



# IOREC

International Off-Grid Renewable  
Energy Conference & Exhibition

## 4<sup>TH</sup> INTERNATIONAL OFF-GRID RENEWABLE ENERGY CONFERENCE & EXHIBITION

# CONFERENCE PROGRAMME

31 October - 1 November 2018 | Singapore





# IOREC

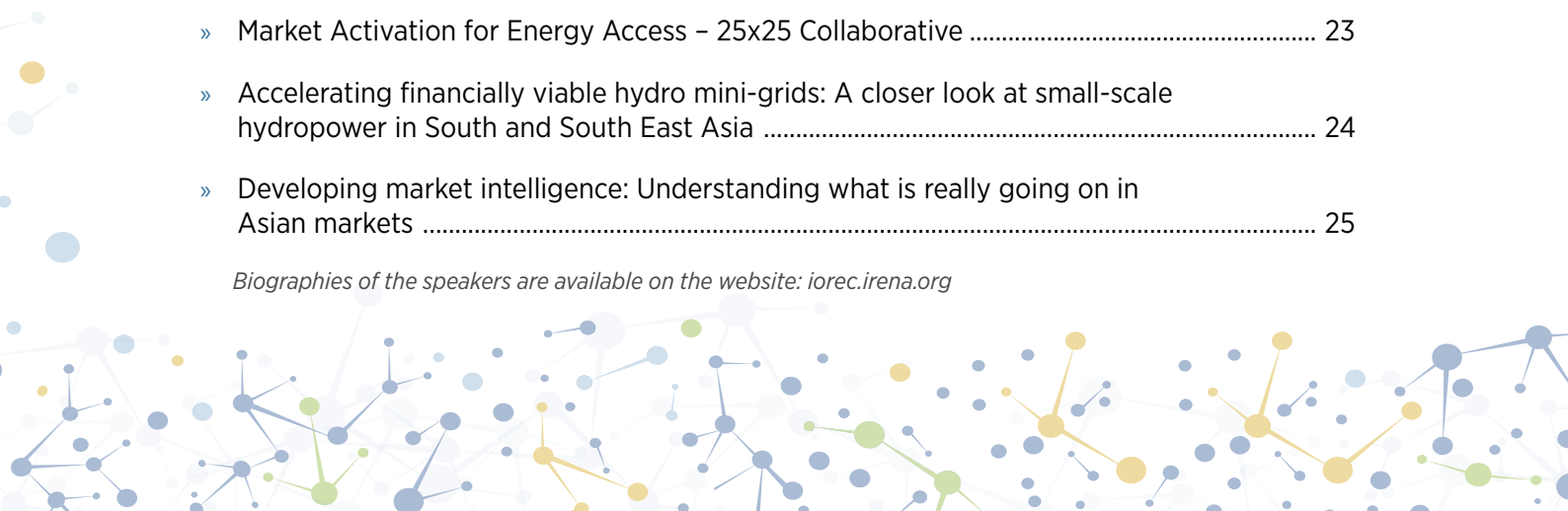
International Off-Grid Renewable  
Energy Conference & Exhibition



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*Biographies of the speakers are available on the website: [iorec.irena.org](http://iorec.irena.org)*



## WEDNESDAY, 31 OCTOBER

07:30-08:30	Registration			
08:30-09:30	Joint IOREC- Asia Clean Energy Summit (ACES) Opening Ceremony			
09:30-10:00	Coffee break / Exhibition			
10:00-11:30	Harnessing off-grid renewables for energy access and Sustainable Development Goals			
11:30-12:45	Driving the deployment of stand-alone systems: Enabling policies and innovative delivery models			
Lunch / Side Events / Exhibition				
12:45-14:30	Sustainable energy and livelihoods <b>Organiser:</b> SELCO Foundation <b>Location:</b> IOREC BR1 <b>Time:</b> 13:00-14:15	Closing the human capital gap in energy access <b>Organisers:</b> Power for All and IRENA <b>Location:</b> IOREC BR2 <b>Time:</b> 13:00-14:15	Supporting renewable energy entrepreneurship <b>Organiser:</b> IRENA <b>Location:</b> IOREC BR3 <b>Time:</b> 13:00-14:15	Project facilitation and funding opportunities for renewable energy projects <b>Organiser:</b> IRENA <b>Location:</b> Plenary <b>Time:</b> 13:00-14:15
14:30-15:45	Financing for stand-alone systems: Finding the missing link			
15:45-16:15	Coffee break / Exhibition			
16:15-17:30	Off-grid innovation: Latest solutions and future needs			
Side Events / Exhibition				
17:30-18:45	Inclusive financing frameworks for off-grid renewable energy solutions <b>Organisers:</b> Hivos and IRENA <b>Location:</b> IOREC BR1	Quality infrastructure for supporting global mini-grid market expansion <b>Organiser:</b> IRENA <b>Location:</b> IOREC BR2	Solar irrigation: Opportunities and challenges <b>Organisers:</b> International Water Management Institute and IRENA <b>Location:</b> IOREC BR3	
18:45-21:30	Reception			

## THURSDAY, 1 NOVEMBER

09:00-10:30	Scaling up renewable energy mini-grid deployment: Enabling policies and regulations			
10:30-11:00	Coffee break / Exhibition			
11:00-12:30	Scaling up renewable energy mini-grid deployment: Innovations in delivery and business models			
12:30-14:15	Lunch / Side Events / Exhibition			
	<p>Renewable energy off-grid components of NDCs: Co-benefits for mitigation, adaptation, and SDGs</p> <p><b>Organiser:</b> Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany</p> <p><b>Location:</b> IOREC BR1</p> <p><b>Time:</b> 12:45-14:00</p>	<p>Accelerating renewable energy based electrification in small island contexts</p> <p><b>Organiser:</b> Department of Energy, Philippines</p> <p><b>Location:</b> IOREC BR2</p> <p><b>Time:</b> 12:45-14:00</p>	<p>25 x 25 Collaborative: Market activation for energy access</p> <p><b>Organisers:</b> Practical Action, Hivos, Power for All, SNV</p> <p><b>Location:</b> IOREC BR3</p> <p><b>Time:</b> 12:45-14:00</p>	<p>Accelerating financially viable hydro mini-grids: A closer look at small-scale hydropower in South and Southeast Asia</p> <p><b>Organiser:</b> Hydro Empowerment Network</p> <p><b>Location:</b> Plenary</p> <p><b>Time:</b> 12:45-14:00</p>
14:15-15:30	Increasing access to finance: Unlocking capital for mini-grid deployment			
15:30-16:00	Coffee break / Exhibition			
16:00-17:15	Maximising socio-economic benefits of off-grid renewable energy solutions: Insights from the field			
17:15-17:30	Closing remarks			
17:30-18:45	Side Events / Exhibition			
	<p>Developing market intelligence: Understanding what is really going on in Asian markets</p> <p><b>Organiser:</b> REN21</p> <p><b>Location:</b> IOREC BR1</p>			
18:45-21:30	Reception			



## Joint IOREC – Asia Clean Energy Summit Opening Ceremony

**31 October 2018, 08:30 – 09:30**

**Welcome Address:** Er Edwin Khew, Chairman, Sustainable Energy Association of Singapore

**Address:** Masagos Zulkifli, Minister for the Environment and Water Resources, Singapore

**Keynote Speech:** Adnan Z. Amin, Director-General, International Renewable Energy Agency (IRENA)

### Session 1

## Harnessing off-grid renewables for energy access and Sustainable Development Goals

**31 October 2018, 10:00 – 11:30**

Access to modern energy services is central to the 2030 Agenda for Sustainable Development. It has a transformative effect on the lives of people and communities by improving well-being – providing them the means to raise their income and productivity and have better access to healthcare, water, food and education. Achieving universal electricity access, especially at the rapid pace required, cannot be done solely through national electricity grids. It is imperative to also support the scaling up of off-grid renewable energy deployment, both stand-alone and mini-grids. It is estimated that by 2030, renewable energy sources will power over 60% of new electricity access, and stand-alone and mini-grid systems will provide the means for almost half of new access.

With over a billion people still without electricity access, off-grid renewable energy solutions are of paramount importance in achieving universal access. The distributed, environment-friendly and adaptable nature of renewable energy technologies makes them highly suited to cater to the energy needs of rural communities and to bring about substantial socio-economic benefits.

The session will bring together policy makers, practitioners, non-governmental organisations, financing institutions and intergovernmental institutions to discuss how the tremendous off-grid renewables opportunity can be harnessed to meet energy access goals and contribute to the wider 2030 Agenda for Sustainable Development.

**Moderator:** Adnan Z. Amin, Director-General, International Renewable Energy Agency (IRENA)

#### Panellists:

- » Arcandra Tahar, Vice-Minister of Energy and Mineral Resources, Indonesia
- » Habiba Ali, Chief Executive Officer and Founder, Sosai Renewable Energies Company
- » Carol Gribnau, Director of the Green Energy and Green Food Programs, Hivos
- » Harish Hande, co-founder, SELCO Foundation
- » Surabhi Mathur Visser, Director Investments, SunFunder
- » Kaveh Zahedi, Deputy Executive Secretary for Sustainable Development, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

## Session 2

### Driving the deployment of stand-alone systems: Enabling policies and innovative delivery models

**31 October 2018, 11:30 - 12:45**

Dramatic cost decreases and technology advancements have made renewable energy technologies the most cost-competitive option for electrification in most rural areas. Realising this immense potential and further accelerating the transformative effect of modern energy on the socio-economic development of underserved communities requires an enabling ecosystem to support private sector participation and to strengthen national electrification efforts. Dedicated policy and regulatory measures coupled with innovation in delivery and financing models, as well as capacity building are the backbone of such an enabling ecosystem.

A range of models have been adopted globally for delivering stand-alone solutions based largely on solar and bioenergy. These include direct sales, rent-to-own and service models coupled with innovations in ownership and financing approaches (e.g., results-based financing, pay-as-you-go, mobile money, smart metering). Each model has pros and cons, and the most appropriate approach depends greatly on the local conditions, including the consumers' willingness/ability to pay, access to enterprise and end-user finance, market demand and availability of local capacity to deliver technical and financial services.

With the aim to achieve universal modern energy access by 2030, the session will focus on the most suitable policy approaches and delivery models for continued growth in the development of stand-alone renewable energy solutions.

**Moderator:** Akanksha Chaurey, Chief Executive Officer, IT Power

**Panellists:**

- » Daniel Ciganovic, Business Development Director, ME SOLshare Ltd
- » Angelo Coppacchioli, General Manager, Ergon Peru, Tozzi Green
- » Ram Dhital, Former Executive Director, Alternative Energy Promotion Centre, Nepal
- » Johanna Galan, Director of Policy, Global Off-Grid Lighting Association (GOGLA)
- » Henry Shongwe, Energy Efficiency Expert, SADC Centre for Renewable Energy and Energy Efficiency (SACREEE)

## Session 3

### Financing for stand-alone systems: Finding the missing link

**31 October 2018, 14:30 - 15:45**

Stand-alone renewable energy solutions are cost-competitive options for expanding electricity access in many rural areas. Consumer financing is often required to distribute such systems in order to overcome cash shortages and make customers more comfortable that the vendor will support and guarantee the functioning of the equipment. In some instances, governments or development agencies have reduced the burden for end-users through grants and micro-credit programs. More recently, startups have turned the consumer finance challenge into an opportunity. By bundling solar home systems, consumer loans and digital payments, they have raised \$1.1 billion in the past five years and expanded into related sectors.

For start-ups providing energy access, financing requirements change dramatically as they mature, in both scale and type. At an initial stage, seed and Series A capital usually comes in the form of equity and grants, while in the scale-up stage debt and working capital takes over. Mismatches between the nature of the funding needed and the investment mandates of financiers can become a barrier to growth. The emergence of specialised financial intermediaries and financing vehicles could allow aggregation of smaller deals into larger programmes. But recent signs indicate that growth is slowing, and new challenges are appearing.

This session will explore how policymakers and regulators, development finance institutions, impact investors and entrepreneurs can accelerate progress towards energy access for all.

**Moderator:** Itamar Orlandi, Head of Frontier Power, Bloomberg New Energy Finance

**Panellists:**

- » Sarah Alexander, Senior Advisor, SELCO Foundation
- » Habiba Ali, Chief Executive Officer and Founder, Sosai Renewable Energies Company
- » Nazmul Haque, Director of Investment and Head of Advisory, IDCOL
- » Surabhi Mathur Visser, Director Investments, SunFunder



## Session 4

### Off-grid innovation: Latest solutions and future needs

**31 October 2018, 16:15 – 17:30**

Innovation has been one of the key drivers to facilitate a greater expansion of off-grid technologies. Nowadays, these breakthroughs go beyond the technology domain, covering innovation in business models, enabling infrastructure, systems operation, financing schemes and regulations.

Because of major digital and physical advances, more innovations in off-grid technologies, such as those related to: improved modularity, off-the-shelf hardware and software, smart interoperability between mini-grid components, advanced monitoring devices and controls, direct current mini-grids, energy trading between prosumers and other options that will disrupt the energy market. All of these may come with gaps and opportunities, and it is crucial to understand how to accommodate and successfully integrate these improvements in the overall energy system.

This session will explore the status of and latest developments in off-grid technologies. It will discuss the needs that these innovations will unleash and potential solutions to ease the future deployment and operation of off-grid systems. The development of quality infrastructure will be presented as a mean to strengthen the market uptake and commercialisation of these technologies, with a special focus on mini-grids. Experts will provide an overview of innovative trends and evaluate their relevance in the global energy transformation.

**Moderator:** Roland Roesch, Deputy Director, IRENA Innovation and Technology Centre

**Presentation:** Quality infrastructure for renewable mini-grids of the future - Insights from IRENA report, Roland Roesch, Deputy Director, IRENA Innovation and Technology Center

**Panellists:**

- » Dennis Chew, Regional Director, International Electrotechnical Commission Asia-Pacific Regional Centre (IEC-APRC)
- » Horng Leong Lim, Project Manager Energy Research Institute, Nanyang Technology University, Singapore
- » Munawar Moin, Managing Director, Rahimafrooz Renewable Energy Limited
- » Katarina Uherova Hasbani, Founder, EnRupt and Vice President, Alliance for Rural Electrification
- » Michael Wollny, Managing Director, Wollny Consulting
- » Marcus Wiemann, Executive Director, Alliance for Rural Electrification

## Session 5

# Scaling up renewable energy mini-grid deployment: Enabling policies and regulations

**1 November 2018, 09:00 – 10:30**

With decreasing costs and improved reliability of technology, renewable energy mini-grid deployment has grown consistently over the past decade. Renewable energy mini-grids are uniquely placed between grid-based solutions and stand-alone systems in both system design and level of service offered, ranging from basic lighting to commercial and productive end-uses. Mini-grids are a key part of the solution to achieve universal electricity access by 2030. It is estimated that by 2030, renewable energy sources will power around 60% of new access connections, with approximately 40% of this through mini-grids.

Accelerating the deployment of renewable energy mini-grids requires, among other measures, a dedicated policy and regulatory environment to address key investment risks. A growing number of countries are introducing targeted policies and regulations to support private sector participation in the sector. Such policies address different aspects, including the legal and licensing framework, tariff setting, main grid arrival risk and design of financial support. The right policy and regulatory environment depends largely on the local conditions, the technology solutions, the role of mini-grids as envisaged within the national electrification strategy and the tier of electricity access delivered. This session will look at policy and regulatory challenges faced by the mini-grid sector, and discuss approaches and solutions from different countries and regions to address them.

**Moderator:** Salvatore Vinci, Head, Partnerships and Technical Advisory Services, IRENA

### Presentations:

1. Economics of renewable energy mini-grids: Developers' perspective, Xavier Vallvé, Director, Trama TechnoAmbiental
2. Policies and regulations for renewable energy mini-grids: Insights from country case studies, Rabia Ferroukhi, Acting Director, Knowledge, Policy and Finance Centre, IRENA and Bishal Parajuli, Associate Professional, Policy, IRENA

### Panellists:

- » Ng'anzi Jumaa Kiboko, Manager Electricity Generation and Markets, Energy and Water Utilities Regulatory Authority, Tanzania
- » Tri Mumpuni, Executive Director and Founder, IBEKA
- » Pippo Ranci, Advisor, Florence School of Regulation, European University Institute
- » Septia Buntara Suspendi, Acting Manager, ASEAN-German Energy Programme, ASEAN Centre for Energy
- » Andresito F. Ulgado, Chief Science Research Specialist for Hydro and Ocean Energy Management Division, Department of Energy, Philippines
- » Xavier Vallvé, Director, Trama TechnoAmbiental

## Session 6

### Scaling up renewable energy mini-grid deployment: Innovations in delivery and business models

**1 November 2018, 11:00 – 12:30**

Government agencies, state-owned utilities, community groups and nongovernmental organisations have historically been driving renewable mini-grid development. As more private sector actors step into this market, across the mini-grid value chain, considerable thinking goes into defining the most suitable business/delivery model for deployment. A variety of aspects need to be taken into consideration to identify the “right” business model, including local socio-economic conditions, the nature of electricity demand, technology solutions, ownership and financing structures, local capacities, tariff determination, and risk mitigation. The choice and success of model depends on factors, including local context as well as the size and structure of the mini-grids.

The end objective of a sound business model is to ensure sustainability of the project. Whether the challenge is ensuring cost recovery and timely and effective operation and maintenance, or ensuring risk-equivalent returns, there is no single ideal business model. Furthermore, mini-grid business models will continue to evolve as new approaches emerge and as cutting-edge technology are increasingly combined with operational elements to reduce costs and enhance viability.

Delivery models also need to be tailored to tap into and/or develop productive end use of energy, as well as to engage communities, especially women, not just as beneficiaries but in the design and operation and maintenance of mini-grid systems to maximise sustainability and benefits.

This session will focus on innovative delivery and business models being used for the deployment of renewable energy mini-grids. The discussion will look at how the operational models for mini-grids are adapting to overcome various market challenges and how technological innovation and capacity development can contribute to mini-grids’ long-term sustainability. On the topic of scalability, experts will present and debate different approaches to incentivise the participation of the private sector.

**Moderator:** Martin Hiller, Director General, Renewable Energy and Energy Efficiency Partnership (REEEP)

**Panellists:**

- » Ayu Abdullah, Regional Director for Southeast Asia, Energy Action Partner
- » Daniel Chavez, Director Design & Engineering, Electric Vine Industries
- » Richard Harrison, Chief Executive Officer, Smart Power Myanmar, PACT
- » Helmut Hertzog, General Manager, South African Renewable Energy Business Incubator (SAREBI)
- » Katharine Pelzer, Director of Commercial Operations, SparkMeter

## Session 7

### Increasing access to finance: Unlocking capital for mini-grid deployment

**1 November 2018, 14:15 – 15:30**

Access to finance is a key challenge to the widespread deployment of renewable energy-based mini-grids despite growing interest from public and private actors. The scale of investment projected for the mini-grid sector to achieve universal access is around USD 20 – 25 billion annually. While some investment risks can be addressed through enabling mini-grid policy and regulatory frameworks (e.g., streamlined licensing, cost-recovering tariff setting, exit options on main-grid arrival), targeted measures are still needed to unlock asset financing in the sector.

As mini-grids pass through different phases (development, proof-of-concept and rollout), the financing needs vary. Depending on the local context, both public and private financing instruments are needed to meet the financing needs, ranging from grants for feasibility studies during project development, to a mixture of performance grants, equity and debt in the rollout stage. Facilitating access to financing for mini-grids will require different stakeholders, including development finance institutions, local finance institutions (especially commercial banks) and national financing facilities (e.g., rural electrification funds), to design long-term, tailored, affordable and accessible financing instruments. Complementing traditional approaches, innovative delivery models focusing on effective risk allocation (e.g., public-private partnerships) and new financing instruments (e.g., crowdfunding, block-chains) can also be considered.

This session will focus on the latest developments in approaches to improve access to finance for renewable energy mini-grids. Special focus will be given to pathways supporting the sustainable scale-up of renewable energy mini-grids through increased use of commercial financing.

**Moderator:** Bikash Pandey, Director of Clean Energy, Winrock International

#### **Panellists:**

- » Anjal Niraula, General Manager, Gham Power
- » Pranay Samson, Associate Director Corporate Finance, Impact Investment Exchange IIX
- » Peter Storey, Global Coordinator, Private Financing Advisory Network (PFAN)
- » Kapila Subasinghe, Vice President and Head of Consulting, DFCC Bank Sri Lanka
- » Dipti Vaghela, Network Facilitator and Manager, Hydro Empowerment Network
- » Abdussalam Yusuf, Assistant General Manager, Nigerian Electricity Regulatory Commission

## Session 8

# Maximising socio-economic benefits of off-grid renewable energy solutions: Insights from the field

**1 November 2018, 16:00 – 17:15**

Access to adequate, affordable, reliable and environmentally-sustainable electricity is essential for meeting basic needs and to accelerate local socio-economic development. Deploying off-grid renewable energy in areas lacking electricity access can yield benefits at both the consumption and supply level. At the consumption level, beneficiaries experience improved quality of life and living standards through lighting, communications and access to information. Off-grid renewables supporting productive uses of energy can support sustainable livelihoods, stimulate local economic activities, raise incomes, enhance productivity and create new employment opportunities in rural areas.

On the supply side, the development of sustainable energy enterprises and the underlying infrastructure, workforce and value chains can drive macroeconomic growth through the creation of direct and indirect jobs. Realising the vast potential of off-grid renewable energy solutions requires an enabling environment comprising of, but not limited to, provision of adequate skills and training programmes, and policies to support local practitioners.

Through cross-sectoral linkages, increasing access to cost-effective and environmentally sustainable energy services can have a broader development impact through better education, gender equality, improved health and enhanced access to clean water. Indeed, off-grid renewables hold the potential to contribute to multiple Sustainable Development Goals.

This session brings together practitioners from the field to share insights on the socio-economic dimension of off-grid renewable energy development. Panellists will highlight specific country experiences and identify specific measures that could maximise the socio-economic benefits for local communities from off-grid renewable energy development.

**Moderator:** Rabia Ferroukhi, Acting Director, Knowledge, Policy and Finance Centre, IRENA

**Presentation:** Divyam Nagpal, Associate Programme Officer, IRENA

### **Panellists:**

- » Hon. Adrian Banie Lasimbang, Executive Director, Centre for Renewable Energy and Appropriate Technology, Malaysia
- » Avishek Malla, Chief Executive Officer, SunFarmer Nepal
- » Tri Mumpuni, Executive Director and Founder, IBEKA, Indonesia
- » Geoffrey Ronoh, Director, Strathmore Energy Research Centre, Kenya
- » Sandra Winarsa, Green Energy Programme Development Manager, Hivos

**Day:** 31 October

**Time:** 13:00 - 14:15

**Location:** IOREC BR1



## Sustainable energy and livelihoods

**Organiser:** SELCO Foundation

Sustainable energy plays a key role in alleviating poverty when linked to productive applications such as automation in the agricultural value chain, crafts and manufacturing and other small and medium enterprises. Some of the key parts that can catalyze improved incomes, savings, productivity and reduction in drudgery include: efficiency of appliances, appropriate financial products, market linkages, capacity building and enabling policies at multiple levels. This leads to the creation of an ecosystem that can scale sustainable energy driven sustainable livelihoods.

The side event will explore the role of sustainable energy in catalyzing the ecosystem via innovative models and processes and will be an opportunity to launch a publication with 50 case studies.

**Moderator:** Huda Jaffer, Lead Designer, SELCO Foundation

### Panel discussions:

- » Energy efficient technology development for productive applications
- » Delivery Models to disseminate energy+livelihood solutions

### Panelists:

- » Bikash Pandey, Winrock International
- » Garrick Lee, Energy Savings Trust
- » Guruprakash Shetty, SELCO Foundation
- » Gigi Wing-Davies, Hivos

**Day:** 31 October

**Time:** 13:00 - 14:15

**Location:** IOREC BR2

**POWER**  
FOR  
**ALL**

 **IRENA**  
International Renewable Energy Agency

## Closing the human capital gap in energy access

**Organisers:** Power for All and IRENA

Achieving universal electricity access is not a technology issue. In fact, existing distributed renewable energy (DRE) solutions have shown that they have the potential to alleviate energy poverty for more than 1 billion people. Rather, it is the human capital—the collective skills and knowledge of a new generation, especially women and youth—that will play a key role in determining our success or failure in achieving Sustainable Development Goal (SDG) 7 and ensuring access to affordable, reliable, sustainable, and modern energy for all.

Join Power for All and IRENA to discuss the skills and job creation dimension of DRE development. Power for All, along with Schneider Electric and other partners, will also launch a new global campaign, Powering Jobs, focused on improving access to training and job opportunities in the energy access sector and building a 21st century workforce that is diverse, inclusive, and equitable.

**Moderator:** William Brent, Chief Communications & Engagement Officer, Power for All

**Scene-setting presentation on Renewable energy and Jobs:** IRENA

**Launch of the “Powering Jobs” campaign:** Power for All

**Panelists:**

- » Praveen Saxena, Chief Executive Officer, Skill Council for Green Jobs, Skill India Mission, India
- » Rabia Ferroukhi, Acting Director, Knowledge, Policy and Finance Centre, IRENA
- » Thomas Andre, Access to Energy Strategy Director, Schneider Electric
- » Isaac Mwathi, Programme Development Manager, Renewable Energy for the East and Southern Africa Region, Hivos

**Day:** 31 October

**Time:** 13:00 -14:15

**Location:** IOREC BR3



## Supporting renewable energy entrepreneurship

**Organiser:** IRENA

The purpose of this event is to discuss the challenges faced by Sub-Saharan entrepreneurs and act as a platform for experience-sharing and dissemination of best practices in terms of enabling policies, innovative financing solutions, skills development and overall the support ecosystem that is at the core of the Renewable Energy Entrepreneurship Support Facility's concept.

The objectives of this side-event are to:

- » Support knowledge exchange between entrepreneurs and incubation centres working in the energy access space in Asia/Africa.
- » Identify critical gaps in knowledge, skills and resources that prevent the creation and growth of enterprises in the energy access sector as well as the opportunity that can boost renewable energy entrepreneurship in Africa and Asia
- » Outline skill enhancement and resources needed to support energy access entrepreneurs.

**Moderator/ Opening remarks:** Gurbuz Gonul, Acting-Director, Country Support and Partnerships, IRENA

### Presentations:

1. Gurbuz Gonul, Acting-Director, Country Support and Partnerships, IRENA
2. Marco Aresti, Programme Manager, RES4Africa

### Interventions:

- » Sarah Alexander, Senior Advisor, SELCO Foundation
- » Habiba Ali, Chief Executive Officer, Sosai Renewable Energies Company, Nigeria
- » Helmut Hertzog, General Manager, South Africa Renewable Energy Business Incubator, South Africa
- » Paul Ogola Ndolo, Managing Director, Sunpawa Energy
- » Henry Shongwe, Energy Efficiency Expert, SADC Centre for Renewable Energy and Energy Efficiency (SACREEE)



**Day:** 31 October  
**Time:** 13:00 -14:15  
**Location:** Plenary



## Project facilitation and funding opportunities for renewable energy projects

**Organiser:** IRENA

The demand for renewable energy finance is growing whilst access to finance is not increasing as quickly particularly for off-grid energy access projects. Access to finance comes through developing financially attractive project proposals and having an effective strategy to seek funding. Public and private sector finance from multilateral development funds through to the local commercial sector are significant sources of funding. IRENA provides various tools, platforms and collaborations for project facilitation and accessing funding:

- » **Global Atlas** – a web platform that allows its users to find maps of renewable energy resources for locations across the world.
- » **Project Navigator** – an online platform providing comprehensive, easily accessible, and practical information, tools and guidance to assist in the development of bankable renewable energy projects.
- » **Sustainable Energy Marketplace** – a matchmaking platform in the project and finance ecosystem for renewable energy including project developers, funders and technology providers.
- » **IRENA/ADFD Facility** – involving a call for proposals to seek over USD 50 million in co-funding annually from the Abu Dhabi Fund for Development (ADFD).

This event will present and discuss these including Global Atlas for resource allocation, Project Navigator for project development, the Sustainable Energy Marketplace as a matchmaking platform for projects and finance and the IRENA/ADFD Facility offering over USD 50 million in concessional debt annually from the Abu Dhabi Fund for Development for the implementation of projects.

**Opening remarks:** Roland Roesch, Deputy Director, IRENA Innovation and Technology Centre

### Presentations:

1. IRENA project facilitation tools to support funding for renewable energy, Roland Roesch, Deputy Director, IRENA Innovation and Technology Centre
2. Guidance on how to apply for the seventh cycle of the IRENA/ADFD Facility, Seleha Lockwood, Programme Officer, IRENA
3. Experiences of development funds through the Facility and funding of mini-grid and off-grid projects, Dr. Bandar Alhoweish, Global Senior Energy Specialist, Islamic Development Bank and Stefan Mager, Strategies for renewable energy for climate protection in developing countries, GIZ

**Global Atlas**  
FOR RENEWABLE ENERGY



**SUSTAINABLE ENERGY  
MARKETPLACE**

**IRENA ADFD**  
PROJECT FACILITY

**Day:** 31 October

**Time:** 17:30 -18:45

**Location:** IOREC BR1



## Inclusive financing frameworks for off-grid renewable energy solutions

**Organisers:** Hivos and IRENA

Access to finance in the off-grid renewable energy sector remains a key barrier to scale-up. While investments in the sector have grown substantially over the past few years, especially in the solar home system segment, it has largely been concentrated in a specific region and among selected enterprises. The sector continues to be perceived as risky, with high transaction costs and with financing that often is outside the reach of many end-users, intermediary financing institutions and enterprises. This impacts entrepreneurs as well as MFIs/SACCOs as well as end-users. To increase the uptake of off-grid renewable energy solutions, an inclusive financing framework is needed that ensures that affordable, long-term financing is available, especially for local entrepreneurs and women.

The session will bring together diverse stakeholders to discuss different approaches to channeling financing to where it is needed and in the form that is needed (e.g., financial instrument, terms of financing). It will also discuss policy and institutional changes to scale-up finance flow to different stakeholders in the sector with a view to scale-up deployment as well as to maximise the socio-economic benefits of off-grid renewable energy solutions.

**Opening remarks:** Rabia Ferroukhi, Acting Director, Knowledge, Policy and Finance Centre, IRENA

**Moderator:** Carol Gribnau, Director, Green Energy and Green Foods Programs, Hivos

### Panelists:

- » Sarah Alexander, Senior Advisor, SELCO Foundation
- » Surabhi Mathur Visser, Director, Investments, SunFunder
- » Habiba Ali, Chief Executive Officer, Sosai Renewable Energies, Nigeria
- » Tijana Radojicic, Senior Energy Advisor, Practical Action
- » Kapila Subasinghe, Vice President (Specialized Project Lending), DFCC Bank, Sri Lanka

**Day:** 31 October

**Time:** 17:30 -18:45

**Location:** IOREC BR2



## Quality infrastructure for supporting global mini-grid market expansion

**Organiser:** IRENA

The session will explain the role of quality infrastructure (QI) in expanding mini-grids markets, including best practices, future risks and strategies to mitigate those. In the session the participants will choose to join one of three working groups: i) Policy makers/Public Sector ii) Project Developers iii) Communities. Each group will work with a field expert to identify the challenges and expectations as a QI stakeholder. The group moderators will share key tools and mechanisms that the stakeholders can apply to support mini grids deployment.

During the session, key messages from the IRENA's report Developing Quality Infrastructure for mini grids will be shared, a study prepared with contributions from the International Electrotechnical Commission and the Alliance for Rural Electrification.

**Opening remarks:** Roland Roesch, Deputy Director, IRENA Innovation and Technology Center

### **Presentations:**

1. Insights from IRENA Report and INSPIRE demonstration, Alessandra Salgado, IRENA Innovation and Technology Center
2. Dennis Chew, Regional Director for IEC-APRC, International Electrotechnical Commission
3. Marcus Wiemann, Executive Director, Alliance for Rural Electrification

**Working Groups:** Stakeholder Insights

**Day:** 31 October

**Time:** 17:30 -18:45

**Location:** IOREC BR3



## Solar irrigation: Opportunities and challenges

**Organisers:** International Water Management Institute and IRENA

Solar Irrigation has been expanding globally at a rapid rate, partly because of the efforts of governments and multilateral agencies and partly because it appeals to the agrarian community, deprived from affordable and reliable energy for irrigation access. Different experiments across the globe have shown that, even though different solar irrigation pilots have been contextualized as per the local requirements, the challenges faced in utilizing the full potential of the technology boils down to some common problems, which are rooted in the business models of these experiments, which often inhibits their scalability.

The session on *Solar Irrigation: Opportunities and Challenges* will bring together the learnings from promising experiments in the field of solar irrigation from South Asia and East Africa. An engaging discussion will follow the colloquium to debate and understand the business models and their current and potential impacts. The discussion will also cover challenges in scaling up these models across geographies and if there are common answers.

**Moderator:** Martin Hiller, Director General, REEEP

**Presentation:** “The Solar-Powered Irrigation Opportunity: Key considerations for deployment and scale-up”: Divyam Nagpal, Associate Programme Officer, IRENA

**Interventions:** Insights from national experiences

- » India: Neha Durga, Consultant, IWMI-Tata Water Policy Program
- » Bangladesh: Nazmul Haque, Director (Investment) & Head of Advisory, IDCOL
- » Nepal: Avishek Malla, Chief Executive Officer, SunFarmer Nepal
- » Kenya and Nepal: Bikash Pandey, Director, Winrock International

**Closing remarks:** Neha Durga, Consultant, IWMI-Tata Water Policy Program

**Day:** 1 November

**Time:** 12:45 -14:00

**Location:** IOREC BR1



## Renewable energy off-grid components of NDCs: Co-benefits for mitigation, adaptation, and SDGs

**Organiser:** Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Germany

The off-grid renewable energy sector is receiving growing attention in international and regional fora dedicated to climate action. Furthermore, notable efforts have been made to identify challenges and to create opportunities to scale up the engagement of the private sector in off-grid renewable energy access. Nevertheless, there remain important pending questions regarding the role that the off-grid sector can play in the framework of Nationally Determined Contributions (NDCs).

Within this framework, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) via the German Cooperation Agency (GIZ) has commissioned a study titled “Renewable Energy Off-grid Components of NDCs and their Role for Climate Change Mitigation” to: Develop a global scenario for rural electrification; Quantify the off-grid market and climate change mitigation potential; support countries in attracting climate finances for NDC implementation. The aim of this side event is to kick-start engagement of local and global stakeholders and to discuss how the results of this study can be transformed into means of concrete action.

### Opening remarks:

- » Stefan Mager, GIZ Advisor to Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, Germany
- » Marcus Wiemann, Executive Director, Alliance for Rural Electrification (ARE)

### Presentations:

1. Renewable Energy Off-grid Components of NDCs, Hugo Lucas, Head of Energy, Factor
2. Scenario Development for Rural Electrification & Off-grid Market and Mitigation Potential, Catherina Cader, Researcher Off-Grid Systems and Reiner Lemoine Institut GmbH
3. Renewable Energy Off-grid Ecosystem, Harish Hande, Co-founder, SELCO

**Day:** 1 November

**Time:** 12:45-14:00

**Location:** IOREC BR2



## Accelerating renewable energy based electrification in small island contexts

**Organiser:** Department of Energy, Philippines

The household electrification level in the Philippines stood at about 90% in 2017. The number of still unelectrified households totals about 2.4 million. While many of them will be connected by various grid extension programs of the electric cooperatives and distribution utilities, over half a million households located in remote, isolated areas such as small islands, will not be reached by such programmes and will require decentralised mini-grids or individual systems based on renewable energy. The challenge is compounded by the archipelagic nature of the country, which is composed of some 7,100 islands, most of them small and dispersed. The solutions require a combination of innovative decentralised technical approaches, new business models and policies and regulations that maximise the role of the private sector. The Government's objective is to have 100% household electrification by 2022.

The specific objectives of this side-event are to provide information and increase knowledge on existing and upcoming opportunities for clean energy and hybrid mini-grids in the Philippines, to learn and increase knowledge about the technical and financial solutions for mini-grids in the Philippines, and to link key players in the Philippines electric power industry with mini-grid experts as well as potential investors and financiers.

**Opening remarks:** Douglas Liner, Team Leader, European Union-supported Access for Sustainable Energy Programme (ASEP)

### Panellists:

- » Marc Louie Olap, OIC-Division Chief, Rural Electrification Administration and Management Division, Electric Power Industry Management Bureau, Department of Energy, Philippines
- » Federico Villar, Acting Department Manager, Disaster Risk Reduction Management, and Manager Technical Operations Division, National Electrification Administration
- » Rene Fajilagutan, General Manager, Romblon Electric Cooperative
- » Marcus Wiemann, Executive Director, Alliance for Rural Electrification
- » Gurbuz Gonul, Acting Director, Country Support and Partnerships, IRENA

### Q&A

**Day:** 1 November

**Time:** 12:45 -14:00

**Location:** IOREC BR3



## Market Activation for Energy Access – 25x25 Collaborative

**Organisers:** Practical Action, Hivos, Power for All and SNV

This session will discuss how to apply Market Activation approaches, aiming at boosting simultaneously demand and supply on decentralized renewable energy (DRE) solutions, promote changes in policies and regulation and increase finance availability in the sector. In this context, expert organizations working on market activation will present and discuss best practices and experiences, including ways to step up the current efforts and convene multi-stakeholder engagements to promote discussions between government representatives, development partners, regional institutions, private sector and financial institutions.

Specific objectives of this side event are to recognise that critical role of putting in place the right enabling environment to accelerate DRE markets development, understand how relevant multi-stakeholder engagement can address the needed policy, regulatory and financing needs, as well as to increase awareness of how the Market Activation approach can contribute to increase credibility across DRE markets, enhance the accountability, transparency and inclusivity in national DRE markets and business models

**Opening remarks:** Market Activation and 25x25 Collaborative, Carlos Sordo, Energy Access Partnership & Innovation Manager, Practical Action

### Presentations:

1. Solar Market Activation in Cambodia, Sophie Truffin, Project Manager Cambodia, SNV
2. Demand stimulation in Indonesia, Sandra Winarsa, Programme Development Manager Renewable Energy for South East Asia, Hivos
3. Private Sector as a crucial partner for market activation, ARE
4. Role of government engagement to frame the right policies and regulations, Henry Shongwe, Energy Efficiency Expert, SACREEE
5. Multi-stakeholder initiatives for a common vision, William Brent, Leadership team member, Power for All

**Day:** 1 November

**Time:** 12:45 -14:00

**Location:** Plenary



## Accelerating financially viable hydro mini-grids: A Closer Look at Small-Scale Hydropower in South and South East Asia

**Organiser:** Hydro Empowerment Network

Micro-hydropower makes up the largest number of existing renewable energy mini-grids, and where resources exist, can generate energy at very low cost. Yet, despite the growing interest in mini-grids to provide electricity access to off-grid populations, little attention has been paid to how hydro mini-grids can be financed, how donor and government support can be mobilized, and which ownership models result in the highest adoption of productive uses.

Building on case studies from South and Southeast Asia, this side event will aim to identify challenges and solutions to scaling existing models of financially viable hydro mini-grids. In this context experts will discuss types of ownership and partnership models between local private developers and consumers, financial and economic viability achieved, role of local manufacturing and local skills development, design of productive end use applications and of connection fees and tariffs for residential and productive end use consumers.

**Moderator:** Binu Parthan, Sustainable Energy Associates (SEA)

**Opening remarks:** Binu Parthan, Sustainable Energy Associates (SEA)

### **Presentations:**

1. Nepal project, Bir Bahardhu Ghale, Barpak Rural Electrification Pvt. Ltd., Nepal
2. Myanmar project, Dipti Vaghela, Hydro Empowerment Network

### **Panellists:**

- » Bikash Pandey, Winrock International
- » Kapila Subasinghe, DFCC Bank, Sri Lanka
- » Rana Ghoneim, UNIDO
- » Gerhard Fischer, ASEAN Hydropower Competence Centre
- » Adrian Banie Lasimbang, CREATE Borneo
- » Tri Mumpuni, IBEKA



**Day:** 1 November

**Time:** 17:30 -18:45

**Location:** IOREC BR1



## Developing market intelligence: Understanding what is really going on in Asian markets

**Organiser:** REN21

To support renewable energy commitments across Asia and the Pacific region there is a need to further scale-up policy best practices, cross-border collaborations and domestic, regional and foreign investments. Given the region's immense potential it is also important to understand the range of possibilities and thinking on the future of renewables across the region. In this context, REN21, ADB and UNESCAP will develop a report to map the current range of renewable energy development across the region. Mapping the region's renewable energy status will not only provide information for potential investment, it will also present concrete evidence of the opportunities to harness economic and social benefits in countries where uptake of renewables has lagged.

The event will present an outline of the report, solicit input from the audience on its structure, and discuss possibilities for collaboration (contributing data, identifying necessary institutions, being a reviewer etc.).

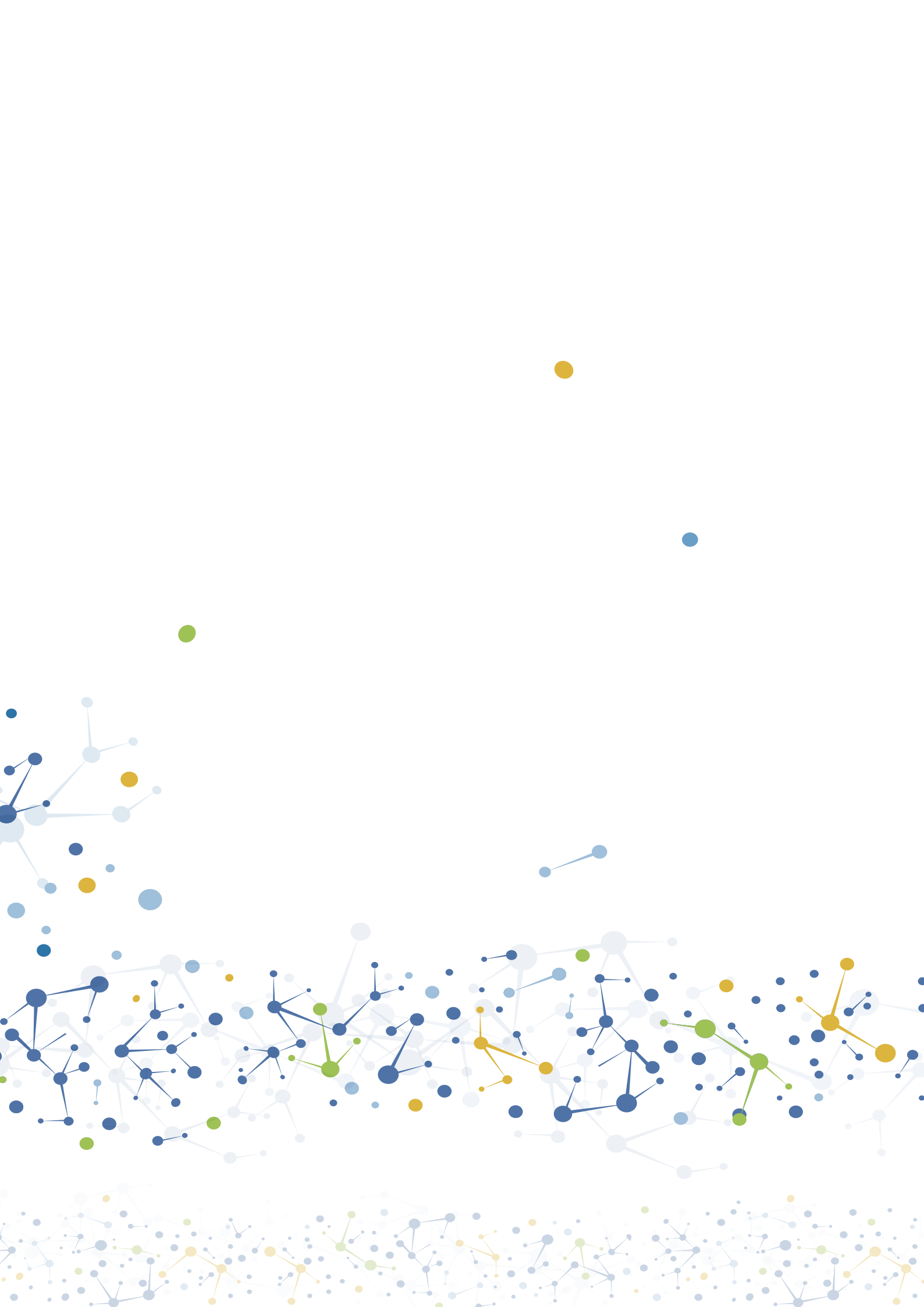
### Opening remarks

#### Presentations:

1. Renewables Rising: Status of renewables in the region, Kee-Yung Nam, ADB and Kohji Iwakami, UNESCAP
2. Distributed Renewables in the Region: Who, what, where, Divyam Nagpal, IRENA
3. Asia and the Pacific Renewable Energy Status Report: Proposed outline, Laura Williamson, REN21

### Open discussion







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