



SEM Evolution Options

9th February 2012

Timeframes of the Target Model

As set out in the Framework Guidelines

- Forward Timeframe (From years in advance up to 11:00 Day Ahead)
 - Financial or Physical Transmission Rights;
 - Pan European platform;

- Day Ahead Timeframe (Gate Closure At 11:00, Trading Day 23:00-23:00)
 - Implicit auctions via single price coupling algorithm;
 - Firm prices and quantities based on the marginal pricing principle;

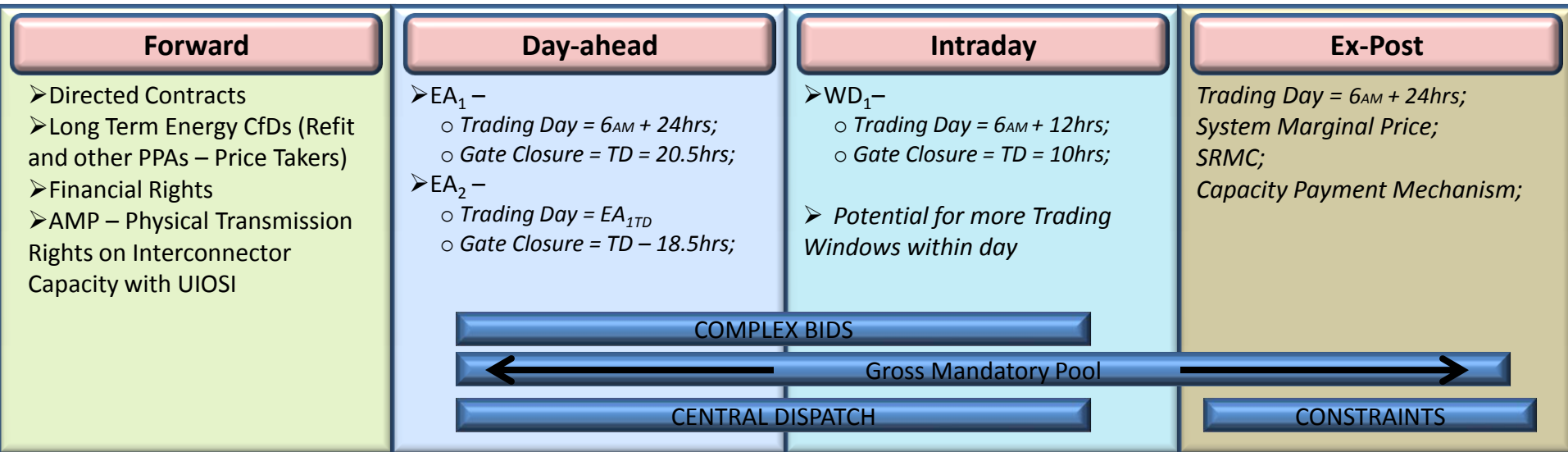
- Intraday Timeframe (harmonised across EU)
 - Continuous implicit trading via SOBF and CMM;
 - Regional auctions may complement where sufficient liquidity;

- Balancing Timeframe (From 1hr before each hour to real-time)
 - Separate Network Code;



Current SEM (with IDT)

Current SEM (with IDT)



Evolution Options

Integrated SEM

Forwards/Futures

Trading arrangements ahead of Day Ahead?

Day Ahead

Single Price Coupling

Intra-Day

Implicit Continuous Trading

Ex-Post

Some form of balancing market required



Forward Trading?

- Trading ahead of the Day Ahead -
 - Provides value to capacity rights;
 - With no arrangements before Day Ahead, first energy auction is implicit;
 - Forwards market allows use of IC capacity – either as nomination or bid;
- Options for a forward market –
 - Bilateral
 - *Parties contract with each other directly or through a central counterparty*
 - Pool arrangements
 - *All parties accede to one Code that outlines all parties obligations to each other*
- Starting position then leads through approach for coupling and balancing;



Option 1

SEM - Options

Forward

Bi-Lateral Trade Agreements

Day-ahead

Couple on EA1

Intraday

Implicit continuous with no
implicit auctions

Balancing

Real Time markets



Bi-lateral Trading, Couple on EA1

➤ *In the Forwards Timeframe*

- *Limited trade outside of SEM using bi-lateral contracts;*
- *Participants submit nomination to local MO after Gate Closure at D-2;*
- *Option to retain the gas Trading Day at 06:00 for 24 hours;*
- *Settlement of contracts between Participants;*

➤ *In the Day-ahead Timeframe*

- *Participants submit Simple/Sophisticated offers to local MO;*
- *Data submitted to central market coupling algorithm;*
- *Couple on EA1 (no later auction); Firm Prices and Quantities;*
- *European Trading Day (23:00 – 23:00) & GCT (11.00);*



Bi-lateral Trading, Couple on EA1

➤ In the Intra-Day timeframe

- Simple/Sophisticated Offers submitted to local MO;*
- Orders sent to Shared Order Book Function ;*
- XB capacity via Capacity Management Module ;*
- Firm Prices and Quantities as output;*
- UIOLI on the Intra-Day market;*

➤ In the Ex-Post timeframe

- Imperfections will remain for variance between dispatch and market costs;*
- Additional settlement for market imbalances;*
- Based on actual dispatch requirements – price as bid;*
- Imbalances paid and charged at balancing price;*



Option 2

SEM - Options

Forward

Firm Forwards Pool

Day-ahead

Couple on EA2

Intraday

Implicit Continuous with or without implicit auctions

Balancing

Ex-post market



Forwards Pool, Couple on EA2

In the Forward Timeframe

- *Complex commercial and technical offer data;*
- *Both Generators and Suppliers actively participate;*
- *Forwards Pool = EA1 with firm SMPs and MSQs;*
- *Retains more of high level design of the SEM;*
- *Option to retain the gas Trading Day at 06:00 for 24 hours;*

In the Day-ahead Timeframe

- *Couple on EA2 timeframe. Current Gate Closure close to Target Model;*
- *European Trading Day (23:00 – 23:00) & GCT (11.00);*
- *Participants submit Simple/Sophisticated offers to MO;*
- *MO submits offers to Single Price Coupling algorithm;*
- *Receives back firm Prices and Quantities;*



Forwards Pool, Couple on EA2

In the Intra-Day timeframe

- *Continuous Trading is required with all XB trade to be input to SOBF.*
- *Regional Auctions are optional if sufficient liquidity.*
- *Simple/Sophisticated Offers submitted to local MO;*
- *Orders sent to Shared Order Book Function ; XB capacity via Capacity Management Module ;*
- *Firm Prices and Quantities as output;*

In the Balancing timeframe

- *Imperfections for variance between dispatch and market costs;*
- *Additional settlement for market imbalances; Calculated difference between contracted firm positions from earlier markets and final requirement;*
- *Form of balancing market – price determined from ex-post optimisation; Involves creation of an Ex-Post price;*
- *Imbalances paid and charged at balancing price;*



Option 3

SEM - Options

Forward

Bi-Lateral & Forwards Pool

Day-ahead

Couple on EA2

Intraday

Implicit Continuous with no
implicit auctions

Balancing

Real time market or
ex post market



Bi-lateral Trading & Pool, Couple on EA2

➤ *In the Forwards Timeframe*

- *Limited trade outside of SEM using bi-lateral contracts;*
- *Participants submit nomination to local MO after Gate Closure;*
- *Option to retain the gas Trading Day at 06:00 for 24 hours;*
- *Settlement of contracts between Participants;*
- *Participants submit complex commercial and technical offer data to local MO;*
- *MO resolves Forwards Pool on basis of available trade when bi-lateral contract trades are excluded;*
- *Firm prices and quantities of pool, settled through the SEM;*

➤ *In the Day-ahead Timeframe*

- *Participants submit Simple/Sophisticated offers to local MO;*
- *Data submitted to central market coupling algorithm;*
- *Couple on EA1 (no later auction); Firm Prices and Quantities;*
- *European Trading Day (23:00 – 23:00) & GCT (11.00);*



Bi-lateral Trading & Pool, Couple on EA2

➤ In the Intra-Day timeframe

- Simple/Sophisticated Offers submitted to local MO;*
- Orders sent to Shared Order Book Function ;*
- XB capacity via Capacity Management Module ;*
- Firm Prices and Quantities as output;*

➤ In the Ex-Post timeframe

- Imperfections will remain for variance between dispatch and market costs;*
- Additional settlement for market imbalances;*
- Form of balancing market – price determined from ex-post optimisation;*
- Imbalances paid and charged at balancing price;*



Option 4

SEM - Options

Forward

Forward CfD
markets (as now)

Day-ahead

Couple on CfD auction

Intraday

Implicit continuous using
CfDs

Balancing

Ex-post markets



Minimal change, couple on CfD

➤ *In the Forwards Timeframe*

- *Bidding into EA1 as is;*
- *MO resolves EA1 based as mandatory gross pool;*
- *Firm MIUNs only;*

➤ *In the Day-ahead Timeframe*

- *Participants submit Simple/Sophisticated offers to CfD market;*
- *Data submitted to central market coupling algorithm;*
- *European Trading Day (23:00 – 23:00) & GCT (11.00);*

➤ *After the Day-ahead Timeframe*

- *Bidding into EA2 as is – CfD results nominated as firm;*
- *MO resolves EA2 based as mandatory gross pool;*
- *Firm MIUNs only;*



Minimal change, couple on CfD

➤ In the Intra-Day timeframe

- Simple/Sophisticated Offers submitted to local MO;*
- Orders sent to Shared Order Book Function ;*
- XB capacity via Capacity Management Module ;*
- Firm Prices and Quantities as output;*

➤ In the Ex-Post timeframe

- Imperfections will remain for variance between dispatch and market costs;*
- EP1 and EP2 runs of the SEM as normal;*
- EP2 results settled in the SEM;*
- CfD results settled outside of the SEM;*



Other issues

- Wind – *wind and other variable generators exposed to imbalances or socialised through constraints? Somewhere in between.*
- Capacity Payments – *all options could accommodate current capacity payments; for interconnector trades may need to be considered further;*
- Market Power – *an issue for SEM Committee to consider; market arrangements should be designed to enhance competition & transparency.*
- Special Units – *need to consider for special units under the T&SC;*



Thank you.
Questions?

