



## AREI Panels COP 27

9 – 18 November 2022

[www.arei.info](http://www.arei.info)



**COP27**  
SHARM EL-SHEIKH  
EGYPT 2022

# VIRTUAL EVENT OF AREI TO COP27

Theme: Digitalization of renewable energies

## Context

The energy sector is currently undergoing a profound transition towards a very significant energy transformation, and digitalization is one of the key enablers to ensure its achievement.

In the energy system, digitalization is essential to integrate energies renewables in electricity systems, improving the reliability of electricity networks and reduce the cost of access to electricity, thus contributing to a fairer energy transition and fair. Digitization offers the possibility of taking advantage of the data we already have to get sustainable energy where it needs to be. More importantly, techniques technologies such as BIG DATA and AI as well as blockchains can considerably improve business concepts for decentralized energy access with renewables and energy efficiency.

For Africa, technological innovation will accelerate development and facilitate transition energy, and is a tangible means by which it can ensure resilience and create a sustainable economy for its population. These developments are more relevant to the sector energy, where digitalization can play a vital role in ensuring that the millions of people who cannot get electricity today are switching directly to energies renewables and moving forward directly into the near future which has already been gradually

## Date & Place

The event was held virtually on the sidelines of COP27 in Sharm El-Sheikh, Egypt.  
November 10, 2022 at 2:00 p.m. (Egypt time) – 12:00 p.m. (GMT)



**Dr BARAKAT Ahmed**  
Expert in charge of capacity building  
IDU /AREI

Dr Barakat opened the meeting and welcomed all panelists and participants.

He started the meeting with an opening speech where he underlined the important points related to the terms of the meeting:

Notably,

▣ The key role of digitalization in the Renewable Energy sector

Digitalization is essential to integrate renewable energies into electrical systems, improve the reliability of electrical networks and reduce the cost of access to electricity.

For Africa, digitalization is a concrete way to ensure resilience and create a sustainable economy for its people.



Mrs. Vida Rozite,  
International Energy Agency,  
IEA

Ms. Rozite begins her remarks by also explaining the important role of the digitization of the renewable energy sector, particularly in energy efficiency, which will allow:

- Better management of energy needs
- Optimization of distribution and transmission systems through innovation continues digitized management systems.

She also emphasized the need:

- To increase mini-grids and small installations and their connections.

In her intervention, she also discussed the challenges facing the energy sector in Africa but also the many benefits of digitalization, such as reducing losses, contributing to network flexibility and reducing costs, in addition to microgrid optimization and management.



M. Yagouba Traore,  
African Energy  
Commission (AFREC)

Mr. Traoré began his remarks with the strategic presentation of AFREC to lay the foundations for a transition towards the construction of the green economy of the future based on the trio.

### **Decarbonization - Digitalization - Decentralization**

He stressed the importance of implementing integrated smart systems that ensure greater control of energy use and energy efficiency, thanks to more flexible, intelligent, connected and responsive energy systems.

Only **50% of the African population has access to electricity despite the significant resources that are not exploited.**

Mr. Yagouba presented a study showing the beneficial impact of using smart integrated systems in the renewable energy sector:

- SADC Region: can generate savings of 9 to 14 billion US dollars and contribute to the reduction of CO2 emissions up to a value between 87 and 140 million tons.
- Eastern Region: Savings of 11.9 billion US dollars and a reduction in CO2 emissions estimated at 48.6 million tonnes.

Mr. Traoré shared with the participants the work carried out by AFREC and the African Union Commission, in particular:

- AU Digital Transformation Strategy.
- Energy efficiency and transition programs
- Energy efficiency program
- Smart Mega Projects in PIDA PAP II (2021-2030).
- Complete capacity building program



Mr Cyril RENAULT  
Energy project manager  
AFD

Mr. Cyril Renault in his speech began his opening by indicating that AFD has been supporting the energy transition for many years.

***As of 2021, he added that there are about 100 projects underway in Africa in the field of energy transition.***

Thus, the possibility of supporting digitization in the energy sector. He reassured the participants about AFD's readiness to work and cooperate with all African partners by citing a few figures:

- AFD has supported energy transition all over the world (€1.2 billion)
- In Africa (2016 – 2020 | €3 billion)



Ms Clara Coornaert,  
Digital Energy Coordinator  
AFD

Mrs COORNAERT continued Mr Renault's remarks by highlighting the advantages of digitizing public services:

- Improve the operation of the energy network (network control, real-time management, etc.)
- Improve the efficiency of utility processes (billing process, administrative process, etc.)
- Support new innovative services (storage, electric vehicle, etc.)

She presented the 4 pillars of the Facility as follows:

- Digitization of utilities
- Innovation financing
- Creation of a Digital Energy Community
- Seeding for innovative solutions for energy access companies



Eng. Julius Gitonga,  
AREI CT Member  
East Africa Region  
Kenya

Engineer Gitonga, used the energy sector in Kenya as a practical case and began his presentation with an inventory of fixtures concerning:

- Digitization of renewable energy in Kenya
- Management of the supply of variable renewable energy to the network
- Digital financing of renewable energies
- Affordability of renewable energy supply
- Smart Meters - Supply Flexibility

To argue his point and he defined the benefits of digitization

- Digitalization creates more flexibility in electricity supply, such as smart meters or the system of prepaid tokens for electricity supply Advance purchase of electricity for household use for any amount.
- Digitization makes power supply affordable and easily purchased from anywhere using mobile money.
- Digitization makes it easier to manage the grid's variable renewable energy supply.

But also the challenges including:

- Internet
- Availability and affordability of consumer digital devices such as smartphones, smart meters, SCADA, etc.
- Regulatory framework to protect the industry against Cybercrime
- Infrastructure financing
- Skill developpement



# Conclusions



## Dr Chantal COLLE

Acting Director IDU /AREI

Member of the CT-West Africa Region

She thanked and greeted the speakers and recalled the importance of the role of digitalization in the renewable energy sector and the adoption of innovative and new solutions that can contribute to the consumption economy but also to the preservation of planet.

In closing, Dr Colle touched on the political aspects of the work, She also highlighted the importance of green hydropower for the future of Africa emphasizing the importance of having good regulation to support the digitization of the system energy

## Dr Mohamed OMRAN

Member of the CT-North Africa Region

He added that a systems approach is Necessary so that the digitalization of energy can better contribute to the realization of the ambitious political priorities of our continent.

Digitalization is impacting the entire energy value chain, from generation to transmission, distribution and demand.

It can also help integrate the growing share of renewables by providing flexible power systems that offer demand-side solutions and energy storage, including for hard-to-decarbonise sectors.

## CONCLUSION

“

Africa needs policies, regulations, new business models to enable digitalization, to solve our challenges.

We need to strengthen our capabilities to procure and exploit the technologies that meet our current

”

needs, but also enable us to meet future needs.

The digitization of energy begins where energy begins at power plants. Operators can use innovative software allowing them to intervene upstream, before damage occurs such as predictive maintenance.

Digitization is key to integrating renewable energy into power systems, improving the reliability of power grids and reducing the cost of access to electricity.

Digitization makes it easier to manage the grid's variable renewable energy supply.

***The importance of training and capacity building to acquire and exploit technologies that meet our current needs, but also allow us to meet future needs.***