

Summary of Key Messages and Recommendations

HIGH-LEVEL CONFERENCE ON SUSTAINABLE ENERGY AND DEVELOPMENT

“Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries”

3rd October 2018, VIENNA, AUSTRIA CENTRE VIENNA
(with energy related events between 1st and 5th October 2018)

A. Background

Under the Austrian Presidency of the Council of the European Union, the Austrian Ministry for Europe, Integration and Foreign Affairs (MFA), the United Nations Industrial Development Organization (UNIDO) and the Austrian Development Agency (ADA) co-organized the High-Level Conference on Sustainable Energy and Development. The Conference took place on 3rd October 2018 under the guiding theme “Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries”.

It was organized under the umbrella of the Global Network of Regional Sustainable Energy Centres (GN-SEC) and in conjunction with the Informal Meeting of the EU Directors General for Development Cooperation. The Conference was accompanied by energy events between 1st and 5th October 2018.

The conference was organised as a concrete follow-up to the EU Council Conclusion on Energy and Development, adopted on 22 May 2018. The conclusions highlighted three key objectives: addressing the lack of access to affordable, reliable and modern energy services; increasing the use of renewable energy and energy efficiency products and services; and contributing to the global fight against climate change, in line with the Paris Agreement. In this context, the conclusions underline the important role of regional sustainable energy cooperation as follows:

(...) The Council stresses the necessity to strengthen regional and sub-regional cooperation and capacities in the sustainable energy and climate sector. The Council moreover supports efforts towards increasing the cost-effectiveness of the energy sector that are conducive to regional integration, trade and investment such as Regional Sustainable Energy Centres anchored in the regional economic communities.

The Conference aimed to accelerate global efforts to strengthen regional cooperation and integration as a catalyst for scaling up renewable energy and energy efficiency investment, innovation and entrepreneurship in developing countries. Targeted regional cooperation can address some of the barriers for sustainable energy and climate technology markets more effectively and at lower costs than national efforts, create the urgently needed economies of scale and enable more equal progress and spill-over effects between countries.

The Conference presented case studies from the EU, EAC, ECOWAS, SADC, CARICOM, SPC, SICA and the Arab States, and explored partnership opportunities with the Global Network of Regional Sustainable Energy Centres (GN-SEC). It also highlighted the catalytic role of regional programmes and organizations in implementing SDGs and the Paris Climate Agreement.

The full conference documentation is available at (e.g. available at: www.se4allnetwork.org).

B. Key messages and recommendations:

Regional sustainable energy and climate cooperation

1. Tapping the potential of renewable energy and energy efficiency requires building the capacity of developing countries to implement policies and regulations, encouraging the involvement of the private sector, implementing solid business models and innovative financing approaches to make solutions affordable to low-income population.
2. By looking at the moderate growth rates of Sustainable Energy and Climate Technology (SECT) markets in a number of developing countries, it becomes obvious that SDG-7, SDG-9 and SDG-13 cannot be attained by 2030 in business-as-usual scenarios. Markets for SECTs products and services remain often small and fragmented. There is need for economies of scale and speed.
3. In this context, formal, informal, centralised and decentralized multi-stakeholder partnerships - leveraging flexible networks and resources between a broad range of like-minded partners in developing and developed countries – can become important accelerators. Regional partnerships, cooperation and integration between countries, private sector and civil society can be an effective tool to address some of the existing demand and supply barriers for SECT market development.
4. Regionally, the energy transformation tends to remain uncoordinated between countries and common barriers and opportunities are not addressed jointly for the benefit of all. Duplication, fragmentation and lack of agenda-setting by the region lead often to inefficient use of international funding and opportunity costs. Simultaneously, global climate agreements and funding instruments face implementation challenges due to the limited national absorption capacities and the absence of regional arrangements.
5. In many parts of the developing world, the institutional capacities to coordinate and promote regional sustainable energy cooperation and integration are weakly developed. The traditional regional organisations and their energy institutions (e.g. utility organisations and regulators) are dealing with wider energy and/or interconnection issues and focus often more on traditional energy sources (e.g. gas, coal, large hydro). In most cases, regional organisations lack of resources and capacities to overlook and monitor complex political and technical sustainable energy policy and implementation processes.
6. Integrated regional markets, which follow joint standards and a common framework, are an important prerequisite for the reduction of investment risks and the uptake of trade with SECTs products and services. However, for several reasons, the regional level is often ignored and remains a missing link in the international sustainable energy and climate cooperation. It is not used systematically as a (cost-)effective tool to promote equal progress, coordination and economies of scales.
7. Regional cooperation in the sustainable energy sector can support the achievement of SDG-7, SDG-9 and SDG-13. Cooperation is essential to achieving the levels of innovation and societal change necessary to increase the uptake of renewable energy and energy efficiency technologies. Cooperation facilitates the exchange of knowledge, the strengthening of institutions, creation of markets, awareness raising, training of the workforce and support to companies.
8. Regional cooperation can complement and enhance the effectiveness of national and international initiatives. It enables the development of legal and regulatory frameworks and quality and energy

performance standards, strengthens the capacities of national institutions, facilitates knowledge management, awareness raising and business and investments promotion.

The Global Network of Regional Sustainable Energy Centres (GN-SEC)

9. To make regional sustainable energy and climate cooperation/integration a priority, UNIDO in partnership with the regional organisations and financial support of the Austrian and Spanish Development Cooperation launched the Global Network of Regional Sustainable Energy Centres (GN-SEC) Programme. Under a common framework, UNIDO assists regional organisations in the creation and operation of sustainable energy centres.
10. The GN-SEC is an innovative south-south and triangular multi-stakeholder partnership to accelerate the energy and climate transformation in developing countries. The network comprises a sub-network of centres in Africa and the Arab region and a sub-network of Small Island Developing States (SIDS). The network is expanding to Central America, Central Asia and the Himalaya-Hindukush region.
11. The GN-SEC is currently becoming a formalized global platform to advocate for SDG-7, SDG-9 and SDG-13 and joint interests in international policy processes. The platform is hosted by UNIDO in Vienna, Austria, and meets regularly. It provides also a "virtual" maker-space for south-south cooperation activities and joint project proposals.
12. The regional centres are advocates for a "New Deal" giving particularly LDCs and SIDS a stronger voice in shaping climate and technology transfer processes. The official mandate given by Ministers and Head of States, the intergovernmental character (based on int. agreements) and the close link to the RECs and national Ministries (through national focal points) give the centres high-level legitimacy. Currently, over ninety Ministers of Energy and/or Heads of State adopted the creation of such centres.
13. The GN-SEC centres aim to accelerate the energy and climate transformation by creating economies of scales, equal progress and spill-over effects between countries. In partnership with Member States and other sub-regional players (e.g. power pools, utility organisations, regulatory authorities, regional banks), the centres work towards the creation of integrated and inclusive regional markets for SECT products and services.
14. Through cross-border approaches and methodologies, the centres complement and accelerate national efforts in the areas of policy and regulation, capacity development, knowledge and data management, awareness raising, as well as the promotion of investment, innovation and entrepreneurship.
15. The GN-SEC centres aim at an equilibrium between market demand for and supply of SECT products and services. They put particular emphasis on actions directed to increase the domestic value creation of investments in SECTs. In this context, the centres shall focus on regional actions to strengthen the productive (manufacturing, assembling, servicing) and innovation capacities of domestic businesses and entrepreneurs (e.g. fiscal and non-fiscal incentives, incubation, acceleration, R&D, quality infrastructure and standards, qualification, IPs, cluster building).
16. Building on country leadership within existing regional cooperation entities, the network puts the key principles of aid and development effectiveness (as defined in the Accra, Paris and Busan Declarations) into practice. From the very beginning, the centres are in the ownership and under the leadership of the respective regional organization and its Member States.

17. The centres are designed as hubs for all kind of domestic and international partnerships. The regional sustainable energy centres are instrumental to the implementation of regional integration and partnerships between donors and regional economic communities on key sustainable energy issues and challenges. They act as hubs for international and regional partnerships with donors, development banks, regional standards institutions and international organisations, among others.
18. The GN-SEC centres can complement regional banks when it comes to the addressing of “soft” issues hindering the de-risking and long-term sustainability of investments (e.g. policy, standards, laws, qualification, and certification). These issues have usually too high transaction costs for banks and/or lead to unfavourable financing terms (e.g. interest rates). Jointly regional financing facilities that provide credit and risk mitigation to project developers and local banks could be created. The Regional Off-Grid Electrification Project (ROGEP) implemented by the World Bank and ECREEE is a good example for that.
19. Regional cooperation can be strengthened through partnerships between the Global Network of Sustainable Energy Centres (GN-SEC), European institutions, development banks and regional organisations and by creating or enhancing linkages between existing instruments.
20. The regional sustainable energy centres cooperate with development partners to establish renewable energy entrepreneurship facilities that provide training for entrepreneurs, advice on technical matters and project proposals and business management. The entrepreneurship facilities of ECREEE, PCREEE and SACREEE are good examples.

Regional policies, standards and knowledge management

21. Regional policy frameworks for renewable energy and energy efficiency including the setting of national targets and requiring the development of RES and EE action plans encourage the involvement of the private sector. For instance, setting regional minimum energy performance standards creates regional markets for energy efficiency. Action plans increase the confidence of the private sector and its readiness to invest. A good example is the cooperation of ECREEE with the UNIDO, EU and AfDB on the development of regional and national RE&EE policies, action and investment plans, as well as standards.
22. Regional cooperation can support the development of policy and regulatory frameworks for private sector development in the sustainable energy business. Policy instruments supporting SMEs, building markets, introducing technology performance standards, strengthening capabilities, removing infrastructural bottlenecks, among others are required. The creation of a regional certification scheme for solar thermal systems is a good examples of RCREEE.
23. Creating a market for sustainable energy products and services is necessary. Economies of scale are very necessary and can be achieved through common markets and standards. For this purpose, alignment of national, regional and global levels is required. As an example, the harmonisation of Minimum Energy Performance Standards (MEPS) at the continental level in Africa enables the creation of markets for energy efficiency. A good example is the joint SACREEE and EACREEE project on EE standards on appliances, funded by SIDA.
24. The regional sustainable energy centres support the inclusion of women in policy-making processes and their involvement in local value chains as entrepreneurs, skilled technicians, engineers etc.
25. Local value chains for sustainable energy technology should be enhanced in developing countries. SMEs in these areas can be a key engine of growth bringing environmental benefits. SMEs require competences such as business management, manufacturing and commercialisation of customer-

oriented products. Effective policy, legal and regulatory frameworks for SMEs are necessary to create an entrepreneurial ecosystem in the field of sustainable energy.

26. Regional cooperation can identify gaps in the value chains for RES and EE and focus support on areas where the private sector faces risks that cannot be covered by commercial financial instruments.
27. By empowering women to become suppliers of clean energy services, women can help lift their families out of poverty. Additional income sources encourage women to reinvest within their community and become entrepreneurs. It is important to involve women in the development and implementation of energy policies and projects, ensuring that their opinions are reflected in the outcome and their empowerment along energy value chains is achieved.
28. Equal access to reliable sustainable energy data and information is key for the development of markets. However, in most of the developing regions, data gathering capacities remain weak. Therefore, it is important to address this through the regional level. The ECOWREX information system, established by ECREEE is a good example.

Regional Sustainable Energy Finance

29. A portfolio of financial instruments is required to scale up access to finance. These instruments include guarantees to reduce risk, blending instruments combining grants with loans, investment platforms to facilitate matchmaking between project developers and financiers, technical assistance for local authorities, banks and project developers as well as measures to improve the investment climate such as dialogue between businesses and policymakers and the provision of market intelligence.
30. Financial instruments providing debt, equity and growth capital for SMEs, hedging foreign currency risks and supporting local banks are required. Development banks are offering instruments targeting different actors and risks but they should be expanded to manage additional risks and connections between them can be improved.
31. Best-practice examples about successful business models should be identified and disseminated to facilitate the assessment of the financial viability of projects by investors
32. The climate-energy nexus in vulnerable regions such as the SIDS should be addressed. Climate financing can complement other investment vehicles. The regional centres have an important role in accessing climate financing for energy efficiency and renewable energy
33. Financial support for the commercialisation of sustainable energy technologies in rural areas is required. Innovative business models targeting productive uses and private customers should be tested but private investors often do not invest in companies without proven business models. Successful business models should be replicated to increase the penetration of RES/EE technologies.
34. Building demand for energy by raising local incomes through productive use training and micro-finance is essential to improve the business case of off-grid solutions.
35. Microfinance can play an important role by offering consumer finance to low-income customers and loans to companies entering rural markets. MFIs can also go into partnerships with the off-grid companies

Regional Sustainable Energy Entrepreneurship and Innovation

36. Regional research and innovation networks enable knowledge transfer and increase innovation capacity on renewable energy and energy efficiency. They play an important role in the development and diffusion of appropriate technology through capacity building activities such as skills training and exchange of researchers.
37. Local businesses in developing countries require improved access to technology and finance. Regional cooperation that encourages knowledge transfer to local businesses and development of skills to assemble, maintain and repair renewable energy and energy efficiency technologies strengthens the ability of local private companies to be active in energy markets.
38. Digitalisation in combination with decentralised renewable energy technologies enables new business models and the entry of new players to energy markets, making consumers evolve into prosumers. These emerging energy systems decrease carbon emissions and enable access to sustainable energy for low-income population. They also allow leap-frogging existing infrastructure.
39. For a sustainable energy technology entrepreneurial ecosystem to develop, governments require policies supporting enterprises, building markets, introducing technology performance standards, strengthening capacities, removing infrastructural bottlenecks, and facilitating finance.
40. Integrated approaches to capacity building are necessary, targeting different actors from governments to entrepreneurs, technical professionals and civil society, and different segments of the value chain.

C. Related side events

C.1. 10th Arab-Austrian Economic Forum & Exhibition: Conference on Energy Transition – Urban Technology and Sustainable Cities. New Opportunities for International Cooperation and Partnerships, 1 October 2018

On 1st of October 2018 a decade of Arab – Austrian relationships was celebrated with a high level forum in Vienna Austria organized by the Austro-Arab Chamber of Commerce (AACC) in cooperation with the City of Vienna and the Regional Center for Renewable Energy and Energy Efficiency (RCREEE). Acknowledging the importance of the emerging and developing MENA region the patronage of the event was under H.E. Prof. Dr. Alexander Van der Bellen – Federal President of the Republic of Austria. The organisers chose three focus points on which fruitful discussions evolved: Energy Transition; Urban Technology and Sustainable Cities; New Opportunities for International Cooperation and Partnerships. The high and wide level attendance from national and international organisations, from governmental to non-governmental organisations and from finance institutions to non-profit associations reflected the importance of these topics.

The speakers and panellists agreed that providing financial instruments is crucial for the penetration of sustainable energy technology. Financial support should be provided in different stages: 1. Early project phase financing for project preparation; 2. Enabling a framework for Public Private Partnerships (PPP); and 3. establishing a solid local capital market that can provide investments; For the MENA region but also valid for other regions in the world it was summarized that as long as oil and gas are the major and cheaper sources of providing energy, governments have to provide the right incentives and legal framework in order to speed up the energy transition.

Key messages:

1. A High Level Policy Dialogue (HLPD) was established with the aim of developing a pipeline of bankable projects on renewable energy and energy efficiency in the Mediterranean region. The projects are intended to implement the Nationally Determined Contributions (NDCs) of the countries and make use of different funding sources such as the Green Climate Fund (GCF) and other climate finance instruments.
2. An overview of the development trends of the energy sector within the Arab context was given, emphasizing the substantial investments in sustainable energy projects that are required. The region is still largely dependent on fossil fuels and has significant energy efficiency potentials. Renewable energy penetration has to be accelerated to rationalise the use of fossil resources and support economic growth. Financial conditions for project developers and local banks should be improved for investments to grow at a fast enough pace to meet the requirements. Financing facilities for renewable energy projects with substantial up-front capital needs are necessary.
3. Cities in the Arab region are expanding dynamically and face substantial challenges to move towards a sustainable, low-carbon and climate resilient path. At the same time, cities offer sizeable opportunities for renewable energy and energy efficiency technologies. Urban and energy planning should be interlinked to integrate decentralised energy sources into urban infrastructure and support the uptake the energy efficient demand-side technologies in buildings, transport, industry and other sectors. Cities require financing to build resilient and sustainable energy infrastructure. It is necessary to crowd-in private finance to complement public funds. For this purpose, the technical capacity of the public sector to attract private investments should be strengthened. National governments can support local governments with leveraging of private capital through municipal debt financing.

C.2. Business Forum Decentralised Energy in Developing Countries, 2 October 2018

The Business Forum was held in conjunction with the High-Level Conference on “Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries” on 3rd October 2018 in Vienna, Austria.

Prior to the conference, technology start-ups and businesses from Africa and Europe were invited to a Business Forum to discuss the practical barriers they are facing in making access to decentralized renewable energy solutions in rural and remote areas a reality by 2030. The forum was organized by the Africa-EU Energy Partnership (AEEP), the Alliance for Rural Electrification (ARE), the Austrian Development Agency (ADA), the Austrian Federal Ministry for Europe, Integration and Foreign Affairs (BMEIA), the European Commission, the German Federal Ministry for Economic Cooperation and Development (BMZ), and UNIDO.

The Forum followed up on issues raised at the “AEEP Policy Makers’ Roundtable on Decentralized Renewable Energy in Africa”, organized as part of the Zambia Off-Grid Investor Forum on 12th June 2018.

Key messages

1. The sustainable energy sector offers opportunities and challenges for start-ups. The size of potential markets is large. However, failure rates of start-ups are high and access to capital is difficult, government policies may pose risks and technical and commercial capacity is required to generate revenues
2. Companies in the decentralised energy business in developing countries face barriers to access technology and finance and lack business and technical skills. Coaching project developers to improve business plans and financial structures and facilitating matchmaking with financiers are necessary for start-ups to grow their business is required.
3. Off-grid business is particularly challenging. Companies face high up-front capital requirements for purchase of equipment. Low-income customers cannot afford technologies with high up-front investment costs and have fluctuating incomes that make payments. Therefore, customer finance and business models based on small incremental payments are required.
4. Start-ups in the sustainable energy sector and their customers require better access to finance. High-risk capital for projects is necessary at an early stage. Debt and equity finance are required later for companies to scale up their business. Foreign currency risks jeopardise the viability of projects particularly when local currencies get devaluated and local currency debt is not sufficiently available.
5. Good development is good for business: serving the world’s poor as customers without exploiting those means support is needed to lower prices to an affordable level, and/or to raise incomes to a point where poor people can afford life-changing energy services. In other words, market building, not only business-building support is key.
6. Clear, reliable financial support is needed on the business side to send trusted market signals to financiers: (i) donor supported patient debt, equity and results-based financing tools to allow existing businesses to grow and deliver results, (ii) De-risking tools such as off-taker risk guarantees, and political and forex risk mitigation tools to help bring in semi-commercial and commercial lenders, (iii) donor supported venture funds to support new - and scale successful - ideas.
7. Consumer finance is necessary for low-income customers to be able to afford sustainable energy products. Microfinance can play an important role by offering consumer finance to low-income customers.
8. New sources of financing should be explored to complement available funding. Microfinance, crowd-funding and institutional investors are possible alternatives.

9. Off-taker risks remain important but can be reduced through the promotion of productive activities, pre-payment methods, contractual arrangements with key clients and diversification of revenue generation
10. Business training and asset finance on the community/local entrepreneur side: Focus on building energy demand by either raising local incomes through productive use training and micro-finance, or by finding ways to cross-subsidize energy costs not only within national utilities as it is done today – but across energy service providers as well.
11. Connection to the national grid in rural areas can be expensive and the time of arrival of the grid to the communities is uncertain. Mini-grids offer an alternative solution but their business case is can be affected by the arrival of the national grid. Therefore, coordination between rural electrification agencies, ministries, transmission and distribution operators and mini-grids companies is necessary.
12. Rural electrification agencies lack budget and technical capacity and require strengthening.
13. Local banks cannot provide the necessary finance or will charge high interest rates due to the risks of the off-grid business. Risk mitigation facilities that allow risk sharing with local banks are necessary to stimulate their participation in these markets.
14. Cost-reflective price signals are important to develop the market and ensure the recovery of investments but countries can only achieve cost-reflective electricity tariffs in the long run.
15. Mobile money increases security of financial transactions and allows companies to collect payments in a more efficient way. In addition, it enables the supply of energy services to customers in rural areas.
16. Digitalisation enables the collection of data from customers. These data can be used by companies to expand their business towards other products and services. However, data protection regulations should ensure the appropriate processing of personal data.
17. Renewable energy cooperatives can play an important role in meeting the energy demand in rural areas. The German government is launching the Green people's energy for Africa initiative. The initiative aims at creating 100 energy cooperatives and supporting 500 SMEs with RES energy. It will also support 500 communities with the development of business plans and projects by 2020.
18. Bilateral cooperation partners and MDBs, which work alongside national government priorities and plans can provide assistance in building up local support for decentralised renewable energy

C.3. Creating Opportunities for Sustainable Energy Investments and Businesses in Developing Countries, 2 October 2018

The Global Forum on Sustainable Energy (GFSE) in cooperation with the Federal Ministry of the Republic of Austria for Europe, Integration and Foreign Affairs (BMEIA), the Austrian Development Agency (ADA) and the United Nations Industrial Development Organization (UNIDO) organized the Side Event: "Creating Opportunities for Sustainable Energy Investments and Businesses in Developing Countries". The side event was organized as a pre-event of the High-Level Conference on "Regional Cooperation to Accelerate Sustainable Energy Innovation and Entrepreneurship in Developing Countries" on Wednesday, 3rd October 2018 in conjunction with the Informal Meeting of the EU Directors General for Development Cooperation in Vienna, Austria. This afternoon event followed and complemented another side event titled "Business Forum: Decentralized Energy in Developing Countries," held in the morning of 2nd October.

Under the Austrian Presidency of the Council of the European Union, the event was facilitated by the Africa-EU Energy Partnership (AEEP), the Federal Ministry for Economic Cooperation and Development (BMZ), Germany and co-organized by the Austrian Government in partnership with the United Nations Industrial

Development Organization (UNIDO). The event was organized in the framework of the “Green People’s Energy for Africa” Initiative and the Private Financing Advisory Network (PFAN).

Key messages

1. Start-ups in the sustainable energy business face challenges to access finance to cover the up-front capital for projects.
2. There is a lack of pre-feasibility and feasibility studies on investment projects. Many project ideas have not been developed to the level of detail required by financial institutions. Financing to conduct feasibility studies and to prepare project proposals to seek financing is necessary.
3. Early-stage support to start-ups through the provision of capital and risk-sharing mechanisms is necessary. At later stages, growth capital and debt are required for companies to expand their business
4. Public money can be used to leverage private investment through measures to de-risk investments, managing risks that other financiers do not accept, and making patient capital available to SMEs that are risky for commercial investors, as well as by creating well-functioning energy markets.
5. A portfolio of financial instruments focusing on SMEs and small-scale projects is required to scale up access to finance. These instruments include guarantees to reduce risk, blending instruments combining grants with loans, investment platforms to facilitate matchmaking between project developers and financiers and measures to improve the investment climate.
6. Projects face both systemic and project-specific risks. Systemic risks (e.g. currency risks and offtaker risks) should be managed differently than project risks. Assigning a price to these risks improves decision-making about bankability of projects by allowing investors a better assessment of the project returns.
7. Depreciation of local currencies can substantially affect the returns of renewable energy projects as project developers have liabilities in foreign hard currencies, but their revenues are in local currencies. Instruments that enable loans in local currencies hedge currency risks due to exchange rates are necessary. These instruments give companies certainty about their loan payments. For example, the Currency Exchange Fund (TCX) enables long-term local currency financing in more than 70 local currencies around the world and has conducted pioneering work in assigning a price to currency risks.
8. Consumer finance is required as a complement to finance for companies, to enable low-income consumers afford the products. Consumer finance facilities established by partnerships between development banks, microfinance institutions and small loan providers can improve access to financing
9. Coaching and mentoring project developers and businesses to develop sound business plans and financial structures for their projects are necessary to enable SMEs with proven technical and commercial concepts to develop their business. An example are the activities conducted by the Private Financing Advisory Network (PFAN).
10. Best-practice examples about successful business models should be identified and disseminated to facilitate the assessment of the financial viability of projects by investors.
11. Development banks offer instruments targeting different project stages and risks. As an example, the Facility for Energy Inclusion (FEI) Off Grid Energy Fund of the African Development Bank (AfDB), co-sponsored by the Nordic Development Fund (NDF) provides local currency working capital loans to scale up off grid energy companies.

12. Development banks participate in equity funds focusing on renewable energy that work closely with local project developers and companies along the value chains to close funding gaps in small-scale energy projects. The Development Bank of Austria (OeEB), for example supports private equity funds that provide financing to companies focusing on solar energy.
13. However, the financial instruments should be expanded to manage additional risks, especially for off-grid projects
14. The regional sustainable energy centres enable the creation of regional markets for on-grid and off-grid technologies. For this purpose, they support the development and implementation of regional policy and regulatory frameworks, encourage the development of an entrepreneurial ecosystem and collaborate with partners on business promotion.
15. As an example, the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) has recently launched the Regional Off-Grid Electrification Project (ROGEP). ROGEP supports the acceleration of the deployment of standalone PV systems for households, public services and productive uses in West Africa. ROGEP's risk mitigation facility will provide risk sharing to commercial banks, debt funds and Energy Service Companies (ESCO). The regional approach allows pulling funds together rather than distributing funds to individual countries
16. The regional sustainable energy centres also cooperate with development partners to establish renewable energy entrepreneurship facilities that provide training for entrepreneurs, advice on technical matters and project proposals and business management.

C.4. Workshop "Partnership opportunities in the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC)" - International Sustainable Energy Conference 2018 (ISEC), Graz, 4 October 2018

UNIDO in cooperation with ECREEE, RCREEE, EACREEE, SACREEE, PCREEE, CCREEE, SICREEE and REEECH organised the workshop "Partnership opportunities in the scope of the Global Network of Regional Sustainable Energy Centres (GN-SEC)" as part of the International Sustainable Energy Conference 2018 "Renewable Heating and Cooling in Integrated Urban and Industrial Energy Systems" on 4th October 2018 in Graz, Austria. The workshop explored potential partnerships between academia, industry and senior experts of the regional sustainable energy centres. GN-SEC representatives provided an overview of the status of renewable energy and energy efficiency markets in Sub Sahara Africa, the Arab, Caribbean, Pacific, Hindu Kush Himalaya and Central American regions and presented ongoing and planned activities of the regional sustainable energy centres.

Martin Lugmayr (UNIDO) opened the session explaining the drivers to create the Regional Sustainable Energy Centres: Tackling energy poverty and affordability, assuring energy security and reliability and mitigating and adapting to climate change. The regional sustainable energy centres support the creation and strengthening of regional markets for renewable energy and energy efficiency, through regional energy performance and quality standards, regional legal, policy and regulatory frameworks, capacity building, investment promotion, knowledge management and awareness raising. The challenges need to be seen as investment and business opportunities. Markets for new low-carbon technologies and solutions are to be up-scaled. The world community is not on track and we lack speed and scale because of a number of demand-side (consumers of low-carbon products and services) and supply-side (providers of low-carbon products and services) barriers. Many countries have not adopted the necessary policies or have not been able to execute them effectively. Moreover, current technology transfer patterns are not inclusive as they tend to focus on demand-creation but ignore the supply side of domestic sustainable energy markets. However, the latter is needed to make the transformation a value creating process in terms of jobs and turn-over for developing countries. Currently, the regional level is not used systematically as a tool to accelerate the energy transformation and to address the barriers and drivers for these new technology markets more effectively. Sustainable energy

entrepreneurship and innovation is often not included explicitly in energy and industrialisation strategies of many LDCs. In order to overcome these barriers on a regional level the creation of regional centres is an effective tool. Six regional centres (ECREEE, RCREEE, EACREEE, SACREEE, PCREEE, and CCREEE) have been established in partnership with regional economic communities (RECs). They work towards integrated and inclusive sustainable energy markets and advice policy implementation, develop capacity, raise awareness and manage knowledge and foster entrepreneurship investment. Their activities are also aimed at de-risking of investments through joint standards and regulation. Three other centres in Central America (SICREEE), Himalaya-Hindukush (REEECH) and Central Africa are currently under preparation.

Kudakwashe Ndhlukula from the **Southern African Centre for Renewable Energy & Energy Efficiency (SACREEE)** followed with an introduction of SACREEE, established in 2015, explaining that it covers 16 countries in the SADC region. National electrification rates vary significantly among countries and energy access is still a major challenge although it has risen in the past few years. There are still large differences in almost all countries between urban and rural areas. In terms of security of supply, progress has been made by South Africa implementing an auction system for renewable electricity, feed in tariffs have been established in some other countries and a favourable framework incentivizing mini-grids has been accorded. The region in terms of electricity is very well interconnected. Only 3 countries are not members of the Southern African Power Pool (SAPP). Coal is still the dominant source of electricity production but hydro power offers large potential and is on the rise. There is increasing participation of Independent Power Producers (IPP) in the region. SACREEE is conducting several activities on RES resource assessment as part of the Africa Clean Energy Corridor (ACEC), gender mainstreaming, industrial energy efficiency and EE lighting and appliances and established the SADC renewable entrepreneurship facility. SACREEE is interested in working together with the private sector.

Karin Reiss (SACREEE) presented the Energy Efficient Lighting and Appliances project (EELA) of SACREEE. More specifically the project aims to create market and institutional conditions in EAC and SADC to stimulate increased diffusion of efficient lighting products and appliances. This project will bring regional support to private sector activities through regional regulatory and trade harmonization interventions; while also considering inclusiveness of all project activities to assure socially sustainable outcomes. EELA is implemented by EACREEE and SACREEE.

Michael Ahimbisibwe from the **East African Centre for Renewable Energy and Energy Efficiency (EACREEE)** started his presentation by pointing out the two key success indicators: increase understanding among the population and technological advancement. Especially important areas are: capacity building for technicians, retailers and regulators, empowering women to close the gender gap in policies and regulation, accelerating government actions and involving non-state actors. Current programmes the centre works on include the upcoming roll out of the regional energy efficiency strategy, the participation in the EELA project, capacity building for small hydro power systems, the establishment of the first office as a net zero and ultra-low energy building, the creation of an observatory for data collection, the establishment of the East African solar academy and a certification system, EE in cities including transport and accelerate industrial energy efficiency.

Hyacinto Elayo from the **ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE)** presented ECREEE covering 15 ECOWAS Member States and operational since 2010. 32% of the installed capacity for electricity generation in ECOWAS is from renewable energy sources. Access to electricity in the region was around 49% in 2014 and still more than 175 million people are without access to electricity. Only 25% of the region's population have access to modern energy cooking. Large untapped potential for hydro and solar power exists in the region. The ECOWAS policy targets concerning renewable energy sources are to elevate the share of renewables in the electricity sector by 2020 up to 35% and reach by 2030 48% renewables' share. The centre developed in cooperation with all member states National Energy Efficiency Action Plans (NEEAP) and Renewable Energy Action Plans (NREAPs). The centre has 12 programmes on small hydro power, clean cooking, off-grid solutions, gender mainstreaming, climate change, energy efficiency, solar thermal capacity building and demonstration (SOLTRAIN) and bioenergy, among others, and established the ECOWAS observatory for renewable energy and energy efficiency (ECOWREX) and the ECOWAS renewable entrepreneurship facility. It also cooperates with partners in the West African clean energy

corridor (WACEC), which advances the integration of RES into power systems. Within the WACEC, a solar corridor is established, which aims to develop 2 GW by 2020 and 10 GW by 2030. In addition, ECREEE recently launched the regional off-grid electrification programme (ROGEP), which supports off-grid companies in the region.

The **Regional Centre for Renewable Energy and Energy Efficiency (RCREEE)** in the Arab region was introduced by **Ashraf Kraidy**. RCREEE covers 17 countries and was the first regional centre in the world. It operates as the technical arm of the League of Arab States. Mr. Kraidy stated that it is challenging to change the mind-sets of policy makers and policy reforms can only be achieved in the long term. The centre supported the development of the “Pan Arab Sustainable Energy Strategy” and its implementation through NREAPs and NEEAPs, which are also aligned with the Nationally Determined Contributions (NDCs) in the framework of the Paris Agreement. RCREEE introduced a certification system for solar heating systems and a certified energy management professional programme (CEMP). RCREEE also manages several financing facilities. Strategic partners are key to drive the energy transition and RCREEE welcomes partnerships and technical assistance.

The **Renewable Energy and Energy Efficiency Centre for the Hindu Kush Himalaya (REEECH)** was presented by **David Molden (ICIMOD)**. This centre is still in formation. The region consists of eight countries, from which 5 countries are Least Developed Countries (LDCs). A significant share of the population relies on the mountain resources within this region. Potential for hydro power is large but very little developed. Interconnection agreements are often only on a bilateral basis and the challenge to interconnect the countries remains significant. Air pollution and black carbon emissions from biomass burning and fossil fuels affect the environment and population. Access to electricity is a challenge especially in the high mountain rural areas, modern energy carriers for cooking and heating are necessary to replace firewood. The mountain regions experience high migration of men, who go abroad in search of jobs, and creating opportunities for women and youth in local value chains will be an important focus. More priorities have been formulated: mountain-specific sustainable energy policies, improvements in quality of small hydropower plants, strengthening knowledge and data management for decision-making, demonstration projects, increasing regional coordination, capacity building, innovative financial models and mobilizing investments through partnerships.

The **Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE)** presented his activities. Donors and partners are contributing to mitigation and adaptation to climate change, which is a significant issue in the region due to vulnerability of the countries. There are many activities in sustainable energy in the region, which make donor coordination and exchange on national and regional initiatives very important to avoid duplication of work. Some countries have good energy access rates but mainly using of fossil fuels. Increasing the share of RES in the energy mix is a key priority. Big pacific islands have made investments in RES but small islands require more investments and encouraging private sector involvement is essential. PCREEE provides information to the private sector and is working closely with the World Bank and UN agencies to expand data management. The use of biogas from agricultural waste or animal waste is an interesting area in which they are looking into closer, both for electricity production and cooking.

Gary Jackson presented the **Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)**. The CARICOM region consists of 15 member states, which have a high vulnerability to natural disasters such as hurricanes, and for the most part rely on tourism as the main economic activity. The region is highly dependent on imported fossil fuels. Electricity prices are among the highest in the world. CARICOM has established the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS), a platform that engages all Member States to implement measures that complement and supplement regional targets. CCREEE, which received full legal status in May 2018, provides technical support to the C-SERMS. Energy efficiency is regarded as a significant opportunity in the region. The region requires knowledge in how to increase resilience and design investment instruments. It also has to build capacities on energy efficiency in buildings, among other areas.

Ryan Cobb introduced the **Centre for Renewable Energy and Energy Efficiency of the Central America Integration System (SICA) countries (SICREEE)** to the audience which consists of eight Central American countries. The centre is still in his formation phase and will support the creation of a common marketplace.

SICREEE will focus on policy implementation, capacity development, knowledge management and awareness raising as well as the creation of business for the local sustainable energy companies. The regional centres offer several opportunities for cooperation with industrial partners in areas such as small hydropower, solar PV and solar thermal systems, off-grid systems, modern uses of biomass, energy efficiency in buildings and industry and standards and labelling for appliances. The regions have significant requirements for capacity building, training and demonstration projects in these areas and private sector involvement in the sustainable energy business is encouraged.

Further information is available at: www.se4allnetwork.org

