Market Code Consultation WS 6

International Trade
How will this be managed in SAWEM?

Requirements to be allowed to trade in SAPP

- **Operates or contracts** generation capacity or a load of **at least 5 MW** that is physically connected to the SAPP Grid; and

- Having been **licensed or given permission** by the host country to undertake **cross border** trading

- **Power is not be tied to a single buyer contract**; or, where such contract exists, must have counter party consent to trade the contracted power on the market; and,

- **Possess capability of balancing** agreed schedules or **must have a contract for balancing agreed schedules** with a SAPP operating member.

- **Acceptance** as a Market Participant **by SAPP Executive Committee**

- Signing the **SAPP Market governance documents**

- Opening of the requisite **accounts for trading purposes** and having the requisite security for trading purposes

- Have at least two trained Traders

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Who shall be allowed to trade on SAPP

- **Will the RSA market will be a Gross or Net pool?**
  - A gross pool means that the market participants will have to provided their full generation/consumption to the market (pool), whilst a Net pool would allow for trade outside the Pool.

- At least from the outset, the market could be seen as both:
  - For those who has a Capacity payment, it will de facto act as a Gross Pool, as the basis for this capacity payment is that they are paid to be available for the local market and thereby they should also offer their power to this market only.
  - For IPPs or other generators without a PPA, the market is a net pool – meaning that they will have an option/choice if they would like to trade in the national market, bilateral or regional

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Who shall be allowed to trade on SAPP – and how to manage?

Some of the initial high-level questions that creates some of the potential issues:

- The new RSA market implies competition between national buyers and sellers

- The current market model is based on a "co-optimised centrally dispatched model" implying that market participants will not control their own assets from a "market optimisation" point of view

- Currently, the International Trader sits within NTCSA

- As a starting point, one could argue that with the local competition being established, they should also be allowed access to the regional market

- One of the main issues is that the market setup is different and also (potentially) the timing of these

- Another issue is that, at least from an Eskom Gx/Dx point of view, their main income source would be the Capacity payment and thereby their orders in the national market will be low based on marginal costs.
    - The main issue is that if they bid their marginal price – they will probably be very competitive in the SAPP markets… This would have two negative results: South Africa will "sponsor" SAPP with the capacity payments; and secondly, the competing generators in SAPP would say that Eskom "dumps" power in the regional market pushing them out of competition.
    - Will they be able to calculate a "full" costs for their power plants?

Who shall be allowed to trade on SAPP –
Long- and medium-term trading

- SAPP has a forward physical market for monthly and weekly trading (and allows for long-term bilateral contracts)

- Some clarifications:
    - Should any RSA market participant (subject to be allowed by SAPP to become a market participant) be allowed to sign a long-term cross-border bilateral agreement? This would require access to the interconnection and thereby subject to an agreement with Eskom Tx and should normally not be allowed. **As a starting point, this should not be allowed**.
    - Who will be the formal counterpart for the current regional bilateral contracts that Eskom holds? International trader holds the legacy contracts – ***the proposed solution is that it could become part of CPA as the management of these would be very similar to the legacy IPP contract***
    - For a generator that is allowed to trade with a buyer in SA, this can **be both a physical or financial contract**
        - if physical agreement, they are BRPs and self-nominate to NTCSA MO,
        - if financial, they would offer their full volume to NTCSA MO and be scheduled by it

- **Any non-Capacity Payment RSA market participant is allowed to trade**

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Who shall be allowed to trade on SAPP –
## Day-ahead market

- Here the difference in models plays a role:
  - SAPP has a self-dispatched, portfolio-based simple hourly orders. They will calculate one result per portfolio that is not connected to any physical asset.
  - RSA will have a centrally dispatched market with unit-based complex bidding and a co-optimised algorithm where also the same orders with the same information will be used for DA, reserves and balancing.

- The optimal solution is to allow for trade **both direct and through the NTCSA MO**

- The non-Capacity Payment RSA Market Participants should be allowed to trade directly (subject to being accepted as SAPP Market Participants)
  - They will self-schedule the result to NTCSA MO as any other normal physical bilateral contract.

- The NTCSA MO will participate in the SAPP DAM based on their orders in the national market:
  - The NTCSA MO will perform a pre-run of its optimisation and "translate" this to a common order representing all RSA Market Participants in their market and submit this to SAPP DAM – and then take the result as a "deemed flow" into its market optimisation afterwards
  - An important detail: the NTCSA MO needs to do this based on the orders received, but also create a "capacity payment adder" to this order
  - It shall use the NEC methodology (see next slide) which is a commonly used methodology for this

  - A small issue: In this case, SAPP will calculate a price for this power sourced from RSA – this will not be equal to the local RSA price; how to manage the difference?

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What is a NEC – Net Export Curve?

This is a solution for how the NTCSA MO can bid into SAPP

- Single hourly orders (to SAPP) should be based on the RSA NEC(s) where:
- NEC is the difference between local (i.e. per Bidding Zone – not sure if we need to differentiate, but maybe) aggregated supply and demand curves (in case of perfectly inelastic demand the NEC consists only of supply)
- Will represent the sensitivity of the system marginal price (SMP) relative to exchange volumes from the RSA perspective
- Contains minimum amount of required information for bidding into the SAPP DAM
- NTCSA MO needs to ensure non-violation of internal constraints when constructing the NEC
- NEC construction requires a well-defined & **transparent** methodology
- In the diagram below; inport means buying from SAPP where export means selling to SAPP

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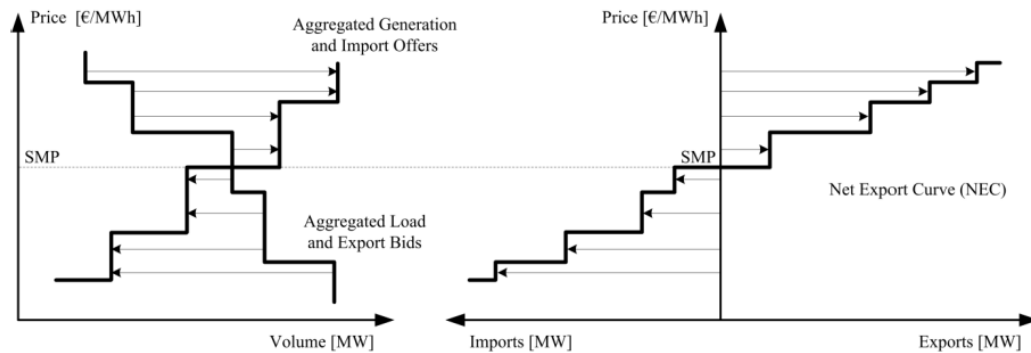
How to manage the interaction between SAPP and SAWEM
Results from SAPP needs to be taken into consideration in SAWEM

- As explained, the NTCSA MO will create a NEC that represents one part of the RSA participation:
  - This will be rather simple, as explained earlier, the NTCSA MO will receive the results from its bidding and it will be treated as a deemed flow and as a price taker.
  - The NTCSA SO will be the BRP of these trades towards SAPP as the results will be incorporated in the constrained calculation and any imbalances will be managed as part of the SAWEM.

- However, we also need to cater for the Non-Capacity Payment market participants that are allowed to trade directly.
  - Their financial settlement with SAPP will be managed as per the SAPP rules
  - The NTCSA SO will still remain BRP for South Africa towards SAPP
  - However, the traded results from SAPP will be sent to the NTCSA as part of its BRP report from SAPP that will enable them to identify the trades done by RSA participants and take those into account towards the market participant in the imbalance calculations in South Africa.

- One interesting question would be: Why should anybody opt to trade directly in SAPP?
  - For FPM it is clear; this is not available within SA
  - By trading in SAWEM DAM you will implicitly be offered to SAPP if not chosen in SAWEM – and automatically be part of national IDM and national BM…
  - For IDM, you might be able to get chosen in the continuous IDM in SAPP – but need to maintain a 24/7 desk…

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Who shall be allowed to trade on SAPP –
Intra-day market

- Here the same difference in models also plays a role:
  - The SAPP IDM is continuous market where market participants are offering buy/sell orders continuously and the matching is also continuous. There is a separate bidding function for this market beside the DA.
  - In RSA with unit-based complex bidding and a co-optimised algorithm where also the same orders with the same information will be used for DA, reserves and balancing, and where the IDM is based on an auction.

- Again, the RSA Non-Capacity Payment market participants should be allowed to trade directly.
  - The same as for DAM, they will nominate this as any bilateral physical contract to the NTCSA MO
  - One detail that needs to be part of the market rules is the harmonisation of timelines.

- Should the NTCSA MO act on the SAPP IDM?
  - Currently, we believe the answer is No. This is based on the differences between the two models.
  - There could be a theoretical solution to implement this, but it would require that the SAWEM to be closed for a period that in return could create other problems.

  - Another (and potentially better solution) is to get into a dialogue of having SAPP also opening an auction-based intraday market.

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Who shall be allowed to trade on SAPP –
Balancing market

- Here more or less the same issues as for IDM exists, but the benefit is that the BMs are more similar in operations

- Any Market Participants without Capacity Payments could offer orders for up or down-regulation to SAPP (if not offered through the SAWEM)

- The NTCSA SO can activate orders in the SAPP BM if these are better than the local orders.

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Who shall be allowed to trade on SAPP

- *An RSA Market Participant with Capacity payment <u>will not </u>be allowed to trade directly*
  - However, they will implicitly participate through their orders to the NTCSA MO

- *An RSA Market Participant without Capacity payment <u>will </u>be allowed to trade directly*
  - Their results will be treated as any bilateral trade inside South Africa and shall be nominated to the NTCSA MO

- **The "old" International Trader function will be split into two parts:**

  - **One for the regulated part of their current work:**
    - Support for the management of transmission capacity
    - Management of legacy bilateral contracts
    - Support in the regional interconnection asset management

  - … and the **commercial trading on SAPP** will need to find a new home
    - This is still to be determined, but the NTCSA cannot trade in the markets

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