercial finance.

DISRUPTIVE SOLUTIONS

Given the scale of the problem—2.9 billion people without clean cooking access—this charrette began with a set of three-year goals to help focus the thinking of participants:

1. 75 percent of national governments in Sub-Saharan Africa, Central and South Asia Countries to have RISE (Regulatory Indicators for Sustainable Energy) scores of 70 or higher (RISE 2018)¹
2. Increase the financial commitments to clean cooking solutions to not less than 75 percent of the \$ 4.4 billion per annum estimated to achieve universal energy access (for a target of \$ 3.3 billion), with not less than 50 percent of that total committed to clean fuels within three years
3. Increase household demand for clean fuels and technologies by three percent each year from 2020 to 2030.

¹RISE is a set of indicators to help compare national policy and regulatory frameworks for sustainable energy. It assesses countries' policy and regulatory support for each of the three pillars of sustainable energy—access to modern energy, energy efficiency, and renewable energy.



DISRUPTIVE SOLUTION 1

THE CLEAN COOKING MARKET CATALYST (CCMC)

Context: There is simply not enough money flowing into the clean cooking sector. The money that is coming in is extremely fragmented, originating from a variety of donors with very different timelines and impact objectives. Meanwhile, the money that is being deployed is not going, for the most part, towards clean solutions such as biogas digestors and improved biomass cookstoves. There are approximately 15-20 entities that are very commercially focused, that have strong potential to bring their products to scale and to bring clean fuels and technologies to the market. However, these entities need more capital to break even, to begin to scale up and to have major demonstrable impact.

Solution Concept: The CCMC will seek to align donors on a common vision and approach to prove the viability and scale of the clean cooking market. The CCMC is envisioned as a \$1 billion, grant-funded platform

that will offer a suite of financial products across the development and finance continuum of clean cooking, offering quick decision-making and a high-risk tolerance. This solution seeks to address the fragmentation and inefficiency of current donor funded programs and projects. With a prioritization of "clean" fuels, the platform would offer the following products:

- a. Equity for 15-20 companies that are languishing in the 'valley of death' to demonstrate scalability and create confidence in the sector (e.g., up to \$20 million per company in grants as equity/concessional loans)
- b. Catalytic window for new business models and technology solutions (e.g., up to \$500k per innovative solution)
- c. Results-based financing (RBF) window, paying for performance on social, health and gender impacts
- d. Debt fund for consumer finance/working capital, with a possible guarantee window.

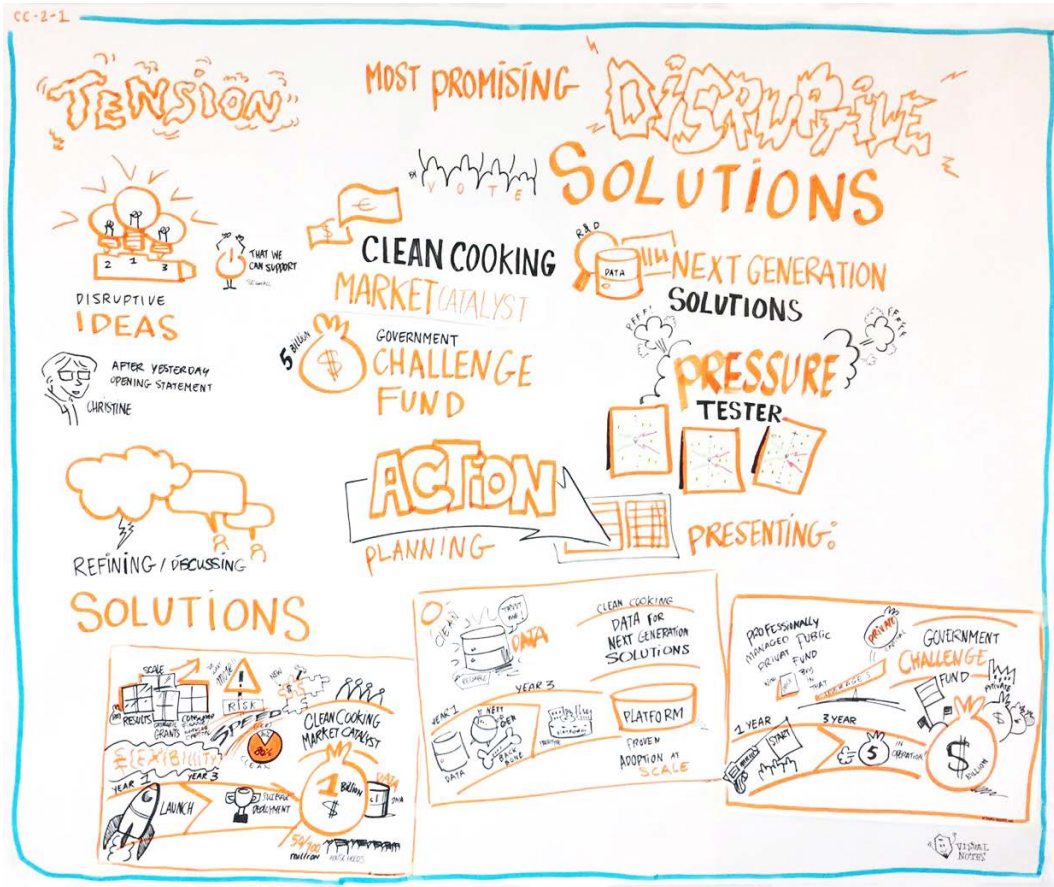




DISRUPTIVE SOLUTION 2
THE CLEAN COOKING GOVERNMENT CHALLENGE FUND

Context: The lack of clear and strong government prioritization of clean cooking is consistently cited as a major barrier to the acceleration of solutions. National targets, supportive fiscal and regulatory policies and their enforcement, access to finance, commitment of domestic resources, and broad public campaigns emphasizing the health and climate benefits of clean cooking are all required to create a market that can attract private investment. If the government creates a stable environment for investors to do business, then conventional finance and financial markets are more likely to be willing to follow and scale up.

Solution Concept: The Clean Cooking Government Challenge Fund will incentivize governments to “enable” clean cooking, tackling policy and commitment barriers. Envisioned as a \$5 billion blended finance vehicle, the fund would be a professionally managed public/private fund that would provide investment, at favorable rates, for clean cooking companies and initiatives, to those countries that develop and enforce policies and regulations, and that commit to targets and domestic resource allocation. The fund would also provide a technical assistance facility for policy support and project preparation. Finally, it would ‘reward’ leading countries with access to finance and establish pathways for replication and scale for other countries to follow.



DISRUPTIVE SOLUTION 3

THE NEXT GENERATION SOLUTIONS DATA PLATFORM

Context: Very early in the charrette discussions, it became evident that those operating in the clean cooking sector want and need data. Data are needed to create an integrated picture, to know what clean cooking solutions are working, what is not working, and to start targeting resources towards scaling up strategies based on what is working. The current situation is that the existing clean cooking data is very siloed and fragmented, preventing an integrated picture of the clean cooking sector.

Solution Concept: Data underpin both the CCMC and the Challenge Fund mentioned above. The Next Generation Solutions Data Platform would be an open, dynamic, reliable data platform for next generation clean cooking solutions, identifying what works for consumers. Accurate and timely data will drive the decisions of investors, enterprises and governments

to allocate resources and funding to viable and scalable solutions. The objectives for this platform would be to optimize existing data while making them more accessible and usable (e.g., visualization of the results from the Multi-Tier Framework² household surveys), and it would define key performance indicators. Additional data would be collected and evidence derived on the impacts of cooking practices on health, climate and gender equality, with transparency around measurement and metrics. Consumer preference data would also be captured, as would data on next generation solutions to identify and test which solutions are scalable (e.g. clean fuel pay-as-you-go models, integration of clean cooking with lighting and efficient rice cookers).

²The Multi-Tier Framework redefines energy access from the traditional binary count to a multi-dimensional definition as the ability to access energy that is adequate, available when needed, reliable, of good quality, convenient, affordable, legal, healthy and safe for all required energy services. Having an electricity connection does not necessarily mean having access to electricity under the new definition, which also takes into account other aspects, such as reliability and affordability. Energy access is measured in the tiered-spectrum, from Tier 0 (no access) to Tier 5 (the highest level of access).

NEXT STEPS

In preparation for the Climate Action Summit the participants will prepare and fine-tune key, high-level messages for integration into SEforALL's engagements at the Climate Action Summit. The objective is to elevate the urgency for action on financing and delivering clean cooking solutions and tee up opportunities for development of the charrette outcomes.

Participants will also target the Clean Cooking Forum, taking place in Nairobi in November 2019, to present charrette outcomes and key messages.

Working groups have been established on each of the solutions, focusing on further development of specific tasks, bringing in additional partners, and developing requisite concept notes for each solution.

Following the Clean Cooking Forum, the working groups will target efforts to enable the announcement of defined actions at the SEforALL Forum taking place in Kigali in May 2020.





DATA & EVIDENCE CHARRETTE

QUESTION FOR INQUIRY

While there is progress in securing electricity access, some countries which account for the majority of the 840 million people without access risk being left behind. How do we improve the data and evidence on who and where they are, what they need, and what is working and why in order to improve decision-making and speed progress?

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THE ISSUE

Since the adoption of SDG7, significant progress has been made in terms of electrification in countries such as Bangladesh, Ethiopia, Kenya and Tanzania. India has also been making significant progress, providing electricity to an estimated 30 million additional people each year. This development has been driven by a combination of rapidly falling clean energy costs, political prioritization, enabling policy frameworks and participation of the private sector with new and innovative off-grid business models.

However, beneath this progress for a few countries is a widening gap where other countries are being left behind. Of the 20 high-impact countries that represent 78 percent of the deficit in access to electricity, 15 are in Sub-Saharan Africa, and the RISE database classifies seven of these as having insufficient policy frameworks for facilitating electricity access, and eight as having weak policy frameworks (RISE 2018).

Electricity access is typically measured by the share of the population with physical access to electricity. However, a more detailed understanding of end-us-

er electrification needs, as well as disaggregated data on gender and nexus issues such as water, climate and food are necessary to better inform electrification plans and investment decisions. While national-level data are valuable for certain types of analysis, better data at the local and regional levels are required for public and private sector planning purposes.

The data needs include (but are not limited to): energy demand forecasts for domestic and productive use, location of unserved and underserved populations, different technological solutions, consumer preferences and willingness/ability to pay, and services and products available.

Continued reliance on indicators that describe energy access in binary terms (having access or not) does not give a clear understanding of what is needed to support human development. Therefore, the current approach to data parameters needs to be refined to address the challenges of affordability, reliability, tiers (as defined by the Multi-Tier Framework) and quality of access.

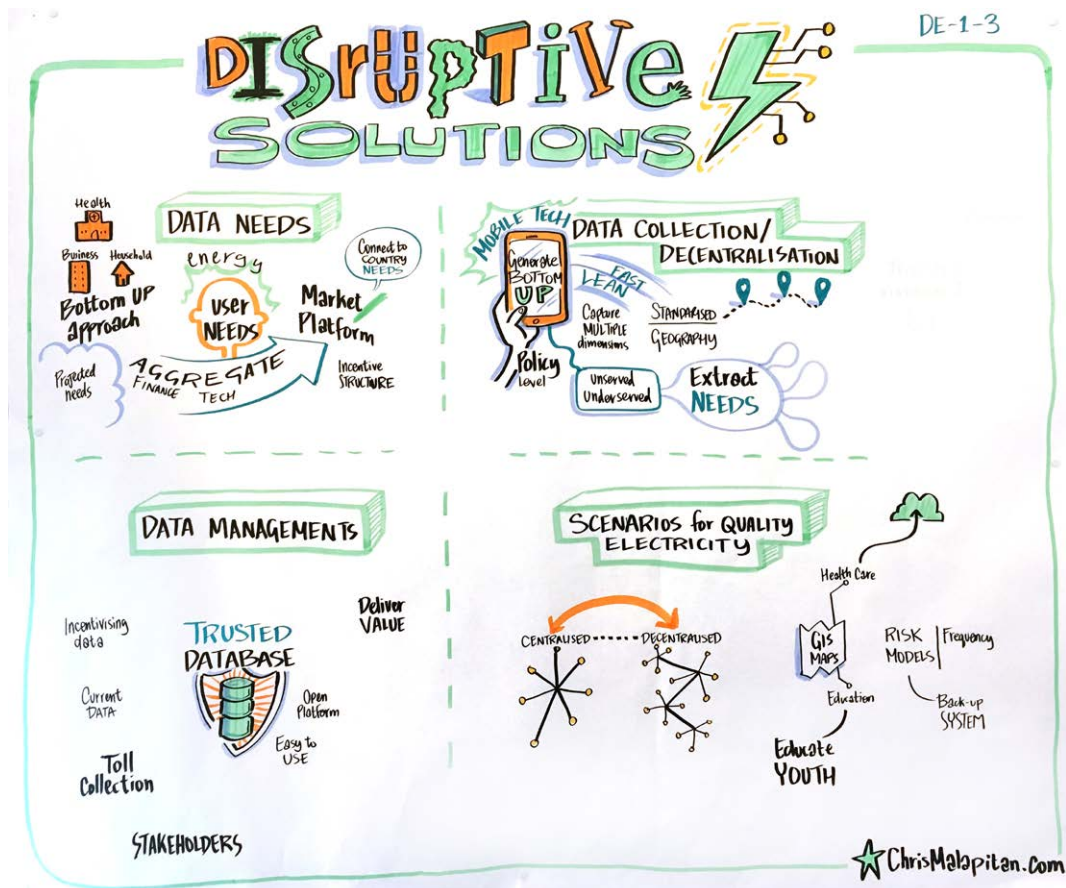
If data are provided at a high frequency and are reliable and comparable across geographies, entrepreneurs and energy service providers can have the market-relevant and consistently updated data necessary for informed investment decisions.

In contrast, continued reliance on binary data may cause unintended consequences, including potentially misleading public and private decision makers. In the case of the public sector, resources may be misaligned and ineffectively targeted. Private sector investment decisions in electricity access

may not be targeted as effectively as possible or may not occur at all.

The participants in this charrette addressed three key underlying questions: What are the specific data needs of the private and public sectors? Are innovative data collection tools—like big data, mobile data, remote sensing and the internet of things—being harnessed to their full extent? How can we ensure that the data collected will be utilized in key decision-making processes that lead to scaling up electrification?





DISRUPTIVE SOLUTIONS

To focus thinking, the following goal was established for the Data and Evidence charrette discussion:

- Within two years, provide to public and private decision makers at the national and/or sub-national level, robust, accessible, and credible data that enable policy and investment decisions that accelerate delivery of quality electricity to unserved and underserved populations.

DISRUPTIVE SOLUTION 1

FULFILLING DATA NEEDS

Context: Participants agreed that there is a dearth of robust, credible and accessible data on energy users in unserved and underserved populations. Filling this shortfall requires the collection of a broader set of localized consumer data that is then made accessible to decision makers. At the same

time, the data that is currently being collected should be based on an informed view of the user that governments and the private sector can better utilize for investment decisions in electrification.

Solution Concept: The proposed solution is a comprehensive data and evidence platform that aligns the needs of energy delivery stakeholders, including financiers, project developers, governments, and civil society, with profiles of unserved and underserved populations that reflect more granularity and localization. The solution would start with a small sample of high-impact countries to pilot the development and rollout of the platform. A survey and assessment would take place within the pilot countries to identify the electricity demands and needs of unserved and underserved populations (e.g. data not covered by the Multi-Tier Framework and other platforms). This assessment would be done in consultation with the government and the private sector.



DISRUPTIVE SOLUTION 2

DATA COLLECTION AND MANAGEMENT

Context: Fragmentation of data can be as problematic as data deficits. Participants identified that quality and timely data are not available in a central location that is easy to access in appropriate formats that suit diverse stakeholder needs. Integrating data collected from different sources and across time and geographies would help evince trends and opportunities to support investment.

Solution Concept: The solution proposes to integrate national, regional and community data collection and management practices into a shared database led by a national focal point. The database would provide decision makers with robust, credible and accessible data by uniting different sources under a single platform that is validated by peer review and crowdsourcing. This solution would require establishing several partnerships with different levels of government and NGOs already involved in data collection in order to design a concept template, coordinate efforts and feed relevant data into a centralized database.



DISRUPTIVE SOLUTION 3 DISSEMINATING EVIDENCE

Context: The charrette defined a timeframe of two years to change the current landscape of electricity data and evidence. With ten years left to achieve SDG7, there is an urgent need to get actionable evidence into the hands of decision makers that highlights the need for and value of investment in energy access. There are limited data and evidence in particular on the economic and social impacts of electrification, and what does exist is often questioned because of perceived gaps and inconsistencies in the data.

Solution Concept: The solution is to create a platform that makes a space for and provides a focal point for bringing together the supply and demand side of data and evidence, adding value through standardization and context. The aim is to provide decision makers with evidence and impact options for the systemic value of universal access to quality electricity. The starting point for building this platform will be to gain high-level support from governments and other stakeholders for establishing the platform. From there, its governance structure, including institutional design, mandate, funding and monitoring mechanisms can be built.

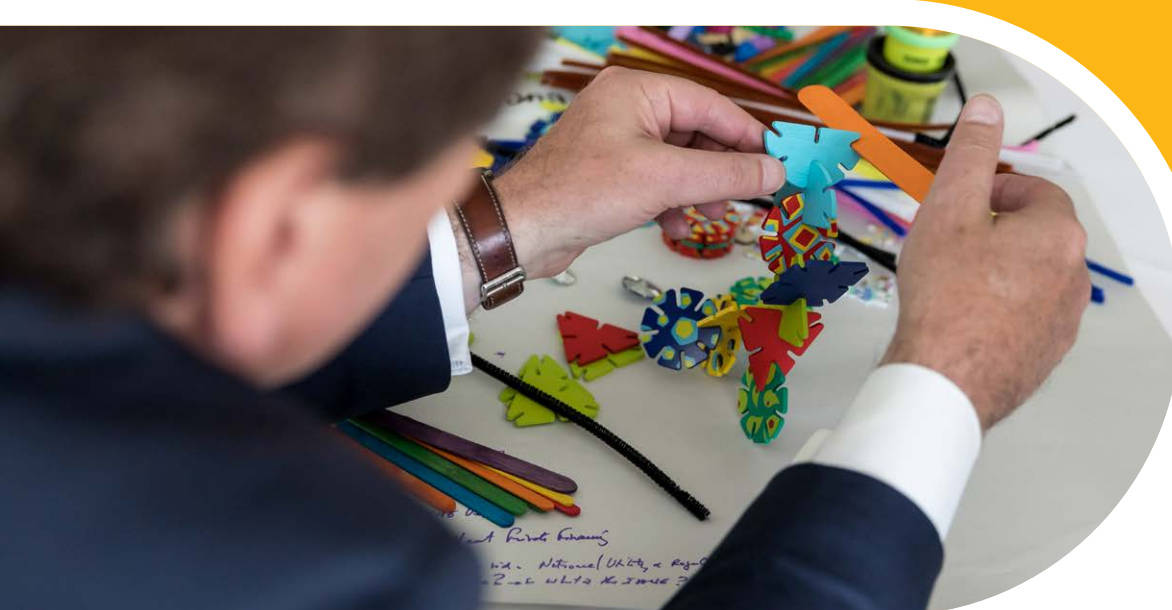
NEXT STEPS

The solution for Fulfilling Data Needs involves immediately identifying two to three countries within the 20 high-impact countries and engaging with governments to gain their support for pilot projects. At the same time, engagement with current data stewards, such as the World Bank's Energy Sector Management Assistance Program (ESMAP), will kick off to validate the data needs survey through an assessment of gaps not covered by existing tools, such as the Multi-Tier Framework.

Next steps for the solution on Data Collection and Management involve finalizing a partnerships structure for the database and defining the dimensions and sources of the data. Partners will then agree on a data hosting solution and finalize the collection methodology, with an eye towards launching the system in test countries within two years.

Building high-level support among multilateral institutions and high-impact countries, designing governance mechanisms and securing funding for the evidence disseminating solution are the key next steps over the next six to twelve months. Within two years, a pilot of the system would be deployed to achieve proof of concept, possibly using an X-Prize style concept or challenge grant to inform system design.

The three solutions identified by the participants have common themes and action items that may allow them to be unified into a single solution. Each solution highlights the need to provide data that are more reliable in terms of their evidentiary standards, through how they are collected, managed and analyzed, and the need for an understanding of energy for productive use. A common undercurrent was the need for a data platform that centralizes and validates data collected at the country level, serves the needs of investors, is based on demand and activates resources that are already available locally. If pursued under a unified initiative, next steps include the development of a concept mechanism that seeks to make the platform workable for the private sector, identifies the capacity and expertise necessary to deliver at the country level and establishes criteria for pilot country selection.



KEY STATISTICS AND COMMENTS



1ST
SEforALL
CHARRETTES

2
DAYS

4
PARALLEL
CHARRETTES



39
COUNTRIES
REPRESENTED

"What a great few days in Amsterdam for SEforALL Charrettes – the most unusual, hands-on and diverse conference I have attended, and some brilliant conversations on way the private sector should (and shouldn't) help bring sustainable energy to the poorest."

Raphaëlle Vallet,
Sustainable Finance Manager,
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115
ATTENDEES

56
FEMALE

59
MALE

45%
 PARTICIPANTS
 ATTENDED THEIR FIRST
 SEforALL EVENT



TYPES OF
 ATTENDEES



"We would like to thank SEforALL for hosting an incredible set of Charrettes in Amsterdam. Participants were brought together to address challenges and identify solutions to achieve SDG7 – ensure access to affordable, reliable, sustainable and modern energy for all."

Olasimbo Sojinrin,
 Nigeria Country Director,
 Solar Sister



"No problem can be solved from the same level of consciousness that created it – what a great few days in Amsterdam for SEforALL Charrettes hands-on & diverse conference to accelerate progress towards achieving SDG7 by 2030."

Mariama Kamara,
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YOUTH
 REPRESENTED
 FROM AFRICA,
 NORTH
 AMERICA,
 OCEANIA, ASIA



"The entire facilitation team was rewarded by the level of engagement of all participants with the Design Thinking approach. As a result of their willingness to engage their whole selves in the process, the four charrettes ultimately crafted solutions to which they were highly committed, and which when implemented stand a good chance of disrupting a status quo that has so far resisted being changed."

Daniel Stone,
SEforALL Charrettes Lead Facilitator



65%

OF SURVEY RESPONDENTS
FEEL MOTIVATED TO DRIVE
THE TOPIC OF THEIR
CHARRETTE FURTHER

56%

OF SURVEY RESPONDENTS
LEARNED SOMETHING NEW
DURING THEIR CHARRETTE
THAT WILL HELP THEM
PROGRESS THEIR WORK

"First of all, congratulations on the enormous success of the meticulously planned charrettes! I think you've made history in the Energy Access and Renewable Energy Community. Well done!"

Mohua Mukherjee,
Programme Ambassador,
International Solar Alliance



80%

OF SURVEY RESPONDENTS FELT THE CHARRETTEES ALLOWED THEM TO HEAR NEW VOICES AND NEW PERSPECTIVES

70%

OF SURVEY RESPONDENTS WERE VERY SATISFIED OR EXTREMELY SATISFIED WITH THE CHARRETTEES, ESPECIALLY THE AGENDA AND DESIGN-THINKING APPROACH

"SEforALL Charrettes inspired me to discuss the need to focus larger efforts on rural electrification, SDG7 Women and the last mile."

Ajaita Shah,
Founder and CEO,
Frontier Markets

"I have learnt so much, I feel I can now come back to Uganda and pitch in front of the donors."

Kakembo Galabuzi
Brian, Student Energy
Founder - WEYE Clean
Energy Company

96%

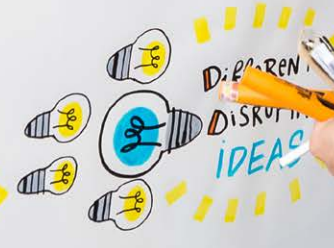
OF ALL SURVEY RESPONDENTS SHOWED INTEREST IN JOINING US AT SEforALL' S 2020 FORUM IN KIGALI



BRIDGING THE GAP

BACKGROUND INFORMATION

- financing cost must go down
- listen to investors & voices from the ground
- how to stack finance?
- scale success stories
- growth mini grids off grids
- understand politics & financiers
- CURRENT financial systems are not right



BRIDGING THE GAP CHARRETTE

QUESTION FOR INQUIRY

What is required to bridge the gap between supply and demand for appropriate finance for electricity access in those countries with the largest energy access deficits—i.e. the high-impact countries—to meet SDG7?

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THE ISSUE

Historically, electricity access has, to a significant extent, been provided by central electricity grids through large-scale generation. Transmission and distribution infrastructure have been funded through project finance structures and on balance sheets. New energy technologies are enabling new forms of access, especially off-grid solutions powered by renewable energy that provide fast and cost-effective solutions for rural and remote populations. These technologies and their associated business models however, lend themselves to different financing structures than traditional energy finance, and require new financiers and new financial mechanisms to support a range of electrification technologies.

SEforALL's *Energizing Finance: Understanding the Landscape 2018* reported the following findings for electricity access finance in high-impact countries (HICs) in 2015-16 (using 2015 as the baseline year):

- Four countries (India, Bangladesh, Kenya and Philippines) received 86 percent of financial commitments tracked to all 20 HICs

- International public finance commitments declined to \$8.8 billion in 2015-16 from \$10.5 billion in the previous 2013-14 reporting period
- Multilateral development finance institutions (DFIs) remained the largest providers of public finance, with 13 percent in 2015-16 (versus 21 percent in 2013-14), followed by bilateral DFIs and export promotion agencies/EXIM banks with 8 percent and 6 percent, respectively
- Concessional finance commitments from all sources decreased by 7 percent to \$4.8 billion relative to 2013-14
- China was the largest provider of bilateral finance for electricity, totaling 23 percent of total international finance
- Investments in unsustainable, grid-connected fossil fuel-fired generation doubled since the 2013-14 reporting period (finance for coal-fired power plants tripled over the same period).

According to *Blended Finance in Clean Energy: Experiences and Opportunities* (CPI 2018) there are

many risks and barriers preventing the scaling up of private investment in clean energy in developing economies: off-taker risk, currency risk, policy risk, the attractiveness of revenues, liquidity risk as well as size/scale mismatches. The lack of precise, current and readily available data about country-specific policies and regulations can mean incomplete information to inform policy risk assessment.

There are critical gaps and mismatches between the types of instruments most needed (demand-side) and those offered (supply-side).

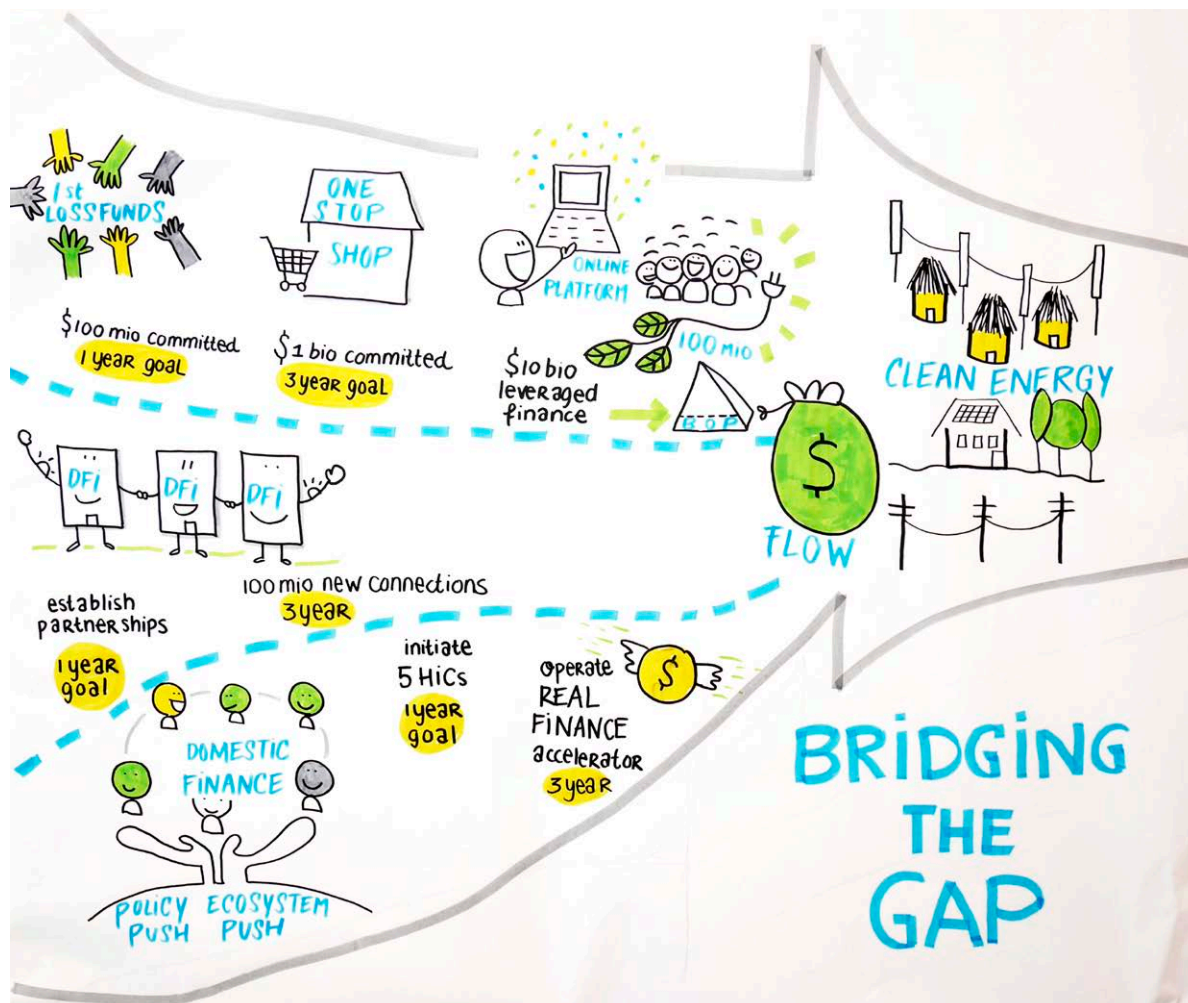
On the supply side, only a small proportion of catalytic finance from DFIs exists relative to total finance flows for energy access in HICs. Potentially catalytic risk mitigation instruments such as guarantees and insurance (typically provided by public financiers) are in short supply relative to direct investment. There is only limited financial product

development (including piloting and scaling) fit for purpose to fill financing market gaps at an individual country level.

On the demand side, at the consumer level, there is often a lack of affordability or creditworthiness, and many electricity providers lack the knowledge to build robust credit assessment processes. Consumers in countries with large access deficits do not have the awareness of new energy technologies which in turn stifles demand. At the country level, there is often a lack of streamlined access to climate finance and project preparation support.

The participants of this charrette explored various instruments that could help bridge the gap between supply and demand for electricity access finance, including blended finance, regulatory innovation, reforming development finance and financial sector innovation.





DISRUPTIVE SOLUTIONS

Participants in the Bridging the Gap charrette were guided by the following goal:

- To mobilize and deploy an additional \$1 billion to increase electricity access flowing to high-impact countries by 2022.

DISRUPTIVE SOLUTION 1

DFIs FOR UNIVERSAL ENERGY ACCESS

Context: One of the emergent themes in this charrette was the need to prioritize the word “development” in “development finance institutions”. Participants agreed that DFIs are not coordinating on energy access projects and procedures; rather

there is a sense of competition between them. A new mindset and approach among DFIs that embraces collaboration would help increase efficiency and unlock new resources for electricity access. The DFI cooperation observed in the climate space would serve as a valuable example to follow.

Solution Concept: Participants conceived of an operational partnership among DFIs that will focus on the electrification target of SDG7. The partnership will convene technical focal points and experts from multilateral and bilateral DFIs with the aim of working together and convening regularly to align the mandates of each institution on electricity access. They will also align very practical aspects like definitions of electricity access, how to track finance, and how to develop a monitoring and evaluation system with common metrics to identify and quantify results.

DISRUPTIVE SOLUTION 2

ENERGY ACCESS FOR 100 MILLION PEOPLE

Context: There is a maze of blended finance facilities that exists within multilateral and bilateral finance institutions. The complexity and opaqueness of available funds is a roadblock for organizations in need of financing for their electricity access projects. At the same time, existing blended finance instruments are often not leveraging and deploying capital as they were envisioned to do and, in some cases, can even crowd out other investors from the space.

Solution Concept: Participants devised a framework wherein DFIs and philanthropic funders commit (or re-allocate) a cumulative \$1 billion of first-loss capital that is showcased on a concrete online platform for improving the effectiveness of blended finance and the transparency of available funds. This transparent online platform and the \$1 billion would seek to leverage an additional \$10 billion of other sources of capital, including commercial finance. The platform would also advocate for a converging towards a simplified template of application for relatively smaller tickets. The goal of this solution is to provide access to electricity for an additional 100 million people.





DISRUPTIVE SOLUTION 3

DOMESTIC FINANCE FOR ENERGY ACCESS

Context: When it comes to a mismatch between supply and demand for electricity access finance, there may not be a mobilization issue so much as a deployment issue. The group acknowledged that one of the major barriers to appropriate finance flows is that there is an important stakeholder group that, at present, is largely absent from the current energy financiers: domestic sources of capital. This group includes sovereign wealth funds, pension funds, SACCOS, and credit unions, even down to smaller institutions providing micro-insurance and micro-credit.

Solution Concept: Participants proposed creating Renewable Energy Access to Local (REAL) Finance Accelerators to mobilize domestic sources of finance for energy entrepreneurs needing capital in the range of \$5,000 to \$500,000, fitting appropriately within the mandate of many local financiers. The accelerators would be targeted towards supporting relatively small businesses operating in the high-impact countries, thereby requiring commitments from these countries' domestic finance institutions for capacity building to design and implement tailored financial products for the electricity access sector.

NEXT STEPS

Before the UN Climate Action Summit in September 2019, SEforALL will engage with the top-level management of the major DFIs to convey the need for an operational partnership on SDG7.1. A joint meeting will be proposed for Q4 of 2019 to initiate discussions and operationalize mechanisms for collaboration in this context.

In the meantime, the charrette members agreed to prioritize the SDG7.1 campaign to align DFIs and develop a concrete concept and workplan to implement a platform for transparent virtual pooling of high-risk, first-loss capital. This working group will engage major investors, including the DFIs, to solicit pledges towards the pool of first-loss capital. The concept will be collaboratively developed, and practical aspects for an online platform will be identified, including a proposal for a governance structure.

A concept note for the REAL Finance Accelerators will be developed, with SEforALL working to identify national focal points within the high-impact countries who would join a multi-stakeholder task force responsible for identifying policy priorities, credit supports, risk mitigation needs and capacity building mechanisms that can help mobilize domestic finance. The charrette members will also reach out to partners, beyond those in the charrette group, with experience leveraging domestic funds and working with local financial institutions to join the working group in elaborating the concept.





LAST MILE CHARRETTE

QUESTION FOR INQUIRY

What changes are necessary within the finance sector (including development finance) to increase risk appetite to fund market-based last-mile electricity access?

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THE ISSUE

While progress has been made in recent years to increase access to electricity, it is nowhere near the speed and scale required for meeting the SDG7 target of universal access by 2030. This demands a re-think of current electrification models, especially for last-mile communities in developing countries. “Last mile” in this context is taken to encompass not only those living a long distance from the central electricity grid but also those who are unserved and who won’t be reached by business-as-usual approaches due to income, remoteness or social exclusion.

The traditional “generation–transmission–distribution” model applied in developing countries, largely driven by public sector investment from DFIs, has demonstrated mixed success in closing electricity access deficits. Providing further grid connections to people in remote locations is, at best, expensive and time consuming, and oftentimes near impossible due to geographic barriers. Off-grid solutions—defined to include all decentralized solutions from small appliances powered by renewable energy

through to mini-grids—have the potential to deliver electricity access to the last mile more quickly and at lower cost.

Off-grid solutions will play a pivotal part in delivering SDG7 by 2030. *Energizing Finance: Understanding the Landscape 2018* reveals that while finance commitments for off-grid solutions almost doubled between 2013-14 and 2015-16, increasing from \$210 million to \$380 million annually, the investment still represents a mere 1.3 percent of the total tracked commitments to electricity access. Achieving scale in the off-grid solutions sector will require financial institutions collectively to provide access to appropriate, affordable finance to both off-grid energy consumers and enterprises.

Those living in off-grid communities typically have low and vulnerable income, which means they have limited, if any, access to finance with which to purchase or lease off-grid solutions. Their irregular incomes often limit them to seeking finance from microfinance institutions, rural credit operators and informal credit sources.

Meanwhile, off-grid entrepreneurs face financing challenges typical of small to medium enterprises (SME) operating high-volume, low-margin businesses in developing markets. These businesses tend to demonstrate high upfront capital requirements for asset/inventory purchases, no or limited access to well-priced local currency finance, logistical challenges in reaching last-mile consumers and inconsistent cash flows. As a result, off-grid entrepreneurs with limited capitalization face genuine challenges in demonstrating the sound financial and operating histories required to secure commercial finance, especially the working capital facilities necessary to support their growth.

These issues carry actual and perceived risks that inhibit financial flows in support of off-grid solutions deployment in last-mile communities. This charrette focused participants on what is needed to change the risk appetite of financial institutions whose commitments and resources are essential to unleashing the true potential of off-grid solutions. This included probing themes such as how to better understand last-mile consumer needs, improving the economics of off-grid solutions, addressing affordability constraints, data required to inform financiers' investment evaluation and capacity building within local financial institutions, among others.



DISRUPTIVE SOLUTIONS

This charrette focused on the supply-side of energy access finance, with the goal that:

- Within three years, implementing changes that would shift the risk appetite of financiers to unleash significant investment in electrification for last-mile communities.

DISRUPTIVE SOLUTION 1 LAST MILE FIRST

Context: Last Mile First is premised on the notion that access to electricity is a public good that enables sound socioeconomic development outcomes. It recognizes that developed countries have benefited enormously from successive governments prioritizing electricity service delivery to

their citizens via public funding, and that it is therefore inequitable to expect developing countries to adopt purely market driven solutions at this stage in their growth cycles.

Solution Concept: The concept prioritizes a bottom-up electricity user needs assessment to inform action at local, regional, national and global levels, initially in one pilot country or region. It envisages collaboration between local stakeholders and providers of appropriate finance and technical solutions, respectively. Access to electricity for last-mile consumers would be priced according to a sliding scale based on ability to pay, with access to the poorest consumers most heavily subsidized. No new funding is envisaged to deliver on the concept; rather it is premised on a country's commitment to repurpose existing funds, notably the redirection of fossil fuel subsidies, in order to capitalize a Last Mile Service Fund.





DISRUPTIVE SOLUTION 2
LEAVE NO SCHOOL OR CLINIC
BEHIND

Context: Health clinics and schools provide essential public services. Clinics require regular, reliable electricity supply to provide vital health services to ensure the well-being of people in remote areas. Among other benefits, electricity in classrooms allows for lighting that can extend the school day and provide access to technology and information. By providing the core electricity infrastructure to meet the needs of these facilities, follow-on connections to last-mile communities could occur.

Solution Concept: The solution identified is to provide adequate and reliable electricity to power critical services for public health and education facilities. Each of these sectors will be treated as a market to which bundled electricity services would be provided as an initial conduit to reach individual last-mile consumers and achieve universal electrification at an individual country level. Proposed activities to advance the concept are centered on: government engagement to identify one country to act as a first pilot location; recruitment of private sector investors and energy service providers; donor engagement to support the overall project development; and a robust monitoring and evaluation framework.

LM-2.9

LAST MILE CONVERSATION



DISRUPTIVE SOLUTION 3

MINI GRID FINANCE PLATFORM ASSOCIATION

Context: Mini-grids are projected to contribute substantially to closing the electricity access gap by 2030. However, the sector is fragmented and marked by a lack of data and knowledge sharing among market participants. This in turn results in high transaction costs and replication of process in each new project development and financing.

Solution Concept: The Mini-Grid Finance Platform Association will seek to expand the mini-grid financial product offering and close information gaps through improved coordination and knowledge sharing among mini-grid developers. This approach recognizes the mini-grid sector's relative fragmentation and lack of consolidated market data and that information sharing is more valuable to the sector than individual actors developing transaction documentation and processes in isolation. The overall objective is to enable a faster flow of funding to the mini-grid sector globally.

NEXT STEPS

Recognizing the solution's broad scope of ambition, in the short term, Last Mile First proponents aim to have developed a concept note that sharpens the solution's focus and defines roles for consortium members. They will leverage their common attendance at relevant convenings prior to the SEforALL Forum in May 2020 to discuss and advance the solution. SEforALL will support these discussions by hosting side meetings at the convenings on request and by remaining involved in solution development. The proponents' longer term objective is to have identified and costed consumer needs in a select number of pilot countries/regions; successfully advocated to governments for the repurposing of existing subsidies to fund concept implementation; and be tracking several governments referring to electricity as a public good and resourcing it accordingly.

Proponents of Leave No School or Clinic Behind are developing a concept note that sets out proposed activities in more detail. Short-term efforts center on government engagement to identify one country to act as a 'green light' champion for the concept, taking the lead on recruitment of private sector investors and donor engagement to support project development and implementation. SEforALL will support the consortium by supporting government engagement and fundraising efforts as necessary, and through sharing its existing, considerable body of work on Powering Health Care and its related network.

By 2020, proponents of the Mini-Grid Finance Platform Association aim to have in place a funded association with global reach. Their ambition is that data shared between association members, and the new networks created under the association's auspices, will demonstrably facilitate and streamline mini-grid transactions. The Mini-Grids Partnership, for which SEforALL co-hosts the Secretariat, can act as a key resource for the consortium developing the association, including by connecting consortium members with funders of mini-grids via a working group.





CONCLUSION

This report reflects the initial iterations of the proposed solutions developed over the two days of the 2019 SEforALL Charrettes. This event was simply the starting point. These disruptive solutions are already evolving and will continue to evolve further in the coming weeks and months. To move forward to implementation, they will require a larger network of support, additional resources and unwavering focus and persistence.

SEforALL is committed to supporting the development of these solutions and working to ensure the individuals and organizations taking them forward have the knowledge and networks they require. We invite the broader sustainable energy for all movement to consider how you can contribute and support this work.

To learn more about the solutions and how to get involved, please contact:

Partnerships@SEforALL.org



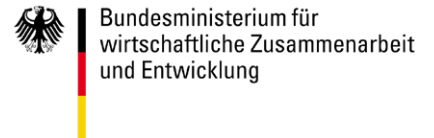
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