



**WORLD BANK GROUP**  
Energy & Extractives

# Améliorer la solvabilité du secteur grâce à un accord régional sur la politique du secteur de l'électricité

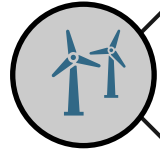
**L'intégration régionale et les échanges transfrontaliers**

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## Regional Market Benefits



**Supports transition to the new energy economy** including more solar, wind and hydro (trading countervailing variations in output, greater system inertia, scale efficient projects).



**Reduces electricity supply costs** through coordinated dispatch of lower cost generators and coordinated investment that takes account of lower cost regional options.



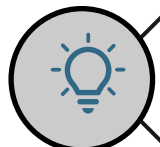
**Reduces need for state subsidies** as costs fall towards tariffs.



**Increases reliability of supply and resilience to shocks and effects of climate change** through increased supply options.



**Reduces greenhouse gas emissions** by allowing electricity exports from countries with low-cost renewables to countries reliant on generation from higher cost fossil fuels.



**Increases access to green, reliable and affordable electricity** through all of the above.



**Stages of regional market:** These benefits increase as integration gets deeper. It may take time to achieve well functioning regional power markets, but stages do not need to be sequential

There are 5 five main characteristics of integration – measuring degree of physical interconnection (hard infrastructure) and harmonized operational, trading and market rules (soft infrastructure).

	Stage 1	Stage 2	Stage 3
<b>Regional Supply and Connectivity</b>	<ul style="list-style-type: none"> <li>Typically starts with 2 countries, later a wider interconnected grid</li> </ul>	<ul style="list-style-type: none"> <li>Interconnected grid involving a number of neighboring countries</li> </ul>	<ul style="list-style-type: none"> <li>Operation of a fully synchronous, multi-country, interconnected power system</li> </ul>
<b>Planning and Investment Coordination</b>	<ul style="list-style-type: none"> <li>National planning and investment</li> </ul>	<ul style="list-style-type: none"> <li>Some coordination of national investments with optimized regional investment plan</li> </ul>	<ul style="list-style-type: none"> <li>Regional integration body empowered to require investments in agreed upon regional plan to be implemented</li> </ul>
<b>Cross-border Trading Arrangements</b>	<ul style="list-style-type: none"> <li>Long-term bilateral Power Purchase Agreements (PPAs)</li> </ul>	<ul style="list-style-type: none"> <li>Long-term PPAs supplemented with short-term markets</li> </ul>	<ul style="list-style-type: none"> <li>Electricity pricing market competition achieved (spot, day-ahead, transmission capacity auctions, etc.)</li> </ul>
<b>Technical and/or Regulatory Harmonization</b>	<ul style="list-style-type: none"> <li>Simple rules agreed upon for the operation of the interconnected system</li> </ul>	<ul style="list-style-type: none"> <li>Harmonization of rules, grid codes</li> </ul>	<ul style="list-style-type: none"> <li>Harmonization of rules, grid codes, and transmission tariffs</li> </ul>
<b>Regional Institutional Architecture</b>	<ul style="list-style-type: none"> <li>Simple institutional arrangements with National vertically integrated utilities (VIU) or Transmission System Operator (TSO)</li> </ul>	<ul style="list-style-type: none"> <li>Number of VIU, national TSO, regional institutions</li> </ul>	<ul style="list-style-type: none"> <li>Complex institutional arrangements with different types of institutions, some national VIU or TSOs, Regional TSO, Regional Regulators, market operators, etc.</li> </ul>

## Benefits

Stages of regional market: Several engagements are advancing the agenda

Work on physical interconnections:

	CLSG	OMVG	OMVS	North Core	Total
Lines (km)	1,349	1,677	288	904	4,218
Substations	10	16	2	6	34
Investment (mUSD)	483	711	109	856	2,159

➔ Financing of physical infrastructure  
➔ Supporting development of contractual arrangements (TSAs, PPAs)

Work on regional institutions:

APL4 WAPP-CLSG Power Interconnection Project, of which \$22 million is devoted to capacity building of regional institutions WAPP, ERERA and ICC

Solar Development in Sub-Saharan Africa - Phase 1 (Sahel) (P162580), of which \$ 8 million is dedicated to capacity building of WAPP

National dialogues:

IPFs	DPFs
<b>Mali</b> Electricity Sector Improvement Project (P166796); <b>Guinea</b> Electricity Access Scale up project (P164225); and <b>Cote d'Ivoire</b> CI-Energies Guarantee Project (P164145)	<b>Guinea</b> – one out of three pillars is on energy (P166322); <b>Cote d'Ivoire</b> – two out of ten prior actions on this green growth DPF are related to the clean energy transition (P169828); <b>Mali</b> – one out of three pillars is on energy (P167547); <b>Liberia</b> – 2 out of 10 prior actions on recent national DPF (P168218) were on energy; and <b>Sierra Leone</b> – 1 prior action out of 10 on energy in three year programmatic series focusing on energy (P169498).

## Regional Markets – Switching Focus: As physical interconnectors are finalized, focus must shift to soft infrastructure (operational and commercial)

Existing interconnections



Physical integration by 2024



Further new interconnections in preparation



Source: World Bank

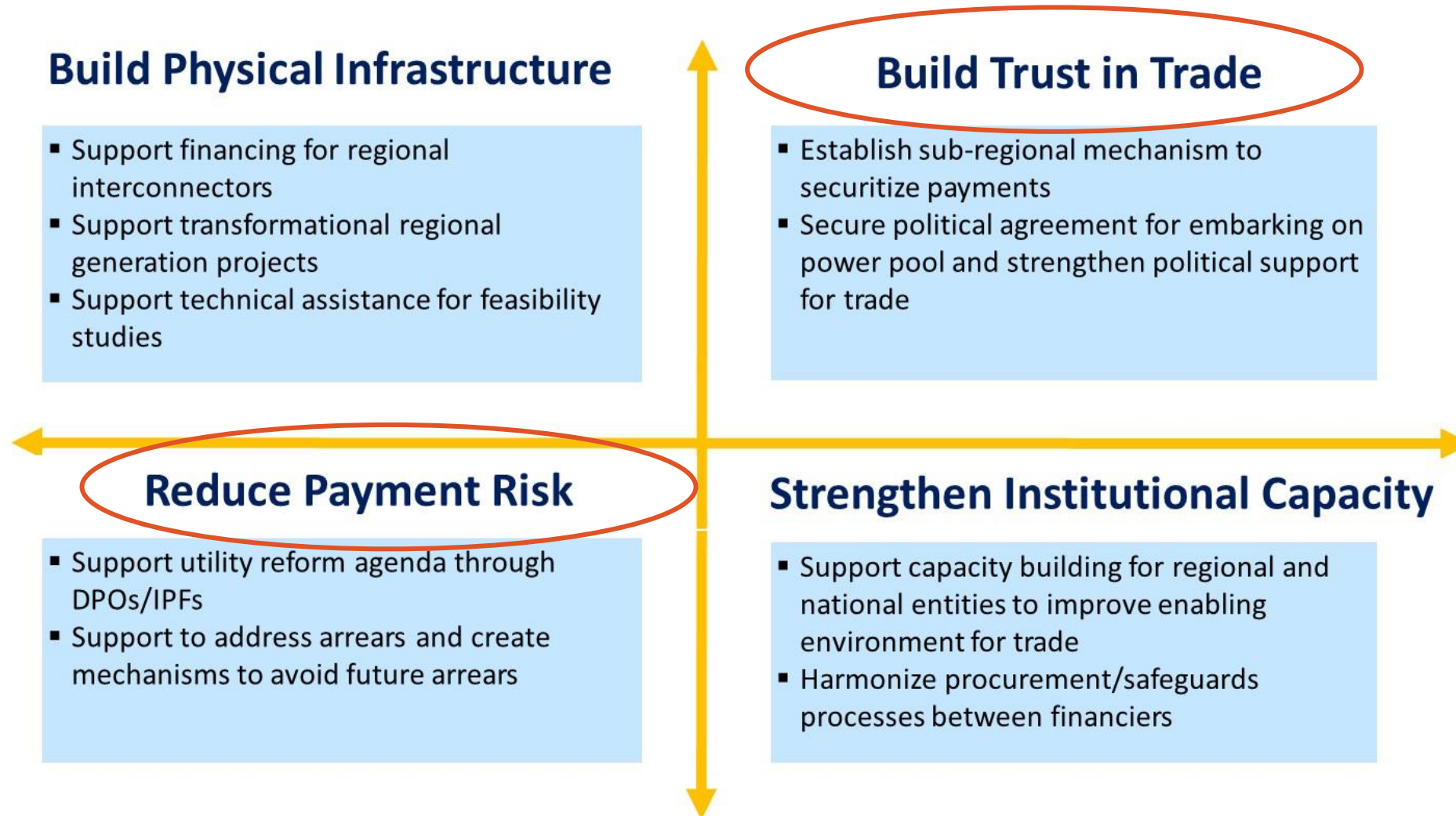
Note: blue lines represent existing transmission lines; red lines represent transmission lines that are under construction or for which funding has been secured; and dotted lines represent transmission projects without funding.

**By 2024, all WAPP members will be interconnected, but power trade will not grow significantly until adequate market conditions are in place (see next slide for key barriers to be addressed)**

## **Regional Markets – Switching Focus:** Regional challenges hampering the development of cross-border electricity trade

- 1. Lack of Creditworthiness of Utilities:** None of the trading utilities are creditworthy and most face serious liquidity constraints, until the financial strength of the utilities improves it will be difficult to enforce payment.
- 2. Political Involvement in Trade:** While bilateral contracts are framed as commercial exchanges among utilities, in practice their implementation is strongly affected by political considerations and regional solidarity.
- 3. Need to Strengthen Bilateral Contracts:** While bilateral contracts in the region follow many good practice criteria, there is considerable scope to strengthen and improve them further.
- 4. Legal Protections Seldom Invoked:** Nevertheless, even where good practice legal protection exists in current contracts, there is a marked reluctance to invoke and enforce any legal protections.
- 5. Sovereign Guarantees Seldom Used:** Although there are almost no sovereign guarantees provided for bilateral contracts, in practice governments always step in to pay-off accumulated arrears sooner or later.

## Regional Markets – Switching Focus: Achieving a well-functioning regional power market involves working on many dimensions at once





## Regional Markets – Switching Focus: Achieving a well-functioning regional power market involves working on many dimensions at once

- ECOWAS Directive approved in late 2018
- Developed with World Bank Technical Assistance (ESMAP)
- Member states are required to *adopt Legislative, Regulatory and Administrative Provisions required to enforce compliance with the Directive*



### MINISTRY OF ENERGY

Reduce power generation costs by:

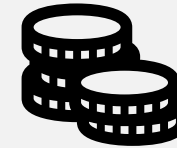
- ✓ Least cost planning
- ✓ Competitive procurement
- ✓ Energy security cost ceiling
- ✓ Tariff/subsidy regulations



### ELECTRICITY UTILITY

Improve and sustain performance:

- ✓ Revenue collection
- ✓ Distribution losses
- ✓ Adoption of ERERA standard contract



### MINISTRY OF FINANCE

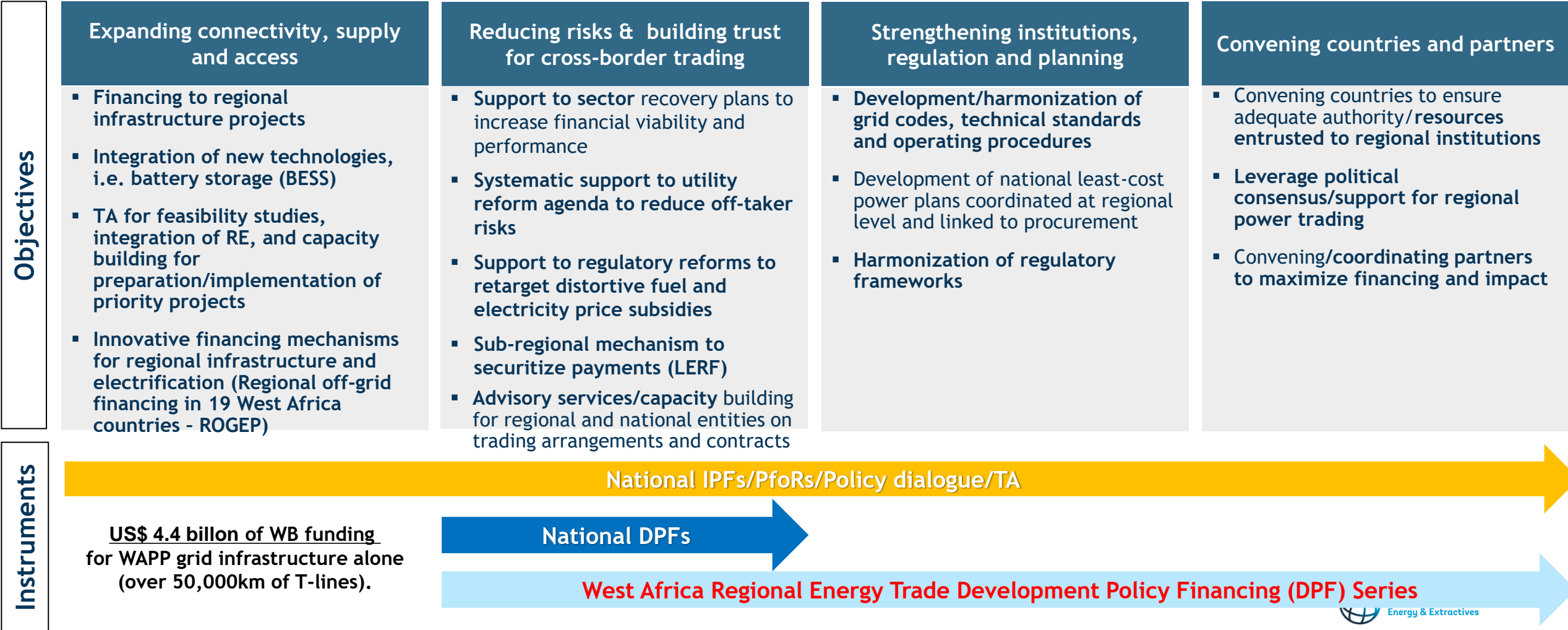
Ensure adequate utility revenues by:

- ✓ Paying public sector bills
- ✓ Adopting cash waterfall
- ✓ Timely approval of tariffs and transfer of compensating subsidies
- ✓ Accounting and monitoring energy-related contingent liabilities
- ✓ Payment guarantees



# Regional Markets – Instruments: WBG strategic areas of engagement spanning from hard to soft infrastructure

*WBG key financier of regional interconnections and equally focusing on helping strengthen market conditions through policy dialogue, diverse instruments, integrated technical assistance and partnerships*



## Regional Markets – Instruments: The Regional DPF series coordinates national reforms knitting regional and country engagements together

1. Programmatic series of two single-tranche DPFs using Regional IDA for the first time
  - *6 target countries:* Cote d'Ivoire, Burkina Faso, Guinea, Liberia, Mali and Sierra Leone
  - *Programmatic approach* to ensure sustained progress towards the establishment of secure power trading arrangements in the regional market
  - First tranche (*DPF1*) involving *\$300 million of overall financing* including credits and grants
2. Builds on key reforms included in new ECOWAS Directive approved in late 2018
  - Developed with Bank TA (ESMAP)
  - Member states are required to adopt *Legislative, Regulatory and Administrative Provisions required to enforce compliance with the Directive*
3. Under DPF1, total of 30 Prior Actions (PAs) met by 6 countries (see next slide)
  - Common matrix
  - Some of the prior actions crafted to allow country specificity

## **Regional Markets – Instruments:** DPF1 supports operationalization of the ECOWAS Directive at the national level, for results at the regional level

<b>Increase confidence in commercial arrangements</b>	<b>Prior Action 1:</b> Adoption by countries of PPAs with enhanced principles for cross-border trade <b>Prior Action 2:</b> Mechanisms to give confidence on prioritization of payments for imports and penalties relating to non-delivery. Payment program for arrears
<b>Implement least cost investment decisions that consider regional options and regulation enabling cross border trade</b>	<b>Prior Action 3:</b> Decisions on the basis of regional least cost planning/transparent economic justification <b>Prior Action 4:</b> Adoption of WAPP Operational Model and Methodology for Wheeling Charges
<b>Support transparency of financial sustainability plans</b>	<b>Prior Action 5:</b> Sector Recovery Plans including change in fuel mix and regional reporting (to ERERA)



## Regional Markets – Instruments: International experience in payment securitization

Best Practices	Australia NEM	Italy EMEO	Central America SIEPAC	Southern Africa SAPP
<b>1. Purchasers must provide cash deposits or unconditional guarantees</b>				
• Cash deposits and bank or government guarantees required to join market	✓	✓	✓	✓
• To trade, security must be at least equal to existing payables and value of trade	✓	✓	✓	✓
<b>2. Escalating measures to deal with continued non-payment</b>	✓	✓	✓	✓
<b>3. Enforcement measures activated on default</b>	✓	✓	✓	✓
<b>4. Tightly defined and standardized reconciliation and settlement process</b>	✓	✓	✓	✓
<b>5. Centralized payment mechanisms</b>	✓	✓	✓	✓
<b>6. “Supplier of last resort” mechanism to safeguard security of supply</b>	✓	✓	✗	✗

## Regional Markets – Instruments: Liquidity Enhancing Revolving Fund (LERF) may help build a fully functional regional power market

**Definition:** *Collective risk mitigation scheme for WAPP participants (“Members”), guaranteeing standardized cross-border trades*

### Objectives:

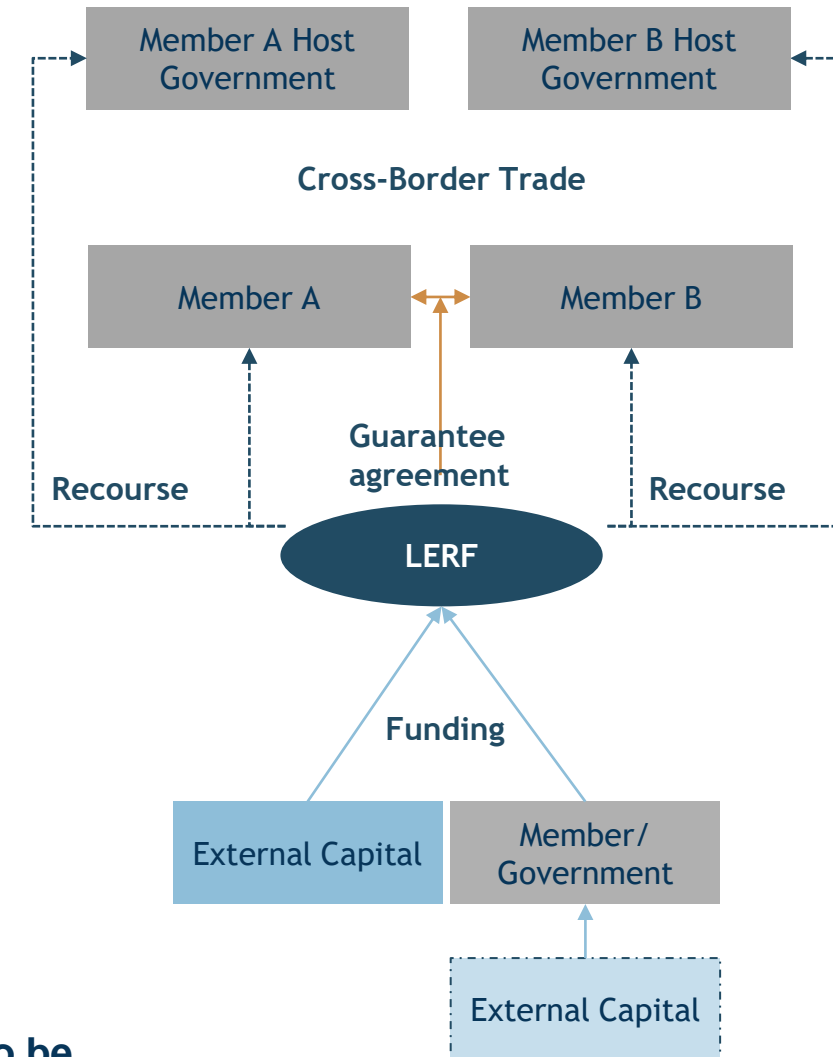
- Use-short term liquidity support to facilitate regional power trade
- Standardize good behaviours by power traders by setting membership requirements, applying penalties where required, increasing transparency
- Serve as a coordination platform to complement existing regional structures such as WAPP
- *Ultimately, supports the development of an effective and efficient regional market, encouraging growth and private investment*

### Structure:

- Capital base and OpEx funding composed of Member (and/or their host government) contributions and external capital from Donors/DFIs
- Members will also pay annual membership fees to support OpEx
- Donors/DFIs can directly contribute to LERF or can indirectly top-up Member/government contributions
- Governments to provide recourse agreement to utilities to ensure replenishment of LERF in the event of non-payment or non-supply by the Member

### Status:

- LERF concept/structure/procedures to be agreed with all partners and the concept to be handed over to ECOWAS/WAPP to coordinate consultations with members





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**Thank you.**