CLEAN ENERGY SOLUTIONS CENTER
ASSISTING COUNTRIES WITH CLEAN ENERGY POLICY

Energy Access "Movers and Shakers" Showcase: State of Play and Potential for Scale in sub-Saharan Africa

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For more information, see the clean energy policy trainings offered by the Solutions Center.

Webinar Panelists

Jem Porcaro	UN Foundation
Daniel-Alexander	SE4All
Katrina Pielli	Power Africa

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Eric — Welcome to today's webinar, which is hosted by the Clean Energy Solutions Center in partnership with the United Nation Foundation Energy Access Practitioner Network. Today's webinar will focus on the state of play and potential for scale for energy access in sub-Saharan Africa. One important note of mention before we begin our presentations is that the Clean Energy Solutions Center does not endorse or recommend specific products or services. Information provided in this webinar is featured in the Solutions Center's resource library as one of many best practices resources reviewed and selected by technical experts. Before we begin, I'll quickly go over some of the webinar features.

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presentation at cleanenergysolutions.org/training. You may follow along as our speakers present. Also, an audio recording and the presentations will be posted to the Solutions Center training page within a few weeks and will be added to the Solutions Center YouTube channel where you will find other informative webinars as well as video interviews with thought leaders on clean energy policy topics.

Today's webinar is centered around the presentations from our guest panelists Jem Porcaro, Daniel Schroth, and Katrina Pielli. These panelists have been kind enough to join us to discuss the state of play and potential for scale of energy access solutions in sub-Saharan Africa. Unfortunately, Gareth Martin is not going to be able to join us today due to a last-minute scheduling conflict. Before our speakers begin their presentations, I'll provide a short, informative overview of the Clean Energy Solutions Center initiative, then following the presentations, we will have a question and answer session where the panelists will address questions submitted by the audience, followed by closing remarks and a brief survey. This slide provides a bit of background in terms of how the Solutions Center came to be.

The Solutions Center is one of Is one of 13 initiatives of the Clean Energy Ministerial that was launched in April 2011 and is primarily led by Australia, the United States, Sweden, and other CEM partners. Outcomes of this unique initiative include support of developing countries in emerging economies through enhancement of resources on policies related to energy access, no-cost policy assistance, and peer to peer learning and training tools, such as the webinar you are attending today. The Solutions Center has four primary goals. It serves as a clearinghouse of clean energy policy resources. It also serves to share policy best practices, data, and analysis tool specific to clean energy policies and programs.

The Solutions Center delivers dynamic services that enable us expert assistance, learning, and peer to peer sharing of experiences, and lastly, the center fosters dialogue on emerging policy issues and innovation around the globe. Our primary audience is energy policy makers and analysts from governments and technical organizations in all countries, but we also strive to engage with the private sector NGOs and civil society. A marquee feature that the Solutions Center provides is the no-cost expert policy assistance known as "Ask-An-Expert". The Ask-An-Expert program has established a broad team of over 30 experts from around the globe who are available to provide remote policy advice and analysis to all countries at no cost. For example, in the area of energy access, we are very pleased to have Kathryn DeEmvalla serving as one of our experts.

If you have a need for policy assistance in energy access or any other clean energy sector, we encourage you to use this valuable service. Again, the assistance is provided free of charge. If you have a question for our experts, please submit it through our simple online form at cleanenergysolutions.org/expert. We also invite you to spread the word about this service to those in your networks and organizations. Now, I'd like to provide brief introductions for today's panelists.

First up today is Jem Porcaro. He's the senior director of Energy Access at the UN Foundation where he's responsible for providing leadership, management, and project support to the Foundation's energy access work, with a particular focus on its involvement in the UN's Sustainable Energy for All initiative. Following Jem, we will hear from Doctor Daniel Schroth who is coordinator of the SE4All Africa Hub, hosted by the AFDB in partnership with the AU, NEPAD and UNDP. Daniel also coordinates the Africa Climate Technology and Finance Center project, the Bank's engagement in the EU-Africa Infrastructure Trust Fund and the Secretariat to the African Energy Leaders Group. And, our final speaker today is Katrina Pielli, who is Power Africa's off-grid energy access team, Beyond the Grid, focused on adding 60 million new households and business connections in sub-Saharan Africa through off-grid energy solutions, household solar, and mini/micro-grid technologies.

And with those introductions, I'd like to welcome Jem to the webinar.

Jem Great. Thanks, Eric. I am gonna just try to now share my presentation. Can you see—

Eric Yep.

Jem Great. So, good morning/afternoon/evening, everyone. My name is Jem Porcaro. I'm the senior director of Energy Access. As Eric mentioned, I manage the foundation's Energy Access program.

My role, I think, in this webinar, really is just to provide a little bit more of an introduction to this webinar and a series of webinars that will follow and just provide a little bit of context for our guest speakers. So, first off, I image most of you who are on this are already familiar with the Energy Access Practitioner Network, but for those of you who may not be, this was in network established by the UN Foundation back in 2011 in support of Sustainable Energy for All. Over the last several years, the network has grown for about 20 members to over 2,400 members, making it the largest global network of Energy Access practitioners. The network is made up primarily of small, medium, large clean energy enterprises, but also has representation from civil society, government, academia. What all these organizations have in common is they are, in their own way, working on providing predominantly decentralized or distributed solutions for rural electrification across the world.

As you can see, we have a number of technologies and resources reflected by our membership including solar PV, energy efficiency, wind, hydro, mini-grids—so, a diverse set of sectors represented by our membership. We really have—our mission is to contribute to the achievement of SDG 7. We try to do that by promoting innovation in policy, technology, business, finance, amplifying the voice of our members and practitioners in general in high-level decision making, and really facilitating increased funding and financing for decentralized energy solutions. And we do that primarily through knowledge sharing and building partnerships and catalyzing action. So, today's webinar really is meant to showcase the work of some of our close

development partners in contributing to the scale up of energy access and in particular, electrification across sub-Saharan Africa.

We chose to do that because this will be—this webinar really kicks off the UN Foundation's new country focused webinar series which will start after this that we are gonna be implementing with the generous support of the Mott Foundation. And so, what we thought we would do is before we delve into a number of country-focused webinars, we would start with a region and we're starting in Africa to begin with—or sub-Saharan Africa, to be more precise. I'm trying to click through. One second. Here we go.

The reason why we're starting our new country-focused webinar series in sub-Saharan Africa is because, I think, at the end of the day, we all recognize that if we're gonna achieve SDG 7 and universal energy access and, in particular, electricity access, it will be because of the concerted effort to achieve universal access in Africa. As this illustration shows, 19 out of the 20 countries with the lowest electrification rates are located in sub-Saharan Africa. A similar story is true when you look at the absolute number of people without electricity, sub-Saharan Africa's home to 13 out of the 20 countries with the highest deficit of electricity with the obvious exception being India. We also know that if we're gonna achieve universal electrification, it will require an emphasis on rural communities where electrification rates can be as low as one percent, as you can see in this illustration, and where large populations currently reside. That will obviously change with urbanization into the future, but still, as you can tell in this figure, the vast majority of populations in countries in sub-Saharan reside in un-electrified, rural, remote areas.

We also know historically that investments in new generation capacity have typically benefited industry by passing more rural and remote communities. The story becomes even more complicated by the fact that in sub-Saharan Africa, there's been kind of strong headwinds in the form of high rural population growth rates that have been eroding gains in rural electrification. As you can see from these figures, sub-Saharan Africa was only second to India in terms of electricity access growth from 2010 to 2012. However, most of that growth has been in urban areas and any growth that took place in rural areas was outstripped by significant rural population growth, which is really an issue specific to sub-Saharan Africa. We don't see that kind of trend in other regions.

The good news is since 2012, in the last five years, there's been significant growth, in particular, in the distributed solar solutions in Africa, thanks in part to declining technology costs, as we all know, and to new and innovative business models that have been probably spearheaded by probably many of you on this call. And these are just some of the latest facts and figures from REN21 and GOGLA in terms of the state of play of PICO and solar home systems across sub-Saharan Africa. Again, I'm sure most of you are aware of some of these significant numbers. We know that much of the growth in distributed solar markets have been fueled by a pay-as-you-go enterprises

who, as you can see from this figure, are concentrated in East Africa. Believe there's roughly 27 of them alone in East Africa.

And what's interesting is that these Pay As You Go companies or enterprises have attracted about four times as much investment in half the time, compared with those selling products for cash. We should also not forget that progress is being made on the mini-grids front as well—and I'm sure Daniel will touch on this—where a growing number of countries are putting in place the enabling environment to attract/increase capital forming a grid. And while mini-grids have yet to prove their commercial viability—particularly at scale—we know improvements in things like feed and tariffs or feed and tariff policies, inter-connection standards in business models will eventually pay dividends for both project developers and investors. It's probably also important to note that these distributed solutions—mini-grids as well as PICO and solar home systems—will pay dividends for countries as a whole as well in addition to developers and investors as they can provide a really important low cost compliment to grid electrification, particularly for rural communities. And I always find this to be a very interesting figure by IEA that shows about 70 percent of new access related demand over the period of 2040 is forecasted to come from mini-grid and off-grid.

And those pie charts show that about two-thirds—if not more of that demand—will be met by renewable energy sources both in the context of mini-grids and off-grids. So, clearly, a lot of potential for renewable—distributed renewable energy. But to realize that potential, we know there are a number of barriers ahead, and these are some highlights of our latest annual survey. And we haven't quite digested all of this, so I'm just giving you a sneak preview of some of the results. But these are the results from a question related to the barriers to growth in distributed renewable energy, and not surprisingly, finance was the top of the list both among investors and practitioners.

A lack of access to finance both for enterprises as well as for customers were identified as the main barriers to growing in distributed renewable energy. What's interesting is that there's some diverging views between practitioners and investors with regards to the importance of policy and regulatory environments and distribution challenges, but that clearly reflects their own respective priorities with practitioners tending to kind of prioritize more macro level issues and investors really being concerned about scaling. And that's why the emphasis on distribution. But if we dig a little bit deeper into the issue of finance, this is another question related to barriers to financing distributed renewable energy. We see a pretty clear message here that working capital—or affordable working capital—is considered to be a major barrier among practitioners and investors, along with insufficient knowledge of investors and a lack of innovative deal or a fund structures.

Again, a slight divergence between practitioners/investors on this fourth limited of a limited track record of industry players, but again, I think this is a little bit of a chicken and egg issue, at least from the perspective of practitioners who will often say that without finance, it's hard to have a

track record. I'll just conclude with a last kind of snippet from our recent annual survey with regards to policy and regulatory challenges for scaling of distributed renewable energy. Here, I just wanted to point out—especially for Daniel, who will speak after me—regulatory frameworks for mini and micro-grids was identified as the biggest policy challenge or barrier for scaling up distributed renewable energy, followed by, more broadly, an enabling environment and policies. So, I think much of this is not surprising, but I wanted to frame all of this because I believe Daniel and the African Development Bank and Katrina, with USAID and the US government, are really addressing many of these issues.

And so, I just wanted to provide a little bit of context and I'm very grateful for both of them for joining us today. And with that, I will hand it over to Daniel.

Daniel

Thank you very much, Jem and good morning or good afternoon to everyone on the call. It is a pleasure having been invited to join this webinar, and I think Jem, you also provided a very good overview of challenges, particularly in sub-Saharan Africa, some of the barriers faced by decentralized energy solutions in particular, but all [Break in audio] potential that clearly is there in some of the positive developments that we have been seeing over the last few years in particular. So, just to repeat very briefly, my name is Daniel Schroth. I'm from the African Development Bank. Specifically, I'm coordinating the sustainable energy format for Kahart, and my presentation today will touch on three points in particular.

One I would like to present a bit more in detail—the state of play of the various country action processes in the context of Sustainable Energy for All in Africa. Second, I would like to highlight the state of implementation of the Green Mini-Grid Market Development Program—in particular, also to present some of the activities that we are currently considering for a second phase of this market development program, in which we would very much like to receive input from all relevant stakeholders, particularly from developers in the mini and micro-grid space. And finally, I'd like to at least briefly to highlight the New Deal on Energy for Africa. As you probably have heard, energy has been made the number one priority for the African Development Bank. Our president, Avaseena, has called for a New Deal on Energy for Africa with very ambitious time lines, so the bank is currently gearing up in partnership with many different stakeholders in terms of delivering on these objectives.

So, to start, two-three sentences—we're gonna be brief on this—about the SE4All Africa Hub. It is hosted by the bank, but it's very much on a ship itself with the African Union Commission, the NEPAD Agency, UNDP, and we also have the regional economic communities represented on a rating basis. So, we have, since the start of this year, the SADC Secretariat that joined our oversight committee. The mandate of the hub is actually deriving from a resolution of the conference of Energy Ministers of Africa from the end of 2012 where—well, the hub were—the institutions that formed the hub subsequently were assigned with [Inaudible] hub and coordinated and facilitated implementation of Sustainable Energy for All in Africa. So, the big

operating principles of the hub, which was very much from the start, to one—ensure African ownership of this global initiative, to ensure that it responds to the needs of the [Inaudible].

It was very much focused on having a light structure—so, not to create any additional bureaucracy, but rather to use also where within existing implementation modalities, and finally, I think that's, of course, the key—to be a results oriented and reading responses to the needs of African countries and relevant partners. So, just again, very briefly—so, some of the activities we have been doing sort of on the hub side. I think we have clearly, a very important role on sort of policy and provision of guns for SE4All country action in particular. We've designed a number of templates and guidelines, including for the so-called Action Agendas, investment prospectus, but also, instruments to ensure that there is some element of quality assurance and quality control in this process. Now, we've been providing directly technical assistance to a number of African countries to help them in the development of their national strategies—these Action Agendas—but also, in the identification of relevant investment opportunities allowing increasingly to help them on the implementation of their priorities that have been identified.

We also try to, well, collect all relevant information, which is quite dispersed, on what's happening on SE4All because obviously, there are many stakeholders, many partners active in the SE4All context, and we have, to this effect, launched earlier this year's SE4All Africa—a website. We certainly encourage those that are interested to use that website. And certainly, we also are quite organizing and partnering with many institutions in the organization of relevant workshops and events. This is just to very briefly show on [Break in Audio] and SDG 7 and, I think, the very close linkage, obviously, between the two. Sort of starting from the launch by the UN Secretary General in 2011—the Declaration of the Decade of Sustainable Energy for All by the United Nations General Assembly, and, most importantly, the adoption of Sustainable Development Goal number 7 last September by the UN member of [Inaudible].

And if you look, of course, at the objectives of SDG 7, they match the objectives of Sustainable Energy for All. I think the only marginal difference is that instead of talking about a doubling of the global [Inaudible] renewable energy, it talks about a substantial increase. One of the tools that we have been promoting and we have been supporting many African countries in development, has been the Action Agenda. And basically, the idea behind the Action Agenda process was that the objects of access, renewable energy, and energy efficiency, are all interconnected to many linkages, many connections. And of course, there are also many nexus angles with areas that are sort of not directly energy linked, but where energy has a significant impact—whether that's on health, gender, water, food, agriculture, and many others.

So, the Action Agenda approach, as we [Inaudible] say—well, there's sense in developing an umbrella energy sector development document at the national level that tries to address these aspects in an integrated and holistic way. And one of the key kind of elements of the development process was that a

particular emphasis has been placed on inclusive development. So, yes, a lead, in most cases, by the Ministry of Energy, but very much with inter-ministerial kind of approach, given the links to other areas as highlighted earlier, but also trying to bring in all other relevant energy sector stakeholders—the development partners that are active, private sector stakeholders, civil society, and academia, for example. So, the Action Agenda's really trying to define the national objectives with the 2030 time horizon where relevant, and importantly outline our key actions that need to be addressed in order to move towards these objectives. So, in that way, it's intended to provide also a coordination platform for the various partners that are intervening at the country level.

Just to say that there have been a number of recommendations—I'm not gonna go through this in detail—in various documents from the SE4All Energy Access Committee to the Finance for Development Outcome Document or the G20 Action Plan on Energy Access that was adopted last year sort of highlighting the role of these Action Agendas, and also, the suggestion that they provide sort of a suitable framework for implementation of SDG7 at the national level. This is just a pre-snapshot of where sort of the country action processes currently stand in Africa. This is sort of just the various steps that have been defined from sort of a formal opt-in to the SE4All initiative where 44 countries have done that. I think it's a little bit solid now with SDG7 to which all countries in Africa—and of course, across the globe, agreed to. A lot of rapid assessments were carried out, which was basically just to determine where did the country stand today vis a vie the three SE4All objectives.

And particularly, we have Action Agendas now in—well, either very advanced or finalized in 20 African countries and several others under development. And equally, investment prospectuses that are particular development in many African countries. So, the focus clearly now is on the implementation side. This is basically just a more graphic way to show which countries in particular have gone through the process or are undergoing the development of the Action Agendas as we speak. We see, particularly, in West Africa, for example, there has been—or is—a coordinated regional approach sort of rollout of these processes where we cooperate very closely with the ECOWAS institutions—particularly the ECOWAS Center for Renewable [Break in Audio] Energy Efficiency.

So, all the 15 ECOWAS countries moved on sort of the same basis, not exactly at the same pace, but sort of in the same process on the Action Agendas as well as on renewable energy and energy efficiency action plans. And, just last week—maybe some of you attended the [Break in Audio] ECOWAS Investment Forum in Akram. It also showcased now, a coordinated approach to developing investment prospectuses over time in all 15 ECOWAS countries. But it's not limited to West Africa. Similarly, there are processes advanced in several of the East African countries, in quite a number of [Break in Audio] African countries, and also, in Central Africa—and equally, on the IP side, without going into further detail on this right now.

This is just to just very briefly highlight some examples of Action Agenda targets from some of the countries. The main ones here are Kenya, Rwanda, and Uganda, and, as one can see is, the targets are clearly focused on trying to move towards universal access to electricity, as well as to clean cooking, and in some cases, moving from a very low initial basis. Some of the countries—I particularly highlight Kenya and Rwanda there on the electricity side. In fact, the universal access to electricity targets are to be at [Inaudible] a lot earlier than 2030—by 2020 or 2022 respectively. On the clean cooking side, given that the challenge here is even higher than on the electricity side, this is sort of more, in deed, aligned with the 2030 kind of time line. Equally, on the renewable electricity channel—the share for renewable electricity generation—the countries see an increase, which is important in lieu of the significant expansion of electricity generation that he's envisaged in these countries.

But this is just a snapshot. All the information that has been sort of finally [Inaudible] value there by the country is available on the website. The Rwanda Action Agenda will be posted next week. There's gonna be the launch at the IPad conference in Kigali. Here, it's just to highlight something without going, again, in all detail, but some of the priority actions highlighted in Action Agendas.

Most of them, for example, talk about the scale up of mini-grid solutions, find priority actions related to quality standards to the development of comprehensive mini-grid policy and regulations—sort of touching on who's on tariffs or license and what happens when the main grid arrives—sort of, I think, very much in line with the point that Jem highlighted—that this is, indeed, being identified as one of the major barriers. But also, one of the supply sides to sort of the promotion of mini-grids and sort of linked to active clients. Also, the hybridization of existing diesel mini-grid in many countries with renewable technologies, or, indeed, also activities on the demand side. Similarly, on clean cooking—this is just a few of the priority actions that have been highlighted in several of the Action Agendas—again, sort of around similar themes on enabling environment, on supply side—including support to local manufacturers, I think, of, for example, high performing cook stoves to also addressing some of the financial—the access to finance challenge that is evident in the clean cooking sector. But equally, it applies to us and energy solutions, as well as, I think, a very important point about sort of awareness [Inaudible] and awareness campaigns and the like.

In terms of the way forward sort of on the SE4All country action, I just want to highlight three main points that, from our perspective at the hub, are most critical. The first that there is a concerted follow-up to these national plans that, in the many cases, have been developed really bringing together key stakeholders at the national level. And they require, obviously, a lot of focus of the government, but also support from partners—including some development partners. And it's also important that these processes are not seen as sort of a one-off, but rather as a continuous exercise. So, for example, in [Break in Audio] countries, working groups were established on energy access to electricity, on clean cooking, or on renewables and energy

efficiency, and it would make a lot of sense to continue some of these structures also while they're moving towards implementation.

Clearly, the mobilization of financing is sort of one of the key aspects on which also from the hub side, we try to provide support to countries going forward. The second key element is on sort of the element of coordination and institutionalization. We see, in many countries, many, many partners intervening—a lot of them even under an umbrella of Sustainable Energy for All. Yet despite, I think, intentions to better coordinate our interventions, I don't think we're anywhere near where one should be. And so, this Action Agenda process, in particular, and its subsequent implementation can provide sort of a platform to bring different stakeholders and—including development partners—around table in line or in support of objectives find by the country itself.

So, that coordination should, in our view, also ultimately be driven and led by the countries. And this is why also the institutionalization of the process is it's quite important, including having sort of national delivery units—secretariats or the like—that can sort of follow-up on a daily basis. And last, but not least, I think tracking and monitoring are critically important, because if that does not happen, it's very—it's impossible sort of to track on how things are progressing, how far our countries are advancing. And clearly, there are a number of instruments that have been promoted, including the context of SE4All, such as the [Inaudible] do in a [Inaudible] framework, which is certainly something that we would like to see gradually being applied in African countries, because it just provides a lot more granularity on the way we measure energy access. Just to say that, as I mentioned earlier on the SE4All Africa website, there's a lot of information available.

Just to move briefly to a second topic, as I mentioned—and I'm gonna try to be a little bit more efficient with time, to not take too much—but just on the GMG Market Development—Green Mini-Grid Market Development Program. The Market Development Program is implemented by the SE4All Africa Hub team. It is funded from the bank's own sustainable energy fund for Africa, but it's sort of part of an effort that DFID has been supporting on mini-grids in Africa. Currently, it is basically a mix of internal staff, but also, we have been able to procure advisory services from different experts and institutions that have a lot of expertise in the area of mini-grids. Just to highlight that—and I think most of you are familiar with that—that the bank—the African Development Bank—traditionally has been focusing mainly on the large-scale projects—on those mission distribution projects, which still make up the lion's share of our portfolio currently.

But we have realized, on the bank side—very clearly, in the last few years—that if you are serious about universal access to electricity, there needs to be a stronger emphasis placed on decentralized energy solutions. And this market development program—forming it is sort of one of the initial instruments from the bank's side to provide support in this critical area. So, we are currently in implementation of the first phase of the DNDP. It was also something that was designed with input from many partners, and, as I

mentioned, I will present a little bit of what we've done now in phase one, and more importantly, what we're envisaging on phase two. I think the on barriers to GMG development, it's very much in line with some of the points that Jem highlighted more generally.

We have done some analysis on this, and sort of the most important dimension that is being highlighted—particularly from developers—are, indeed, to the policy and regulatory framework. And specifically, as far as it's concerned to the question of tariffs—are they cost-reflective tariffs and what happens in countries where there's a uniform tariff policy. Questions of licensing, of mini-grids—of course the critical question of, ""What happens when the main grid or the National Grid arrives?" And generally, sort of the issue of inconsistency or changing government positions as far as mini-grids are concerned. There's still a lack of detailed market intelligence in many countries.

We also, I think, still face an issue of relatively few business models—particularly in sort of private sector business models—even some of the success stories on the mini-grid side today have a very high share of [Inaudible] or subsidy elements today. There's certainly capacity issues across the board, and that's an issue that is being consistently highlighted, including at the IOREC Conference a couple of weeks ago in Nairobi. And last, but not least—and I think this is certainly also a point critical for financing institutions to [Inaudible] be is the issue of access to finance—specifically access to long-term debt. So, the Market Development Program was designed in a way to respond to these categories of challenges or barriers, and it's basically operating alongside five business lines. From [Break in Audio] to business development support, policy and regulatory support, quality assurance, and access to finance.

So, the activities of the first phase that we have implemented—or are implementing—I'll just highlight them briefly—are the following ones. On Market Intelligence, we have been analyzing with the support of enlisted services all existing methodologies. Most of them are RGIS space, with a view to assess how do they rate on a range of criteria from sort of ease of use to how they deal with data policy to other aspects. And also, then based on that analysis, we came to the conclusion that while there is a wide variety of instruments that exist, there's sort of not a perfect one as such yet, so you have most of these methodologies scoring high on some aspects, but not so high on others. So, we have sort of developed a methodology that kind of tries to combine the strength of the different existing tools, and we're currently applying that in the first few countries.

The first one has been Mozambique. So, the analysis of the methodologies, the proposed methodology, and their market intelligence report will be published on the bank's website shortly, and this will be made available to all those that are interested. On the Business Development Services—which is the core element, particularly of the first phase—we've been working with Energy4Impact and INENSUS. And, in particular, we were able to launch at IOREC two weeks ago—or three weeks ago now—a help desk for developers

which contains relevant information, links to a variety of tools, from basically site selection, operation, and maintenance, and it also operates and Ask-An-Expert service where we have, on standby, different experts from the Energy4Impact and INENSUS team to respond to any questions that develop as might have. And in some justified cases, this might even be more in depth support.

We're also working currently on the development of a green mini-grid Africa strategy that we would like to table for endorsement by African ministers at the STC or the Specialize Technical Committee, which is sort of the new terminology the AU uses for the conference for Energy Ministers of Africa that will be convening in late November in [Inaudible]. And basically, the intention there is to dress the profile for mini-grids among African governments and give them some key principles and then issues at hand that will hopefully—they will address that subsequently at national level. Finally, on the Access to Finance—in the first place, we have been doing a supply side scoping. So, the various instruments that already exist that can—well, are supporting mini-grid developers as well as sort of a better understanding of what are sort of the needs that mini-grid developers have in particular. This will also be published in the course of November and will be available through the Help Desk site, so I certainly encourage those that are looking for financing for mini-grid projects, to make use of that tool once it becomes available.

This is just the snapshot of the Green Mini-Grid Help Desk, including the link. You can also access it directly from the SE4All Africa website; there's a button at the bottom of the page. We've learned, on the first phase, quite a number of lessons which we have tried now to apply in the design of phase two of this Market Development Program, including that there are still serious information gaps at national level, including information on mini-hydro, biomass potential—kind of the information about potential anchor clients or productive use applications. Also, the policy gaps—as highlighted earlier—that are the most important barrier according to the information that we were able to gather. And still—very much a need of long-term financing and an absence, at this point—a large absence—of commercial debt.

Also, local financial institutions are not familiar with the mini-grids and are, at this point, reluctant to lend to such projects. So, we're currently, as I said, working on phase two, and we would, after this call, through the practitioners' network and to the attendees, circulate the concept note for our phase two. We would very much appreciate input. We have quite a number of activities envisaged. Not all of these will kind of make it into the final document for approval, so this is kind of prioritization.

It's quite important, and your input on this prioritization would be extremely valuable. So, we have a number of activities foreseen under the different business lines. So, we want to continue to extend this Market Intelligence Country Studies to more countries—particularly some of the priority countries, high impact countries that Jem highlighted early on. We would also want to see how we can support sort of the resource mapping and the

mapping of productive use and anchor clients in the number of countries—particularly those where these market intelligence reports will be carried out. We also—given that there's a huge lack compared to the off-grid sector, at this point in time, of key market data, we would like sort of to initiate a process whereby this data, in terms of the number of mini-grids that are operating in terms of financing that has to be mobilized through the sector, *et cetera*, is sort of collected over time and regularly, because this is very important in order to assess how the mini-grid sector is developing over time.

On the Business Development Services, we want to extend and expand on the Help Desk and to support, through the Help Desk services. And we also want to see how we can support on the capacity building side—how can we strengthen the capacities of different stakeholders as far as mini-grids are concerned. On policy and regulatory support, we intend to mirror a little bit the Help Desk that we have now established for developers also for policy makers, so that this is an easy kind of support tool that policy makers can access if they have any issues or need any support on creating a favorable—enabling environment on legal, regulatory policy issues as far as [Inaudible] are concerned. And in this case, this will be complimented also by country packages that we are implementing directly already with a number of countries through our Sustainable Energy [Break in Audio] for Africa. We also intend to, on the quality assurance side, to see how the quality assurance framework that has been developed, is being [Break in Audio] in the context of global leap that was highlighted earlier by the Clean Energy Solutions Center in a number of African countries.

And finally, on Access to Finance, we intend to see if we can design a results-based funding facility. We also want to sort out the capacity needs that commercial finances—commercial local financial institutions have and how these can be addressed so that they, in turn, might lend to mini-grid projects. And ideally, we don't want this to be sort of done in isolation, but connected to some facilities that the bank is currently preparing, including dedicated credit lines to local financial institutions focused on energy efficiency and small-scale renewables, including mini-grids. And also, the access to finance [Inaudible] will hopefully help to contribute to, well, more financing being made available to mini-grid projects going forward. As I said, we would very much like your feedback on the concept now that we will circulate, including on the prioritization of the activities, and so any feedback you can provide due by 31st of October would be extremely valuable for us to make sure that we design the second phase in line with needs of different persons.

I've been talking too long, so I'm just gonna be very brief on the last three slides. I just wanted to highlight, very briefly, because this is not number one priority. Energy's the number one priority for the African Development Bank, and, as I said earlier, we have launched a New Deal on Energy for Africa. Just to give a brief impression of what here is currently envisaged and what is sort of some of the ongoing work. It's just saying that the New Deal on Energy for Africa target is even more ambitious that then SD7 goal.

It intends to achieve universal access in Africa by 2025, which is, as we all know, just now under 10 years. So, it's extremely ambitious. It's actually in line with the new SE4All strategic framework, which calls on the front loading of the energy access target, given the importance that SDG7 [Break in Audio] has for the achievement of most of the other sustainable development goals. We have actually done, at the African Development Bank, quite some analysis on what this would mean—a universal access by 2025—and it would mean 130 million new on-grid connections, 35 million new off-grid connections, 160 gigawatt, if new, capacity, and, of course on the cooking side, 150 million new kind of clean cooking solutions being provide to 150 million households. So, this kind of illustrates where it clearly—the huge ambition of the New Deal on Energy for Africa, and also highlights that it can only be achieved in partnership with all stakeholders active in the energy sector.

So, to support this ambition, a number of flagship programs have been established or, just very recently, at the bank, that tried to address a number of key scenes related to sort of the enabling environment to project financing, to scaling, particularly, energy access and also delivering basically the execution. I'm not gonna go into detail of these programs, but as a focus, for example, on IPPs through kind of put in programs for IPPs at national level. There's a focus on the key aspect of how utilities can be transformed to make that more credible as off-takers. There's a focus on early stage project preparation support, which has been identified by many as particular gap. There is a focus on sort of the bottom of the pyramid financing solutions for the bottom of the pyramid.

There were a number of activities and initiatives. And last, but not least, to have sort of a countrywide energy sector transformation approach—and this is also where clearly, from my perspective, was a link to the SE4 country action process. And certainly, last but not least—because it's cross-cutting—is this transformative partnership for energy in Africa. So, lots happening and we will certainly, from our side, provide a lot more information and entry points on the various activities under the New Deal in due course. But let me stop here and hand back to Eric and Jem for continuation. Thank you.

Eric Great. Thank you very much, Daniel. We'll transition over to Katrina now.

Katrina Great. Thank you. I appreciate that. And thank you to everyone for participating and to UNF and the Solutions Center or the opportunity for us to speak. So, just a quick overview for folks that might not be familiar.

Power Africa is an initiative that is led by the US, but is really grounded in partnership, and it recognizes, as you all know and as you heard from Daniel and Jem, the significant opportunity that exists in sub-Saharan Africa to help electrify the 600 million people who are currently without. The Power Africa Model, as I mentioned, is really grounded in partnership, and it's designed to leverage practical solutions that build on collaboration, finance, and energy expertise, private sector engagement and leadership—and again, further development with civil society and others which a very important goal of leveraging effective partnerships. The focus for today's call is on the energy

access component of Power Africa, and to give you a sense of our goals, we have a broad goal to double access to electricity across the continent by 2030. To do that, we have two high-level goals. One is to add 30,000 new megawatts of clean power, and the second is to add 60 million new household and business connections.

Now, to do that, as you know, that's very ambitious, and it really hinges on partnership, as I've mentioned. We have over 120 private sector partners that have committed over $31 billion to the power sector in sub-Saharan Africa, and this includes over 60 partners that are focused on Beyond the Grid. Beyond the Grid is the piece of Power Africa that focuses on off-grid energy access. The other important piece I'd like to mention is the work that we're doing with development and strategic partners. I won't spend much time going through these, suffice it to say that we're in close coordination and cooperation with everyone, including the World Bank, the EU, government of Sweden, the African Development Bank—and I'll highlight a few points for _____ writing with Daniel. Also, SE4All, IRENA, Canada, NEPAD, *et cetera*.

And there are a couple of more on the horizon, so stay tuned for those. Now, the crux of what guides our work is a document that we released earlier in the ear called *The Roadmap.* And this is really designed to help layout how we're going to reach our aggressive goals. I won't spend a lot of time on this slide—you can look at the roadmap yourself—but what this does is show you the two paths to achieving our goal. On the left, you see the path focused on the megawatts, and on the right, you see the path focused on the connection. So, within the 60 million connections, we think approximately half will come from scaling up grid rollout or on-grid connections, and approximately half that come from off-grid, which is the Beyond the Grid program.

To do this, we focus primarily on household solar and micro-grids. Now, thinking about Beyond the Grid, this was something that was launched in June 2014 in Ethiopia, and really could recognize that there's a lot of opportunity. It took us a bit to get our feet under us and to really start showing some results, and I'm happy to discuss that with [Break in Audio]. Here's our two priorities. As I mentioned, we have 25 to 30 million connections that we're expecting to delivery by 2030.

To do that, we think that 17 to 20 million of those will come from solar home systems, and 8 to 10 million will come from micro-grids. This slide gives you a quick snapshot of how we are prioritizing our work. On household solar, we're really looking at access to financing and technical assistance to get over those stubborn market barriers. On micro-grids or mini-grids—we use that term interchangeably—we're primarily focused on making sure that the policy environments are conducive to actually allowing these systems to go forward, providing a commercial private sector business opportunity, as well as, of course, financing as well. So, to get there, there's a couple of key things that we will cover.

The first one, again, is partnership with our key private sector partners. We'll talk more about that in a moment. Another is, again, donor strategic

partners—a sort of recognizing the suite of tools and resources that comes to the table on behalf of the US government, on behalf of those partners, including commercial banks, private investors, impact investors, and then again, looking at promoting opportunities that cover that 60 million connection goal. So, how do we think about an integrated approach to energy access, one that doesn't just look at off-grid or grid rollout, or opportunities for large scale transactions, but how do we do this in a coordinated way? And then finally, looking to identify and leverage key related issues—things like energy efficiency, energy efficient appliances—and I'll touch more on that in a moment.

Probably one of the most exciting, I think, pieces of our program are our field advisors. So, in addition to the team that is based here in South Africa and also in Washington, D.C. that support Beyond the Grid, we have 11 advisors that are sprinkled across the continent that focus on off-grid energy. I've listed the countries here as well as our two advisors that cover the continent that can be deployed for additional countries or other regions. The focus of these advisors is to provide that transaction assistance, that technical assistance to both companies and governments to help accelerate these new connections. I wanted to give you a snapshot of what that means in the field, so these are our examples of assistance that we've provided to our private sector companies over the past six months.

I won't go through all of them in detail. I understand that you'll be able to download the slides, but it does include assisting with the review of grants, applications. It includes making connections to private investor and financiers to helping navigate the regulatory processes and distribution licensing requirements; helping to refine and strengthen marketing strategies, retail strategies; again, connecting up with new companies for partnership opportunities, distribution opportunities; again, working around regulatory changes and how that could impact the broader sector; providing a coordination role; and then finally looking to support the companies as they look to expand or improve their operations or try new things. This is a link, I think, to mention back to the Green Mini-Grid Help Desk that you hear Daniel mention. Our vision is that these services can really provide a very cooperative opportunity.

So, as some of the requests that come in to the service for AFBV is of great opportunity for those requests to be sort of graduated out into further assistance that field advisors can provide. And so, our programs our working closely on that. In terms of providing examples of assistance to governments, here's a snapshot, again, of recent types of assistance. So, one is take a look at the existing policies and make recommendations for ways to provide incentives—and that can be both a policy incentive and a financial incentive—to accelerate access; really categorizing best practices from the continent and elsewhere; providing technical assistance on key technical issues like integration of mini-grids into the main grid, thinking about how concession models can work with off-grid; looking to support technical standards and development of those; capacity building efforts; and finally, implementing and developing their rural electrification strategies. One thing I

might mention here that takes us back to the idea of leveraging related topics—we are partnering with SE4All to do an energy efficiency roadmap for Uganda.

One of the key pieces of that document that it's in development now is looking at the energy access and energy efficiency nexus, and providing really a blueprint that builds on the SE4All Action Agenda that you hear Daniel mention to go deeper on energy efficiency, identify these key linkages, and look at ways to operationalize that. I'll just take a quick minute and mention the importance of the US government Interagency Partnerships. These really are critical to helping us achieve our success. There's a whole host of opportunities. I've listed two agencies here—the US Department of Energy and the US Trade Development Agency.

There's additional opportunities through USAID, OPIC, XM—I'm happy to talk offline where appropriate. Here's just a handful of the collaboration with the Department of Energy. We'll be rolling out these initiatives in the coming year. We'll be doing technical validation of the Quality Assurance Framework for Mini-Grids, working with private sector companies in sub-Saharan Africa. Here, again, we also see a strong opportunity to link up the Green Mini-Grid phase 2 work that you heard Daniel mention.

We're partnering with Global LEAP and DFID to expand the successful Global LEAP results-based financing procurement incentive that's running in Bangladesh now. We'll be bringing that to East Africa in 2017. And then finally, we are right now running a competition with DFID with the USAID Global Development Lab to recognize and award high-quality off-grid refrigerators. I'll speak more about that in a moment, but applications are welcome now. Moving then into the US Trade and Development Agency—they just actually held a call for proposals for grant applications.

This is an agency that will provide grants for project prep activities that can include anything from a small mini-grid to a large power plant. So, these were very exciting. We saw a number of off-grid projects come in the grant window for these. They're currently under review. I mentioned briefly the refrigeration prize; that is one piece of the scaling off-grid energy grant challenge for development.

This is really a flagship activity under Power Africa for our household solar activities, and what this is is a partnership that was announced in June with DFID and Shell Foundation and the USAID Development Lab looking to really focus and accelerate the household solar sector to hit 20 million households just from household solar. To do that, we're really focused on leveraging the existing activities and then growing them. So, we're focused on three elements. The first is Expanding Supply, and we'll be supporting companies that serve off-grid customers by helping them expand geographically, testing new business models, tapping into new sources of finance. We'll be working to drive demand, so working through encouraging innovation in products and services, including, again, the household refrigeration prize that I mentioned.

Also, looking to do more on [Inaudible] finance services, and finally looking to strengthen the marketplace—so, doing that by promoting policy and regulatory reforms, spurring again greater use of mobile payment systems, and growing the capacity in mobile markets. So, we think this is a great opportunity to sort of highlight the partnership of Power Africa, as well as the household solar focus. In the interest of time, I will move quickly through the toolbox. You see the links are at the bottom? You can download it and feel free to reach out for us; we can go through these in specific for you.

Transaction assistance is probably one of the most popular tools that we use for off-grid energy. I mentioned the USTDA grant application—they had over 300 that were received, and they're being reviewed now. We also have the USAID Development Innovation Ventures grant competition, which is another popular one for off-grid. Finance—we have a partial credit guarantee that is in place now for off-grid. It's a $75 million opportunity and we can talk more about that either offline or in the questions.

I would highlight here—the $15 million commitment that the overseas private investment corporation made to Lumos in Nigeria to expand their operations. For capacity building, this is a great opportunity that leverages partnerships with DFID, with DOE, et cetera—also looking to work through the MCC—the Millennium Challenge Corporation Compact. Mentioned here is the $46 million for Benin, and we also do provide legal assistance—no so much as relevant for off-grid. So, finally, here's our team here in Pitoria. I'm in Washington, myself. Maria Hilda Rivera and Lovemore Seveni.

We do, as I mentioned, have a couple of folks who are on assignment with us from other agencies—Claudia Schwartz from the US African Development Foundation, as well as our team of field advisors. Feel free to reach out for any questions, comments—any ways that we can further assist. And we're also happy to connect you up with our field advisors for further discussion in country. So, with that, I'll turn it back over to Jem.

Eric Thank you very much, Katrina, and thank you all for those great presentations. We're gonna turn to a question and answer session at this point. Just a reminder to participants to please enter questions into the Question Pane. The first one goes to both Daniel and Katrina, really. It's about—there's a few questions about micro-grids that I'm gonna ask together here.

The first one is, a participant asks, "What scale are micro-grids at this stage in sub-Saharan Africa? How many have been deployed and what the time lines are?" So, sort of establish a baseline. And either Daniel or Katrina. It was asked to Daniel, but it was relevant for Katrina's work also.

Daniel Right. Sorry. I was on mute. And well, we see in terms of mini-grids, we see actually a huge bandwidth in terms of mini-grids from sort of just, let's say, a few hundred kilowatts up to sort of really larger ones that are kind of several, maybe together, sort of in the lower megawatt level. So, it's still quite a variety of different systems that we're seeing.

The numbers—this is one of the issues that there is no clear kind of measuring of the number of mini-grids at this point in time. Having said that, our colleagues at the ECOWAS Center for Renewable Energy Efficiency just recently, last week, in Accra presented sort of an overview of mini-grids in West Africa, and there were, sort of, at several hundred, but mainly focused on two countries—Senegal and Mali, where there has been a particularly active sort of mini-grid approach. And then they have been established—most of them, quite a number of years back. So, it's difficult to give a clear overview at this point in time in terms of the numbers of mini-grids, and we hope, in fact, through this standardization and measurement on a regular basis, we can provide more visibility and clarity of what are we talking about in terms of the current size and then also be able to measure how the mini-grid sector is evolving over time, including also to have then information about the respective sizes of the mini-grid systems as well.

Katrina Thanks. The only thing I would add—I agree with everything that Daniel said—is that there is, on the active discussion of, I think, trying to scale up the existing set of perhaps older diesel only grids, to make them hybrid or transition them into solar plus storage. And that continues to be, I think, an interest of the private sector as well as the governments and donors.

Eric Great. Thank you both. [Break in Audio] question that relates to the comment that Katrina just made right there is if—either Daniel or Katrina or Jem, "We're seeing a limit to the suitability of solar PV, and if there's anybody investigating/incorporating small hydro or wind in some micro-grids as well."

Katrina Yeah, I can just tackle that one and then I'll turn it over to Daniel. I think the issue is that no, we haven't, I think, approached anything that looks like a limit for PV, at least in the off-grid space. And there are a couple of mini-grids in East Africa that are actually looking at doing micro-hydro and micro-hydro plus solar. One of the—a company called Virunga Power—and there may be others as well—so, I think that that is happening, but, albeit, in much more, I think, identified pockets.

Daniel Yeah. I agree with what Katrina said. I think most of sort of the mini-grids that we're seeing are solar PV or a combination of hybrid solar PV and diesel prep, for example. But particularly—well, in a number of countries, we're seeing also mini-grids sort of linked to small hydro. For example, a colleague of ours was just recently in a remote province in DRC—there's a huge potential there for mini-grids, including particularly sort of linked to small hydro. I'm not aware—at least I haven't sort of heard of mini-grids with dominantly wind, but again, this might be due to a lack of information about what mini-grids are out there.

Eric Great. Thank you both. The next question is directed towards Daniel, but it's a topic that Katrina might like to comment on as well. "How will the African Development Bank Manage household lack of purchasing power? You mentioned in your presentation that developers expressed a need for RBF to support rural consumer connections..." and the participant asks if you could expand on that a little bit more, what the design for results-based funding facilities might look like.

Daniel Thank you for that question. The affordability issue is, indeed, one of the key challenges, particularly if you're talking about the bottom of the pyramid, because I think people also have to realize that while many of those that, for example, afford at this point in time, let's say a solar home systems, are probably really not really the bottom of the pyramid. I think on our side—on the bank side—we have different approaches at this point in time. One is through a kind of focused on-grid program to have sort of subsidies also for sort of the last mile of connections. We have worked—we financed the particular [Break in Audio] in Kenya recently where there is sort of some efforts to provide sort of subsidies for households that would not be able to afford it otherwise to the grid.

In terms of the result-based and [Inaudible], we have sort of not fully defined that yet under the mini-grid program. Basically, here, the activity would be, in a first instance, to get some outside expertise to help us design that in sort of the best possible way, and also take into account lessons learned from existing RBF approaches. For example, GI Setum is having RBF funding facilities on mini-grids operational in a few countries, including, for example, in Rwanda, so we want to kind of learn from sort of the lessons learned of some of the existing ones, not in the design of the new ones. So, I cannot yet provide sort of too much detail about it, because this is still at a relatively early stage.

Eric Great. Thank you. Is there anything you'd like to add to that, Katrina?

Katrina No, not at this time. Thanks.

Eric Okay. Great. A follow-up question that relates to that is about the affordability trajectory for off-grid and mini-grid projects. "So, what cost per kilowatt hour is sort of the relevant benchmark now and what direction those costs are heading in the near future as it relates to affordability for the group that we were just talking about?"

Katrina I think it depends. Really, the way that we tend to think about this is the tariff price and sort of comparing that to what the customer would otherwise have available to help meet their electrification needs. And so, I think that's the big question that needs to be addressed. Typically, in East Africa, you're seeing tariffs, you know, $0.30-$0.40—even approaching $0.46. I think those, when you compare them to what the other options are that are out there for the customers, those can be competitive.

And, as Daniel mentioned, there's opportunities to sort of support that through innovative financing or buying down the cost of connections using Pay As You Go type structures in a mini-grid setting. So, there's a variety of ways to continue to work to drive those down.

Daniel I fully agree with what Katrina said, just to hold [Inaudible]. I think that there is clearly [Break in Audio] to hold energy efficiency discussion. We also see that there's a lot of effort in making appliances look more efficient than they are currently, and hence, you can do a lot more when you can power a lot more appliances through a home system than what is currently possible. So, I

think the efficiency gains of appliances is important kind of factor to take into account also going forward. I suspect that in 5 or in 10 years, one will be able to power more activities and appliances with a, let's say, solar home system than we're currently able to.

Eric Great. Thank you very much. The next question is about the role of civil society organizations and the participant asks each of the presenters how you plan to work with civil society in the initiatives you've mentioned both at the national and local level, and what value civil society can bring to this work.

Daniel Well, in terms of—I mean, it has been, as far as, for example, sustainable energy for [Inaudible], and how the role of civil society was highlighted very much from the beginning in [Inaudible], also bringing in the dimension of those that—instead of moving a little bit away from just the sort of supplier considerations, but really kind of approach, also energy access, very much on the demand side. For example, in these SE4All tree action processes, the dimension of consultations—including the civil society stakeholders—is one of the key points that we emphasize from our side. I think we have seen a number of very good examples where there's [Inaudible] is happening in an exemplary way. We've also seen other cases where that is a bit more difficult. Also, maybe sometimes because governments are not as used to engaged with civil society stakeholders.

As for mini-grid issues are concerned, civil society organizations can play a very important role, including—in terms of the aspect of community engagement. For mini-grids to be successful, it is an essential requirement to be able to understand and work very well together with communities, and that community engagement is, in many cases, facilitated—or can be facilitated—through civil society organizations. So, really, there's a strong—a focus and a key role to be played by civil society organizations in the energy access arena.

Katrina Yeah. I think building on that, Power for Africa has, I think, worked hard to maintain a strong partnership with civil society organizations both based in the US and based on the continent. I think from our perspective, as Daniel mentioned, it really does create a very important linkage to the work that we're doing with the local communities, really making sure that all of the citizens and the stakeholders have really an effective voice in the energy sector development. So, I think that we've tried to do that in increasingly frequent numbers of engagement opportunities over the last couple of years, and would be happy to speak more about that offline.

Eric Great. Thank you both. The next question is about micro-grids and isolated grids versus sort of grid connected mini-grids and what thoughts are about how to plan for eventual connection. You both spoke about it a little bit, Daniel and Katrina, but just how to think about grids, approaching mini-grids, and eventually getting connected, potentially.

Daniel Well, this is, indeed, one of the key uncertainties that particularly private sector developers face, and one—I think one recommendation clearly is that there's, on the government side, transparency about the grid expansion plans,

on the one side. I think it's also important to look at ways whereby mini-grids are already sort of designed in a way that it can connect the grid when it arrives, but I think very important, that there is policies in place to address issue of compensation to the mini-grid operators or kind of providing them with an opportunity to connect to the main grid. I think it's [Break in Audio] that these aspects are clearly formulated to provide predictability to private sector stakeholders, to mini developers. And if, as I said, mini-grids are designed technically in a way that they can connect to the main grid, I think that's also important to consider at the planning stage already.

Katrina Yeah, I completely agree with what Daniel said, and I think the link to the financing is critical—that really having that certainty, as Daniel was discussing, between sort of the mini-grid location and where the grid is planning to go because the government utility has made that expansion public. Understanding that—understanding then very clearly what that legal framework is, will help really de-risk a lot of these systems. I think one of the reasons we've heard from financiers is that mini-grids or micro-grids are still a bit tricky for them is that there is such uncertainty. And so, I think that's a very important piece. And the other piece is really just the economics—that these mini-grids, whether or not they're connected to the grid or not, can really look to provide that sort of last mile connection—that if these systems are allowed to have an opportunity, as Daniel said, to be created with an [Inaudible] integrating with the grid—if that's the company's business model, then that may be a less expensive way to actually finance these connections.

And having clarity from the government about what the rules of the road around this topic are can go a long way towards making these business models, I think, much more attractive to investors, and really helping to [Inaudible] the connections.

Eric Great. Thank you very much. We had a lot of great questions, some of which we weren't able to get to, so we'll connect with those attendees offline to address their questions. Thank you for that great question and answer session. Before we turn to the survey, I'd like to provide the panelists with a quick opportunity to make any closing remarks, and perhaps will go in the order that you all presented. So, we'll go Jem, then Daniel, and Katrina.

Jem Thanks, Eric. Can you hear me?

Eric Yes.

Jem Okay. Yeah, no—I'll just keep it very short. I just really want to extend thanks and gratitude on behalf of the UN Foundation to Daniel and Katrina for participating in the webinar. I think both presentations demonstrated the depth and the width of the amount of support and work and effort that both organizations are placing on this issue, among other organizations we know who are involved in this space. So, we're very pleased to be a partner and a colleague to them, and look forward to continuing our collaboration in this space. And a final thank you to all of you for joining us today. Thank you.

Daniel Just from my side equally, a big thank you to all those that were able to join the webinar and indeed for the excellent questions that were asked. I would also like to thank the UN Foundation for giving us the opportunity to highlight or present some of the work that we're currently doing. I'd also like to thank Eric for moderating the session. And finally, as mentioned in my presentation, certainly all those—particularly those working in the mini-grid space to provide feedback on the concept note for the second phase. I think your input and feedback will certainly help us to make it as responsive to the needs of those that are working on these topics on a daily basis. So, thank you very much.

Katrina Thanks. And just to echo the appreciation to both UNF and the Solutions Center for the opportunity. I really would encourage you all to reach out, take advantage of the tools and services and resources that Power Africa under the Beyond the Grid program. We are looking forward to interacting with you and look forward to hearing from you soon. So, thank you all very much for your time today.

Eric Fantastic. Thank you again to the panelists. We'd now like to ask the audience to take a minute to answer a quick survey on the webinar. We have five short questions for you to answer, and your feedback is very valuable to us as it allows us to know what we're doing well and where we can improve. So, you'll see the questions displayed on your screen. The first question is—the webinar content provided me with useful information and insight.

Next—the webinar's presenters were effective. Overall, the webinar met my expectations. Do you anticipate using the information presented in this webinar directly in your work and/or organization? Do you anticipate applying the information presented to develop or revise policies or programs in your country of focus? Thank you for answering our survey.

On behalf of the Clean Energy Solutions Center, I'd like to extend a thank you to all of our expert panelists and to our attendees for participating in today's webinar. We had a terrific audience, and we really appreciate your time. I invite our attendees to check the Solutions Center website if you'd like to view the slides and listen to a recording of today's presentations as well as previously held webinars. Additionally, you will find information on upcoming webinars and other training events. We are now posting webinar recordings to the Clean Energy Solutions Center YouTube channel.

Please allow for about one week for the audio recording to be posted. We also invite you to inform your colleagues and those in your networks about Solutions Center resources and services, including no-cost policy support. Have a great rest of your day and we hope to see you again at future Clean Energy Solutions Center events. This concludes our webinar.