CAM network code development
- Stakeholder Joint Working Session 3 -

Material presented by ENTSOG (incl. conclusion)

Brussels – 4th May 2011

SJWS 3 – Opening and Introduction

CAM concepts to be discussed

- ERGEG's CAM framework guideline is basis for ENTSOG concepts

#	Date	Remarks	Topic to be tackled	
1	6th April 2011	SJWS 1	Bundling and platforms	✔
2	21st April 2011	SJWS 2	Auctions	✔
3	4th May 2011	SJWS 3	Within-day allocation and interruptible capacity	
4	19th May 2011	SJWS 4	Wrap-up	

- Draft CAM NC expected to be published on the 21st of June

SJWS 3: Within-day and interruptible capacity

SJWS 3 – Opening and Introduction

Market's involvement

- Good SG debate over the last 2 sessions

- Discussions showed the strong interlink of other areas
  - CMP
  - Balancing
  - Tariffs
  - Interoperability

- Engagement of all involved parties crucial

- Issue raised to ACER and EC

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SJWS 3 – Opening and Introduction

Agenda

No.	Description	Time
2.	**ERGEG expectation – ACER**	**10.45-11.00**
3.	**Open discussion**	**11.00-11.15**
4.	**Within-day allocation processes**	**11.15-11.45**
5.	**Open discussion**	**11.45-12.00**
	Coffee Break	**12.00-12.15**
6.	**Interruptible capacity**	**12.15-12.30**
7.	**Open discussion**	**12.30-12.45**
	Lunch Break	**12.45-13.45**
8.	**View of the Prime Movers**	**13.45-14.15**
9.	**Stakeholder consideration – EFET**	**14.15-14.45**
10.	**Open discussion**	**14.45-15.15**
	Coffee Break	**15.15-15.30**
11.	**Summing up and conclusion**	**15.30-16.00**

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Part 1

Within-day allocation

Standardised Products

Framework Guideline:

The network code shall define a small set of standardised firm capacity services of different durations and starting dates, which covers market needs

ENTSOG ➤ **A Product is understood to mean a capacity volume over a certain duration.**

Framework Guideline:

The consultation must include yearly, quarterly, monthly, daily and **intra-day products.**

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Daily product: duration of 1 Gas Day; 05:00 a.m. UTC

Within-day product: duration at least one hour until the end of the day

Within-day Product

Framework Guideline:

3.1.1 Auction Design: Capacity services for each time interval (with the **possible exception** of within-day capacity) are allocated via auctions

2.2 Registered network user **are entitled** within day to submit nominations on an interruptible basis at any time

3.1.5 TSOs **may** allocate within-day capacity i.e. capacity not allocated after the day-ahead auction via FCFS

Within-day Product Options

Conceptual differences

FCFS:

Time based approach

Users who apply <u>before</u> other users get allocated the capacity

Pros:
- **Simple concept**
- **Easier rules**
- **Consistent with CAM for Interruptible Within-day**
- **Value linked to Day-ahead**

Auction:

Value based approach

Users who value and demand the capacity at a price <u>greater</u> than other Users get allocated the capacity
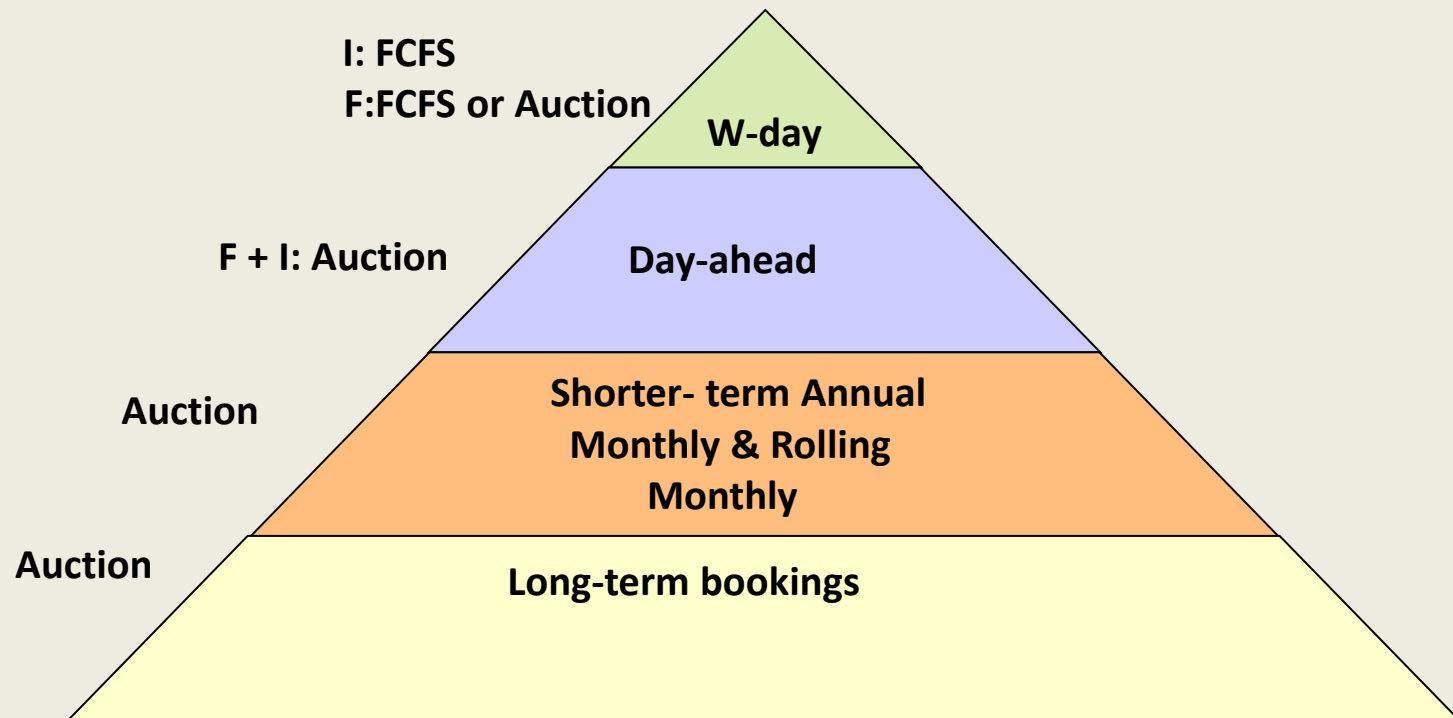
Pros:
- **Market able to place a <u>value</u> on the product and its scarcity**
- **Users placing bids greater than others more likely to get allocated**
- **Open mechanism (non-discriminatory)**

Within-day Product

Product Set and CAM

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I: FCFS
F:FCFS or Auction

W-day

F + I: Auction

Day-ahead

Auction

**Shorter- term Annual
Monthly & Rolling
Monthly**

Auction

Long-term bookings

Within-day Product

What Could Build the Within Day Product?

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NC Requirement:
- **Any unallocated capacity from previous auctions Long term ,Annual Monthly, Rolling Monthly, Daily (day ahead)**
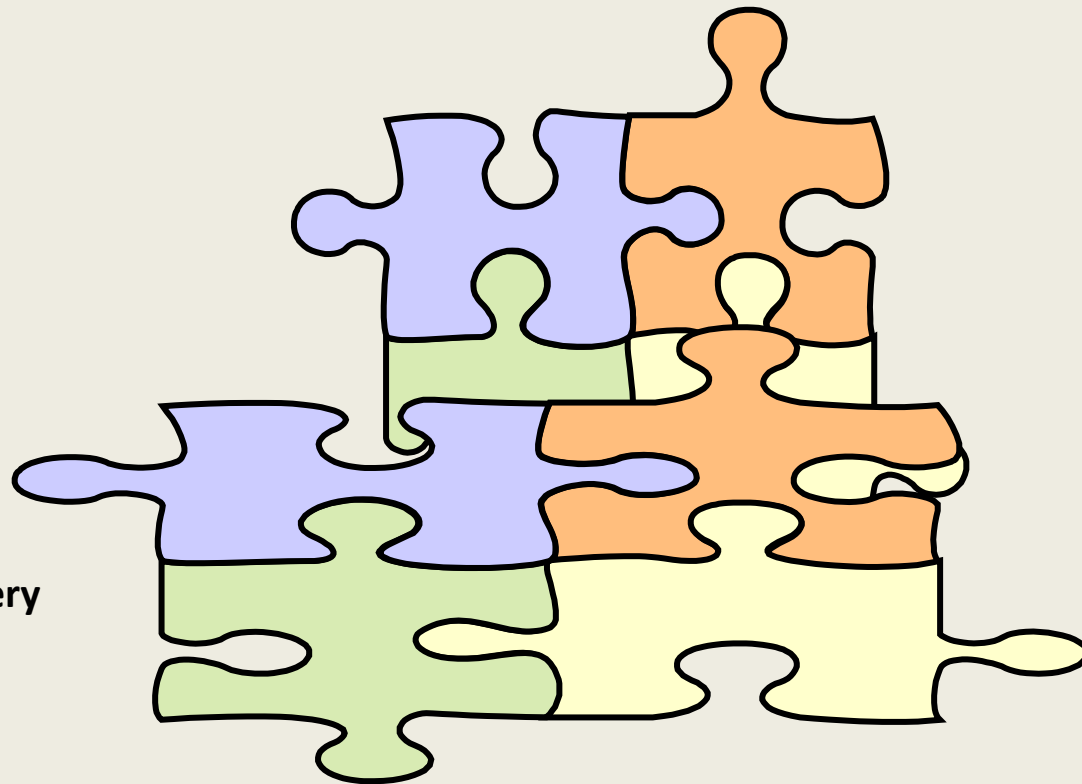
CMP capacity
+ ST Assessment additional capability
+ Oversubscription assessment against Buy Back risks
+ Incentive arrangements?
+ Surrendered/UIOLI capacity

- **Firm still for sale? If not then offer interruptible**
- **Interruptible W-d only when firm W-d is sold out**
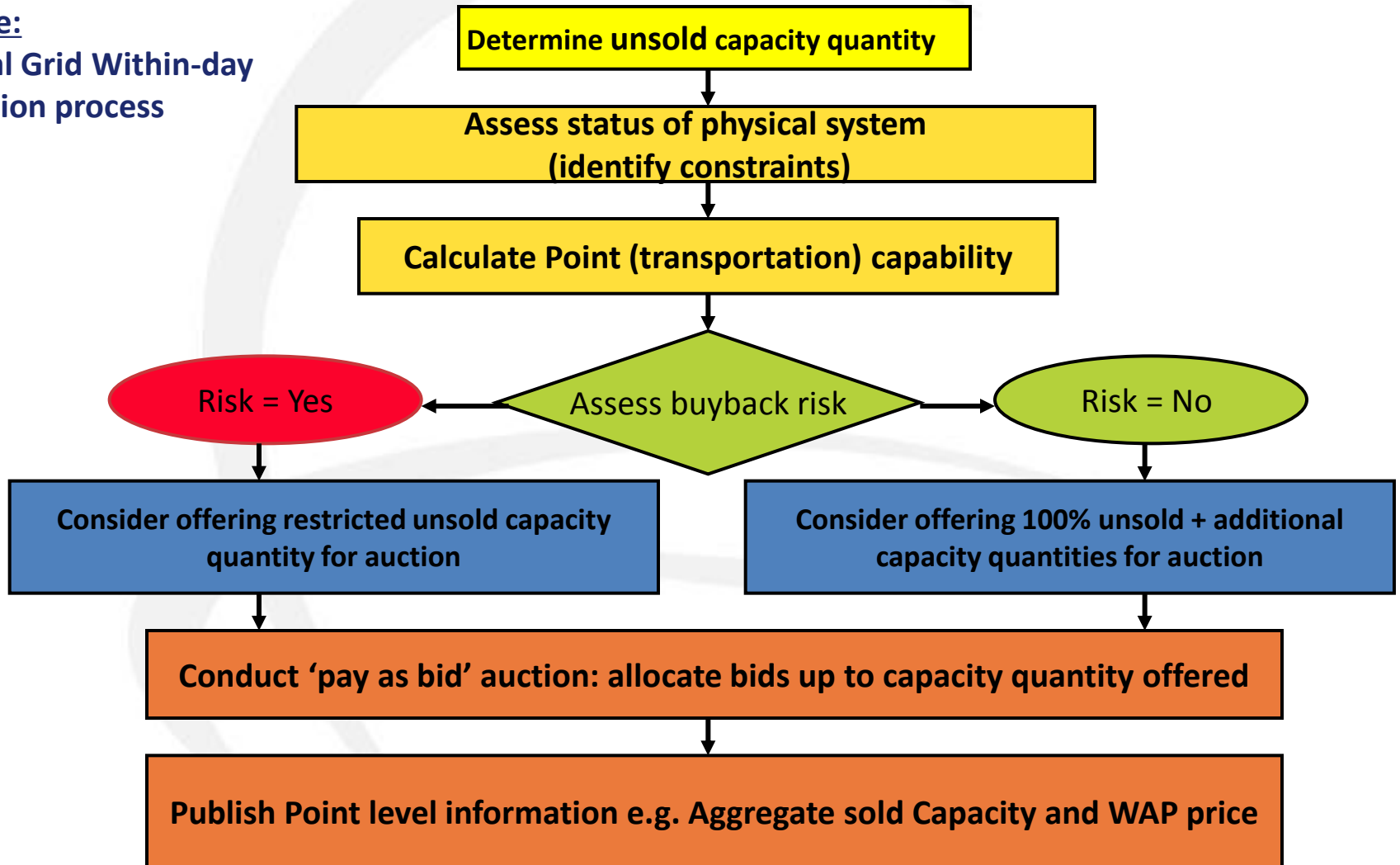- **Tariff of Interruptible relative to risk of Interruption**

Code Interaction

- **CAM**
- **CMP**
- **Incentives**

- **Interoperability**
- **Maintenance**

- **Balancing**

- **Tariffs**
- **Over/under recovery**

Within-day Product / Incentives & CMPs ?

Example:
National Grid Within-day calculation process

Determine **unsold** capacity quantity

↓

Assess status of physical system (identify constraints)

↓

Calculate Point (transportation) capability

↓

Assess buyback risk

← Risk = Yes | Risk = No →

Risk = Yes:
Consider offering restricted unsold capacity quantity for auction

Risk = No:
Consider offering 100% unsold + additional capacity quantities for auction

↓

Conduct 'pay as bid' auction: allocate bids up to capacity quantity offered

↓

Publish Point level information e.g. Aggregate sold Capacity and WAP price

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Assumption Under Which the Within-day Options are Developed:

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- **At un-congested IPs there is a risk of a gradual shift from LT bookings to a ST pay-as-use approach, if ST capacity is available at a very low tariff**

- **This unintended effect would cause a significant cross-subsidy to flexibility users at the expense of base-load users**

- **To counter this unwanted effect, the NC on tariffs will determine a methodology to mitigate against this risk.**

Interruptible Within Day Product

Framework Guideline:

- At any time during the day a registered shipper can request interruptible within-day capacity by sending in a nomination higher than his capacity already booked

- TSOs shall offer within-day products at least on an interruptible basis at every IP

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- The part of the nomination above the amount of capacity already booked by the network user is considered the within-day booking request

- Allocated on a first-come-first-served basis

- Process is restricted by the nomination lead time

- The TSO will send the nominating network user a confirmation of his booking request, followed by either an interruption notice or a confirmation following regular process

- For specifying the interruption sequence, the nomination time-stamp will serve as a reference to identify the contractual time-stamp

Within-day Firm Product Option 1: FCFS

If there is within-day capacity firm available, bookings will be allocated via the procedure defined for Interruptible Within Day

• After receiving a nomination higher than already booked capacity, the TSO will send the network user a confirmation of booking and a confirmation of nomination

– Starting when: after DA auction, D-1 20:00, D 06:00?

• Within day firm capacity will be allocated first, before interruptible capacity is allocated

• TSOs shall publish and update the available amount of within-day firm capacity on offer, after closure of the day-ahead auctions

Within–day Product Option 2: Auctions

Auction Calendar

Service	Start of Bidding Window[18]	Duration of Bidding Window	Allocation
Long-term	1st Monday of March	[10] business days	[5] business days after closing bidding window
Annual Monthly	1st Monday of June	[10] business days	[5] business days after closing bidding window
Rolling Monthly	2nd Monday of proceeding month	[3] business days	[2] business days after closing bidding window
Rolling Daily Day-Ahead	Everyday	6-12h	13h
Within-day	Every hour	[day-ahead/] 6-2h	Every hour within-day or directly before the day[19]

General Timing of Within-day Auction

Bidding Window Options

- Bid window open:

    - Exclusively on the day (D)
    - Before the day e.g. D-1 from [01.00hrs]
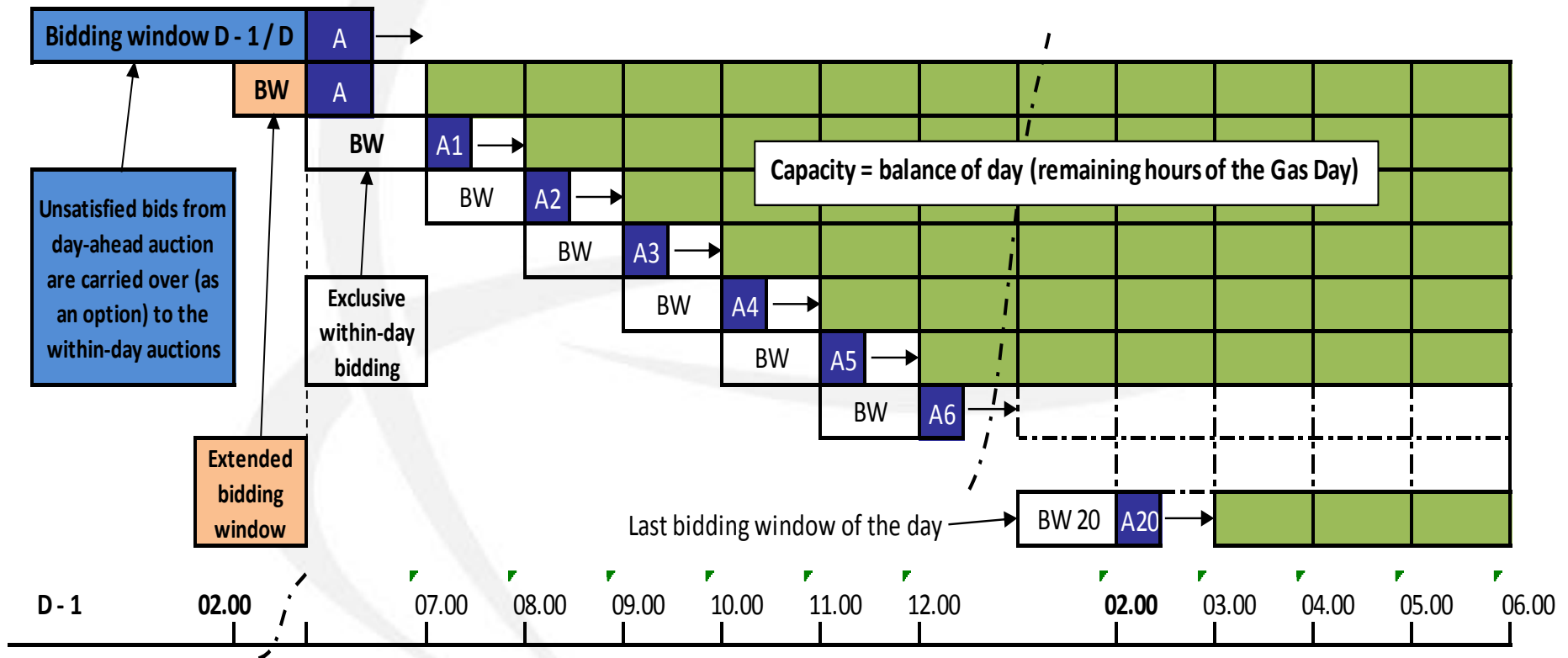   - Before the day [or earlier] with ability to roll over unallocated bids

Options

- Could provide Users with operational flexibility
- TSO could assess User demand at an early opportunity
- TSO could allocate on D-1 providing a full days capacity for D

- Assumed $1/24^{th}$ flow rate – fixed / reducing bids

Within-day Product (Auction)

Product

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Bidding window D - 1 / D

A

BW | A

BW | A1

BW | A2

BW | A3

BW | A4

BW | A5

BW | A6

Capacity = balance of day (remaining hours of the Gas Day)

Unsatisfied bids from day-ahead auction are carried over (as an option) to the within-day auctions

Exclusive within-day bidding

Extended bidding window

Last bidding window of the day → BW 20 | A20

| D - 1 | 02.00 | | 07.00 | 08.00 | 09.00 | 10.00 | 11.00 | 12.00 | 02.00 | 03.00 | 04.00 | 05.00 | 06.00 |

General Within-day Auction Principles

Window-based mechanism

- Requirement to indicate the availability of product beforehand

- Within-day Auctions cannot overlap the next hour bar (s)

- Users place their bids based on requirements

- Every hour TSO assesses the bid stack and allocates capacity (in price order)

Within-day Auction Bidding Window Structure

Bids can be freely submitted, amended and removed during Bidding Window

- Single round: one Bidding Window for one auction process
- Single tranche: all available capacity (at that time) auctioned at once
- Sealed Bid: bids are submitted individually

Information support over bidding windows

- Aggregated information published after bidding window
    - Information should display market valuation of the product e.g. WAP weighted average price & quantity allocated
    - This would enable Users to consider later Auction Window bidding strategy (price/quantity)

Within-day Auction Process in Detail

Relevant information is published before the auction

- Invitation inc T&Cs, & auction calendar (not applicable for Within-day as every day)

- Available quantity (obligated) known before auction

Bids are submitted during bidding window

- 1 or several inclusive bids may be submitted (amended or removed) during BW

- 1 bid comprises a unit price, a requested quantity and a min / max quantity

- A reserve price applies to all bids: bids below reserve price are not accepted

Bids are allocated after the closure of Bidding Window

- Allocations and price confirmation takes place soon after the hour bar finishes

- All bids & allocations are subject to Financial Security and other relevant checks

- Unallocated capacity (if any) can be carried forward into the next hour bar (adjusted by the 1/24th rate).

Auction Algorithm
Allocation and Price Setting

Short-term

Pay-as-bid-auction
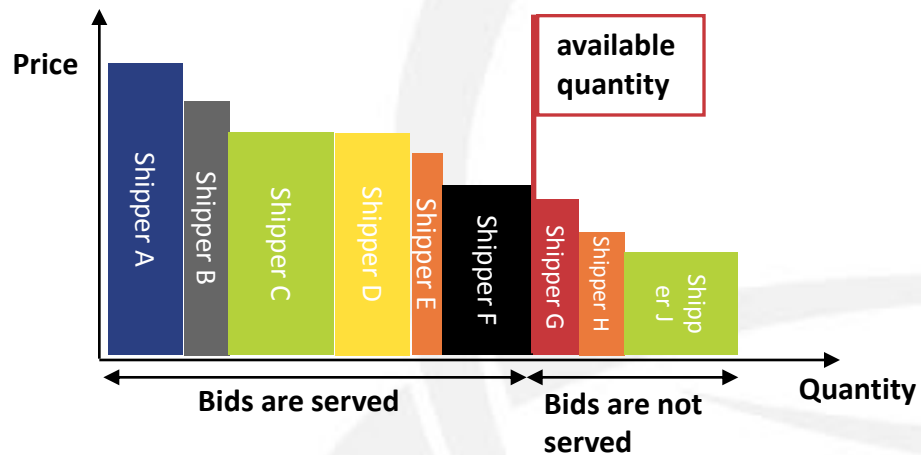
Successful bidders pay the price which they actually bid in the Auction (at or above the reserve price).

Auction Algorithm Details

Bids are ranked per unit price

- The higher the unit price, the higher the rank

Available quantity is allocated to highest price ranked bids

- The highest in ranking gets the capacity up to its bid quantity

- If capacity available the next in ranking gets remaining capacity up to its bid quantity – and so on…..

- Last bid is allocated the remaining quantity*

Bids of equivalent rank are pro-rated

- If the available quantity is lower than the sum of a bid quantity for the same unit price, all bids are allocated such available quantity pro-rata*

Price setting

- Pay-as-Bid: all bids will pay their respective indicated bid price.

•Bids are removed if allocated quantity is under indicated minimum allocated quantity

Part 2

Interruptible capacity

Interruptible

Framework Guideline:

2. The network code(s) shall set out how Transmission System Operators determine the firm and interruptible capacity they <u>jointly offer</u> at each interconnection point … in both directions; at unidirectional points, backhaul capacity shall be offered at least on an interruptible basis

2.2 [NC].. shall implement standardised procedures, including the <u>definition of interruption lead times</u>, to ensure that <u>interruptions take place in a coordinated and standardised manner</u>.
…shall define the possible reasons of interruption, classes of interruptibility and the sequence how interruptions take place

3.1.1[NC]… shall set out that all interruptible capacity services for each time interval (with the possible exception of within-day capacity) are <u>allocated via auctions</u>

Interruptible Products

Regulation 715/2009:

Art. 16.3a: TSOs shall offer a day-ahead interruptible at IPs where firm capacity is sold out

Framework Guideline:

Alignment, not full harmonisation
The NC must include standardised lead time, coordinated process and interruption sequence

Joint sales process through auctions (except Within-day)

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Capacity calculation out of scope, therefore no mentioning of classes and reasons of interruptible

Future role of interruptible uncertain because of probable impact CMP Guideline

Characteristics of interruptible capacity services

- Interruptible capacity services can be offered by TSOs at any IP in both directions. The minimum obligation posed upon TSOs shall be to offer a <u>day-ahead interruptible service at IPs where firm capacity is sold out</u>

- At unidirectional points, <u>backhaul capacity</u> shall be offered at least on an interruptible basis.

- If interruptible capacity is offered, this shall <u>not be detrimental</u> to the amount of firm capacity on offer.

- If offered, interruptible capacity services shall have the <u>same durations</u> as firm capacity services.

- If offered, interruptible capacity with a service duration of one gas day or longer shall be allocated via an <u>auction process</u>

Aligned sales process

Adjacent TSOs shall coordinate the process of offering interruptible capacity

- TSOs shall publish the amounts of interruptible capacity on offer before the start of the auction process (with the exception of within-day)

- If offered, interruptible capacity services shall be allocated via a separate auction after firm capacity of equal duration has been allocated, but before the auction of firm capacity with a shorter duration will start

- Interruptible capacity auctions shall be conducted according to the same design principles and calendar as apply to firm capacity including the reserve price for which the relevant regulated tariff will apply

Standard interruption lead time

- Interruptible capacities will have standardised interruption lead times, on which adjacent TSOs will decided jointly

- The default standardised interruption lead time will be two hours (next hour bar + 2 hours), unless the adjacent TSOs agree on a different time

Coordination of interruption processes

- The TSO who initiates the interruption notifies its interrupted shipper and the relevant neighbouring TSO. The neighbouring TSO notifies the counterparty of the interrupted shipper

- This process should be automated in order to maximise the time available to interrupted network users to redefine their programmes and rebalance their positions
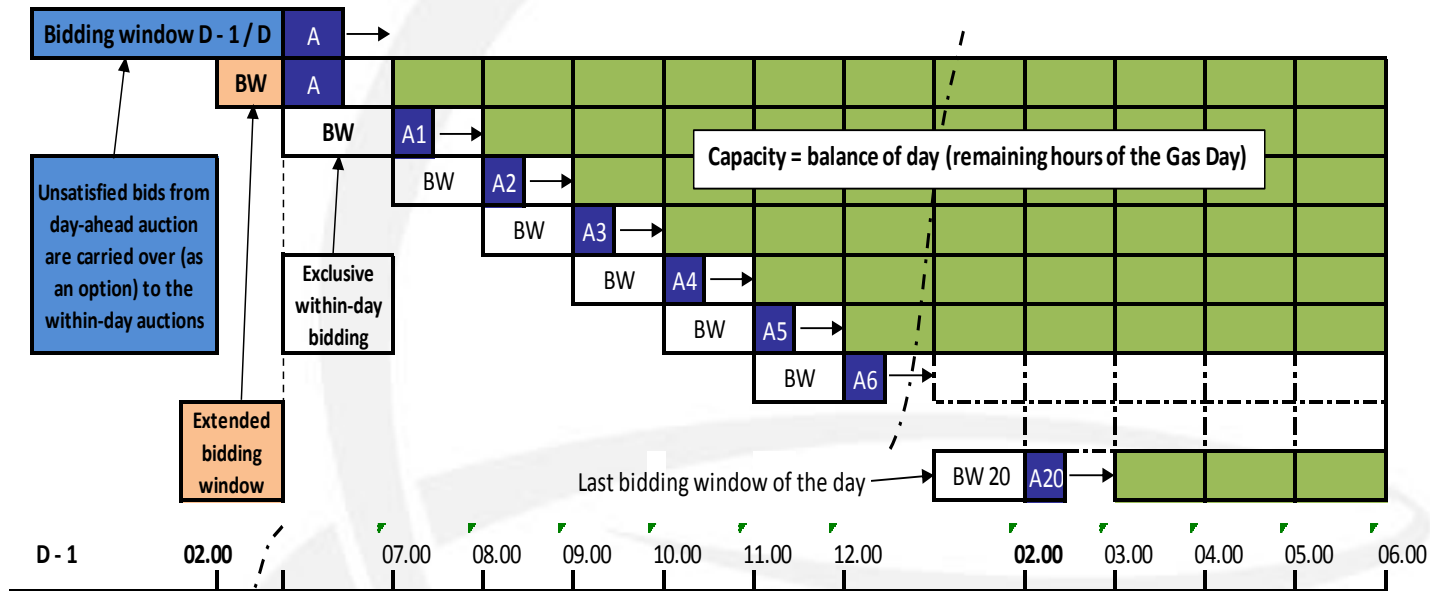
Defined sequence of interruptions

The order, in which interruptions are performed will be determined based on the following parameters:

1. The contract with the oldest contractual timestamp prevails and/or
2. The contract for which the highest price was bid or paid prevails

- In case a parameter is not applicable, it will be disregarded

- If a situation occurs in which, after applying these parameters, two or more nominations are ranked at the same position within the interruption order then a pro-rata reduction of these nomination will be applied

- To accommodate the differences between the various interruptible capacity services within Europe, the adjacent TSOs will implement and coordinate these joint procedures on an IP by IP basis

Summing up SJWS 3

Summary of within-day

Bidding window D - 1 / D | A

BW | A

BW | A1

BW | A2

BW | A3

BW | A4

BW | A5

BW | A6

Capacity = balance of day (remaining hours of the Gas Day)

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Exclusive within-day bidding

Extended bidding window

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D - 1   02.00   07.00 08.00 09.00 10.00 11.00 12.00   02.00 03.00 04.00 05.00 06.00

… or FCFS

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Summary of within-day

Key characteristics of concept

- FCFS
    - o Nominate over current booking
    - o Early application gets allocated capacity (pay-as-used based)

- Auction
    - o Place quantity and price
    - o Users who signal price gets allocated capacity (open market based)

Conclusion of debate on within-day

Main points of discussion

- Reserve price is key to develop an appropriate solution

  o Users: objective should be to minimise over-and under-recovery

    → Issue of LT / ST cross-subsidy

  o Users support that appropriate incentives lead to developing the market

  o Acer asked to provide more clarity during SJWS 4

- Auctions requested by majority of all parties

  o Market-based approach, structured sale

  o Extended requesting window adds flexibility

- Auction process perceived as manageable

- FCFS bears complexity in the detail (nomination/interruptible)

- Users want flexibility to re-nominate during the day (CMP impact)

Summary of interruptible capacity

Key characteristics of concept

- Same allocation process as firm

- Harmonised interruption procedures

- Auction as the only allocation mechanics

- Reserve price to be the regulated tariff

- Coordination of calculation outcomes

Conclusion of debate on interruptible capacity

Main points of discussion

- CMPs impact on the value of existing interruptible contracts

- CAM FG changes value of interruptible capacity in general

- Probability of interruption will increase in the future

- Users raised point what to do with long-term contracted interruptible contracts

  - o Interest in upgrading interruptible to firm

Preference for firm capacity

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