African Union

THE AFRICA-EU PARTNERSHIP

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R&I Partnership 'Climate Change and Sustainable Energy'
of the AU-EU High-Level Policy Dialogue on Science, Technology and Innovation (HLPD)

1st Workshop on COVID-19 and the Health-Energy-Climate Nexus

16-17 February 2021 (online)

MINUTES

The Working Group of the **Research&Innovation Partnership on 'Climate Change and Sustainable Energy' (CCSE)** of the **AU-EU High-Level Policy Dialogue on Science, Technology and Innovation** held their first workshop on 16-17 February 2021. The workshop took place online and attracted a total of 274 registrations. During the two days of the workshop a total of 147 participants joined the meeting, with around 115 participants during the course of each day. With 55% of participants originating from the African continent, 41% from the European and 3% from other regions of the world (India, Israel and the US) good regional representation was achieved. The two-day workshop was moderated by the two co-chairs of the working group; Leah Wanambwa Naess from the African Union Commission, Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment and Dr Philippe Schild from the European Commission, DG Research & Innovation.

Please note that all presentations of the workshop can be downloaded here: https://ccse-workshop.service-facility.eu/en/documents

Objectives of the workshop

The workshop focused on Climate Change and Sustainable Energy in relation to COVID-19 recovery and resilience packages on day 1 and the health-energy climate nexus on day 2.

Through the input of eleven keynote speeches and fifteen parallel break-out sessions during the two days, the workshop provided a high-level expertise and a fruitful exchange among the participants. Finally, it led to the identification of priorities and challenges that should be tackled by the CCSE partnership within the selected topics and thus suggest actions for implementation to the CCSE partnership.

Background AU-EU Research and Innovation Partnership on Climate Change and Sustainable Energy (CCSE)

The AU-EU Research and Innovation Partnership on Climate Change and Sustainable Energy (CCSE) is one of the priority areas for cooperation of the AU-EU High Level Policy Dialogue (HLPD) on Science, Technology and Innovation and was adopted at the 4th AU-EU HLPD Senior Officials Meeting (SOM) in Brussels in October 2017.

The CCSE Partnership is based on the CCSE roadmap composed of two elements (1) climate action for adaptation and mitigation and (2) sustainable energy. It is driven by understanding the climate risks, delivering knowledge to support adaptation and mitigation measures and Europe´s existing strong contribution to climate change and to the transition to a sustainable energy production in line with political agreements such as the SDGs (especially affordable and clean energy (7) and climate action (13)), the Paris Agreement, the EU climate and energy union packages, the AU Vision 2063, the AU Science, Technology and Innovation Strategy for Africa 2024, the AU-EU Statement on Climate Change 2014 and the AU-EU Renewable Energy Cooperation Programme (RECP).

In the framework of the CCSE partnership, a working group was launched on 15 July 2020 with the task to explore future avenues of cooperation notably on green/renewable hydrogen, circular economy, energy efficiency in buildings, climate-environment-health nexus and climate adaptation and to accompany and monitor the implementation of the measures under the CCSE roadmap by developing (i) an Action Plan, as well as (ii) a Monitoring and Evaluation framework.

The priority area of CCSE is further implemented through various projects such as the Intra-ACP Climate Services and Related Applications project, the Global Climate Change Alliance Plus (GCCA+), the Coordination and Support Action/CSA SINCERE 2018-2022, the Joint Research Programme project LEAP-RE on renewable energy or the Bioclimatic approaches for improving energy performance in buildings in Africa and Europe. 134 eligible proposals from the demonstration actions in Africa Call of Green Deal are currently under evaluation.

Concise summary of the workshop

The **first day of the workshop focused** on **COVID-19 recovery and resilience packages**. It was addressed by five keynote speeches on three key questions. The following discussions in 8 break-out sessions elaborated recommendations to the key questions:

1. What climate justice measures are needed to ensure access to energy, climate change adaptation, resilience and secure health in the context of Covid-19 among African and European countries?

The recommendations to this question referred basically to the following items: harmonisation and good governance, needed knowledge and research, cooperation and involvement of stakeholders, acquisition and destination of funding, modalities of energy systems and technologies.

2. How can gender sensitive measures be designed to address access to energy and public health concerns simultaneously?

The recommendations to this question referred basically to the following items: policy participation and women representation, better use and application of social sciences, gender data collection and data policy to address the poverty gap, empowerment of women in strategic professions and positions, access of women to finance and subsidisation.

3. How are African Small Island Developing States (SIDS), largely economically dependent on tourism and heavily impacted by COVID-19 crisis, planning to recover taking the opportunity to integrate low carbon and climate resilience in their recovery plans?

The recommendations to this question referred basically to the following items: building resilience through better use of the ocean space, finding solutions targeting the debt burden and diversify economic activities, including eco-tourism and domestic tourism, and energy resources, providing incentives by policies.

The second day of the workshop focused on the health-energy-climate nexus. It was addressed by six keynote speeches on three key questions. The following discussions in 8 break-out sessions elaborated recommendations to the key questions:

1. Africa and Europe are dealing with regional changes in aerosol load and the possibility of increasing regional risks in response to severe weather conditions associated with climate change (e.g. localised heat waves and changing precipitation geographically). What can possible scenarios and solutions be?

The recommendations to this question referred basically to the following items: need of multidisciplinary approach (research vs. politics, regional vs. global, diversity of economic sectors), need of climate data, better investigation in production and distribution of sustainable energies, need of capacity building and awareness in all levels of the society, need of innovative finance and alternative markets

2. How is indoor pollution related to health problems and what are possible solutions and future scenarios?

The recommendations to this question referred basically to the following items: already existing clean cooking initiatives, sponsored by UNEP and AU, need to be spread, need of correct business models and financial schemes for alternative solutions; the importance of good governance and investments as regards to sustainable energy; the gender issue to be considered in every stage of planning and implementation; reduction of indoor pollution concomitant with air pollution of other sectors like transport, agriculture.

3. How well is the energy support infrastructure of healthcare systems in Africa and Europe prepared to handle and manage the demands of an increased number of patients e.g. through air pollution and GHG emissions plus Covid-19? How can this need be met in a sustainable way?

The recommendations to this question referred basically to the following items: urgent need of investments in sustainable energy systems (production and distribution) and accessible health infrastructure; need of strong cooperation between AU and EU to combat COVID-19; incentives for circular economy; promote eco-friendlier housings and urban infrastructures; decentralization of sustainable energy grids

Day 1: COVID-19 Recovery and Resilience Packages

The first day of the workshop focused on COVID-19 recovery and resilience packages. It was addressed by five keynote speakers addressing three key questions. The keynote presentations set the tone for a following break-out session with eight parallel discussion-groups, each led by members of the CCSE working group: Ibidun Adelekan, Luis Alves, Maria Figueroa, Rafiq Hamdi, Kari Herlevi, Francois Moisan, Patrick Monfray, Joseph Mwangi, Mamma Sawaneh and Semida Silveira. The discussion groups advanced the debate on the workshop's questions and suggested solutions and future priorities for the African-European cooperation in the field of CCSE. A summary of the parallel discussions was presented back in the plenary at the end of day 1. Highlights of the first day follow here.

What climate justice measures are needed to ensure access to energy, climate change adaptation, resilience and secure health in the context of Covid-19 among African and European countries?

Stéphane Hallegatte, lead economist with the Climate Change Group of the World Bank addressed the first question by highlighting that climate change and now also COVID-19 impacts continue to push more people into extreme poverty. Thus, he advises combining COVID-19 recovery with broader resilience gains, with good development (incl. universal access to services, rapid structural change and demography and education) being key to reduce climate change vulnerability.

Rafael Tuts, Director of the Global Solutions division of UN-Habitat responded to the question emphasizing that cities are the main battleground for the fight against climate change, as they consume up to 75 % of total energy and are responsible for 70 % of greenhouse gas emissions today. He highlighted three main areas that require special attention in fighting climate change in cities: (1) the built environment, (2) urban planning and (3) urban basic services. Addressing these three main priority areas will require a paradigm shift at several levels, including political commitment, investments in clean energy generation and capacity building always paying close attention to the most vulnerable groups.

Recommendation for action – Outcome of Discussion Groups

Harmonisation and good governance

- Harmonise local and regional climate policies.
- Include policy coordination and good governance into future cooperation (integrated policy, effective governance, commitment, policies for inclusion, participation and empowerment in decision-making).
- Examine principles of commonly differentiated responsibilities, with regard to the key challenge for Africa being the need to develop in sustainable ways not always being considered by European partners.
- Adopt climate justice lens in the form of inclusiveness especially in policies, e.g. policies that ensure affordability for urban poor households and innovative financing mechanisms such as adoption of pay as you go models for the utilisation of solar energy. Since the entry cost for renewable energy is high, the cost of financing is better anchored by governments than private sectors to ensure affordability by marginalised or vulnerable communities.
- Involve the private sector in policies.
- Examine policies and measures that can reduce emissions of GHG especially short-lived pollutants such as methane through the adoption of other development models (e.g. circular economy and shared economy models) that can enable access to clean energy.
- Develop education and awareness at different levels (e.g. age, profession, gender)
- Include R&I rooted in local needs to the agenda, e.g. Hybrid Waste-to-Energy in African Countries.

Knowledge / research

- Gather knowledge for climate justice (disenfranchised, affected countries / regions, geographic and contextual particularities, impacts). Climate action should focus in these regions to deliver climate resilience. Knowledge needs to be spread about the value that solutions create and can help in adoption of climate solutions.
- Establish thematic research groups/groups (similar to WASCAL/SASCAL); develop African climate services for resilience.
- Leverage the fact that the cost of renewable energy is not as expensive as fossil fuels.
- Provide access to information. Evidence suggests that less than 10% of available information reach final users, decision- & policy makers and stakeholders. Programs for innovation proposing "circular communication" (e.g. one that reaches out to end users - farmers, citizens etc.) help to achieve access. 1 million trees in the Sahel is a positive example of a project.
- Understand land degradation and the decline of ecosystem resources. Understand the opportunities of restoring those resources and landscape that will allow the farmers, pastoral hunters, and young people to stay and live their lives and avoid to emigrate to the cities and other regions.
- Build awareness at different levels (age, profession) for energy efficiency.
- Improve data management, vocational training, and education (especially for young girls and boys).
- Integrate in school level curriculum: clean energy; early warning systems.
- Develop integrated planning and strategic development methodologies for how to best combine climate change actions and energy access to address poverty and improve resilience of communities.
- Identify forms of knowledge co-production: translate scientific jargon and integrate local solutions and narratives that help break the gap between policy and people.
- Identify public communication strategies that allow simplification in the implementation of climate and energy access solutions.

Cooperation and involvement

- Involve stakeholders in the cooperation. Find systemic ways to work on long term solutions beyond monitoring.
- Involve all academic disciplines, need for trans-disciplinary approaches to research and capacity building for both African and European research.
- Strengthen relations between researchers, businesses, practitioners and policy-makers; strengthen energy planning capacity and enhance governance.
- Tackle COVID-19 jointly:
    - Revive disrupted funding flows,
    - Ensure delivery of equipment and service maintenance, which have great impact on local and national economies as well as public health.
    - Allow data collection by creating access to observation stations.
    - Ensure active dialogue with stakeholders, which is important to deliver on local demands to address poverty, and reduce political unrest.
- Expand digital meetings for sharing of information and capacity building as they allow broader participation due to no travel costs.
- Activate and use protocols for Ebola (if applicable) as starting point to address the COVID-19 pandemic. Develop strategies to enhance the preparedness of African communities in similar situations in the future. Such aspects should be included in strategies for improved energy access.

Finance

- Urgently focus on free trade agreements and on poverty reduction (incl. cheaper alternatives).
- Simplify the criteria for AU-EU calls for funding proposals. They are too academic even as they are aiming at including and supporting the most vulnerable population. The result is they never really reach out to them. Illiterate and un-organised groups of people cannot submit proposals. Future funding calls should be simplified and not make requirements for funding projects so technical or difficult to follow.

Energy systems / technologies

- Promote a larger share of renewables into energy systems based on the African renewable energy potential.
- Promote energy storage and battery studies including recycling, both at decentralised level and at on-grid level (hybridisation).
- Capitalise the support for energy infrastructure.
- Ensure universal access to energy as it is a key enabler for development and resilience of African populations. COVID-19 seems to have reverted the trend of improving access to energy in African countries since 2013, particularly problematic in rural areas. Accelerating access to energy needs to stay a key priority for action.
- Ensure that a large part of the value chain for renewable energy must be situated in Africa so that the socio-economic benefits may accrue to the continent and the people.
- Provide resilient electricity for hospitals. The need for sanitation devices increased and local, portable equipment using renewable energy could bring solutions for example for hand washing, UV sterilisation, desalination of water, oxygen generators. These devices could be developed with local materials through research and innovation cooperation programs between Africa and Europe[1].
- Include indigenous, traditional knowledge systems for appropriate technologies for local circular economy (not necessarily globalisation in each sector). Biogas production at domestic level is an option often neglected and should be promoted.

How can gender sensitive measures be designed to address access to energy and public health concerns simultaneously?

Anthony Nyong, Director for Climate Change and Green Growth at the African Development Bank to acknowledged the close correlation that exists between access to energy, health and gender. In energy poor countries households use inefficient energy sources such as kerosene and fuelwood which cause dangerous indoor air pollution. Women in these communities suffer disproportionately related health complications due to exposure to indoor air pollution. In this regard, targeted gender-sensitive measures must inform policy interventions that remove the gender imbalance in energy and health service access. Measures could include mainstreaming of gender in country energy policies, boosting women employment and decision-making in the energy sector and collecting data on women as users of energy among other.

Recommendation for action – Outcome of Discussion Groups

- Ensure policy participation and women representation in decision making processes; empowering women´s political participation
- Include women in the pooling of energy (e.g. use of community biogas digester plants). This will eliminate air pollution, ensure good quality food and enhance health status. The use of renewable energy in balance not just for individual household consumption but to create balance of realistic challenges on the field in ways that enhance capacities for women and create work for them.
- Use the social sciences, gender data collection and data policy to address the poverty gap (incl. cultural diversity and norms).
- Consider gender in solutions design but also at the level of university and engineers. Gender sensitive planning and programming, mainstreaming gender in development is required; creation of Living Labs in cities, where to test measures – especially such to reduce climate injustice and seek to create more gender balance.
- Support capacity building of the most vulnerable group (girls); education and awareness, already from primary school levels in order to adapt solutions to all contexts.
- Enhance gender specific cooperatives in energy business, clean energy, clean cooking. Pay attention to the fact that the COVID 19 pandemic makes that more energy is consumed at home and women are more occupied in the domestic activities relying on energy.
- Recognise the value of cultural norms in policy design and implementation; respect and recognition of cultural diversity and ownership.
- Support job sharing and transformation; access of women to finance and subsidisation.

[1] Note from moderator: an open source research program on such issues have been developed in Africa by JOGL (Just One Giant Lab) see: https://app.jogl.io/search/projects?refinementList%5Bprograms.title%5D%5B0%5D=OpenCovid19%20Initiative&page=1

How are African Small Island Developing States (SIDS), largely economically dependent on tourism and heavily impacted by COVID-19 crisis, planning to recover taking the opportunity to integrate low carbon and climate resilience in their recovery plans?

Rito Èvora, National Director of the Ministry of Industry, Trade and Energy of Cabo Verde highlighted that the economy of Cabo Verde is significantly affected by COVID-19 and prospects for 2021 and the medium term are subject to uncertainties and downside risks. The long-term recovery strategy of the country is to achieve a secure, efficient, sustainable energy sector, without reliance on fossil fuels and, to insure universal access and energy security. This is to be achieved through investments in strategic infrastructure, renewable energy development, promotion of energy efficiency, energy market reform and institutional strengthening (incl. improvement of business environment).

Jean-Paul Adam, Director Technology, Climate Change and Natural Resources Management at the United Nations Economic Commission for Africa (UNECA) highlighted in his keynote speech that services/sectors linked to tourism are most impacted by the COVID-19 pandemic, leading to a widespread loss of economic activity, as these are the sectors most important for SIDS. However, climate change is as damaging (even worse) than the pandemic, with Africa remaining the continent most severely threatened by climate change. Thus, the recovery plans must be climate conscious, including a blue economy response, creating green jobs through renewable energy investment, and strengthening the innovative finance eco-system.

Recommendation for action – Outcome of Discussion Groups

Resilience

- Build resilience through better use of the ocean space. In this regard the use of ocean/blue economy and renewable energy from water to minimise fossil fuel imports are opportunities. The ECA is working on a toolkit towards this.
- Transfer the lessons learned from Covid-19 (take the challenge seriously) to impacts of climate change.
- Prioritise to bring resilience to external shocks, since small island states have a low resource base.

Policies and finance

- Acknowledge the fact that trade deficit and financial issue on the short-medium-long term, as investment has collapsed in Africa during COVID-19 and include the lessons-learned into future planning.
- Promote sustainable renewable energy (waste to energy) in policies.
- Diversify economic activities, blue economy.
- Inquire for new sources of concessional finance, SDG linked bond, solutions targeting the debt burden.

Tourism

- Suggest to look to the effect of COVID-19 along the whole chain from upstream to downstream in order to have a bigger picture on its impact on tourism in small island: Work on the water related issue, water access, sanitation aspect, etc.
- Encourage eco-tourism and domestic tourism; tourism-based economic strategies including low carbon.

Day 2: Health-Energy Climate Nexus

The second day of the workshop focused on the question of the health-energy climate nexus. It was addressed by six keynote speakers addressing three key questions. The keynote presentations set the tone for the following seven parallel discussion-groups, each led by members of the CCSE working group: Ibidun Adelekan, Luis Alves, Maria Figueroa, Rafiq Hamdi, Kari Herlevi, Francois Moisan, Patrick Monfray, Joseph Mwangi and Semida Silveira. The discussion groups deepened debate on the key questions and suggested solutions and future priorities for the African-European cooperation in the field of CCSE which were presented to the plenary at the end of day 2.

Africa and Europe are dealing with regional changes in aerosol load and the possibility of increasing regional risks in response to severe weather conditions associated with climate change (e.g. localised heat waves and changing precipitation geographically). What can possible scenarios and solutions be?

Dr Aïda Diongue-Niang, Scientific Advisor at the National Agency on Civil Aviation and Meteorology (ANACIM) in Dakar, Senegal highlighted that climate change, disaster risk, sustainable development , biodiversity, human health and well-being are tightly connected. The COVID-19 pandemic provides the world with an example of this interconnection with its widespread impacts on the economy, the society and environment. Climate change and air quality issues thus require a holistic approach that support sustainable development and access to energy. Regional climate information and climate services that support a multidisciplinary approach and co-design with stakeholders can help for adaptation and risk management; however, many challenges need to be overcome, particularly in Africa.

Dr Roberta Boscolo, Scientific Officer at the World Meteorological Organization (WMO) highlighted that Africa has the least developed land-based observation network of all continents, which is in a deteriorating state. This results in the need of improved climate services and early warning systems in Africa in order to enable better management of the risks of climate variability and change and adaptation to climate change, through the development and incorporation of science-based climate information and prediction into planning, policy and practice on the global, regional and national scale.

Professor Dr Alexander Baklanov, Science Officer at the World Meteorological Organization (WMO) focused on air quality prediction and forecasting capabilities and related meteorological analysis for Africa. He paid special attention to the environmental health risks of the air quality, aerosol contamination and high impact weather and prediction and early warning for Africa.

Recommendation for action – Outcome of Discussion Groups

Multidisciplinary approach

- Elaborate in multidisciplinary approach the many interconnected solutions to regional changes in aerosol load, including policy makers – and eliminate silos in research.
- Deal with the problems of the risks of air and aerosol pollution in urban areas, as well as frame the risks in economic activities such as agriculture, and in public health.
- Establish and maintain partnerships on regional and global level.

Need of climate data

- Close the lack of climate data and information (e.g. climate modelling, early warning systems at different time scales, objective seasonal forecast and fine weather forecast):
- Make data in useable format available for end users.
- Develop forecasting system and early warning system that could reach the stakeholders and the most vulnerable people via co-production (on the long-term) of climate services.
- Work on in-situ observations for better monitoring (for example black carbon) which still need further research.
- Add meteorological observations and information to those of identical content regarding the environment.
- Intensify measurements and monitoring of air pollution, greenhouse gas emissions, water quantity and quality.
- Ensure that data centres work together with different regions, collection and processing data, and sharing this data in different ways. The work with universities is essential to guarantee that there is enough competence for data processing in Africa.

Sustainable energy

- Consider alternative transport fuels, e.g. biodiesel, biogas etc.
- Investigate dynamics of charcoal market as it is a main producer of energy, with high impact on deforestation then also on flooding, air quality or animals.
- Investigate intermediate systems between the present charcoal production toward a solar cook stove "realm":
  - Waste recycling for energy and sanitation,
  - Afforestation for sustainable charcoal production.
- Assess the diversity of best energy systems should be made at regional or sub-regional level (biomass, biogas, solar, electric grid, etc...).

Awareness / capacity building

- Develop climate and air quality monitoring for early hazard warning, but it is not enough if without capacity building and education at large for efficient use by population. Added values should be clear for population appropriation and long-term functioning, beyond the original investment.

Financing / market

- Consider economic costs while at the same time thinking out of the box: what are alternative markets? Innovative financing?

How is indoor pollution related to health problems and what are possible solutions and future scenarios?

Sandra Cavalieri, Urban Health Initiative Coordinator at the Climate & Clean Air Coalition (CCAC) highlighted that 2.8 billion people rely on solid fuel and kerosene to cook every year, with nearly 7 million people die prematurely from the effects of household (indoor) and ambient (outdoor) air pollution. Vividly showing the multiple benefits access to clean energy can achieve for health, climate and gender. Solutions include cleaner and more energy efficient cookstoves, off-grid solar energy and improved heat stoves.

Recommendation for action – Outcome of Discussion Groups

- Improve and fund indoor and outdoor air quality in Africa. Energy for cooking and home lighting is one of the most serious public health problems in Africa. The COVID-19 pandemic worsened the situation as more people are ordered to stay at home. In progress are several clean cooking initiatives sponsored by UNEP and AU incl. the Global Clean Cooking Alliance.

Solutions and Financing

- Support shift from fossil fuel sources to sustainable alternatives:
  - Limit the use of kerosene for lighting by making it more expensive,
  - Support alternatives with a reduced cost,
  - Solar cookers, improved stoves – linked to local materials and manufacturing; LPG for urban and peri-urban areas, as well biogas.
- Explore correct business models and financial schemes for clean cooking sector.
- Explore means to increase private sector participation in the clean cooking investments through schemes like results-based-financing.
- Consider options addressing groups in extreme poverty when getting to the new market.
- Help companies is a key but not enough to create a sustainable market, demand by consumers should be investigated. Both technological and social innovations are needed.

Policies

- Strengthen good governance and investments to increase access to clean cooking solutions. Priority should be given to continental-regional air quality policies unlike the present focus on country level policies. Future scenarios would need to consider electrification powered by solar and wind energy and strong built in end of life materials.
- Don't forget energy needs, problems of indoor and outdoor air pollution while resources are placed to attend COVID-19 related issues.
- Compile and spread best practices, adapted to each culture and condition.

Gender

- Involve women entrepreneurs in the search for solutions to the problem because majority work at small scale, understanding the problem very well and the role they can play to help in scaling up solutions. Programs targeting young women and men entrepreneurs are therefore recommended.
- Work on clean cooking devices such as electricity, LPG, but consider the socio-economic aspect as well and look rather to the whole value chain. Consider gender issue and try be connected with the international context.

Nexus

- Acknowledge that cities and air pollution are linked to other sectors such as transport (a big number of severe conditions and adaptations are needed to fulfil requested standards).
- Reduce air pollution from other sectors like forest, agriculture. Solutions include afforestation, forest management, taxation. Agriculture: reduce the use of chemicals on the field. It is indispensable to take care of burning agriculture residues in the fields that is an important source of indoor and outdoor pollution
- Learn from the COVID-19 pandemic with regard to indoor air pollution, use of mask, and restrictions for meeting people. Include the public awareness in future discussions.
- Connect solutions between energy-health and climate.
- Address sanitation jointly with air quality. Waste recycling could be developed for both sanitation and fuel production.

How well is the energy support infrastructure of healthcare systems in Africa and Europe prepared to handle and manage the demands of an increased number of patients e.g. through air pollution and GHG emissions plus Covid-19? How can this need be met in a sustainable way?

Sherry Kennedy, Director of Communications at Sustainable Energy for All (SEforALL) cited that in 2018 59% health facilities in low and middle-income countries lacked reliable power. 1 in 4 health facilities in Sub-Saharan Africa had NO access to electricity 2013, 70% of the equipment breaks down, with voltage surge as leading course (2007), highlighting the serious gaps in access and reliability. Key barriers to rapid deployment of energy solutions to health facilities include data, energy demand, system design, financing, sector capacity and sustainability.

Dr Kirsten Westphal, Senior Expert at the German Institute for International and Security Affairs had a differentiated look at infrastructure, availability and quality of energy supply and health care as well as access to both showing its close interconnectedness. She highlighted the importance of international cooperation on universal access to clean energy to promote investments in clean energy, phase-out fossil fuel subsidies and make clean energy for households a priority (cooking & lightning).

Recommendation for action – Outcome of Discussion Groups

- Ensure direct investments to strengthen energy infrastructure.
- Promote policies, campaigns and advocacy to overcome weak energy and health services in Africa.
- Advocate the fact that health is not a matter of budget but a human right.

Cooperation

- Support a borderless cooperation within Africa and between Europe and Africa. Since the fight against COVID-19 is the mass vaccination of populations and the vaccine needs very low temperatures for its conservation, the problem of cold storage arises with great accuracy, requiring also a lot of intracontinental and intercontinental cooperation, collaboration and partnerships, capacity-building/education for researches both in AU/EU equally.
- Forge partnerships to and integrated projects with potential for replication. In parallel, the cooperation with universities is crucial to build the necessary capacity for installations and maintenance.

Economy

- Advance knowledge and solutions that facilitate a shift from waste management to circular economy.

Policies

- Rethink the health sector for Africa and develop high quality health systems paid by the national governments (COVID-19 as wake-up call).
- Prioritise on how to provide basic electricity services that allow to match health provision and attend the vulnerable and sick.
- Switch governmental offices/buildings to solar energy and thus trigger the African solar market, provide an excess of solar electricity to key sectors, as health sector, and entrain others players. In addition, build eco-friendlier household, building and infrastructure is essential, where governments could act (as proposed in COP commitments).

Technologies

- Develop renewable energy for healthcare centers, possibly via mix or hybrid solution with off-grid system, biogas
- Explore RE mini-grids and micro grids as the most effective way to electrify rural health facilities.
- Acknowledge the fact that Africa is far from Europe here: only 17 countries have capacity to transport Pfizer vaccine at -70°C.
- Provide infrastructure in an integrated way, for example, waste to energy, demonstration to motivate replicability, job creation. Infrastructure deficit is an overall problem for the development in Africa. For health centres, infrastructure for energy, water and also waste are necessary to guarantee the basis for health care, not least in a context of a pandemic.