



POWERING A BRIGHTER FUTURE: THE AFRICA – EU GREEN ENERGY INITIATIVE (AEGEI)

A Continental Programme for one Single African Electricity Market (AfSEM), a Continental Power System Masterplan (CMP), and the African Energy Efficiency Strategy (AfEES)

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Electricity demands in Africa are expected to triple by 2040 as population grows and living standards improve. The African Union (AU) and the European Union (EU) have joined forces to forge a continental approach to a fully integrated, competitive, and harmonised electricity market that will accelerate the development of the continent and improve energy access for all African citizens.

Three flagship initiatives among African energy stakeholders are currently supported through the **EU Global Technical Assistance Facility for Sustainable Energy (EU-GTAF)** and are part of the EU continental actions of the **Africa-EU Green Energy Initiative (AEGEI)** which aims at consolidating the joint sustained efforts for green energy investments in Africa:

1. **AfSEM**, which aspires to become one of the world's largest electricity markets by 2040 by enhancing access to reliable, affordable and sustainable electricity in Africa through the harmonisation of policies, legislation and regulatory frameworks at the regional and continental level;
2. **CMP**, which is the “blueprint” of the AfSEM, providing the necessary infrastructure to link all national and regional Power Pools’ transmission networks and enabling intra-and inter-regional electricity trade; and
3. **AfeES**, currently under development, which seeks to explore and define the role of energy efficiency technology in the energy mix of the continent, pledging to achieve a 50% increase in energy productivity by 2050.

All three initiatives are fully integrated in the **European Global Gateway Strategy** which aims at investing in sustainable infrastructure projects around the world with a dedicated budget worth €150 billion for investments in Africa only. This financial package will focus on supporting Africa's energy transition, digital transformation, and sustainable infrastructure in a Team Europe approach, i.e. the EU institutions and the EU Member States jointly. In this sense, the AfSEM, CMP, and AfeES are key priority initiatives for the EU - they will ensure the development of resilient power systems and electricity markets, enabling efficient electricity trading and facilitating Africa's green and just energy transition on supply and demand ends. The Global Gateway Strategy provides an opportunity to accelerate their implementation, while also other sources of funding will be mobilised.

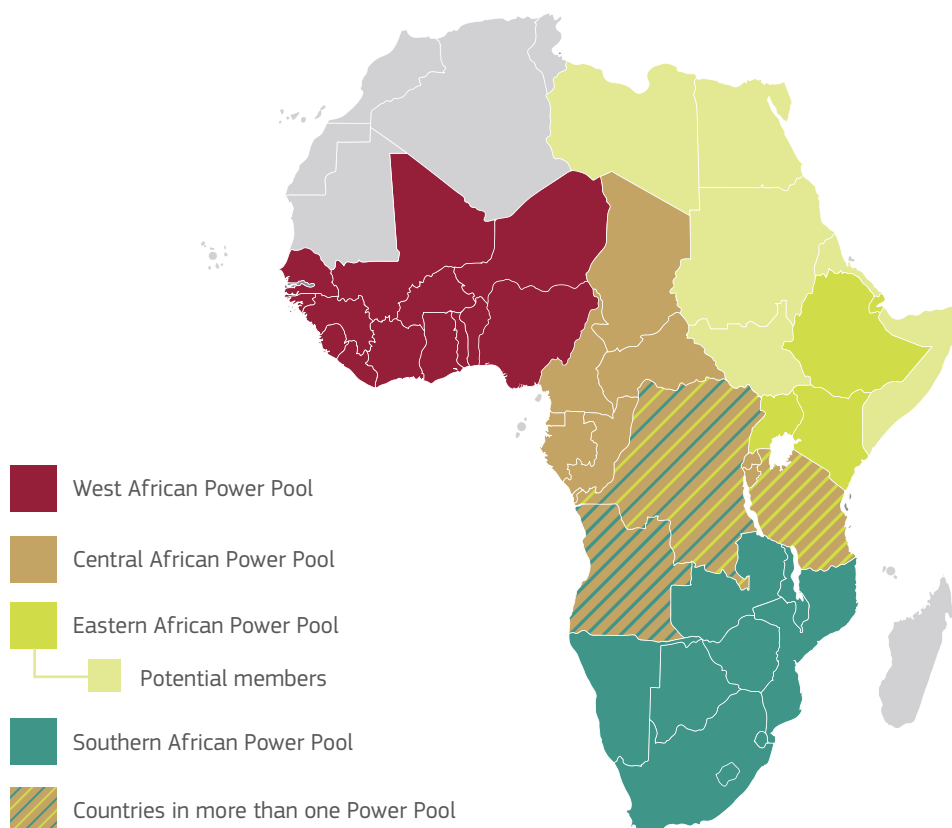
Consultation among energy stakeholders in Cotonou, Benin, in July 2023



PURPOSE OF THE AFSEM, CMP, AND AFEES UNDER THE AGEI

Africa faces significant energy challenges, with over **600 million Africans in particular in rural areas lacking access to electricity**. A large part (even up to 60%) of the electricity generated in Africa is lost on its way to the consumer, due to problems in the transmission system. At the same time, the **demand for electricity is expected to triple by 2040** due to industrialisation, urbanisation, higher household income, and climate change.

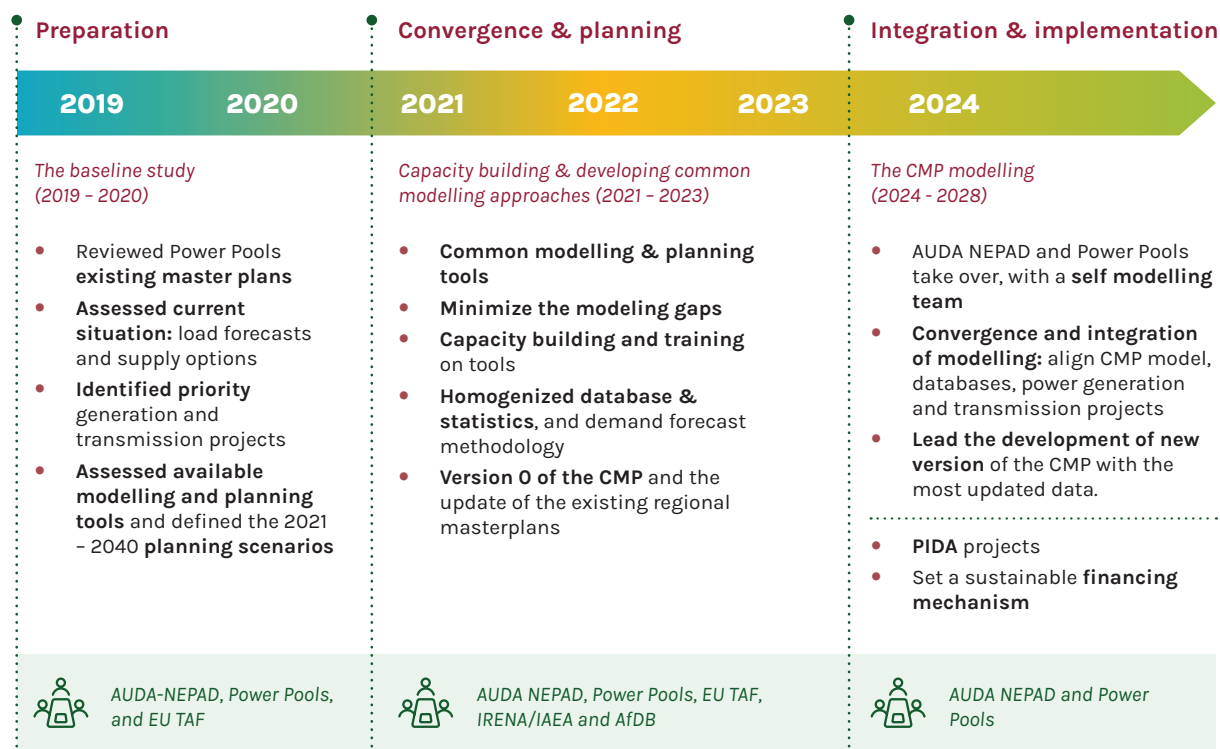
The AfSEM, CMP, and AfEES present vital solutions to address all of these issues, providing opportunities for growth, development, and prosperity, while fostering the use of the vast renewable energy potential in Africa, as well as sustainable use of energy. One of the ambitions is to support Africa's goal of increasing renewable energy generation capacity to 300 GW. Thus, Africa gears up towards transforming into the global powerhouse of the future, turning deficit into drive and making Africa's electricity grid the smartest one in the world.



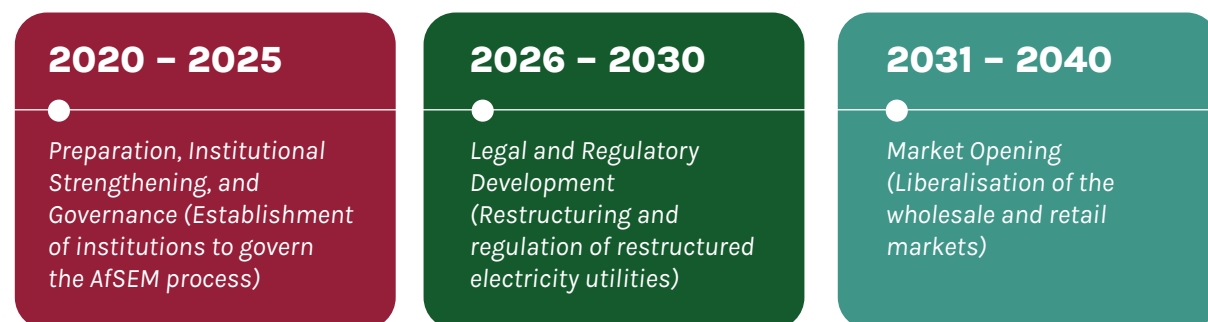
The CMP implementing partners – the African Union Development Agency (AUDA), EU-GTAF, the International Atomic Energy Agency (IAEA), and the International Renewable Energy Agency (IRENA) – will support African stakeholders with the development of the CMP, identifying surplus and deficit regions/countries in terms of electricity generation/supply and consumption/

demand. This will help identify the most cost-effective ways of expanding clean electricity generation and transmission infrastructure across the African continent. The initiative uses different smart simulation models to measure the electricity consumption in each country and to design a robust and flexible power system to supply the demand.

The CMP modelling & implementation timeline



The 3 phases of the AfSEM



THE VISION AND MISSION OF THE AFRICAN SINGLE ELECTRICITY MARKET



VISION

A harmonised, well-connected, and competitive continental African electricity market delivering secure, reliable, affordable, and sustainable electricity services.



MISSION

To integrate the African continent enabling competitive trading in secure, reliable, affordable, and sustainable electricity services across the continent for the development of the African people.

To accomplish these guiding principles, **four Strategic Goals and five Strategic Objectives (SO)** have been formulated:

1

Strategic Goal 1: Developing Africa's abundant energy resources

Strategic Objective 1: Develop generation, transmission, and distribution infrastructure to harness the abundant clean and green energy resources and to transport the electricity

Strategic Objective 2: Promote regional integration and intercontinental trading in electricity

2

Strategic Goal 2: Harmonising the policy, legal, and regulatory frameworks in the African electricity sector

Strategic Objective 3: Harmonise policies, legislations, rules, and regulations to establish robust governance structures

4

Strategic Goal 4: Leveraging technological innovation in the African electricity sector

Strategic Objective 5: Leverage cutting-edge technological innovations to modernize the African electricity sector

3

Strategic Goal 3: Caring for the African electricity consumer and addressing consumer issues

Strategic Objective 4: Facilitate access to secure, affordable, reliable, and sustainable electricity

THE BENEFITS OF THE AFSEM, CMP, AND AFEES

The three initiatives bring numerous benefits to the African continent, including:



Enhanced energy access

The three initiatives can significantly improve energy access and efficiency in many African countries, particularly those with limited power generation capacities. By interconnecting national grids, surplus electricity from one country can be transferred to areas experiencing shortages, thereby reducing energy poverty and increasing access to reliable electricity for households, businesses, and industries.



Renewable energy integration

The three initiatives can facilitate the integration of renewable energy sources into the electricity mix at a larger scale. Many African countries have abundant renewable energy resources such as solar, wind, and hydropower. This promotes sustainable development and contributes to the global fight against climate change through mitigation and adaptation, as well as by improving biodiversity and combating desertification.



Optimised Energy Efficiency

Centralised electricity markets inherently promote the efficient distribution and consumption of electricity. By streamlining electricity flows, power is dispatched from the most efficient sources first, thereby reducing energy wastage. This efficiency also extends to networks and consumption. Advanced smart grid technologies can be introduced to minimise network losses and consumers can be incentivised to adopt energy-efficient practices and technologies. Efficient use of energy reduces costs, lessens the environmental footprint, and ensures that more people will get access to the electricity they need.



Increased energy security and resilience

The three initiatives can enhance energy security and resilience for participating countries through regional integration. By diversifying their energy sources and reducing reliance on a single power generation infrastructure, countries can mitigate the risks associated with supply disruptions, natural disasters, or technical failures. Cross-border electricity trade can provide backup options during emergencies and ensure a more reliable electricity supply.



Job creation and skill development

The three initiatives will require a skilled workforce in the development and operation, creating employment opportunities in various sectors. The construction of interconnections, installation of transmission infrastructure, and operation of the regional electricity markets under Power Pools will generate jobs directly. Additionally, the growth of industries and businesses supported by improved electricity access will create further indirect employment opportunities.



Economic growth and development

The three initiatives as a well-functioning continental electricity market, have the potential to boost economic growth and development across the continent. Access to reliable and affordable electricity is a crucial factor for attracting investments, fostering industrialisation, and supporting the growth of various sectors such as manufacturing, agriculture, and services.



Pan-African cooperation

The three initiatives promote collaboration, cooperation, and co-creation among African countries and RECs, fostering a sense of unity and shared goals and eventually providing millions of African citizens with access to electricity, improving their lives and offering them new opportunities to thrive.

KEY MILESTONES & NEXT STEPS

Important milestones have already been achieved for the three initiatives: a series of policy, technical, and strategic papers have been prepared and adopted by the AU to guide the implementation process since 2017, including a **Strategy and Action Plan for a Harmonised Electricity Market in Africa** in 2017, currently under revision, and a **Policy Paper and a Roadmap towards AfSEM** in 2020. In 2022/2023 numerous additional reports have been prepared by a team of technical experts to define the operationalisation of the AfSEM which also comprehends the structure of its future Secretariat and a Five-Year Business Plan.

On 15 September 2023, the Ministerial meeting of the African Union for the energy sectors officially adopted the key documents to pave the way for a sustainable African Single Electricity Market and a Continental Power System Masterplan.

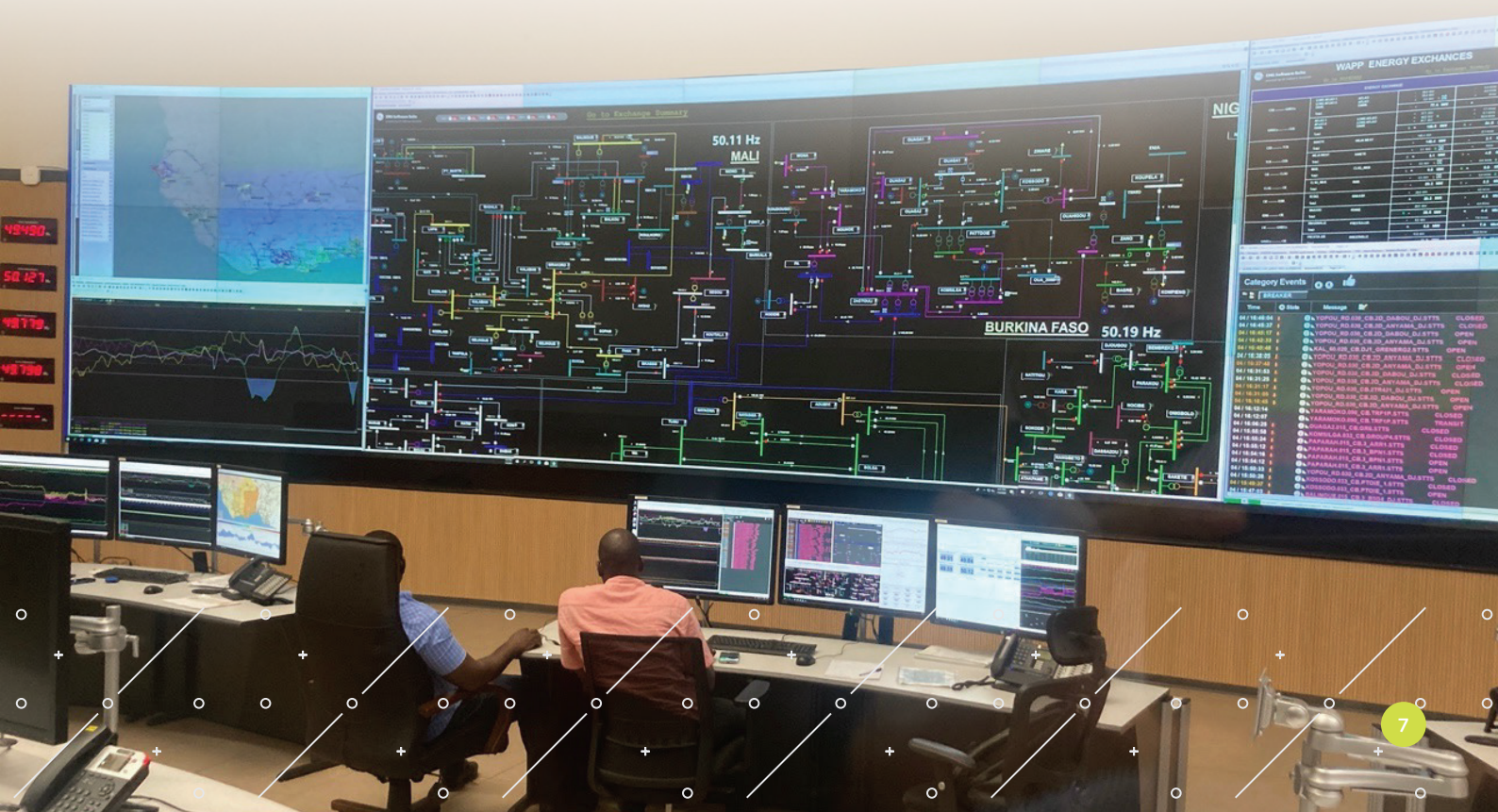
More specifically the stakeholders present:

- Called for the adoption of the AfSEM and CMP to become an **AU Agenda 2063 Flagship Project**.
- Approved the strategic and action plans of the African Single Electricity Market (AfSEM).
- Adopted the synthesis report of the Continental (Power System) Master Plan (CMP).
- Discussed the African Energy Efficiency Strategy (AfEES).

In the **next phase** and in line with the Global Gateway Strategy, the activities **will further advance the cross-border cooperation in power system and electricity market operation, develop transmission networks at the national, regional, and continental levels** and continue to lay particular emphasis on aspects of renewable energy and energy efficiency. In addition, **the national and regional transmission networks** for intra-regional electricity trade among neighbouring countries **will be linked** and thus ensure inter-regional electricity trade among Power Pools and/or with Europe.

The combined support for the harmonisation of policy, law, and regulation (AfSEM) as well as for energy infrastructure and planning based on renewable energy (CMP), while advancing at the same time energy efficiency actions (AfEES) has proven to be a successful approach on the way to a green energy transition in Africa (AEGEI) which will provide 1.3 billion people with access to reliable and sustainable electricity.

The control centre of the West African Power Pool in Cotonou, Benin



CONTACT INFORMATION

EU Delegation at the African Union

- Website: https://www.eeas.europa.eu/delegations/african-union-au_en
- X: <https://twitter.com/EUtoAU>
- Facebook: <https://www.facebook.com/EU.Delegation.to.the.African.Union>

The Secretariat of the AfSEM is currently based at the African Union Commission – Department of Infrastructure and Energy (AUC – DIE).

African Union Energy and Infrastructure Department (AUC-DIE)

- Website: <https://au.int/en/afsem>
- X: https://twitter.com/au_ied

The CMP Secretariat is located at the African Union Development Agency (AUDA-NEPAD).

AUDA-NEPAD

- Website: <https://nepad.org/continental-master-plan>
- X: https://twitter.com/nepad_agency
- Facebook: <https://www.facebook.com/nepad.page>
- LinkedIn: <https://www.linkedin.com/company/nepad-planning-and-coordinating-agency>

The AfEES is currently developed in close collaboration with the African Energy Commission (AFREC).

AFREC

- Website: <https://au-afrec.org/>
- X: https://twitter.com/AU_AFREC
- Facebook: <https://www.facebook.com/AUAFREC>
- LinkedIn: <https://www.linkedin.com/company/afrec-energy-commission>

African Union (AU)

- X: https://twitter.com/_AfricanUnion
- Facebook: <https://www.facebook.com/AfricanUnionCommission>
- LinkedIn: <https://www.linkedin.com/company/african-union-commission-addis-ababa>
- Instagram: https://www.instagram.com/africanunion_official

