AFRICAN SCHOOL OF REGULATION

ASR Conference Series

POWER POOLS IN AFRICA: RELEASING THE POTENTIAL OF REGIONAL POWER TRADE

Open issues and key lessons learned

May 11h, 2023

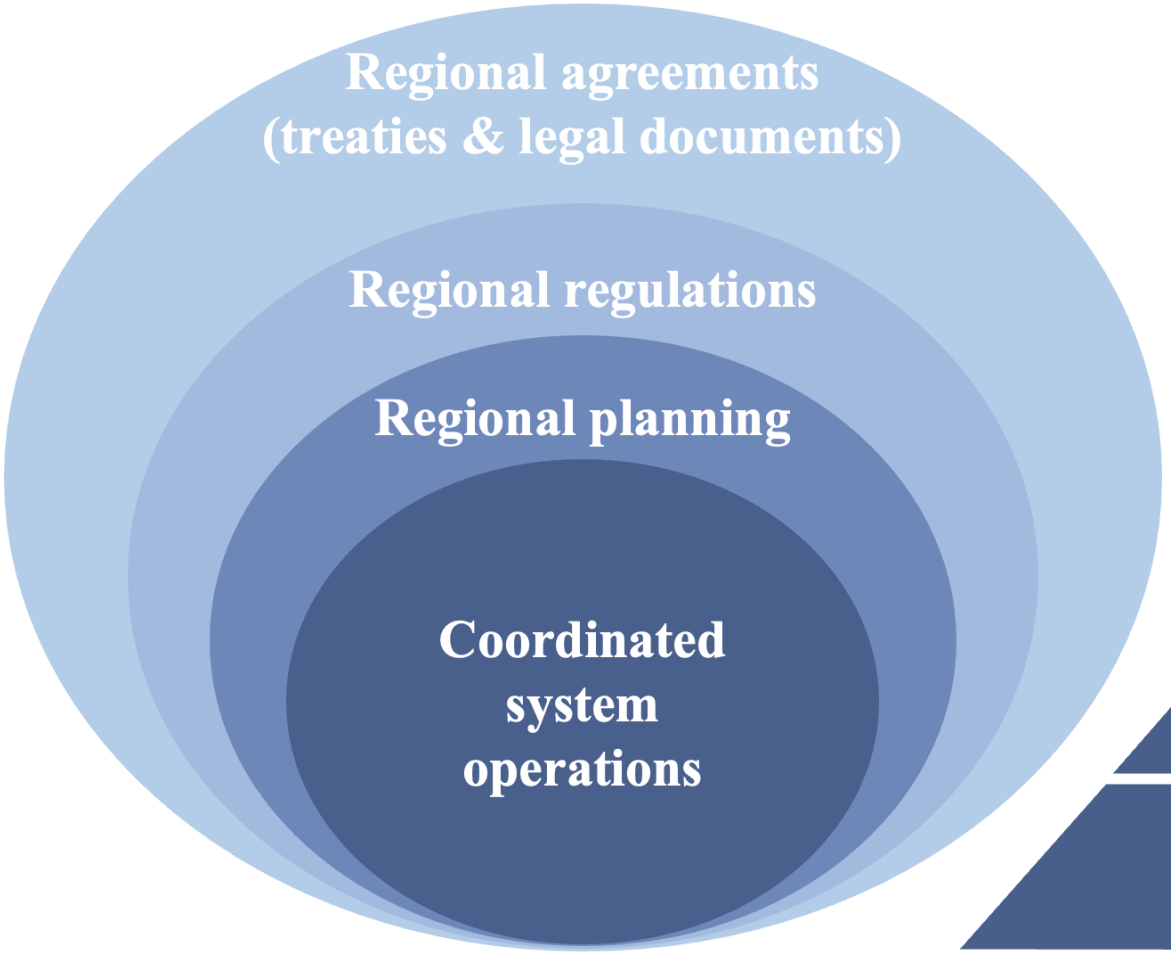
Major topics

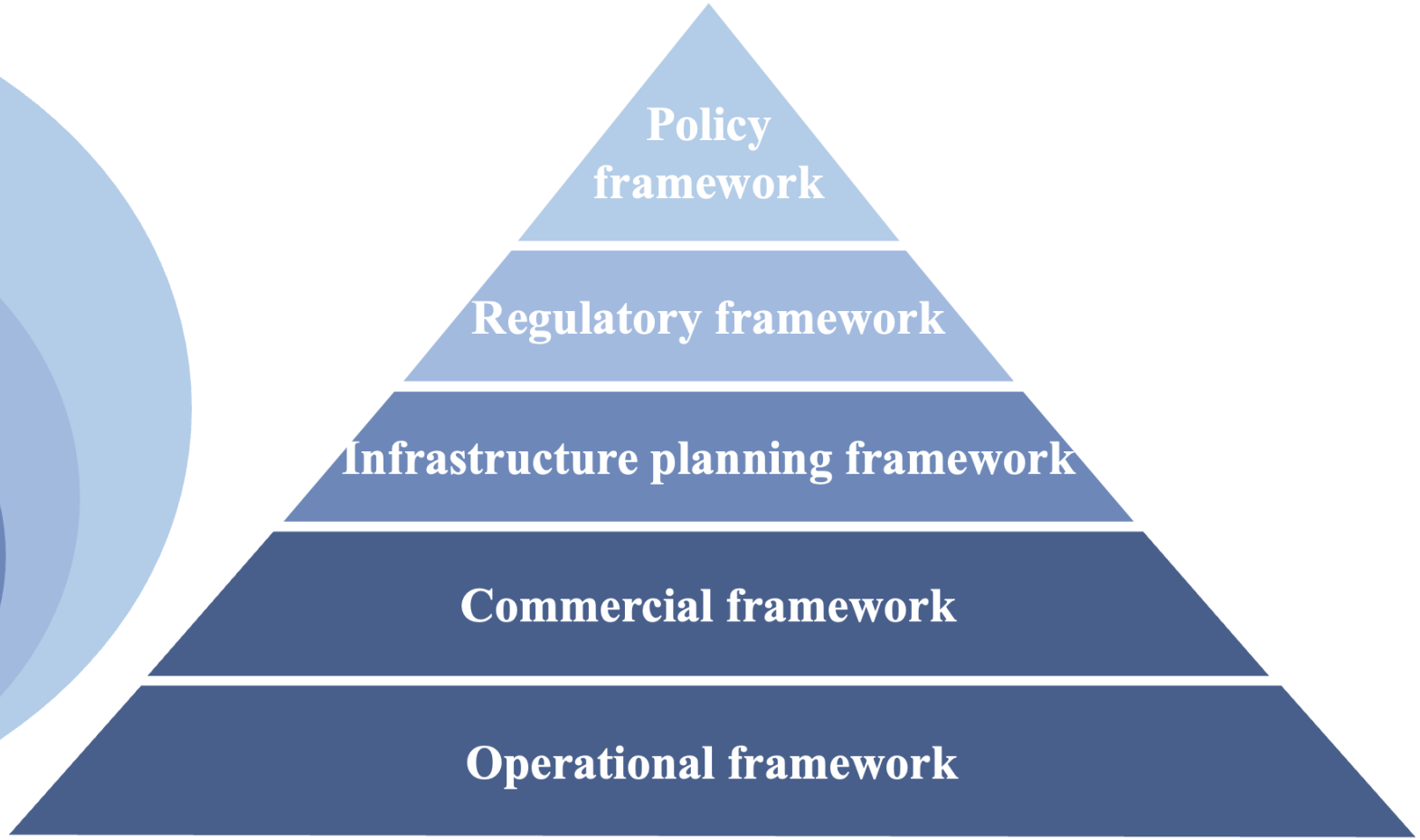
Governance
Planning
Regulation of cross-border trade
Transmission regulation

Governance

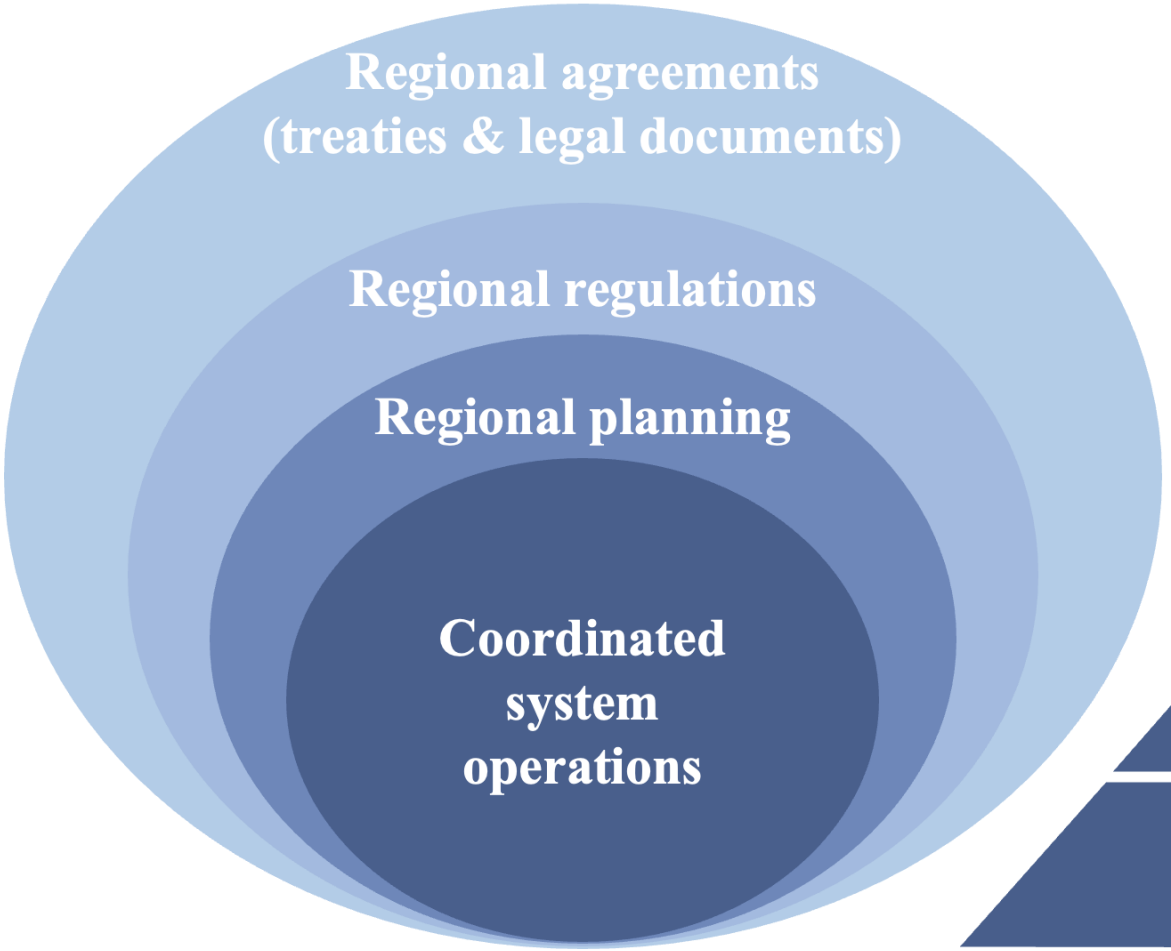
Open issues & forceful ideas

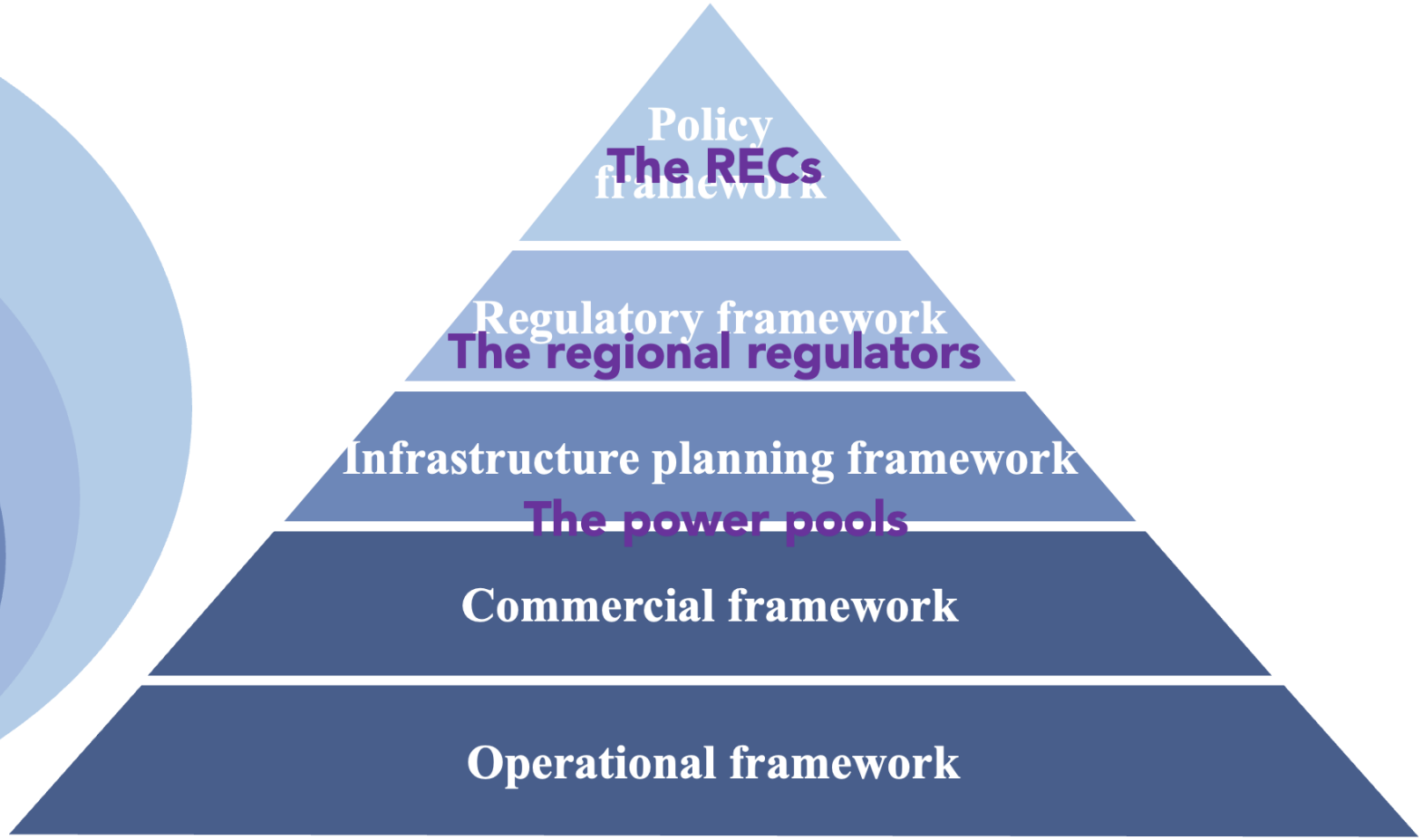
Functions & the corresponding institutional frameworks in regional power trade





Functions & the corresponding institutional frameworks in regional power trade in Africa





The power pools organisations

	SAPP	West African Power Pool	THE EASTERN AFRICA POWER POOL ADDIS ABABA
Operation Committee	✓	✓	✓
Planning Committee	✓	✓	✓
Coordination Centre	✓	✓	
Market Committee	✓		
Investment Facilitation	✓	✓	

Responsibilities of regional regulators

Mandate	RERA - SAPP	ERERA - WAPP	IRB - EAPP
Regulation of cross-border exchanges		✓	✓
Regulation of regional transmission tariff		✓	✓
Regulation of bilateral contracts		✓	✓
Regulation of organised markets		✓	✓
Dispute resolution		✓	✓
Enforcing capabilities (applying regulations, standards and procedures)		?	

Open issues & forceful ideas – 1

- All "**open positions**" must be filled.
  - **Regional regulators & system/market operators** with executive power on regional matters.
  - Ensure that regulation, once enacted & hopefully correct, is implemented. This requires an **enforcement authority** at higher level.
- **Capacity building** is needed at the base: national regulatory authorities & stakeholders.
- The **importance of political economy** *(understand the motivations of each stakeholder)* & how **trust** / **self-interest** are necessary ingredients.
  - Improvement of security of supply & lower energy costs are always strong **motivations.**

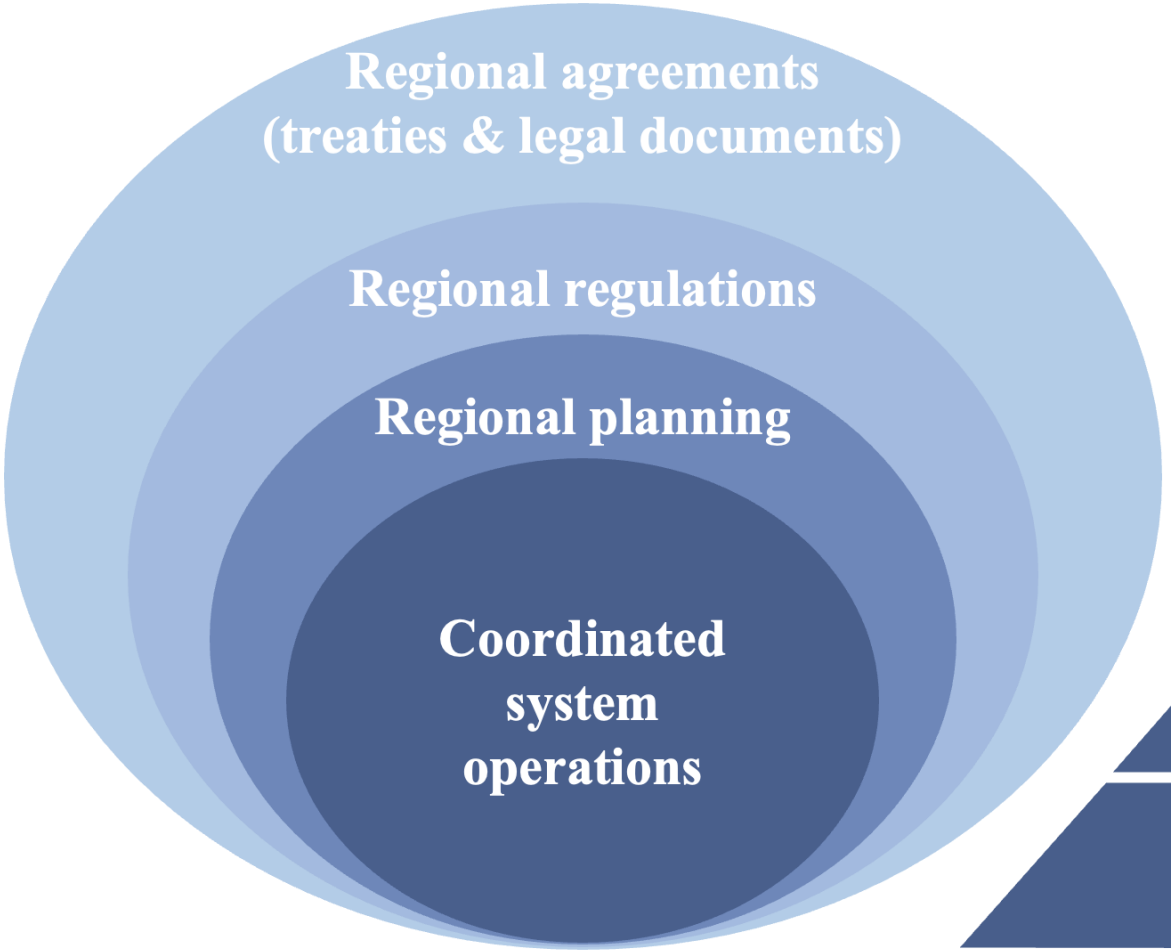
Open issues & forceful ideas – 2

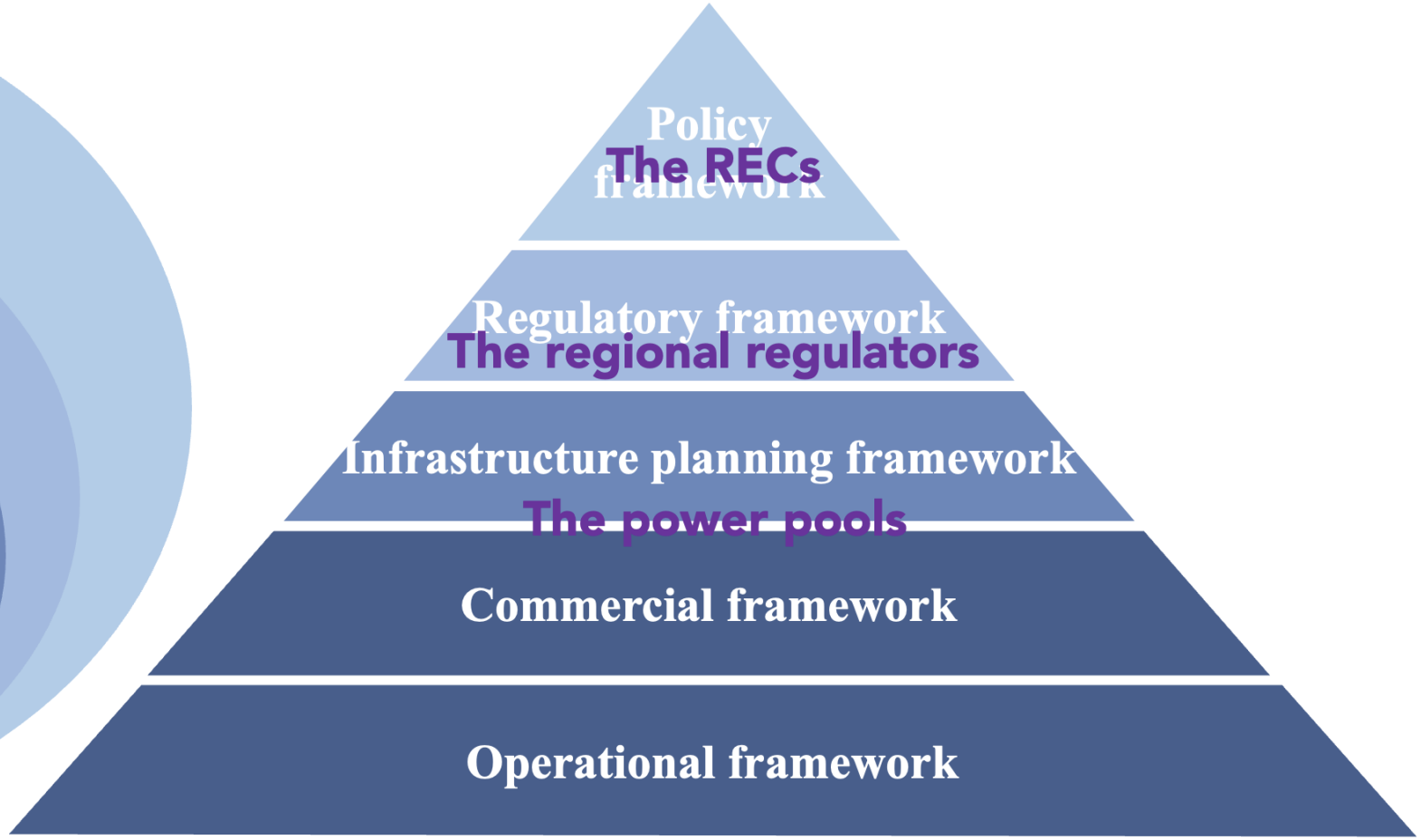
- **Regulatory harmonisation** *(some minimum level must be mandatory)* must be done with the "**single system paradigm**" in mind.
- The need to open cross-border trade to **all kinds of agents** that qualify.
  - Poor creditworthiness of off-takers deters trade, as well as investment in generation & transmission. **Intermediaries may help.**
- **Learn from regional approaches** before jumping to continental ones.

Planning

Open issues & forceful ideas

Functions & the corresponding institutional frameworks in regional power trade in Africa





Open issues & forceful ideas – 1

- Acute need for **more cross border transmission capacity**.
  - Regional transmission planning requires a **specialised organisation** capable to **integrate the top down** (regional) **& bottom up** (national) perspectives into a regional transmission expansion plan…

    … to be **enforced** by a higher authority.
  - **Plan for the unexpected** because it will happen.
    - More interconnection capacity is always better in the long run.
    - Cost / benefit analysis may be unable to capture this.

Open issues & forceful ideas – 2

- Make sure that **unnecessary risks** & **conflictive cost allocation rules** are avoided.
  - There must be some regional authority to resolve disputes.
  - Apply a combination of **enforcement measures & subsidies** for high-priority projects.
- Planning is more challenging & necessary because of variable renewable penetration & potential generation resources of regional dimension.
  - Capacity expansion planning must be complemented by **technical analysis** of operation constraints.
  - **Political considerations** may interfere with bilateral or multilateral agreements to build regional infrastructures.

Regulation of cross-border trade

Open issues & forceful ideas

Open issues & forceful ideas – 1

- **Correct regulation** is key to attract investment & for efficient operation.
- **Acknowledge history** *(bilateral contracts linked to projects)* & design a **phased evolution** towards a **future target model**.
  - The goal is not necessarily a competitive market, but an efficient utilization of the existing resources.
  - Organised short-term regional markets **open the mind to multilateralism**.
  - The challenge is to **combine efficiency** in the dispatch of generation with the need for **security of supply**.
  - **Physical bilateral contracts** must be replaced by a better solution, which could be a combination of purely financial contracts & guarantees of supply **only** in situations of curtailment. Simplicity & standardisation will help, as a regional grid code.

Transmission regulation

Open issues & forceful ideas

Open issues & forceful ideas – 1

- **Correct regulation** is key to attract transmission investment & to avoid impediments to power trade.
- **Acknowledge history** *(bilateral contracts linked to projects)* & design a **phased evolution** towards a future target model. The need for a "vision".
  - Avoid deviations from the orthodox rule of "regulated revenue requirement based on the **efficient cost-of-service or the outcome of a tender**" in the remuneration of transmission assets.
  - Align with best international practices in the **allocation of the costs** of regional transmission infrastructures.
  - Minimise efficiency distortions in the choice of the **format of transmission charges.**

Open issues & forceful ideas – 2

- *Avoid deviations from the orthodox rule of "regulated revenue requirement based on the efficient cost-of-service or the outcome of a tender" in the remuneration of transmission assets.*
  - Revenues to pay transmission costs must be ringfenced.

Open issues & forceful ideas – 3

- *Align with best international practices in the allocation of the costs of regional transmission infrastructures.*
  - Transmission charges **must not depend on commercial transactions**.
  - Cost of regional transmission assets could be **allocated to countries**, giving freedom to national authorities to design the internal charges.
  - **National charges must give access to trade** at regional level.
  - If these principles are followed, the implementation details do not matter much, except for the **format of the charges** to the final agents.
- **Much capacity building is needed** in this topic, since the correct approaches are often counterintuitive. And good data is needed.

Open issues & forceful ideas – 4

- Minimise efficiency distortions in the **choice of the format of transmission charges. What not to do:**
  - Volumetric charges to generators distort their variable costs.
  - Capacity charges to generators overcharge low-utilization plants.
  - Lump sum annual charges based on coincidental peak demand could be an interesting alternative.
  - Stable & locational signals announced well in advance can contribute to a better generation siting decisions.
  - Transparency & simplicity are also valuable features.
- Perhaps this topic could be debated in a future ASR event.

Thanks