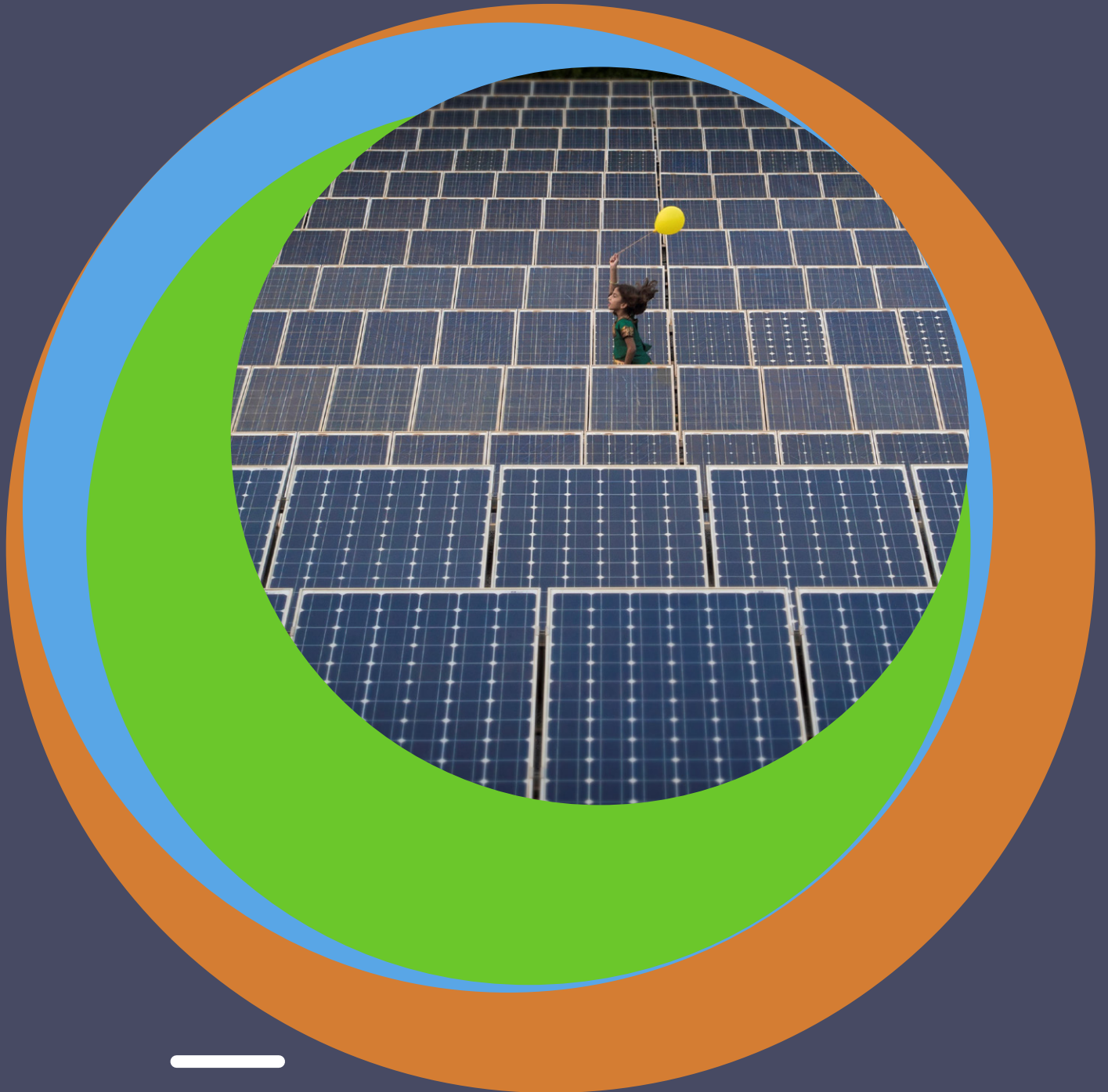




Alliance for  
Rural  
Electrification  
*Shining a Light for Progress*



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# ANNUAL REPORT 2018

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# 1. MESSAGE from the New President

**OURS IS A WORK IN PROGRESS** as still millions of people do not have access to electricity or efficient lighting and economic development. Providing electricity for all by 2030 would require an annual investment of about USD 52 billion per year, more than twice the level mobilised under current and planned policies! Of the additional investment, 95% needs to be directed to sub-Saharan Africa. By 2030, renewable energy sources will power over 60% of new access, and off-grid and mini-grid systems will provide the means for almost half of new access, underpinned by new business models using digital and mobile technologies.<sup>1</sup>

Specific energy access plans loom larger in many countries, yet even pioneering countries that lead the regulatory and policy front for private sector intervention in the energy access sector face challenges related to capacity and speed of execution.



**In 2016, at least 9 million were connected to renewable mini-grids and 124 million utilised solar lighting solutions and solar home systems”**

In 2016, at least 9 million were connected to renewable mini-grids and 124 million utilised solar lighting solutions and solar home systems<sup>2</sup>. Small-scale distributed capacity investment, or investment in solar PV systems of less than 1 MW, increased 15% to USD 49.4 billion.<sup>3</sup> The mini-grid sector is showing promise with small amounts of capital committed to various developers & projects. The number of people connected to mini-grids increased three-fold in Asia between 2008 and 2016, to 8.8 million. During the same period, Africa saw a six-fold increase, from just over 0.2 million to 1.3 million.<sup>4</sup> The majority of the schemes however use diesel or hydro power generation and are run and maintained by the



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government. The Development Funding Institutions are experimenting with Results Based Funding (RBF) for connection subsidies and there are discussions underway that would ultimately see broad based investment in kWh subsidies to ensure tariff equity for consumers irrespective of the energy source. That said, there are few pioneers leading the fray and deployment of capital remains inefficient and incredibly slow.

We have high hopes for the AfDB's recently launched Off-grid Energy Access Fund (OGEF) of USD 58 million, which is part of the Bank's FEI with USD 500 million (mostly on-grid, and about 100 million for off-grid). The pan-African coverage with prequalified eligibility based on past track record should accelerate deployment of capital and ultimately clean energy connections. It is to be measured on speed of deployment and efficiency, so we expect it would accelerate capital at a higher rate and larger amounts.

As the sector develops, we are seeing new and innovative companies coming to the forefront - looking to solve the electrification challenges not as much with technology innovation but business model innovation. Ultimately this is what is required to break that status quo.

<sup>1</sup> See IEA Energy Access Outlook 2017.

<sup>2</sup> See IRENA, Policies & Regulations for Renewable Energy Minigrids, 2018, p. 6.

<sup>3</sup> See REN 21, GSR 2018 p. 145.

<sup>4</sup> See IRENA, Policies and regulations for renewable energy mini-grids, 2018, p. 8.



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Special thanks go to our Members, their commitment of annual Membership fees which enable us to do our work on their behalf. A big thank you goes also to our Partners AEEP, AidEx, GIZ, IDB, Intersolar Europe, OFID, GET.invest (earlier RECP), SEforALL and UNIDO and many more that have contributed greatly to our 2018 agenda without whom it would have been impossible.

ARE welcomed 39 new Members in 2018 - we now represent 133 Members active in nearly all countries in the world. More importantly, our specific regional focus on Africa, Asia and LAC has resulted in 18 new Members from Europe, 8 from Africa, 10 from Asia, 3 from Americas. We lost 41 Members due to lack of payment within a reasonable period of time. We are sad to see them go but note that Membership payment is critical to ARE operations. Ultimately the work we do provide the sector and Membership benefits and it has running costs that need to be covered as a non-profit organisation.

Building on the success of previous editions of our flagship event, for the upcoming 5<sup>th</sup> ARE Energy Access Investment Forum (EAIF) 2019 in Abidjan we expect more than 250 registrants to attend - a similar high number of participants as for previous ones in Catania, Lisbon, Madrid and Amsterdam though more travel efforts will be needed. This year's EAIF, organised in partnership with the [African Development Bank](#) and GET.invest and supported by Club-ER, ECREEE, SEforALL and UNIDO will gather public, private and other stakeholders with the goal to boost clean energy access globally and in particular in Africa, where 588 million people still lack electricity. A crucial part of the programme are the ARE Awards 2019 and more importantly the expected several hundred B2B matchmaking meetings, highly

acknowledged by participants as they pave the ground for deeper business relations. To intensify the exchange with players from and outside Africa, ARE will also hold its Annual General Meeting in conjunction with the Forum the day before.

Personally, I am especially proud to have been elected by the Members to lead the association as President over the last year. In a short period of time we – thanks to the Board and Secretariat efforts - have achieved a lot, increasing our energy access project work on diverse levels and engaging with five new funding partners. Our agenda is more Member-success focused and the ultimate goal is to measure the organisation by energy access connections deployed through Membership.

As I said at the beginning of this letter, ours is a work in progress. ARE and myself look forward to continuing our just fight to ensuring accelerated increase of energy connections in the world.



**Vivian Vendeirinho**  
ARE President  
(2018 – present)

## 2. FOREWORD from the Executive Director

**DURING ITS GENERAL ASSEMBLY IN CATANIA** on 12 March 2018, the Membership of ARE adopted the revised ARE Strategy prepared and presented by the ARE Board to better meet and tackle the present needs of the clean off-grid sector. ARE was created over 10 years ago with the objective to help build a sector and has performed admirably in building up support and legitimacy in distributed renewables energies. Now that this legitimacy and an initial upswing in funding has been realised, the sector is evolving from a “why” to a “how” phase.



**ARE (co)organised 18 events - leading from fora and conferences to workshops and trainings - in 15 different countries worldwide with more than 3,000 participants in total”**

To support ARE Members more effectively in their way to make clean energy access happen in Africa, Asia-Pacific and Latin-America/Caribbean, the Secretariat has been very active during last year. While the Annual Report itself will give more comprehensive insights into the activities per newly-established workstream and per department, I would like to use the opportunity here to highlight a few achievements of major importance:

Building on our aim to build a sustainable decentralised renewable energy industry for the 21<sup>st</sup> century, to activate markets for affordable energy services, and to create local jobs and inclusive economies ARE (co)organised 18 events - leading from fora and conferences to workshops and trainings - in 15 different countries worldwide with more than 3,000 participants in total. For two-third of the events, experts came together directly in the mentioned target regions where energy access remains a crucial challenge which can be addressed through B2B and B2F support. While both, the quality and quantity of events, as well as their regional spread, could be increased by the ARE team, the association had to face a decline in Membership for the first time in the last six

years. Reason being that companies working hard for SEforALL and SDG targets would like to see better and more tailored support. Non-profits like ARE, which only receive a third of their funding from Membership fees to keep the threshold as low as possible, would strongly benefit from funding support for core activities (instead of only project-linked funding) to improve their skills and services, and thus better serve the market.

Therefore, I welcome very much that during its EU Presidency in the second half of 2018, Austria put a special focus on examining how development cooperation can be improved, and its effectiveness and collaboration with the private sector scaled up. Along these lines we would like to thank in particular the European Commission, the Austrian and German Government as well the African and Latin-American Development Banks together with the OFID for their commitment and increasing financing initiatives to support cross-border and regional collaboration on decentralised renewable energy for development.

We strongly feel that the reference projects done with these partners can be used as models by ARE and new incoming development partners to multiply the success of ARE and Partner missions.

We truly believe that together we can change the world, and we very much look forward to collaborating with you moving forward to make this dream of energy access for all a reality soon!

I wish you interesting insights on ways to get involved with us. Let’s start now!



**Marcus Wiemann**  
ARE Executive Director  
(2013 – present)

# 3. ABBREVIATIONS LIST

<b>ACEF</b> Asia Clean Energy Forum	<b>DOE</b> Philippine Department of Energy	Renewable Energy Agency	<b>REN21</b> Renewable Energy Policy Network for the 21 <sup>st</sup> Century
<b>ACES</b> Asia Clean Energy Summit	<b>DRE</b> Decentralised Renewable Energy	<b>ISA</b> The International Solar Alliance	<b>RES4MED&amp;AFRICA</b> Renewable Energy Solutions for the Mediterranean & Africa
<b>ADB</b> Asian Development Bank	<b>DRD</b> Department of Rural Development of Myanmar	<b>ISES</b> International Solar Energy Society	<b>RET</b> Renewable Energy Technologies
<b>AEEP</b> Africa-EU Energy Partnership	<b>EAIF</b> Energy Access Investment Forum	<b>kfW DEG</b> German Investment Corporation	<b>ROGEP</b> Regional Off-Grid Electrification Project
<b>AFD</b> Agence Française de Développement	<b>ECOWAS</b> Economic Community of West African States	<b>KEA</b> Korea Energy Agency	<b>SDG</b> Sustainable Development Goal
<b>AfDB</b> African Development Bank	<b>ECREEE</b> ECOWAS Centre for Renewable Energy and Energy Efficiency	<b>kWp</b> kilowatt peak	<b>SEforALL</b> Sustainable Energy for All
<b>AGM</b> Annual General Meeting	<b>EDP</b> Energias de Portugal	<b>kW</b> kilowatt	<b>SHP</b> Small Hydroelectric Power
<b>AMDA</b> Africa Mini-grid Developers Association	<b>EIP</b> External Investment Plan of the European Union	<b>LAC</b> Latin America and the Caribbean	<b>SIEW</b> Singapore Energy Week
<b>ARE</b> Alliance for Rural Electrification	<b>ElectriFI</b> Electrification Financing Initiative of the European Union	<b>LatAm</b> Latin America	<b>SIN</b> National Interconnected System
<b>AU</b> African Union	<b>ESS</b> Energy Storage Systems	<b>LOGiC</b> Low Carbon Off-Grid Communities	<b>SMEs</b> Small and Medium Sized Enterprises
<b>ASEP</b> Access to Sustainable Energy Program	<b>EUEI PDF</b> EU Energy Initiative Partnership Dialogue Facility	<b>MFI</b> Multilateral Finance Institution	<b>SNV</b> Stichting Nederlandse Vrijwilligers (Netherlands Development Organisation)
<b>BMZ</b> German Federal Ministry of Economic Cooperation and Development	<b>EUR</b> Euro	<b>MENA</b> Middle East & North Africa	<b>TTA</b> Trama TecnoAmbiental
<b>BSW Solar</b> The German Solar Association	<b>FEI</b> Facility for Energy Inclusion AfDB's Platform	<b>MESIA</b> Middle East Solar Industry Association	<b>UNF</b> United Nations Foundation
<b>B2B</b> Business-to-business	<b>FRES</b> Foundation Rural Energy Services	<b>MNRE</b> The Ministry of New and Renewable Energy of India	<b>UNIDO</b> The United Nations Industrial Development Organisation
<b>CfP</b> Call for proposals	<b>GE</b> General Electric	<b>MoU</b> Memorandum of Understanding	<b>USAID</b> The U.S. Agency for International Development
<b>CLEAN</b> Clean Energy Access Network	<b>GIZ</b> Deutsche Gesellschaft für Internationale Zusammenarbeit	<b>NGO</b> Non-governmental organisation	<b>USD</b> US Dollar
<b>Club-ER</b> L'Association Africaine pour l'Électrification Rurale	<b>GMG</b> Green Mini-Grids	<b>NEA</b> Philippines National Electrification Administration	<b>WS</b> Work Stream
<b>COMESA</b> Common Market for Eastern and Southern Africa	<b>HICs</b> High-impact countries	<b>NHN</b> North-Holland-North	<b>ZNI</b> Non-Interconnected Zones
<b>COP</b> Conference of Parties	<b>IAEREP</b> Increased Access to Electricity and Renewable Energy Production (EU-Funded Project)	<b>NPP</b> New Power Producer	
<b>CoP</b> Community of Practice	<b>IAYES</b> India Africa Youth Energy Symposium	<b>NWE</b> North-West Europe	
<b>DG DEVCO</b> The European Commission's Directorate-General for International Cooperation and Development	<b>IBGE</b> Brazilian Institute of Geography and Statistics	<b>OGEF</b> Off-Grid Energy Access Fund	
<b>DG ENER</b> The European Commission's Directorate-General for Energy	<b>IDB or IADB</b> Inter-American Development Bank	<b>OFID</b> OPEC Fund for International Development	
<b>DFI</b> Development Finance Institution	<b>IEA</b> International Energy Agency	<b>OLADE</b> Latin American Energy Organisation	
<b>DHES</b> Decentral hybrid energy systems	<b>IEC</b> International Electrotechnical Commission	<b>PAYG</b> Pay as You Go	
	<b>IRENA</b> International Renewable Energy Agency	<b>PFAN</b> Private Financing Advisory Network	
		<b>PhP</b> Philippine Peso	
		<b>PURE</b> Productive Use of Renewable Energy	
		<b>PV</b> Photovoltaics	
		<b>QTP</b> Qualified Third Parties	
		<b>RE</b> Renewable energy	
		<b>RECP</b> Africa-EU Renewable Energy Cooperation Programme	

## 4. ARE Key Achievements in 2018 and Way Forward for 2019

**AS A RESULT OF ITS REVISED ARE STRATEGY** agreed by the General Assembly in March 2018, the mission of ARE has been restated more precisely: to build a sustainable decentralised renewable energy industry for the 21<sup>st</sup> century, to activate markets for affordable energy services, and to create local jobs and inclusive economies.

With this refinement of direction, ARE has been able to add more value in three continents - Africa, Asia-Pacific and Latin-America/Caribbean – by providing extensive support service:

- directly to individual ARE Member and
- on a more general level to the whole value chain for clean off-grid markets and businesses through



Market Intelligence



Business2Government + High-Level Influence



Business2Business + B2Finance



Capacity + Market Building Measures

As a result of increasing more specialised communications and marketing services for its Members' technology and business solutions, ARE has been able to increase again its number of direct followers: for example, the number of ARE website visitors went up from 3,200 to 4,000 per month and ARE social media channels followers from 7,200 to 10,000. Given that ARE regards itself as the key contact point for gathering information about sector initiatives and activities, we are very pleased to see that by these means we have been able to compensate to some extent the loss of traction readership caused by the EU General Data Protection Regulation which came into effect last year (e.g. reduction of ARE Newsletter readers from 48,000 to 7,000).

ARE has been working intensively to improve market and funding/financing conditions for the sector. 2018 showed that most players still face severe market entry and positioning obstacles before hopefully reaching the status of a sustainable business situation. Under these highly volatile markets conditions, ARE could happily welcome 39 new Members in the last year. However, due to the loss of 41 Members, ARE Membership decreased for the first time since 2013, from 149 to 133 in 2018.

Nevertheless, in respect of the Sustainable Development Goals and SEforALL objectives, ARE believes that the combination of global advocacy leadership towards internationally, multi-nationally and nationally acting development support players and policy-makers, as well its interest to achieve win-win situations in rural areas in low- and medium countries by supporting local expertise and entrepreneurship, combined with international know-how and investment power is the best way to upscale clean energy access in Africa, Asia-Pacific and Latin-America/Caribbean.

In 2018, to increase the implementation of sustainable cost-effective and high-quality business and end-customer solutions, ARE has again joined forces with the most knowledgeable and influential Partners to act globally and regionally.

*(see next page)*



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## EVENTS & ACTIVITIES IN EUROPE

### Catania (Italy) 4<sup>th</sup> ARE Energy Access Investment Forum

13 - 15 Mar 2018

**Participants:** 200+ in total, thereof 60+ ARE Members

**Partners + Sponsors:** AEEP, AfDB, Blue solutions by Bolloré, HNU, Electrifi, Enel, Entiba Energy, Fundacion Acciona, IDB, IEC, IRENA, KfW, Odyssey Energy Solutions, Paygee, Plug the Sun, REEEP, REN21, RES4MED&Africa, RECP, SEforALL, Winch Energy, Windkinetic and XANT.

**Highlights:** 450 B2B Meetings, video message of Rachel Kyte (Chief Executive Officer - SEforALL), Side event: DG DEVCO Energy Digital Nexus Workshop, new ARE publication **ARE Annual Report 2017**; ARE break-out session on financing/funding + site visit to 3SUN Factory of Enel, Passo Martino's Innovation Hub of Enel and the Winch Energy Remote Power Unit.

**Thematic focus:** Energy digital nexus / innovative business models / energy access / off-grid renewables

### Brussels (Belgium): LOGIC Session as part of the EUSEW on Solidarity Islands and Energy Communities: How Community Energy Alleviates Energy Poverty

Date: 4 - 8 Jun 2018

**Participants:** 60 in total

**Partners:** INFORSE, LOGiC & RESCOOP

**Highlights:** ARE who leads on the LOGiC communications represented LOGiC during the session entitled "Solidarity & Energy Communities, How Community Energy Alleviates Energy Poverty Both Rural & Urban" and highlighted the role of energy communities in tackling those societal challenges, with particular focus on best practice in Scotland and Denmark.

**Thematic focus:** Micro- / mini-grids / productive use

### Munich (Germany) Off-Grid Power Forum: Conference & Exhibition at Intersolar Europe

Date: 20 - 22 Jun 2018

**Participants:** 200+ in total, thereof 15 ARE Members and 2 Partners

**Partners + Sponsors:** BMZ, BSW-Solar, RECP, LOGiC

**Highlights:** The Forum was once again the focal point to learn about the latest trends on future markets, technological solutions and smart applications in a growing cross-sectoral environment. 15 ARE Members presented their solutions during the sessions and took part in the Conference.

**Thematic focus:** Solar PV / mini-grids trends and technologies

### Bonn (Germany) IRENA Innovation Week

5 - 7 Sep 2018

**Participants:** 250 in total, thereof 10 ARE Members

**Partner:** IRENA

**Highlights:** Marcus Wiemann, Executive Director of ARE, was selected to participate in a roundtable discussion on "Broadening energy access through innovation". This session addressed how to support the development, deployment and dissemination of a broad range of innovative energy access solutions and evaluate their relevance in the context of the global energy transformation. During the panel discussion, ARE was invited to highlight the need for more involvement of the finance industry and better tailored funding and de-risking support schemes.

**Thematic focus:** Clean energy / upscaling / de-risking / funding



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**Vienna (Austria) High Level Conference on Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries under Austria EU-Presidency**

2 - 3 Oct 2018

Participants: 50 in total, thereof 12 ARE Members

Partners + Sponsors: Austria Development Agency, Federal Ministry Austria, GIZ, UNIDO

Highlights: Business Forum for Decentralised Energy in Developing Countries: ARE invited 10 start-ups & SMEs to present key recommendations at the High-Level Conference the next day. Launch of the new ARE publication **Energy Access from the Bottom Up: Start-up and SME Showcase 2018**

Thematic focus: Start-ups and SMEs / innovative business models/ solar PV / mini-grid trends and technologies

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**Brussels (Belgium) G-STIC 2018 – Energy Positive Communities**

28-30 Nov 2018

Participants: 600 in total, thereof 5 ARE Members

Partner: G-STIC

Highlights: ARE invited to share its know-how about most critical success factors for achieving impact in local energy communities and has explained in particular how productive use of renewable energy is a driver of economic development.

Thematic focus: Productive use / communities empowerment/ capacity building

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## EVENTS & ACTIVITIES IN AFRICA

**Lusaka (Zambia) Zambia Off-Grid Investment Forum**

12 - 13 Jun 2018

Participants: 230 in total, thereof 20+ ARE Members

Partners + Sponsors: GOGLA, IAEREP, RECP, Zambia Rural Electrification Authority

Highlights: First event co-hosted by the two leading global off-grid industry associations to build partnerships around off-grid energy solutions in Zambia.

Thematic focus: Financing / market information / off-grid energy

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**Lagos (Nigeria) Power Nigeria**

25 - 27 Sep 2018

Participants: 200+ in total, thereof 3 ARE Members

Partner: Power Nigeria

Highlights: ARE Board Member Prosper Magali (Ensol) invited to provide first-hand information on latest power solutions in Nigeria; ARE also spoke on Productive Use of Renewable Energy (PURE) and the forecast role of mini-grids.

Thematic focus: Mini-grids initiatives / smart meters / solar PV / digital energy / blockchain

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**Dakar (Senegal) ECOWAS Sustainable Energy Forum (ESEF 2018)**

13-15 Nov 2018

Participants: 200+ in total, thereof 6 ARE Members

Partner: ECREEE

Highlights: ARE VPs Guilherme Collares (EDP) and Aaron Leopold (AMDA) invited to contribute to panels on competitive bidding for Green Mini-Grids (GMG) and on integrated electrification

Thematic focus: Funding / flanking measures for off-grid RE

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**Lusaka (Zambia) RES4AFRICA Program Launch in Zambia + Technical Workshop on Mini-Grids**

26 - 28 Nov 2018

Participants: 200+ in total, thereof 3 ARE Members

Partner: RES4AFRICA

Highlights: ARE invited to present on 'Decentralised systems and productive use of energy'. During the conference, ARE provided the latest insights for the deployment of RE solutions in Zambia and for supporting the transition to auction programmes (Scaling Solar & GetFit Programs) were shared.

Thematic focus: Mini-grids / productive use / market information



## EVENTS & ACTIVITIES IN ASIA

**New Delhi (India) India Energy Access Summit**

12 - 13 Feb 2018

Participants: 100 in total, thereof 8 ARE Members

Partners + Sponsors: The Climate Group & Sambodhi Research

Highlights: ARE Vice-President Katarina Hasbani (The August Company) moderated a session on "Big Data & Analytics for Energy Access"; TED-style talks and thematic workshops sessions about India's leadership on 100% electrification by 2022 and the role of private sector and big data analytics for energy access to enable India's mainstream financing for scaling up DRE.

Thematic focus: Big data and Analytics / mini-grids in India / productive use

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**Manila (Philippines) Asia Clean Energy Forum**

4 - 8 Jun 2018

Participants: 200+ in total, thereof 3 ARE Members

Partners + Sponsors: ADB, ENERGIA, PFAN, KOPERNIK

Highlights: ARE has organised a workshop on **Women Entrepreneurship in Clean Energy**, together with ADB, ENERGIA, KOPERNIK and PFAN, where five inspiring women entrepreneurs in the energy sector have presented their businesses. ARE Vice-President Katarina Hasbani (The August Company) moderated the session "Gender Lens Investment" and presented on "Batteries and Energy storage for energy access". ARE Board Member Sukla Chandra (GE Power) did a presentation on "Access to energy for the Urban Poor".

Thematic focus: Clean energy / women entrepreneurship / energy storage

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**Manila (Philippines) Philippines Mini-Grid B2B Forum**

19 - 21 Sep 2018

Participants: 283 in total, thereof 21 ARE Members

Partners + Sponsors: Philippine Department of Energy (DOE), Philippines National Electrification Administration (NEA), EU funded ASEP Programme

Highlights: First forum of this size and scope of contents in the country; objectives were to link electric cooperatives with international experts and potential financiers, to identify investment opportunities and to share knowledge on latest industry RE business solutions.

Thematic focus: Mini-grids / productive use / financing

**Tangshan (China) ARE Microgrid Workshop at Energy Storage China**

20 Sep 2018

Participants: 50+ in total, thereof 4 ARE Members

Partners + Sponsors: Energy Storage China (ESC)

Highlights: Four Members presented on energy storage systems (ESS) and micro-grid initiatives, including technologies like blockchain, financing schemes and opportunities for deployment based on real-world micro-grid case studies.

Thematic focus: Energy Storage / Micro-/Mini-Grids

**Singapore (Singapore) 4<sup>th</sup> International Off-Grid Renewable Energy Conference (IOREC) during the Singapore Energy Week (SIEW), as part of the Asia Clean Energy Summit (ACES)**

31 Oct - 1 Nov 2018

Participants: + 300 in total, thereof 30+ ARE Members

Partners + Sponsors: IRENA, ACES, SIEW

Highlights: 13 ARE Member exhibitors; sharing insights about ways of scaling-up standalone & mini-grid renewable energy solutions

Thematic focus: Off-grid renewables / mini-grids and stand-alone systems

**Bangalore (India) ARE Micro-Grid Workshop 2018 at Intersolar India**

13 Dec 2018

Participants: 45 in total, thereof 9 ARE Members

Partners + Sponsors: General Electric, Sterling & Wilson, The International Solar Alliance (ISA)

Highlights: ARE Members GE and Sterling Wilson gave keynote speeches; ARE Board Member Rebecca Symington (Mlinda) moderated session on "Decentralised Renewable Energy & Job Creation in Rural India"; CES-India, Powerblox and LED-Safari participated in panel discussions on innovative digital technologies, DRE & Job creation in Rural India. In combination with ARE Microgrid Workshop, the 1<sup>st</sup> India-Africa Youth Energy Symposium (IAYES) was held, a platform for youth in Indian subcontinent and African continent to implement sustainable energy projects.

Thematic focus: Energy access in India / digital technologies, training & job creation / productive use / financing for off-grid renewable energy

**EVENTS IN LATIN-AMERICA****São Paulo (Brazil) ARE Off-Grid Workshop at Intersolar South America**

28 Aug 2018

Participants 70

Partners + Sponsors: Intersolar, ISES, OLADE, Schneider-Electric, UNF, REN21

Highlights: The workshop focused on innovative projects in LAC region in order to empower communities through clean energy access, underlining the need for increased business training and asset finance for local people.

Thematic focus: Innovative business models / energy access in LAC & Brazil

**Washington** (United States of America) **IDB Workshop: Master Map & Plan for the Universalisation of Electric Services in Bolivia**

22 Oct 2018

Participants: 40

Partners + Supporters: IDB

**Highlights:** Former ARE Board Member Karl Kolmsee (Smart Hydro Power) executed the ARE training focusing on how to best prepare and implement rural electrification program using modern, digital tools. The aim of the workshop was focusing on how digital technologies can contribute to develop a national integrated energy access map and plan for Bolivia.

**Thematic focus:** Digital energy technologies / energy access in Bolivia

**Suriname ARE Rural Electrification Training to Suriname Electric Utility** 20 - 21 Nov 2018

Participants: 24

**Highlights:** Former ARE Board Member Karl Kolmsee (Smart Hydro Power) executed the ARE training focusing on technologies & costs, business models & financing of mini-grids and the impact of rural electrification on socio-economic integration.

**Thematic focus:** Rural electrification/ off-grid renewables / financing & business models



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# 5. ARE STRATEGY 2018-2030

**DURING ITS GENERAL ASSEMBLY IN CATANIA** on 12 March 2018, the Membership of ARE adopted the revised ARE Strategy prepared and presented by the ARE Board to better meet and tackle the present needs of the clean off-grid sector. ARE was created over 10 years ago with the objective to help build a sector and has performed admirably in building up support and legitimacy in distributed renewables energies. Now that this legitimacy and an initial upswing in funding has been realised, the sector is evolving from a “why” to a “how” phase. In addition to the growing B2B and sector financing, more active Membership involvement is key to future success and financial sustainability of the association.

While the overall objective of ARE is still that everyone in the world and in particular all rural people in low-and medium income



**The sector is evolving from a “why” to a “how” phase**

countries should have access to affordable, secure and clean energy and energy services by 2030, such results are more likely to be achieved if the association’s work plan is better aligned with the ones of leading political and development initiatives such as from the United Nations, SEforALL and the European Union. This is why it has been agreed to expand the practiced 3-year ARE planning cycle to 12 years until 2030 and to sub-divide the full period into three 4-year periods for operational reasons.

To increase the chances of creating a fair level-playing field for the clean off-grid sector, ARE has been active in building a sustainable decentralised renewable energy industry, activating markets for affordable energy services, and creating local jobs and inclusive economies by starting four new Workstreams:

Workstreams (WS)	Chair	SEC
WS 1: Global voice “speaking as one cohesive team”	Aaron Leopold	Ling Ng
WS 2: Global association acting locally “global partnerships working locally”	Vivian Vendeirinho	David Lecoque
WS 3: Powerful partnerships “strength in numbers and common learning”	Katarina Hasbani	Jens Jaeger
WS 4: Fundraising “leveraging our Member base to unlocking capital”	Pablo Astorga	Marcus Wiemann



To support more effectively ARE Members active in Africa, Asia-Pacific and Latin-America/Caribbean in their business objectives, as well as key stakeholders outside ARE (e.g. developing organisations, financing institutions, governments and regulators) in a more transparent, more measurable and more accountable way (e.g. new off-grid connections, investments into local economic activity and job creation), more commitment from the sector and more trust-building relationships are needed.

ARE strongly believes that with the appropriate mix of instruments and better coordination of existing and planned initiatives of engaged stakeholder groups, it will be possible to mature and commercialise rural electrification markets so that future investments will achieve adequate risk returns!



**More active Membership involvement is key to future success and financial sustainability of the association”**

### MEMBER BENEFITS

<p><b>VISIBILITY</b></p> <p>ARE promotes its Members’ products, services and expertise via our news section, newsletter, online case studies, matchmaking platform &amp; job platform.</p>	<p><b>INTELLIGENCE</b></p> <p>ARE shares the latest news, procurement and tender opportunities, event discounts, publications and job opportunities in the internal weekly alert to Members every Friday.</p>	<p><b>INFLUENCE</b></p> <p>ARE works with its Members and high-level partners to influence policy framework conditions for decentralised renewables.</p>
<p><b>BUSINESS CONTACTS</b></p> <p>ARE helps its Members with B2B, B2F and B2G matchmaking and with networking and contacts.</p>	<p><b>ACCESS TO MARKETS &amp; FINANCE</b></p> <p>ARE works with its Members and Partners to scale up access to finance for decentralised renewables and provide market access for its Members.</p>	<p><b>DISCOUNTS</b></p> <p>ARE is cooperating with industry event organisers to offer registration and exhibition discounts, speaking slots and other opportunities to its Members.</p>

# 6. GLOBAL ENERGY ACCESS POLICY

## Market Trends Business Development

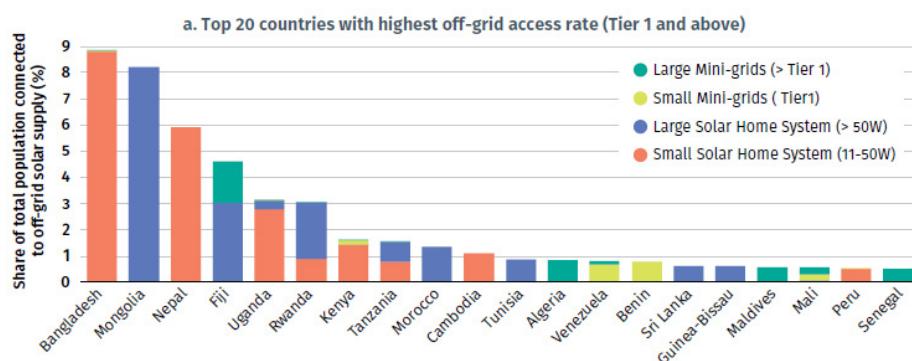
**IN GLOBAL POWER MARKETS**, the IEA finds in its *World Energy Outlook 2018* that renewables have become the technology of choice, making up almost two-thirds of global capacity additions to 2040, thanks to falling costs and supportive government policies.<sup>5</sup>

The IEA also finds that electricity is the fastest-growing source of final energy demand, and over the next 25 years it continues to outpace energy consumption as a whole. The power sector now attracts more investments than oil and gas combined. As a result, this will transform the global power mix, with the share of renewables in generation rising to over 40% by 2040, from 25% today.<sup>6</sup>

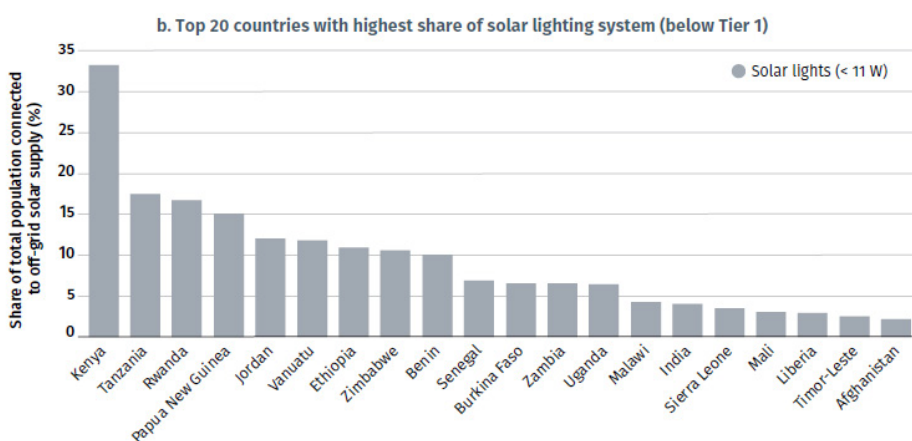
Zooming in on distributed energy, Bloomberg New Energy

Finance echoes the view of ARE that distributed technologies can provide power where the traditional grid is non-existent, inadequate, not cost-effective or too distant for connection. These technologies, and the innovative business models that deploy them can deliver not just energy but also economic opportunities to the two billion people not reliably served by the energy industry today.<sup>7</sup>

Indeed, distributed renewables for energy access (DREA) systems play a very important role in improving energy access. They continue to provide cost-effective alternatives to extending or improving the grid and were serving an estimated 300 million people by the end of 2016. Off-grid solar devices such as solar lanterns and solar home systems experienced 60% annual growth rates



Source: IRENA 2018, World Bank World Development Indicators database.



Source: IRENA 2018 World Bank World Development Indicators database.

5 <https://www.iea.org/weo2018/>

6 <https://www.iea.org/weo2018/electricity/>

7 <https://medium.com/climatescope/distributed-energy-in-emerging-markets-a6319604e947>

between 2010 and 2017. The pay-as-you-go (PAYG) model, enabled by the emergence of mobile technology, has become the dominant means of rolling out DREA systems around the world. In East and West Africa, PAYG companies raised about USD 263 million in capital – up 19% from 2016 – and served more than 700,000 customers.<sup>8</sup>

Building on its success in 2017, when the largest solar deal in Africa was off-grid and small-scale solar projects accounted for five of the eleven largest solar deals in Africa between January and October,<sup>9</sup> distributed renewables continued to grow robustly in 2018. Emerging evidence suggests off-grid solar electricity reaches about 141 million people in the developing world, of whom 30 million enjoy a level of service considered to be “access”.<sup>10</sup> Uptake is highly concentrated in about a dozen pioneering countries (see graph below) and can be as high as 5-10% for full solar home systems and greater than 10% for solar lanterns.<sup>11</sup>

Nonetheless, as SEforALL – of which ARE is Proud Partner – notes in its flagship Energizing Finance 2018 report, that the electrification investment gap remains large where it is most needed and its urgency is even intensifying,<sup>12</sup> while there has been a dramatic and encouraging increase in electricity access investments over the last four years overall in the 20 high-impact countries (HICs) – which accounted for 79% of the global access deficit in 2016.

Indeed, despite the overall increase in electricity finance, the total amount committed falls well short of the estimated USD 52 billion per year (IEA 2017) needed to provide electricity to all by 2030. At USD 30.2 billion per year, this means we are only reaching just over half of this goal, and with each passing year, falling further behind.<sup>13</sup> Of the additional investment, 95% needs to be directed to Sub-Saharan Africa.<sup>14</sup>

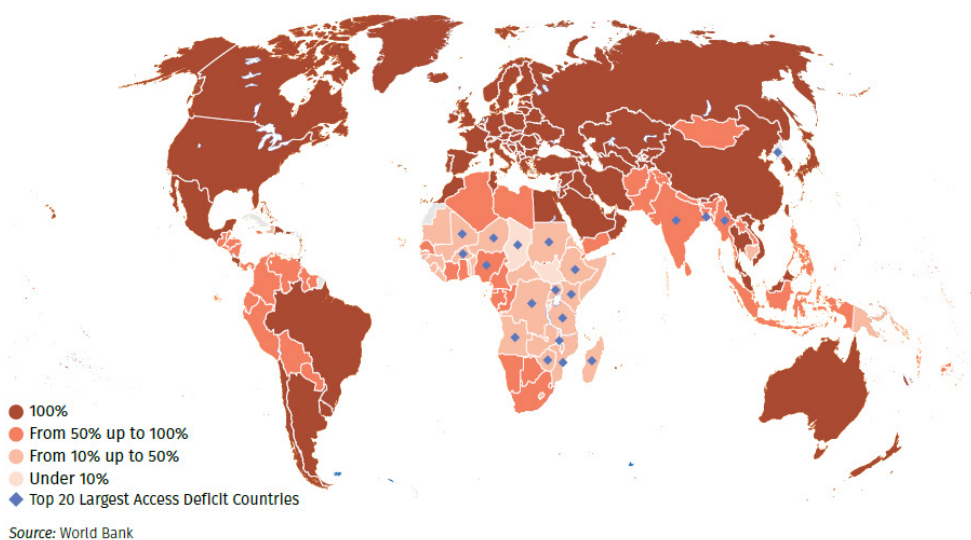


Figure 2.1: Share of population with access to electricity in 2016 (%)

8 <http://www.ren21.net/gsr-2018/pages/highlights/highlights/>

9 <https://medium.com/climatescope/distributed-energy-in-emerging-markets-a6319604e947>

10 IEA, IRENA, UNSD, WBG, WHO, Tracking SDG7: The Energy Progress Report 2018, p. 17 <https://trackingsdg7.esmap.org/downloads>

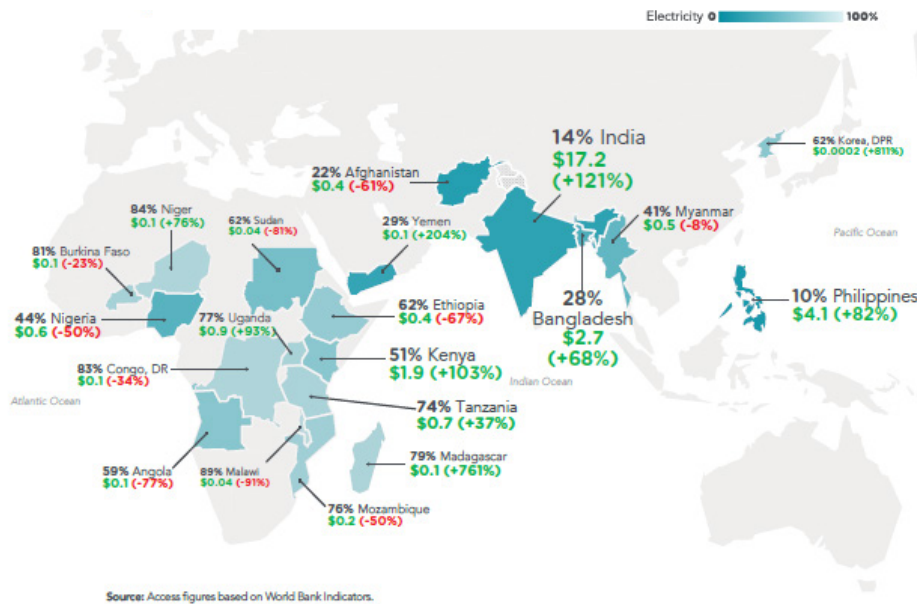
11 IEA, IRENA, UNSD, WBG, WHO, Tracking SDG7: The Energy Progress Report 2018, p. 17 <https://trackingsdg7.esmap.org/downloads>

12 <https://www.seforall.org/energizingfinance>

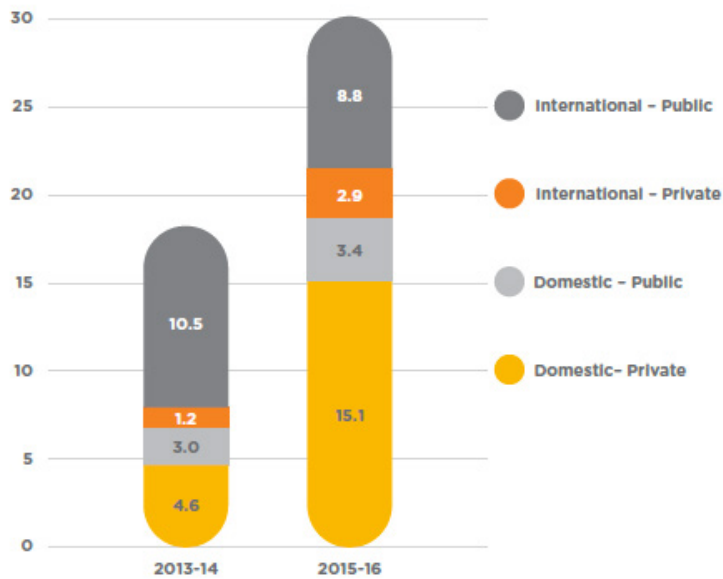
13 <https://www.seforall.org/energizingfinance>

14 IEA, Energy Access Outlook 2017, <https://www.iea.org/access2017>





Percentage of population without access to electricity, total finance tracked in 2015-16 (in USD billion) and changes from 2013-14.

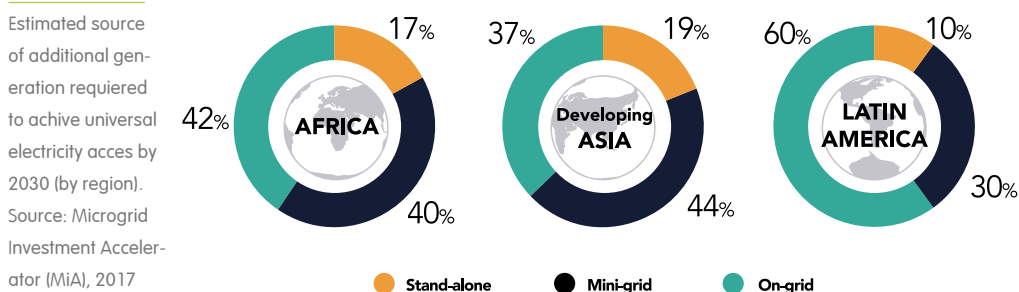


Sources of finance of electricity across the 20 HICs (USD billion)

As a result, as the IEA already found in its Energy Access Outlook 2017, 1.1 billion people remain without electricity, 84% of which live in rural areas. Efforts to promote electricity access are having a positive impact in all regions, but progress remains slow as it is estimated that 674 million people will still not have access by 2030.

	2000		2016		New Policies Scenario	
					2030	
	million	%	million	%	million	%
<b>Africa</b>	<b>532</b>	<b>66%</b>	<b>588</b>	<b>48%</b>	<b>602</b>	<b>36%</b>
North Africa	14	10%	0	0%	0	0%
Central Africa	73	90%	98	75%	122	63%
East Africa	164	90%	172	61%	135	34%
South Africa	15	34%	8	14%	1	1%
Other Southern Africa	108	86%	135	69%	156	55%
West Africa	158	67%	175	48%	188	36%
<b>Developing Asia</b>	<b>1 059</b>	<b>33%</b>	<b>439</b>	<b>11%</b>	<b>54</b>	<b>1%</b>
China	18	1%	0	0%	0	0%
India	600	57%	239	18%	0	0%
Indonesia	99	47%	23	9%	0	0%
Other Southeast Asia	100	33%	42	11%	2	<1%
Other developing Asia	242	68%	135	27%	52	9%
<b>Central and South America</b>	<b>56</b>	<b>13%</b>	<b>17</b>	<b>3%</b>	<b>4</b>	<b>1%</b>
<b>Middle East</b>	<b>15</b>	<b>9%</b>	<b>17</b>	<b>7%</b>	<b>14</b>	<b>5%</b>
<b>World</b>	<b>1 672</b>	<b>27%</b>	<b>1 060</b>	<b>14%</b>	<b>674</b>	<b>8%</b>

Source: IEA Energy Access Report 2017 <sup>15</sup>



To realise this potential and to advance energy access, the deployment of decentralised renewables needs to be underpinned by an enabling environment with the right policies, institutional support, strategic planning, adequate regulations, and attractive financial incentives.

In this context, emerging and innovative energy service delivery models offer unprecedented opportunities for private sector-driven off-grid electrification and accelerating universal electricity access - but only if countries can create the necessary environment for them to be replicated and scaled up.<sup>16</sup>

<sup>15</sup> [https://www.iea.org/publications/freepublications/publication/WEO2017SpecialReport\\_EnergyAccessOutlook.pdf](https://www.iea.org/publications/freepublications/publication/WEO2017SpecialReport_EnergyAccessOutlook.pdf), p. 49

<sup>16</sup> World Bank, State of Electricity Access Report (SEAR) 2017, p. 11 <http://www.worldbank.org/en/topic/energy/publication/sear>

Indeed, access to finance remains the main barrier limiting the upscaling of the off-grid sector and accelerated clean rural electrification. In particular, project developers struggle to access working and medium to long-term capital, whether through debt or equity.

Moreover, current policy and regulatory frameworks constitute a major impediment to upscaling initiatives and clean energy access. Even though mini- and off-grid solutions are expected to deliver 71% of all new electricity connections in rural areas as the most cost-effective solutions, serving 485 million people by 2030,<sup>17</sup> the policy and legal context in which these will be deployed is still inadequate in many countries.<sup>18</sup>

How can these challenges be addressed? How can all the blossoming initiatives and projects being developed on the ground be scaled up, to effectively address energy poverty? We invite the reader to browse through the latest ARE publication on “Energy Access from the Bottom Up: Start-up and SME Showcase 2018” to get our take.



## SUB-SAHARAN AFRICA

In this publication there is a focus on sub-Saharan Africa as it has the largest energy access gap with 57% of the population without access to electricity. 26 million people gained access annually since 2012, an almost tripling of the rate seen between 2000 and 2012. Despite the promising signs, energy access efforts still struggle to keep up with population growth (electrification efforts outpaced population growth for the first time in 2014, leading to a decline in the number of people without access since then).<sup>19</sup>

Out of the 674 million people projected to be without energy in 2030, it is estimated that 600 million will be in Africa. To address this, it is imperative that more attention is given to off-grid solutions in Africa. In 2018, there has been a flurry of activity across the continent.

In **Kenya**, the Government launched the Kenya National Electrification Strategy (KNES) in December 2018. Developed in partnership with the World Bank, KNES provides a roadmap to achieving universal access to electricity for all Kenyans by 2022 on a least-cost basis. The strategy recognises the key role played by off-grid options, mini-grids and stand-alone solar

systems that complement grid extension and intensification. Above all, it highlights the crucial role that the private sector will need to play in providing off-grid solutions for Kenyan homes, businesses and community service centers in remote parts of the country.<sup>20</sup>

In **Togo**, the Government plans to use solar power to increase the availability of electricity from 47% to 100% by 2030, at an expected cost of around USD 1.8b.<sup>21</sup> It initiated a new electrification programme, known as ‘CIZO’,<sup>22</sup> which should provide electricity access to 2 million Togolese by 2022.<sup>23</sup> In view of this programme, the BBOX from UK and EDF from France signed a landmark deal to develop and market solutions for access to off-grid electricity in Togo,<sup>24</sup> aiming for a market share of 35% in Togo by 2024.<sup>25</sup>

In **Nigeria**, increasing activity in its solar-powered mini-grid industry, coupled with government support for off-grid solutions,<sup>26</sup> makes that Nigeria is one of the hottest markets for decentralised renewables. The Rocky Mountain Institute found that the vast but underdeveloped mini-grid market offers revenue potential of N2.8 trillion<sup>27</sup> (USD 8 billion) annually in Nigeria alone, and that costs are competitive with alternatives like diesel and petrol generators. At the same time, mini-grid costs can be reduced by more than 50% over the next three years, unlocking market scale to tens of thousands of sites within Nigeria alone.<sup>28</sup>

Complementing the national initiatives, donors have also advanced an array of international support initiatives in 2018.

One such initiative is the **Regional Off-Grid Electrification Project** (ROGEP)<sup>29</sup> funded by World Bank and launched in autumn 2017, which aims to enhance elec-

17 IEA, Energy Access Outlook 2017: From Poverty to Prosperity, 2017, pp. 11, 53. Available on <https://www.iea.org/access2017/>

18 Climatescope 2017. Available on <http://global-climatescope.org/en/>

19 IEA, Energy Access Outlook 2017, p. 42 <https://www.iea.org/access2017>

20 <https://www.worldbank.org/en/news/press-release/2018/12/06/kenya-launches-ambitious-plan-to-provide-electricity-to-all-citizens-by-2022>

21 <http://www.globalconstructionreview.com/news/togo-launches-18bn-plan-provide-universal-access-e/>

22 <https://numerique.gouv.tg/projet/cizo>

23 <https://numerique.gouv.tg/projet/cizo>

24 <https://www.esi-africa.com/togo-off-grid-electricity-market-strengthens/>

25 <https://numerique.gouv.tg/projet/cizo>

26 <https://oxfordbusinessgroup.com/news/nigeria%E2%80%99s-mini-grid-market-exhibits-high-growth-potential>

27 <https://rmi.org/press-release/the-latest-rocky-mountain-institute-and-the-nigerian-renewable-energy-roundtable-report-shows-us20-billion-investment-opportunity-for-nigeria-in-scaling-minigrids/>

28 <https://rmi.org/press-release/the-latest-rocky-mountain-institute-and-the-nigerian-renewable-energy-roundtable-report-shows-us20-billion-investment-opportunity-for-nigeria-in-scaling-minigrids/>

29 <http://www.ecreee.org/page/rogep-regional-off-grid-electrification-project>

tricity access in West Africa and Sahel region, through stand-alone solar systems (e.g. solar lanterns, solar home systems, solar water pumps, solar mills, solar sewing machines). The project, with an estimated overall budget of USD 200 million, addresses 19 countries: Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Sierra Leone, Senegal, Togo, Cameroon, CAR, Chad, and Mauritania.

A second key example is the **External Investment Plan (EIP)**<sup>30</sup> of the European Union, which was adopted in September 2017 to help boost investment in partner countries in Africa. It aims to contribute to the UN SDGs<sup>31</sup> while tackling some of the root causes of migration and more importantly seeks to mobilise and to leverage sustainable public and private investments for the improvement of economic, social and labour market developments. The EIP supports partner countries by: **mobilising finance** (through the European Fund for Sustainable Development); providing **technical assistance** to help prepare investment projects, and by developing a **favourable investment climate and business environment**.



**Out of the 674 million people projected to be without energy in 2030, it is estimated that 600 million will be in Africa”**

A third example is the **Electrification Financing Initiative (ElectriFI)**<sup>32</sup> of the European Commission, which as a flexible financial facility aims to support investments that increase and/or improve access to modern, affordable and sustainable energy services. For instance, ElectriFI co-finances the implementation of the Asrama micro-grid pilot project developed by the energy access integrated operator and ARE Member Benoo Energies. And in December 2018, ElectriFI announced an investment of USD 2.5 million to support the expansion of ARE Member Virunga Power.

A fourth example is the USD 58 million **Off-Grid En-**

**ergy Access Fund (OGEF)**<sup>33</sup> launched by the African Development Bank, the Nordic Development Fund, the Global Environment Facility, Calvert Impact Capital and All On. It is part of the Facility for Energy Inclusion (FEI) sponsored by AfDB, a USD 500 million debt platform to catalyse capital markets support for innovative energy access strategies.

OGEF is designed to provide flexible debt instruments, predominantly oriented around local currency lending for consumer finance, to companies in the household energy access sector including distributors, manufacturers, and end-user credit providers. The Fund supports financially sustainable transactions that engage local capital markets to increase access to clean electricity for underserved households.



## ASIA-PACIFIC

Between 2012 and 2014, according to the IEA, an estimated 93.1 million people in Asia and the Pacific gained access to electricity while the population grew by 83.8 million. The regional rate of electrification rose to 90.3%, up from 89.8% in 2012, though national rates varied widely. Despite impressive growth rates, the figures mask that there is still a large rural population in the most remote areas of the continent that remain without energy access.

In South-East Asia, 65 million people remain without electricity access and millions more only have access to poor quality connections, relying on non-cost-effective and polluting diesel generators to meet demand (IEA, 2017). Of those currently without access, over 95% live in four countries: Indonesia (23 million people), Myanmar (22 million), Philippines (11 million), and Cambodia (6 million).



For decentralised renewable energies **Indonesia** offers the highest potential in terms of missing connections as the country has the high's in remote Papua Maluku<sup>34</sup>. To address this need the Ministry of Energy and Mineral Resources of Indonesia launched the USD 3 billion Bright Indonesia Programme at the same time as announcing the mini-grid plans. The lighting pro-

30 [https://ec.europa.eu/commission/external-investment-plan/what-eus-external-investment-plan\\_en](https://ec.europa.eu/commission/external-investment-plan/what-eus-external-investment-plan_en)

31 [https://ec.europa.eu/europeaid/policies/sustainable-development-goals\\_en](https://ec.europa.eu/europeaid/policies/sustainable-development-goals_en)

32 <http://electrifi.eu/>

33 <https://www.afdb.org/en/news-and-events/african-development-bank-nordic-development-fund-and-partners-launch-off-grid-energy-access-fund-with-us-58-million-18432/>

34 <https://www.pv-magazine.com/2018/10/11/indonesia-reveals-national-plan-for-micro-and-mini-grids/>

gramme aims to use renewable power to illuminate eastern provinces such as Papua, West Papua, Maluku, North Maluku, and east and west Nusa Tenggara by the end of 2019. To build the ground, in 2016 the government of Indonesia launched its “Accelerating Electrification in Rural Areas Programme”<sup>35</sup> before introducing a new policy, which outlines an initial policy framework for private sector investment and development of government-sanctioned clean and hybrid mini-grids in currently unelectrified areas and/or areas without reliable access to electricity. The aim is reach 100% energy access by 2020.



Also, **Myanmar** offers also a very interesting market for mini-grid and off-grid developers as with more than two-third of the 55 million people lack access to reliable electricity, many of them live in rural villages. Currently, more than 30,000 rural villages across Myanmar are not connected to the national grid and more than 13,000 diesel mini-grids exist which offer the opportunity for replacement or hybridisation with renewables. To address this gap via growth of off-grid electrification, Smart Power Myanmar was created in May 2018 by Rockefeller Foundation through ARE Member, Pact Myanmar, as implementing partner. Supported by its founding Members – Rockefeller Foundation, USAID, World Bank and Yoma Strategic Holdings – Smart Power Myanmar seeks to scale up energy access to millions of underserved communities in rural, peri-urban areas and in areas of special economic potential.



In addition, **the Philippines**, where ARE conducted the first-ever Philippines Mini-grid Business-to-Business (B2B) Forum in Manila in September 2018, offer tremendous potential for the implementation of new clean energy mini-grids and for hybridisation of existing island diesel mini-grids or power plants with its 7,641 islands and around 400 MW of diesel generating capacity installed in over 320 off-grid missionary areas. More than 2.3 million households remain unelectrified according to latest estimates by the National Electrification Administration (NEA). To



© ARE Member Solar Village

address this issue, the government is reviewing current policy and regulatory procedures that will streamline the process on Qualified Third Parties (QTP) and New Power Producer (NPP) investments. This will pave the way for collaboration between electric cooperatives and private sector players which could provide innovative and competitive energy access solutions to answer the off-grid power supply challenge in the country.



In **Cambodia**, on 26 January 2018, the Electricity Authority of Cambodia (EAC) enacted a new solar generation regulation.<sup>36</sup> The impact of the new regulation on the development of off-grid renewable energy solutions is not yet clear, but builds on the 2017 rural electrification plan, which aims to ensure that 70% of Cambodian households are connected to the national electricity grid by 2030.

## The India case



In **India**, Indian PM Narendra Modi, tweeted on 28 April that every single village of India “now has access to electricity”. A closer look at what constitutes electrified reveals that still India has a while to go before full energy access. According to official data, only 1,417 of India’s 18,452 villages, or 7.3% of the total, have 100% household connectivity, and about 31 million homes are still in the dark. Last year, the government followed up with an impressive USD 2.5 billion programme, Saubhagya,<sup>37</sup> to provide power connections to nearly every household by the end of March 2019.

The Saubhagya goal is very ambitious: to achieve the target full energy access by 31 March 2019, the connection rate should be 2.03 million households per month. However, data from the Saubhagya portal indicates that around 0.73 million connections have been released per month from the launch of the scheme in last October to end of April 2018.

A **study** conducted by the Council on Energy, Environment and Water also showed that over 50% of electrified rural households in Uttar Pradesh, Bihar, Madhya Pradesh, Jharkhand, Odisha and West Bengal do not even get 12 hours of supply in a day. To achieve universal access to reliable and sustainable energy, distributed renewables (such as microgrids) therefore

35 Microgrid Investment Accelerator: Microgrid Market Analysis & Investment Opportunities in India, Indonesia and Tanzania (2017), p 26

36 Phnom Penh Post: Cambodia’s solar regulation (2018)

37 <http://saubhagya.gov.in/>

have a crucial role to play in improving both the access and reliability of energy supply.

Complementing the national initiatives, donors have also advanced an array of international support initiatives for specific off-grid programmes in Asia in 2018.

For example, in Philippines, the **Access to Sustainable Energy Programme** or **ASEP**<sup>38</sup> is implemented as a joint undertaking of the European Union and the Philippine Department of Energy (DOE). Through ASEP, the EU has allocated a grant of over PHP 3 billion to assist the Government of the Philippines to meet its rural electrification targets by means of renewable energy, and to promote energy efficiency. The EU TAF will also organise a mission to assess the existing market potential for renewable energy investments projects and the funding opportunities for private sector investments in renewable energy in the Philippines.

In Myanmar, Rockefeller Foundation has supported the creation of the **Smart Power Myanmar facility**, led by ARE Member, PACT. The facility aims to advance public-private partnerships that significantly accelerate universal rural electrification and improve the lives of all people, including women and ethnic nationalities, by enabling access to productive power that will spur economic development.<sup>39</sup>



Likewise, GIZ is also continuously working on advancing rural electrification in Myanmar via the **“Promoting Rural Electrification in Myanmar”** Programme aimed at policy, human resource development as well as private sector participation.<sup>40</sup>

In India, the European Investment Bank signed a new EUR 150 million long-term loan with the Indian Renew-

38 <https://www.eu-asep.ph/>

39 <https://www.rockefellerfoundation.org/blog/accelerating-rural-electrification-myanmar/>

40 <https://www.giz.de/en/worldwide/42922.html>

able Energy Development Agency (IREDA) to support renewable energy investment across India in March 2018. More than 1.1 million Indian households expected to benefit from clean energy produced by renewable energy schemes financed by the new initiative.<sup>41</sup>



## LATIN-AMERICA/ CARIBBEAN

In comparison to other regions in the world, Latin-America/Caribbean with 97%<sup>42</sup> has a very high rate of electricity coverage and countries like Chile and Mexico appear frequently on the list of the 10 best markets for renewable energies worldwide. However about 22 million people – about six million households – still lack energy access. Figures are much lower when zooming into remote regions in the mountains or on islands<sup>43</sup>.

Renewables have become increasingly important in the energy mix with investments higher than USD 80 million, especially when it comes to large scale hydropower meaning that the continent can benefit positively from social-economic development from small- and medium scale productive use business applications facilitated by more needed community involvement. For example, as outlined in the ARE-IDB publication on **Access to energy services through renewable sources in Latin America & The Caribbean** it is estimated that about 30% of the off-grid solutions could be in the form of mini-grids.<sup>44</sup>

While so far governments as in Bolivia, Brazil and Peru often have used major tenders for solar home systems, which have helped to bring electrification to rural inhabitants, this way does not really consider the opportunity for a broader involvement of the locals as it does not offer enough incentive for the private sector to take more action in order to advance this market opportunity further. Financing and institutional structures supporting projects still mainly come from the public sector. Research to adapt technologies to local needs is still mainly done by public universities. Private initiatives are often based

41 <http://www.eib.org/en/infocentre/press/releases/all/2018/2018-064-more-than-one-million-indian-households-to-benefit-from-european-investment-bank-backed-clean-energy.htm>


42 <https://www.irena.org/publications/2016/Jun/Renewable-Energy-Statistics-2016-Latin-America-and-the-Caribbean,> p 3


43 <file:///C:/Users/mmonjour/Downloads/Meeting-Challenges-Measuring-Progress-The-Benefits-of-Sustainable-Energy-Access-in-Latin-America-and-the-Caribbean.pdf>, p 13

44 [Acceso a Servicios de Energia a través de Fuentes Renovables en America Latina y El Caribe](#), p 6

on efforts of not-for-profit organisations or corporate social responsibility projects which lack replication on a large scale.

Five countries can be identified as having great potential for implementing rural electrification projects and off-grid renewables.

 **Bolivia** has a target to deploy 183 MW of renewable electricity by 2025, as set by the 2014 Bolivia Electric Plan 2020-25. Access to electricity in rural areas in 2017 was 77%. The Government set an ambitious electricity strategy and provide with the aim to reach 100% of access to electricity, in line with the goals of the SEforALL initiative. The intermediate goals are to have 97% national access in 2020, with 100% access in urban areas and 90% in rural areas. Reaching universal access means to bring the service to 220,000 households in rural areas. To accomplish this goal, a national integrated access strategy is needed to guide investment needs that are very large (around USD 2,000 million up to 2025).<sup>45</sup>

 **Peru** has large potential for rural electrification and renewable energy. Despite having one of the highest potentials for solar energy in Latin America, hydropower in Peru has been and will continue to be a pivotal renewable energy source, in 2017 hydropower was about 97% of Peru's renewably generated power.

94,9% of the population had access to electricity in 2016. However, the remoteness and inaccessibility of locations, communities and low purchasing power of the people have limited the expansion of electricity coverage. Among other factors, there have been insufficient financial resources to carry out dissemination programs for off-grid technologies or installation of mini-grids.

Another major challenge is to promote clean cooking alternatives in the country. According to the National Institute of Data and Statistics (INEI) in 2016, there were approximately 34.6% of homes that frequently used solid fuels such as firewood, charcoal, dung, etc. for cooking edible goods. 1.5 million homes still use inefficient cooking appliances such as open flame and/or traditional stoves. In Peru, the homes that use this type of fuel are mostly located in rural areas in the Peruvian Andes, and as a result of cooking meals inside their homes, the local inhabitants are continuously exposing themselves to home air pollution – the greatest global environmental health risk of today <sup>46</sup>.

45 IDB, Master Map and Plan for the Universalisation of Electric Services in Bolivia, 2018

46 Access to Energy Services through Renewable Sources in Latin America & The Caribbean, ARE-IDB, 2017, p 32.



Besides his high coverage electricity rate resulting from his efforts in electrification during the last years, in **Mexico**, two million people still lack access to electricity and rely on expensive and dirty sources to light their homes and businesses.

Access to reliable and affordable energy is a foundational step to eliminating poverty, but power lines are not coming anytime soon to Mexico's remotest villages due to their geographical location and isolation conditions which makes them hard to reach and expensive targets for government infrastructure and electrification <sup>47</sup>.



In **Brazil**, since 2004, the Luz Para Todos Programme has provided more than 3.3 million new electricity connections to rural households, benefiting nearly 16 million people, with investments in the range of R\$ 23 billion, of which R\$ 13.4 billion came from subsidies. According to information from the Brazilian Institute of Geography and Statistics (IBGE), the rural electrification rate, which was 71% in 2000, reached 98% in 2015, showing the great contribution of the program to universal energy access.



**Colombia's** large untapped potential for rural electrification is coupled with the government's willingness and support to expand the renewable energy sector<sup>48</sup>. A large portion of Colombia's territory, especially in the Andean territories, is located outside the National Interconnected System, meaning that a grid extension to rural areas is often prohibitively expensive, technically challenging thus unfeasible. Off-grid and mini-grid solutions are a very promising option to satisfy the demand and need for energy access throughout the country. The "Financial Support Fund for Rural Electrification of Non-Grid connected Areas" aims to provide resources to develop energy projects related to the expansion and reinforcement of the electricity service in rural areas. Whereas about 66% of the country's area is located in Non-Interconnected Zones (ZNI), the National Interconnected System (SIN) covers approximately 87% of the population. In the ZNI, installed capacity for power generation is 118 MW, of which 108.5 MW correspond to diesel plants and the remaining 9.5 MW to SHP and photovoltaic systems.





47 Access to Energy Services through Renewable Sources in Latin America & The Caribbean, ARE-IDB, 2017, p 23

48 [http://www.ren21.net/wp-content/uploads/2018/06/17-8652\\_GSR2018\\_FullReport\\_web\\_final\\_.pdf](http://www.ren21.net/wp-content/uploads/2018/06/17-8652_GSR2018_FullReport_web_final_.pdf), p 65

## 7. ARE Key Activities Per Region

**TO BE AT THE FOREFRONT OF MARKET DEVELOPMENTS** and to capitalise first on new upcoming opportunities, based on its extensive network of partners ARE provides a competitive information advantage for its Members by sharing expert market insights to easily identify what is coming up, where the opportunities lie and how planned projects can be financed, implemented and operated successfully. As a consequence, ARE has again been able to identify best business cases from real-world solutions and to develop key recommendations as advise for the international development community so to further improve the overall conditions for market players.

As part of ARE Workstream 2 'Global association acting locally', ARE has started to intensify its already strong efforts to form global partnerships with the aim to work more effectively locally. Building on this broad scope and depth of experiences, ARE is able to effectively promote its Members' solutions to target audiences in three different continents at the same time while providing more general market development support services for the whole value chain for clean off-grid markets and businesses through:

-  Market Intelligence
-  Business2Government + High-Level Influence
-  Business2Business + B2Finance and
-  Capacity + Market Building Measures

As a next step it is foreseen to install local ARE coordinators in Africa, Asia-Pacific and Latin-America/Caribbean to enable on-going structured dialogues in regions and countries as well as better coordination and know-how exchange support for the benefit of both ARE Members and local actors from public and private sector.

To achieve clean energy access latest by 2030 and also in 2018, ARE undertook again a great number of activities - practically and/or by feeding into leading sector publications and platform discussions:

- to advise top global & national institutions on what the private sector and the practitioners building energy access on the ground need to be successful
- to help established practitioners & newcomers to make use of latest industry know-how and thereby find their market position and to expand from there.

### HOW ARE TACKLED CHALLENGES IN AFRICA?



The ARE Workstream 2 'Act Locally', managed by David Lecoque, Policy and Business Development Manager, focuses on creating value for ARE Members and enabling renewable energy access connections at scale in rural areas of developing countries.

With 95% of ARE's Members active in Africa and building on 20 Africa-based Members, this Workstream is the biggest internal ARE structure and the main conduit for ARE's activities in Africa.



**With 95% of ARE's Members active in Africa, the ARE Workstream 2 'Act Locally' is the biggest internal ARE structure and the main conduit for ARE's activities in Africa"**

New Members in Africa in 2018 were Africa Energy Services Group Limited (Rwanda), Africa Mini-grid Developers Association (Kenya), Fortune Engineering (Ethiopia), Hotspot Network Limited (Nigeria), PowerCorner Tanzania Limited (Tanzania), SolarGen Technologies (Somalia), SunFunder (Kenya) and Sunrise Solar Solutions Limited (Ghana).

In consultation with those Board Members with the highest interest in Africa (FRES, ABB, RVE.SOL, EDP and Practical Action) the Members of the Workstream were regularly informed about upcoming activities and possibilities for engagements and contributions.



#### Market Intelligence

ARE directly supports its Members by informing them



of new market opportunities via e.g. its weekly internal newsletter and a suite of events. In addition, ARE raises their visibility and value propositions in order to attract financing and partners via e.g. the **ARE Matchmaking Platform**, structured B2B meetings around the world, as well as presentations and publications such as the “Energy Access from the Bottom Up: Start-up and SME Showcase 2018”.

### Business2Government + High-Level Influence

As the leading global industry association for decentralised renewables in emerging countries, ARE was again the natural partner for the public sector who has shown again a stronger interest to collaborate with the private sector in earlier stages of planning for future legislation and financing initiatives.

Indeed, policies, regulations, financial instruments and community-development initiatives have a greater impact when the experiences of actors who deliver projects on the ground are considered in their design and implementation.

ARE strongly advocated on behalf of the sector and brought in fresh thinking to solve the energy access puzzle, in particular by working together with all major stakeholders such as SEforALL, the European Union, the African Union, Development Finance Institutions (DFIs), the Mini-Grid Partnership and other relevant players.

In terms of events, a particular highlight was the **4<sup>th</sup> ARE Energy Access Investment Forum: Integrating Remote Communities into Economies**, in Catania, Italy on 13-15 March 2018. The accelerated deployment of renewables as the core solution to solving energy poverty, particularly in Africa, as well as available and upcoming financial instruments including tender and project finance tools, were the core topics of the event.

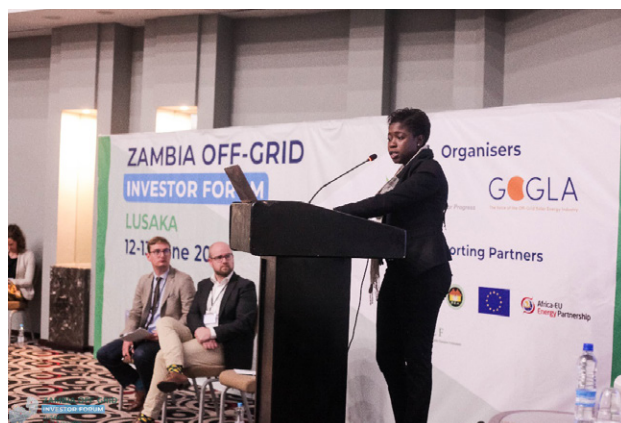
Other top events where ARE provided strong contributions were the ECOWAS Sustainable Energy Forum in Dakar, the Sustainable Energy for All Forum in Lisbon and the EU-AU Presidency High-Level Conference in Vienna (See Annex 3).

Indeed, as appears from ARE’s abovementioned publication on “Energy Access from the Bottom Up: Start-up and SME Showcase 2018”, current policy and regulatory frameworks remain a major impediment to upscaling initiatives and clean energy access.

### Business2Business + B2Finance

As the number one business association bringing together the private sector and practitioners for decentralised renewables solutions, ARE continued to build added value for its existing and new incoming Members through many different initiatives.

Regarding events, of particular relevance was the **Zambia Off-Grid Investor Forum**. This event was co-organised by ARE with sister organisation GOGLA, and supported by Zambia’s Rural Electrification Authority, the RECP and the European Union funded IAEREP project. Participants from 21 different countries took part in the B2B Matchmaking, with a satisfaction rate of 92%.



Based on its continued role to advise developing finance organisations on how to best engage into the off-grid market, which is characterised by small to medium scale investments, ARE has been very active to get more closely involved with the (development) finance sector and thereby in its efforts to close another important gap which is hindering upscaling.

In addition to established schemes within and outside the association such as the 1<sup>st</sup> Call for Proposals of OFID and ARE (ARE Members Rahimafrooz and Mlinda Foundation successfully implemented two mini-grid in India and Bangladesh as part of the ARE-OFID CfP for hybrid mini-grids; one mini-grid to be installed in Mali by ARE Member Access), ElectrIFI of the European Commission or Green Mini-Grid Program of the African Development Bank (AfDB), ARE has a growing interest to establish this needed internal exchange on better project finance for the benefit of its Members (as done e.g. during the 4<sup>th</sup> Energy Access Investment Forum).

### Capacity + Market Building Measures

During 2018, ARE has continued developing its training course on rural electrification where interested persons and organisations, either from public or private/civil society sector can learn about the key essentials on how to develop and to implement sustainable renewable energy access projects in rural areas.

In this vein, ARE developed a fit-for-purpose training course for the German non-profit Biohaus. Also training packages on successful ways for de-risking are available for interested stakeholders from the (developing) finance sector.



© ARE Member NRECA International

## HOW ARE TACKLED CHALLENGES IN ASIA?



In 2018, 22 ARE Members were based in Asia in South- and South-East Asia. New Members from Asia in 2018 include: Crowdfcredit (Japan), International Copper Alliance (Thailand), Physics Research Cebu (the Philippines), Plug the Sun (Hong Kong), Solar Village (India),

Sterling & Wilson (India), Sunny Irrigation (Singapore) and Trina Solar (Singapore).

As part of ARE Workstream 2 'Act Locally', ARE expanded its activities on the local level in South- and South-East Asia to serve its Membership active in the region (more than 55% of ARE Members are active in South and South-East Asia).



**More than 55% of ARE Members are active in South and South-East Asia"**



### Market Intelligence

ARE directly supported its Members in Asia by informing them of new market opportunities via e.g. its weekly internal newsletter and a suite of events. In addition, ARE raises their visibility and value propositions in order to attract financing and partners via e.g. the **ARE Matchmaking Platform**, structured B2B meetings and info about latest market developments (e.g. at Philippines Mini-Grid B2B Forum, 4<sup>th</sup> IOREC and ARE Microgrid Workshop at Intersolar India) as well as presentations and publications such as the "Energy Access from the Bottom Up: Start-up and SME Showcase 2018".

ARE also launched the report "Key Recommendations for Decision Makers" in October 2018, which includes suggestions to scale the clean energy mini-grid sector in the Philippines.

Building on its policy expertise, and in addition to numerous consultation processes, ARE also provided input to leading global publications, such as IRENA's "Policies & regulations for renewable energy mini-grids" and the forthcoming "Quality Infrastructure for renewable mini-grids", as well as REN21's **Renewables 2018 Global Status Report**.

## Business2Government + High-Level Influence

To improve policy conditions for private sector companies active in off-grid renewables, ARE opened dialogues with a number of government and public policy makers including the Department of Energy (DOE) and the National Electrification Administration (NEA) of the Philippines as well as the Department of Rural Development of Myanmar (DRD).

In the Philippines, the Department of Energy of the Philippines' goal is to attain 100% electrification for all islands of the Philippines by 2020. This is why the government is reviewing current policy and regulatory procedures that will streamline the process on Qualified Third Parties (QTP) and New Power Producer (NPP) investments in hybrid and clean energy mini-grids in the Philippines. To make use of this window of opportunity, ARE and DOE through the support of the European Union through its Access to Sustainable Energy Programme (ASEP), organised the **Philippines Mini-Grid B2B Forum** on 19-21 September 2018. The Philippines National Electrification Administration (NEA) was also one of the supporting organisations.

The key recommendations were launched at the 4<sup>th</sup> International Off-grid Renewable Energy Conference (IOREC) in Singapore, which attracted experts from around the world and across the off-grid renewable energy value chain, with representatives from policy-makers, rural electrification agencies, private sector, NGOs, academia, financing institutions and international organisations. Over the two-day event, the participants deliberated on enabling policies, financing schemes, innovative business models and technology applications.

ARE was also present at numerous events in the region (see Annex 3) and thereby to considerably grow its network and more importantly learnt how ARE can use its expertise to help on energy access.



## Business2Business + B2Finance

In 2018, ARE significantly increased its activities in uniting private sector players from or interested in the Asian off-grid sector with a particular focus on mini/microgrids. As typically done in other regions of the world, ARE worked together with local Partners to increase the impact of its activities.

Regarding events, of particular relevance was the Philippines Mini-Grid B2B Forum in Manila on 19-21 September 2018, which included more than 280 technology providers, project developers and investors from Asia, Europe and North America in more than 185 direct B2B meetings.

Likewise, building on its good experiences from Intersolar India 2017, ARE once again organised a Micro-Grid Workshop at Intersolar India on 13 December 2018 in Bangalore. The workshop and following reception, sponsored by ARE Members GE and Sterling & Wilson, facilitated B2B and B2F interaction.

Finally, as a new cooperation in 2018, ARE partnered with Messe Düsseldorf Shanghai to organise a Micro-Grid Workshop at Energy Storage China 2018, which facilitated interaction between ARE Members and Chinese companies. 2018 also marked the closure of the successful **ARE-OFID project** on hybrid mini-grids (please see Chapter 8: "OFID – ARE Cooperation"). With regards to the above mentioned 1<sup>st</sup> CfP of OFID, two ARE Members (Rahimafrooz and Mlinda Foundation) successfully implemented mini-grid projects, in Bangladesh and India respectively.

## Capacity + Market Building Measures

During 2018, ARE has continued developing its training course on rural electrification, where interested persons and organisations, either from public or private/civil society sector can learn about the key essentials on how to develop and to implement sustainable renewable energy access projects in rural areas.

In this vein, ARE developed a fit-for-purpose training course for the German non-profit foundation Biohaus. Also training packages on successful ways for de-risking are available for interested stakeholders from the (developing) finance sector.

## HOW ARE TACKLED CHALLENGES IN LATIN AMERICA & CARIBBEAN?



The ARE Workstream ‘Policy & Business Development Latin-America’ was originally planned to start in 2019, but as a result of growing confidence and common goals with the IDB, ARE could already start its first activities in the continent half a year earlier on a more general level to the

whole value chain for clean off-grid markets and businesses.

The work of ARE, which aimed to support one Member from Chile and about 25 Members with interest in the region, was coordinated by Marcus Wiemann, Executive Director of ARE, in close exchange with ARE Board Member Karl Kolmsee from Smart Hydro Power acting as chair of the Workstream. Also here, ARE could perform a number of activities around policy dialogue, private sector cooperation, capacity building & training as well as access to finance & funding.



**The ARE Workstream ‘Policy & Business Development Latin-America’ was originally planned to start in 2019, but as a result of growing confidence and common goals with the IDB, ARE could already start its first activities in the continent half a year earlier”**



### Market Intelligence

Throughout the year, ARE Secretariat informed its Members active in Latin America about targeted business opportunities, notably via its weekly alerts and newsletters. In addition, ARE provided tailored support to enhance Members’ value proposition and to connect them with the most relevant stakeholders in the Latin American market (e.g. through the **ARE Matchmaking Platform**). In this regard, ARE disseminated a number of precious market information through trainings in Latin America.



In 2018, ARE also launched the Spanish version of the ARE-IDB Publication: “Access to Energy Services through Renewable Sources in Latin America & the Caribbean (originally published in 2017).”



### Business2Government + High-Level Influence

To improve policy conditions for private sector companies active in off-grid renewables, ARE opened dialogues with a number of high-level stakeholders including CAF – Development Bank of Latin America and reinforced existing positive relations with ARE Partner IADB and OLADE.

For the second year in a row ARE organised the **ARE Off-Grid Workshop**, in collaboration with Intersolar, in São Paulo on 28 August 2018. About 70 participants discussed ways to better facilitate the implementation of innovative policies and business models in the off-grid renewable energy sector in Latin-America and Caribbean.

ARE also acted as a supporting partner for several main events in the region (see Annex 3) and thereby increased its visibility and network on the continent.



### Business2Business + B2Finance

In 2018, ARE continued its collaboration with Partner IDB by providing support and expertise to further develop private players’ involvement in the LAC off-grid sector, with a particular focus on universal electricity access. ARE worked together with local Partners, such as OLADE, to increase the impact of its activities.

ARE has given key insights during the **IDB Workshop: Master Map and Plan for the Universalisation of Electric Services in Bolivia**, held in Washington last 22 October 2018. The aim of the workshop was focusing on how digital technologies can contribute to develop a national integrated energy access map and plan for Bolivia by spreading knowledge around digitalisation developments, examples of actual deployments, lessons learned, and by engaging in a “deep dive” dialogue around such technologies in the context of Bolivia.

### Capacity + Market Building Measures

During 2018, ARE has continued developing training courses on rural electrification, where interested stakeholders, either from public or private/civil society sector can learn about the key essentials on how to develop and to implement sustainable renewable energy access projects in rural areas.

In this regard, ARE developed a tailored training course in Suriname last 20-21 November 2018: the **ARE Rural Electrification Training to Suriname Electric Utility**. Former ARE Board Member Karl Kolmsee (Smart Hydro Power) conducted the ARE training focusing on technologies & costs, business models & financing of mini-grids and the impact of rural electrification on socio-economic integration.

**GIVEN THE MAIN INTEREST OF ARE** to achieve clean energy connections via its Membership and also to develop immature markets towards their commercialisation, this highlights in particular results achieved together with commercial Partners and Members of ARE.



© ARE Member Plug the Sun

## 8. ARE Projects with (Commercial) Cooperation Partners

While for AEEP and RECP refer to section 'ARE Activities to tackle Challenges in Africa', please look at section 'ARE Activities to tackle Challenges in Latin-America & Caribbean' for collaborations with IDB and at section 'ARE Activities to tackle Challenges in Asia' for ASEP, DOE and NEA for the Philippines Mini-grid B2B Forum.



### INTERSOLAR – ARE PARTNERSHIP

Continuing the partnership and holding a successful series of Off-Grid Workshops and Off-Grid Power Fora since 2015, Intersolar and ARE joined forces again for market access in three continents in 2018 – Munich (Germany) in Europe, São Paulo (Brasil) in Latin America and Bangalore (India) in Asia.

The 3-day Off-Grid Power Forum in Munich on 20 - 22 June 2018 was once again the focal point to learn about the latest trends on future markets, technological solutions and smart applications in a growing cross-sectoral environment. There were over 200 participants including 15 ARE Members who presented their solutions in the conference, where the exhibition was organised by ARE, supported by GET.invest with ARE Members GFM (Spain), LEDSAfari (Switzerland) and Windkinetic (Italy) as exhibitors.

ARE was happy to be present at Intersolar South America in São Paulo again where thanks to its sponsors Schneider Electric and Staubli and together with its partners ISES, OLADE, REN21 and UNF a half-day Off-Grid Workshop was organised on 28 August 2018. This year's edition moderated by ARE Member TTA focused on empowering communities through clean energy access in LAC region and we would like to thank once again the over 60 attendees who joined to follow the keynote speech from IDB.

The Off-Grid Workshop in Bangalore in Intersolar India on 13 December 2018 focusing on digitalisation and impact on rural jobs in India's decentralised energy sector

gathered over 45 participants with keynote speeches by MNRE and ARE Members GE Power plus Sterling and Wilson about embracing innovations and developments in digitalisation of energy.



### LOGIC – ARE PARTNERSHIP

In respect of the growing internationalisation of the off-grid sector and in the belief that profound technology and know-exchange between low and medium to high income countries is crucial to effectively contribute to SEforALL and its targets, ARE is the communication partner in a consortium led by North-Holland-North (NHN) to support the Low Carbon Off-grid Communities (LOGiC) project.

The objective of the project (60%-funded by Interreg North-West Europe) is to develop a standardised model for renewables-based decentral hybrid energy systems (DHES) for scaling up the use of decentralised renewables on islands and in remote areas. Three areas in NWE act as pilot locations for the hybrid systems: Meckenbach (Germany), Orkney Islands (United Kingdom) and Texel (the Netherlands).

The critical factor in successful DHES deployment will be community and stakeholder involvement. Therefore, the LOGiC consortium has launched a Community of Practice (CoP), open to all interested stakeholders. Moreover, ARE has been active in promoting LOGiC at various events in 2018, including: the European Sustainable Energy Week in Brussels, Intersolar Europe in Munich and G-STIC 2018 in Brussels.



Uniting against Poverty

## OFID – ARE COOPERATION

As part of its collaboration with SEforALL to serve the SDG 7 objectives, for the first time ARE could launch a self-managed grant scheme promoting access to modern, affordable and sustainable energy services in Africa and Asia because of the kind support of Alhaji Dr. Kandeh Kolleh Yumkella, former United Nations Under-Secretary-General and the Special Representative of the Secretary-General for Sustainable Energy for All (SEforALL) and Mr Suleiman Jasir Al-Herbish, Director-General and Chief Executive Officer of the OPEC Fund for International Development (OFID).

Thanks to the funding support from OFID, ARE launched a USD 990,000 Call for Proposals (CfP) "Promoting Access to Modern Energy Services through Mini-Grid Projects in Africa and Asia", to provide a de-risking mechanism for ARE Members and their business ventures through cost-sharing in order to accelerate replicable and scalable models for the deployment of mini-grids and for increasing and improving access to modern, affordable and sustainable energy services in developing countries.

Because of existing project pipelines looking for adequate funding and financing support, ARE together with its Member Revelle acting as Project /Fund Manager (PMU) could start with project implementations aiming for productive use of renewables energies in record time. Already within 2.5 years three out of four selected projects could be finalised with fulfilling the intended targets; and in some cases these could even be exceeded as the following table shows.<sup>49</sup>

In addition to the achieved clean energy access results, ARE was also able to share with OFID **lessons learned and recommendations for** the three phases of the grant scheme's process: (1) design, (2) application and (3) implementation, so that the developing support sector can consider them for future activities.



49 The fourth project aiming for the installation of a hybrid mini-grid system in Titimane, one of the remotest areas in Mozambique had to be terminated by project developer EDP because due the fact that the government unexpectedly decided to extend the national grid to the location of the project the entire action became non-eligible for funding, as one of the main requirements for the receipt of funds under the present grant scheme, was the absence of plans for connecting the target beneficiaries to the main electricity grid in the years to come. Via ARE all received grant payments were returned back to OFID by EDP.

### Key Achievements at a Glance

	Key Target Indicators	Actual Achievements
<b>ACCESS S.A.R.L</b>	<ul style="list-style-type: none"> <li>• Installation of a solar park of 32 kWp</li> <li>• Installation of a genset of 68kW</li> <li>• Installation of a 7km grid distribution network</li> <li>• Power brought to at least 200 clients</li> <li>• Power brought to at least 20 productive users</li> </ul>	<ul style="list-style-type: none"> <li>• Installation of system of 55 kWp including solar panels, inverters and batteries</li> <li>• 68kW genset installed</li> <li>• 7km grid distribution network installed</li> <li>• 205 households currently connected</li> <li>• 19 productive users currently connected</li> <li>• three clinics/doctors currently connected</li> </ul>
<b>Mlinda Association</b>	<ul style="list-style-type: none"> <li>• Installation of PV panels of 69.5 kWp in three villages</li> <li>• Installation of a genset of 7.5kW in three villages</li> <li>• Construction of distribution grids in three villages</li> <li>• 319 households connected</li> <li>• 41 productive users connected</li> <li>• 41 commercial outlets connected</li> </ul>	<ul style="list-style-type: none"> <li>• PV panels of 69.5 kWp installed in three villages</li> <li>• Three gensets of 7.5kW installed</li> <li>• Works for distribution grids completed (Naratoli - 5 km; Sahitoli - 5.5 km; Passanga - 4.5 km)</li> <li>• 358 households connected</li> <li>• 57 productive users connected</li> <li>• 61 commercial outlets connected</li> <li>• Mlinda plans to commission a total of 50 mini-grids by June 2020 with an installed base of over 1 MW. The funding from OFID for the three initial grids has triggered this process. It has also contributed towards building the confidence of Mlinda's team to execute this project smoothly</li> </ul>
<b>Rahimafrooz Renewable Energy Limited</b>	<ul style="list-style-type: none"> <li>• Installation of PV panels of 80kWp</li> <li>• Installation of 80kVA genset</li> <li>• Installation of a distribution grid</li> <li>• Access to electricity for at least 310 households</li> <li>• Access to electricity for at least 40 shops (productive users)</li> <li>• Provision of power to at least 10 irrigation pumps for year-round cropping</li> <li>• Provision of electricity to one community health clinic and three primary schools</li> </ul>	<ul style="list-style-type: none"> <li>• PV panels of 80kWp installed</li> <li>• 80kVA genset installed</li> <li>• 440V three-phase distribution line constructed with a total length of 6km</li> <li>• 201 households currently registered/115 households currently connected</li> <li>• 62 productive users currently registered/50 productive users currently connected</li> <li>• Irrigation pumps will be powered at a later stage, during the next irrigation season (January 2019).</li> <li>• The existing health clinic, three primary schools and one secondary school were contacted; it is expected that they will be connected within the next three months</li> </ul>



# 9. TESTIMONIALS from ARE Partners



**HARY ANDRIANTAVY**

Executive Director  
Association Africaine pour l'Élec-  
trification Rurale (CLUB-ER), Ivory  
Coast

“CLUB-ER and ARE are the twin actors of access to energy; together they represent the public and private sectors respectively. Our partnership started in 2016 and since which, we have widely appreciated the full cooperation with ARE’s team and Members. We are happy to work together and create high efficiency in rural electrification.”



**JAVIER CUERVO**

Senior Energy Specialist  
Inter-American Development Bank  
(IADB), United States

“ARE’s training to the electricity company of Suriname proved very valuable to promote the adoption of new technologies based on solar mini-grids. Our collaborative work with ARE keeps bringing new opportunities to help with the achievement of universal access in Latin America and the Caribbean.”



**FLORIAN WESSENDORF**

Managing Director  
Solar Promotion International  
GmbH (Intersolar), Germany

“We are proud to partner with the ARE on solar off-grid topics. This year’s Off-Grid Power Conference in Munich was a great success for all partners. We are looking forward to the next editions in São Paulo and Mumbai to enhance our fruitful partnership in the future.”



**RACHEL KYTE**

Special Representative of the UN  
Secretary-General & CEO  
SEforALL, United States

“ARE is focused on the one of the most important issues in our pledge to “leave no one behind” – a pledge made in both signing the SDGs and the Paris Agreement. Securing access to reliable, affordable and clean energy for rural, low income communities – the largest part of the more than 1 billion people without access to sustainable energy is a critical component of living up to that pledge. By joining the SEforALL partnership network, ARE brings their leadership to a movement that is focused on going further, faster – together.”

# 10. ARE GLOBAL VOICE



In 2018, distributed renewable technology and business solutions attracted strong interest from governments and international organisations that are striving to improve energy access. In response to the growing demand, the ARE Workstream 1 'Global Voice' was established in 2018 to 'speak as one cohesive team' on behalf of ARE Members and the off-grid industry.

The objectives of the Workstream are to:

- Identify industry challenges & trends, highlighting road blocks, removing them and highlighting opportunities for Members & Funders
- Establish & communicate broadly (Member-driven) positions on industry issues
- Evidence & data – document and share standardised data from developers and implementers to increase sector transparency



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## OVERVIEW OF ARE GLOBAL VOICE HIGHLIGHTS

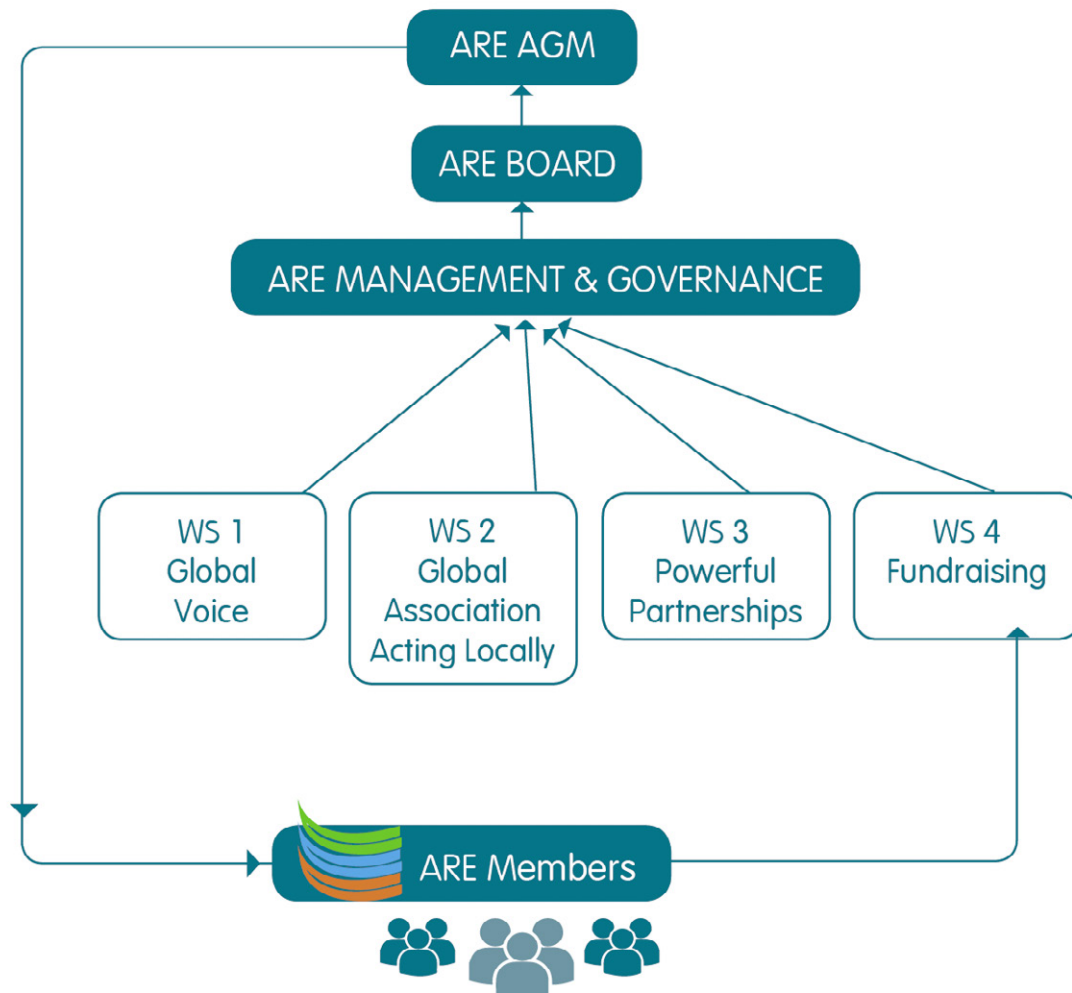
ARE Statistics	ARE Publications	Key ARE events with ARE Member showcase	Top institutional relationships	Evidence & data
<p>Increase of ARE Newsletter &amp; Advocacy readership from 44,000 to 48,000 (because of GDPR to be reduced to 7,000 but compensated by social media network)</p> <p>Six ARE Newsletters with co-editorials from the European Commission, GIZ, IRENA, OFID, Power for All, World Bank</p> <p>4,000 unique visitors/month to the ARE website</p> <p>35 Partnership agreements, where ARE Members receive 10-20% discount + free passes</p> <p>Increase of Social Media followers from 7,300 to over 10,000</p>	<p>ARE Annual Report 2017</p> <p>Key Recommendations to Decision-Makers presented at EU-AT Presidency High-Level Conference</p> <p>ARE-ASEP Key Recommendations for Decision Makers: Philippines Mini-grid B2B Forum</p> <p>ARE-IDB 'Access to Energy Services through Renewable Sources in Latin America &amp; the Caribbean' [Spanish]</p> <p>ARE-AEEP Energy Access from the Bottom Up: Start-Up &amp; SME Showcase 2018</p> <p>Weekly Alerts every week to ARE Members with in-depth information about upcoming business and procurement opportunities</p> <p>ARE also provided input to leading global publications, such as:</p> <ul style="list-style-type: none"> <li>IRENA: 'Policies &amp; regulations for renewable energy mini-grids'</li> <li>IRENA: 'Quality Infrastructure for renewable mini-grids'</li> <li>REN21: Renewables 2018 Global Status Report</li> </ul>	<p>ARE Energy Access Investment Forum, Sicily</p> <p>Sustainable Energy for All Forum, Lisbon</p> <p>Zambia Off-Grid Investor Forum, Lusaka</p> <p>Intersolar Europe, Munich</p> <p>Intersolar South America: ARE Off-Grid Workshop, São Paulo</p> <p>Philippines Mini-Grid B2B Forum, Manila</p> <p>Energy Storage China, Tangshan</p> <p>EU-AT Presidency High-Level Conference: Regional Sustainable Energy Cooperation for Development, Vienna</p> <p>International Off-Grid Renewable Energy Conference, Singapore</p> <p>ECOWAS Sustainable Energy Forum, Dakar</p> <p>Intersolar India: ARE Microgrid Workshop 2018, Bangalore</p>	<p>Access to Sustainable Energy Programme – Philippines (ASEP)</p> <p>African Development Bank</p> <p>Africa-EU Energy Partnership (AEEP)</p> <p>Asian Development Bank</p> <p>Department of Energy Philippines (DOE)</p> <p>European Commission</p> <p>Gesellschaft fuer Internationale Zusammenarbeit (GIZ)</p> <p>Inter-American Development Bank</p> <p>Interreg North-West Europe (LOGiC)</p> <p>IRENA</p> <p>OPEC Fund for International Development (OFID)</p> <p>Renewable Energy Cooperation Program (RECP)</p> <p>SEforALL</p> <p>UNIDO</p> <p>World Bank</p>	<p>OFID-ARE CfP completed (via Access, Mlinda Foundation, Rahimafrooz, three operational mini-grids in Bangladesh, India &amp; Mali implemented)</p> <p>60 Case Studies from ARE Members</p>

# 11. ORGANISATION of ARE

## ARE GOVERNANCE STRUCTURE

For the purposes of good governance and to ease effective decision-making, ARE has implemented a clear governance structure to complement the ARE Statutes by the description of ARE internal roles and responsibilities as well as rules and procedures.

### ARE Working Structure



## ARE BOARD OF DIRECTORS

2018 has been a very crucial year for ARE. After the announced resignation of Ernesto Macías as President since ARE’s creation and with the ending terms of 2018, there was the need to hold ARE President and Board elections at the Annual General Meeting on 12 March 2018. As a result of a very competitive election, the following regular Members form the Board of ARE:



**President**  
**VIVIAN VENDEIRINHO**  
 Founder & Managing Director  
 (RVE.SOL)



**Vice-President**  
**GUILHERME COLLARES PEREIRA**  
 A2E Intl Relations Director  
 (EDP Renováveis S.A)



**Vice-President**  
**KATARINA UHEROVA HASBANI**  
 Founder/ Consultant  
 (The August Company)



**Vice-President**  
**AARON LEOPOLD**  
 CEO  
 (AMDA)



**Board Member**  
**EMILY MCATEER**  
 Co-Founder & CEO  
 (Odyssey Energy Solutions)



**Board Member**  
**PROSPER MAGALI**  
 Director of Projects & Business  
 (Ensol Limited)



**Board Member**  
**PABLO ASTORGA**  
 Global Sales Manager - Microgrids  
 (ABB)



**Board Member**  
**SUKLA CHANDRA**  
 Global Product Leader –  
 Hybrid Distributed Power  
 (GE Power)



**Board Member**  
**REBECCA SYMINGTON**  
 Executive Director  
 (Mlinda Charitable Trust)

NAME	AFFILIATION, COUNTRY	REGIONAL FOCUS	TERM	FUNCTION
Vivian Vendeirinho	RVE.SOL, Portugal	Africa	2018-2019	President
Vivian Vendeirinho	RVE.SOL, Portugal	Africa	2015-2019	Board Member
Guilherme Collares Pereira	EDP Renovaveis, Portugal	Africa	2018-2019	Vice-President
Aaron Leopold	AMDA, Kenya	Africa	2016-2020	Vice-President
Katarina Uherova Hasbani	The August Company, Singapore	Asia-Pacific	2016-2022	Vice-President
Rebecca Symington	Mlinda Foundation, France	Asia-Pacific	2018-2019	Board Member
Pablo Astorga	ABB, Spain	Latin-America/ Caribbean	2016-2020	Board Member
Emily McAteer	Odyssey Energy Solutions, U.S.A.	Africa	2018-2021	Board Member
Sukla Chandra	GE India Industrial, India	Asia-Pacific	2018-2021	Board Member
Prosper Magali	Ensol, Tanzania	Africa	2018-2022	Board Member



“The work of ARE is invaluable for bringing together companies, organisations and individuals striving for energy access. While being an ARE Board Member, I could clearly see the progress of decentralised renewable energy technologies and the increasing activities of the association in this regard. I will certainly continue to give my contribution to advance further such important innovations”.

**Sukla Chandra**

ARE Board Member (2018 – Present)



“Through ARE Awards, our company’s visibility has increased. The ARE Awards are an ideal platform for Members and project developers to make their interventions known to the whole world”.

**Prosper Magali**

ARE Board Member (2018 – Present)



“By helping building up local win-win partnerships between NGOs and private sector developers, ARE has proved to be essential in the energy access space”.

**Rebecca Symington**

ARE Board Member (2018 – Present)

## ARE SECRETARIAT

Based on its stronger continental focus, ARE could stabilise its Secretariat team of four colleagues who on a case-by-case decision got support from freelance consultants and interns.



	NAME	COUNTRY (TERM)	FUNCTION
<b>Core Team</b>	Wiemann, Marcus	Germany (February 2013 – present)	Executive Director
	Lecoque, David	Belgium (November 2013 – present)	Policy & Business Development Manager
	Ng, Ling	United Kingdom (January 2014 – present)	Communications & Marketing Officer
	Jaeger, Jens	Denmark (January 2016 – present)	Policy & Business Development Officer
<b>Temporary Support</b>	Uchida, Moe	Japan (January – March 2018)	Administrative Assistant
	Georgiou, Marina	Greece (February 2018)	Administrative Assistant
	Coucke, Laetitia	Belgium (May 2018)	Administrative Assistant
	Satpathy, Apoorva	India (May 2018– October 2018)	Analyst & Project Assistant
	Monjour, Melina	Italy and France (June 2018 – present)	Communications & Policy Assistant





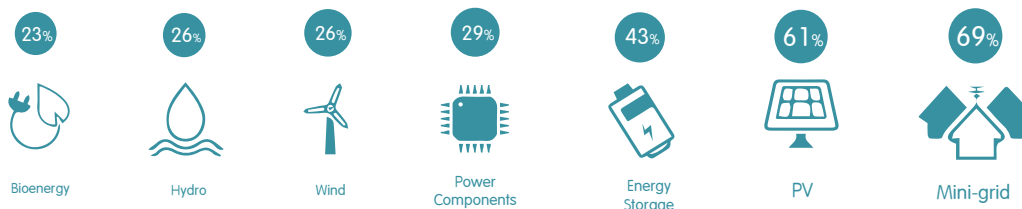
ARE MEMBERS ACTIVE IN AFRICA, ASIA-PACIFIC, LATIN AMERICA-CARIBBEAN



ARE MEMBERS PER REGION OF ORIGIN



ARE MEMBERS BY TECHNOLOGY



Out of the 133 Members, two are from the public sector, two from academia and 129 from the private sector. 25 Members are financiers and/or investors.

TYPE OF MEMBERSHIP



# 13. TESTIMONIALS from ARE Members



“ARE has been extremely helpful for us on various level: providing us the platform to network with potential partners and customers, giving us exposure at international level and inviting us for various important events which helped us for the business. We are very grateful to the ARE team who is extremely dedicated and always eager to help and connect us with the right people all around the globe. Thank you.”

**Govinda Upadhyay**  
CEO | LEDsafari SA, Switzerland



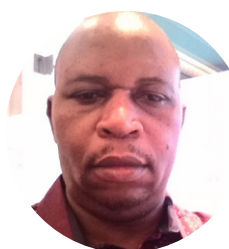
“ARE has been for GFM the bridge to the international off-grid market, really very well supported by ARE Staff in the different countries we were together in Ethiopia, Germany, Singapore, Italy, Portugal, etc. Really very good work and an important tool to be part of the new decentralised energy sytem we'll have in the next years.”

**Javier Bustos**  
Managing Director | GFM, Spain



“We are very pleased with our Membership in ARE. Between finding new investment leads and attending high-level delegations, in particular with energy access initiatives in the European Union and across Africa, ARE has provided us with the right access and knowledge to grow our business and meet like-minded companies. The network and information provided through ARE membership is invaluable for companies across the energy access spectrum.”

**Brian Kelly**  
Founder & CEO | Virunga Power, Africa



“As serious and authentic practitioners in rural electrification and renewable energy advocacy space, there is no higher badge of honour and credibility than displaying our membership with ARE.

ARE is the undoubted front runner in bringing together companies, organisations and individuals striving for sustainable poverty reduction and climate friendly energy technologies on the planet, as it has demonstrated in the few years it has been in existence”.

**Trust Chifamba**  
CEO | Start Africa, Zimbabwe

# 14. ANNEX I (new Members joining in 2018 in bold)



ABB - ABC Contracting - ACCESS - Fundación ACCIONA Microenergia - Fondazione ACRA -  
 Appui au Développement Autonome - **AFD Agence Francaise de Developpement** - **Africa  
 Energy Services Group Limited** - **AMDA** - Alla Collina Verde nel Mediterraneo - ALSA Solar  
 Systems - Althelia Climate Fund - **AMMP Technologies** - Ankur Scientific Energy Technologies  
 - Aquanovis - **Atmosfair** - Asantys Systems - Autarsys East Africa - All Power Labs - **BASF** -  
 Benoolend - Bornay - **CAA Communication and Accessories Int. GmbH** - Clear **Resource**  
 - **CMI** - **Crowdcredit** - Customized Energy Solutions India - **DEEPBLOO** - Eauxwell Nigeria -  
 Energy Access Ventures - **EcoCinetic** - Ecoligo - **ECOTEC** - Energias de Portugal - Energo Labs  
 - Enersol - ENGIE Rassembleurs d'Energies - Ennera Energy & Mobilit - Ensol - Entiba Energy  
 - ESPE RINNOVABILI - Eurobat - Factor - Ferntech GmbH - **FlexGrid** - **Fortune Engineering** -  
 Fraunhofer ISE - Freqcon - Foundation Rural Energy Services - GE India Industrial - GERES - Global  
 Energy Storage Alliance - Generaciones Fotovoltaicas de la Mancha - Grid Alternatives - Global  
 Sustainable Energy Solutions - Gigawatt Global Off Grid - Hivos - HNU University of Applied  
 Sciences Neu-Ulm - HOMSOL - **Hotspot Network Limited** - HT Energy - Hydrobox Cameroun  
 SARL - Iberdrola - **International Copper Alliance** - Infra Capital Myanmar - International Power  
 Supply - **KfW DEG** - LDK Engineering Consultants - LEDsafari - M-Power - Mlinda Charitable  
 Trust - NRECA International - **Odyssey** - **OutBack Power Technologies** - Ossi-Yeto - **Pact** -  
**Physics Research Cebu** - **Pit Pure Power** - Plan International España - Plug the Sun - Power-  
 Blox - **PowerCorner Tanzania Limited** - Practical Action - Proparco - Qinous - Rahimafrooz  
 Renewable Energy - RENAC - Renewables in Africa - RES4Med - Revelle Group RTSOFT GmbH  
 - Reiner Lemoine Institut - **RTSOFT GmbH** - Rubitec Nigeria - RVE.SOL - Sader - Schneider  
 Electric - SD Wind Energy - SMA Sunbelt Energy GmbH - **Smarter Microgrid** - Smart RUE -  
 SNV Netherlands Development Organisation - SOLAR23 - **SolarGen Technologies** - Solarland  
 Electric Power Technology - Solarmate Engineering - SolarNow - **Solar Village** - Solarwatt -  
**SolarWorks!** - SparkMeter - START Africa - **Sterling and Wilson** - Stimulus - Studer Innotec -  
**SunFunder** - **Sunny Irrigation** - **Sunrise Solar Solutions Limited** - SC Sustainable Concepts  
 GmbH - **TESVOLT** - The August Company - **THEnergy** - Tiger Power - **Trina Solar Energy  
 Development Pte. Ltd.** - Trama TecnoAmbiental - Turbulent - Uni of Southampton - Virunga  
 Power - Voltalia - Windkinetic - Wollny Consulting - Wuppertal Institute for Climate - XANT

# 15. ANNEX 2

## ARE financials 2018 (in Euro)

PROFIT & COST ITEMS	ACTUALS 2017	ACTUALS 2018
<b>Membership Fees</b>	186,860	200,350
<b>Sponsoring Fees</b>	36,954	159,112
<b>Management Fees</b>	85,520	107,336
<b>Project Fees - Donor Partners Private Sector</b>	-	1,947
<b>Project Fees - Donor Partners Public Sector</b>	253,126	41,349
<b>Operating income</b>	<b>563,031</b>	<b>510,094</b>
<b>Services &amp; other goods</b>	465,645	396,911
<b>Remuneration &amp; social security costs</b>	128,631	152,616
<b>Operating profit</b>	<b>-31,245</b>	<b>-39,433</b>
<b>Financial profit</b>	<b>-1,240</b>	<b>16,771</b>
<b>Result</b>	<b>-32,485</b>	<b>-22,662</b>

# 16. ANNEX 3 ARE Events 2018

In 2018, ARE could stabilise its activities in Africa and considerably increase its efforts in Asia-Pacific and also in Latin-America. As ARE Members and Partners are some of the most influential players in the off-grid energy sector, ARE has organised and contributed to a vast range of events in the past year. The following overview shows all events where ARE was represented by the Board and/or Secretariat or had a lead position to make it happen (bold).

DATE	EVENT	COUNTRY
11-12 Jan	5th International Conference & Exhibition on Energy Storage & Microgrids	India
13-14 Jan	<b>IRENA Assembly 2018</b>	<b>UAE</b>
13-14 Jan	<b>World Future Energy Summit</b>	<b>UAE</b>
15-18 Jan	Solar Expo: A World Future Energy Summit Event	UAE
23-24 Jan	RES4Africa East African Renewable Energy Exhibition (RES-EXPO)	Kenya
12-13 Feb	<b>India Energy Access Summit</b>	<b>India</b>
21-22 Feb	<b>ARE Training to IADB</b>	<b>US</b>
28 Feb	<b>Off-grid systems: Building the future of energy in South-East Asia</b>	<b>Singapore</b>
6-8 Mar	Central America & Caribbean Clean Energy Conference & Exhibition	Panama
<b>8 Mar</b>	<b>EU – India Clean Energy Investment Platform</b>	<b>India</b>
13-14 Mar	SEED South Africa Symposium 2018	South Africa
12 Mar	<b>ARE Board Meeting</b>	<b>Italy</b>
12 Mar	<b>ARE Annual General Meeting</b>	<b>Italy</b>
13-15 Mar	<b>4<sup>th</sup> ARE Energy Access Investment Forum</b>	<b>Italy</b>
19-21 Mar	EACREEE Sustainable Energy Forum	Rwanda
20 Mar	5 <sup>th</sup> Workshop with Private Sector in the framework of the Policy Forum on Development	Belgium
9-12 Apr	<b>11<sup>th</sup> OECD Rural Development Conference</b>	UK
2-03 May	<b>Sustainable Energy for All Forum</b>	<b>Portugal</b>
4 May	<b>Guinea Bissau Sustainable Energy Investment Workshop</b>	<b>Portugal</b>
8 May	<b>Business Club ‘Düsseldorfer Jonges’</b>	<b>Germany</b>
15-17 May	African Utility Week	South Africa

4 May	<b>Learnings from The Rockefeller Foundation's Smart Power for Rural Development Program</b>	<b>Webinar</b>
23-24 May	Power & Electricity World	Philippines
23-25 May	3 <sup>rd</sup> Solar India Expo-2018	India
4-5 Jun	<b>Eurelectric Power Summit 2018 - «What's Next? New Players, Products and Peers»</b>	<b>Slovenia</b>
4-8 Jun	<b>LOGiC Session as part of the EUSEW on Solidarity Islands and Energy Communities: How Community Energy Alleviates Energy Poverty</b>	<b>Belgium</b>
4-8 Jun	<b>Asia Clean Energy Forum 2018</b>	Philippines
5 -6 Jun	<b>European Development Days 2018</b>	<b>Belgium</b>
6-9 Jun	ASEAN Sustainable Energy Week 2018	Thailand
12-13 Jun	<b>Zambia Off-Grid Investor Forum</b>	<b>Zambia</b>
20-22 Jun	<b>Intersolar Europe</b>	<b>Germany</b>
21 Jun	International Solar Alliance Forum	Germany
27-28 June	Peruvian New & Renewable Energy Congress	Peru
2-4 Jul	Global Solar + Energy Storage Congress & Expo 2018	China
9 Jul	<b>Promoting productive use of energy - Not as simple as expected</b>	Webinar
10 Jul	<b>ARE Members Webinar</b>	Webinar
21-23 Aug	9 <sup>th</sup> World Renewable Energy Technology Congress & Expo-2018	India
28 Aug	<b>Intersolar South America: ARE Off-grid Workshop</b>	<b>Brazil</b>
4 Sep	<b>ARE Members Webinar</b>	<b>Webinar</b>
5-7 Sep	<b>IRENA Innovation Week</b>	Germany
11-13 Sep	7 <sup>th</sup> Microgrid Global Innovation Forum	UK
12-13 Sep	Future Energy East Africa	Kenya
19-21 Sep	<b>Philippines Mini-grid B2B Forum</b>	<b>Philippines</b>
20 Sep	Energy Storage China	<b>China</b>
25-27 Sep	<b>Power Nigeria</b>	<b>Nigeria</b>
2-3 Oct	<b>High Level Conference on 'Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries' under Austria EU-Presidency</b>	<b>Austria</b>
17-19 Oct	International Conference on Solar Technologies & Hybrid Mini Grids to improve energy access	Spain

22 Oct	<b>IDB Workshop: Master Map and Plan for the Universalisation of Electric Services in Bolivia</b>	<b>US</b>
31 Oct – 02 Nov	<b>4<sup>th</sup> International Off-Grid Renewable Energy Conference (IOREC)</b>	<b>Singapore</b>
2 Nov	<b>Energy For All Investor Forum</b>	<b>Singapore</b>
7-10 Nov	International Conference on Solar Electricity & Water	Cairo
13-15 Nov	<b>ECOWAS Sustainable Energy Forum</b>	<b>Senegal</b>
13-14 Nov	Future Energy Nigeria	Nigeria
14-15 Nov	<b>AidEx Brussels Conference: Solar Pavilion</b>	<b>Belgium</b>
20-21 Nov	<b>ARE Rural Electrification Training to Suriname Electric Utility</b>	<b>Suriname</b>
20-21 Nov	RE-Source 2018	Netherlands
22 Nov	European Investment Bank - Africa Day	Ethiopia
26-28 Nov	<b>RES4Africa Zambia Program Launch + Workshop on Mini-Grids</b>	<b>Zambia</b>
28-30 Nov	<b>G-STIC 2018: Energy Positive Communities</b>	<b>Belgium</b>
6-7 Dec	Guinea Bissau Sustainable Energy International Conference	Guinea Bissau
10-13 Dec	3 <sup>rd</sup> Energy Week in Latin America and the Caribbean	Uruguay
11 Dec	<b>COP 24</b>	<b>Poland</b>
<b>11-13 Dec</b>	<b>Intersolar India: ARE Off-grid Workshop</b>	<b>India</b>





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