

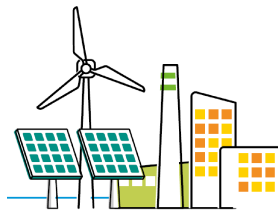


UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

5th Steering Committee Meeting of the Global Network of Regional Sustainable Energy Centres (GN-SEC)

5 to 8 September 2022

Location: Vienna International Centre, Austria



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A. Introduction:

The 5th Steering Committee Meeting of the Global Network of Regional Sustainable Energy Centres (GN-SEC) was hosted by UNIDO from 5 to 8 September 2022 in Vienna, Austria. The event brought together fifty-six (56) participants, including the centres' directors, industry experts, donors and technical partners. The meeting was held in a hybrid format—both in person and online. It marked the first physical gathering of the GN-SEC members since the 4th Steering Committee held on 25 October 2019 in Accra, Ghana—on the margins of the ECOWAS Sustainable Energy Conference.

Parallel with the GN-SEC Steering Committee meeting, UNIDO organised two separate expert trainings for stakeholders from Bhutan and Barbados on public transport and electric mobility, as well as CleanTech clustering respectively. Interested GN-SEC participants joined the excursion of the Barbadian BLOOM Cleantech Cluster to the Green Tech Cluster in Styria, Austria on the 7th of September—gaining first-hand practical exposure to novel PV technologies and entrepreneurial innovation.

B. Background

The 5th GN-SEC Steering Committee meeting was held against the current backdrop of rising fossil fuels and food prices, ever more noticeable climate change impacts, and international efforts to “build back better” in a sustainable COVID-19 recovery. The meeting addressed pressing issues such as the diversification in energy mix, environmental protection and climate change mitigation as well as integrated adaptation.

Despite continued supply-chain interruptions and travel restrictions, regional and triangular cooperation remains an essential accelerator for the transition towards sustainable energy and circular economy solutions in developing countries. The GN-SEC centres constitute an important public infrastructure of the regional economic communities. They serve as support for a global business model that can facilitate the production of the required goods and services of the growing world population, while using fewer resources and producing less waste and pollution.

The GN-SEC Network is designed to serve as an effective platform to promote south-south and triangular cooperation on sustainable energy issues and solutions for specific target countries and groups. GN-SEC aims to support regional efforts to accelerate the energy transition “from the region for the region”. The Platform currently receives financial support from the Governments of Austria, Norway and Spain.

C. Meeting objectives

The 5th GN-SEC SC meeting provided updates on the individual, south-south and triangular activities of the centres. It also created a “makerspace” for new initiatives, projects, events and activities. Moreover, it reviewed the proposed project document of the GN-SEC platform and provided concrete inputs for an annual work plan. Based on the various priority topics of the participants, working groups and activities were organised. Partnerships with other UNIDO departments and external partners on joint initiatives were discussed. The meeting deliberated on exploring new funding opportunities targeting multilateral donors in the energy and climate space including *inter alia* the EU, GEF, GCF, Adaptation Fund and other development partners.

The main objectives of the meeting were to:

- 1. Reconnect and strengthen the common GN-SEC identity;**
- 2. Provide updates on the status and activity portfolio of the individual centres;**
- 3. Provide updates on south-south and triangular GN-SEC projects, activities and events;**
- 4. Review and validate the results framework of the GN-SEC project document;**
- 5. Reach agreement on an annual work plan for joint GN-SEC activities; and**
- 6. Identify new funding and partnership opportunities.**

D. Summary and key outcomes

"Think globally, act regionally, implement nationally"

The 5th GN-SEC Steering Committee Meeting took place around the vision of contributing to the global sustainable development goals while focusing on joint regional resources and their potential for the successful national implementation of high-impact projects.

On the **first day**, participants started by reviewing some of the achievements made during the COVID-19 pandemic and discussing how to keep momentum with new ideas and projects. The centre's presentations focused on the achieved milestones in 2019-2022, the outlook for 2023-2024 and proposals for joint GN-SEC activities in 2023-2024 (see proceeding details for information on each centre).

UNIDO presented the annual work plan of the GN-SEC platform and the results framework of the GN-SEC platform project for its approval.

Sessions featured updates on ongoing joint GN-SEC projects, including: **EELA**, **STAR C** and **LDC Group on Climate Change** projects, as well as partnerships with **IEA-SHC**, **GWNET** and **SIDS DOCK**. The discussion also included presentations on the status of the implementation of the GN-SEC online training on sustainable energy solutions for islands,¹ the international guidelines on small hydro power and the Global Ocean Energy Alliance (GOEA).²

The **second day** focused on partnership opportunities with various **UNIDO divisions**, the **Austrian Development Agency (ADA)**, the **Global Environment Facility (GEF)** and the **Green Climate Fund (GCF)** regarding possible joint GN-SEC initiatives related to renewable energy, energy efficiency and climate change. This included presentations on the:

- Industrial Energy Efficiency Accelerator;
- Industrial Deep Decarbonisation Initiative (IDDI);
- Global CleanTech Innovation Program (GCIP);
- Private Finance Advisory Network (PFAN);
- Global Programme for Green Hydrogen in Industry;
- Draft UNIDO Climate Strategy; and
- Global Impact Program for Clean Cooking

The participants were also introduced to the concept of the **BLOOM Regional Cleantech Cluster Program** and its first pilot project in Barbados. Similarly, a possible joint GN-SEC approach regarding e-mobility and integrated power systems was discussed.

The **third day** included several parallel events. At the VIC, a number of bilateral meetings took place among the centres and relevant stakeholders. A team of delegates from Barbados and Bhutan went on a field tour in Graz to visit some centres working on bioenergy and sustainable technologies—including a hydrogen testing centre, a solar test field and green technologies.

¹ <http://training.gn-sec.net>

² All presentations and documents are available in the GN-SEC Dropbox upon request.

The **fourth and last day** took place at the VIC, where further partnership opportunities regarding the LDC Group on Climate Change, the IEA Solar Heating and Cooling Program (IEA-SHC), the GN-SEC gender and youth focal point network, the Vienna Energy Forum (VEF) and the STAR C were discussed.

Activities included the presentation of a potential joint GN-SEC approach regarding integrated resource and resilience plus energy planning, as well as the distribution of renewable energy modalities in rural and urban areas. A survey was conducted among the centres, in which they prioritised specific thematic programs and services of the GN-SEC platform in a short-term and mid-term view. The results are available in the annex.

The GN-SEC SC meeting concluded with a discussion on the hosting of the next meeting. Based on the offer of ECO, it was decided to hold the next session in Baku, Azerbaijan in 2023, in conjunction with the launch of the ECO Clean Energy Centre.

The main results of the 5th GN-SEC Steering Committee meeting can be summarised as follows:

- The annual work plan of the GN-SEC platform was approved.
- The results framework of the GN-SEC project document was approved.
- Joint short-term and mid-term priority programs and services of the GN-SEC platform were identified through a conducted survey (see results in the Annex). The different priorities of the various target groups (e.g. Africa/ Arab, LAC, ASP, SIDS, LDCs) were also presented at the meeting for GN-SEC's consideration.
- UNIDO was encouraged to mobilise further funding and recruit senior GN-SEC advisors who can provide support to all centres in the identified priority areas. Particular support for project document development would be required.
- UNIDO was encouraged to establish a GN-SEC network of focal points regarding gender and youth, knowledge management and communication, as well as procurement and finance. Further networks will be established based on the priorities indicated by the survey.
- UNIDO was encouraged to provide capacity building for the centres on how to access climate finance more effectively.
- UNIDO is encouraged to provide guidance on finding more sustainable financing modalities for the centres—considering various public and private income streams. In this context, a partnership with the new Innovative Finance Unit of UNIDO is being proposed.
- It was reiterated that the long-term support of the Government of Austria, through the Austrian Development Agency (ADA) and the Federal Ministry of European and International Affairs (BMeIA) is highly appreciated and is enabling successful projects both regionally and nationally. The partners were encouraged to continue with direct support to the centres as well as the GN-SEC platform managed by UNIDO.
- The next GN-SEC SC meeting will be held in Baku, Azerbaijan in 2023.

E. Detailed proceedings:

Opening session: 5 September 2022

Mr. Martin Lugmayr (Industrial Development Expert and GN-SEC Programme Coordinator) opened the meeting by welcoming the guests and participants and presenting the main agenda for the day.

The Austrian Development Agency—one of the main donors and partners of the Centres—was represented by Mr. Erwin Kuenzi, Head of Themes and Quality of the organisation. He took the opportunity to congratulate the Sustainable Energy Centres on their respective achievements—acknowledging the dissemination of information, knowledge sharing and technology transfer as one of the centres' main legacies. He proceeded to discuss the global recovery process from the pandemic and its effect on the centres.

Kuenzi commented on the centres' impact and highlighted the significance of their work, their collective commitment to the energy transition of their regions and the success of their trainings in building regional and national technical capacity and expertise. He emphasised that there is still the need for further groundwork regarding subsidies and price caps on energy sources. He underlined that, with the numerous environmental setbacks being experienced such as the return of nuclear energy, flight inflation, and dependency on natural gas, effective strategies to tackle these issues are needed, thus re-echoing the need for investments in renewables. Because of the growing need to prioritise the energy demands of industries and individuals— to solidify energy efficiency, increase technical capacity, promote the utilisation of green fuels (such as hydrogen), the redevelopment of the transport system, and the reformation of the energy systems in general, Mr. Kuenzi advocated for further initiatives and continued efforts from the centres. He concluded his address by wishing the steering committee a fruitful, interesting and refreshing discussion. He reiterated the Austrian Development Agency's support to the centres and to the GN-SEC platform.

Thereafter, his Excellency Mr. Huseyin Avni Bicakli (Deputy Secretary General of ECO) delivered his opening remarks online. He emphasised the importance of cross-border cooperation, of support for energy efficiency schemes, and proactive engagement in mitigation and adaptation strategies towards energy transition pathways to 2030.

Session I: Introduction and meeting objectives

Mr. Martin Lugmayr opened the session. He underlined the changing environment in the international energy sector due to global emergencies, including the COVID-19, climate change and the recent oil price escalations—all of which have put a heavy burden on public finances in developing countries, particularly LDCs and SIDS. These crises also hinder the pri-

vate sector's ability to raise foreign direct investment and affordable domestic financing for the clean energy transition.

He drew attention to the short time left to achieve SDG7 and SDG13 and underlined the importance of the GN-SECs and regional cooperation to accelerate the energy and climate transition. Moreover, he highlighted the trend and need for more integrated and cross-sectoral climate mitigation and adaptation approaches, which might require a rethinking of the solely energy-focused mandates and projects of the centres. New approaches would include an integration of issues such as the water-energy-food nexus, the industry and productive use nexus, circular economy solutions and climate resilience.

He proposed the main topics for the meeting:

- Welcoming the newly established centres;
- Reconnecting and strengthen the centres' identity;
- Providing a state of the role of regional cooperation in a changing environment;
- Providing an update on the status of the centres;
- Sharing both challenges and lessons learned;
- Discussing the prioritisation of thematic program areas and services of the GN-SEC platform;
- Presenting and agreeing on the annual work plan;
- Approving the results framework for the GN-SEC platform project; and
- Identifying new funding opportunities.

Session II: Looking back and going forward

Mr. Tareq Emtairah (Director at the Department of Energy, UNIDO) conveyed welcoming remarks and shared UNIDO's broader commitments to energy challenges and energy security dimensions amidst their growing relevance.

He spoke of how regional centres will become central to levelling the playing field around energy transitions and economies of scale—bringing energy policy to a broader scope. He drew attention to the perspective of the Council of Energy Engineers, urging the council to work more with the centres. He invited the GN-SEC to explore broader disciplines such as the steel and cement industries. UNIDO could support such work by advocating for the centres at events such as Industrial Deep Decarbonisation Initiative (IDDI), organised in Pittsburgh at the end of September 2022.

Thereafter, Mr. Lugmayr presented the 4th GN-SEC meeting minutes for adoption. He shared some highlights from this meeting, bringing emphasis to the discussions on the role of E-mobility, gender and youth network, energy efficiency, SHP standards, bio energy, among others.

He highlighted the uniqueness of the GN-SEC and its potential impact to influence the energy future for more than 1.5 billion people with its presence in 38 out of 46 LDCs, and 32 out of 36 of SIDS. He explained that UNIDO's role regarding the GN-SEC is currently in transition since most of the centres either are, or are in the process of becoming independent. Apart from the “classic” institution-building support for the new centres in Central Africa and Asia, UNIDO will focus predominantly on the south-south and triangular activities of the GN-SEC platform. Despite COVID-19, thanks to the operationalisation of the GN-SEC, several activities such as institution building and joint learning were implemented, and productive meetings continued to be held.

However, there is still a crucial need to establish a multi-donor trust fund to be able to further implement the activities. The platform could also explore opportunities with the GCF or Adaptation Fund. At the knowledge and communication levels, the energy information systems of the CARICOM and Hindu Kush Himalaya could be models for regional data management systems. Communication, outreach, media and knowledge management related activities need to be increased—this could include establishing a knowledge management system as well as introducing a quarterly newsletter to increase visibility and to strengthen the link between the centres.

Finally, Mr. Lugmayr presented the annual work plan of the GN-SEC platform, which had been shared with all members before the meeting. The work plan was approved.

He outlined the strategy to establish various **GN-SEC focal point networks** for areas such as:

- **Gender and Youth;**
- **Knowledge Management and Communication;**
- **Procurement and Finance; and**
- **Other selected thematic priority areas to be identified in consultation with the centres.**

The networks would strengthen the global south-south and triangular function of the GN-SEC platform, while also ensuring joint learning and capacity building for the centres. Various centres expressed the need for such support. Contingent upon available funding, UNIDO would hire senior experts that would support the individual centres and bring them up to speed.

Moreover, these experts would also help to develop joint GN-SEC project proposals in specific areas. He referred to the examples of electric mobility and gender and youth. He also announced a survey to be conducted among the centres, which would shed light on the prioritisation of the GN-SEC thematic areas and the services of the GN-SEC platform. The results of the survey would guide the further establishment of GN-SEC focal point networks and the recruitment of senior support experts.

Session III: Updates from the GN-SEC centres and regions

This session was reserved for each region to present on three topics:

Milestones from 2019-2022

Outlook 2023-2024

Centres' proposals for joint activities in 2023-2024

Africa and Arab regions

(EACREEE, ECREEE, RCREEE, SACREEE and CEREEAC)

Milestones from 2019-2020:

Just as in other regions, the Africa-Arab regions were affected by the COVID-19. This affected the efficient operation of activities, the free movement of staff, networking activities with potential partners, and, to a certain extent, fundraising. The budget was decreased for many of the centres. However, despite the disease outbreak, the centres succeeded to further implement activities and obtain new projects. Remote working arrangement and virtual events eased this process.

Among other things, centres like **EACREEE** received funds from UNIDO under the Energy Efficient Lighting and Appliances (EELA) Project to support the development of the EAC Regional Energy Efficiency Policy. They were able to get the MEPS for lighting developed and adopted by the EAC through the EELA Project.

ECREEE further implemented the ECOWAS Renewable Energy Facility (EREF), supporting 6 mini-grid projects in Cabo Verde, Nigeria, Mali, Ghana, The Gambia, and Sierra Leone.

RCREEE established an environmental unit. The centre acquired new projects in its portfolio, with important activities supporting its region's member states (e.g ATMP, Cool Up, design

NEEAPs and NREAPs, conducted energy modelling exercises to MSs, Waste to energy, ESIA for 2500 MW RE projects, environmental management in Industrial sector, Industrial energy efficiency fund, etc.).

EACREEE and **SACREEE** conducted joint activities under the EELA project in East and Southern Africa. Both centres supported the development and adoption of the MEPS for lighting by the EAC and the SADC regions. **SACREEE** published a policy paper on “Expanding RE for Access and Development: The Role of Development Finance Institutions in Southern Africa”

CEREEAC, the last established centre on the African continent and within the GN-SEC family, developed a roadmap for the promotion of renewable energy in Central Africa with UNIDO and IRENA’s support. The centre will be hosted in Luanda, Angola. A donor roundtable was organised, but the centre would still need funding in order to formally start its activities.

Outlook 2023-2024

On the outlook 2023-2024, **EACREEE started by raising questions about budget** and funding. Due to lack of funding, the centre has just one technical staff member. Expressing thanks to UNIDO and ADA, the centre called for the GN-SEC to provide seed funding or venture capital to ensure that EACREEE does not cross over and such a situation derails the RE and EE deployment in the EAC. The short term priority resides in mobilising seed budget to recruit and sustain at least two more consultants to support the development of the EAC Regional Energy Policy, the development and enforcement of RE and EE standards, among others.

ECREEE’s outlook is reflected in its strategic plan 2022-2026. Several programs are in the pipeline, including Green Hydrogen, E-mobility, and other novel technologies. The centre will raise funding to respond to the need for a clean mini-grid, digitization of energy services and infrastructure.

RCREEE will mainly focus on green hydrogen economy, capacity building for the member states (MSs) officials and institutions, RE based desalination and water-energy nexus, and access to green finance. The centre will work on establishing a funding and operations model that can sustain RCREEE into the future so that it can provide assistance to the Arab region community. The centre aims at advancing regional cooperation on the future of Energy. The centre is aware that addressing this sustainability challenge requires a transformation of the organisation and clear focus on earning as much as spending. That’s why the centre developed a new sustainable financial model to be implemented during the upcoming period.

During this period, **SACREEE** will also focus on green hydrogen, and continue to work on standards and labelling, green building codes, the development of RE planning tools, an entrepreneurship support facility and institutional policies and procedures. The centre plans to

further offer energy efficiency (EE) compliance trainings, organise an EE forum and establish a sustainable knowledge hub. The centre requires UNIDO's technical assistance to further design and implement its program.

CEREEAC will mainly work on its operationalisation. Once the centre obtains the required funding to launch its activities, the centre aims at developing projects related to governance instruments for RE and EE in the central African region, provision of RE and EE quality products and services, awareness raising, investment and entrepreneurship. It plans to include gender as a cross-cutting thematic.

Centres' proposal for joint activities in 2023-2024

For the joint GN-SEC activities, the centres' representatives from the African and Arab regions proposed to work jointly on topics such as: green hydrogen, (industrial) energy efficiency, e-mobility, mini-grid, mobilisation of funding (access to green finance). **SACREEE** added that it would be beneficial for the centres to collaborate on lessons learned gathered from the different regions, knowledge sharing and further exchange on developing joint programs. **CEREEAC** requested support from the other centres in the elaboration and establishment of its internal texts (status, internal regulations, rules and procedures, etc.). The centre also proposed to promote inter-regional exchange of staff to enable knowledge sharing and strengthen partnership among the centres. **RCREEE specifically** proposed to develop and organise jointly capacity building programs on EE and RE applications.

Asian Region (CECECO, REEECH)

CECECO (The ECO Clean Energy Centre)

Milestones from 2019-2022

- Preparatory phase has been launched
- Project deliverables prepared and validated
- Project promotion and becoming flagship initiative
- Becoming vital elements in ECO Vision 2025 and ECO Energy Strategy 2030
- Azerbaijan, Türkiye, İnan and Uzbekistan as a candidates to be host
- Host country has been selected - Azerbaijan
- Budget for centre operations has been laid out

Outlook 2023-2024

- The thematic priorities of the centre will be:
- Energy Efficiency/Renewable Energy
- Decentralisation

- Renewable Energy Grid Connection
- Business models for transition to sustainable energy
- Digitalisation
- Cross-border electricity connectivity for sustainable development

The upcoming outlook for the next 2 years:

- Start-up and beginning of operations
- Enabling renewables and energy efficiency policy and regulatory frameworks
- Capacity building of key stakeholders in the region
- Regional knowledge hub on renewables and energy efficiency technologies
- Promotion of investments in renewable energy and energy efficiency

Centres' proposals for joint activities in 2023-2024

- Funding mobilisation strategy / Enabling sustainable management
- Tune up the capacity of Centre to address latest global development
- Promoting the Center in global arena for its familiarity
- Attracting best international experiences for application to the Centre's activities, including capacity building

REEECH - Renewable Energy and Energy Efficiency Capability for the Hindu Kush Himalaya

Milestones from 2019-2022

- Training Solar water pumping - 141 government officials, private sector & academics from 5 RMCs. Handbook (under publication). 1 pilot under construction. JNE college, Bhutan adopted the training for an elective course.
- Training Solar PV on-grid rooftop - 60 government officials & private sector trained. Handbook (under publication). DRE officials acknowledged training will support the implementation of the USD \$ 3 million program.
- Training solar fencing - 89 government officials & users trained. 1 pilot in Bhutan. 259 ha solar fenced in collaboration with DoFPS, benefiting 1,116 people.
- Training MAED in collaboration with IAEA - 21 government officials & academics trained. Better understanding the use of existing data for projections on demand analysis resulting in better planning and strategy development.

Outlook 2023-2024

REEECH will focus on 3 areas in the HKH region.

- Narrowing the knowledge and data gaps on mountain specific energy issues.
 - Outcome: RMCs have increased access to high quality evidence and the decision support tools being used for policy making, integrated energy planning and programme design.
- Promoting renewable energy solutions for building climate resilient enterprises.
 - Outcome: RMCs government and value chain actors are equipped with knowledge and appropriate tools to identify appropriate policy instruments and leverage investment for accelerating RETs adoption by the mountain enterprises.
- Facilitating clean energy transitions for meeting Net Zero Emission targets by strengthening capacity of national institutions.
 - Outcome: Sectorial readiness assessments in at least 4 RMCs are developed and the recommendations reflected in the RMCs national or sub-national plans. Along with NDC energy tracking system used by the RMCs to support debates and pledges for different potential pathways to clean energy transitions.

Centres' proposals for joint activities in 2023-2024

- A proposal to accelerate Women and youth led MSMEs transition to clean in HKH region submitted to IDR.
- Regional Training Programme on application of modelling tools/frameworks to address energy poverty and build climate resilient green mountain enterprises in HKH region.
- Development of sectoral Assessment and building climate resilient enterprise frameworks.
- UNIDO support required for fund mobilisation and bringing investments into the region.

Latinamerican Region (OLADE, SICREE)

CCREEE - Caribbean Centre for Renewable Energy and Energy Efficiency

Milestones from 2019-2022

- The organisation works on the “Least regret plan” for member states.

- They informed of their four integrated regional planning for
- Offshore wind developments
- Tech-specific capacity building
- Solar heating training
- Cooling training.
- Offered several webinars and activities
- Currently the data collection is conducted by interns and other support staff, but we try to engage and build that program on E mobility and Green hydrogen.

Outlook 2023-2024

- CCREEE will focus on the following topics:
- Regional energy security strategy
- Offshore Wind Development

Centres' proposals for joint activities in 2023-2024

- Expansion of the Knowledge Hub and connecting others GN-SEC Centres
- Regional hydrogen strategy and global supply
- Expansion of the Integrated Utility Service Model
- Integrated Resource and Resilience Programme expansion
- Technology specific capacity building
- Energy access projects development and deployment

OLADE - Latin America Energy Organization

Milestones from 2019-2022

- Carried out three reports that analysed the energy sector's situation regarding the health emergency: "From COVID-19 crisis to resilience: toolbox for energy sector actors in Latin America and the Caribbean".
- Worked on the following recent projects:
 - Technical assistance to Uruguay's energy policy
 - Technical assistance to Honduras' energy roadmap
 - Project: "Improving, increasing and facilitating access to education and training in renewable energy in Latin America" (ETRELA)
 - Siesur Project
 - Project: "Preparation of energy balances in terms of useful energy for the industrial, residential, transport and/or commercial sectors"

- OLADE Energy Statistics Mobile Application and Energy Outlook - a Mobile APP
- Technical assistance to develop CARICOM's energy information system - SIECARIOM
- Publication in the ENERLAC Journal: "Assessment of the impact of climate change on electricity generation in the southern cone countries"
- Contributed to the Knowledge Community: CAPEVLAC - part of the Master's Program in the topic of energy transition" in partnership with various universities in Uruguay and Argentina.
- Published OLADE's yearly publication: "The Energy Outlook of Latin American and the Caribbean" was published in 2021, containing statistics and energy indicators of each OLADE member country as well as various chapters on priority topics.

Outlook 2023-2024

OLADE's plans for the next two years is to continue working on their current projects, including the "Useful Energy Balances Projects" - a way to provide up-to-date energy statistics, energy training and important reports.

Centres' proposals for joint activities in 2023-2024

OLADE and UNIDO could collaborate in the below topics:

- Energy technologies' supply chains
- Regulatory frameworks for energy efficiency and renewable energies
- Role of the industry in the pathways for achieving Net Zero
- Energy efficiency in the industrial sector and energy management systems
- Production, commercialization and transportation of green hydrogen
- New heating technologies based on renewable energy sources
- Distributed generation
- Energy integration

SICREEE - Centre of Renewable Energy and Energy Efficiency - Central America

Milestones from 2019-2022

The centre focused on 4 thematic areas:

- SICREEE Regional institutional structures
- Hubs: energy and gender/ sustainable mobility
- Fundraising strategy
- Agreements with OLADE-GN-SEC and CENPROMYPE

Other activities were:

- Participation in events and activities with international institutions
- Technical Coordination, Implementation and Harmonizations Policies at the Regional Level
- Presentation of an article for ISEC (Internacional Sustainable Energy Conference)
- Project mapping
- Promotion of electric mobility in Honduras
- Preparation of Concept Notes
- Capacity Building
- Certification on ISO: 50001
- Training Needs Survey
- Work with CENPROMYPE
- Management of Information, Data and Awareness
- Development of communications strategy
- Preparation of virtual library
- Articulation between communicators
- Identification of portfolio of investment projects
- Realisation of 2 regional events
- Execution of 2 communication campaigns

Outlook 2023-2024

SICREE will be focusing on the following areas:

- Fundraising Strategy
- Participation in the Regional Energy Congress COREN- (Organised by the Salvadoran Association of Industrialists)
- Participation UNIDO-ODS 9 activity from October 18 to 20
- RAE of CIER in Paraguay
- Participation in OLADE's Energy Week (Panama)
- ICREEE's Business Plan
- Establishment Network with Institutions: OLADE, ECLAC, CECACIER, UNEP, Universities in Spain
- NETWORK of cooperators: UNIDO, GIZ, JICA, Taiwan, EU, IDB, Rockefeller Foundation, UNEP, International Development Research Center (Canada)

Ongoing project proposals:

- Green and Inclusive Energy Project (GCF/ IDB/ Rockefeller Foundation)
- Sustainable mobility (GCF/GEF)
- Hiring of Global Factor (GCF/GEF)
- Accredited entity support (GCF/GEF UNIDO)

Centres' proposals for joint activities in 2023-2024

SICREEE would like to continue its cooperation with the GN-SEC on the main thematic areas.

They updated on the areas where the cooperation is working well:

- Technical support from UNIDO
- Support for Capacity Building
- Support with consultants
- Support on issues related to access to energy, electric mobility and energy efficiency

Other areas where the centre sees potential further cooperation are:

- Time zone - The trainings and workshops are sometimes at timezones that hinders their participation.
- Added value of GN-SEC platform
- Contacts
- Networking
- Recognition
- Priority thematic areas
- Sustainable Mobility
- Energy Kit
- Proposals for joint priority programs
- Share lessons learned and some projects among Centres

Pacific Region (PCREEE)

PCREEE - Pacific Centre for Renewable Energy and Energy Efficiency

Milestones from 2019-2022

- PCREEE provided the update on the strategies they adopted to handle the hindrances posed by the COVID-19 crisis and recounted their achievements in the last years:
- Adopted Business Plan, finalised e-mobility programme & prepare office for a virtual delivery future [fabricate conference room & put in video conference facility]

- Needed to manage costs, particularly personnel costs
- Conducted National Energy Dialogues in Niue and Vanuatu
- Established industry associations in Fiji and Vanuatu
- Focussed business start ups and mini-grids training on reliable, safe and resilient recovery in the electricity sector
- Included sustainable energy in national qualifications providing career pathways and opportunities for youths
- CTCN consultancies – EE Master Plan & develop energy efficiency in transport – Solomon Is & Vanuatu
- Worked together with ISA / INES on mini-grids training
- Worked together with PFAN, GET.Invest & CAMCO on the investment forums
- Work on EE focused mostly on the Aust PALS and the transport sector
- Work on CB focused mostly on the EU PacTVET & Industry Associations
- Worked on first Contribution Agreement with ADA
- Signed 4th Agreement with UNIDO
- Adoption of the SPC Strategic Plan: 2022 – 2031 which is to be delivered through 6 regional centres of excellence hosted by SPC - specialising in ocean science, data, genetic resources, non-communicable diseases, NDC and energy.

Outlook 2023-2024

- More on e-mobility awareness and demonstration as well as policy and regulation
- Strengthen business start-ups [business licence and SE qualification]
- Strengthen investment promotion [investment forums, industry associations and a regional sustainable energy facility]
- Continue emphasis on safety, resilience and recovery
- Strengthen resource mobilisation effort , e.g, pursue GCF project with Vanuatu - Leveraging the National Green Energy Fund (NGEF) to Achieve Rural Electrification in Vanuatu
- Transition to a new local host – Tonga National University
- Balancing national & regional identity
- Balancing TA deliveries & additional emphasis on teaching, research and innovation
- PCREEE review to provide some guidance
- Registration and delivery of a qualification on sustainable energy at the Diploma Level.

Session IV: Updates on joint GN-SEC initiatives

Mr. Martin Lugmayr presented the results framework of the GN-SEC platform project, which had been shared with all centres before the meeting. He highlighted the generous support

of the Austrian Development Agency (ADA) and conveyed how the GN-SEC centres and regions benefit from joint South-South and triangular programs through the platform.

He indicated that the GN-SEC platform will be maintained in order to provide quality services such as joint training and capacity building for partners within the network. Mr. Lugmayr reiterated that the GN-SEC as a central platform, rather than competing with the centres, holds the role of hosting financing activities that would ultimately be beneficial for all the centres.

With its experience establishing 10 regional centres globally, the GN-SEC platform could support other centres in creating robust and tailored fiduciary / financial accountability standards, communication and advocacy activities.

The project results framework was approved and will be submitted to ADA, the main contributor to the platform project.

Session V: Updates on joint GN-SEC initiatives

EELA (Energy Efficient Lighting and Appliances) initiative program

Ms. Karin Reiss-Haimbala presented the EELA (Energy Efficient Lighting and Appliances) initiative program. EELA has programs in East and Southern Africa. She proceeded to highlight the findings and lessons learnt in the EAC and SADC regions:

- High-performing and energy efficiency are poverty reduction indicators.
- Transitioning to new light bulbs was achieved quickly, however, when the light bulbs stopped working, it became problematic to replace them. Because of the prices, consumers tended to buy the less expensive ones.
- The private sector does not have an enabling environment due to a lack of standards and opportunities. The introduction is problematic at the country level and economies of scale could unlock the program.
- Addressing enforcement is at the early stages in sub-regions such as Ghana etc. Regional projects can only offer limited services at the national level. Activities such as product registration systems, compliance framework, and setting up trainings would support the efforts of the project.
- Pricing challenges: very cheap products are upfront cheaper but have long-term and running costs.
- A poor person cannot afford to be cheap: a poor product is not cheap!

STAR C

Following the EELA program, the STAR C Project was presented by Ms. Andrea Eras Almeida. She shared some highlights from the STAR-C partnership with ISA and the French government.

Least Developed Countries (LDCs) Group Programs

The LDC Group Programs were presented by Ms. Otalia Sacko (UNIDO) and Ms. Madeleine Diouf Sarr (MEDD). They highlighted their work on energy deployment and energy efficiency to enhance the capacity of the LDCs. The initiatives are facilitating the improvement of advocacy, mitigating climate risk and providing financial support. Ms. Madeleine Diouf Sarr gave an overview of the the relevant topics for the partnership with GN-SEC:

- Work on policy enforcement and dissemination
- The private sector as an important aspect in the development of the project
- How to help small enterprises in EE
- Focus on adaptation elements for mitigation nexus

SSHP (Small Sized Hydropower)

Professor Heng Liu provided insights on the work of SSHP (small Sized Hydropowers). He showcased the SHP modules and technical guidelines produced by UNIDO. He mentioned that 220 gigawatts - more than 60%, is not yet developed. This is especially true for developing countries such as African nations. It is important to formulate technical guidelines so that developing countries can achieve energy access on their own. International workshop agreement - ISO standards (of 6). IWA 33 is based on the technical guidelines - it is only a part of it, but it is an international standard. The GN-SEC supported the development of the guidelines.

Mr. Liu invited the GN-SEC to take part in the ISO committee working on the approval of the guidelines as international standards

Session VI: Updates on joint GN-SEC initiatives

GWNET (Global Women's Network for Energy Transition)

Ms. Katharina Proestler (UNIDO) and Ms. Christine Lins (GWNET) presented their work on gender and youth focal point networks with a focus on human rights, on how energy poverty affects women and youth, and on how women are both victims of climate change as well as a huge untapped potential.

They drew attention to the fact that in mainstreaming gender in the energy arena, policy-makers need to know the current situation and work on empowering women and youth in the centres and sectors in order to bring about a palpable change.

Under the GN-SEC, GWNET will help to establish a network of gender and youth focal points and provide mentoring to the centres. They plan to launch a call to nominate a focal point/gender expert from each regional centre who would want to become part of the mentorship program and exchange. It would require a minimum of a one-year commitment as well as proven engagement. UNIDO has signed an agreement with GWNET to implement these activities and it is envisaged that the GN-SEC Program on Gender and Youth will be executed in partnership with the regional centres.

SIDS DOCK AND CIEMAT (Small Island Developing States and Centres for Energy, Environment and Technology Research)

The **SIDS DOCK and CIEMAT** provided a capacity-building update on Ocean Energy.

They brought up the following points highlighting the potential of ocean energy:

- Global ocean energy alliance is following up on the Glasgow climate pact. "We are losing the oceans as carbon storage." The ocean can be one major pillar for climate change mitigation. The industrial colour would be, not only green, but blue—and it has great potential for growth. It is a \$USD 3 trillion added value industry, expected to create 40 million jobs.
- Ocean energies are overlooked in planning and more than 15% of ocean energy should be provided by 2050.
- Seaweed, macro energy, algae, waste energy production, offshore wind, floating PV, and renewable energy can contribute to the blue economy.
- Fisheries and nutrition sector are energised by adverse fossil fuels. They are currently not on the radar of global fundraising—thus the centres ought to develop a pipeline of projects that would show the feasibility in these industries.
- The Belize sargassum project - waste energy project. Nature-based solution in the blue-green economy nexus. It creates local value.
- Reduction of collection/dumping costs.
- Leapfrogging to biotechnology and blue science should not be limited to SIDS and LDCs. It is important that SIDS are of varying sizes, shapes and unique economic situations. Some are more advanced, and some are lagging. The uptake of specific technologies depends on context and situation as well as and the possibilities to scale up.

- Associations in Europe modus operandi is = deploy deploy deploy. This is the only way that any technology will reach any maturity level. There needs to be real on-the-ground testing and not just in innovation labs. In order to advance, the Ocean energy sector has to move away from traditional business models. Ideally, the trend would focus on islands, niche markets, ocean energy innovation stations, focus on developing the tech and put less focus on costs of energy. SIDS are poised to take advantage of these technical developments/advancements in Dominican Republic and Barbados - these will grow as the GLOEA comes to fruition

IEA SHC (IEA Solar Heating and Cooling Program)

Intervention by Mr. Gentjan Sema on IEA SHC discussed the following topics:

- Solar heating and technical cooling program.
- Scale and cost reduction in terms of engagement and collaboration with different stakeholders.
- Advocacy and communication are required to ensure that the benefits of decarbonisation efforts are spread outwards.

He finalised his presentation with the invitation: "Have a seat at the table, we want all the regional centres to be engaged in the project.

Gender and Youth

Mr. Gary Jackson (CCREEE) delivered a speech on how to bridge the gap between the leading generation and the youth.

- 75% of the graduates of the university are women in the Caribbean while most of the prisoners in the region are men. There is some disconnect.
- There is an issue partly because there are hardly any women in the energy sector.
- As an analogy, out of 20 women Mr. Gary Jackson spoke to, only one of them went into the energy field.

He invited the participants to engage in an exploratory journey that starts by understanding the youth and then learning how to communicate and engage youth.

Opening session: 6 September 2022

Session VII: Partnership opportunities with the UNIDO Energy Systems and Decarbonization Unit: Focus on Industrial Energy Efficiency and Decarbonization

Ms. Rana Ghoneim introduced the Energy Systems and Infrastructure Project and discussed the key sectors in the energy field that the division is addressing. In her presentation, she divided the industry in 3 categories: – the “villain” where more than 40% of the global emissions are produced – accounting for about one third of the global energy demand. This industry includes manufacturing and it is growing rapidly, especially in India and China.

The second category is the "victim" of the industry sector: some of the victims include, but are not limited to those in agricultural businesses.

And the third category is the industry as the "solution provider".

The Industrial Deep Decarbonization Initiative (IDDI) - creates demand for funding. The world builds the equivalent of a new york city every month. The question, then, is how do we create demand for low-carbon commodities?

What are low carbon commodities ?

What is low carbon steel or low carbon cement?

Different bandwidths from A to E addressing the carbon intensity of every product.

Green procurement is a key to creating demand for the product and assuring stakeholders that there is a payoff.

Who are the key experts and key institutions?

What are some of the elements of political ambition?

How do we create benchmarks to assess the ambition/pledge for targets?

Ms. Nurzat Myrsalieva described the opportunities for building an industrial energy accelerator to provide direct support and assistance to countries via technical workshops and regional and international best practices. Institutional support means facilitating and including the coordination mechanisms– standard setting and quality assurance schemes for products and services. Industry training and implementation support of the ISO 50001 energy-compliant system.

Energy Management Systems (ENMS) applies to all industries of all sizes.

Energy systems optimization, integration of renewable energy sources in industries and building a pipeline of projects to access financing options through bankable proposals lead to cash flows for the industry.

Closing questions by **Ms. Karin Reiss-Haimbala**

- What is missing in the packages we are offering (services, etc.)?
- How can we assist the centres / join the IDDI?

- How can centres assist in joint fund mobilisation?

Mr. Mirzayev Rovshan CECECO showed interest in how to bring the regional target for energy efficiency and reduction for CECECO countries as well as regional diagnostic tools—training to support these interventions to be a 3rd party evaluator. He mentioned that the Energy Service Companies (ESCO) mechanism does not have scale in the region due to its size. Therefore, awareness, both on the demand side and the supply side, is necessary.

Interventions from SIDS in the PCREEE

Small Islands Developing States generally do not have the same capacity to build in the industrial sector as other countries—but from the lessons learned during the pandemic, reclaiming this sector is necessary. Industrial Energy Efficiency (IEE) is more relevant for PCREEE. Some interesting programs could be webinars for Pacific island countries to explain what IEE is actually about.

Creating awareness and the needs and involvements—training access for finance - how to write a good proposal to access finance. Local financing institutions do not want to invest, so how can we make local investments less risky? We can set a target that 5000 companies, for example, are using ISO 50001 and sharing these objectives and technical workshops. Any of the components in the planning can become and be adapted to a regional project. It's just about focusing and seeing where we want to focus.

Regarding SIDS, some industries still exist, such as food processing, fishing, and ports, that can still integrate raising awareness and financing. For instance, steel and cement - but nature-based solutions can be used to build right from the beginning. Benchmarking and baselining industries - such as agro. Regional benchmarking study. Regional targets vs national targets - are we double counting? What can be created?

SIDS DOCK

In these planning, it is important to mention the significance of shareholders that make the decisions, emphasising advocacy and communications. ESG (Energy Systems Governance) is a sophisticated emerging topic. Carbon credit monetization. Working with public money can destroy the local market of ESCOs (Energy Services Companies), so it must be carefully introduced. The message must be presented tactfully.

Session VIII: Partnership possibilities with the UNIDO Climate Technologies Innovation Unit

Mr. Alois Mhlanga, Division Chief of the Climate Technology and Innovation (CTI), provided updates on the unit's programs on climate action and energy transition and presented four of their successful programs. The services provided by the unit are focused on: fo

- a) Enterprise development
- b) Technology support
- c) Investment facilitation
- d) Water energy land nexus

Ms. Olga Rataj presented the **Global Cleantech Innovation Programme (GCIP)**. GCIP supports start-ups and SMEs with innovative ideas to transform them into investment-ready, market-competitive and scalable solutions.

Mr. Marko Van Waveren Hogervorst presented **PFAN (Private Financing Advisory Network)**. PFAN is a global network of 200 climate and clean energy financing experts. The network advises low-carbon, climate resilient businesses in developing countries and matches projects to appropriate private financing. PFAN and the GN-SEC have collaborated on various projects over the last ten years and they proposed future cooperation ideas in the field of outreach and events, thematic approaches in the field of E-mobility, gender and circular economy, and in knowledge sharing and management.

Mr. Jossy Thomas presented **UNIDO's Bioenergy Strategy**. The strategy supports the development of bioenergy industries in DC, LDC and SIDS in their transition to a sustainable bioenergy-based electricity, transportation and cooking solutions. He presented the case study of Tanzania for transition to biofuel cooking technology for 500k households in Dar es Salaam, supporting the bioenergy industry.

Session IX: Partnership possibilities with the Austrian Development Agency (ADA)

The Austrian Development Agency presented its objectives and principles, which include social and cultural context considerations.

The key regions that the ADA targets are LDCs and South Europe, as well as crisis regions. Mr. Manfred Bürstmayr and his colleague Mr. Oliver Walter spoke about funding opportunities from the GCF and ADA, indicating that different programmes and initiatives were formed, such as the VEF and SEforall.

The GCF plays a catalyst role in complementary sources of climate finance. It unlocks projects and engages development finance institutions and partners in crowd investment. At the same time, the ADA approach to environment and social initiatives focuses on regular exchanges and meetings with NDAs for secure ownership and stakeholder participation in the host country. ADA can implement PIP by means of executive entities depending on available expertise and capacities.

In addition to the GCF funds - ADA could make available co-financing options. But the objectives are clear: reducing global poverty, safeguarding peace and human security, and preserving the environment and natural resources. UNIDO offered capacity building support to the centres regarding the GCF and Adaptation Fund.

Session X: Partnership opportunities with the Global Environment Facility (GEF), Green Climate Fund (GCF) and Adaptation Fund

Mr. Scott Willis presented his overview on the outlook of climate change. **Ms. Olga Gordievska**- Associate GEF Coordination Expert, provided some insight on GCF opportunities for GN-SEC programs . These programmes sharpen UNIDO's mandate by creating guidelines and priorities that intersect with the NDC priorities. For instance, working with developing countries on adaptation, national ownership, implementation and execution roles, segregation, capacity building, private sector engagement, synergies, complementaries, and scaling-up. In addition, the implementing entity must think long-term about how they can translate the GCF funds into action.

Mr. Aymen Ahmed and **Mr. Jochen Kraus** presented the international financial institutions - a new department/division headed by Mr. Michael Dethlefsen - Chief of Innovative Finance Unit of UNIDO. This division will focus on exploring the different financing mechanisms and opportunities that are available. The presentation also touched on innovative finance and international financial institutions. Regarding adaptation, a three-step approach was advised: Pre concept, then concept, then full-fledged concept development. The project agreements from GCF are cumbersome as it is a fund with a very good reputation because the projects can be very transformative, and the scale-up and feedback can be far-reaching. The standardised agreements with the fund and standardised co-financing agreement expectations for the project cycle go through a lengthy project of 1 to 2 years because of the diligence and reputation of the fund.

The centres highlighted the difficulties to receive accreditation from GCF and the lack of capacities to develop high-quality project documents. In this context, **Mr. Lugmayr** underlined the intention to provide capacity building support to the centres through the GN-SEC platform. If sufficient funding can be mobilised, UNIDO would hire senior project document de-

velopers who could support the centres. He highlighted the general difficulties to get regional projects approved by the GEF/GCF. Most countries prefer to deal with earmarked funds on a national level. He encouraged the centres to lobby for regional funding windows.

Session XI: Partnership possibilities with the UNIDO Division of Climate and Technology Partnerships: Focus on Green Hydrogen

Mr. Luis Umanzor, representing Ms. Petra Schwager-Kederst, provided some highlights on **UNIDO's Green Hydrogen Global Program**, which is focusing on the following;

- Providing new pathways for industrial growth opportunities
- Green hydrogen in industry
- Partners for development in Morocco - green hydrogen and steel
 - Review the Maghreb steel industry/steel association of Morocco
- Knowledge products for replication in other countries
- Awareness raising and capacity building
- Technical cooperation.
 - GEF 8 programme, up to 2 million per country. Twenty-one discussions are ongoing. The project duration is 2-3 years. There are discussions with the World Bank as a potential partner.

He presented the International Hydrogen Energy Centre. which was unveiled in July 2021.

Hydrogen is not sufficiently affordable in developing countries—especially because infrastructure needs to be developed. Research is necessary to develop this technology so that it is financially viable with cost-effective technologies. There are a few demonstration areas where developments in green hydrogen have been implemented (for example Zhangjiakou, an area near the Beijing Olympics) and their current program in collaboration with the government of Morocco.

The discussion and undertaken survey revealed high interest in the topic. Several centres mentioned that several centres are working in the area of green hydrogen with various donors (e.g. ECREEE, RCREEE, SACREEE). Currently, UNIDO is working with SACREEE on a regional roadmap.

Session XII: Partnership possibilities with the Regional BLOOM Cluster Program for sustainable energy and circular economy solutions and innovations

The session featured the presentation of the **BLOOM Regional Cluster Program** and its first pilot project in Barbados. The cluster in Barbados has been an important pilot for the wider

BLOOM Regional Cluster Program to be rolled out by UNIDO under the GN-SEC in various middle and lower-income countries over the next few years.

The BLOOM Regional Cluster Program in Barbados has the mission to develop a highly competent ecosystem of sustainable energy companies by providing cluster members access to high quality business intelligence, matchmaking and business incubation services.

Mr. Martin Lugmayr expressed his appreciation to the cluster team in Barbados for their achievements and introduced the delegates into the regional BLOOM program. He highlighted the importance of local entrepreneurship and innovation for an “inclusive” climate transition that generates green jobs and revenues in developing countries. He pointed out that cleantech clustering has for a long time been a domain of industrialised and emerging countries. However, middle and lower income countries also have a critical mass of young entrepreneurs and innovators that are ready to cooperate under a joint makerspace and are keen to tap into value chains of cleantech manufacturing and servicing. He highlighted the opportunities for south-south and triangular cooperation between well-established cleantech clusters and BLOOM newcomers in developing countries. He invited the participating regional representatives from the Africa Arab region, Asia Pacific, Latin America and Caribbean to nominate further pilot countries. Afterwards, Jari Aaltonen, BLOOM Cluster Manager and Terrell Thompson, Life Sciences Coordinator at Export Barbados, presented the ongoing projects and results achieved so far. Subsequently, several Barbadian entrepreneurs and members of the BLOOM cluster explained their business approaches in the areas of waste recycling and waste to energy, biotech, and solar power to the intrigued other participants of the meeting.

Session XIII: Partnership possibilities on Electric Mobility and Integrated Power Systems

During the session, **Mr. Gentjan Sema**, UNIDO Project Administrator, and **Mr. Andrew Campbell**, UNIDO Senior EV Specialist, presented possible regional support options for electric mobility. Mr. Campbell was hired by UNIDO to support several GN-SEC Centres in the development and implementation of their EV activities. He supported PCREEE in the development of a regional EV policy and program for the Pacific. Several other centres have started working on EV programs and there is a lot to learn from each other.

There are several lessons learned from UNIDO projects on e-mobility because of the vast regional/country trials. UNIDO has gained experience in the following areas:

- Diagnostic assessment
- Policy support and institutional strengthening
- Capacity building

- Investment pipeline
- Certification
- Battery swapping / 2nd life and post
- Raw material

PFAN – e-mobility

PFAN has 28 ongoing projects in the e-mobility sector. Eight projects mobilised finance for a total of \$370M—concentrated in Asia but also growing in Africa. Policy and having an all-inclusive and multi-sectoral approach, including technology transfer, capacity building, knowledge transfer, and behaviour change management are key aspects for the successful implementation of these projects.

Bhutan project example:

- Vision: what does 2030 look like for mobility in Bhutan
- Bus rapid transport
- De-risk the vision and provide confidence in an e-bus and operational information for planning
- Demonstration - modern city style e-bus supported by modern public transport services
- EV roadmap and Sharing of information

Intervention by the Bhutanese Delegation

- Bhutan - completely renewable energy sources, which allows much variety in battery
- 1 of 2 carbon neutral countries
- Electrification of the mobility sector is a high priority
 - 60% contribution to carbon, which is a risk to their decarbonization objectives
 - 500 truckers were very enthusiastic to be part of this new wave, which suggests public engagement on many levels.

SIDS DOCK raised the question of financing. Mr. Tareq Emtairah answered with several points:

- That there are several avenues to look at, and, though developing countries cannot put a price on the carbon market and do not have a carbon scheme, it does not stop them from venturing into these fields. Electrification might offer solutions where fossil fuels cannot.
- Fuel taxes and serious money comes from it - so what will it shift to if the firm revenue of fuel tax is not there any longer? What is the replacement? Maybe road tax: single vehicle options. Or Global trend to pedestrianisation?

The final intervention led with the question: "Do we need to change today what we got wrong tomorrow?"

The fossil fuel industry has ingrained in us the current approach, however, we should not be afraid of embarking on the path towards sustainable transportation

7 September 2022

Expert Meetings and Trainings

See Annex II

Report on the expert meetings and training on electric mobility for Bhutanese transport officials in Austria

See Annex III

Report on the BLOOM cleantech cluster meetings and training for Barbadian experts in Austria, Sweden and Denmark

Opening session: 8 September 2022

Session XIV: Partnership possibilities with the LDC Group on Climate Change

This session was organised to specifically exchange and explore partnership opportunities and modalities with the **Least Developed Countries (LDC) Group on Climate Change**. Ms. Otalia Sacko opened the session by introducing the speed brainstorming concept and invited each participant to join a sub-group to start brainstorming about strategic points in terms of energy and climate. The LDC Group on climate change could work on and in partnership with the GN-SEC and advance during the COP27.

Each participant was invited to join one of the four stations:

- Station facilitated by Rana Ghoneim: Toward COP27 - Gather key elements for the establishment of a clean energy and climate plan for the LDC.
- Station facilitated by Mr. Alois Mhalanga: Adaptation - How to cooperate to advance the adaptation agenda of the LDC in terms of resilient infrastructure planning and investment.
- Station facilitated by Mr. Martin Lugmayr: Ideas and modalities for a partnership with the of GN-SEC centres for RE and energy efficiency (EE) deployment and policy dissemination.

- Station facilitated by Ms. Karin Reiss-Haimbala: Toward industrial Energy Efficiency.

In each station, participants were invited to brainstorm on challenges, opportunities and ways forward. They were invited to visit each station for about 12 min. After 12 min, they changed the station until all stations had been visited by each participant.

Identifying challenges is key to climate change mitigation for COP27 from the LDC Group standpoint. More than mitigation, the approach needs to be towards adaptation. There are limits to how much can be mitigated and many of the changes are irreversible. Having climate and energy more fused, as opposed to keeping them separate, has always played a crucial role.

There is a need for collaboration between the climate and energy ministries so that actions can have the desired impact. Another important question is how to drive the culture from the bottom-up as well? Thinking more systematically - how do we put that into practice? How do we bridge the gap between energy and climate, like carbon removal and capture, is a waste of time unless we approach natural-based solutions.

How do we integrate youth into the transition? More inclusive discussions. There is a gap between the youth and the current ruling generation. The youth is trained to be more interconnected. There is a whole supply and value chain. The smaller steps need to be acknowledged and taken, such as simplifying access to finance. The GCF has proposed new guidelines to shorten their process. For instance, 2-3 years from project idea to implementation. An idea would be to convene a roundtable with finance institutions where we can chat more directly about that topic. For LDCs the problem is access to technologies: how do we incentivize local production? Also, value chains need to be created, and energy storage is a challenge in the most simplified method. Energy nexus - food, health, climate, and technology is also an issue.

A key aspect for adaptation and mitigation - capturing the multiple benefits of energy needs innovative business models that encompass productivity and gender. Setting up testing facilities and training centres: capacity and technology are keys. There is at times, no good project preparation and no funding for project development, plus building capacity for women and youth on different and imported technologies is not prioritised. It could perhaps be done. through training at vocational schools and universities.

The water-energy-food nexus as a topic brings more coherence to the need to be on a holistic society approach. People in LDCs still do not have access to markets and poverty is still rampant as we move towards net zero by 2050. A country like the US has a roadmap. How-

ever, a country like Egypt has it as a target. How is industrial development moving in the next ten years, and what is the roadmap and the concrete points?

Also, how do we go beyond and implement it without forgetting society? Data is critical and it is an underlying challenge. Sharing of data and transparency is essential given the extreme urgency of the COP27 to bring down the silos, and it is no longer only an energy or climate issue. It has to be prepped through curricula to prepare future generations, thinking of it along the water-food-energy nexus.

Recommendations:

- Simplify LDC Group to host a round table with the financial institutions and highlight that project financing approval is taking too long.
- Propose simplified approval processes: At the moment, even the most simplified systems takes 2-3 years and need more support from donors
- GN-SEC side event highlighting the challenges at the RCREEE pavilion.

Intervention by Mr. Alois Mhlanga:

An integrated approach is important - energy is a nexus across all sectors—an ecosystem-based intervention on SMEs' addressing macro, meso and micro issues. As much as SMEs contribute, they are not recognized in the policies and are not offered enough support to scale up their businesses. The macro issues are access to finance, skills, and market access.

Society's women and youth - how does it affect them and where do they get help?

We must integrate the policy-making processes to support SME startups and other services. Because resilient climate plans across the ministries - ICTs and data sharing need to be carried across and shared. We need to support the creation of as many SMEs and startups as possible if there is going to be a critical mass of startups that are not homogenous. Understanding what the needs are for micro-enterprises - women and youth is crucial in this process. There is a need to articulate the role of innovation in creating local employment in new and green industries.

Intervention by Ms. Karin Reiss-Haimbala

There is a need for energy efficiency and industrial energy, as well as appliances for buildings, the transport sector and cities that are aligned with climate change adaptation.

Energy-efficient water pumps are crucial to respond to the impacts of climate change. Leadership is crucial and key to mobilising the right frameworks in place, and it is important to have diagnostic data-based information to convince the leadership to put the right framework in place. UNIDO can intervene here to assist in this. We need to inform the consumers to achieve a behaviour change through public education, awareness raising and an incentivization mechanism for consumers and companies to invest in energy efficiency. Strength-

ening testing capacity is a need; testing facilities are missing. Enforcement of standards and promoting business models is another requirement. Energy Service Companies (ESCOs) and the need to create best practices with contractual arrangements for a number of regions for successful experiences should be shared as best practices for others to follow. For traded goods, products and equipment, harmonisation is important, with regulatory aspects and facilitating trade - not introducing barriers via policy. Regional energy efficiency programs speak to the different needs of different countries. Industrial energy efficiency some Regional development needs to have and reflect the countries.

Recommendation for GN-SEC to engage in regular dialogue on energy efficiency:

- What is already there, what tools can be shared, adapting to different regions, lessons learned that can be shared
- Everyone talks about efficiency, but no one wants to pay for it - LDC could be a key group to drive the message to the donors

Intervention by Mr. Martin Lugmayr:

Joint learning institutional setups are different across the regions. How do we bridge the different setups in GN-SEC? GN-SEC should be the bridge for a critical mass of resources so that centres fulfil their mandate. We need a full-time team to operate and fundraise and more work needs to be done in this area. There are issues of the ownership of member states, lack of time for joint activities, modalities where costs are reduced and meeting donor standards, etc. GN-SEC tries to balance the big states and the LDCS/SIDS to develop an equal approach. GN-SEC platform is useful because it gives credibility to fundraising opportunities. More human resources are needed to highlight communication and advocacy, sub-regional meetings, gender and youth - the role of women in energy innovation and energy access -, e-mobility, and land maritime private sector partnerships. In terms of integrated solutions, centres have to be rethought, mandates have to be reviewed as well as structure—integrating more the ministries of climate, energy, and environment into solutions. For example, joint communication, including translation of GN-SEC meetings to French and Spanish-speaking communities. Harmonised studies on specific topics simultaneously, formulating joint policies on topics such as green hydrogen. Youth partnerships should be facilitated more and present at the COP27, looking more at the blue economy nexus = blue bonds.

Session XV: Strengthening the GN-SEC Gender and Youth Focal Point Network (GYFPN)

During the session, **Ms. Christine Lins**, GWNET, presented updates on the plan to establish a GN-SEC Gender and Youth Focal Point Network. The contract with UNIDO includes mentoring for the centres as well as the development of a global GN-SEC program on gender and

youth in the energy sector. It will also focus on strengthening capacity-building to enhance the gender and youth work in respective countries and constitutions

Katharina presented the UNIDO mandate as follows:

- Gender equality is the focus, but so is seeing the needs of young people to be involved in the energy transition.
- Not asking for a seat at the table anymore but needing investment in us.
- Youth can be agents of change for the industry, be part of the workforce, advocate for better standards, and they are also consumers of energy.
- Decisions today are not for 2-3 years but for 10, 20, or 30 years. The impact is inter-generational.

VEF:

- Youth day
- Call to action
- Events for COP
- Guidebook for meaningful youth engagement
- Expert meetings

UNIDO, at a glance:

- Women and men equally lead, participate in, and benefit from inclusive and sustainable industrial development
- 2019 policy on gender equality
- Gender mainstreaming in the project cycle
- UNIDO's guide to gender analysis and gender mainstreaming of the project cycle

Sharing of experiences:

SICREEE

The baseline in the energy organisations to see how women are represented

- 25% are women.
- Did a new survey, but new information is not yet available, but it is likely that the data has not changed considerably.
- Hub on gender
 - Did some studies, but we need to develop a regional strategy on the topic.

PCREEE

- It is hosted by one division, the human rights division. Within that, there are gender and youth programs. And within that, there is a geo-resources and maritime division.

- Pacific energy gender action plan from 2018 or so; new meeting convening to reactivate the action plan that was adopted.
- Nominated youth and women focal point.

CCREEE

- Gender mainstreaming within projects - data collection and engaging everyone across the board when doing project planning and execution.
- Gender cafe - meet twice monthly to discuss the nuances of gender so that we are mindful of vulnerable groups for project execution.
- Several trainings for national focal institutions to build capacity.
- Procurement phase for knowledge attitudes and practices to build a baseline for action and how to expand it.
- Youth - youth engagement program with youth interns in the centres: 15 interns, one for each member states so that they can work with experts in the field.
- CARICOM energy monthly forum.

RCREEE

- UNDP TOT for women.
- Work on youth - developing a mapping of youth in the MENA region and how to support them further.
- Tunisia - green financing.
- AGORA German think tank collaboration.

REEECH

- Mountain focus. Gender is highly mainstream, whether in the design or implementation of the project.
- Full set of gender teams to ensure both gender's participation.
- Audited how we are varied in terms of gender mainstreaming.
- The action plan is to end by the end of the year, and the new term starts in 2023—where gender is a cross-cutting issue.

SACREEE

- Series of webinars looking at the SADOE youth in energy.
- Entrepreneurship
- Renewable energy to energy facility/centre supported by IRENA.
 - Looked at some windows for youth and women
 - Two windows for women and youth-led areas for technical assistance
 - Regional strategy on gender and renewable gender and energy efficiency.

Some questions:

- Is there data on how gender is progressing and who is working on it?

- SDG7 has no gender dimension.
- Case studies or publications are needed. We would appreciate sharing it if there are youth or women leaders available.

How can UNIDO support this further?

- SACREEEE suggested a platform to coordinate the youth around the globe to collaborate and share their experiences and expand their enterprises and market reach.
- Identify an ambassador for the topic.

Session XVI: Regional connecting points to the Vienna Energy Forum (VEF)

Ms. Rana Ghoneim discussed the development of the energy goals and their importance, and how it influences the discussion on sustainability and development on a global scale at the VEF. Last session focused on the role of energy in industries, the food sector, and energy access—both as an enabler and a key in development.

Key takeaways included a database of young experts and speakers. Gender and Energy Compact was born from the VEF.

VEF 2023 - what's to come:

- Solidify the identity of the VEF and its evolution
- Include more innovative and highly graphical elements

Theme:

- Energy security for LDCS, SIDS, everyone - energy is a challenge.
- Heat pumps, installing heat pumps - citizens want to move forward in the supply chain, but the market is not there, and the technical capacities are lacking. The design and implementation of the system need development.
- Tackle and drive energy security.

Leonardo spoke about the GFSE global forum on sustainable energy regarding Green Skills and Supply of materials and tracking the value chains, improving them to make them more sustainable, and localising value chains.

Green skills:

- Cooperation between governments, businesses and TVET.
- Anticipating the future forecasting needs for training and retraining.
- Design and implement flexible education and training programs - need to be more modular, agile, and quicker than before. Adapt training programmes to people who do not have the same timing/pacing to adjust.

- Women youth indigenous people, marginalised groups, reskilling and upskilling of people.
- Training should become more flexible and targeted: training programs need to be improved and scaled up, modular to date training required, and changes need to be integrated more rapidly to avoid obsolete data.
- Skill partnerships and policy frameworks - skill partnerships between governments, companies, institutions, and labour associations are necessary.
- Training programs are embedded in a wider policy.
- Dual training system: allowing apprentices to upskill.
- Skills platform for the blue and green economy in SIDS and coastal LDCs
- Role of GLOEA, etc.
- GN-SEC pact for skills:
 - A pact could bring together stakeholders, social partners and regional organisations.
- Networking hub with roundtables with industrial ecosystems and governments
- Knowledge hubs
- Guidance and resources.

Certification of skills and harmonisation

- Certification helps customers gain confidence in the quality of service and recognize competent professionals.
- Skills standards.
- Regional qualification and certification schemes ECOWAS, for example:
 - Inter collaboration
 - Skills in the buildings sector
 - Performance gap
 - Cross craft understanding
 - Intelligent buildings
- Standardisation of skills to facilitate mobility of employment for construction workers and installers.
- Skills for energy efficiency.

Digital skills:

- Digitalization is enabling new business models and integration into the grid.
- Lowering costs and increasing accessibility.
- Soft skills and sustainability skills.

Women and green skills

- Change the mentality in the RE sector to hire more women.

- Possible solutions include networking and mentorship.
- Workplace practices.
- Youth.
- Youths' interests and needs and what they need to be trained on, and how they need to be trained.
- Integrated approach.

Some questions

- Heat pumps - are more relevant for the mountain regions (REEECH). The problem with this solution is that it may have to be produced and transported up to the mountains. There are technical issues and affordability issues. Local innovation. Come up with a program that includes the local market. How to be holistic
- Response: how do we develop the value chains - are the local companies responsible? Low income? The technology has to be robust enough to be sustainable and last a long time, not being replaced yearly due to bad quality.

It was proposed to organise regional editions upfront to the Vienna Energy Forum (VEF) to collect input from the various regions.

Intervention by Ms. Rana Ghoneim:

- 12 - 14 June for VEF
- Youth day/youth for the Vienna Energy Forum
- IIASA - youth academy to get training
- What specific technologies for regions are needed:
- Heat pumps
- Ocean energies
- What can we do to go out of silos
- Star C network
- Capture issues that are relevant to highlight good dialogue and develop good key recommendations

Session XVII: Partnership possibilities with the International Solar Alliance (ISA) and STAR C Implementation

The session featured a presentation on the starting STARC project, which will be implemented in partnership with ECREEE, EACREEE, PCREEE and REEECH. Mr. Saba Kalam online and ISA colleagues in VIC spoke about ISA functions: for instance, training testing knowledge centre for innovation/start up with 1m EUR disbursement for the project to mobilise more money, cover a wider variety of training and agencies, testing centres, and determine which regions and what the interests for the approaches are.

After that, Mr. Alvin Tepo Togba presented the plan and targeted centres for STAR C project initial phase highlighting the below mentioned:

- Capacity building: technical aspects of the project. The multitude of training facilities for PV and thermal technologies within the centres. Training and skills development of qualified solar professionals in SSA and SIDS
- Standardisation
- Project implementation:
- Conservative: 1m run for 2.5 years
- Optimistic: 2.77m for five years
- Standardisation and certification schemes
- Four components or outcomes will be worked on

Outcome 1

- Improved quality and certification frameworks for solar PV/thermal

Outcome 2

- Enhanced capacities of institutions to offer certified quality solar curricula and training

Outcome 3

- Increased impact of solar networks and knowledge management system

Outcome 4

- Effective star c managerial structure established and sustained.

Optimistic and future GN-SEC collaboration

- Mainstreaming activities
- Policies
- Partnerships
- Targeted solar

Intervention by Wolfgang on STAR C preparatory phase:

- Generic baseline assessment - best practice of standardisation and certification quality controls of the solar market
- Quality control standards
- Standards for solar thermal collectors
- Iso 9896 / ISO TC 180
- Certification of personnel
- Direct benefits for qualified personnel

PCREEE baseline assessment

- Regional qualification framework at SPC (pacific community)

- National countries to contextualise and adopt the qualification framework for national law
- Level 1 and 2 of the program is accredited
- Level 3 4 still await accreditation
- Qualification measures

ECREEE baseline assessment

- Different levels of PV solar training
- Certification exams done by exam centres
- Different centres for installers, exams and supervisors
- Certificate valid for one year
- No international accreditation as a certification body

Intervention by Rovshan:

- What will be the availability of centres?
- Plan to implement star centre in all member countries
- In any member country, we may have implementation

Intervention by Denis Ariho

- How to attract trainees
- What certification schemes exist considering the country schemes
- We need to charge fees to produce revenues for the centre
- We should not train the youth into oblivion but give them a direction/guideline for progression and specialisation

Change of social acceptance: train local levels of experts - lawyers, regulators, and bankers so that there is an ecosystem. Resource mobilisation: Attract resources to develop the institution, but there is a business plan so that the STAR C centre is self-sustaining

Human capital: Attracting qualified personnel. Recruitment and sustainability: Designed to be very flexible and well adapted to the priority and needs of the countries. One centre could be dedicated to training or expertise or innovation or testing. It could be that it is all in the same place. It is your desire how you want to design and make the decision at the country level.

Session XVIII: STAR C Training with the IEA Solar Heating and Cooling Program

Mr. Jean Michel Parle introduced the IRRPs, as CCREEE member states are one of the most vulnerable regions in the world due to hurricanes. Therefore we need innovations that are adapted to our region. The multitude of vulnerabilities must be considered to understand

and develop climate-sensitive tech. It was proposed to develop a joint GN-SEC approach regarding integrated resources and resilience planning. CCREEE could provide support.

What is an IRRP

- Integrated resource and resilience plan emerging from power sector planning
- Assess resilience, the sector's vulnerabilities and investment plans we frame as the slightest regret.
- Assesses resources needed to meet projected electricity demand while considering risks

Regional context:

- Difficult general context 0 small grids, small capacities, high tariffs, common vulnerabilities, precarious economies
- Difficult sectoral context - ageing assets, expensive to develop, increasing complexity, uncertainties, sectoral vulnerabilities
- Data and knowledge gaps - need to understand gaps.

Identified gaps and need for regional knowledge and planning through partnerships.

- The pilot programme was a partnership with GIZ/EU/CLI-RES program
- Caricom
- Member states
- Underpinned by UNIDO and ADA support

The goal is to establish CCREEE as the region's backstop for power sector planning, with Caricom establishing a consistent regional approach via IAEA collaboration.

Session XX: Partnership possibilities on decentralised/distributed renewable energy solutions

Ms. Karin Reiss-Haimbala and Mr. Yoshinari Suzuki presented some best practices examples on how partnerships can be formed by looking at the demand side and what we can do to drive demand in LDCs.

Closing

The day also featured the conducting of a survey among the centres on the prioritisation of suggested joint GN-SEC programs and thematic areas, as well as providing services of the GN-SEC platform. UNIDO will share the survey also with OLADE after the meeting. Mr. Martin Lugmayr presented preliminary results of the survey. To cover the different interests, the

survey captures key country groups, including Africa/Arab, Latin America and Caribbean, Asia and Pacific, SIDS and LDCs. The survey will be finalised and shared after the meeting.

It was decided to host the 6th edition in Baku in conjunction with the launch of the ECO Clean Energy Centre in 2023.

Mr. Tareq Emtairah (Director Department of Energy) - delivered his closing remarks, while expressing thanks to participants for the insightful week of deliberations. He amicably disclosed that he also joined UNIDO as part of the GN-SEC family, thus the centres hold a special place in his heart. Later the Director of Energy mentioned that the UNIDO DG conveys his best wishes to the centres and apologises for his absence as he was on mission travel. The Director General would like to highlight three action areas

- Zero hunger
- Energy access
- Climate

Mr. Tareq Emtairah also extended invitations to the participants for the upcoming VEF (Vienna Energy Forum), and suggested it as a forum to bring together dedicated donors, and industry experts on the margins of the forum with the GN-SEC community. Strategic orientation in the coming years will support the areas in which the GN-SEC centres are forwarding, building capacity and so forth. Closing his remarks, he thanked the centres for their diligence and ADA for their continuous support to the activities of the centres.

F. Media coverage of the 5th GN-SEC Steering Committee Meeting 2022

Bhutan:

<https://www.postbus.at/en/news/postbus-knowhow>

Barbados:

https://www.linkedin.com/posts/recolab_unido-recolab-nsva-activity-6973899167181983745-m51e?utm_source=share&utm_medium=member_desktop

https://www.linkedin.com/posts/nsva_unido-recolab-nsva-activity-6973704061195808768-rqNE?utm_source=share&utm_medium=member_desktop

https://www.linkedin.com/posts/amanda-haux-01323740_unido-recolab-nsva-activity-6973896441182175232-G9ON?utm_source=share&utm_medium=member_desktop

https://www.linkedin.com/posts/trellebogs-energi-ab_miljaemteknik-stadsutveckling-klimatomstaellning-activity-6973926288600281088-80nF?utm_source=share&utm_medium=member_desktop

https://www.linkedin.com/posts/sustainable-business-hub_just-happy-faces-when-unido-visited-sweden-activity-6975012730990682112-pRIX?utm_source=share&utm_medium=member_desktop

Graz:

https://www.linkedin.com/posts/solidses_solarenergy-renewableenergy-greenenergy-activity-6973933245193175040-tN4U?utm_source=share&utm_medium=member_desktop

UNIDO

<https://www.unido.org/news/global-network-energy-centres-calls-cop27-support-regional-cooperation-cornerstone-climate-transition>

G. Participating GN-SEC SC representatives

Participant Name	Organisation	Physical/Virtual
Mr. Gary Jackson	CCREEE	Physical
Ms. Cherri-Ann Farquharson	CCREEE	Physical
Mr. Jean-Michel Parle	CCREEE	Physical
Mr. Canon Goddy Muhanguzi Muhumuza	EACREEE	Physical
Mr. Denis Ariho	EACREEE	Physical
Mr. Jean Francis Sempore	ECREEE	Physical
Mr. Rovshan Mirzayev	ECO-CECECO	Physical
Mr. Charles Diarra	ECREEE	Physical
Mr. Elayo Hyacinth	ECREEE	Virtual
Mr. Solomone Fifita	PCREEE	Physical
Mr. Kakau Foliaki	PCREEE	Physical
Mr. Jauad Elkharraz	RCREEE	Physical
Mr. Avishek Malla	REEECH	Physical
Mr. Mewang Gyeltshen	REEECH	Physical
Mr. Kudakwashe Ndhuku-	SACREEE	Physical
Ms. Alexandra Arias Al- varado	SICREEE	Physical
Mr. Roger Espejo	SIDS DOCK	Physical
Mr. Désiré Armand Nde- mazagoa Backotta	ECCAS	Physical
Mr. Bürstmayr Manfred	ADA	Physical
Mr. Erwin Kuenzi	ADA	Physical
Mr. Alexander Zenz	BMEIA	Virtual
Mr. Oliver Walter	ADA	Physical

Mr. Klaus Steiner	BMEIA	Virtual
Mr. Thomas Hollensteiner	BMEIA	Physical
Aichetou Seck	LDC Support, Climate Analytics GmbH	Physical
Mr. Mamadou Sambou	Ministry of Petroleum and Energy to Senegal	Physical
Ms. Camilla More	International Institute for Environment and Development (IIED)	Physical
Ms. Madeleine Diouf Sarr	Least Developed Countries (LDC) Group on climate change	Physical
Mr. Andrew Campbell	United Nations Industrial Development Organisation	Physical
Mr. Saba Kalam	International Solar Alliance	Virtual
Mr. Wolfgang Gruber-Glat-	AEE - Institut für Nachhaltige Technologien	Physical
Mr. Huseyin Avni Bicakli	Economic Cooperation Organisation (ECO)	Virtual
Mr. Christoph Brunner	AEE - Institut für Nachhaltige Technologien/IEA SHC	Physical
Ms. Christine Lins	GWNET	Physical
Mr. Manuel Welsch	IAEA	Physical
Mr. Leonardo Barreto-Gomez	GFSE Secretariat/Austrian Energy Agency	Physical
Ms. Ines Kindermann-Zeiling	GFSE Secretariat/Austrian Energy Agency	Physical
Mr. Guillermo Koutoudjian	OLADE (Latin America Energy Organisa-	Virtual
Mr. Daniel Mugnier	Planair (partner of AEE INTEC)	Virtual
Mr. Philippe Malbranche	International Solar Alliance	Online
Mr. Ugochukwu Ugbor	International Solar Alliance	Online
Zoom Registrants....		
Ms. Nazrin Habizada	Ministry of Energy, Azerbaijan	Online
Mr. Mamatmusa Ukubaev	Economic Cooperation Organisation, Tehran	Online
Mr. Omar V Al Sherif	Amagashie Community, Australia	Online
Mr. Binyam Gebreyes	Drybrough Crescent, Scotland	Online
Mr. Readlay Makaliki	SACREE, Namibia	Online
Ms. Kornelia Lipinge	SACREE, Namibia	Online
Ms. Eugenia Masvikeni	SACREE, Namibia	Online
Mr. Scott Willis	UNIDO, Denmark	Online

Ms. Selma Festus	SACREE, Namibia	Online
Ms. Evita Moawad	UNIDO, Austria	Online
Mr. Alexander Zenz	BMEIA, Austria	Online
Mr. Francis Nzukou Djoughem	UNIDO, Cameroon	Online
Mr. Manjeet Dhakal	Climate Analytics, Nepal	Online
Mr. Yoshinari Suzuki	UNIDO, Austria	Online
Mr. Onay Geylan	UNIDO, United states of America	Online
Mr. Saba Kalam	ISA, India	Online
Mr. Anupol Bordoloi	ISA, India	Online

G.

H. Full list of the participants

No	Participants	Institution	Function	Participation Online/Physical
5th Steering Committee Meeting of GN-SEC				
Vienna International Centre (5 - 8 September, 2022)				
1	Gary Jackson	CCREEE	Executive Director	physical
2	Cherri-Ann Farquharson	CCREEE	Knowledge Management and Capacity Development	physical
3	Jean-Michel Parle	CCREEE	Generation expansion planning Expert	physical
4	Canon Goddy Muhanguzi Muhu-	EACREEE	Interim Executive Director	physical
5	Denis Ariho	EACREEE	Lead Technical Expert-EELA Project	physical
6	Jean Francis Sempare	ECREEE	Executive Director	physical
7	Rovshan Mirzayev	ECO-CECECO	Director of Energy, Minerals and Environment	physical
8	Charles Diarra	ECREEE	Head of Energy Efficiency	physical
9	Elayo Hyacinth	ECREEE	Policy Officer	physical
10	Solomone Fifita	PCREEE	Executive Manager	physical

11	Kakau Foliaki	PCREEE	Programme Delivery Officer	physical
12	Jauad Elkharraz	RCREEE	Executive Director	physical
13	Avishek Malla	REEECH	Energy Specialist	physical
14	Mewang Gyeltshen	REEECH	Programme Coordinator	physical
15	Kudakwashe Ndhlovu	SACREEE	Executive Director	physical
16	Alexandra Arias Alvarado	SICREEE	SICREEE Coordinator	physical
17	Roger Espejo	SIDS DOCK	Representative and Chief Innovation Officer at Wedge Global	physical
18	Désiré Armand Ndemazagoa Backet-	ECCAS	Coordonnateur	physical
19	Bürstmayr Manfred	ADA	Sustainable Energy Advisor	physical
20	Erwin Kuenzi	ADA	Head of Themes and Quality	physical
21	Alexander Zenz	BMEIA	Referent	online
22	Oliver Walter	ADA		physical
23	Klaus Steiner	BMEIA	Deputy Director for Multi-lateral Development Cooperation	online
24	Thomas HOLLEN-STEINER	BMEIA	Counsellor – UNIDO and UNOOSA/COPUOS	physical
25	Aichetou Seck	LDC Support, Climate Analytics GmbH	Climate Diplomacy Advisor	physical
26	Mamadou Sambou	Ministry of Petroleum and Energy to Senegal	National Coordinator of Sustainable Energy Pro-	physical
27	Camilla More	International Institute for Environment and Development (IIED)		physical
28	Madeleine Diouf Sarr	Least Developed Countries (LDC) Group on climate change	Chair	physical
29	Andrew Campbell	United Nations Industrial Development Organiza-	Senior Electric Vehicle Specialist	physical

30	Saba Kalam	International Solar Alliance	Programme Specialist	physical
31	Wolfgang Gruber-Glatzl	AEE - Institut für Nachhaltige Technologien	Wissenschaftlicher Mitarbeiter	physical
32	Huseyin Avni Bicakli	Economic Cooperation Organisation (ECO)	Deputy Director General	online
33	Christoph Brunner	AEE - Institut für Nachhaltige Technologien/IEA SHC	CEO	physical
34	Christine Lins	GWNET	Executive Director	physical
35	Manuel Welsch	IAEA	Energy Planner & Economist	online
36	Leonardo Barreto-Gomez	GFSE Secretariat/Austrian Energy Agency	Head of Center EU & International Affairs	physical
37	Ines Kindermann-Zeilingner	GFSE Secretariat/Austrian Energy Agency	Head of Center EU & International Affairs	physical
38	Guillermo Koutoudjian	OLADE (Latin America Energy Organization)	Chief of the Integration, access and security de-	online
39	Daniel Mugnier	Planair (partner of AAEA INTEC)	Head of Solar and Innovation Department	online
40	Philippe Malbranche	International Solar Alliance	Additional Director General, Knowledge Management and Institutional Development	physical
41	Ugochukwu Ugbor	International Solar Alliance	Chief of Unit, Knowledge Management	physical
Bloom Cleantech Cluster Expert Meeting and Training				
Austria, Sweden and Denmark (06 - 10 September, 2022)				
40	Akilah Rashida PHILLIPS	Bloom Cleantech Cluster	Project Officer	physical
41	Avril Rae WILLIAMS	University of the West Indies, Cave Hill Campus	Senior Lecturer	physical
42	Dario Matthew O PILE	Export Barbados, Barbados Investment & Development Corporation	Research Officer	physical
43	Deandra Alayssa CRAWFORD	Dee's Enterprises	Owner	physical

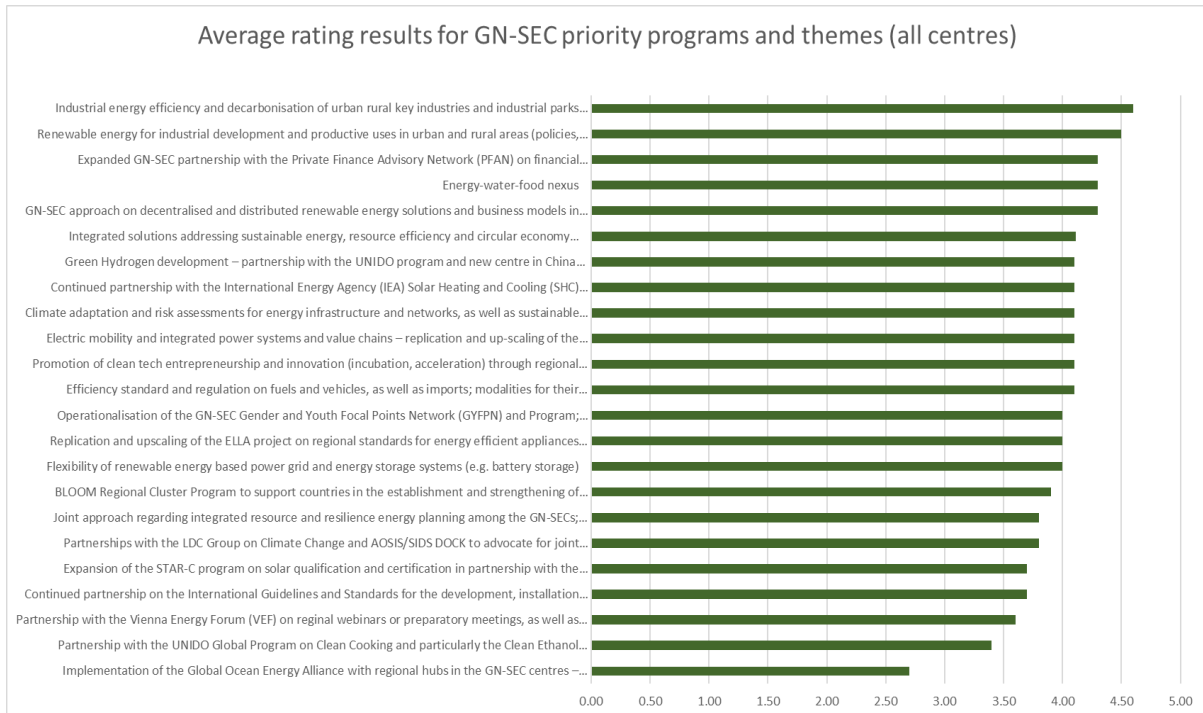
44	Jari Antero AALTO-NEN	United Nations Industrial Development Organisa-	Bloom Cleantech Cluster Supervisor	physical
45	Joshua K H FORTE	Red Diamond Compost Inc	Owner	physical
46	Kerri-Ann Marissa BOVELL	EcoMycö	Owner	physical
47	Robert Daniel W HINDS	Barbados Chamber of Commerce and Industry	Green Committee Representative	physical
48	Robert Martin GOODRIDGE	Goodridge Power	Owner	physical
49	Tamara Nakeisha FRANCIS	Bloom Cleantech Cluster	Project Officer	physical
50	Terrell Mario THOMPSON	Export Barbados, Barbados Investment & Development Corporation	Life Sciences and Biotechnology Coordinator	physical
51	Travis Antonio SINCKLER	Ministry of Environment and National Beautifica-	Senior Environmental Officer	physical
Expert Group Meeting and Training on Electric Vehicles for Bhutanese Transport Experts				
Austria (5 - 8 September, 2022)				
52	Sonam Zangmo	GIS Section	Engineer, Head	
53	Ugyen Norbu	Ministry of Information and Communications	Chief, Road Safety and Transport Authority	
54	Sonam Tobgye	Prime Minister's Office	Project Manager, EV, PMU	
55	Sangay Dorji	City Bus Service	Oft. Director	
56	Pasang Tshering	City Bus Service	Manager (Operation and Maintenance)	
5th Steering Committee Meeting GN-SEC Team and UNIDO Colleagues				
Austria (5 - 8 September, 2022)				
57	Martin Lugmayr	UNIDO	Sustainable Energy Expert	physical

58	Andrea Eras Almeida	UNIDO	Project Administrator	physical
59	Gentjan SEMA	UNIDO	Project Administrator	physical
60	Jochen KRAUS	UNIDO	Procurement	physical
61	Mary Bindu Palacherril	UNIDO	Senior Project Assistant	physical
62	Otalia Sacko	UNIDO	Lead Technical Expert	physical
63	Alvin Tepo Togba	UNIDO	Project Associate	physical
64	Ndivhuho Tshikovhi	UNIDO	Intern	physical
65	Lukas Kaehn	UNIDO	Intern	physical
66	Tareq Emtairah	UNIDO	Director	physical
67	Rana Ghoneim	UNIDO	Chief	physical
68	Ms. Nurzat Myrsalie- va	UNIDO	Coordinator	physical
69	Karin Reiss-Haimbala	UNIDO	Programme Coordinator	physical
70	Ms. Katarina Baruni- ca	UNIDO	Industrial Development Officer	physical
71	Yoshinari Suzuki	UNIDO	Industrial Development Officer	physical
72	Mr. Onay Geylan	UNIDO	Project Administrator	physical
73	Ms. Katharina Proestle	UNIDO	Coordinator	physical
74	Alois Mhlanga	UNIDO	Chief	physical
75	Marko van Waveren Hogervorst	UNIDO	PFAN Partnerships Man- ager	physical
76	Ms. Olga Rataj	UNIDO	Associate Industrial De- velopment Officer	physical
77	Mr. Jossy Thomas	UNIDO	Industrial Development Officer	physical
78	Mr. Christopher Scott Willis	UNIDO	Climate Change Specialist	physical
79	Ms. Olga Gordiievaska	UNIDO	Associate GEF Coordina- tion Expert	physical
80	Mr. Aymen Ahmed	UNIDO	Procurement Officer	physical

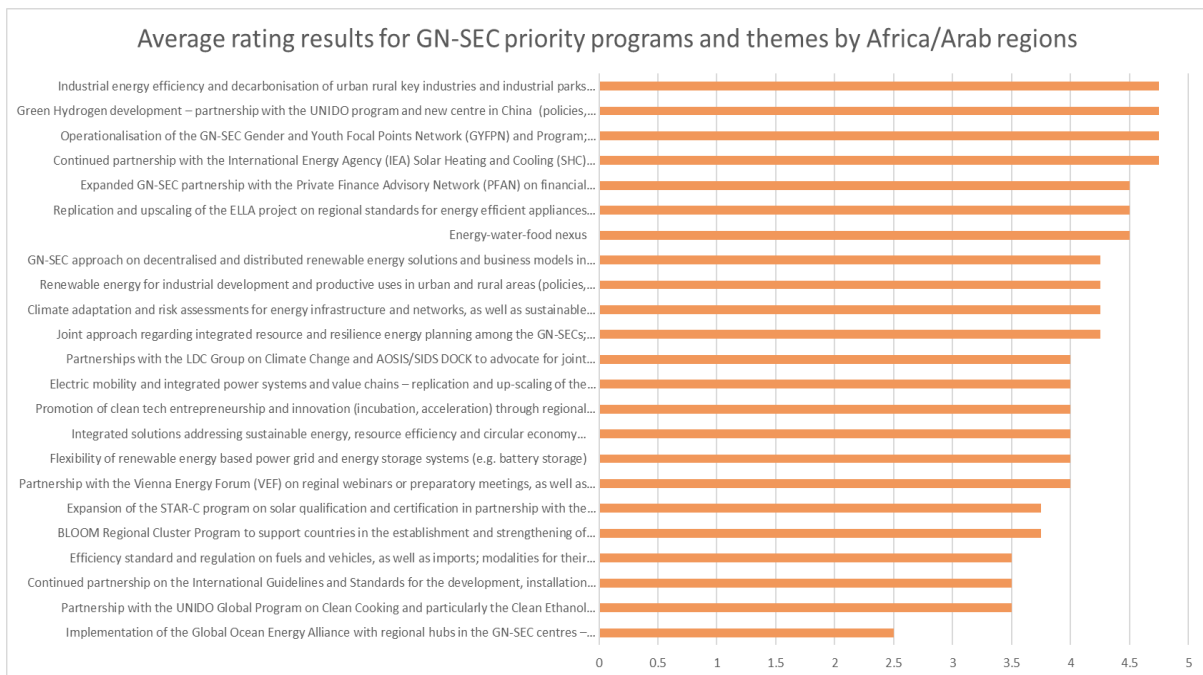
81	Ms. Petra Schwager-Kederst	UNIDO	Chief	physical
82	Mr. Heng Liu	UNIDO	Senior Technical Advisor	physical

Annex I: Results of the GN-SEC Survey

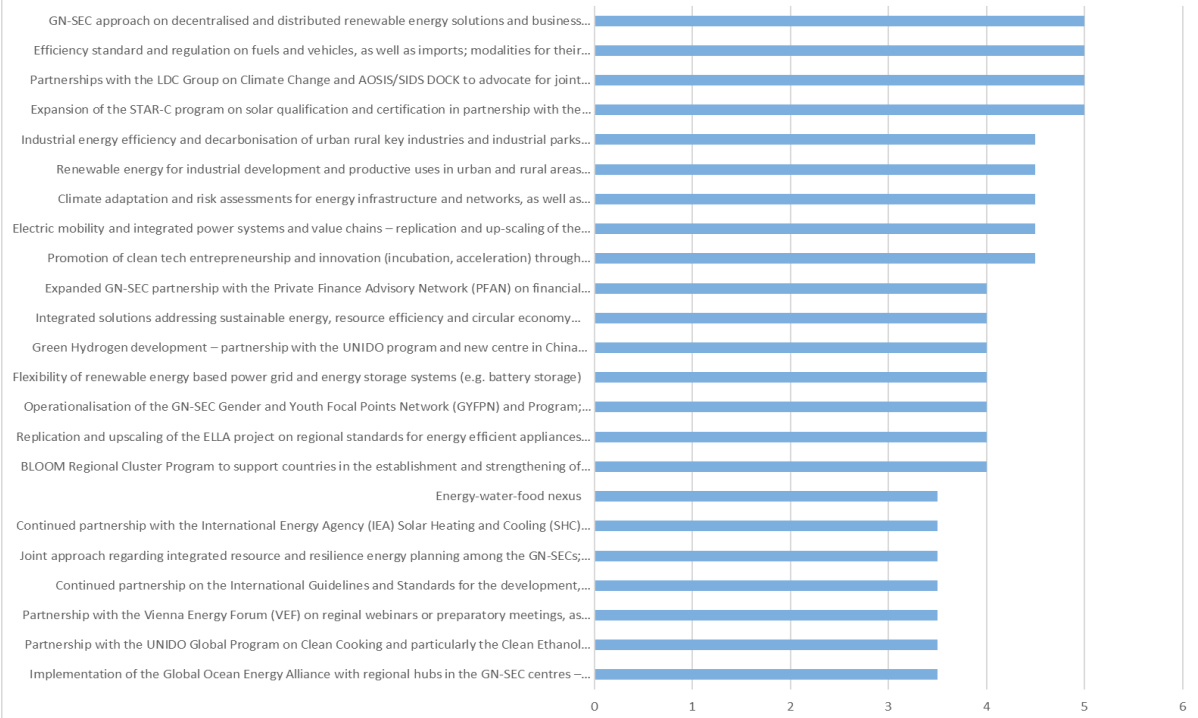
Average rating results for GN-SEC priority programs and themes (all centres)



Average rating results for GN-SEC priority programs and themes by Africa/Arab regions



Average rating results for GN-SEC priority programs and themes by SIDS (CCREEE/PCREEE)



Average rating results for GN-SEC priority programs and themes in LAC (CCREEE, SICREEE, OLADE)



Average rating results for GN-SEC priority programs and themes in ASP (PCREEE, CECECO, REEECH)



Rating results for GN-SEC priority programs and themes (SACREEE, RCREEE, EACREEE, ECREEE)



Rating results for GN-SEC priority programs and themes (CCREEE, SICREEE, OLADE)



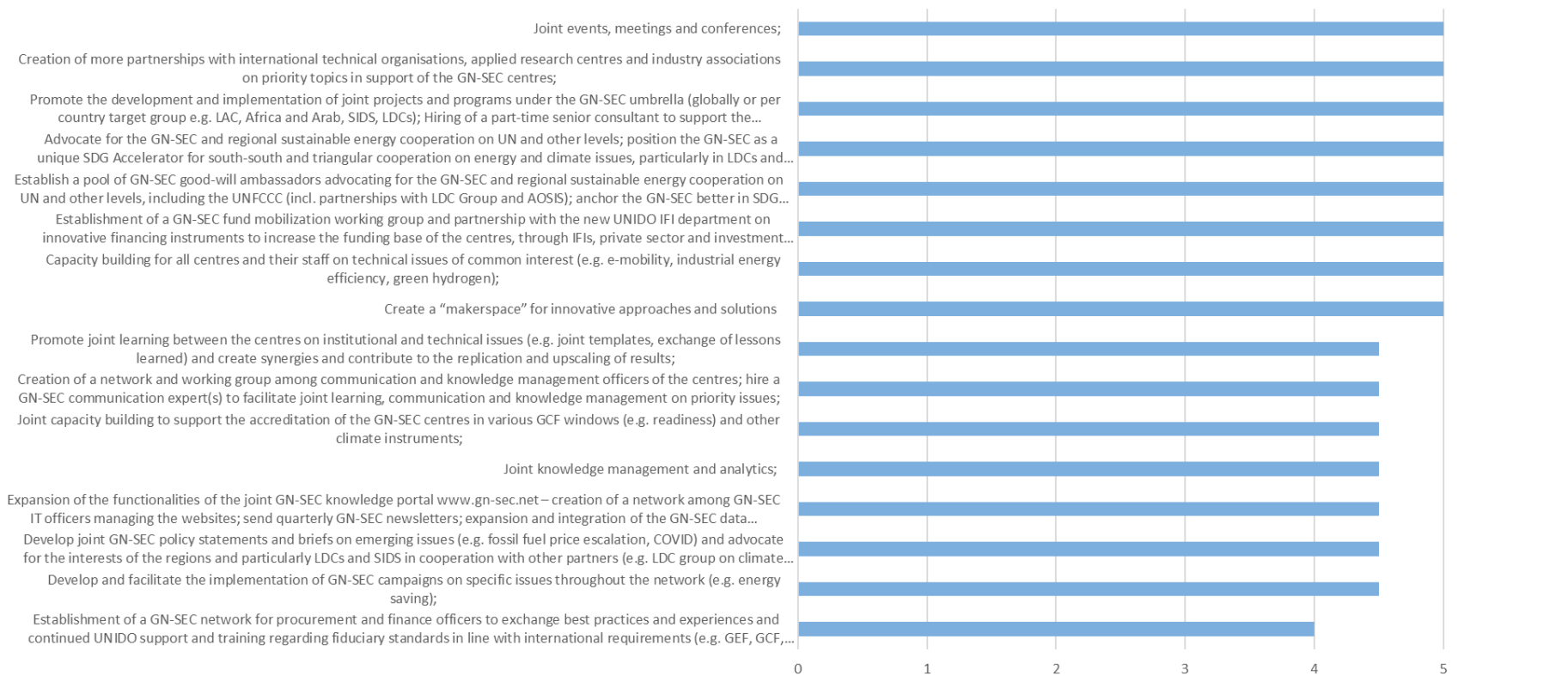
Rating results for GN-SEC priority programs and themes (PCREEE, REEECH, CECECO)



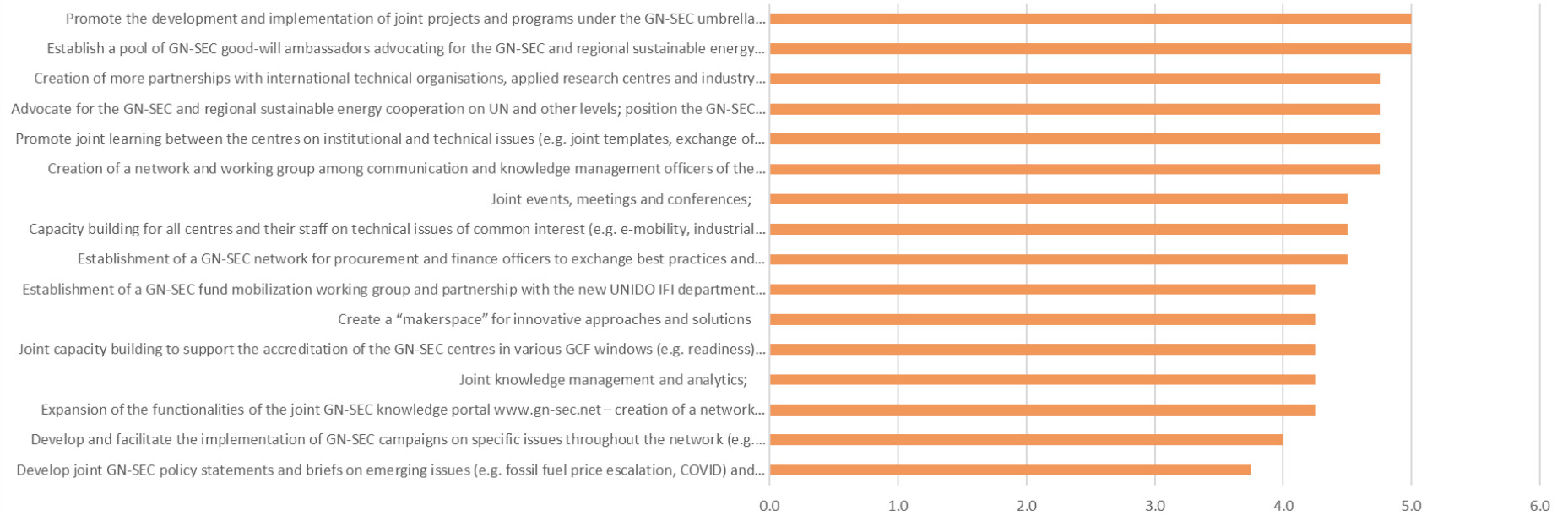
Average rating results for priority services of the global GN-SEC platform



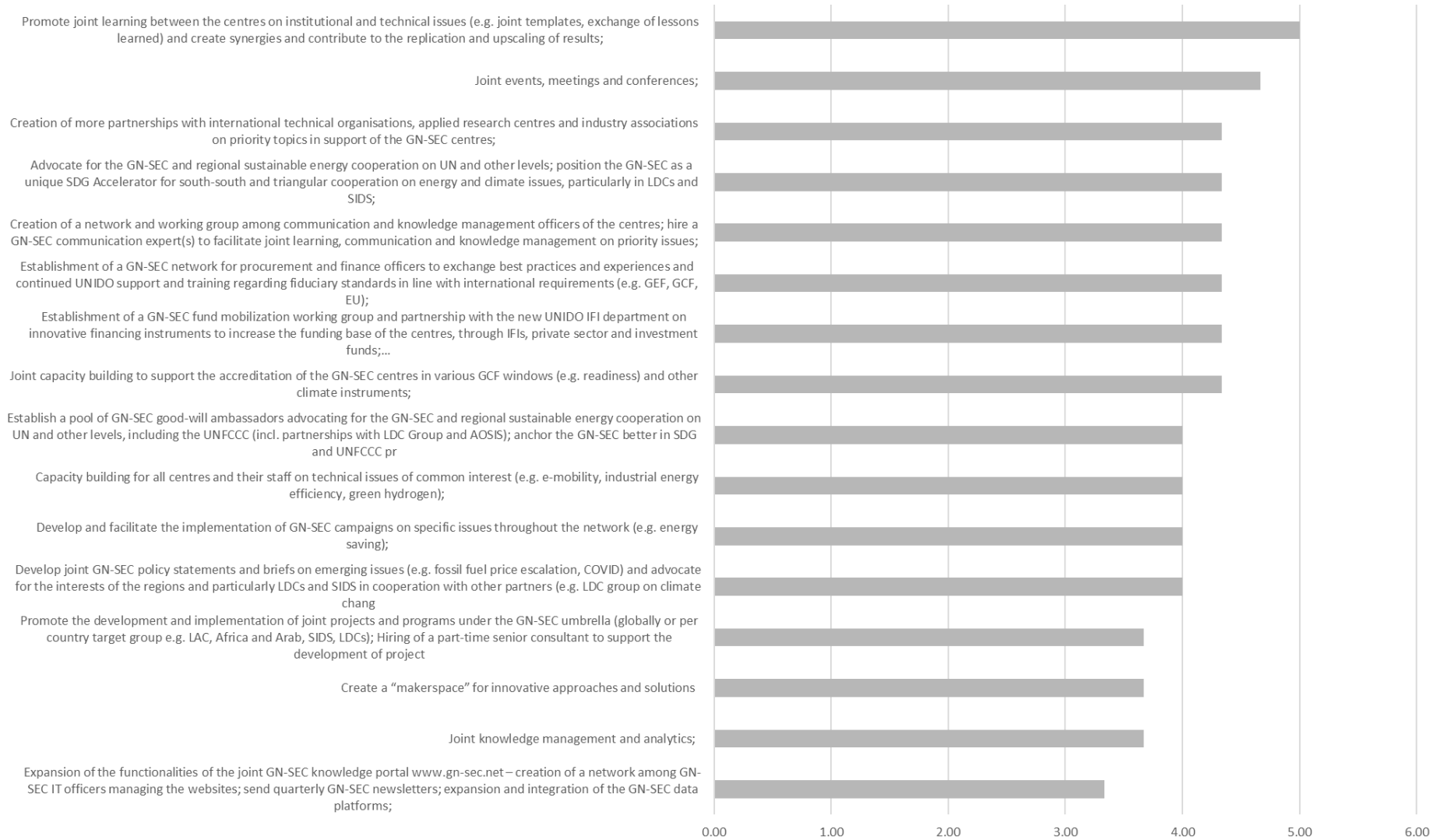
Average rating regarding priority services of the GN-SEC platform by SIDS (CCREEE/PCREEE)



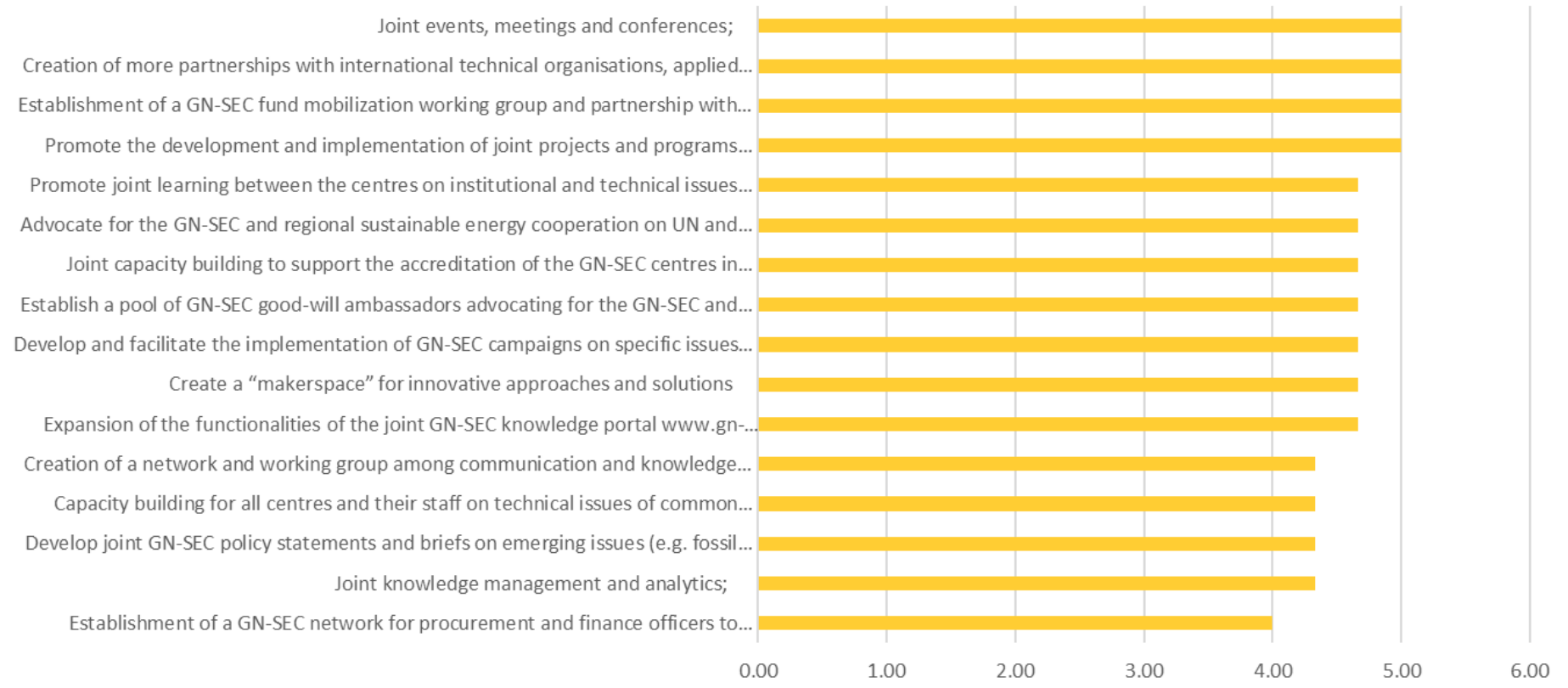
Rating results of priority services of the GN-SEC platform by Africa/Arab (ECREEE, EACREEE, RCREEE, SACREEE)



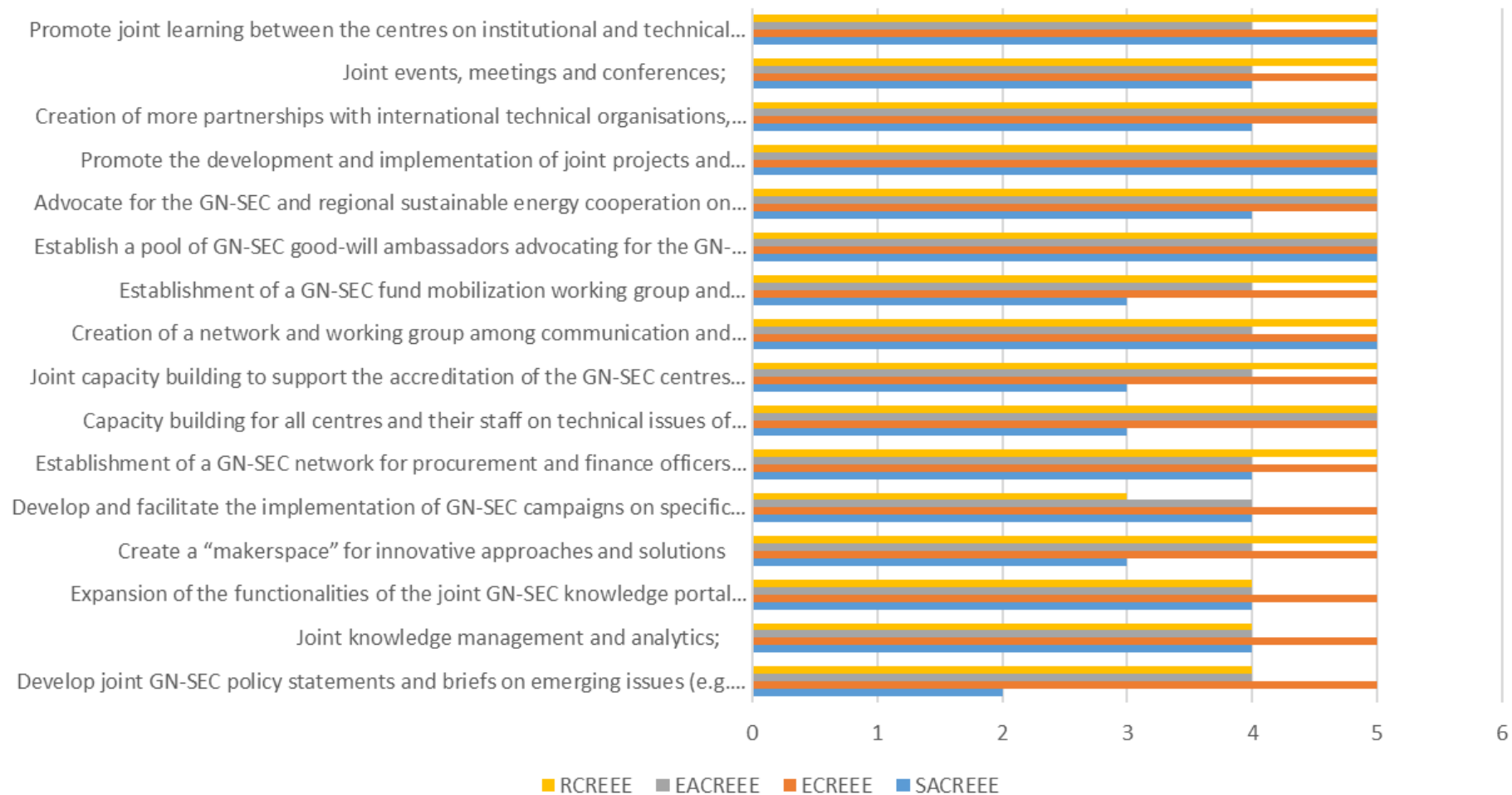
Average rating of priority services of the GN-SEC Platform by LAC (CCREEE, SICREEE, OLADE)



Average rating of priority services of the GN-SEC platform by Asia and Pacific (REEECH, PCREEE, CECECO)



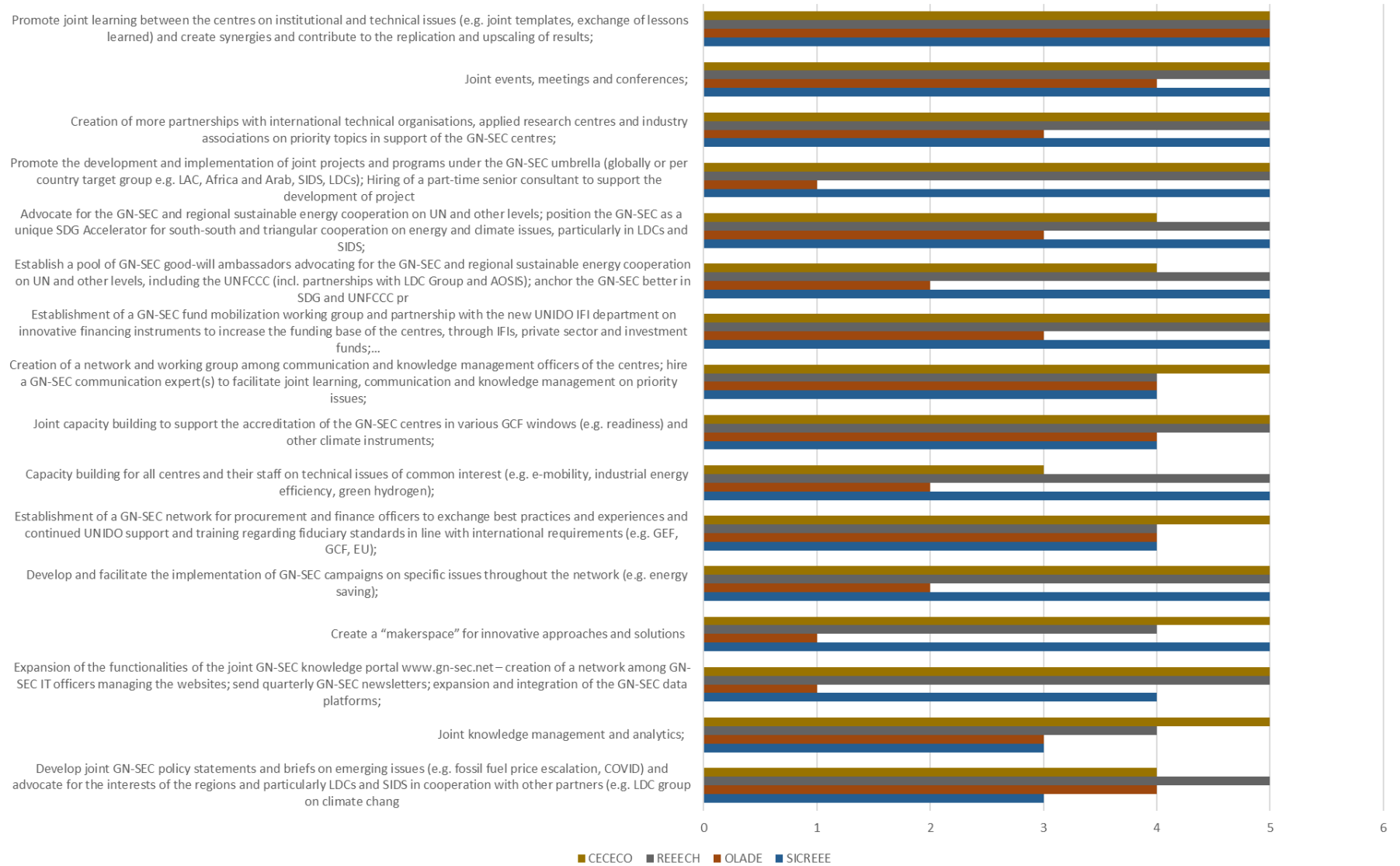
Rating of priority services of the GN-SEC platform (SACREEE, ECREEE, EACEEE, RCREEE)



Rating of priority service of the GN-SEC platform (CCREEE, PCREEE)



Rating of priority services of the GN-SEC platform (SICREEE, OLADE, REEECH, CECECO)



Annex II

Report on the expert meetings and training on electric mobility for Bhutanese transport officials in Austria

5th – 8th September 2022

From 5th to 8th September 2022, a Bhutanese delegation participated in an expert group meeting and training organized by UNIDO in Austria. The overall objective was to strengthen the capacities of the transport experts on sustainable urban mobility solutions by visiting various bus operators and demonstration sites in Vienna, Lower Austria and Styria. When it comes to electric mobility, Austria and Bhutan share common features due to their mountainous character and availability of hydropower resources. Vienna is one of the leading European cities in area of sustainable public transport and has adopted ambitious goals to become a climate-neutral city.

The visits took place in the context of the ongoing installation works for the first e-bus and charging infrastructure in Thimphu, the capital of Bhutan. The bus pilot is part of the project "Promoting green electric mobility solutions for urban transport in Bhutan and the wider Hindu Kush Himalaya", which is being implemented by UNIDO in partnership with the Prime Minister's Office, the Thimphu City Council and City Bus Service (CBS) and funding of the Austrian Federal Ministry for Europe, Integration and Foreign Affairs (BMeiA). The e-bus will be an important reference project for future replication in Bhutan and the Hindu Kush Himalaya region.

It contributes to the *2040 Bhutan Integrated Strategic Transport Vision* and the efforts of the Government to switch to a low-carbon intelligent transport system. The sector faces multiple challenges, as it is a cause for rapidly growing air pollution and GHG emissions, and is characterized by fossil fuel import dependence and price fluctuations. The availability of low-cost hydropower base-load capacities makes the country an interesting place to pioneer the electrification of the transport system. In this context, UNIDO has supported the counterparts in the development of the Bhutan E-Mobility Roadmap 2020 to 2035 and the 2040 Thimphu Transport Vision of CBS, which includes concrete steps to integrate electric mobility solutions.



Figure 1: Visit of the e-competence center in Siebenhirten which is currently under construction

The Bhutanese visit took place in conjunction with the 5th Steering Committee of the Global Network of Regional Sustainable Energy Centers ([GN-SEC](#)), organized by UNIDO between 5th and 8th September 2022 at the Vienna International Centre. Various centers are currently launching regional e-mobility programs. The Renewable Energy and Energy Efficiency Capability for the Himalaya Hindukush ([REEECH](#)), hosted by ICIMOD in Kathmandu, Nepal, will disseminate the Bhutanese lessons learned within the region.

The first day of the tour on Monday started off with a visit of the e-competence center of Wiener Linien in Siebenhirten, which is currently still under construction and will be finished by the end of 2023. The building

plan with all its features like photovoltaic systems on the roof for charging the buses, efficient usage of waste heat, building with wood as a sustainable material and facade greening impressed the engaged guests from Bhutan. The visit also included a tour around the construction site so that everyone could get a real picture of the progress made so far.

From there, the field trip continued to the Wiener Linien bus garage at Leopoldau. Currently, two hydrogen buses are about to enter service. The expert group not only rode in one of the hydrogen buses but they also visited and were taken through the bus depot's on-site hydrogen storage and refueling facilities.

Next the group travelled to the nearby Siemens Vienna headquarters, where senior managers from Siemens Mobility presented, among other things, their initiatives in the field of electric rail systems, e-buses, and e-highway, then provided an in-depth question and answer session.

On Tuesday, the delegation travelled to Gänserndorf, a village outside of Vienna, to visit Postbus's e-bus operation. Postbus is Austria's largest bus company and their Gänserndorf operation is an important step toward electrification of their fleet, starting



Figure 2: The Bhutanese delegation at a showcase project of Postbus in Gänserndorf

with the operation of eleven 12-meter long low-floor electric buses. Specialists from the public transport service provider VOR, charging station operator EVN and the vehicle manufacturer Mercedes as well as from Postbus were on site and presented the project. The Bhutanese delegation were able to ride the e-bus, were taken through the charging procedures (both overhead pantograph and more standard charging connector methods), and taken through the main drive components of the e-bus. A lively question and answer session provided detail on the

operation of the e-buses, what differences were found with them compared to the operation of diesel buses, and on the challenges so far. All in all, the visit enabled the participants of the training to get practical insights and initiated an immense knowledge transfer.



Figure 3: Excursion group picture in front of AVL headquarters after listening to a presentation of SOLID

In the afternoon, the delegation travelled to the VIC and joined the 5th GN-SEC Steering Committee meeting. Andrew Campbell and Gentjan Sema presented at the e-mobility session of that meeting. The lessons learned of the pilot project in Bhutan will be shared within the network and presents an interesting learning case for other regions.

Figure 3: Excursion group picture in front of AVL headquarters after listening to a presentation of SOLID

representatives to visit various facilities in the city of Graz in Styria. The morning sessions involved meeting BEST (Bioenergy and sustainable technologies) and HyCentA Research GmbH, and included a tour of the bioenergy- and hydrogen-related research laboratories on the premises of the TU Graz. After lunch, the tour continued at the AVL List facility in which AVL presented on their low-carbon initiatives and SOLID presented on solar thermal energy.

The day in Graz finished with a presentation by Green Tech Cluster Styria, at their newly built Science Tower, followed by a tour of their rooftop garden which has views over Graz.

The meetings on Thursday set up for the Bhutanese delegation were aimed at addressing the policy aspects of e-mobility. In the first meeting, the City of Vienna provided an overview of their e-mobility initiatives, followed by Urban



Figure 4: Meeting with the City of Vienna to talk about e-mobility initiatives

Innovation Vienna (an executing entity of different city projects) providing an overview of various initiatives including their e-cargo bike promotion scheme for companies and the Viennese Climate Roadmap. The afternoon's meeting was at the Austrian Energy Agency (AEA), with a presentation on the klimaktiv mobil

campaign of the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK). The campaign has the main pillars "Advisory programmes", "Financial support programmes", "Awareness



Figure 5: The Bhutanese delegation with the UNIDO Team

raising", "Education and certification schemes" and "Partnership and awarding" providing the delegation with an understanding of the interweave of activities necessary to deliver e-mobility programs. The day ended with a meeting at the Vienna International Centre, with Mr. Martin Lugmayr, manager of the Bhutan project and GN-SEC program, as well as Mr. Gentjan Sema, GN-SEC project administrator.

business and policy which can immediately help to enhance the in-service operation of e-buses but also demonstrated how to go about developing a far greater e-mobility ecosystem. Furthermore, the participants could get a glimpse of what will be possible in the future in terms of (urban) mobility. This view beyond the horizon

The four-day training enabled the Bhutanese delegation to get important practical and theoretical insights in terms of technology,



was most definitely an inspiration and will motivate the experts in their work for the mobility transition in Bhutan. Thus, the tour could contribute to versatile knowledge transfer as well as capacity building and in retrospect can be summed up as a great success.

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Further information:

<https://www.gn-sec.net/news/expert-group-meetings-and-training-electric-mobility-bhutanese-transport-experts-5-8-september>

<https://www.icimod.org/initiative/reeech/>

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<https://www.gn-sec.net/pt-pt/node/12206>

Annex III

Report on the BLOOM cleantech cluster meetings and training for Barbadian experts in Austria, Sweden and Denmark from 6th to 8th September 2022

Since 2018, the United Nations Industrial Development Organization (UNIDO), with funding from the Global Environment Facility (GEF), is implementing the project “Strategic platform to promote sustainable energy technology innovation, industrial development and entrepreneurship” in Barbados, a small island developing state (SIDS) in the Caribbean.

The project established BLOOM, the first cleantech cluster within the Caribbean Community. It is hosted by Export Barbados (BIDC) under the supervision of the Ministry of Industry, Innovation, Science and Technology (MIIST). UNIDO is providing technical assistance for the establishment of the cluster model and management, its service packages, international partnerships and fund raising. It is envisaged that BLOOM reaches sustainability and continues to operate beyond project closure.

Created as public-private partnership, the cluster hub provides shared resources and services, as well as a makerspace for companies and academia to work on joint projects, solutions and marketing. BLOOM contributes to the efforts of the Government of Barbados to tackle the severe impacts the COVID-19 health and fiscal crisis, recent oil price escalations, as well as growing climate change adaptation costs. By strengthening local cleantech entrepreneurship and innovation, the cluster contributes to economic diversification towards emerging sectors of the green and blue economy, decoupling from fossil fuel imports and reduction of environmental externalities.

Barbados has not only ambitious plans to become the first carbon free small island developing state by 2030, it intends also to become an export leader of cleantech products and services to the Caribbean and beyond. The sector includes a broad range of island relevant products, services and business models, including renewable energy, energy and resource efficiency, waste disposal, treatment and recycling, as well as circular economy.

After four years of implementation, the BLOOM is currently fully handed over to the recruited local management team at BIDC. To further strengthen the capacities of the local cluster management and key stakeholders, UNIDO organized international expert meetings and training in Austria, Denmark and Sweden between 6th and 10th September 2022. The varied program introduced the participants to best management practice and lessons learned of European cleantech clusters, as well as to latest technology innovations with relevance for the Caribbean. A total of 12 representatives from Barbados consisting of BLOOM cluster staff, government officials and further stakeholders as well as business owners and cluster incubatees took part in the tour.

On Tuesday, it commenced with a presentation of the BLOOM achievements in the context of the 5th Steering Committee of the Global Network of Regional Sustainable Energy Centers (GN-SEC), convened by UNIDO between 5 and 8 September at the Vienna International Centre. The cluster in Barbados has been an important pilot for the wider BLOOM Regional Cluster Program to be rolled out by UNIDO under the GN-SEC in various middle and lower-income countries over the next years.

Mr. Martin Lugmayr, manager of the GEF project and GN-SEC program, expressed his appreciation to the cluster team in Barbados for their achievements and introduced the delegates into the regional BLOOM program. He highlighted the importance of local entrepreneurship and innovation for an “inclusive” climate transition generating green jobs and revenues in developing countries. He pointed out that cleantech clustering has been for a long time a domain of industrialized and emerging countries. However, also middle and lower income countries have a critical mass of young entrepreneurs and innovators, which are ready to cooperate under a joint makerspace, and are keen to tap into value chains of cleantech manufacturing and servicing. He highlighted the opportunities for south-south and triangular cooperation between well-established clean tech clusters and BLOOM newcomers in developing countries. He invited the participating regional representatives from the Africa Arab region, Asia Pacific, Latin America and Caribbean to nominate further pilot countries.



Figure 1: Presentation of the Regional BLOOM Cluster Program at the 5th GN-SEC Steering Committee meeting on 6 September

Afterwards, Jari Aaltonen, BLOOM Cluster Manager and Terrell Thompson, Life Sciences Coordinator at Export Barbados, presented the ongoing projects and results achieved so far. Subsequently, several Barbadian entrepreneurs and members of the BLOOM cluster explained their business approaches in the areas of waste recycling and waste to energy, biotech, and solar power to the intrigued other participants of the meeting.

On Wednesday, the delegation from Barbados together with other interested attendees joined a full-day tour to Graz and visited four different facilities. During the morning, *BEST Bioenergy and sustainable technologies* and *HyCentA Research GmbH* specialized on hydrogen solutions gave both a short company overview and then showcased their research facilities and applications on the premises of the TU Graz. After lunch, the tour continued at the *AVL List* facility in order to learn more about *SOLID*, a company focusing on solar thermal energy. From there, the 28-member study group set off for the last stop for Wednesday, the *Green Tech Cluster Styria*. Here, a short presentation highlighted and explained the cluster organization and work. The excursion



Figure 2: Group picture in front of AVL headquarters after listening to a presentation of SOLID on 7 September

ended on the newly built Science Tower with a view over Graz surrounded by the numerous plants of the rooftop garden. At about 7:30 the group arrived in Vienna on time.

For the delegation from Barbados, Thursday also started early as they headed to Copenhagen and from there on to Helsingborg in Sweden. Upon arrival, the participants visited *RecoLab*, a wastewater to energy facility, and later heard several presentations on urban development in Helsingborg, hydrogen projects in the

municipality of Trelleborg, and on the *Sustainable Business Hub*, another cluster active in southern Sweden. A successful day with a lot of knowledge transfer and networking ended late in the evening after the return trip to Copenhagen.

The next morning brought the delegation from Barbados to the environmental cluster *CLEAN* in



Figure 3: Visit of Denmark's environmental cluster CLEAN including training session on cluster management as well as networking on 9 September.

Copenhagen. First, there was a training session on cluster management and sustainability, in which COO Henrik Bjørnager Jensen outlined the central structures and processes of a successfully operating cluster. Afterwards, the International Cleantech Network (ICN) was introduced, which is an umbrella cluster organization that includes *CLEAN* but also the previously visited *Sustainable Business Hub* in Malmö and the *Green Tech*

Cluster Styria. Besides, the BLOOM cluster had the opportunity to present itself briefly and possible collaborations were explored, contact details were exchanged.

In the afternoon, two more visits followed: on the one hand *Brintbranchen*, the Danish organization for hydrogen and Power-to-X solutions, on the other hand *Amager Bakke*, the most sophisticated

waste-to-energy facility in the world. The presentation of the plant and an ensuing guided tour through the location rewarded the participants on their last day with a spectacular view over Copenhagen and the offshore wind farms in the distance. From there, the delegation from Barbados went back to the hotel, and after a dinner together, all participants left for the airport early on Saturday morning.

The four-day expert meetings and training can be seen as a great success in many ways. The intensive program has given the participants a variety of impressions, from technical insights to business and managerial approaches on how to sustain the cluster in the upcoming years, to inspiration for new projects. Next to that, it has paved new ways of cooperation with European partners. After the active participation in trainings and many Q&A sessions, the local BLOOM team should be best possible prepared for the next years ahead and have a plan in place once the funding stops. The visibility of the BLOOM cluster itself, especially of the entrepreneurs, but also of the whole approach was increased considerably within the European cleantech cluster network and the exchange with European partners will be intensified in the future – even a membership in the ICN is up for debate. The concept of BLOOM and the different presentations at the 5th GN-SEC Steering committee meeting were very well received by the other participants and the replication of the model in other countries was recommended.

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Mr. Terrell Thompson

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Further information:

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