

Training Day – Module 2B

Regional energy market integration

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The benefits of cross-border trade/ regional markets

- Reduction in the ***total costs of meeting demand***, by using a larger pool of resources
 - In the EU, market integration reduced total cost of serving demand by EUR 34 bn in 2021 alone, compared to separate national markets (source ACER)
- A larger (interconnected) system is ***more stable***
- Reduction in the ***total costs of providing reserve***, as resources could be shared and the reserve needs are proportionately lower for larger systems
- Easier ***integration of variable renewable-based generation***

Models of cross-border/ regional power trading (1)

- ***Merchant cross-border transmission projects***
 - *ElecLink (FR – UK), with capacity allocated explicitly by JAO*
 - *BritNed (UK – NL)*
 - *Cross Sound Cable (NY – CT), Neptune RTS Transmission Line (NJ – NY) in the US*
 - *Basslink (Tas – Vic) in Australia before July 2026*
- ***Exchanges over (regulated) cross-border interconnectors*** governed by:
 - ***Reserve sharing and mutual support*** (between Transmission System Operators)
 - *Any interconnected systems*
 - ***Long-term contracts*** between designated entities in the different countries
 - *Lao PDR –Thailand – Malaysia – Singapore Power Integration Project*
 - ***Exchanges between designated entities*** in the different countries
 - *EAPP (Eastern Africa Power Pool)*
 - *COMELEC (Maghreb Electricity Committee)*

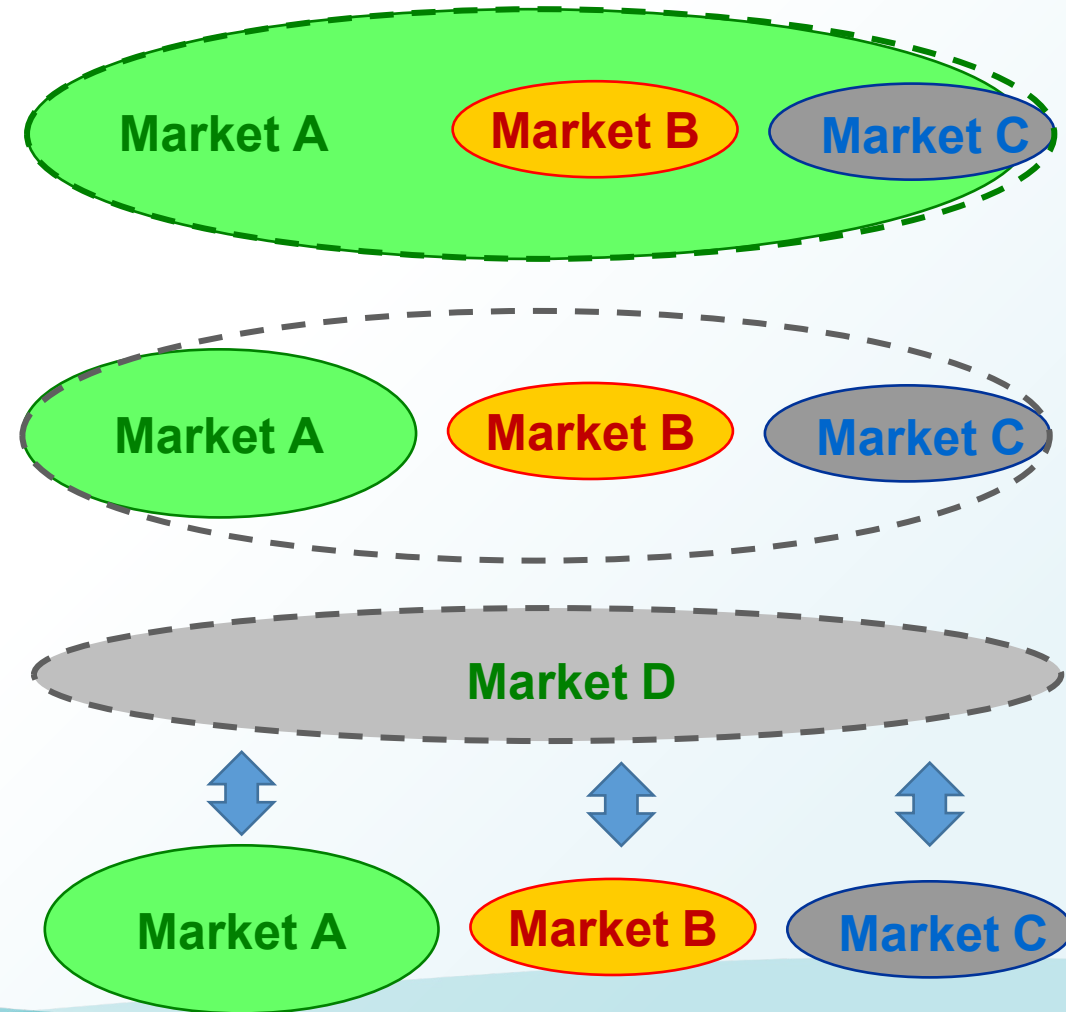
Models of cross-border/ regional power trading (2)

- ***Exchanges over (regulated) cross-border interconnectors*** governed by:
 - ***Physical capacity allocation to market actors***
 - First-come-first-served
 - Pro-rata allocation
 - Auctions
 - *JAO (Joint Allocation Office) in the EU for explicit allocation on different timeframes*
 - ***Integrated electricity market*** covering several jurisdictions
 - *EU Internal Electricity Market*
 - *US Regional Markets*
 - *Regional Electricity Market (MER) in Central America*
 - *WAPP (Western Africa Power Pool) - transitioning*
 - *SAPP (Southern Africa Power Pool)*

Regional Electricity Market Integration: Many possible models

Three possible models:

- **Extension** of the market in one jurisdiction to encompass other jurisdictions
- **Establishment** of a regional market, replacing existing markets, with new rules agreed among all involved jurisdictions
- **Superimposing** a regional market on the trading arrangements in the different jurisdictions



Extension of the market in one jurisdiction to encompass other jurisdictions

Extension of Market A and its
rules to Markets B and C

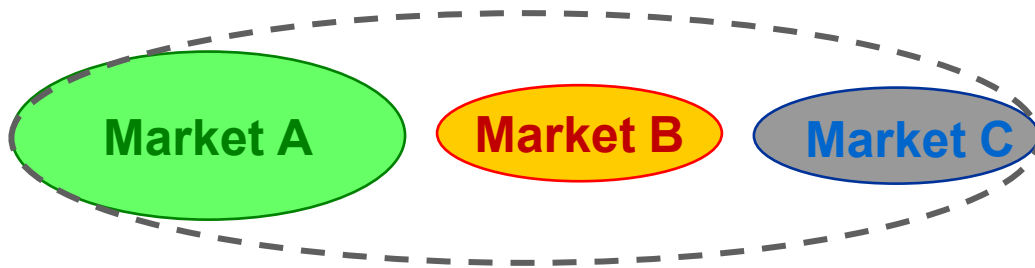


Example: Italy-Slovenia (2011) in Europe

- Easy technically to implement, as it does not require the development of new tools (as long as the existing ones can be extended to other jurisdictions)
- Well tested tools
- Jurisdictions to which the market is extended join an already well-functioning market (if so)
- Requires the acceptance of the rules of one jurisdiction by the other jurisdictions involved
- Likely to require an adaptation of the governance, however without major changes in the rules
- Participants in the 'original' market might have an experience advantage

Establishment of a regional market, replacing existing markets, with new agreed rules

New market and common rules
for the regional market

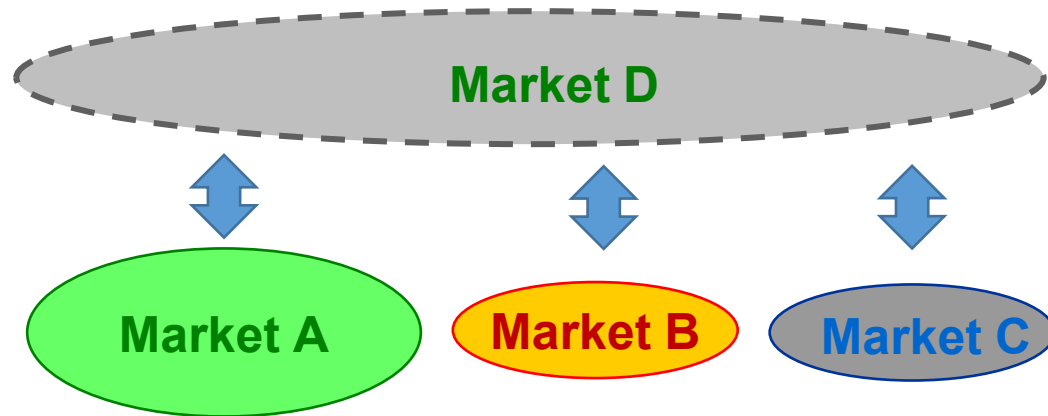


Example: the Internal Electricity
Market in Europe

- Likely to involve a more balanced governance
- Governance and rules reflect the situation of all involved jurisdictions
- Experience from any pre-existing markets can be used to develop the new governance and rules
- Requires the development of new rules and governance
- Likely to require the development of new technical trading tools (but there is significant experience around the world)
- Likely to require changes in the trading rules in the different jurisdictions involved and to take longer to implement

Superimposing a regional market on the trading arrangements in the different jurisdictions

Regional market, with its own rules,
superimposed on trading arrangements
in the different jurisdictions



- More robust to differences in trading arrangements in the different jurisdictions involved
- Regional market governance not interfering with the governance in the different jurisdictions involved
- Potentially simpler governance
- Possibly delivering less benefits than full market integration (first two models)
- Requires the development of new governance, rules and tools (but there is some experience around the world)
- Requires acceptance of regional rules by market participants



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