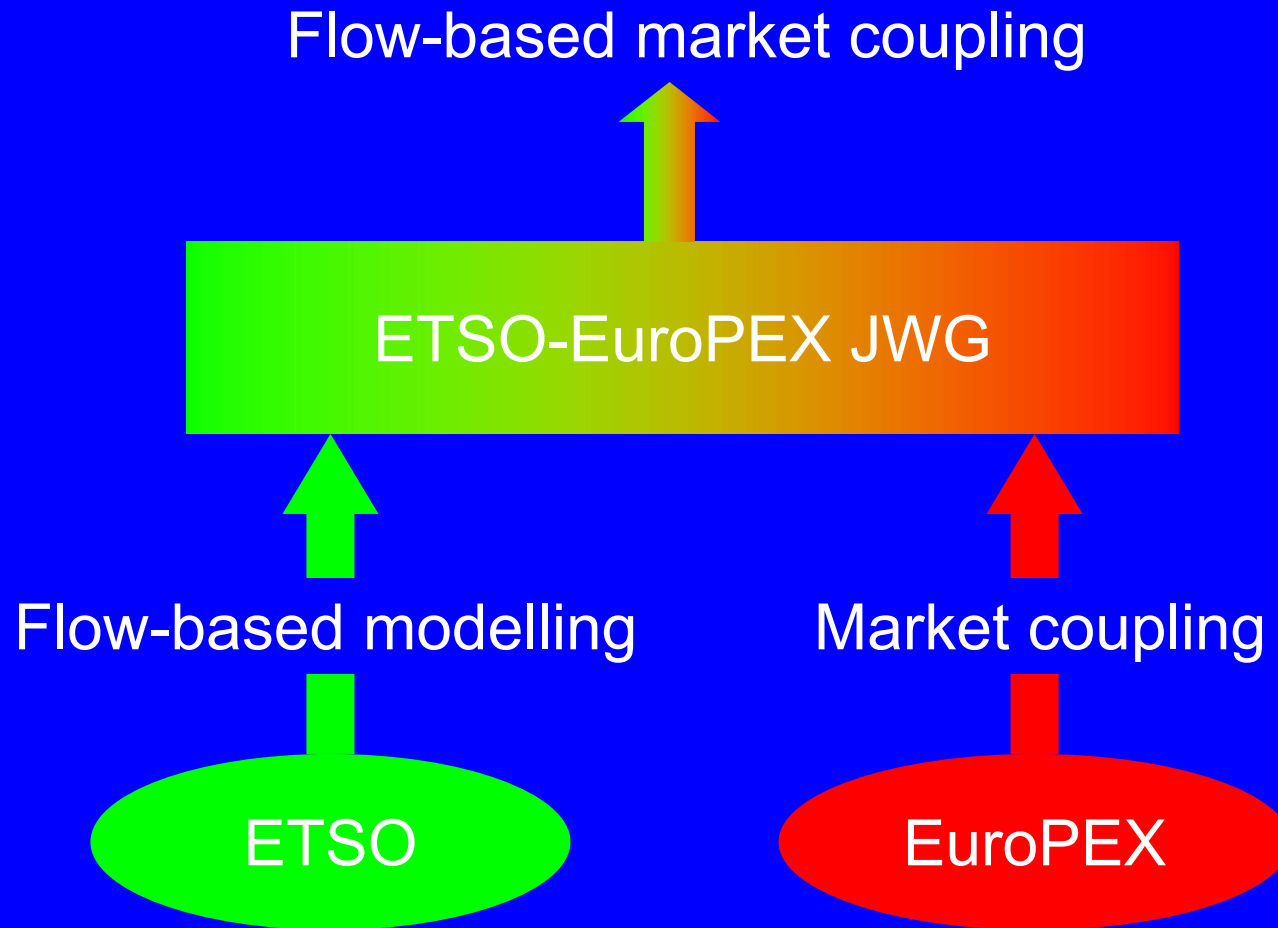


# Flow-based Market Coupling (FMC)

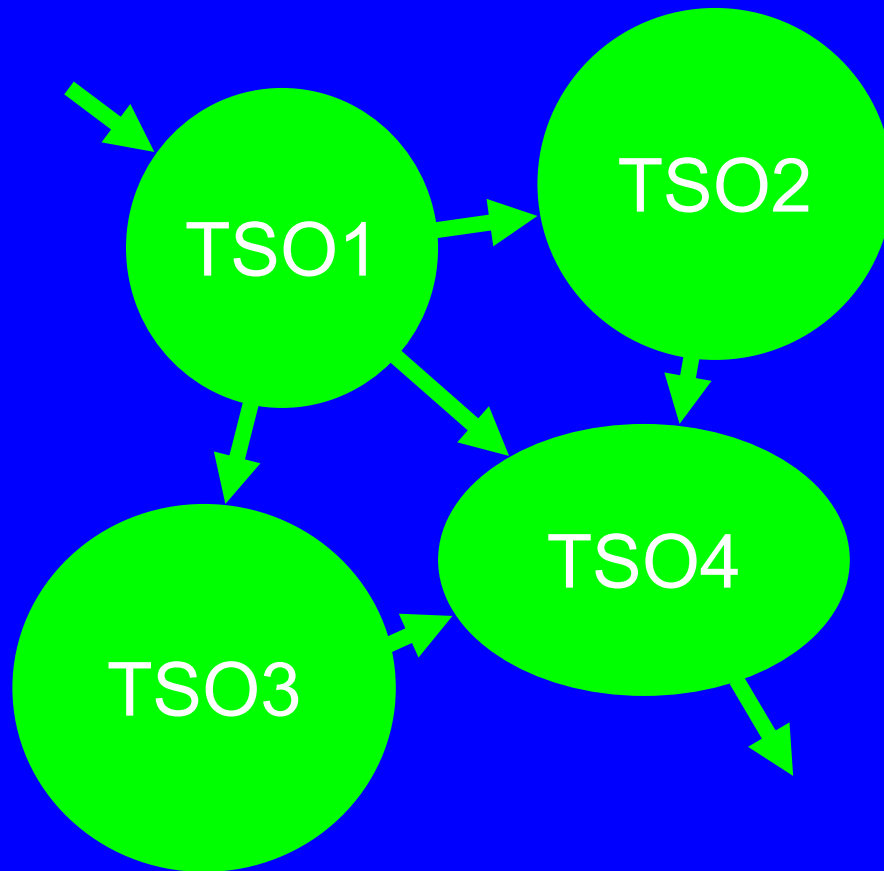
Pierre Bornard (ENTSO)

Bert den Ouden (EuroPEX)

# Origins of FMC

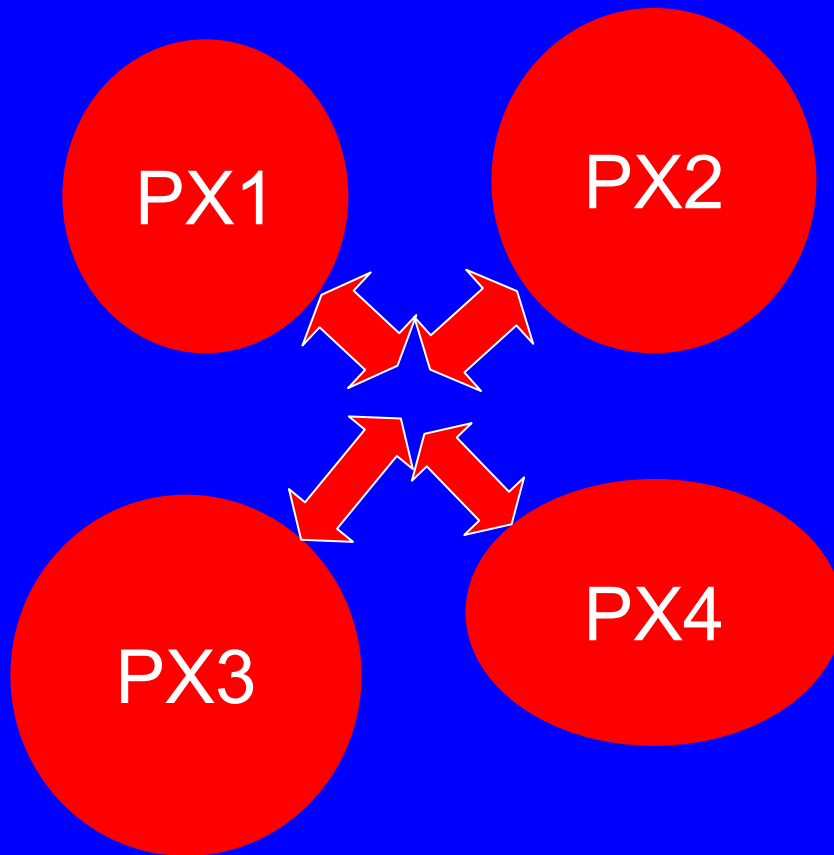


# Flow-based modelling



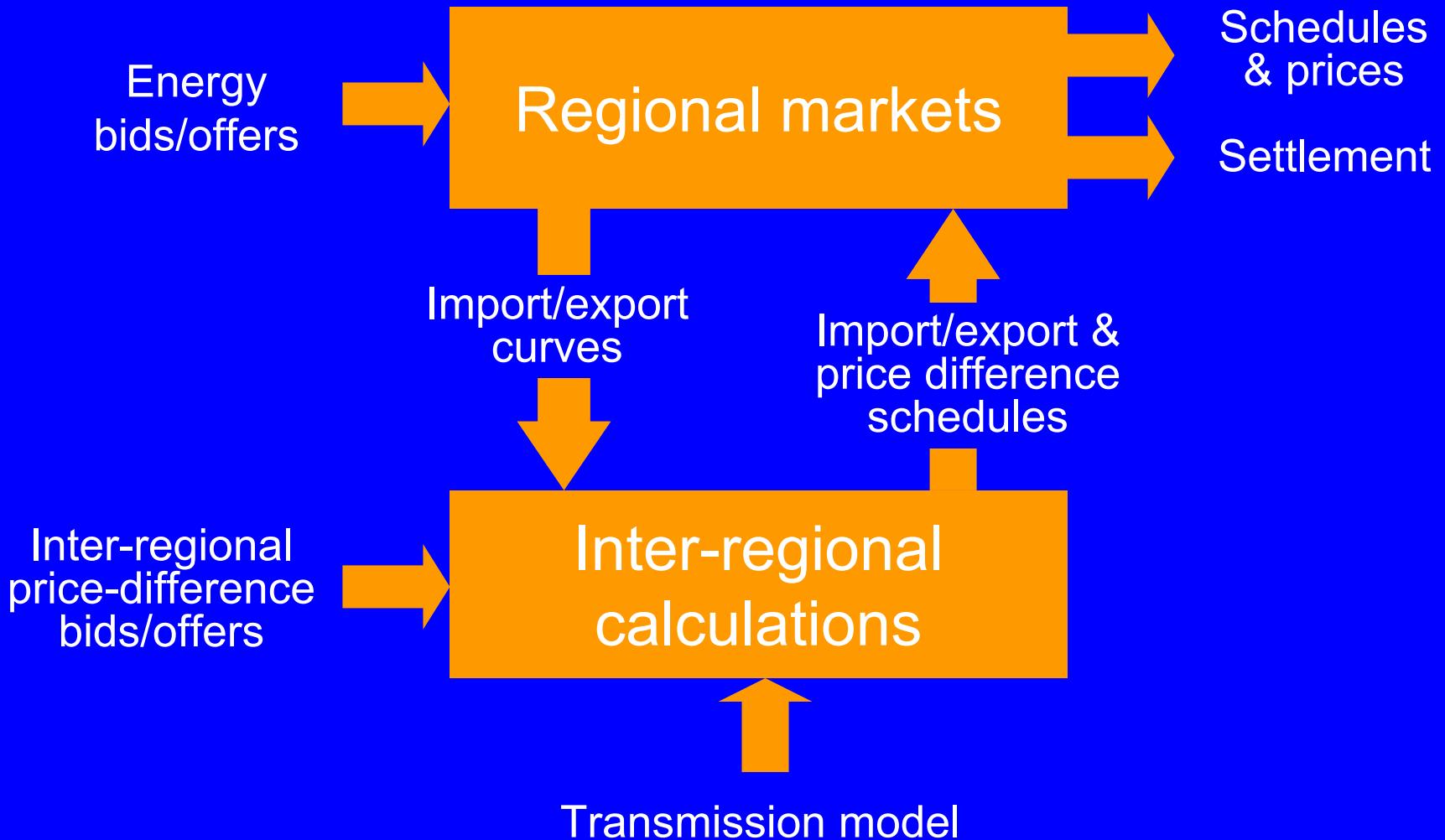
- All modelled electrical flow paths taken into account, not just 'contract path'
- Maximises use of inter-regional transmission capacity

# Market coupling



- Beneficial trading between regional markets via power exchanges
- Maximises inter-regional market efficiency

# FMC day-ahead market



# Benefits of FMC

## Congestion management

- Flow-based approach and netting maximises use of inter-regional transmission network

## Market efficiency

- Integrated capacity and energy markets eliminate unnecessary pricing risk and concentrate liquidity
- Inherent cross-border access for all market participants
- Variety of trading options: bilateral/exchange, blocks

## Feasibility

- builds on existing trading infrastructure and liquidity
- can evolve over time

# Forward markets

- FMC is compatible with
  - forward transmission rights
  - financial hedging instruments
  - options (UIOLI or UIOSI)
- So transmission capacity auctions can be used if required

# Regulatory/contractual arrangements

- Power exchanges' 'institutional' role needs to be designated and held accountable to Regulator or TSO
- Harmonisation is needed for inter-regional transmission modelling, data transfer, publishing formats, etc.
- General structure and content of regulatory/contractual arrangements has been identified



# Outstanding issues

- Technical development
  - transmission model
  - market coupling mechanism
- Evolutionary paths (Member State dependent)
- Regulatory and contractual matters, including the designated status of power exchanges
- Guidelines for consideration by EU Comitology
- Advisory guidelines for local projects

# Conclusions

- FMC enables a suitable balance between effective congestion management and efficient energy trading
- The key is to introduce an administered FMC scheme at the day-ahead stage, allowing flexibility in forward market and balancing arrangements
- Further investigation of technical, regulatory and contractual matters is necessary