

# Key Issue II: Imbalance Pricing and Settlement

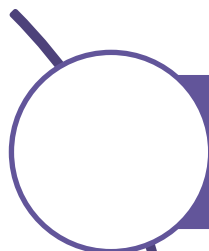
EBSAG

24 September 2013

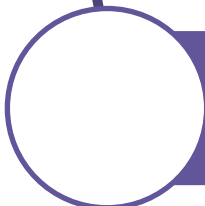
Frank Nobel

# Result of Public Consultation

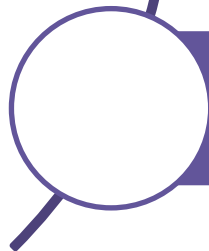
**322 comments were received on the chapter on Settlement. The main concerns are:**



**Marginal Pricing.** Some stakeholders want to enforce a single price system while others suggest a dual price system with reference to a day ahead price



**The use of the concept Relevant Area.** Many stakeholders suggest to use Bidding Zones in line with NC CACM



**Settlement Responsibility.** The possibility of delegation of Imbalance Settlement to another entity should be enlarged.

# Information exchange



## Who informs:

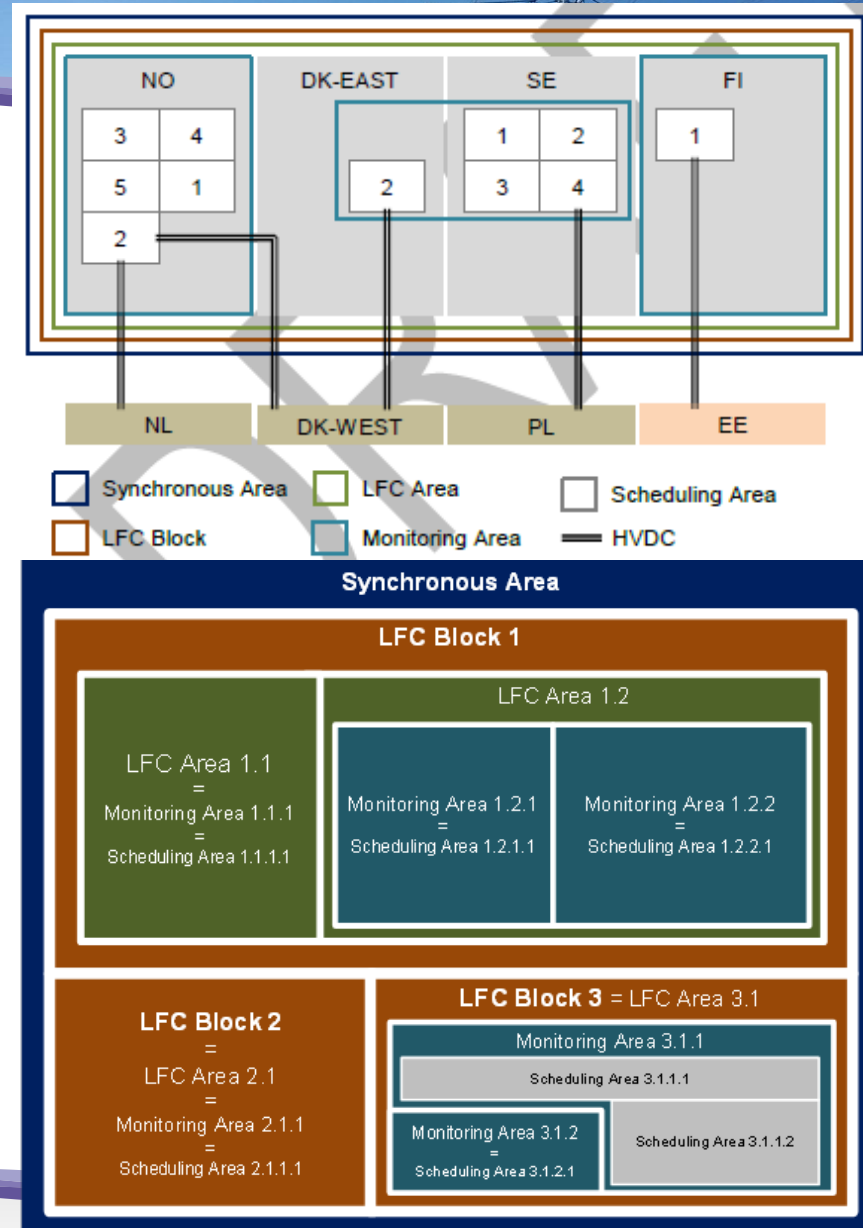
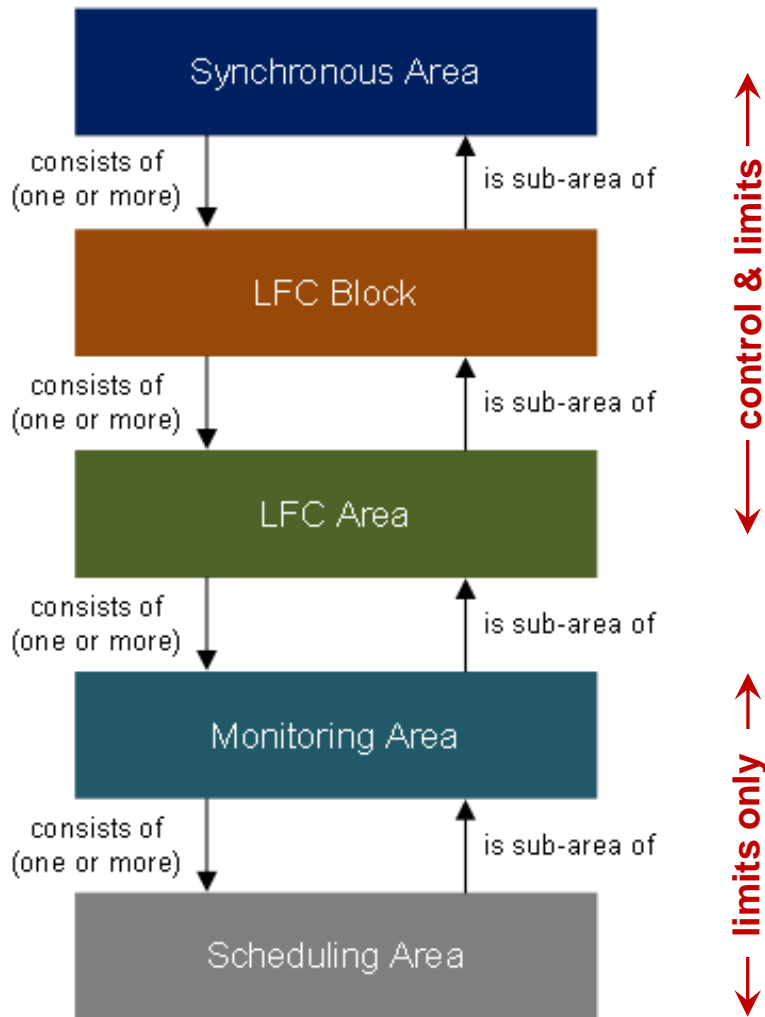
- To Whom
- What
- For Which Area

# Who to Whom, What (NC EB)



From	To	BRP	BSP	TSO
BRP		<ul style="list-style-type: none"> <li>•Sales</li> <li>•Purchases</li> <li>•Trading Bids</li> </ul>		<ul style="list-style-type: none"> <li>•Commercial Schedules                             <ul style="list-style-type: none"> <li>○Internal</li> <li>○External</li> </ul> </li> <li>•Physical Schedules                             <ul style="list-style-type: none"> <li>○Generation</li> <li>○Load</li> </ul> </li> </ul>
BSP		Business arrangements	Transfer of Balancing Reserves (Approval of TSOs necessary)	<ul style="list-style-type: none"> <li>•Balancing Energy Bids ('BEB')</li> <li>•Balancing Reserves</li> </ul>
TSO		<ul style="list-style-type: none"> <li>•Imbalance</li> <li>•Adjustment Imb.</li> </ul>	•Request Activation 'BEB'	<ul style="list-style-type: none"> <li>•TSO Schedules</li> <li>•'BEB' (to CMO)</li> <li>•Request Activation BEB (to CMO)</li> </ul>

# Types and hierarchy of geographical areas operated by TSOs (LFC-R, SD)



# Where: Areal Hierarchies (after CACM, LFC-R SD)

IEM

↓ consists of (sub)  
(one or more) area of ↑

CC/CA Region

↓ consists of is sub-  
(one or more) area of ↑

Bidding Zone

↓ consists of (sub)  
(one or more) area of ↑

↓ consists of (sub)  
(one or more) area of ↑

Synchronous Area

↓ consists of (sub)  
(one or more) area of ↑

LFC Block

↓ consists of (sub)  
(one or more) area of ↑

LFC Area

↓ consists of (sub)  
(one or more) area of ↑

Monitoring Area

↓ consists of (sub)  
(one or more) area of ↑

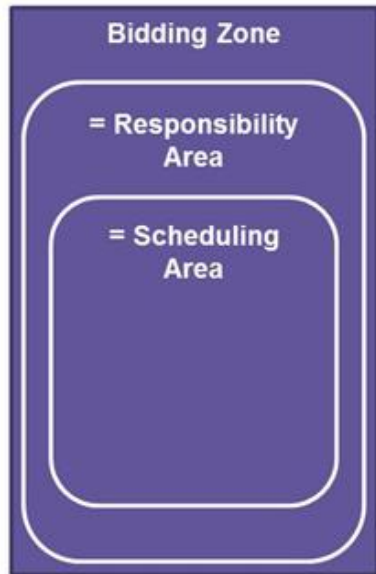
Scheduling Area



# Relations between Scheduling Area, Responsibility Area and Bidding Zone (OPS SD)

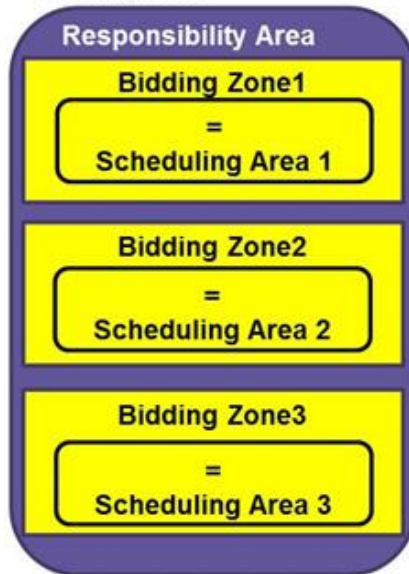


1. Responsibility Area  
= Bidding Zone  
= Scheduling Area



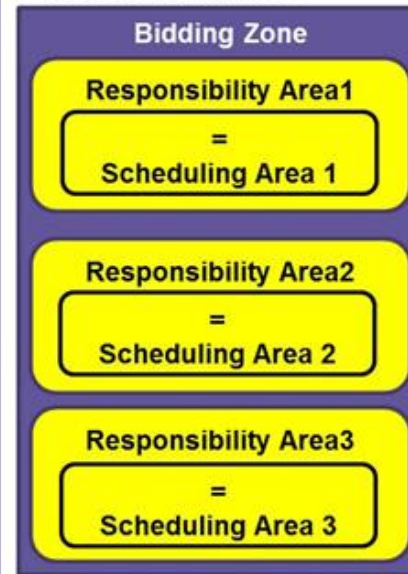
Most Common

2. Responsibility Area  
contains more than  
one Bidding Zone then  
Scheduling Area =  
Bidding Zone



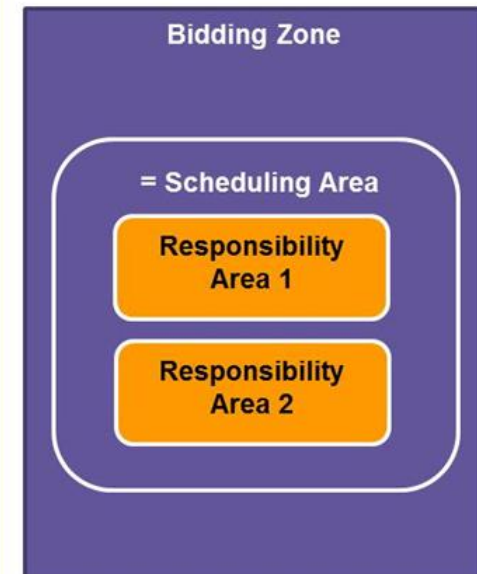
Nordic, IT

3. Bidding Zone  
contains more than one  
Responsibility Area then  
Scheduling Area =  
Responsibility Area



DE-AT

4. Two Responsibility Areas  
establish one Scheduling Area  
(Bidding Zone = Scheduling Area)



IRE + NIR

# Settlement Principles (FWGL NC EB)



Non discriminatory

Objective, fair, transparent

Effective competition, market based pricing

Appropriate (= no perverse) incentives to all (BRP, BSP, TSO)

But taking into account:

Limited distortion to adjacent markets

Account for regional specificities market design



# Energy Settlements TSO (or designated entity)



## TSO – BSP: Balancing Energy:

- Frequency Containment Process (optional settlement)
- Frequency Restoration Process
- Reserve Replacement Process (optional process)

## TSO – BRP: Imbalance

- Notified Position
  - Internal/External Commercial Trade Schedules
  - Generation/Load Schedules)
- Allocated Volume (metered/profiled values)
- Adjustments (Balancing Energy)

## TSO – TSO('s): Exchanged energy due to:

- Intended exchange
- Unintended exchange

# TSO – BRP Imbalance Settlement



Encourage BRPs to be balanced as close to the physical reality as possible, or help the system to restore its balance

Price aggravating System Imbalance not less/more than average  
(=marginal for pay-as-cleared MOL) Balancing Energy FRR/RR  
to reduce System Imbalance

Price other direction open ...

# Settlements Results



Financial disinterest TSO (neutrality)

Fair and equal distribution of energy settlement cost/benefit

No perverse incentives

- BSP (non-delivery)
- BRP (gaming)
- TSO (free-riding)