

# CONTINENTAL POWER SYSTEMS MASTER PLAN

EU TAF & AUDA- NEPAD  
18 Jan 2021  
PIDA WEEK



Project funded by the EUROPEAN UNION  
EuropeAid/Development Cooperation Instrument  
DCI-ENV/2013/335-152



# AUC – EU TAF Cooperation: Harmonisation of Electricity Markets in Africa

2015

- Electricity Harmonisation - Strategy and Action Plan



2017

- Adoption of Strategy and Action Plan by the AU Heads of the States



2017-20

- Implementation: Transmission Tariff, MEPS, Mini Grids, etc



2020-21

- **AUC- EU TAF Medium Term Actions for the 2019-2021:**
- AUDA – NEPAD, AFREC, APUA, AfCFTA, AFUR



2020-21

- **Continental Power System (transmission-generation) Master Plan (STC Cairo 2019)**

2020-21

- **African Single Electricity Market: Policy Paper and Roadmap (STC Cairo 2019)**



# AUC – EU TAF Cooperation: *New medium-term Technical Assistance actions:2019-2020*

## Key Energy Policy and Planning Activities:

### Monitoring

Strategy and Action Plan

### Digital Platform

- Annual Report Progress to Heads of AU MS
- Issue report on MEPs and Transition tariffs March 2021
- Policy recommendation
- Updating Action Plan

### Continental Power System (transmission – generation) Master Plan

### CMP Phase 1

- Decision in Cairo and WGM, SCM March 2020
- Baseline Scenario (Assess PPs MPs)
- Priority Projects
- Modelling CMP
- Draft ToRs for Modelling CMP

### African Single Electricity Market

### Policy Paper and Roadmap

- Validation Policy Paper
- Presanction of policy Paper to STC
- Governance Coordination Structure
- Strategic Planning
- List of priority activities



**EU TAF – AUDA NEPAD**  
**Continental Power System Master Plan**  
**Baseline Study (Lot 8.1)**

- Review the existing masterplans developed by each of the 5 power pools in Africa;
- Develop a baseline scenario. This will include detailed assessment of load forecasts and supply options and identify all priority generation and transmission projects earmarked for development.
- Develop detailed terms of reference for the next phase (i.e. phase 2) of the study;



## Methodology

- **Bottom-up** approach: *Consultative and participatory*
- *Assessment of PPs Master Plans*
- *Priority Generation and Transmission Projects*
- Assessment comparative analysis of **modelling-planning tools**;
- Establish **cooperation with modelling partners**



# Continental Master Plan: Assessment, Consultations Participatory Process - Baseline scenario

## Consultations for all the deliverables produced:

- **WGM and SCM for the approval Inception Report (March 2020)**
- **1 meeting with each PP and MED-TSO - assessment of MPs (May)**
- **2 meetings with AfDB and WB (July)**
- **2 meetings with each modelling partners: IRENA, IEA, IAEA (July)**
- **1 stakeholders meeting with all RECs, PPs, AUC, AUDA NEPAD, AfDB, Regional Regulators, and RE&EE Centers (Sept)**
- **4 meetings (with each PP) for modelling and planning tool**

**28 meeting in total (approx. 100 hours)**

**Stakeholders validation of deliverables**



# Continental Master Plan: Key Findings - State of Power Pool Masterplans - Baseline scenario

## Up to date Masterplan

- WAPP and SAPP have updated Masterplans

## Masterplan Being Updated

- EAPP updating their Masterplan

## Masterplans' Status requiring more information or support

- CAPP Masterplan outdated and requested for assistance to mobilise resources to update the Masterplan
- COMELEC has no Masterplan and needs institutional strengthening to bring it a par with other power pools



# Continental Master Plan: Key Findings modelling-planning tools - Baseline scenario

	PIDA (2012), for 2020-2040	WAPP (2018), for 2019-2033	CAPP (2006), for 2005-2025	SAPP (2017) for 2015-2040	EAPP (2014), for 2015 - 2040
Demand Forecast Nr of Scenarios	<u>1 scenario</u>	<u>3 scenarios:</u>	<u>1-3 scenarios /</u>	2 scenarios (Base, Low)	<u>1 scenario;</u>
GIS	no	no	no	Yes: GeoTerralmage	No, but basic mapping
Generation planning software	GAP	PRELE	GAMS + CPLEX solver	PLEXOS	BALMOREL
Transmission planning software	NAP	PRELE	GAMS + CPLEX solver	PLEXOS and PSS/E	BALMOREL
Network analysis software and dynamic studies	No	-EUROSTAG	no	PSS/E	No.
Planning Scenarios	3 scenarios:	1 scenarios	2 scenarios	3 scenarios:	21 scenarios are analysed



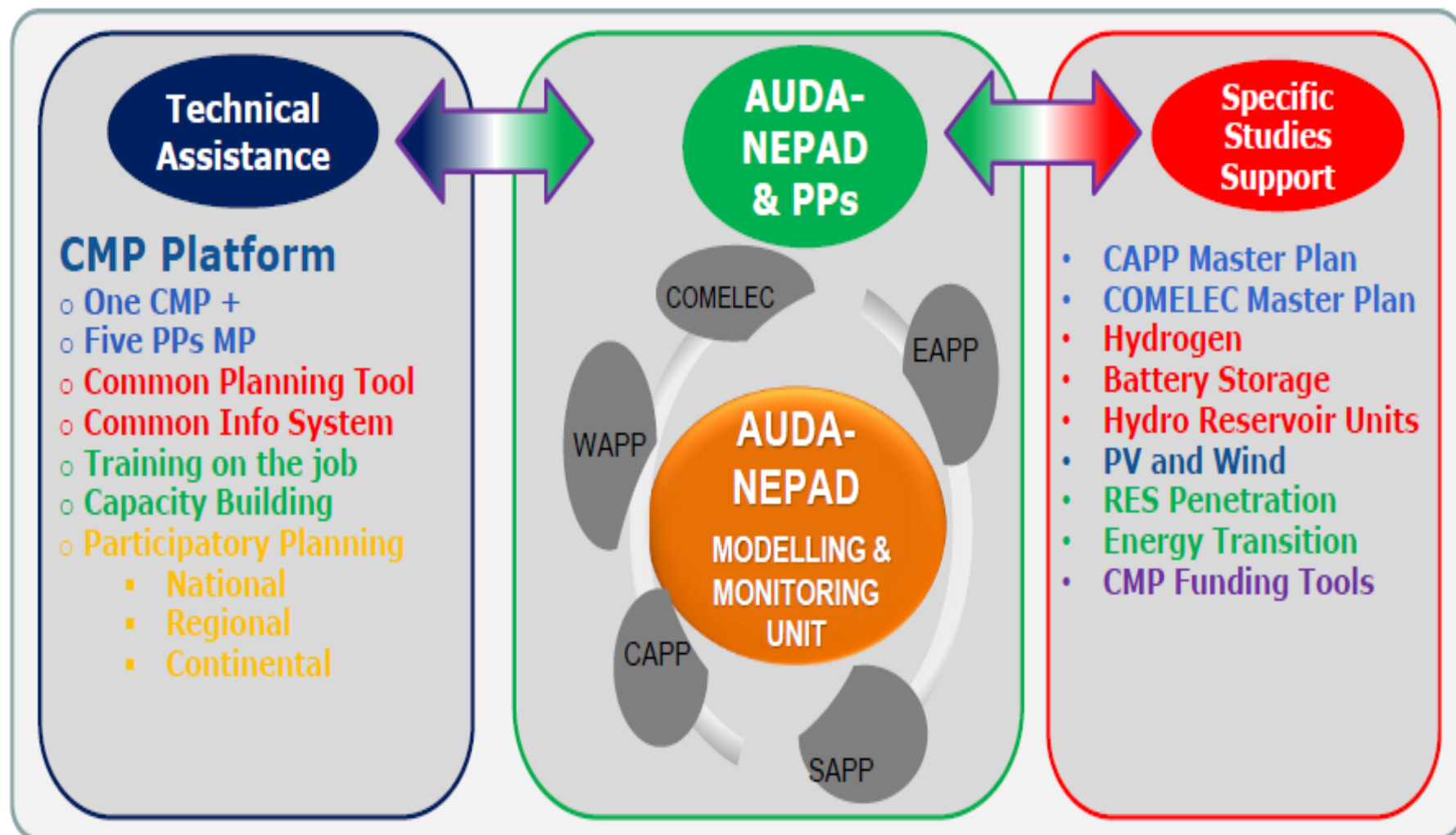


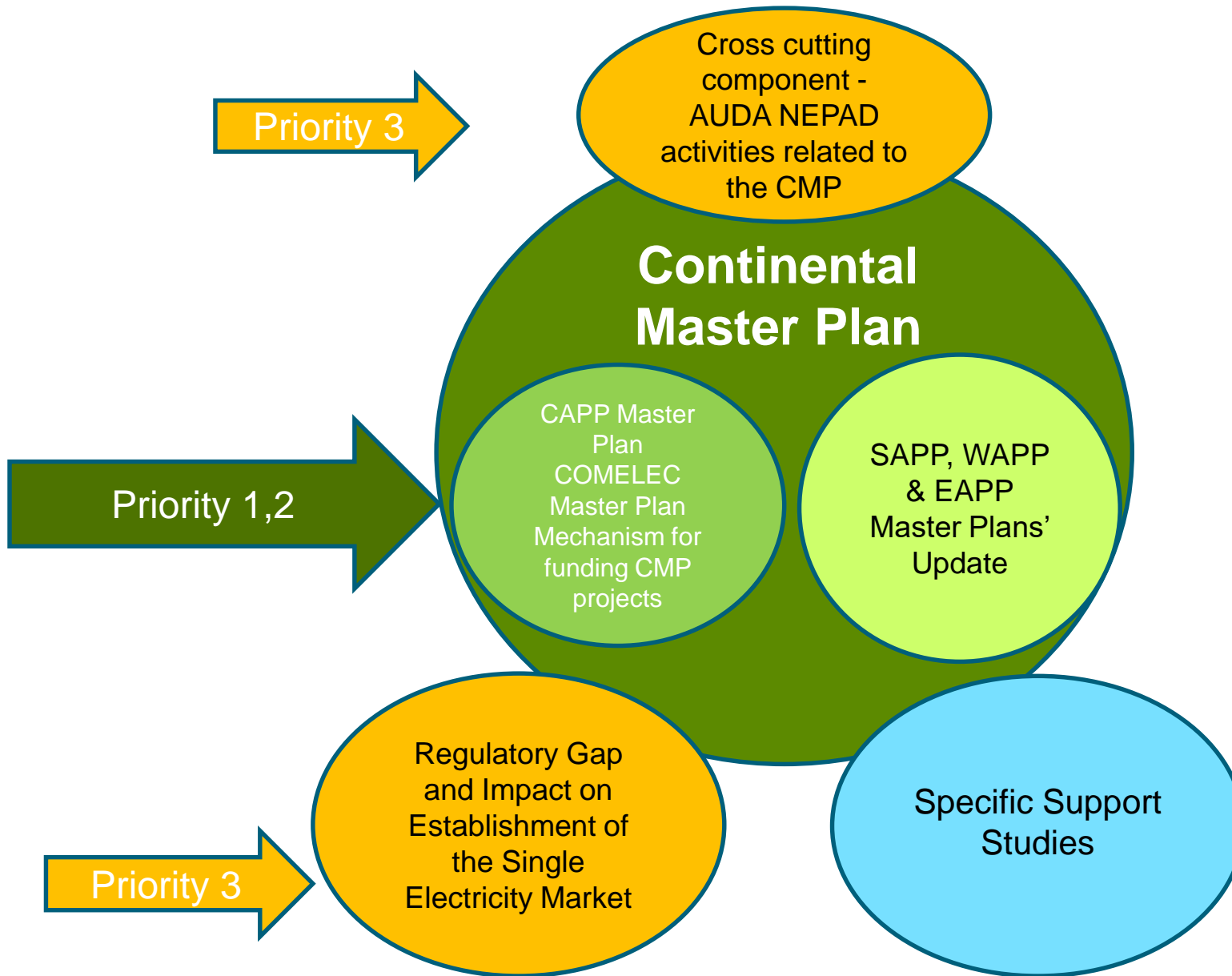
## Deliverables Continental Mater Plan- Phase 1

- **Inception Report** - Data collection and review of all valid and latest power pool masterplans (March 2020)
- **Baseline Scenario:**
  - Baseline Load forecast and supply options,
  - - Identify all priority generation and transmission projects
  - - Report on the Review of Existing Masterplans (June 2020)
- **Identify all priority generation and transmission projects;**
  - Carry out assessment of supply/demand balance for each power pool
  - Develop models for generation and transmission (June 2020)
- **Modelling and Planning Studies on uniform basis** (Sept 2020)
- **Develop detailed ToR for Phase 2** (Oct 2020)



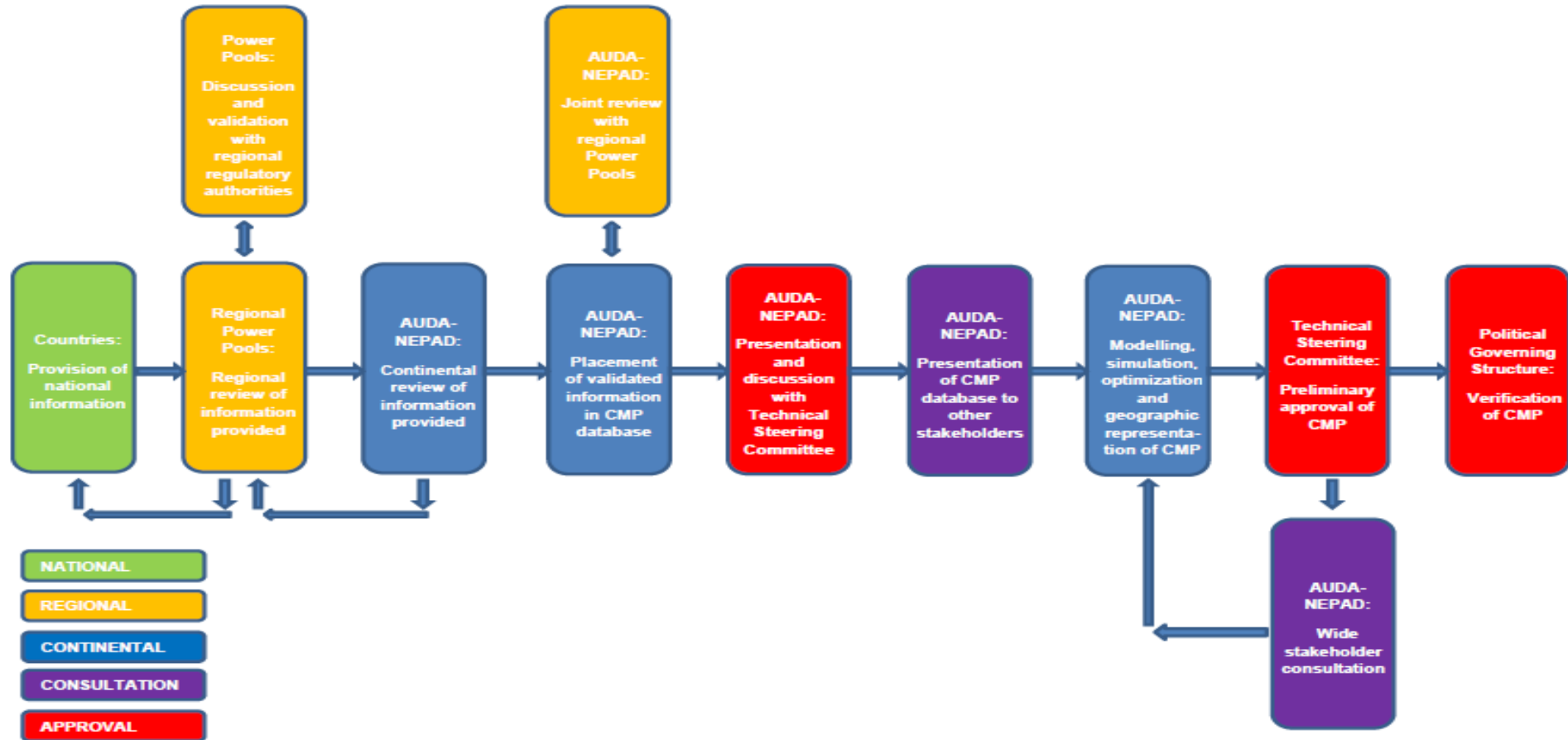
# Implementation: Participatory and Collaborative Planning Approach for Developing CMP





# Proposed Bottom Up Implementation (CMP – Lot1)

## CMP Development Process



## Recommendations :

- **Coordination & Synchronization** among the related activities to AfSEM, CMP and PIDA
- **Continuation of the Participatory - bottom up approach process** towards the development of the AfSEM and CMP
- **Continuation** of the for the Continental/Regional strategies, policies, guidelines
- **Continuity from phase 1 to phase 2** and achievement of accelerated results
- Strategic Planning and Modelling by using **common planning tool**



# Thank you

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