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european network
of transmission system operators
for gas

39 Members and **1** Associated Partner in **23** EU countries

3 Observers from EU affiliate countries

- Gassco AS (Norway)
- Plinacro Ltd (Croatia)
- Swissgas AS (Switzerland)


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Balancing network code (BAL NC) – SJWS2

–

Process update

Tori Gerus
Adviser

26 January 2012 - Diamant Centre, Brussels

Session agenda

Drafting process review

Network code spine

Glossary

Gap analysis

SJWS3, SJWS4 and SJWS5 topic treatment

SJWS2 agenda

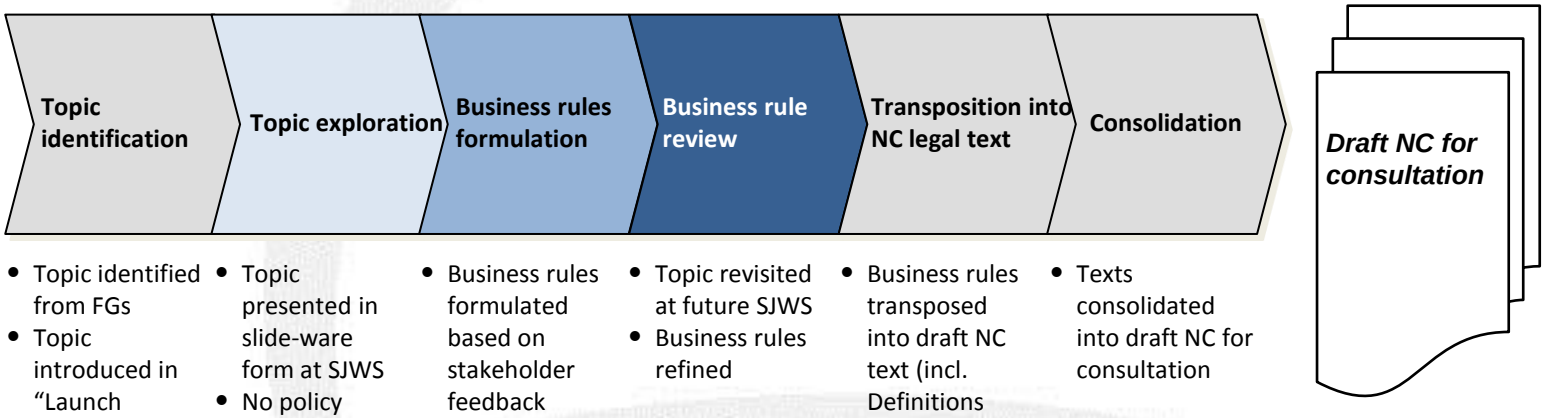
Aside: ‘straw man’ as used by project team

Colloquial expression, meaning

A semi-developed but full argument/idea, intended to solicit reaction → revised, finalised argument

“I’m easier to critique and develop than a blank sheet of paper.”

Code development – from topic to draft text



- Topic identified from FGs
- Topic introduced in "Launch Documentation" and at Launch Workshop

- Topic presented in slide-ware form at SJWS
- No policy options ruled out at this step
- Stakeholder input received

- Business rules formulated based on stakeholder feedback
- No policy options ruled out at this step
- Stakeholder input received

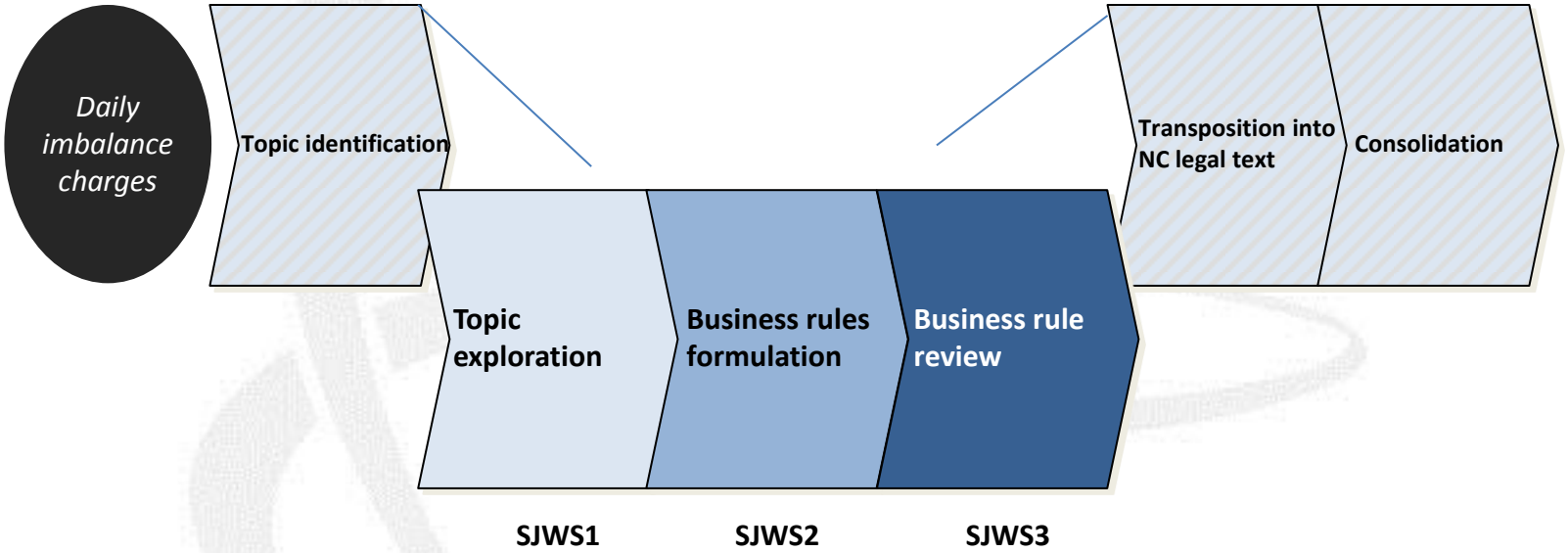
- Topic revisited at future SJWS
- Business rules refined

- Business rules transposed into draft NC text (incl. Definitions annex)

- Texts consolidated into draft NC for consultation

Imbalance charges – from topic to business rule

EXAMPLE

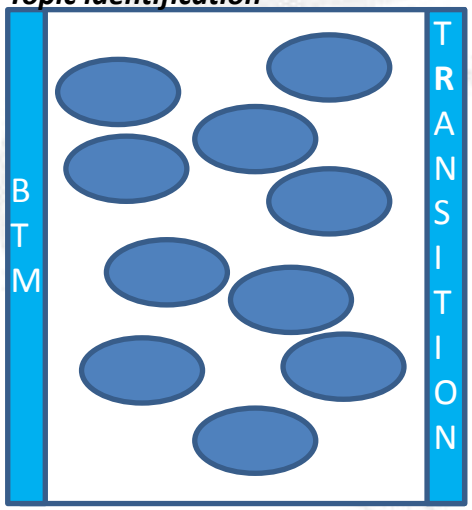


Code development – spine

Framework Guidelines structure

- General provisions
- Principles for network users and TSO roles and responsibilities
- Buying and selling of flexible gas and balancing services by TSOs
- Balancing period and nomination procedure
- Imbalance charges
- TSO information provision obligations
- Cross-border cooperation
- Transitional period, compliance and monitoring

Topic identification



CHAPTER I
SUBJECT MATTER, SCOPE AND DEFINITIONS

CHAPTER II
ROLES AND RESPONSIBILITIES

CHAPTER III
BALANCING SYSTEM

CHAPTER IV
BALANCING PERIOD

CHAPTER V
WITHIN-DAY OBLIGATIONS

CHAPTER VI
OPERATIONAL BALANCING

CHAPTER VII
IMBALANCE CHARGES

CHAPTER VIII
NEUTRALITY ARRANGEMENTS

CHAPTER IX
NOMINATIONS

CHAPTER X
INFORMATION PROVISION OBLIGATIONS

CHAPTER XI
CROSS-BORDER COOPERATION

CHAPTER XII
COMPLIANCE & MONITORING AND IMPLEMENTATION

BAL NC: proposed spine (1/5)

CHAPTER I

SUBJECT MATTER, SCOPE AND DEFINITIONS

Content

- Subject matter and scope
- Definitions

CHAPTER II

ROLES AND RESPONSIBILITIES FOR TRANSMISSION SYSTEM OPERATORS AND NETWORK USERS

Content

- TSO
  - All direct roles of the TSOs and possible assigned roles
- Neutrality (for cash flows from gas buying and selling)
- Network User
  - Definition (including role of balancing aggregator, if appropriate)
  - Balancing contract accession arrangements

BAL NC: proposed spine (2/5)

CHAPTER III

BALANCING SYSTEM

Contents

- System definition
- Entry points
- Exit points
- Virtual trading point
    - Principles for design

CHAPTER IV

BALANCING PERIOD

Contents

- Balancing period
- Interim measures

CHAPTER V

WITHIN-DAY OBLIGATIONS

Contents

- TSO notification of existing or planned WDO
- Criteria for NRA approval of WDOs in public consultation
- Deadline for NRA approval of pre-NC WDOs
- Process for NRA approval
- ACER role

BAL NC: proposed spine (3/5)

CHAPTER VI

OPERATIONAL BALANCING

Contents

- Balancing tool definition
- Short-term standardised products
- Balancing services
- Buying and selling of flexible gas
    - Release of flexible gas
- Decision-making processes
- Merit order
- Incentives
- Interim measures (e.g., balancing platform)

CHAPTER VII

IMBALANCE CHARGES

Contents

- Daily quantity and imbalance definition
- Imbalance price determination
    - Imbalance price proxy
- Imbalance cash-out settlement functions
    - Tolerances
- Other interim measures

BAL NC: proposed spine (4/5)

CHAPTER VIII

NEUTRALITY ARRANGEMENTS

Contents

- Cost and revenue elements (gas)
- Cost and revenue elements (non-gas)
- Redistribution approaches
  - Timings
  - Net neutrality apportionment rules

CHAPTER IX

NOMINATIONS, SCHEDULING RENOMINATIONS AND INFORMATION EXCHANGE

Contents

- Nominations/re-nominations scoping
  - Points
  - Data
- Operational scheduling

BAL NC: proposed spine (5/5)

CHAPTER X

INFORMATION PROVISION OBLIGATIONS

Contents

- Nominations
- Overall status of the system (as per Chapter 3 of Annex 1 of the Gas Regulation)
- Aggregate network user information
- TSO actions to buy and sell gas
- Individual network user information, incl. NDM derived forecasts
- DSO information
- Information from gas exchanges/balancing platforms
- Incentives
- Interim measures

CHAPTER XI

CROSS-BORDER COOPERATION

Contents (TBC)

- TSO cooperation
- Consultation process on integration proposals
- Review (report) on opportunities
- Interim measures

CHAPTER XII

COMPLIANCE & MONITORING AND IMPLEMENTATION

Contents

- Compliance
- TSO report on interim measures
- Entry into force

Glossary/definitions set: in-progress

ANNEX I

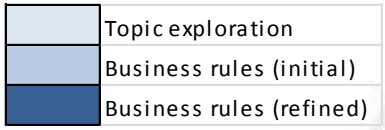
EXTRACT

Definitions *(use foreseen as of 20 Jan. 2012)*

For the purposes of this Network Code, the following definitions shall apply:

Term	Formal/legal definition	Source
'allocation'	means xx. *Definition formulation in-progress*	New in BAL NC (pending intra-ENTSOG approval)
'balancing period'	means the period within which the off-take of an amount of natural gas, expressed in units of energy, must be offset by every network user by means of the injection of the same amount of natural gas into the transmission network in accordance with the transport contract or the network code, as defined in Article 2 of the Gas Regulation.	Regulation 715
'balancing period' (informal)	means a standardised daily interval, at the end of which network users are financially settled for any deviations, as accumulated over the course of the preceding 24 hours, between their inputs into and off-takes from the balancing zone. In the network code this standardisation shall be set out from 5:00 to 5:00 UTC/GMT or any other time period harmonised across the EU as decided for daily capacity products in the network code on Capacity Allocation Mechanisms. (From Section 4.1 and not Definitions Section)	BAL FGs
'balancing platform'	means a trading platform on which flexible gas is bought and sold, balancing services are procured and the TSO is party to every trade	BAL FGs
'balancing regime'	means the rules and agreements that apply to portfolio and TSO balancing, including the procurement of flexible gas, balancing services and imbalance charges.	BAL FGs
'balancing services'	means additional services (i.e. additional to the buying and selling of flexible gas) that a TSO may buy in order for the system to remain within safe operational limits, for example the ability to inject / withdraw gas into / from storage.	BAL FGs
'balancing zone'	means an entry-exit system, which may consist of more than one system, as defined in Article 2(13) of the Gas Directive, to which a specific balancing regime is applicable. Distribution systems may be part of the balancing zone. The entries from storage and LNG into the transmission system as well as the exits from the transmission system into the storage are part of the balancing zone.	BAL FGs

Gap analysis



EXTRACT

CHAPTER			Launch	SJWS1	SJWS2	SJWS3	SJWS4	SJWS5
BALANCING SYSTEM	System definition	Main						
		VTP						
BALANCING PERIOD	Main							
OPERATIONAL BALANCING	Products and services							
	Merit order							
	Related decision making							
	Interim measures/balancing platform							
IMBALANCE CHARGES	Daily imbalance charges							
		Imbalance price proxy						
	Imbalance cash-out	Tolerances						
	Other interim measures							
INFORMATION PROVISION	Nominations							
	Aggregate network user info.							
	TSO actions to buy and sell gas							
	Individual NU info, incl. NDM der.							
	DSO information							
	Info from exchanges and platforms							
	Incentives							
	Interim measures							

SJWS3-5: topic treatment

PRELIMINARY

SJWS3 – 9 Feb. 2012

Business rules (basic) review

- Nominations
- Balancing products
- Linepack
- Tolerances
- Information provision
  - TSO buy&sell actions
  - Individual NU, incl. NDM
  - DSO info.
  - Info. from exchanges/platforms

Business rules (refined) review

- Balancing platform
- VTP
- Balancing product merit order
- Imbalance quantities

Topic exploration

- Information provision
  - Incentives
  - Interim measures
- Transition topics (as per SJWS2)
- Cross-border cooperation

SJWS4 – 23 Feb. 2012

Business rules (basic) review

- TSO buying&selling of flexible gas
- Imbalance price proxy
- Tolerances
- Neutrality
- Within-day obligations (WDOs)
- Information provision
  - Aggregate network user info.
  - Incentives
  - Interim measures
- Cross-border cooperation

Business rules (refined) review

- Balancing products
- Linepack
- Information provision
  - TSO buy&sell actions
  - Individual NU, incl. NDM
  - DSO info.
  - Info. from exchanges/platforms
- Transition topics

SJWS5 – 7-8 Mar. 2012

Business rules (refined) review

- Nominations
- TSO buying&selling of flexible gas
- WDOs
- Imbalance price proxy
- Tolerances
- Neutrality
- Information provision
  - Aggregate network user info.
  - Incentives
  - Interim measures
- Transition topics
- Cross-border cooperation

SJWS2 agenda

Description	Presenter	Time
Registration and pre-workshop coffee		**from 9:30**
ENTSOG welcome and opening	**Nigel Sisman**	**10:00 – 10:05**
Process update: code development	**Tori Gerus**	**10:05 – 10:20**
Progress update: items not on SJWS2 agenda	**Ruud van der Meer**	**10:20 – 10:35**
Balancing Target Model – Business rules review (1)	**Noel Regan**	**10:35 – 11:20**
Coffee break		**11:20 – 11:30**
Balancing Target Model – Business rules review (2)	**Ruud van de Meer**	**11:30 – 12:00**
Balancing Target Model – Topic exploration (1) • Neutrality	**Noel Regan**	**12:00 – 13:00**
Lunch		**13:00 – 13:45**
Balancing Target Model – Topic exploration (2) • Linepack flexibility service	**TBC**	**13:45 – 14:15**
Interim approaches • Tolerances	**Julien Quainon**	**14:15 – 15:30**
Coffee break		**15:30 – 15:40**
Constructing sequences for transitional arrangements	**Nigel Sisman**	**15:40 – 16:15**
Summary conclusions from day and next steps	**Nigel Sisman**	**16:15 – 17:00**

Questions or comments?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Work in progress
Content update

Progress on balancing products

- Initially 5 short term standardized products identified as potential balancing tool for TSOs
- SJWS1 considerations
  - Remove swap as a standardized short term product
    - It can be constructed as two end-of-day products
    - Swaps can still be needed by TSOs, but as balancing services
  - There is a need to consider the possibility to manage within-day positions using
    - Title market transactions
    - Locational market transactions
  - –

Next steps on balancing products

- Explore possibility to reduce number of short term standardised balancing products
  - Can within-day positions of the network be managed using title and locational market transactions only?
- Establish detailed business rules on short term standardised balancing products
  - Product definition
  - (re)nomination requirements
  - Checks on delivery
- Develop business rules on procurement of balancing services
  - Specification of a market based processes

Material to be delivered for discussion in SJWS3

Short term standardised products

The following short term standardized balancing products shall be defined:

- Title market transaction
- Locational market transaction
- Intra-day title market transaction
  will only be used in systems with within-day obligations
- Intra-day locational market transaction
  will only be used in systems with “profiled nominations”

“(Re)nomination requirements[1]”

Locational market transaction and intra-day market transactions definitions may require:

- a, and which, network user to make (re)nomination
- exercise of option to determine at which point(s) (re)nom will be made
- process to check that (re)nom has actually been made, and gas has flowed
- (re)nom requirements consistent with section .. of the nc
- rules and incentives on (re)nominations
- Others?

Detailed proposals will be developed for SJWS3 review

[1]Locational and temporal products may have additional specificities beyond the Title Product definition

Information Flows

- ENTSOG presented a ‘topic exploration’ on portfolio information in SJWS1
- Based on the feedback received from stakeholders we are preparing ‘first pass business rules’ for consideration
- Some considerations:
  - Timing and provision of information
  - Interfaces with other areas – nominations, imbalances, tolerances
  - Potential accuracy measures
  - Roles and responsibilities
- It is intended to revert on other matters for ‘topic exploration’ in SJWS 3:
  - Input information

Nominations

- ENTSOG presented Topic Exploration Slides at SJWS1
- Feedback from stakeholders seeking greater than criteria at IPs (per FGs)
- ENTSOG considering what is required to make the nominations regime support the balancing regime proposed
  - ACER aiming to provide further opinion

ACER liaison

- Planned a series of 10 telco’s
  - CION/ACER/ENTSOG
  - Well into consultation phase
- ACER will be contacted with any urgent matters

More than 2 price cash-out

- Will be discussed in context of
  - Information accuracy
  - Tolerances
  - Effects on imbalance calculation


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Daily Imbalance Charge

Draft Business Rules Presentation

Noel Regan
Commercial Framework Kernel Group

Introduction

- At SJWS 1 ENTSOG presented ‘topic exploration’ slides for stakeholder feedback
- Subsequently draft business rules have been prepared for stakeholder consideration, published on our website in advance of the workshop
- Intended to prompt discussions on particular points and are not a position

Daily Imbalance Charge

Worked Example - Optional

1. General
2. Daily Imbalance Quantity Calculation
3. Daily Imbalance Charge Calculation
4. Determination of ‘Small Adjustment’
5. Allocations

Worked Example

Worked Example

- Lets assume we have a simple Balancing Zone with two Network Users:
  - Alpha
  - Beta
- Within the Balancing Zone there is a liquid wholesale market
- Lets look at one Gas Day (or Balancing Period)

Worked Example

Network Users

Network User	Alpha	Beta
Inputs	100	200
Offtakes	80	240
Position	20 Long	(40) short

Wholesale Market

- The weighted average wholesale market price is 40 c/unit
- The TSO carried purchased 3 lots of gas at
  - 39.5 c/unit
  - 40.7 c/unit
  - 42 c/unit

Imbalance Methodology

- A Small Adjustment has been set of 1c/th for the Marginal Buy and Sell Price

Worked Example

Calculate Marginal Buy and Sell Price

- **Marginal Buy Price**, higher of
  - TSO Trades: 42 c/unit
  - Average plus Small Adjustment: (40 c/unit + 1 c/unit) = 41 c/unit

  –= 42 c/unit

- **Marginal Sell Price**, lower of
  - TSO Trades: 39.5 c/unit
  - 39 c/unit

  –= 39 c/unit

Worked Example

Alpha

- Was long gas so sells gas at the Marginal Sell Price

Alpha receives: 20 units x 39c/unit = 780c

If it had sold the gas at the average price it would have received: 800 c

Beta

- Was short gas so purchases gas at the Marginal Buy Price

Beta pays: 40 units x 42 c/unit = 1,680

If it had bought the gas at the average price it would have paid: 1,600 c

Business Rules

Daily Imbalance Charge

General

- The TSO shall publish its imbalance charge methodology and update it accordingly as any changes are made. This methodology must contain:
  - The determination of the weighted average gas price;
  - The determination of the small adjustment;
  - The timing of the initial and final allocations and window for challenging / querying initial allocations;
- The imbalance charge methodology shall be approved by the NRA, pursuant to Article 41(6)(b) of the Gas Directive.

Daily Imbalance Charge

Daily Imbalance Quantity Calculation

- Each Network User shall have a Daily Imbalance Quantity calculated, which shall be the difference between its Inputs to and Offtakes from the Balancing Zone for each Gas Day

- Inputs = Entry Allocations + VTP Buy Allocations

- Offtakes = Exit Allocations + VTP Sell Allocations

–

Daily Imbalance Charge

Daily Imbalance Quantity Calculation

- Network Users shall be provided with an initial Daily Imbalance Quantity on the day following the Gas Day where technically and operationally feasible, but no later than (x) business days after the Gas Day

- Network Users shall be allowed to query or challenge Initial Daily Imbalance Quantity for a defined period of time after the initial Daily Imbalance Quantity is provided

- Following this period and no later (x) business days in the month after the Gas Day, Network Users shall be provided with a final Daily Imbalance Quantity, to be used in the imbalance settlement process

Daily Imbalance Charge

Daily Imbalance Quantity Calculation

- If the sum of a Network User's Inputs for a Gas Day equals the sum of its Offtakes for a Gas Day, the Network User's Daily Imbalance Quantity for that Gas Day shall be balanced; and

- If the sum of a Network User's Inputs for a Gas Day exceeds the sum of its Offtakes for a Gas Day, the Network User's Daily Imbalance Quantity for that Gas Day shall be positive; and

- If the sum of a Network User's Offtakes for a Gas Day exceeds the sum of its Inputs for a Gas Day, the Network User's Daily Imbalance Quantity for that Gas Day shall be negative.

Daily Imbalance Charge

Daily Imbalance Charge

- A Marginal Buy Price and a Marginal Sell Price shall be calculated for each Gas Day:

- A Marginal Sell Price is calculated as the lower of:
  - The lowest price of any gas balancing trade to which the TSO is a party in respect of a balancing period (excluding locational or temporal products), or
  - The weighted average price of gastraded in respect of that day, minus a small adjustment to incentivise Network Users to balance.

- A Marginal Buy Price is calculated as the higher of:
  - The highest price of any gas balancing trade to which the TSO is a party in respect of a balancing period (excluding locational or temporal products), or
  - The weighted average price of gas traded in respect of that day, plus a small adjustment to incentivise Network Users to balance.

Daily Imbalance Charge

Daily Imbalance Charge

- The weighted average price of gas should be derived on the following basis
  - Trades in respect of Day D made on D-1 and Day D.
  - Trades made on pre-identified platforms, exchanges or via recognized price reporting.

- The Daily Imbalance Charge shall be calculated by the TSO for each Network User for each Gas Day in accordance with the following formula

  - Daily Imbalance Charge = Negative Daily Imbalance Quantity x Marginal Buy Price, or

  - Daily Imbalance Charge = Positive Daily Imbalance Quantity x Marginal Sell Price.

Daily Imbalance Charge

Derivation of Small Adjustment

- The small adjustment used in calculating the marginal price calculation shall be proposed by the TSO and assessed for approval by the NRA.

- In designing the Small Adjustment the TSO will consider the following criteria:
    - It shall incentivise Network Users to balance their portfolio;
    - It shall be designed and applied in a non-discriminatory manner;
    - It shall not deter market entry;
    - It shall not impede the development of competitive markets;
    - Its impact on cross border trade;

- Should there be evidence that the criteria are not satisfied, the TSO may seek and the NRA may approve an immediate change of the small adjustment.

Daily Imbalance Charge

Allocations

The Entry Allocation can apply to one or more of the following Entry Points:

- Interconnection Points;
- LNG Terminal Inputs;
- Production Facilities;
- Storage Withdrawals;
- Transmission System / Distribution System Inputs(s) or if the Balancing Zone includes the distribution system, Entry Points directly entering the Distribution System.
- Virtual Entry Points;
- Any other point where gas flows enter the Balancing Zone;

Daily Imbalance Charge

Allocations

- The process for deriving the Entry Allocation at each point shall not be part of the Balancing Network Code [although the process should not be detrimental to the efficiency of the balancing regime].

Daily Imbalance Charge

Allocations

The Exit Allocation can apply to one or more of the following Exit Points:

- Interconnection Points;
- Storage Injections;
- Transmission connected Intraday Metered End Consumer Offtakes;
- Transmission connected Daily Metered End Consumer Offtakes;
- Transmission connected Non Daily Metered Consumer Offtakes
- Transmission System / Distribution System Offtakes(s) or, if the Balancing Zone includes the Distribution System, these Exit Allocations include:
  - Distribution connected Intraday Metered End Consumer Offtakes;
  - Distribution connected Daily Metered End Consumer Offtakes;
  - Non Daily Metered End Consumer Offtakes;
- Virtual Exit Points;
- Any other point where gas exits the Balancing Zone.

Daily Imbalance Charge

Allocations

The Exit Allocation can apply to one or more of the following Exit Points:

- Interconnection Points;
- Storage Injections;
- Transmission connected Intraday Metered End Consumer Offtakes;
- Transmission connected Daily Metered End Consumer Offtakes;
- Transmission connected Non Daily Metered Consumer Offtakes
- Transmission System / Distribution System Offtakes(s) or, if the Balancing Zone includes the Distribution System, these Exit Allocations include:
  - Distribution connected Intraday Metered End Consumer Offtakes;
  - Distribution connected Daily Metered End Consumer Offtakes;
  - Non Daily Metered End Consumer Offtakes;
- Virtual Exit Points;
- Any other point where gas exits the Balancing Zone.

Daily Imbalance Charge

Allocations

- The Exit Allocation for Transmission connected Intraday Metered End Consumer Offtakes, Transmission connected Daily Metered End Consumer Offtakes, Distribution connected Intraday Metered End Consumer Offtakes and Distribution connected Daily Metered End Consumer Offtakes, shall be based on measured flows over the Gas Day.

- The Exit Allocation for Non Daily Metered End Consumer Offtakes shall be based on an ex-post estimate of each Network Users offtakes, taking account of actual demand on the Gas Day, unless
  - Metered information is provided within the day on NDM Offtakes;
  - Network Users are cashed out against day ahead information, , whereby the Exit Allocation equals the Day Ahead NDM Derived Forecast.

Discussion

1. General
2. Daily Imbalance Quantity Calculation
3. Daily Imbalance Charge Calculation
4. Determination of ‘Small Adjustment’
5. Allocations

For each section:

- Discuss any specific issues
- Areas missing / too much information
- Any scenarios wrongly prohibited?

The more feedback the better…..


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Platforms

Kick starting a market – GB experience

Two key questions

- Can the TSO use market based mechanisms if market is not liquid
- How can you balance if gas day finishes 12 hours after CoB

TSO can kick-start a market – GB experience

- Liquidity will grow
- An out-of-hours market will evolve
  - 24-7 operation provides the TSO and market parties with the opportunity to trade during all hours of the day
  - TSO and market actually do trade during all hours of the day
  - Out of office hours the trading is more liquid than between 9 and 5.

Trading platform

- TSO shall trade the products mentioned under section .. on an electronic trading platform
- The platform shall
  - Provide functionalities for registered user to place and manage bids and offers
  - Provide functionalities for registered users to accept bids and offers
  - Provide for bids and offers to be anonymous
  - Anonymity can be lifted after the trade has been done (e.g. in relation to locational trades)
  - Offer these services on a 24/7 basis
- The platform may offer additional products
- Where additional products are offered the TSO shall only trade in the short term standardized balancing products

Establishment and competition

- If no platform is available TSO shall endeavour to establish a balancing platform
- If an existing platform only offers support for title products TSO will endeavour to establish a balancing platform for trade in locational and temporal products
- Where more than one platform is available TSO will decide which platform(s) to use
- TSO will only use those platforms that support the TSO in the establishment of settlement prices in close to real-time

Balancing platform

As an initial step in trading short term products TSO

- May trade locational and both intra-day products
  - On a platform that
  - Allows all registered users to place bids and offers
  - Only allows the TSO to accept bids and offers by other network users
- Must consult on the use of such a mechanism
- Indicate what criteria must be met to move away from this interim step

Procurement of balancing services

TSO will establish a bulletin board

- For procuring long term balancing services
- Via posting of bids by the TSO
- Specifying the relevant information, including
  - Contract period (start, end)
  - Location
  - Injection capacity
  - Withdrawal capacity
  - Working volume
- Register offers made by network users

Merit order
Initial strawman

Description of merit order – initial strawman

When taking balancing actions TSO will use short term standardized balancing products

- Title market transactions
- Locational market transactions
- Intra-day market transactions
- Intra-day locational transactions

Where two or more of these instruments are expected to provide flows that keep the system within the accepted operational envelop the TSO will choose based on efficiency of the instrument

- TSO can use long term balancing services where short term standardised products will not or are not likely to provide flows that will keep the system within the accepted operational envelop

Use of merit order – initial strawman

- Any action aimed at managing end-of-day position will be through the use of title market transactions
- Locational transactions will only be used if there is an internal bottle-neck and the gas cannot be moved through the system timely enough (locational: assumed flat delivery over the rest of the gasday)
- Temporal only when other products are not likely to provide a profile to keep the system within operational envelop


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Settlement / Neutrality

Noel Regan
Commercial Framework Kernel Group

Network code considerations

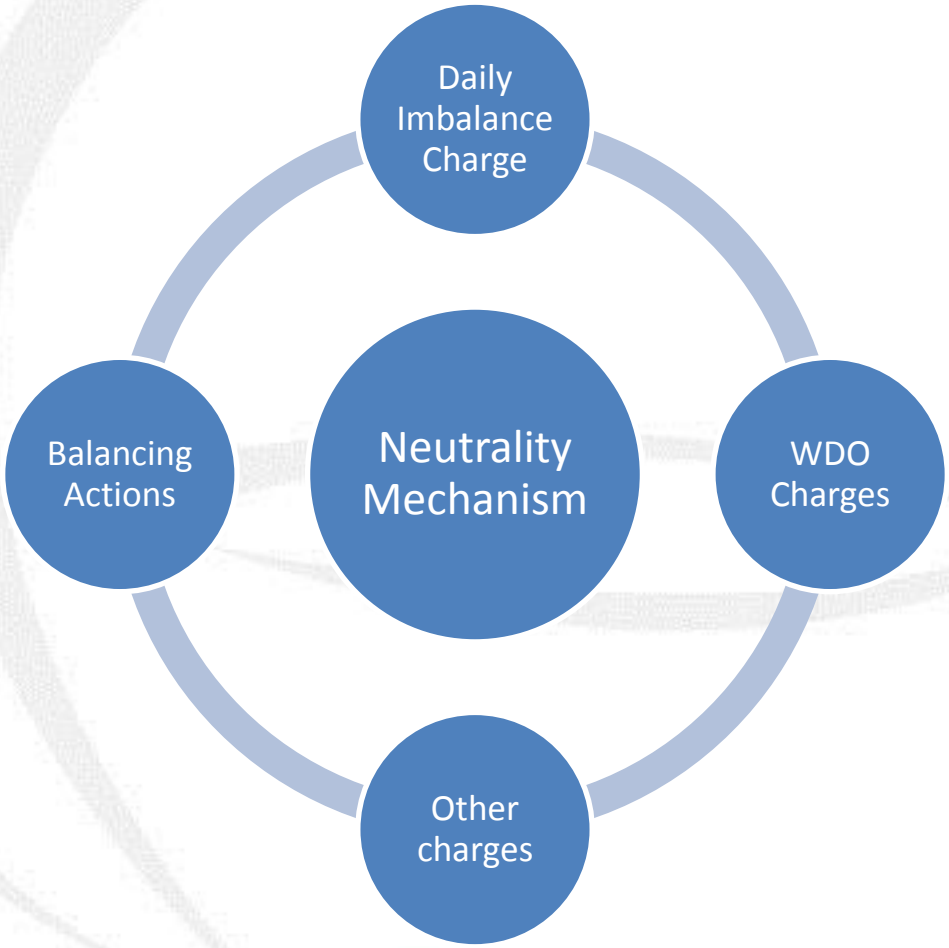
- At the balancing launch event, ENTSOG and stakeholders discussed that the development of a Neutrality Mechanism needs careful consideration

- Some support was received for the principles of a mechanism being included in the code
  - satisfy the requirements specified in the framework guidelines (FGs) and
  - bring about some high-level harmonisation

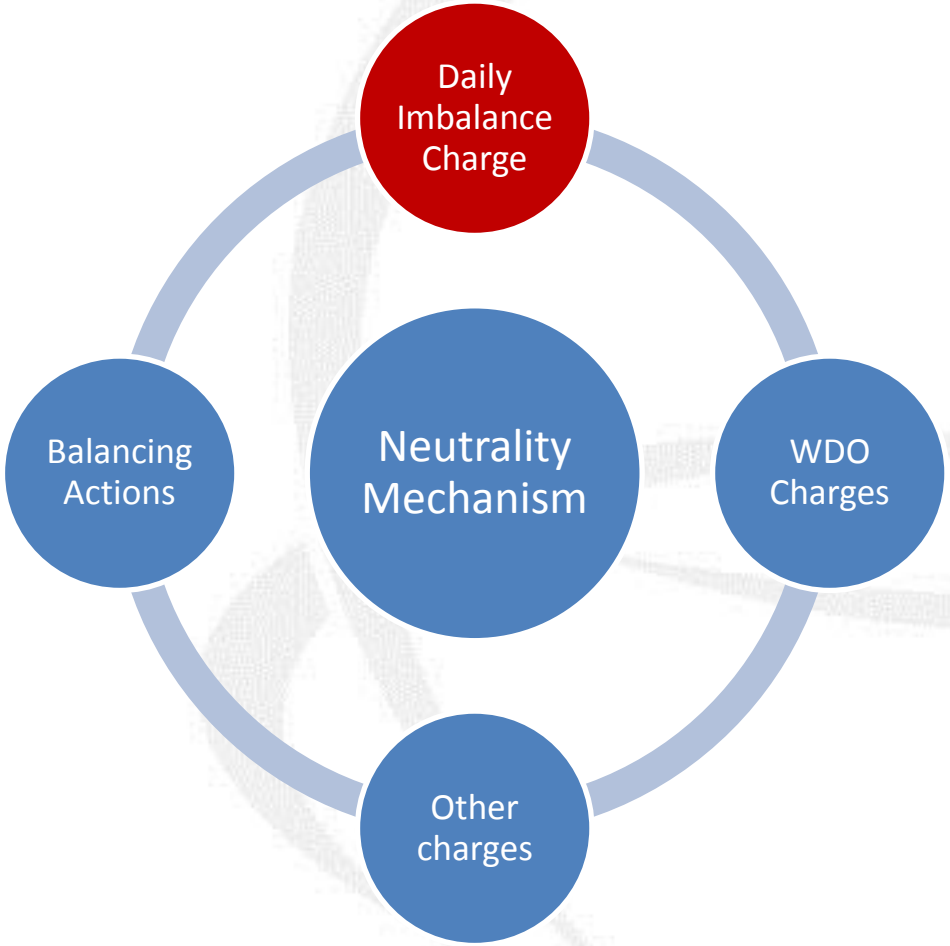
- ENTSOG sees merit in having some details in relation to a Neutrality Mechanism in the network code and has developed the proposal further

- Stakeholder views are sought on the treatment of neutrality within the code

What are the financial elements of the balancing activities

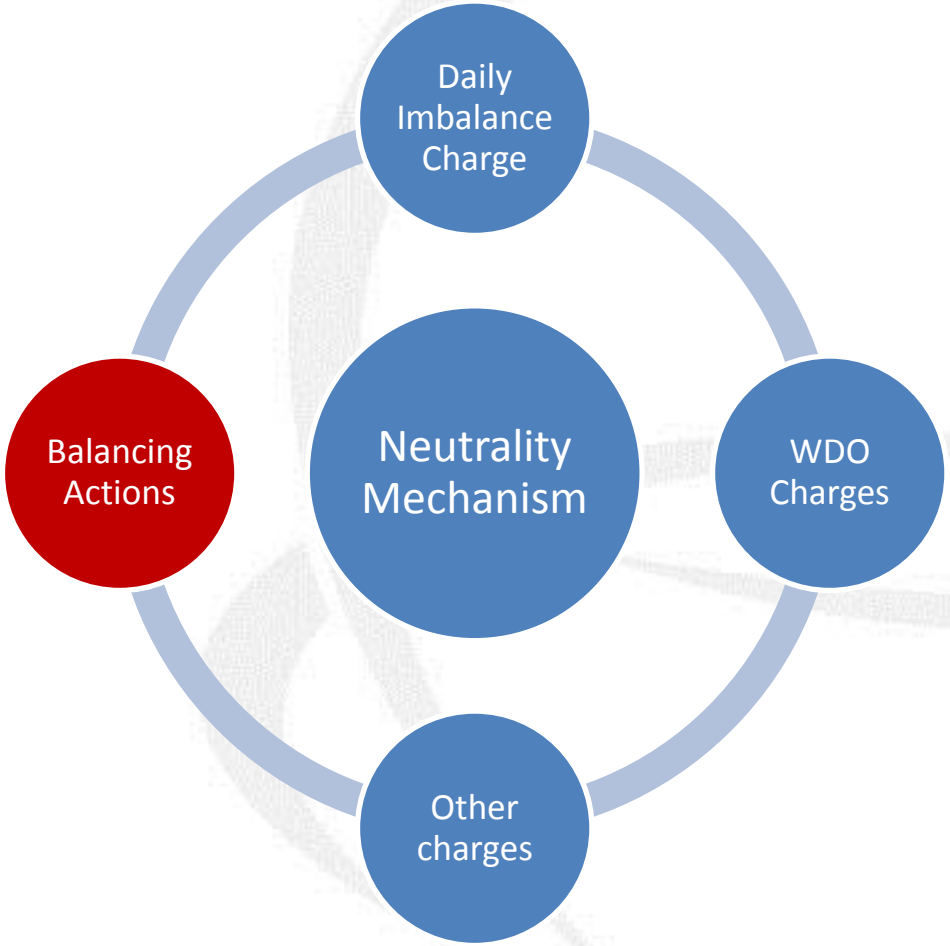


What are the financial elements of the balancing activities



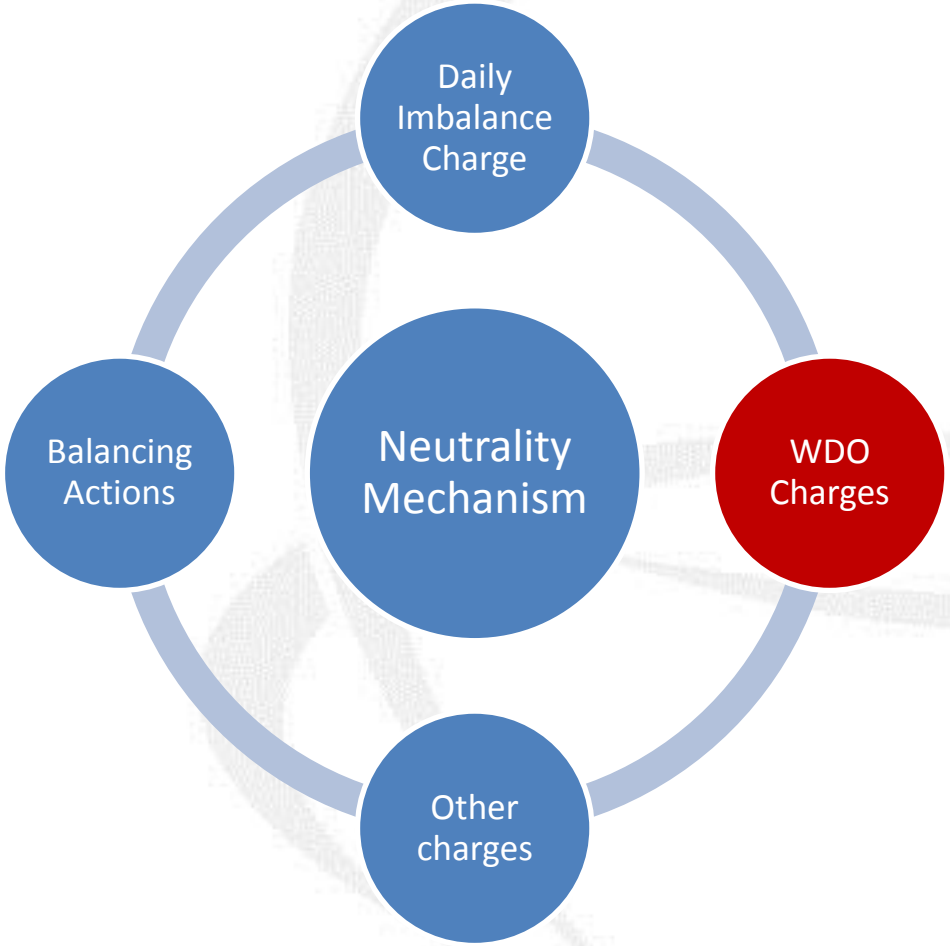
- Each Network Users is charged or credited for its Daily Imbalance Quantity
- May be net income or outgoing

What are the financial elements of the balancing activities



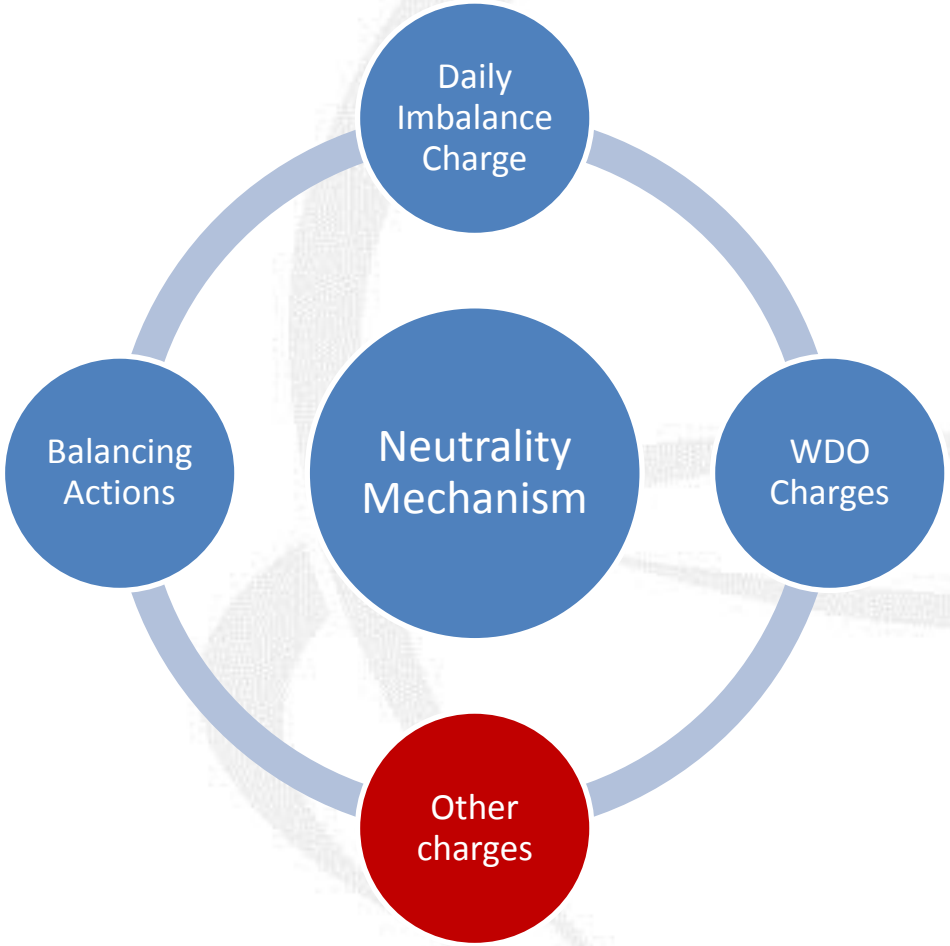
- This pot covers the TSOs balancing actions:
  - Short term products
  - Balancing Services
- May be net income or outgoing
- Can include fixed costs

What are the financial elements of the balancing activities



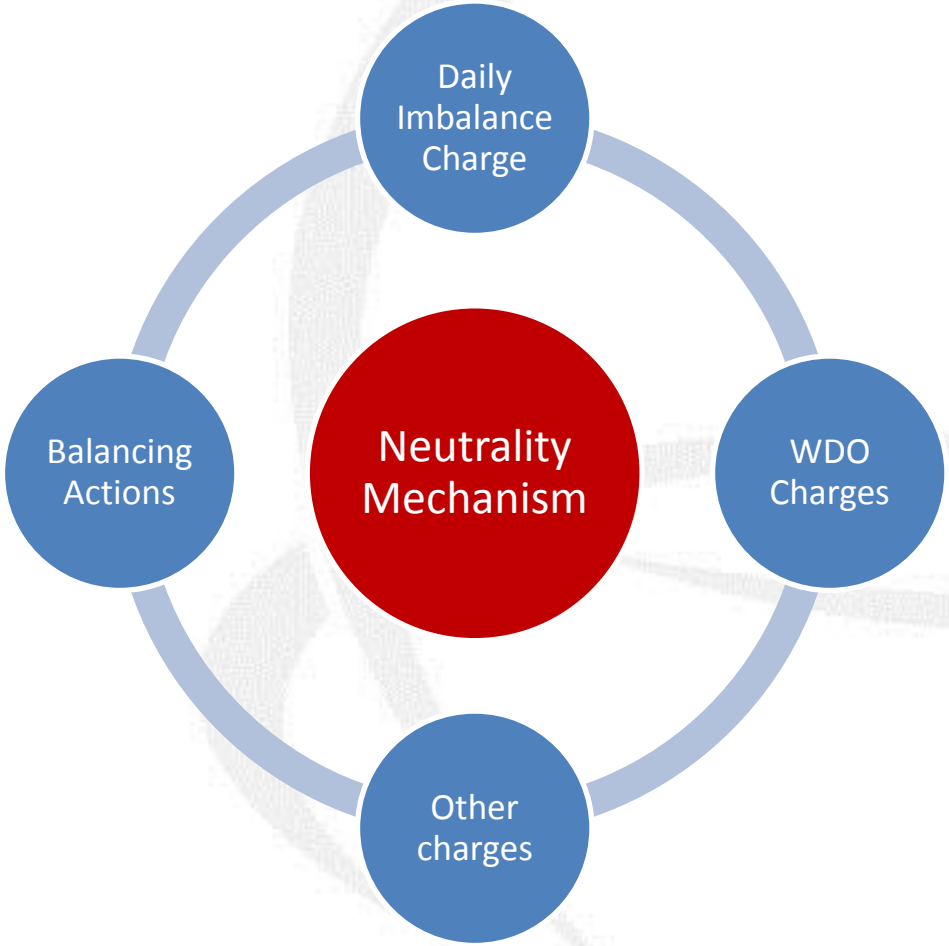
- May be an income if Network User did not follow a within day obligation
- Not a feature of all regimes

What are the financial elements of the balancing activities



- This pot intended to capture other financial flows from Balancing activities
  - E.g. administration costs
  - Financing costs

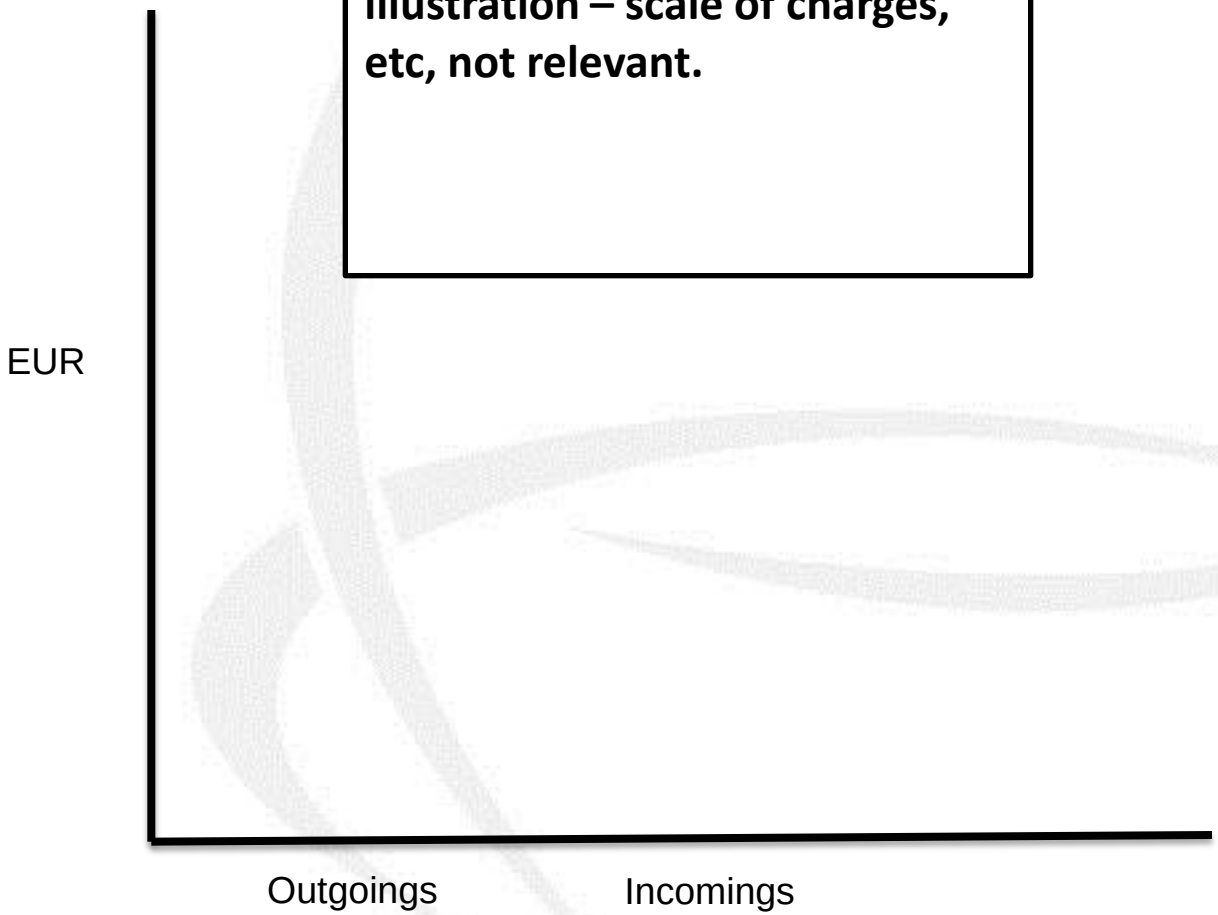
What are the financial elements of the balancing activities



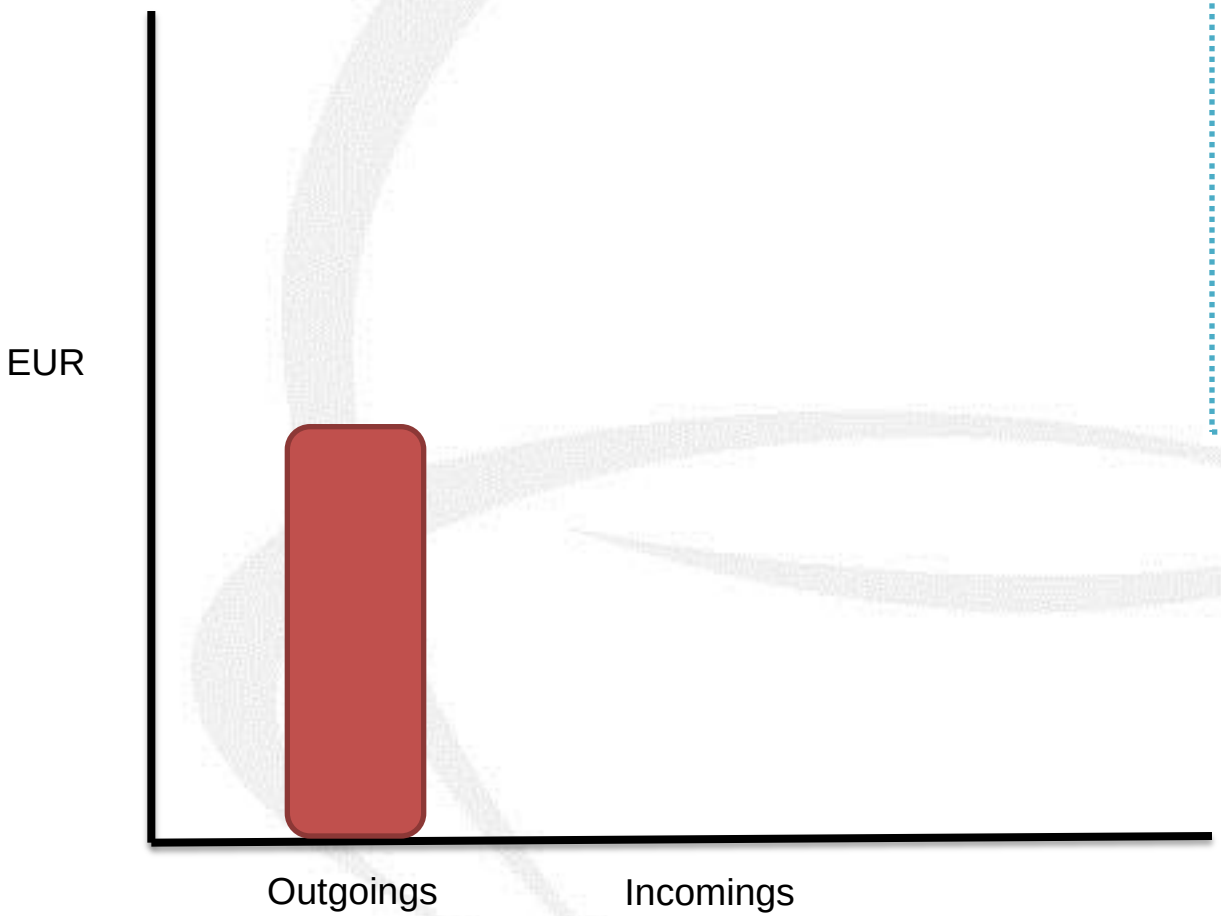
- Choices then can be made on the principles of neutrality mechanism
- There are three main features of a neutrality mechanism:
  1. The financial flows that feed into the mechanism
  2. The construction of the mechanism
  3. The means of distributing the pot amongst network users

Lets look at an example Gas Day

Note – all diagrams for illustration – scale of charges, etc, not relevant.

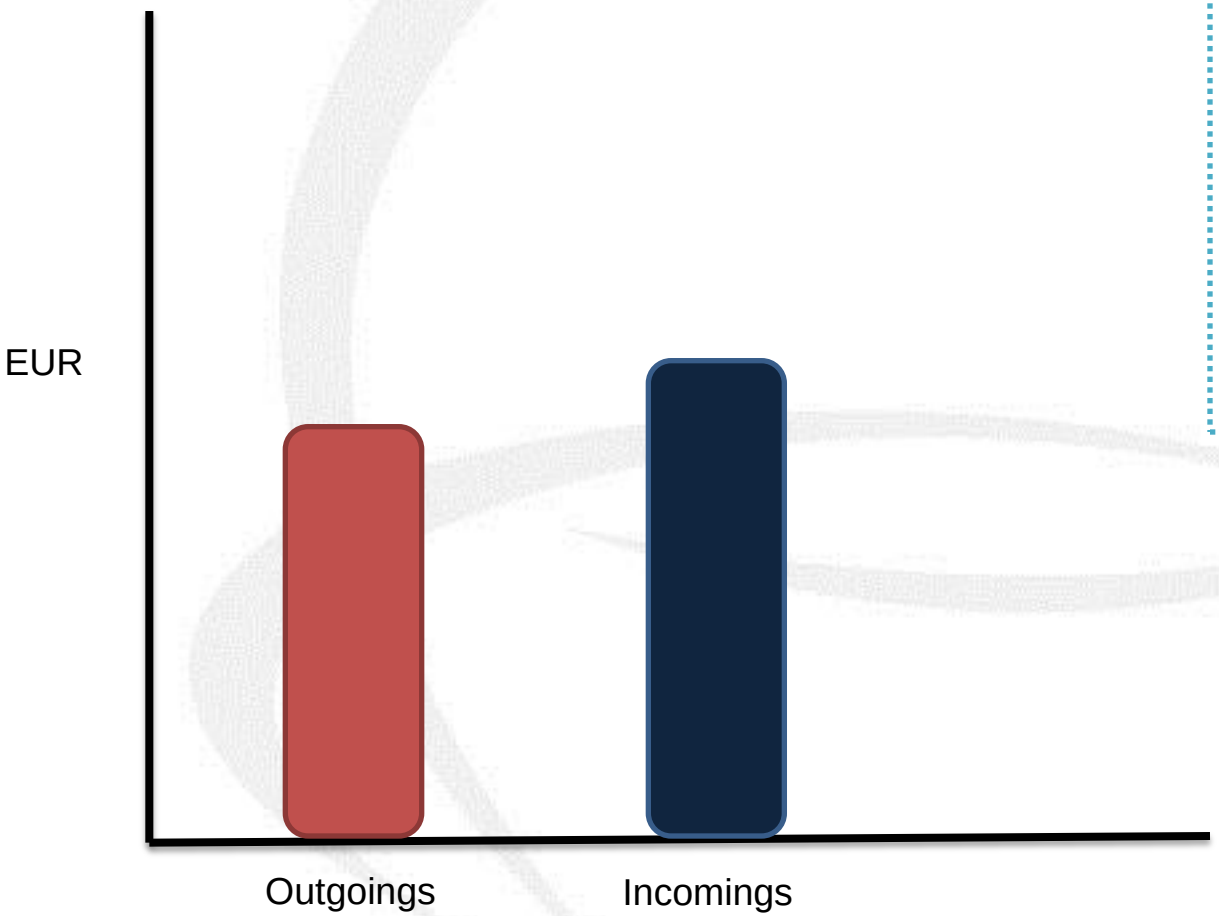


Lets look at an example Gas Day



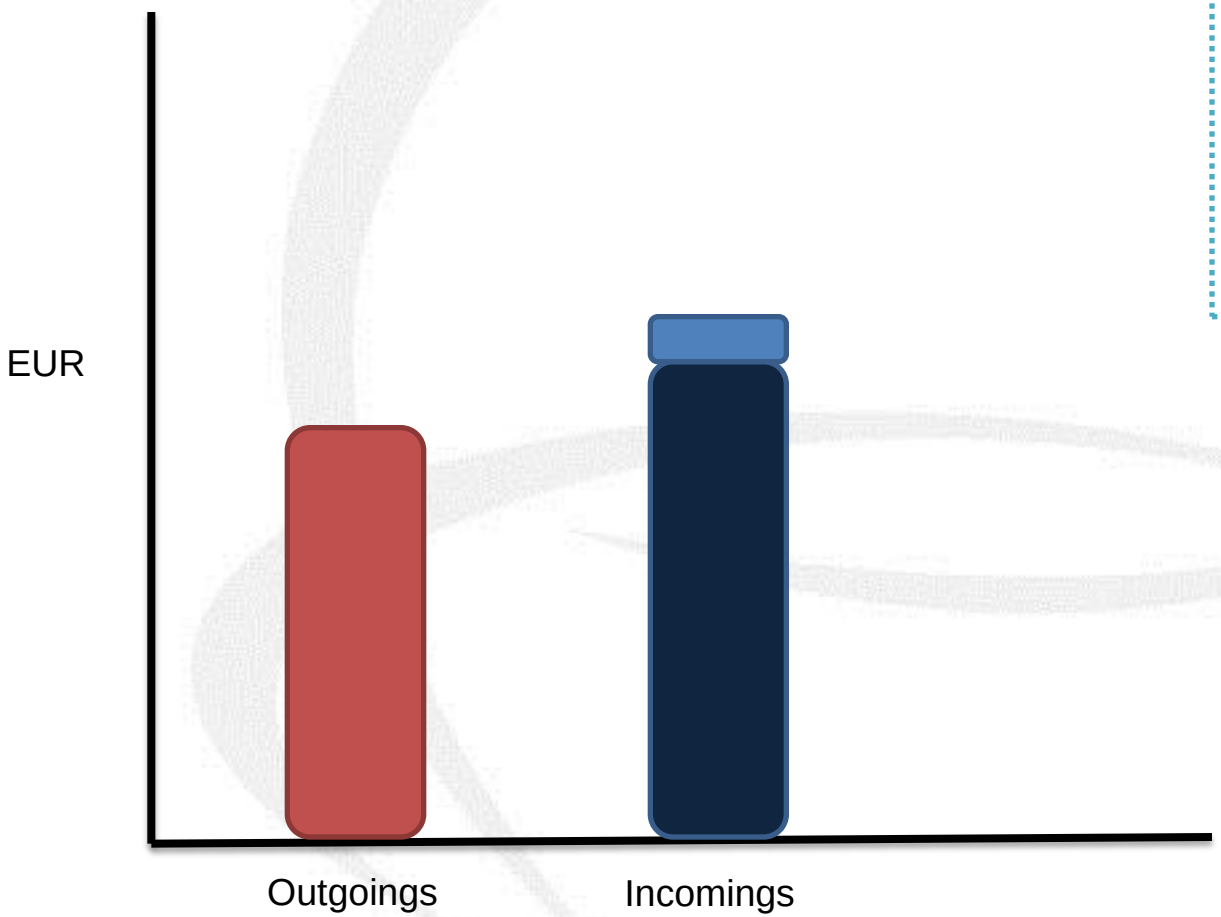
Comment
Network Users were short on this Gas Day and the TSO bought balancing gas

Lets look at an example Gas Day



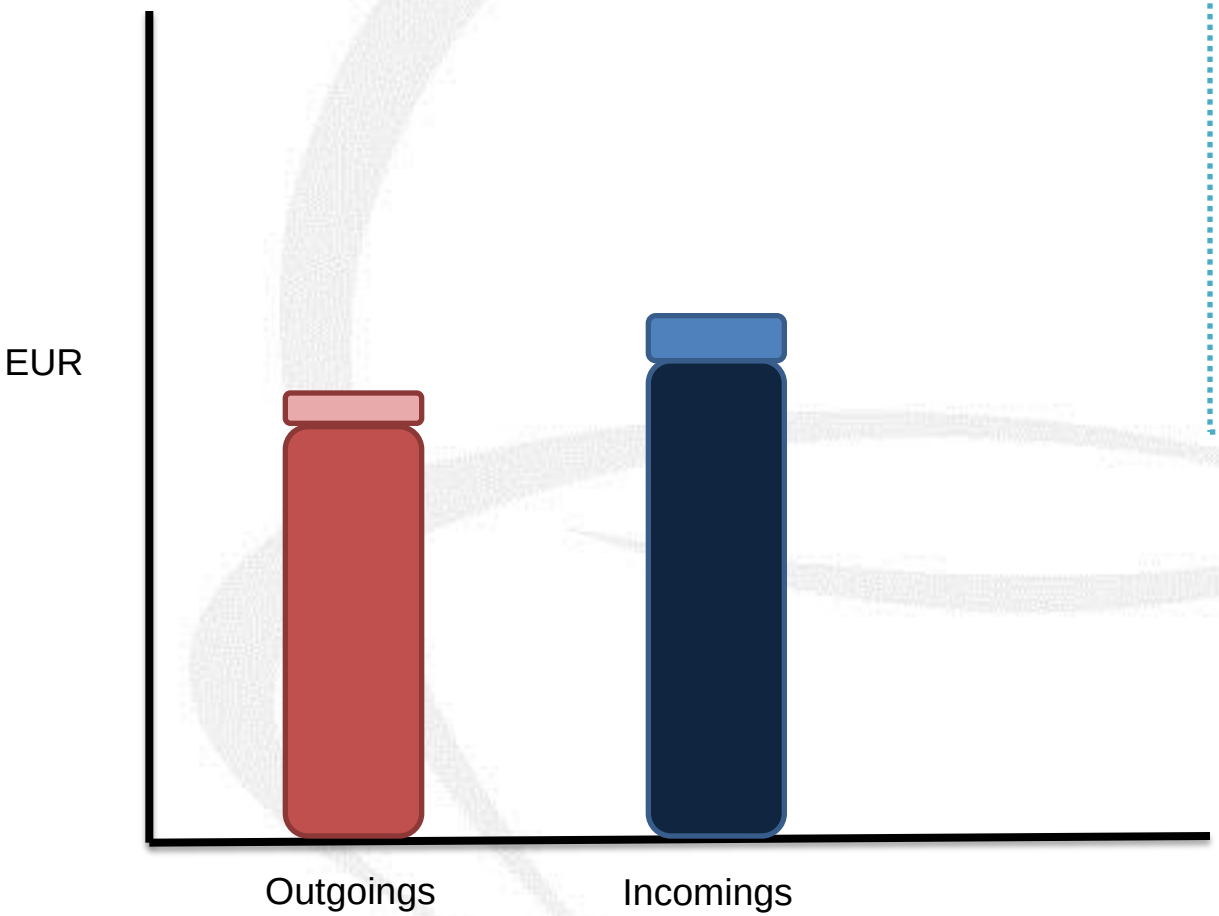
Comment
Each Network User imbalance is settled. In this example the incomings slightly exceed the TSOs costs.

Lets look at an example Gas Day



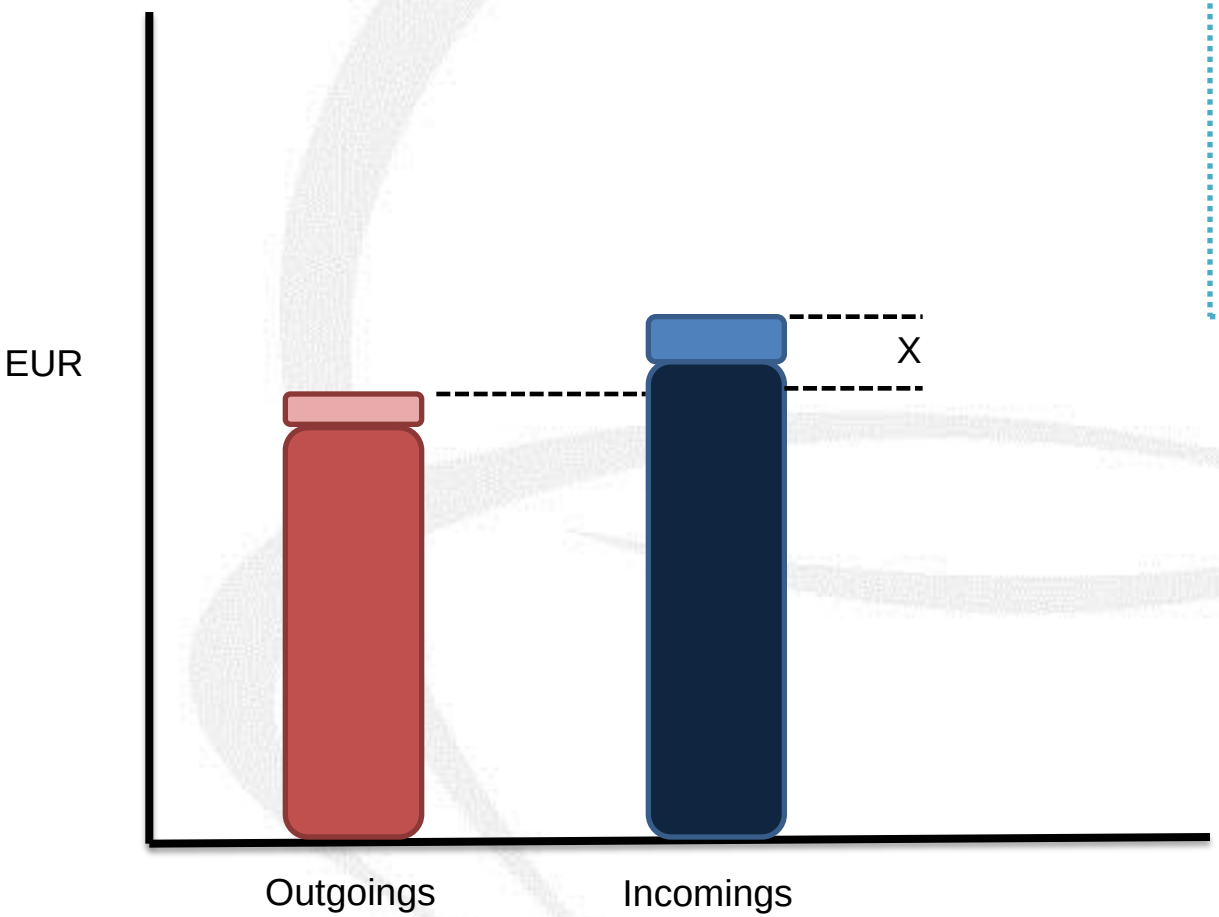
Comment
Some Network Users incur a small penalty for not following their WDO

Lets look at an example Gas Day



Comment
The TSO has some other costs / revenues to be included
E.g. fixed costs, financing,

Lets look at an example Gas Day



Comment
The TSO has surplus of "X" for this Gas Day. This amount to feed into neutrality mechanism

Framework Guideline Principles of the balancing neutrality mechanism

- The TSO shall be cash neutral with respect of all its balancing activities, undertaken in its role as the system residual balancer
- The TSO shall levy imbalance charges directly on the network users that were out of balance at the end of the balancing period
- The TSO shall only recover from all network users, any costs incurred from undertaking balancing activities that are not directly attributable to a network user
- The balancing neutrality charges shall be kept separate from other transmission charges

A neutrality mechanism is therefore required to satisfy these requirements

Additional Principles for Consideration

High Level Principles

- A balancing neutrality mechanism will be used to enable the TSO to recover and appropriately apportion charges and revenues related to its balancing activities
- The apportionment of charges and revenues to all network users will be based on each network user's usage of the system within the balancing period

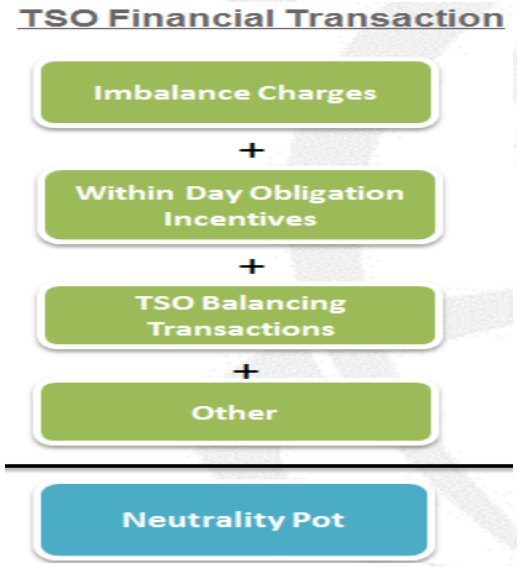
Do stakeholders feel that such principles are appropriate?

Types of Neutrality Mechanism

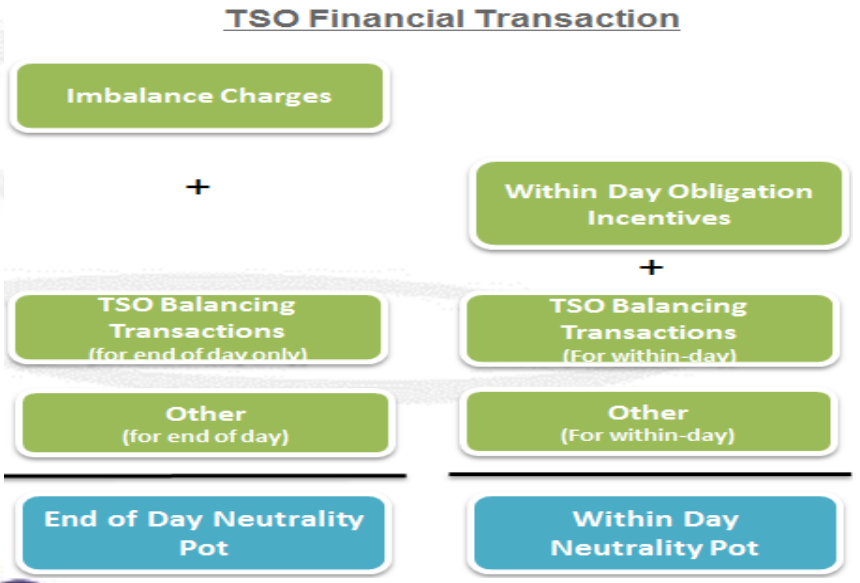
Identification of Balancing Neutrality Mechanism structures

- The Neutrality pot should apportion costs fairly – where there is WDOs and balancing actions that can be attributed to end of day or within day separately a dual balancing neutrality mechanism may be considered
- This might look like:

Single Balancing Neutrality Mechanism



Dual Balancing Neutrality Mechanism



Recovery of the Balancing Neutrality Charge

Neutrality Charging Application

- The balancing neutrality charge to be recovered or credited shall be the difference between the amounts received and the amounts payable by the TSO in respect of all the applicable balancing charges

- For each balancing period there is;
  - A net neutrality amount for each neutrality pot constructed, which equates to all balancing payments due to the TSO less all receipts due to the TSO
  - The net neutrality amount will be divided pro rata amongst network user based on their total usage of the system for the considered pot.

- Each network user shall pay to the TSO or (as the case maybe) the TSO shall pay to the network user the balancing neutrality charge in accordance with the invoice arrangements utilised by the relevant TSO/Network Users

- The mechanism must complement wider financial considerations, such as:
  - Default risk
  - Consideration of network users billing practices (do they invoice monthly, quarterly, etc).

Conclusions

- ENTSOG sees merit in having details in relation to a Neutrality Mechanism in the network code

- We have proposed additional elements for consideration:

1. High level Principles

2. Identification of balancing neutrality mechanism structures

3. Neutrality Charging application rules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Linepack Flexibility Service

Commercial Framework Kernel Group

Introduction

- The term linepack can be used in many different contexts
- In this presentation we are focusing on a specific provision on use of linepack within the framework guidelines

“The network code on gas balancing shall not prevent TSOs from allocating linepack to network

users if approved by the relevant NRA. Where linepack is sold, TSOs shall allocate the linepack

to network users as a commercial product on a transparent and non-discriminatory basis and it

shall be offered at a cost reflective price. The price may also be determined through competitive

mechanisms. The decision by the relevant NRA to allocate linepack shall be based on objective

criteria, including the physical characteristics of the networks, whether the provision is consistent with Section 4 of these Framework Guidelines and whether offering a linepack product would facilitate a more efficient use of the system.”

Introduction

- There are significant differences in the levels of linepack flexibility throughout Europe
- This clause refers to a ‘linepack flexibility service’ which some TSOs might be able to offer network users considering physical characteristics of the networks.
- In essence the framework guidelines state that the network code should not prevent this service being offered, but that it must satisfy certain criteria
- So what does a linepack flexibility service look like?

How is it offered to Network Users

- Linepack flexibility can be offered to the extent to which mismatches between input and offtake flows can be accommodated in the system
  - referring to aggregate inputs and offtakes (and so no specific targeting of costs /utilisation to a specific user).

- In the context of linepack flexibility service, we are seeking to sell end-of-day linepack flexibility to individual network users and make them responsible for staying within their service entitlements.
  - Therefore it is only meaningful to sell such services where there is a sufficiently large amount of flexibility over and above that which might be considered to have a benefit from some form of socialisation

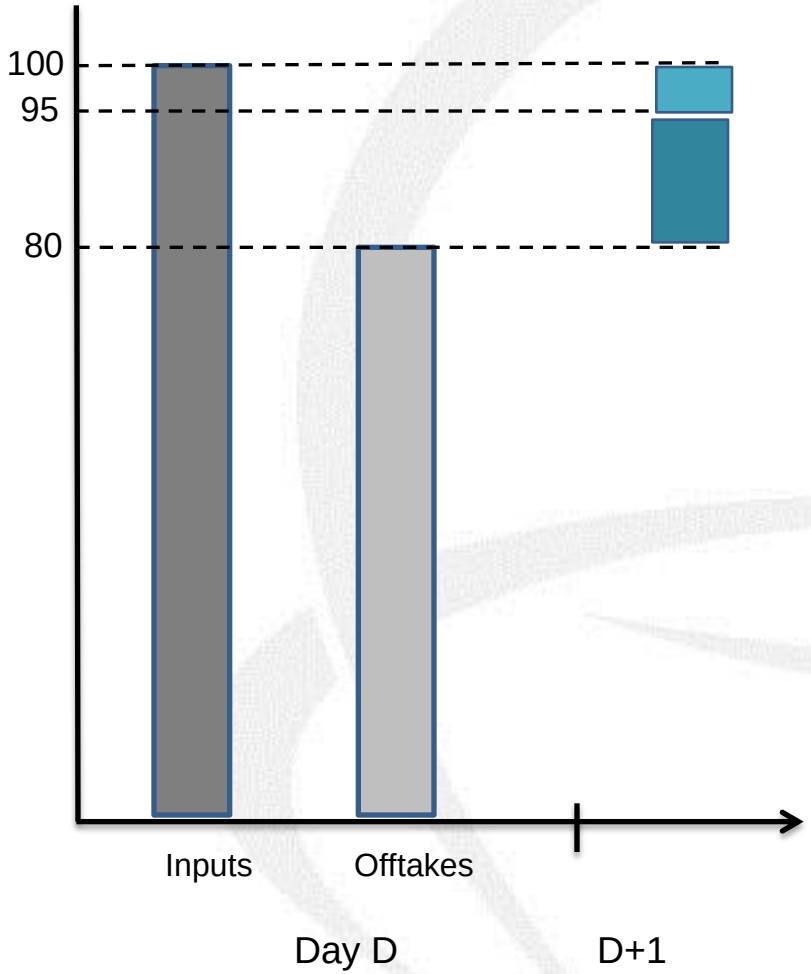
ENTSOG have identified two high level means of offering this product to network users:

1. Implicit linepack service
2. Explicit linepack service

Implicit Linepack Service

- Here Network Users do not notify the TSO of its intention to use the service within the Gas Day
- If the Network User has an imbalance quantity at the end of the day there is an “implicit” assumption that it wished to use the service
- Its imbalance quantity to be cashed-out is reduced by up to the pre-arranged inventory capacity
- The amount in the inventory derived for the end of day influences the inventory change that can be accommodated the next day

Implicit Linepack Service



Assume

- Network User has booked 15 units of implicit linepack storage which is empty at the start of the Gas Day
- In the example the Network User has an imbalance of 20 – however the TSO does not know until the end of the Gas day whether the Network User intended to use the implicit storage or not
- 15 units are therefore assumed to be stored, meaning the network Users starts the next Gas day 15 units with this in inventory
- 5 units are sold to the TSO at the Marginal Sell Price

Implicit Linepack Service

Some considerations:

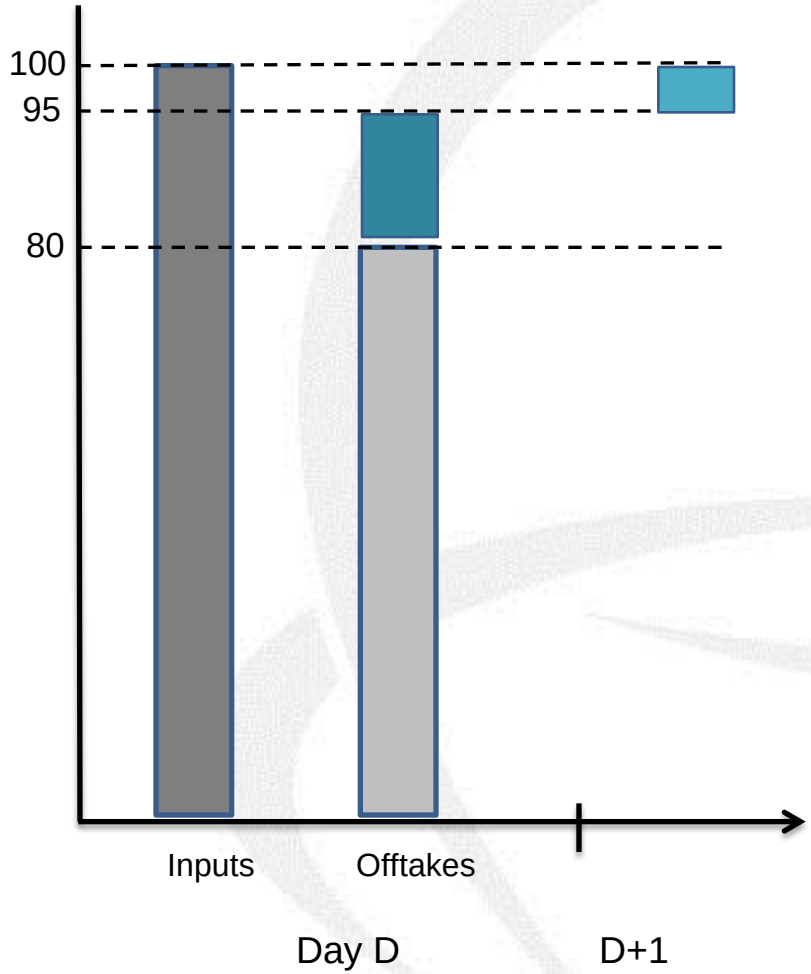
- TSO does not know within the day Network Users intention to balance – may make balancing actions more difficult

- TSOs and Network User may require a final imbalance calculation in the early hours of D+1 – has implications on reconcilliaton. This is a strong information requirement.

Explicit Linepack Service

- Here Network Users do notify the TSO of its intention to use the service as an injection or withdrawal at the end of the Gas Day
- Network users will only be able to give notifications up to their maximum level of inventory in the linepack service available.
- To all intents and purposes it is basically a standard storage service

Explicit Linepack Service



Assume

- Network User has booked 15 units of implicit linepack
- In the example the Network User has an imbalance of 20
- If the TSO has not nominated to inject 15 units of gas it is fully cashed out for 20 units at Marginal Sell Price

Or

- If the TSO had nominated to inject the gas carries 15 units carries forward like the implicit service and 5 units are cashed out

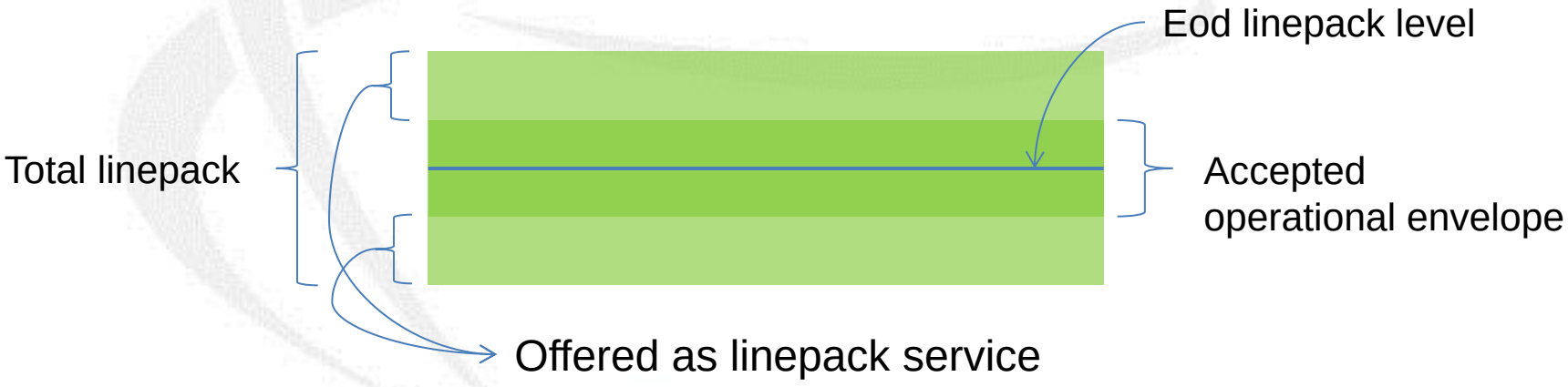
Review of framework guidelines

- The framework guidelines ask that certain criteria are met in order for the service to be offered

Criteria

(i) the physical characteristics of the networks

- The TSO should not need to contract any other infrastructure (e.g. storage or terminals) to provide this service
- so the extent of linepack flexibility available would be limited to that beyond which otherwise might be used to manage imbalances in flow rates on the system.



Criteria

(ii) whether the provision is consistent with Section 4 of the framework guidelines

So what is in Section 4:

4.1 Balancing Period

- Standarised Balancing period
- Network Users financially settled after each Balancing Period
  -> allocations to/from linepack service are allocations from/to network user's balancing account

4.2 Within Day Obligations

-> Introducing a linepack service shall not lead to more stringent within-day obligations

4.3 Nominations

-> Introduction of linepack service shall not have a negative impact on nomination requirements

ENTSOG will have to pick the specific criteria based on Section 4 of the framework guidelines for inclusion in the Network Code

Criteria

(iii) ***whether offering a linepack product would facilitate a more efficient use of the transmission system***

- If offering the service reduces the overall cost of operating the system

- does not place any additional cost on those network users that do not avail of the facility;

Exmaple:

Suppose network user

- enters gas quantity Q into linepack during day D when average price is P
- Takes gas from linepack during day D+n when average price is P+dp

Then network user earns Q*dp.

Who is paying this, does this ‘place any additional cost on network users that do not avail of the facility’?

Process

Once the linepack service has met the above criteria and being sold, its sale as a product must:

- be a commercial product
- be sold on a transparent and non-discriminatory basis
- be offered at a cost reflective price or competitive mechanisms.

Issues for Stakeholder Feedback

- The Framework guidelines include specific criteria that a linepack flexibility service must be considered against
  - Has ENTSOG identified the right criteria?
  - In sufficent level of detail?

- Are there any more criteria you would like us to consider

- Any views on the two models described

- What level of harmonization is needed to prevent distortion of the neighbouring market?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End of Day Tolerances

Topic Exploration

Tolerances : An interim step towards the Balancing Target Model

Presented at Launch Workshop 13 & 14 Dec 2011

The framework guidelines allow tolerances to be introduced as **an interim step** where network users **do not have access to a liquid short-term wholesale gas market or to sources of flexible gas** (including the associated infrastructure) to trade in order to be in a position to balance their portfolios.

The tolerances **shall reflect genuine system flexibility** and **user needs** and address in particular **the needs of small users and new entrants**. These tolerances may be **free of imbalance charges.**

The rules for the level of tolerances allocated to categories of network users shall be **approved by the relevant NRA.**

Tolerances : an interim step towards the Balancing Target Model

Presented at Launch Workshop 13 & 14 Dec 2011

Specific assumptions

tolerances in this section only apply to the end of day imbalance quantity

Development of the concept

The level of tolerances available for network users should meet the following criteria:

- Consistency with technical transmission system requirements
- Reflection of the level of risk assumed by network users
- Useful tool in order to evolve towards the BTM
- The tolerance level applied to each network users should not be too small to prevent the management of the initial risk, related to not having access to a liquid short-term wholesale market or to sources of flexible, and not too big to not support their adaptation to the BTM

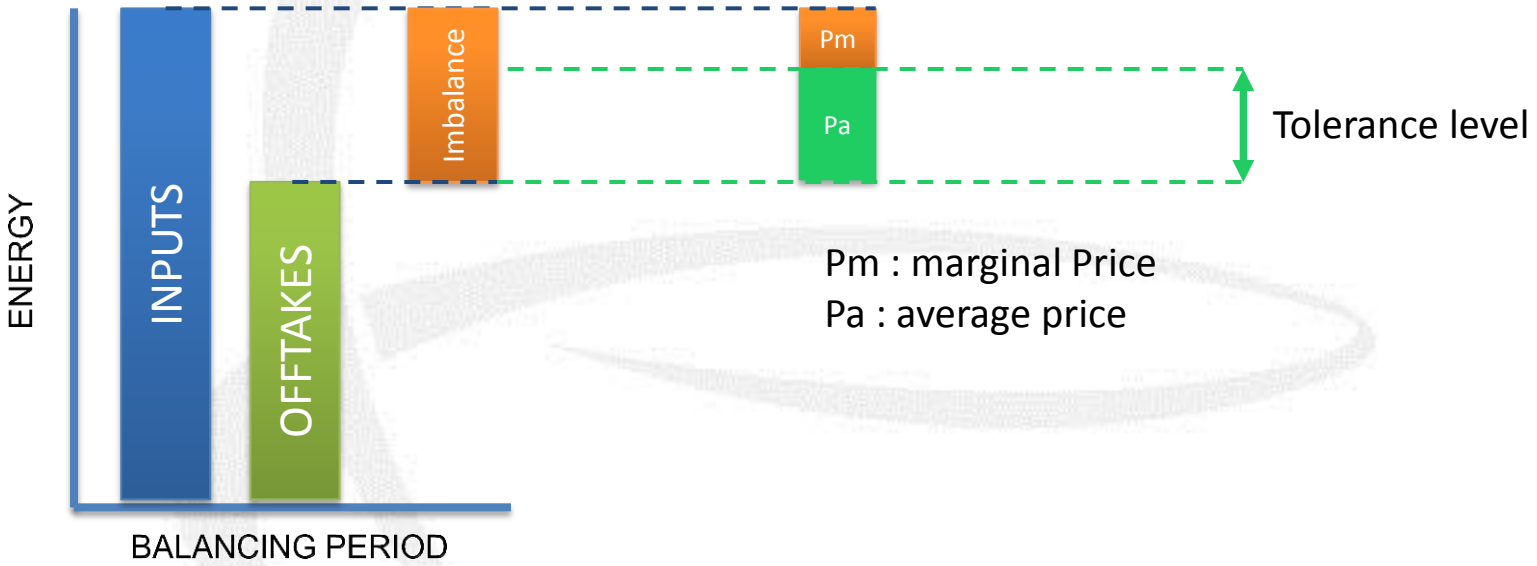
The framework guidelines state that tolerances should not discriminate in particular against network users with smaller gas portfolios.

Development of the concept of tolerances

Presented at Launch Workshop 13 & 14 Dec 2011

If a tolerance regime applies then the price for the imbalance quantity is treated differently considering the imbalance below the tolerance and the imbalance which exceeds the agreed tolerance.

Some examples of tolerance



Another option

Different multipliers can be applied to the price for different tranches of the imbalance quantity

Tolerances : Considerations for the Network Code

Presented at Launch Workshop 13 & 14 Dec 2011

In preparing a section on the Network Code on tolerances several decisions will have to be made:

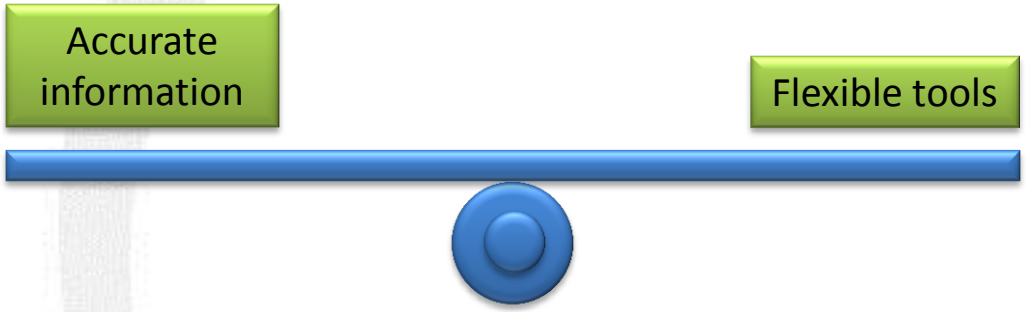
- Determination of the **rules for tolerances** (including how the level(s) / **threshold** is (are) **defined** and the **prices to be applied**) and whether different rules could apply to different categories of network users, especially **new entrants or small users**.

- The framework guidelines provide for tolerances where **network users do not have access to a liquid short term wholesale gas market or to sources of flexible gas**. The Network Code shall determine the **criteria for the use of tolerances**. TSOs that comply with these criteria can then discuss the use of tolerances, as an interim measure with the relevant NRA. While this is not expected to be the case it may be in the early years.

Tolerances as a trade off to balance the risks

Balancing target model

A network user is able to balance its portfolio according to this balance



- IDM
- DM
- NDM
- *Network information*
- *Marginal Price*
- *Agregate flows*

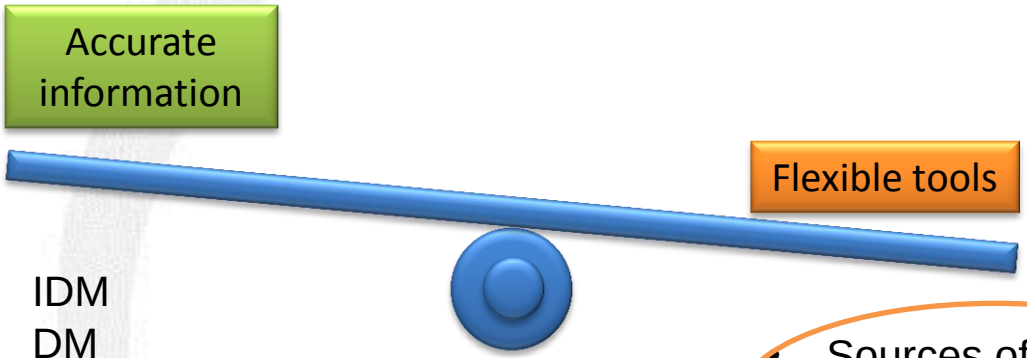
- Sources of flexible gas
- « enough» liquidity
- 24/7 trading or balancing platform

General comment : *if both sides of the balance are efficient enough, no tolerances will be provided to network users*

Other reasons for tolerances outside of criteria given

Framework guidelines

The FG opens the possibility to give tolerances if not enough liquidity or no access to sources of flexible gas



- IDM
- DM
- NDM
- *Network information*
- *Marginal Price*
- *Agregate flows*

- Sources of flexible gas
- « enough» liquidity
- 24/7 trading or balancing platform

1st comment : *a wholesale market can be considered as liquid enough and still is not opened 24/7 (especially WE issues and evening/night) & balancing is a 24/7 issue*

2nd comment (not linked to tolerances but to Genuine System Needs) : *if no platform 24/7 => it can also justify balancing services for the TSO*

Other reasons for tolerances outside of criteria given

Information provision

The FG dont' propose any tolerance options linked to information provision, but still it can be an issue for network users

- IDM
- DM
- NDM
- *Network information*
- *Marginal Price*
- *Agregate flows*

- Sources of flexible gas
- « enough» liquidity
- 24/7 trading or balancing platform

3rd comment : Inaccuracy and absence of information at a portfolio level, especially in early stages, will be an issue in many countries

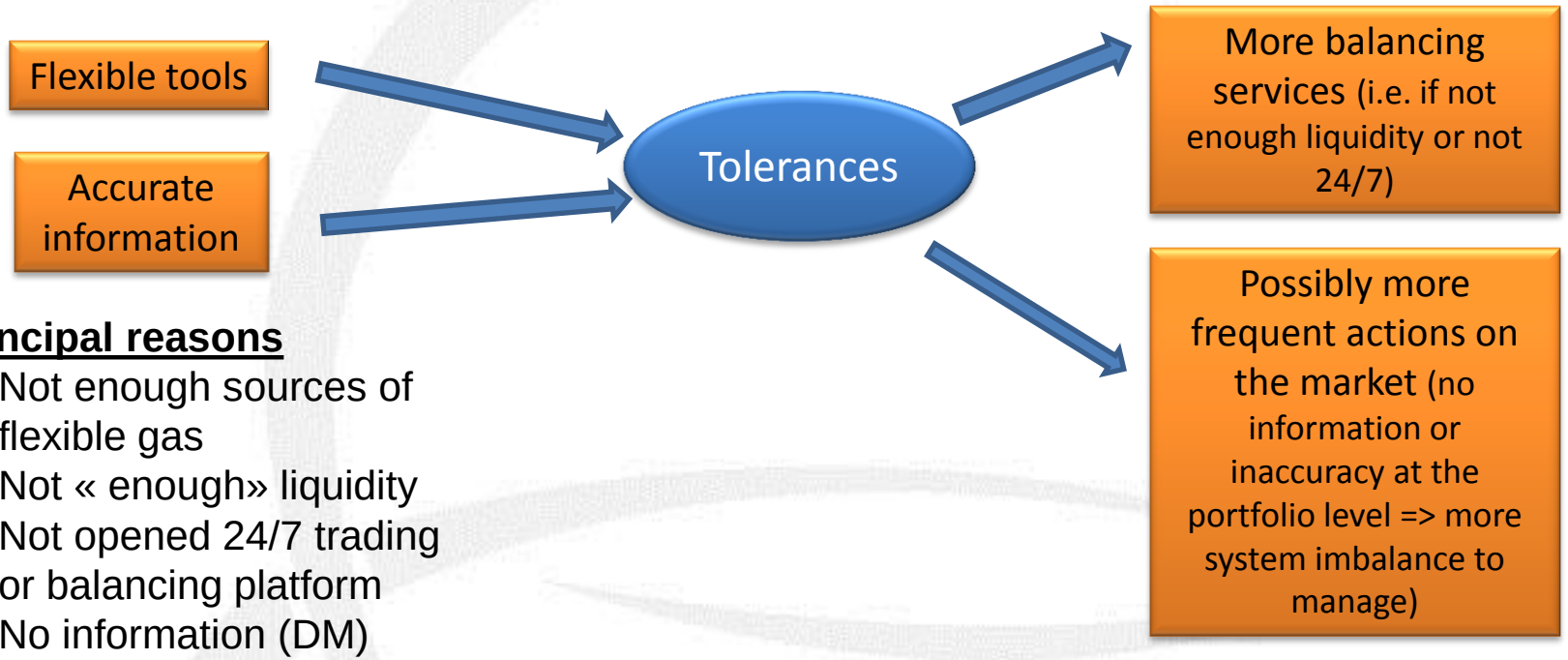
- No WD information for DM
- Accuracy of NDM forecasts

=> Consideration : tolerances should be an option for all these issues, as an interim measure in the network code

Tolerances

Exploring options for linking to system and users needs

Network user ***System (TSO)***



Principal reasons

- Not enough sources of flexible gas
- Not « enough» liquidity
- Not opened 24/7 trading or balancing platform
- No information (DM)
- Not accurate information (NDM)

FG : The tolerances **shall reflect genuine system flexibility**
However, tolerances are more linked to balancing issues for the network user, which implies that the TSO finds temporary solutions to manage the system to keep it safe while tolerances will be offered (or keeps longer some current balancing services)

Tolerances

How to define sources of flexible gas in this context or wholesale market being liquid enough

The FG allow tolerances if not enough sources of flexible gas for the network user or wholesale market not liquid enough

What can be considered as not enough access to sources of flexible gas ?

- Number of entry/exit points in a balancing zone (3 at least ?) ?
  - The smaller the zone is, the less likely to have multiple sources of flexibility
- *How flexible is a source ?*
  - Linked to possibility of renominations, so about contractual rules at each source
  - Linked to possible non EU entry/exit points of the balancing zone ?
  - –

What can be considered as not enough liquid wholesale market ?

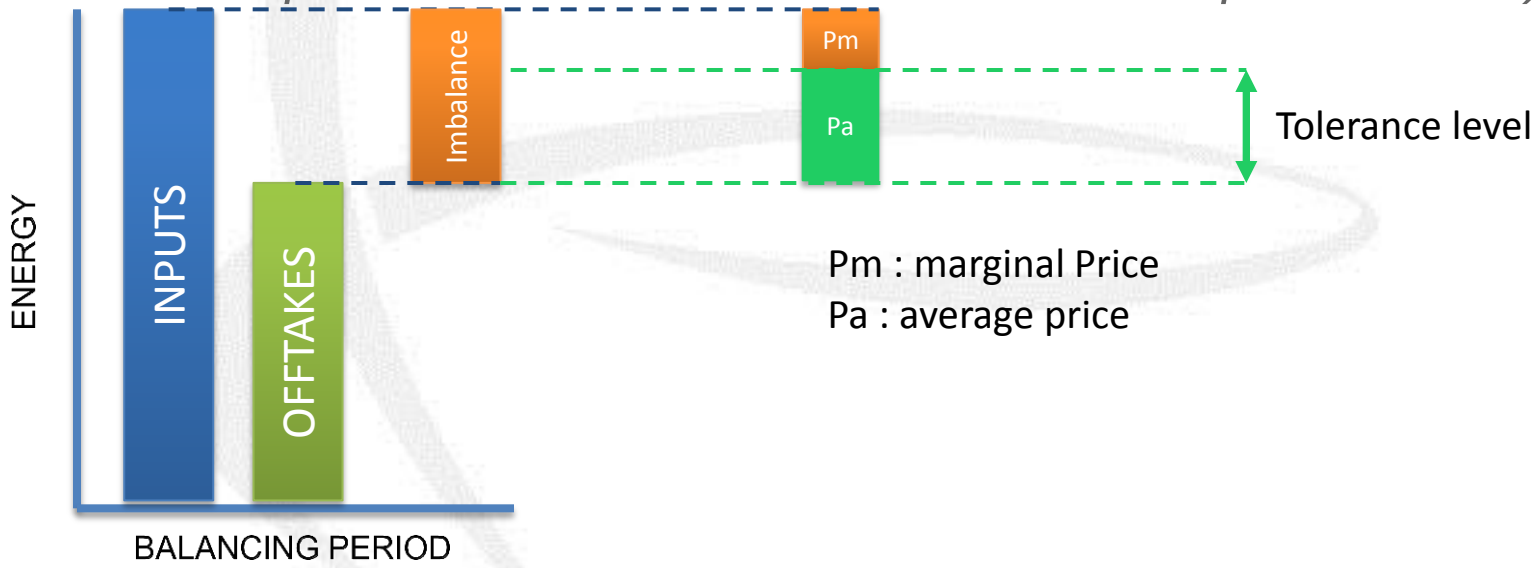
- Following comments at SJWS, is it more a question of depth of the wholesale market or liquidity ?

Rules for Tolerances (1/ 3)

Imbalance charges

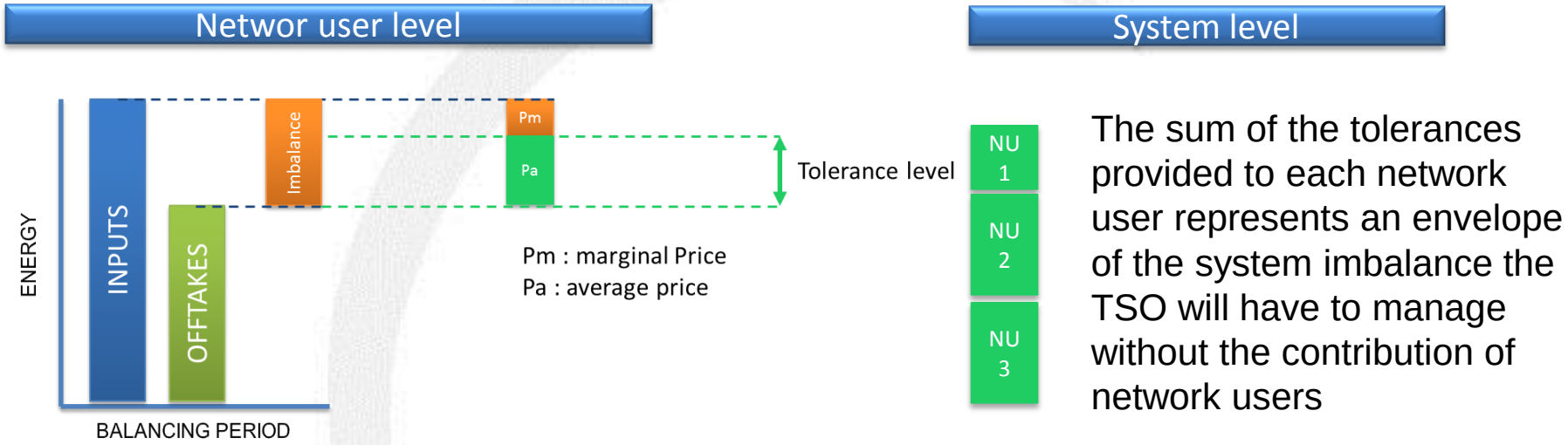
Consideration :

- *Do we want to develop many options for an interim measure (at least considering daily tolerances) ?*
- *Do we propose the following diagram as the base case (which doesn't mean other possibilities are ruled out but not developed in the nc) ?*



Rules for Tolerances (2/ 3)

Threshold



The sum of the tolerances provided to each network user represents an envelope of the system imbalance the TSO will have to manage without the contribution of network users

Network user's point of view

Threshold linked to sources of flexible gas access, liquidity, accuracy of information

TSO's point of view

The bigger the thresold is, the less efficient the marginal price is. Which means balancing will remain the responsibility of the TSO.

As an interim measure

This threshold will be re-evaluated each X year(s) considering the evolution of liquidity (...) in order to be reduced to 0 when the interim measure is considered not useful anymore (max 5 years)

Rules for Tolerances (3/ 3)

needs of small users and new entrants

Considering the principal reasons to offer tolerances :

- Not enough sources of flexible gas
- Not « enough» liquidity
- Not opened 24/7 trading or balancing platform
- No information (DM)
- Not accurate information (NDM)

- The three first ones are a shared issue, whatever the size of the network user is
- The last two ones will be a more prescient issue for small users and new entrants and are directly linked to portfolio's size and categories (IDM, DM, and NDM)

Considerations :

- Small users and new entrants could be considered regarding their delivery portfolio (offtakes)
  - a more important percentage of tolerances for delivery capacities (DM and NDM) not reaching XX MWh/d
  - Or a lower level of consumption than 2% of global consumption considering historical data of end-consumers in the portfolio of the new entrant or small user
- Limited to new entrants who have offtakes and inputs, i.e. not just virtual trading point activities?

Discussion points – Tolerences

- Special considerations for new entrants / small users?
- To address
  - Information inadequacy/inaccuracy (eg: NDM Derived Forecast v Allocations) ?
  - Illiquidity / poor access to flexible gas?
- To offer exposure reduction via price based tolerance

Appendix
Basic Worked Example

Worked Example

Scenario:

- A Network User called “G Gas” is provided with an imbalance tolerance of 200 units for Gas Day “D”
- For these 200 units G Gas is not subject to marginal pricing

Gas Day “D”

G Gas Outcomes	Market Outcome
• Allocated Inputs of 2,000 units onto the Balancing Zone • Allocated Offtakes of 2,250 units off the Balancing Zone	• Average Price = 35 c/unit • Marginal Buy Price = 40 c/unit • Marginal Sell Price = 30 c/unit

So what is “G Gas Daily” Imbalance Charge

Inputs	–	Offtakes	=	Daily Imbalance Quantity
2,000	-	2,250	=	-250

G Gas has a negative Daily Imbalance Quantity meaning it must buy gas at the Marginal Buy Price

If it had no tolerance:

-250 units x 40 c/units = 10,000c to be paid to TSO

But with the tolerance…….

-200 units x 35 c/units = 7,000 c (tolerance applied)

-50 units x 40 c/units = 2,000 c (outside tolerance)

9,000c

Reduced exposure from tolerance = 10,000c – 9,000c = 100c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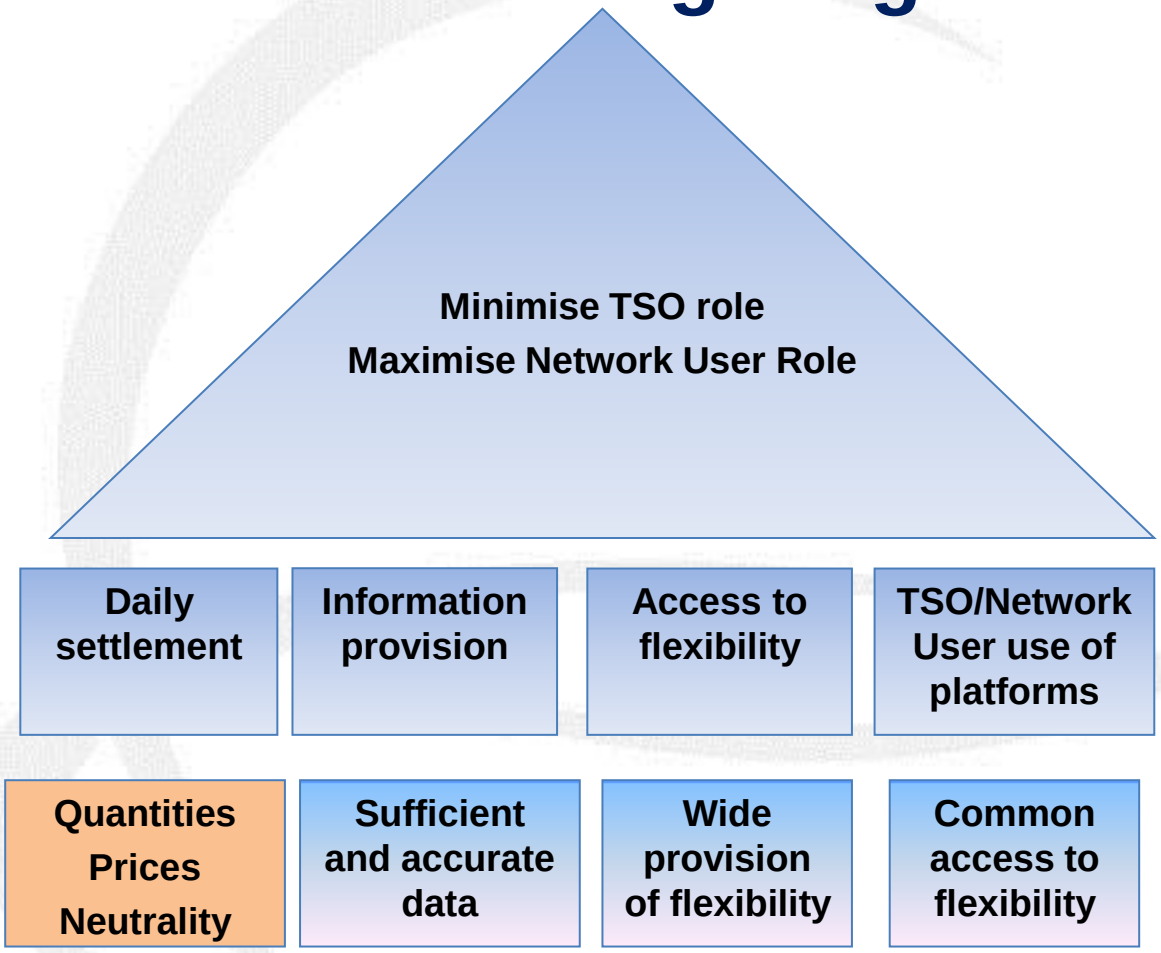
Stepwise to the Balancing Target Model

- Managing the transition

Nigel Sisman
Business Area Manager, Markets

Balancing network code SJWS2, Brussels, 26 January 2012

The Gas Balancing Target Model



Core risks need to be mitigated so that network users can manage risks and opportunities

Transition – to deliver a properly functioning regime

Today

Impacting Network Users:

Imbalance determination

Information availability

Nomination / renomination regime

Tolerance application

Cash-out prices derivation

TSOs activities:

Procurement

Balancing action decision process

Financial treatment of balancing costs

Balancing framework must encourage

- Information availability (DSOs' critical role)
- Balancing platforms
- Wholesale market

Balancing Target Model

Multiple steps may be necessary:

- Roadmap approach
- Assessment at each stage
- Market player and TSO evolution

evolution as confidence develops and criteria satisfied

Aiming towards a balancing target model requires both system users and TSOs to manage transitional steps

Some transition options (1)

Successive steps – towards eradication of tolerances

Tolerance application	Larger tolerances	Smaller tolerances	No tolerances

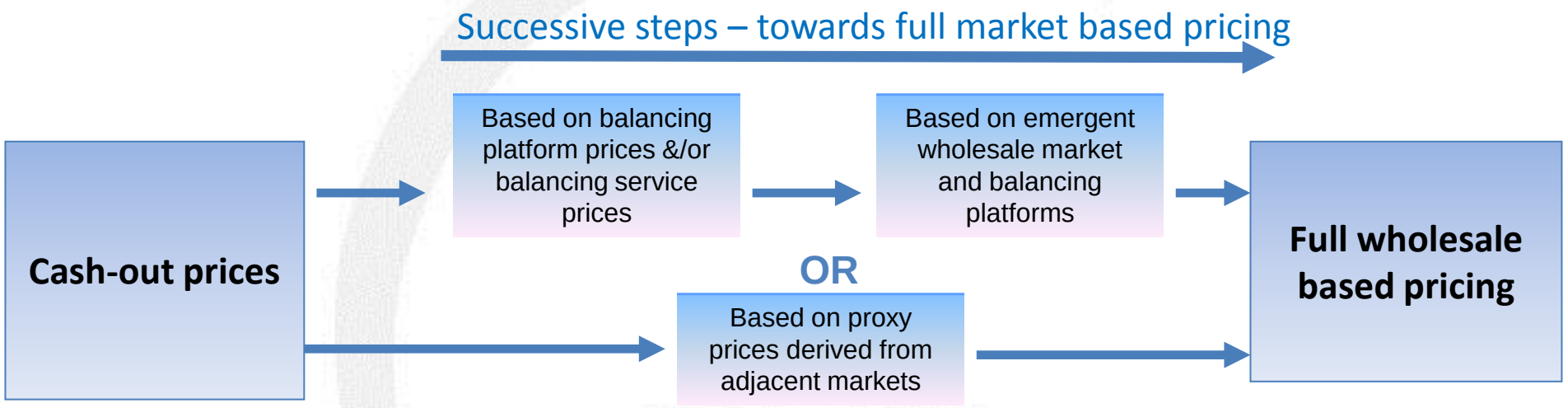
Tolerance options e.g.based upon

- absolute levels or (sums of) % of allocation classes
- difference between NDM Derived Forecasts and NDM Exit allocations

Early "larger" tolerances provide a "softer landing" for network users …

.. may generate higher TSO action levels to encourage liquidity on a balancing platform

Some transition options (2)



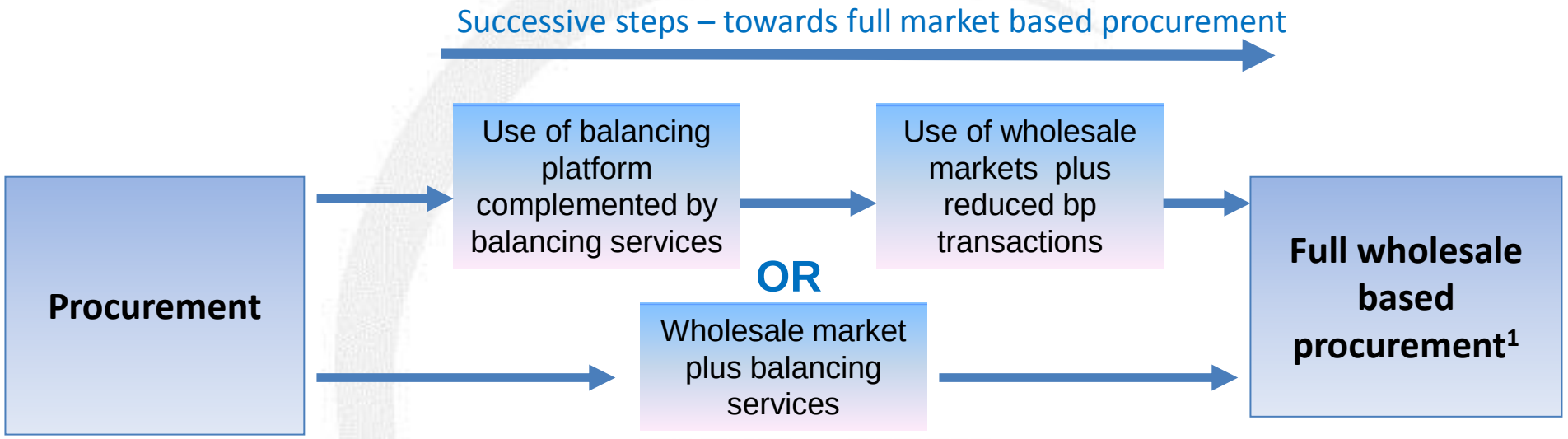
Balancing platforms or cross-border proxies could be used for cash-out price determination

- important that prices accessed for balancing set the cash-out exposures
- derived prices for TSO deployment of balancing services to act as stimulus

Essential to deliver robust in cash-out prices

Cash-out pricing is part of the transitional package to define increasing balancing responsibility to network users

Some transition options (3)



Balancing platforms envisaged

- may need to prove the balancing platform and then migrate to wholesale market

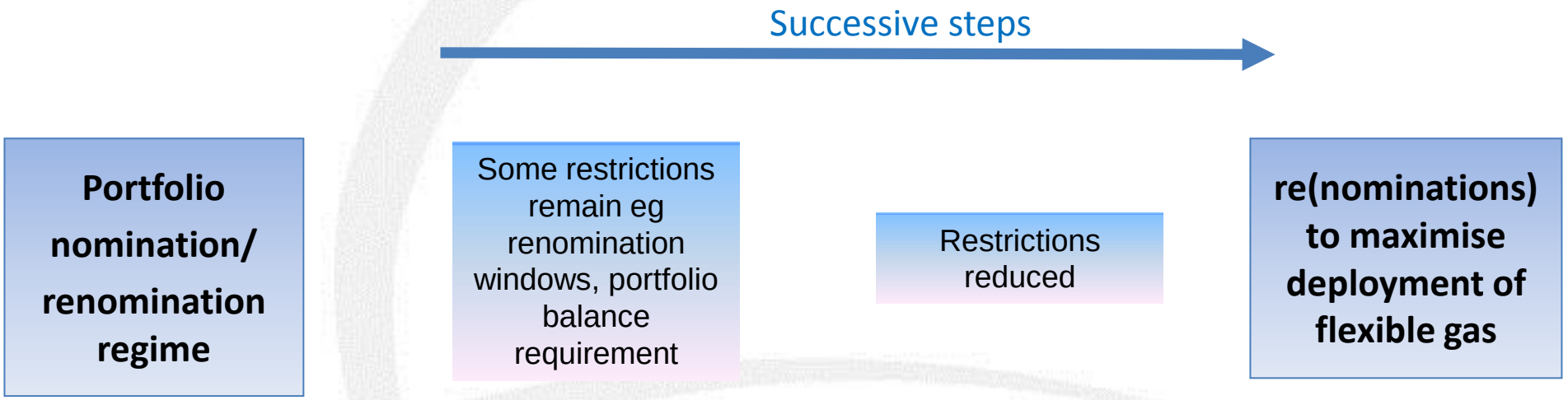
Alternative might be use wholesale market and retain more balancing services initially

Procurement is at the heart of the transition …..

…. early commitment to wholesale market platform providing and proving necessary Standardised Short Term Products probably the best way forward

[1]Where wholesale market cannot meet requirements balancing services may be used

Some transition options (4)

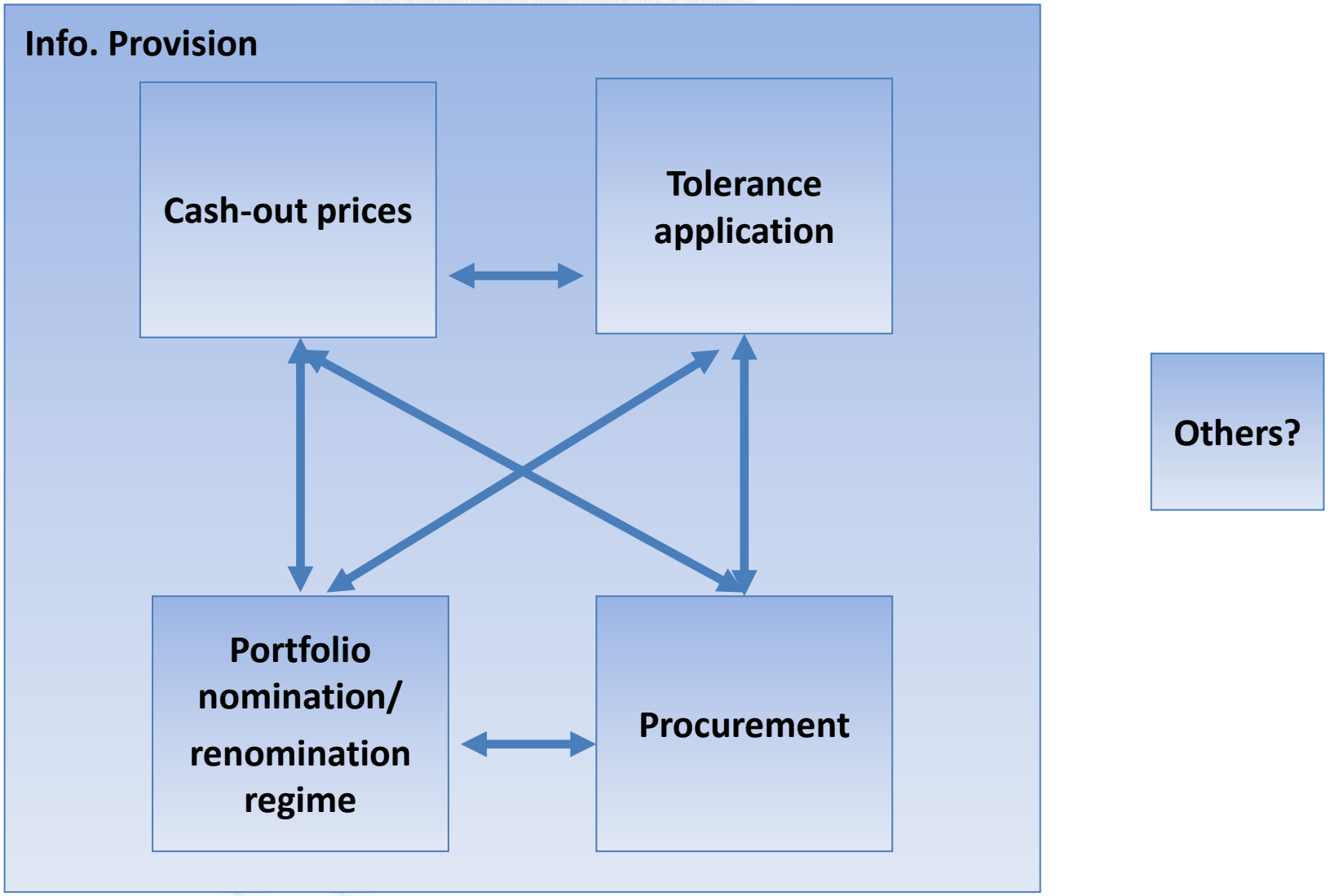


Early steps to be considered in the context of focussing trading liquidity in some periods

Portfolio balance requirements in early phases to mitigate against hunting effects?

Stepwise evolution of the nomination regime can be used to focus liquidity at D-1 and particular windows within day D

Delivery of effective functioning transition



Interactions are critical to define the combination of steps required to deliver a transition

Discussion points

- Do we just focus on areas for interim steps defined in fg?
- Should we add in other areas?
- Should we select a sub-set of options?
- What level of development do we need to do:
  - For the options in each area
  - For the linkages between each area
  - For the timescales associated with the specifications
  - For the considerations to define progressive steps
- How should we organise to deliver?

- What do we expect the content of the nc to look like?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SJWS3-5: topic treatment

PRELIMINARY

SJWS3 – 9 Feb. 2012

Business rules (basic) review

- Nominations
- Balancing products
- Linepack
- Tolerances
- Information provision
  - TSO buy&sell actions
  - Individual NU, incl. NDM
  - DSO info.
  - Info. from exchanges/platforms

Business rules (refined) review

- Balancing platform
- VTP
- Balancing product merit order
- Imbalance quantities

Topic exploration

- Information provision
  - Incentives
  - Interim measures
- Transition topics (as per SJWS2)
- Cross-border cooperation

SJWS4 – 23 Feb. 2012

Business rules (basic) review

- TSO buying&selling of flexible gas
- Imbalance price proxy
- Tolerances
- Neutrality
- Within-day obligations (WDOs)
- Information provision
  - Aggregate network user info.
  - Incentives
  - Interim measures
- Cross-border cooperation

Business rules (refined) review

- Balancing products
- Linepack
- Information provision
  - TSO buy&sell actions
  - Individual NU, incl. NDM
  - DSO info.
  - Info. from exchanges/platforms
- Transition topics

SJWS5 – 7-8 Mar. 2012

Business rules (refined) review

- Nominations
- TSO buying&selling of flexible gas
- WDOs
- Imbalance price proxy
- Tolerances
- Neutrality
- Information provision
  - Aggregate network user info.
  - Incentives
  - Interim measures
- Transition topics
- Cross-border cooperation


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ANNEX
Supporting materials for session 5 on balancing platforms