



# ETA Workshop 1.3

13/11/2014

# Agenda

- Introduction
- Currency
- Participant Registration
- Clearing & Settlement
- Credit Risk
- Treatment of VAT
- Cross Border Shipping (Financial)
- Market Information



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## Currency

# Currency Risk

- Wholesale market covers two jurisdictions
  - each using their own currency
- Trading in both euros and pounds sterling
- Participants submit offers in local currency
- Participants settle transactions in local currency
- Currency Risk occurs when
  - transactions are denominated in a currency other than the local currency payments; and
  - where transactions are committed to at one point in time
  - and settlement takes place later
  - exchange rate may have moved
- Currency Cost (which may be positive or negative) occurs when
  - there is a net flow in payments between currencies; and
  - payments are settled at an exchange rate different to the rate prevailing when participants committed to the transaction

# Example – Currency Risk

Currency Risk (Assuming market denominated in euro)

- NI Generator sells 100MWh at 52.50 £/MWh on day D
- NI Supplier buys 100MWh at 52.50 £/MWh on day D
- €/£ Exchange rate is 0.84
- Transaction is priced at 62.50 €/MWh
  
- Transaction is settled on D+X at 62.50 €/MWh
- €/£ Exchange rate has moved to 0.8
- NI Generator receives 50 £/MWh
- NI Supplier pays 50 £/MWh
  
- Payments balance although the transaction has not been settled at the price anticipated

# Example – Currency Cost

Currency Cost (Assuming market is denominated in euro)

- NI Generator sells 100MWh at 52.50 £/MWh on day D
- ROI Supplier buys 100MWh at 62.50 €/MWh on day D
- €/£ Exchange rate is 0.84
- NI Generator expects to receive  $52.50 \text{ £/MWh} * 100\text{MWh} = \text{£}5250$  (= €6250)
- ROI Supplier expects to pay €6250
  
- Transaction is settled on D+X at 62.50 €/MWh
- €/£ Exchange rate has moved to 0.8
- ROI Supplier pays  $62.50 \text{ €/MWh} * 100\text{MWh} = \text{€}6250$  (= £5000)
- NI Generator receives  $(62.50/0.8 = 50 \text{ £/MWh}) * 100\text{MWh} = \text{£}5000$
- Payments denominated in € balance but the NI Generator suffers a loss of £250
  
- If Settlement uses the original exchange rate
- ROI Supplier pays  $62.50 \text{ €/MWh} * 100\text{MWh} = \text{€}6250$
- NI Generator receives  $\text{£}5250$  ( $5250/0.8 = \text{€}6562.50$ )
- Payments In – Payments Out =  $\text{€}6250 - 6562.50 = -\text{€}312.50$
- Difference is borne by the entire market rather than the £ denominated Generator

# Current Policy Implementation

- SEM operates on the basis of two currencies
- 6.4 of the TSC states:
  - All payments in respect of Settlements, including Resettlements, will be in euro (€) or pounds sterling (£) depending on the Currency Zone of the Unit(s) in respect of which the Settlement (or Resettlement) is taking place
- 6.3 of the TSC states:
  - All Settlement information and cash flows shall be calculated in euro (€)
- SEMO publish a **Trading Day Exchange Rate** between euro and pounds sterling before each Trading Day
- Participants submit offers in their own domestic currency

## Current Policy Implementation (2)

- **Trading Day Exchange Rate** used to convert pound sterling offers into euro offers
- All settlements and cash flows are calculated in euros
- Payments to NI participants are converted back to pound sterling using the same **Trading Day Exchange Rate** used to convert the offers
- If there is a net payment between the currencies, then any changes in the actual exchange rates between the time when offers are submitted and the time when settlement occurs give rise to a difference between payments in and payments out



## Current Policy Implementation (3)

- This difference is the “currency cost”
- Each participant is allocated their share of the currency cost based on their trade expressed against the total market trade
- Market Operator recovers this actual cost (or distributes the surplus, when the Currency Cost is negative) as part of the normal billing process

# Questions for Detailed Design

- The EU cross border market places will operate and be settled in euro
- CACM - “All Nominated Electricity Market Operators shall ensure that Orders submitted to the Price Coupling Algorithm shall be expressed in terms of Euros and make reference to Market Time”
- Are there any reasons why the I-SEM should not continue to be a dual currency market with socialised currency risk?

## Questions for Detailed Design (2)

- Day Ahead and Intraday markets likely to have quick settlement turnaround
  - Currency risk in these markets will represent a significantly smaller exposure than in the current SEM arrangements
- Currency cost in the Day Ahead market can be determined by calculating an Ireland/Northern Ireland market surplus position
- If the aggregate market result shows 400MWh surplus generation in Ireland, this means that in the market this 400MWh was therefore exported from Ireland to Northern Ireland, thereby incurring a currency cost if exchange rates changes between the transaction and settlement  
Similar approach could be taken in Intraday and Balancing markets
- Will be easier to calculate if the two-DC line configuration is implemented in EUPHEMIA

## Questions for Detailed Design (3)

- Options for managing and socialising currency costs
  - Recovery and payment of the actual currency imbalances as part of the regular billing period process
  - Forecasting currency costs annually (or monthly) and charging an up-front payment to suppliers at the start of every year (or month) to establish a “currency fund”, from which producers would be refunded any currency losses
  - Forecasting currency costs annually (or monthly) and incorporating this in a tariff
- Any difference between revenues collected using the “currency fund” or the tariff and the actual costs realised would be carried forward as a correction factor into the calculations for the next year (or month)

# Summary Questions

- Are there any reasons why the I-SEM should not continue to be a dual currency market with socialised currency risk?
  - Specifically, are there any problems with the current approach?
  - Are there any reasons why treatment needs to be different in I-SEM?
- If the currency costs are to be borne by the market as a whole is this better managed through ex-ante forecasting and annual reconciliation or ex-post calculation?

# Currency Discussion



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## Participant Registration



# Participant Registration

- Process of accession to the market
- Needs to consider multiple trading arrangements that will exist in the I-SEM
- Registration in the I-SEM could entail participation at
  - Day-ahead market
  - Intraday market
  - Balancing arrangements
  - Imbalance settlement
  - Financial Transmission Rights
  - Reliability Options
- Process needs to be robust and as streamlined as possible

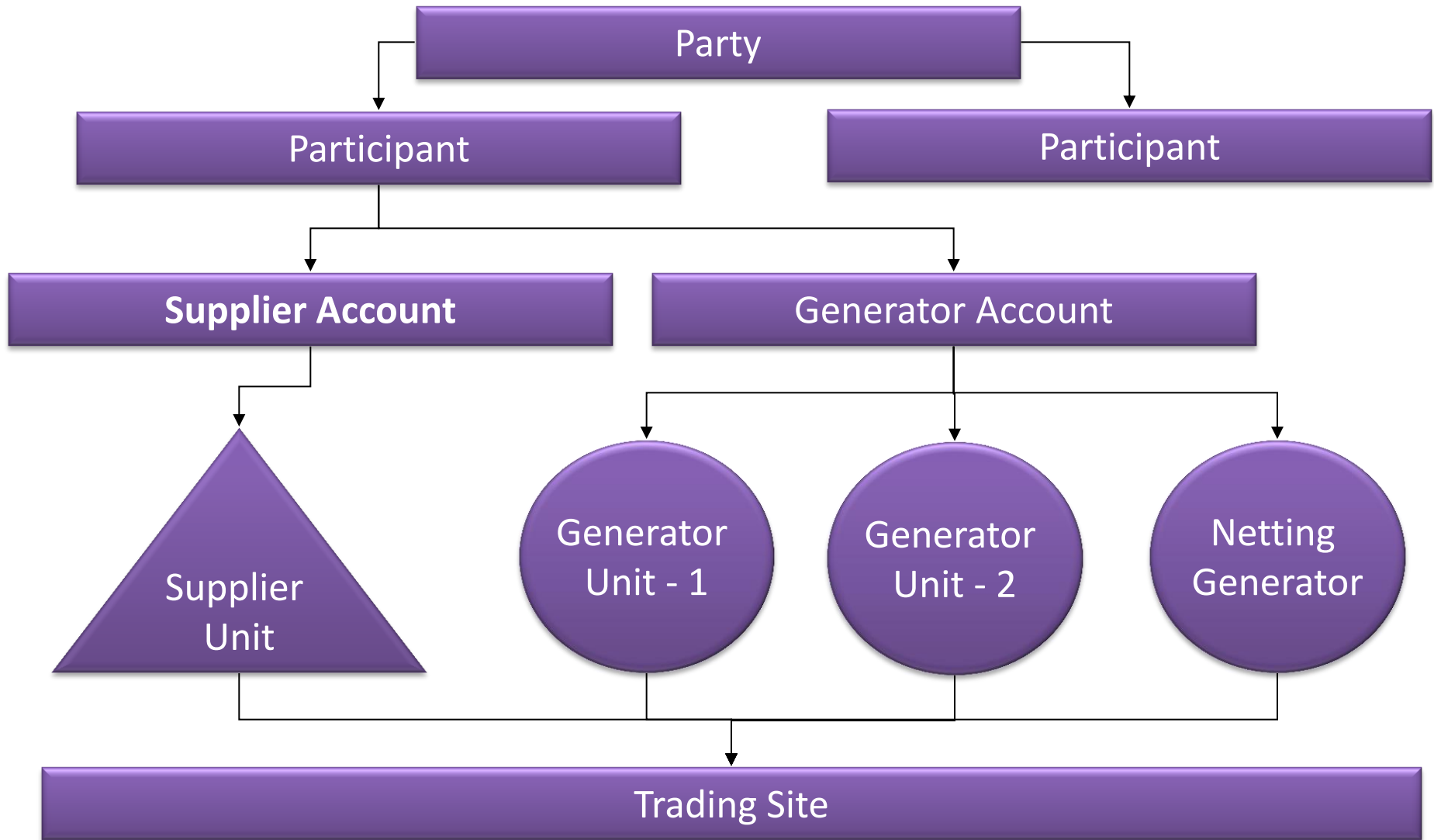


# Current Policy Implementation

What are the entities that can register in the SEM?

- Party
- Participant
- Account
- Unit (Generator/Demand Side Unit/Supplier/Interconnector Unit)
- Interconnector (with IRCU and IEU)
- Trading Sites (with Netting Generator Units)

# Current Policy Implementation



# Current Policy Implementation

- To trade in the SEM, a company must register as a Party.
- Once registered as a Party, a company can then register units.
- Technical data submitted to SEMO and validated/verified by TSO/Meter Data Providers.
- Party and unit registration can be concurrent.
- Four stage process of
  - Application
  - Review
  - Participant Readiness
  - Go-Live

# Questions for Detailed Design

- The I-SEM arrangements have multiple trading opportunities
- Level of detail required for each may vary (e.g. – technical data in the day-ahead vs. balancing arrangements)
- International experience – in GB, for energy trading participants have to register
  - Balancing market unit with Elexon;
  - Physical unit with TSO;
  - Trading entity with market operator(s) (N2EX, APX);
  - Clearing membership with clearing house;

## Questions for Detailed Design (2)

- Should the I-SEM have a single registration process for all trading and settlement?
- Should we consider how a single registration can interact with single collateralisation, settlement, etc?
- Are separate requirements, as in GB, as efficient?
- If a single registration, will process be based on highest level of detailed data required? (e.g. – technical unit data required for balancing arrangements vs. only company level in Reliability Options)
- Should the requirements of the balancing arrangements dictate the registration process (e.g. – TSO/MDP verification/validation of technical characteristics)?

## Questions for Detailed Design (3)

- Can ***Agreed Procedure 1*** serve as a blueprint for registration in the I-SEM?
- Can the four stage unit registration process be applied when setting up a physical unit?
- Current change of ownership involves deregistration followed by new registration – is this efficient?
- How do we address the disparity between timings – e.g., market day begins at 23:00 where metering/DUoS/etc. begins at 0:00?
- Current registration process heavily based on requirements of large participants – should there be separate process for smaller participants?

# Summary Questions

- Is it desirable to have a single central point for registration for the Day Ahead, Intraday and balancing markets or should consideration be given to having separate registration processes for all markets given the information requirement disparity between markets?
- Are there concepts and processes for registration in the current SEM (AP1) which should be carried forward to the I-SEM?
- Should the change of ownership process for units be streamlined?
- Should it be the aim of the I-SEM detailed design to make the registration process for small participants simpler and more straightforward than for larger participants?

# Participant Registration Discussion





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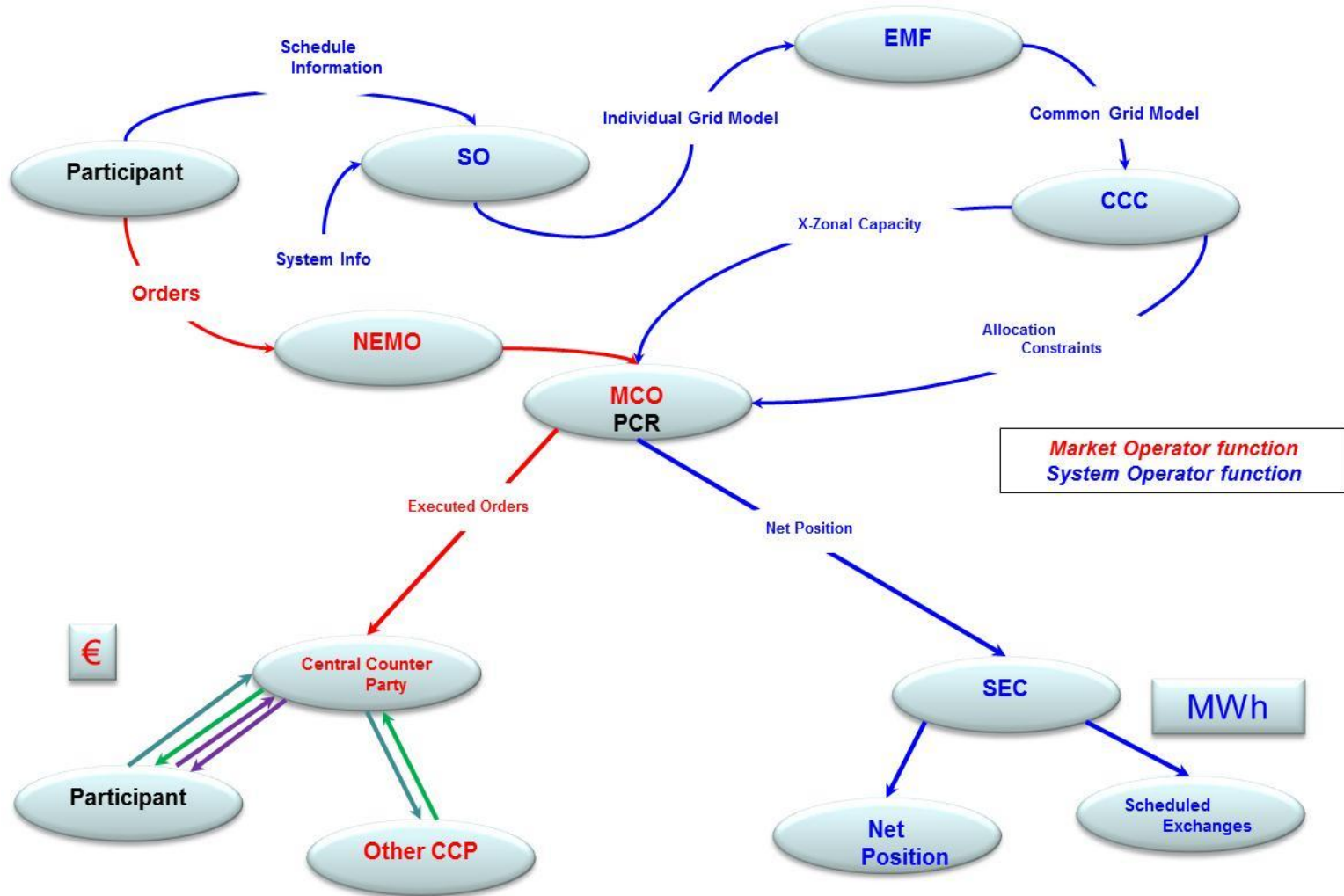
## Clearing & Settlement



# Clearing & Settlement

- Network Code on Capacity Allocation and Congestion Management introduces central counter party role
- This is a role of the Nominated Electricity Market Operator (NEMO)
- In operating the day-ahead and intraday market, the NEMO is responsible for imports and exports from the I-SEM
- The NEMO is central counter party to all internal trading as well as with central counter party in adjacent markets (GB for the I-SEM)

# Clearing & Settlement



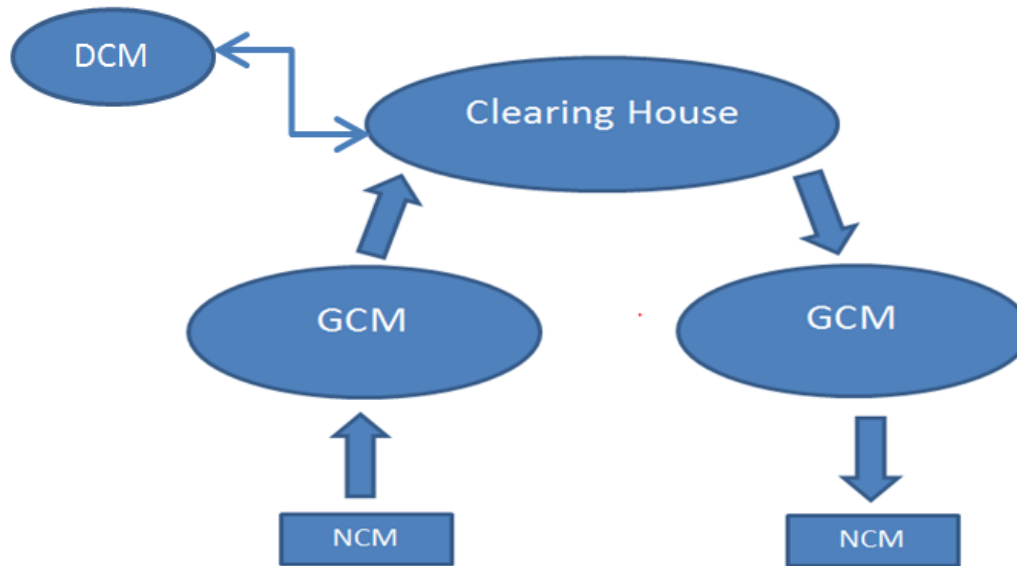
# Current Policy Implementation

- All energy bought and sold through pool mechanism
- SEMO establish clearing accounts in the SEM bank
- SEMO produce invoices and self-billing invoices
- Payment terms set out in T&SC and Agreed Procedures
- Payments and charges for trading and capacity invoices are 3 working days for money in and 4 working days for money out

# Questions for Detailed Design

- Timing of settlement for day-ahead & intraday – daily calculation and publication of invoices/self billing invoices
- Payment terms, e.g. GB is –
  - N2EX: money in D+1/money out D+3;
  - APX: money in D+1 @ 11:00/money out D+1 @ 17:00
- Do the ex-ante markets require a resettlement facility?
- Across EU, most clearing is done by separate company from the market operators
- Clearing houses also include more automated netting of trades

## Questions for Detailed Design (2)



- General Clearing Member - transact with the clearing house and with non-clearing members. Typically a bank or large financial institution;
- Non-Clearing Member - enters a tri-lateral agreement with a clearing member and the clearing house to perform transaction on their behalf. Typically, these would be traders, generators, suppliers, etc.
- Direct Clearing Member - permitted to perform transactions directly with the clearing house but cannot transact with non-clearing members

## Questions for Detailed Design (3)

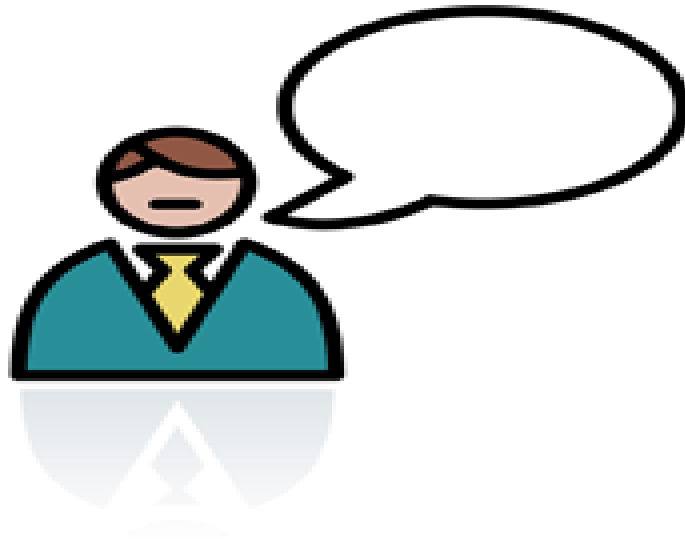
- Timing of imbalance settlement may be different
- Imbalance settlement based on metered volumes – what resettlement arrangements will need to be in place?
- Should clearing arrangements also consider other revenue streams in the I-SEM –
  - Reliability Options settlement;
  - “Difference” payment in CRM;
  - FTR settlement;
  - Congestion income distribution;
- Is it appropriate, desirable to have a single invoice for many revenue streams? (Pooling invoices)

# Summary Questions

- Should faster payment terms be adopted for all markets or just the day-ahead/intraday?
- Should pooling of invoices be considered (including RO settlement) if possible?
- Do the day-ahead and intraday markets of the I-SEM require a separate clearing house?



# Clearing & Settlement Discussion



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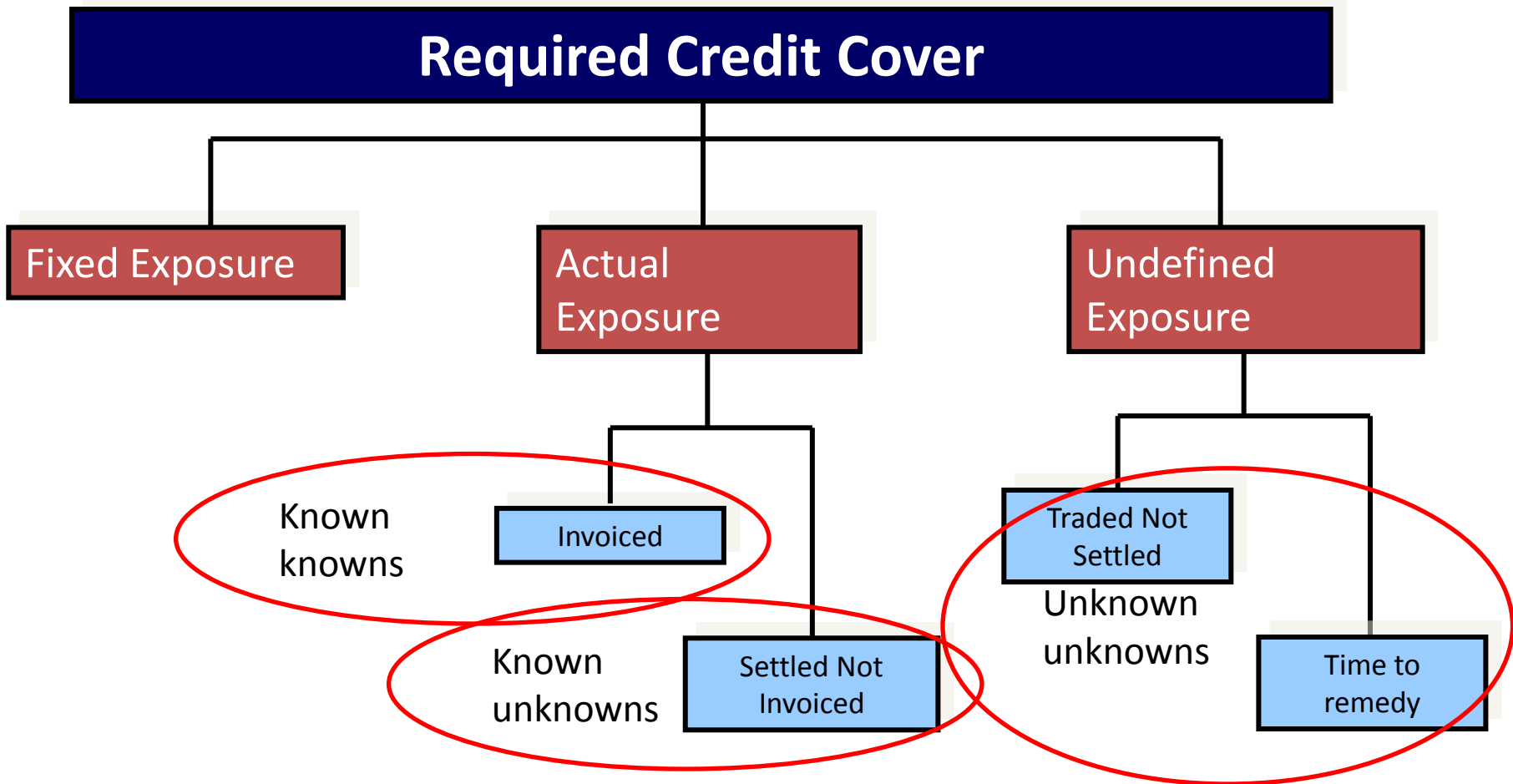
## Credit Risk



# Credit Risk

- Protection against default risk
- Ensures creditors are insured against non-payment by debtors
- Means those who owe money to the pool must have sufficient collateral in place
- Trade netting (e.g. - settlement reallocation) used to minimise collateral requirement

# Current Policy Implementation



## Current Policy Implementation

- 100% collateralisation required
- Calculated based on
  - Issued invoice amounts;
  - Published settlement statements (indicative and initial);
  - 95<sup>th</sup> percentile estimation of exposure over time to remedy;
  - Fixed cover requirement;
- IDT modification: interconnector units can have bid/offers adjusted based on posted collateral. Can only trade to the extent of their collateral.
- Collaterals are posted as
  - Lodgement to cash collateral account; and/or
  - Letter of Credit
- Smearing rules applied to unsecured bad debts

# Questions for Detailed Design

- Collaterals required across all trading opportunities in the I-SEM (day-ahead, intraday, balancing, reliability options, etc.)
- Participants in EU markets have to post collateral with each market operator (e.g., in GB participants post with APX/N2EX for day-ahead, APX for intraday and Elexon for balancing)
- Is a single credit risk mechanism across all I-SEM exposures possible? desirable?
- How is exposure calculated, particularly for balancing arrangements?

## Questions for Detailed Design (2)

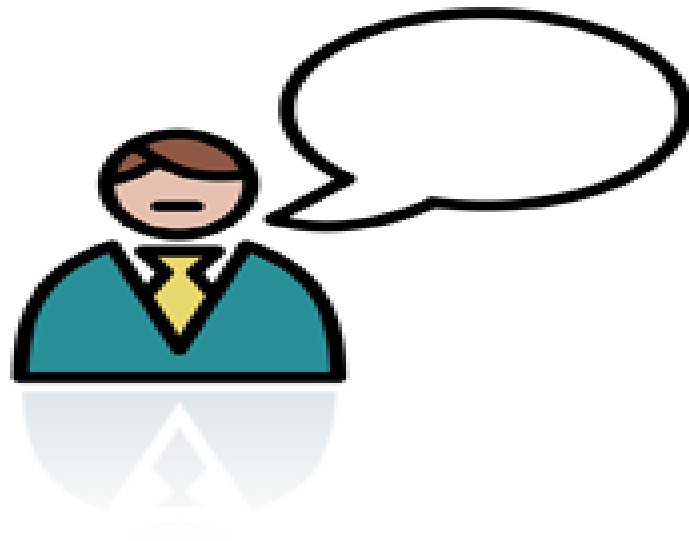
- Ex-ante markets could require collateral before trading is permitted
- However, the imbalance positions are not expected to be planned
- Can a 95<sup>th</sup> percentile projection work for imbalance settlement?
- E.g. – a participant, who normally trades bulk of their requirements in ex-ante markets, is unable to get matched in day-ahead or intraday and ends up buying their full exposure in imbalance

# Summary Questions

- Do we continue with 100% collateralisation requirement?
- Do we continue with current approach for unsecured bad debt?
- Are the current forms of collateral suitable?
- Is single collateralisation across all market feasible?
- How is undefined exposure in balancing/imbalance determined?
- Should ex-ante markets only allow trade up to posted collaterals?



# Credit Risk Discussion



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## Treatment of VAT



# Treatment of VAT

- VAT applicable on the purchase and sale of goods and services
- Applicable to energy trades, capacity payments and market operator charges
- Comply with VAT requirements from EU as well as UK and Ireland
- Special rules applicable to cross border trades
- Applicable to trade between Northern Ireland and Ireland as well as exports from the SEM

# Current Policy Implementation

- VAT agreement requires SEMO to prepare settlement documents that include VAT
- North/South trades initially managed through use of a blended VAT rate based on forecasts
- Required annual adjustment based on actual outcomes
- Billing systems amended to dynamically calculate VAT from actual flows
- Invoices include values of inter-zonal and intra-zonal trade for VAT calculation

# Current Policy Implementation

- HM Revenue & Customs (HMRC) introduced a reverse charge accounting mechanism (domestic reverse charge) for wholesale supplies of gas and electricity within the UK
- This is now implemented for NI participants
- VAT not charged on Energy & Capacity invoices
- Supplier must self-account for VAT

# Questions for Detailed Design

- Generator Participants can be VAT registered anywhere in the world
  - IE – VAT registered in the Republic of Ireland
  - UK – VAT registered in the United Kingdom
  - EU – VAT registered in the EU but outside the Republic of Ireland and United Kingdom
  - Non-EU – VAT registered outside the EU
- Supplier Participants must be registered in the same location as their units

## Questions for Detailed Design (2)

Calculation is required to determine the proportion of the pool in each jurisdiction which is:

- Generated by Participants VAT registered in that jurisdiction
- Generated by Participants VAT registered in EU (but outside the jurisdiction)
- Generated by Participants VAT registered outside the EU
- Consumed by Participants VAT registered in that jurisdiction
- Consumed by Participants VAT registered in EU (but outside the jurisdiction)

## Questions for Detailed Design (3)

- Does the introduction of the Central Counter Party change the nature of transactions?
- Any other mechanisms that could improve VAT treatment for participants?
- Consider if reverse charging of VAT should be applied within IE?
- VAT implications with respect to netting of trades where these can represent payables and receivables under a single participant
- Calculation of inter-zonal flows if SEM/GB modelled as one bidding zone border in day-ahead/intraday markets

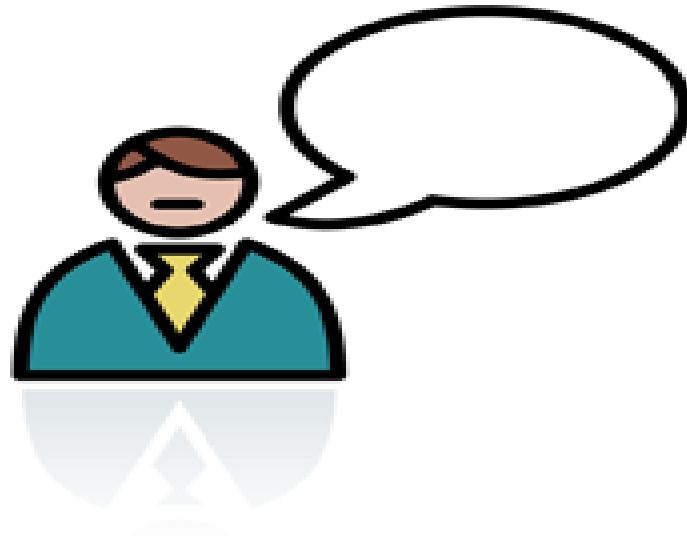


# Summary Questions

- What are the impacts of the new arrangements with respect to VAT?
- Should other mechanisms, like reverse charging, be explored for all of I-SEM?
- Calculation of cross-border flows?

# Treatment of VAT

## Discussion



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## Cross Border Shipping



# Cross border shipping

- Shipping Agent to transfer Net Positions between different Central Counter Parties
- Exists due to the implicit nature of the day-ahead and intraday markets, i.e. – no participant explicitly exports, bidding zone surplus is exported by Central Counter Party/Shipping Agent
- Not strictly required under CACM
- Central Counter Parties can settle directly with each other

# Current Policy Implementation

- SEM contains “explicit” allocation of capacity, even when implicit!
  - Explicit allocation – EA1 for capacity holders only;
  - Implicit allocation – EA2/WD1 for non-capacity holders also;
- However, imports/exports are explicitly handled by registered interconnector units
- All SEM financial transactions for cross border trades are with interconnector unit
- Interconnector unit is responsible for activity on the other side of the border

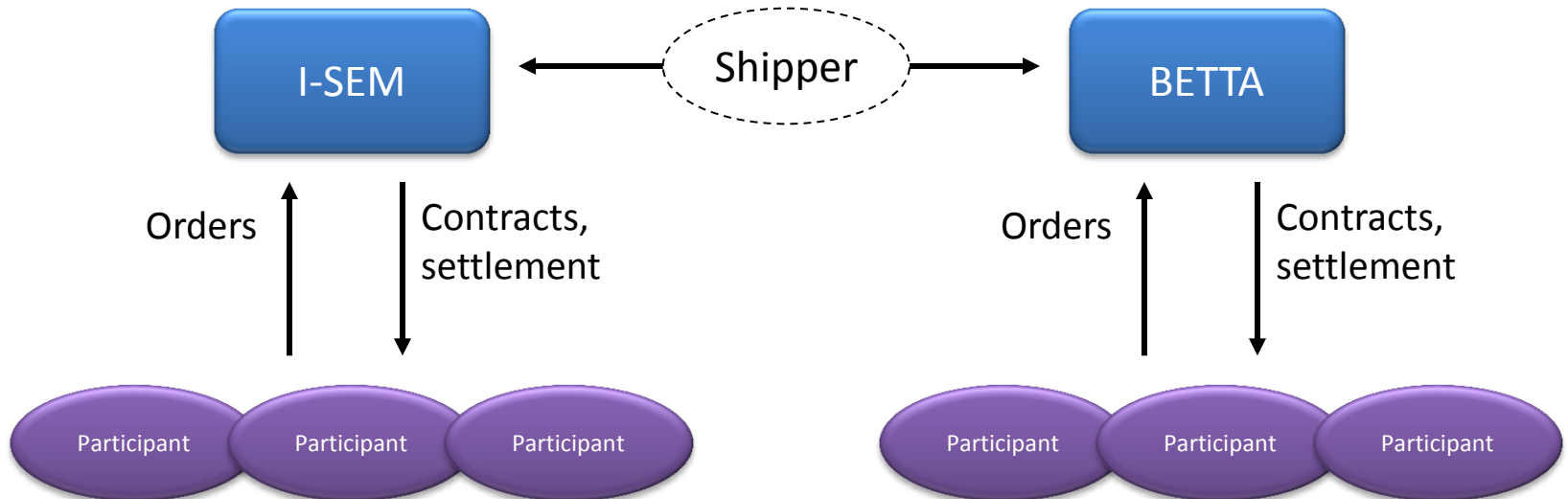
# Questions for Detailed Design

- Different arrangements exist for cross border shipping across EU
- Question is what party takes ownership of imports /exports from the I-SEM?
- Shipping agents used in some cross border arrangements due to contractual framework
- Operational agreements needed between agents and TSOs
- Framework agreements need to be enacted with all potential parties (e.g. – GB framework agreement between APX, N2EX, Britned and IFA)

# Questions for Detailed Design (2)

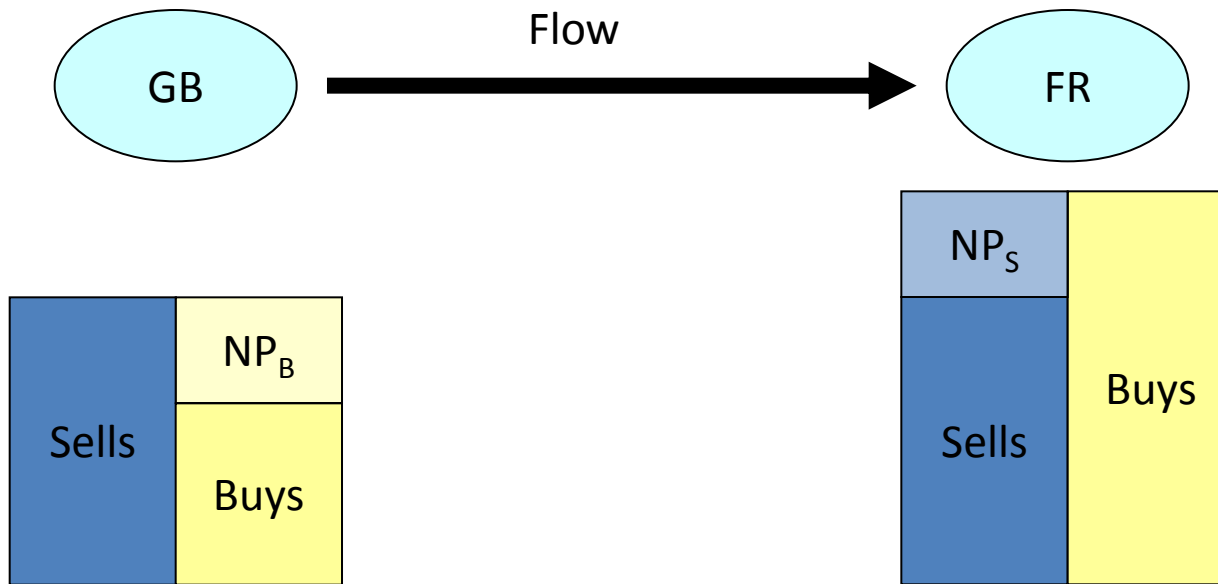
Shipping:

- nomination
- settlement
- congestion revenue collection/distribution



# Questions for Detailed Design (3)

- The output of the coupling algorithm is 'net position' of each price area, which equates to required energy transactions.
- Example: flow from GB to France, Net position of GB shipper is a Buy, and a France sell.

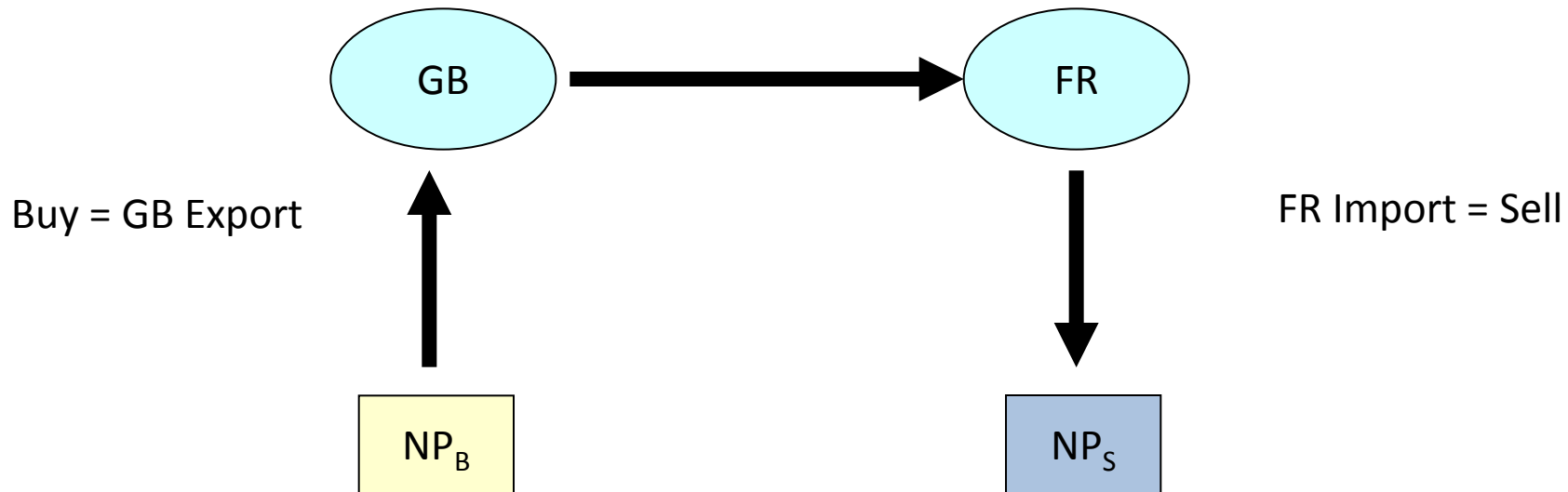


Shipper buys energy in GB, and then sells the energy in France



# Questions for Detailed Design (4)

- To balance traded position, nominations required to TSOs in order to be balanced in each country.



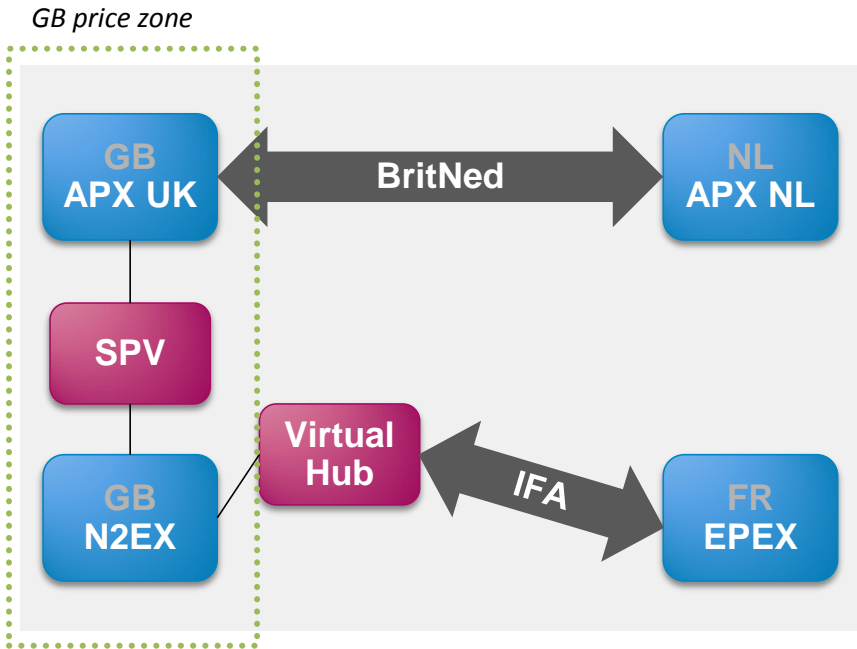
Interconnector nominations to balance shipper position in each country

# Questions for Detailed Design (5)

## GB arrangements -

- BritNed acts a shipping agent for exchanges between GB and NL
- GB-FR exchanges settled directly between N2EX and EPEX clearing houses, without a shipping agent
- 'Special Purpose Vehicle' (SPV) created to act a shipping agent for intra-GB exchanges between N2EX and APX
- As of October 2014, Nord Pool Spot has taken over responsibility from Nasdaq OMX for N2EX clearing operations
- Understand this has removed the need for the SPV

# Questions for Detailed Design (5)

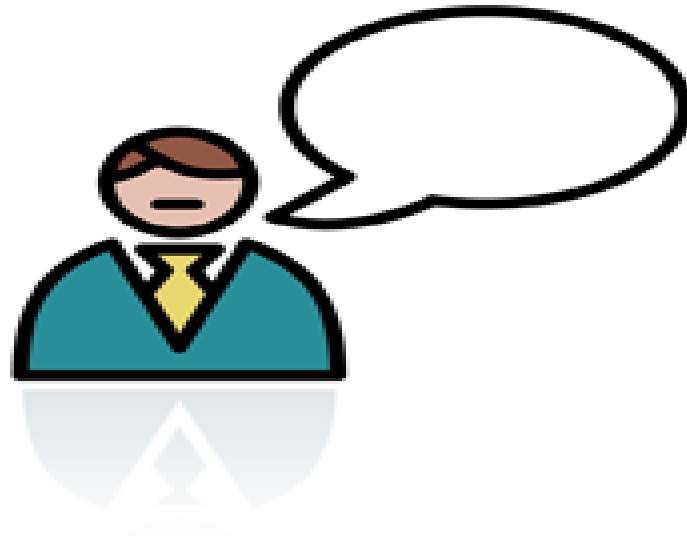


Borders / Interconnectors	Capacity Holders	PX	CCP	Shipping Agent
GB-FR / IFA cable	NGIC, RTE	GB1 : N2EX FR : EPEX	GB1 : NOMX FR : ECC	
GB-NL / BritNed Cable	BritNed	NL : APX NL GB2 : APX UK	NL : APX CCP NL GB2 : APX CCP UK	BritNed
Intra GB Virtual Interconnector	-	GB1 : N2EX GB2 : APX UK	GB1: NOMX GB2: APX CCP UK	SPV

# Summary Questions

- Is a shipping agent needed for the I-SEM?
- How the role can be developed in a way that is best suited to the overall market?

# Cross border shipping Discussion





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## Market Information

# Current Policy

- The publication of market information plays an important role:
  - Making more information available helps participants to make informed decisions
  - May also provide part of a check on price manipulation
- The publication of data in the SEM is governed by Appendix E (timing of publication) and Agreed Procedure 6 (method of publication) of the Trading and Settlement Code
- AP6 covers the concept of Private and Public Data:
  - Private Data Reports are individual report generated for certain participants only
  - Public Data Publications are made available to the general public via the SEMO website

# Questions for Detailed Design

- What information should be made public and where is it more appropriate for some data items to be restricted?
- Timescales for the publication of information
- How should data be made available (public website or registered interfaces)?



# Summary Questions

- Is the current policy on market information fit for purpose for I-SEM?
- Is the current policy of making high levels of information available fully reflective of participant needs?
- Do the current provisions allow for sufficient transparency to avoid market power issues, or are revisions required?
- Will the current arrangements provide information to allow timely participation in all I-SEM timeframes?
- Do the current arrangements provide sufficient information to all participation in all market timeframes?
- Do provisions publish information that is sufficient for participants to efficiently perform their obligations as balance responsible parties.?

# Market Information Discussion

