ACER
Agency for the Cooperation of Energy Regulators

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european network of transmission system operators for gas

ACER-ENTSOG Joint Worksop on

Gas Balancing Early

Implementation

17/11/2015

Content

1. Second ACER-ENTSOG Report on the status of the implementation of the Balancing Network Code (BAL NC)

   a) ACER presentation
   b) ENTSOG presentation

2. Implementation models
   a) in the United Kingdom (NGG/Ofgem)
   b) in Germany (NCG)
   c) Market integration (Belux-Fluxys, GRTGaz-TRS)

3. Initial views of a best practice model for the development of a balancing market (EFET)

ACER
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Second ACER-ENTSOG Report on the status of the implementation of the Balancing Network Code

ACER Gas Department

Budapest, 17 November, 2015.

Where we started: Vision (2010-2011)

- Balancing Code – key to market design, not just technical rules

Facilitating a single market

- **Remove barriers to cross-border trade** created by different balancing arrangements
- **Reduce fragmentation of the market** by looking at ways to merge balancing zones
- **Promote the development of regional markets** by encouraging the use of interconnectors (and gas from cross-borders) in balancing

Develop liquid traded market

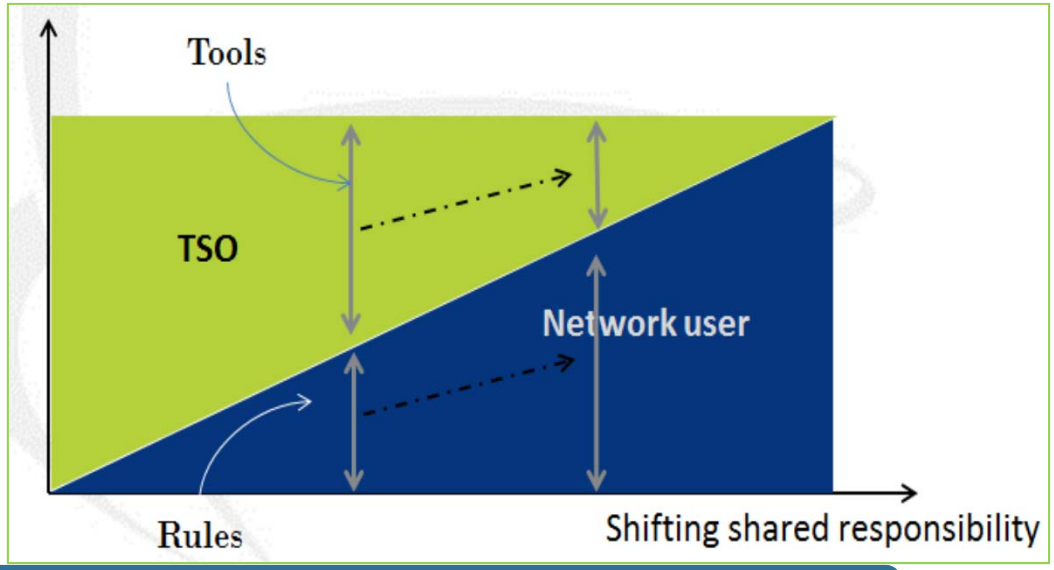
- **Facilitate new entry** by ensuring balancing arrangements are non-discriminatory;
- **Promote market liquidity at emerging gas hubs**
  - by encouraging shipper trading across timescales;
  - by having market arrangements for TSO procurement of balancing gas

Suitable for all parts of Europe

- **Provides a coherent set of rules,** which
  - lead to a common vision of balancing arrangements;
  - can be implemented in network codes and is enforceable by NRAs;
  - take account of the different degree of market development across Europe (need for interim steps)

How to reach the Balancing Target model? -
Source: ENTSOG's Launch Documentation (2011)

1	There is not a wholesale market for the TSO to purchase short term balancing products, thus all its balancing actions are carried out via balancing service(s). The TSO creates a balancing platform in order to stimulate a short term market. All trades on the balancing platform are with the TSO.
2	The TSO starts to carry out some balancing actions via the balancing platform, but while liquidity remains low, needs to use balancing services for the majority of its balancing actions.
3	A wholesale market commences where parties can trade directly with one another (i.e. the TSO is not a party to the trade).
4	If liquidity increases on the balancing platform then the TSO carries out a greater amount of balancing actions on the balancing platform as it gains confidence in its liquidity, efficiency and reliability. As a consequence it reduces the balancing actions it requires via balancing services.
5	If market liquidity on the wholesale market has reached a sufficient level that the source is reliable for the TSO to carry out the majority of its balancing actions via the market, then it commences trading on the wholesale market. The balancing platform may be maintained for a probationary period or if the TSO requires it to source temporal or locational products. The level of balancing services the TSO holds is reduced.
6	The TSO now carries out most of its balancing actions on the wholesale market. The balancing platform may be still in use for temporal or location products, if they are not available on the wholesale market. Balancing services are maintained for meeting the balancing needs of the transmission system.



Regulatory Framework

- **BALANCING NC** was published on 26 March 2014 in OJEU and **applicable** since **1 October 2015.**

- The Madrid Forum of 6-7 May 2014 requested ENTSOG and ACER to follow up on the early implementation in the EU Member States.

  - **First ACER-ENTSOG Report** presented to the next Madrid Forum (15-16 October 2014) and published in October 2014.

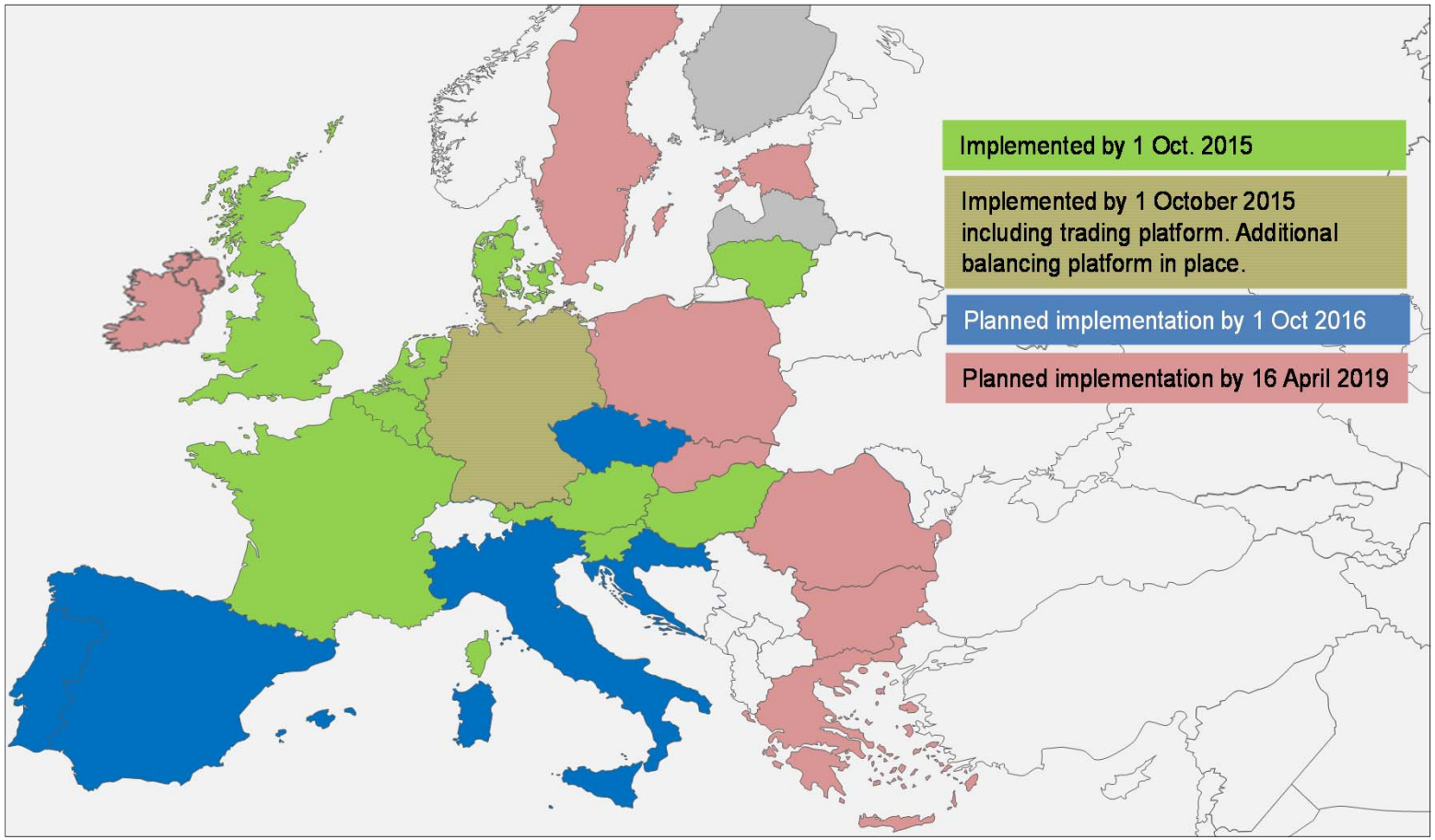
  - **Second ACER-ENTSOG implementation** on the status of the implementation of the Balancing Network Code published recently (**9 November 2015).**

- Both reports were published jointly on ACER and ENTSOG websites.

The Report - Data collection

- Information collected via an **online survey** sent to all EU Member States
- Prior to circulation, ACER and ENTSOG invited **associations to propose questions for the survey**
- TSOs and NRAs cooperated to provide one joint answer to the survey for each Member State
- 25 responses:
  - All **22 Member States** where the Code applies (UK-NI and UK-GB submitted 2 separate responses)
  - **Estonia and Luxembourg** replied on a voluntary basis.

The Report - Implementation dates



- 10 Member States reported to have implemented the Code by 1 October 2015.
- 5 Member States will apply transitory measures and implement the Code by 1 October 2016.
- 9 Member States and NI will apply interim measures (2019)

The Report - Implementation heterogeneity

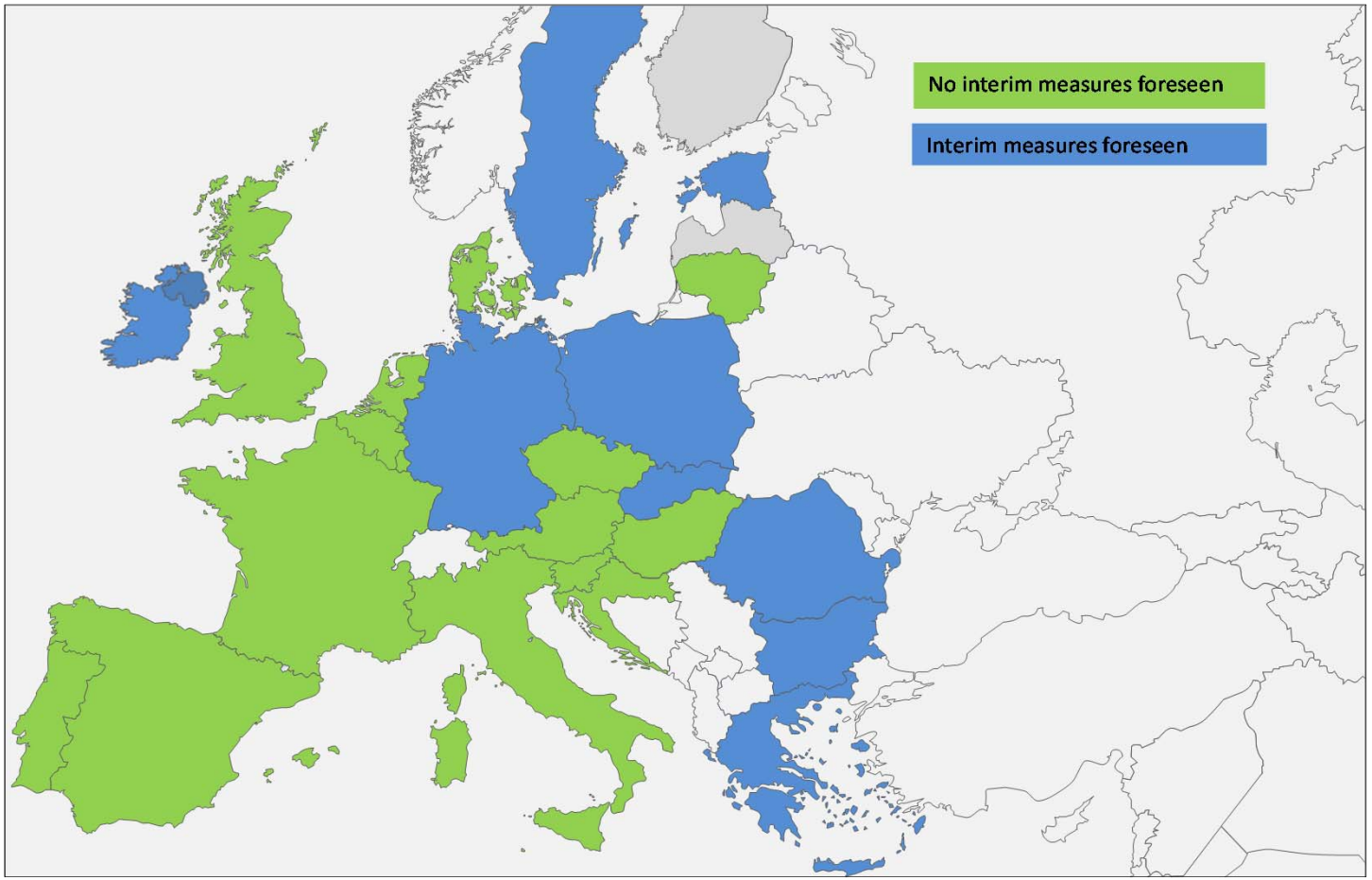
- The Code provides for a **high degree of flexibility** to TSOs and NRAs in the national implementation. Reasons: gas networks and markets differ from each other in their characteristics

- **Implementation options**:
  - 3 possible implementation dates (Oct 15, Oct 16, Apr 19)
  - 3 possible types of information models for forecasting non daily metered off takes (base case, variant 1, 2)
  - 4 possible types of interim measures (balancing platform, tolerances, interim imbalance charge, alternative to the balancing platform)
  - 4 possible types of short term standardised products to be procured by the TSO for balancing purposes on the trading platform (title, locational, temporal, temporal locational)
  - the possibility to continue procuring resources for balancing via balancing services
  - the possibility to provide additional linepack flexibility service
  - different lead times for trade notifications (30 min – 2 hrs with conditions)
  - the possibility to choose whether or not to apply within day obligations with 3 possible types of within day obligations (system wide, portfolio based, entry-exit)

- The implementation is progressing along multiple time schedules and along several regulatory options.
- Almost all of the possibilities offered by the Code have been used in the national implementations.
- **Yet, the focus should be the same: creation of market based balancing with residual TSO balancing**

The Report - Interim measures

- **9 MSs** and **UK-NI** apply **interim measures**
  - » BG, DE, EE, EL, IE, PL, RO, SE, SK, UK-NI



The Report - Interim measures - conditions

- Proposed in case of **insufficient liquidity** in the short term wholesale gas market.
- Are subject to **market consultations** and **NRA's approval.**
  - TSOs to request NRA approval **by 16 October 2014** and NRA approval should have been issued within **6 months** from the receipt of the complete report.
- **All the other provisions** of the Code had to be implemented by **1 October 2015**. Interim measures exclude the application of the transitory period option.
- **Annual report** submitted to the NRA both for requesting or continuing these interim measures. In 5 years time terminate the measures.
- 4 types of interim measures can be implemented:
  - **Balancing platform**
  - **Interim imbalance charge**
  - **Tolerances**
  - **Alternative to a balancing platform**

The Report - Interim measures - breakdown

- **Balancing platform** (5/10)
  - In EL, PL, RO, SK in order to stimulate wholesale market liquidity
  - In DE to procure specific products that cannot be procured on the trading platform currently in place.
- **Interim imbalance charge** (6/10)
  - BG, EL, IE, PL, SE, SK
- **Tolerances** (8/10)
  - BG, EL, IE, LT, PL, RO, SE, UK-NI
- **Alternative to a balancing platform** (4/10)
  - IE, RO, SE, UK-NI

The Report – Overview of selected topics (1 / 2)

Country	Trading platform	STSPs	Balancing services	Types of information provision	Neutrality charge publication
AT*	In place	Title	None	3	N/A
BE	In place	Title	None	3	Published
BG	2019	Under discussion	Foreseen or discussed	1	Not published
CZ	In place	Under discussion	Foreseen or discussed	2	Not published
DE	In place	Also others	In place	3	Published
DK	In place	Title	None	3	Published
EE**	Not indicated	Under discussion	Not indicated	Not indicated	Not indicated
EL	2019	Under discussion	In place	3	Published
ES***	January 2016	Also others	Foreseen or discussed	3	Published
FR	In place	Also others	Foreseen or discussed	3	Published
HR	2016	Under discussion	None	1	Not published
HU	In place	Also others	None	3	Published
IE	2019	Under discussion	In place	2	Published

*In AT “balancing portfolio” within day obligations apply. **EE holds Derogation.
***From 1 November 2015 in ES the “overall status of the transmission network” and the “transmission system operator’s balancing actions” will be published.

The Report – Overview of selected topics (2/2)

Country	Trading platform	STSPs	Balancing Services	Types of information provision	Neutrality charge publication
IT***	In place	Also others	Foreseen or discussed	3	Published
LT	In place	Title	In place	3	Published in the tariff review
LU**	In place	Title	None	3	Published
NL*	In place	Also others	None	3	N/A
PL	In place	Also others	None	3	Published
PT	2016	Under discussion	Foreseen or Discussed	1	Not published
RO	2019	Under discussion	None (?)	1	Not published
SE	2019	No	In place	3	Not published
SI	In place	Title	In place	3	Published
SK	2019	Title	Foreseen or Discussed	2	Not published
UK-GB	In place	Also others	None	3	Published
UK-NI	2019	No	In place	3	Published in the tariff review

*Reported as not applicable in NL because “system-wide” within day obligations apply. **LU holds Derogation.
***IT to publish from 1 Nov 2015 the ”network user’s inputs and off-takes for the gas day” published.

Considerations and next steps

- **Detailed analyses** on the **charges and merit order** are required in the future to reveal whether the chosen balancing designs progress towards market-based daily balancing.

- MSs implementing **interim measures** should make plans **transparent** and also plan for how a **timely transition moving away** from the interim measures will be conducted.

- The **information provision** requirement is not put in place fully by one **third of the MSs**, which would hinder network users to take care of their imbalance positions and move towards market based balancing.

- Subject to an annual regulatory review:
  - **14 MSs** and Northern Ireland still use or plan **balancing services** for use.
  - **13 MSs** foresee or allow the TSOs to **trade in adjacent balancing zones.**
  - a proper consideration in the future should be made how these measures contribute to a market-based daily balancing and residual TSOs role.

Thank you for your attention!

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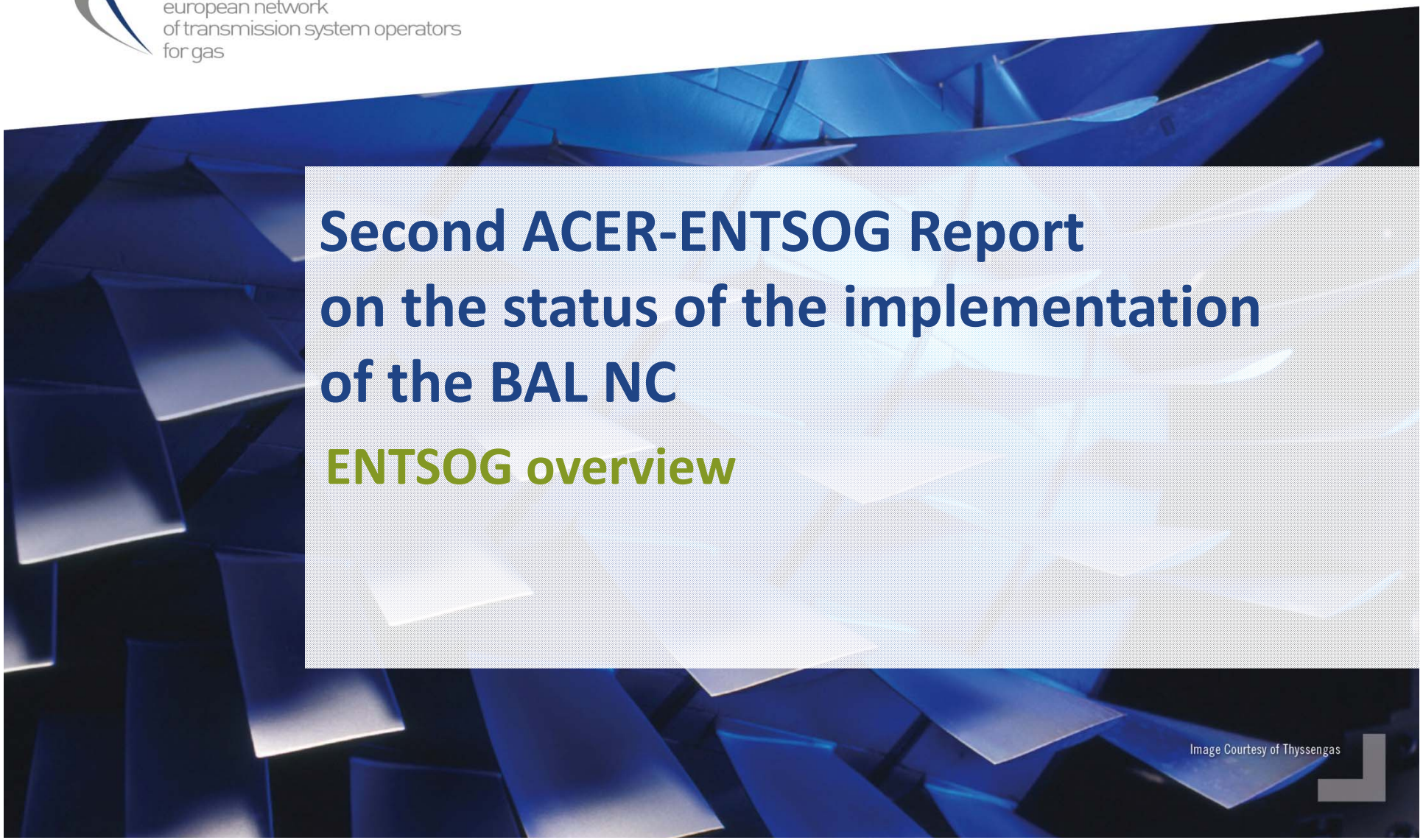
of transmission system operators
for gas

Budapest, 17 November 2015

Second ACER-ENTSOG Report on the status of the implementation of the BAL NC

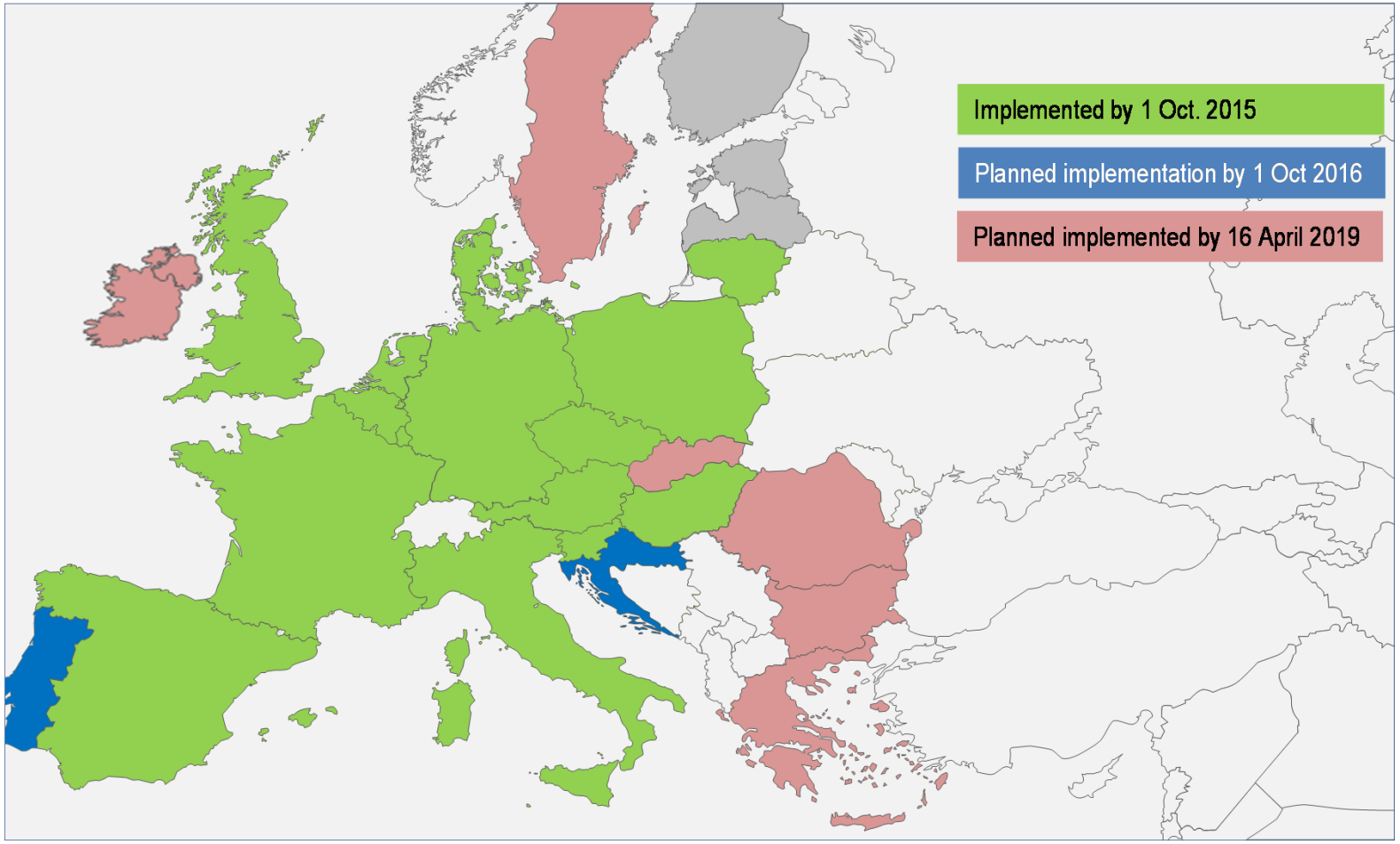
ENTSOG overview



The content of the presentation

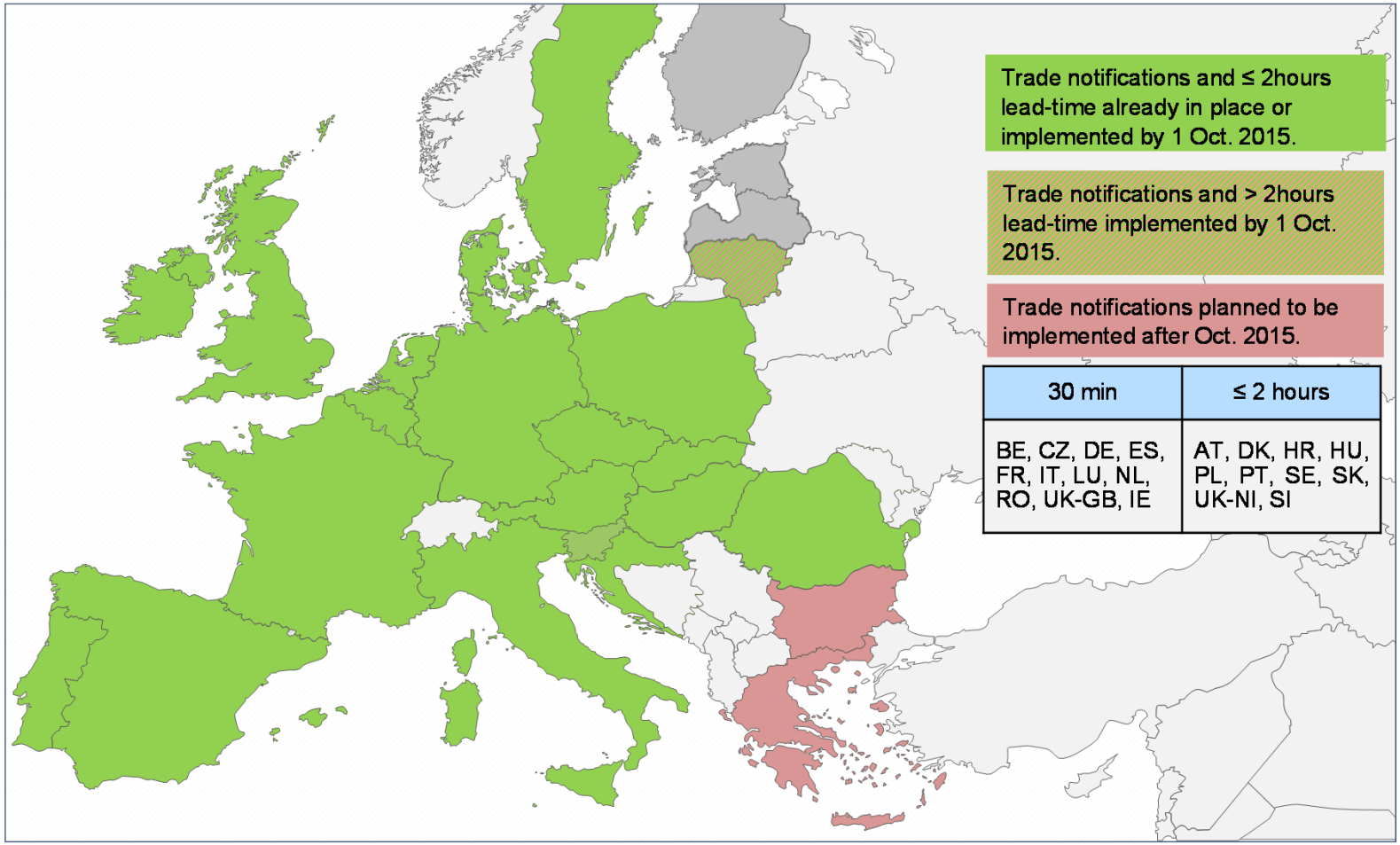
- **Trading platforms for balancing;**
- **Trade notifications and Lead-time;**
- **Nominations;**
- **Information provision;**
- **Linepack flexibility service.**

Implementation of Trading platforms for balancing



Compared to previous report, two more countries (CZ and PL) have implemented a trading platform by 1 October 2015.

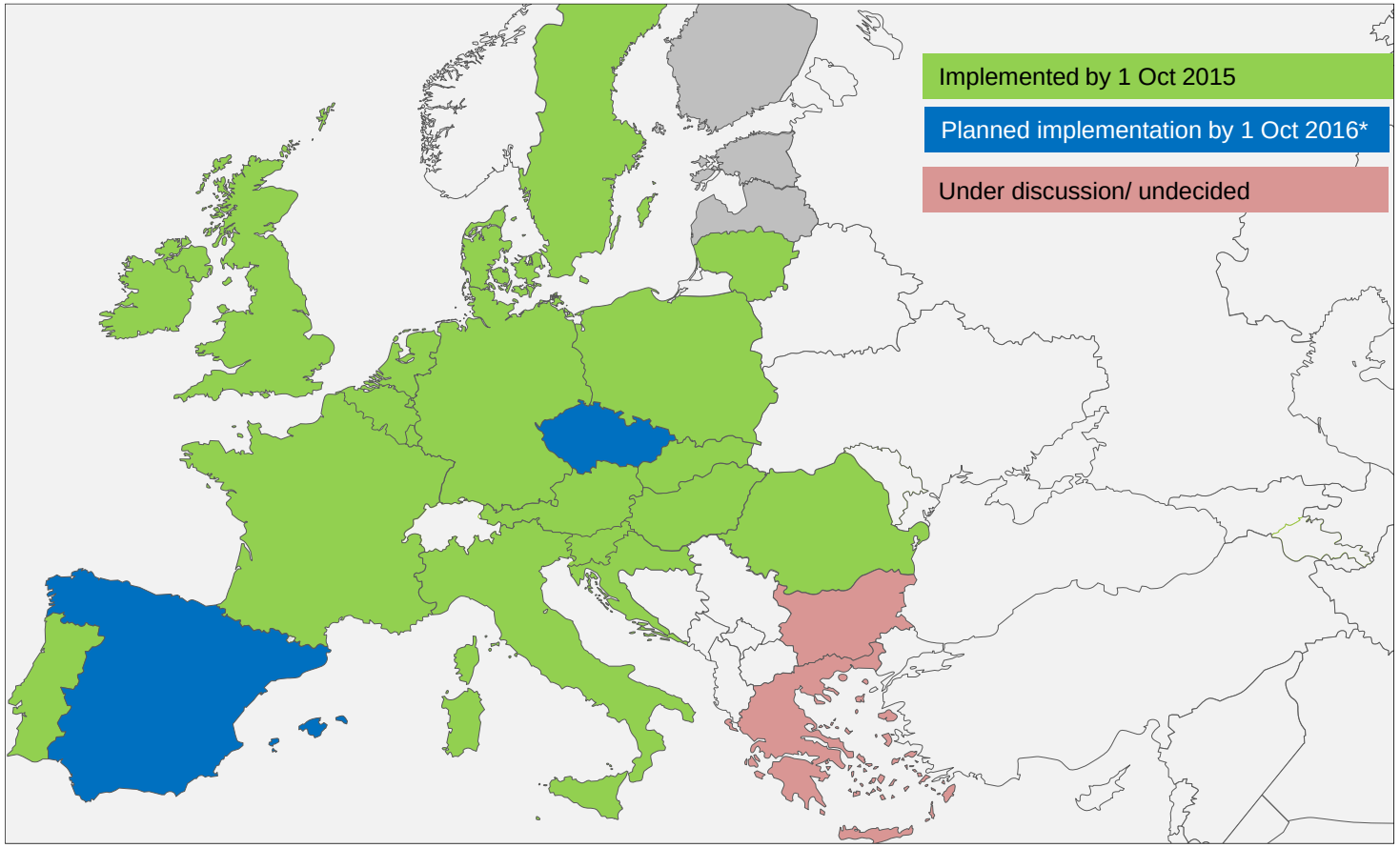
Implementation of Trade notifications & Lead time



30 min	≤ 2 hours
BE, CZ, DE, ES, FR, IT, LU, NL, RO, UK-GB, IE	AT, DK, HR, HU, PL, PT, SE, SK, UK-NI, SI

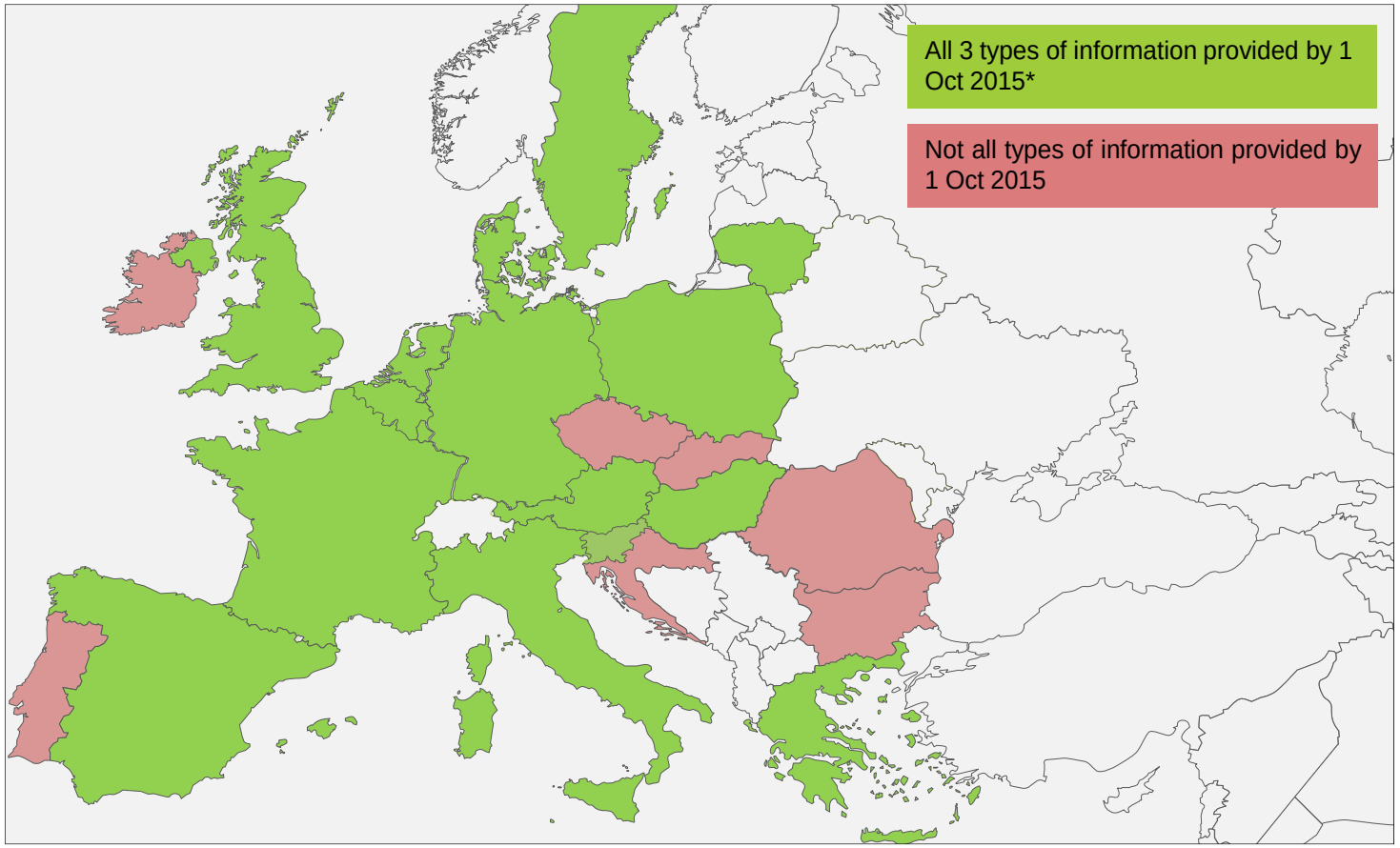
The majority of countries reported that trade notifications and ≤ 2 hours lead-time are already in place or planned to be implemented by 1 Oct 2015.

Implementation of Nomination provisions



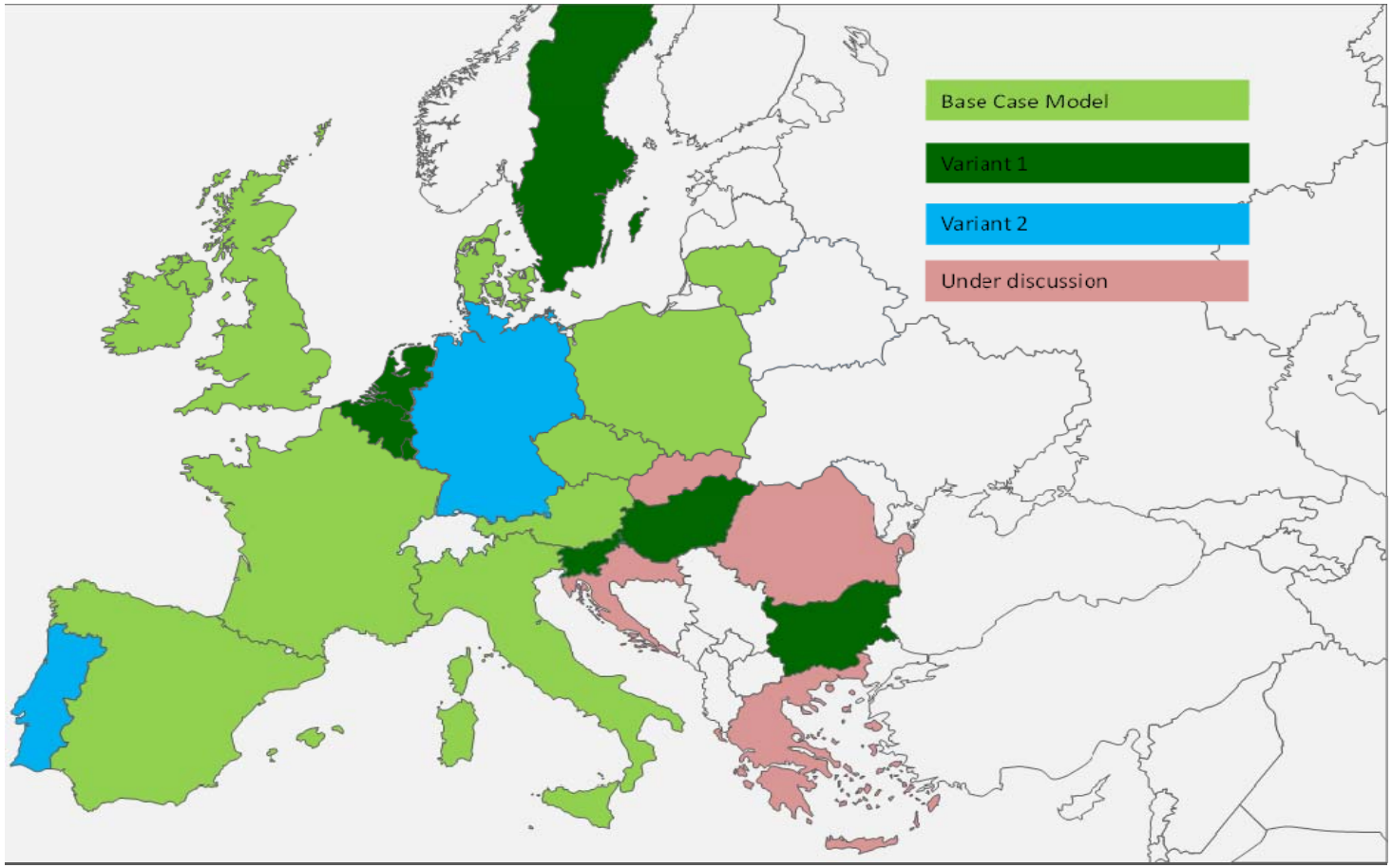
- ***Almost all countries already implemented the rules for nominations or planned to be in place by 1 Oct 2015;***
- ***Spain implemented nomination provisions by 1 November 2015.***

Implementation of Information provision (types)



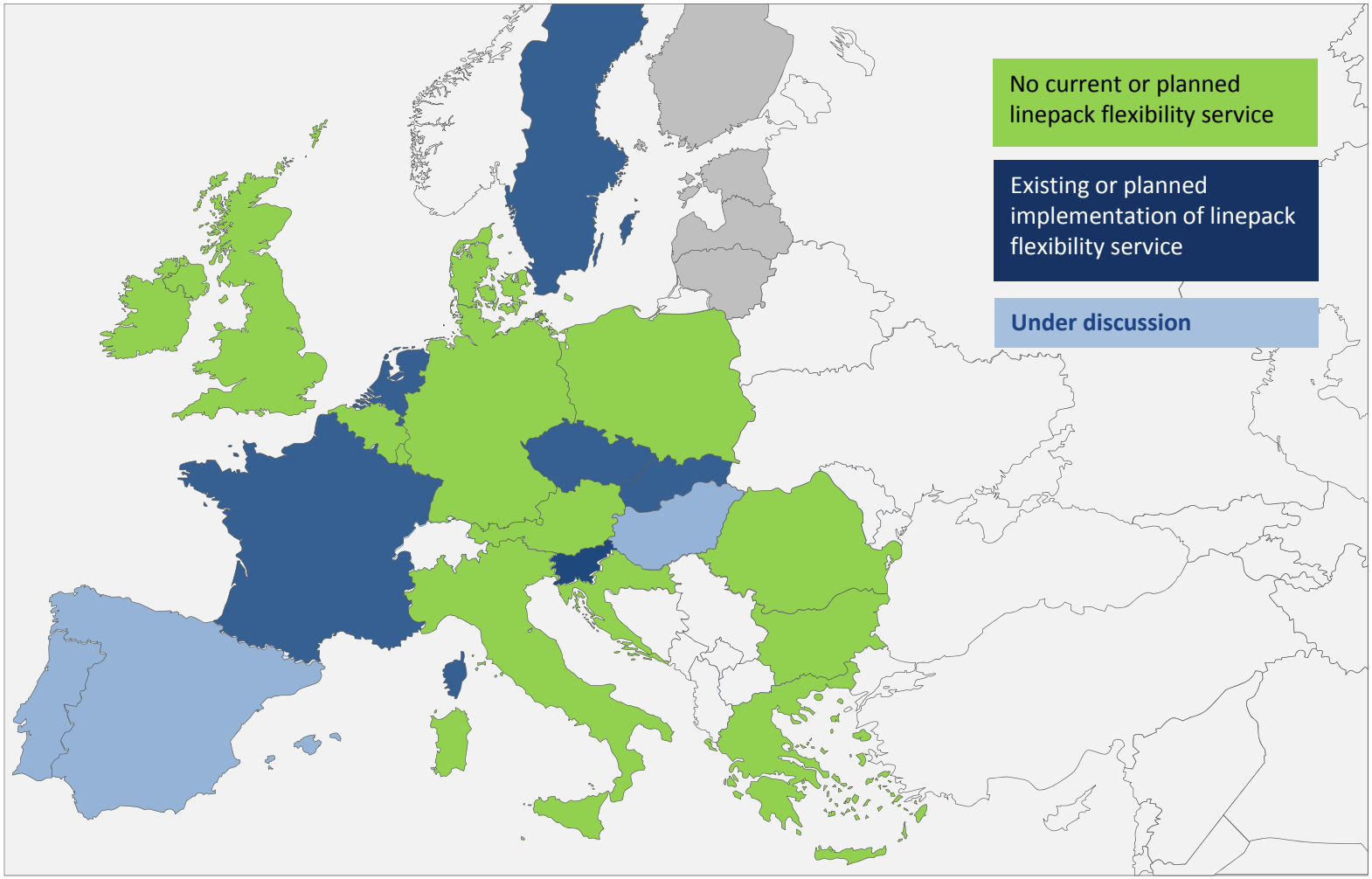
- ***3 countries (CZ, IE, SK) have implemented 2 types of information;***
- ***4 countries (BG, HR, PT, RO) have implemented 1 type of information.***

Implementation of Information provision (models)



In Austria the model is currently not applicable as there are no non daily metered off-take points. In case a non daily metered off-take point is connected to the transmission system, the 'base case' model will be apply.

Implementation of Linepack flexibility service



ENTSOG overview of the report

- ***BAL NC allows a certain national flexibility in its implementation***

- ***Across EU almost all of the possibilities have been used by countries in responding to their obligations under the BAL NC***

- ***The range and details of the national implementation options used were reflected in the joint report***

Thank You for Your Attention

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Implementation of the Gas Balancing Network Code in Great Britain

ACER-ENTSOG Joint Workshop on Gas Balancing Early Implementation
17 November 2015, Budapest

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Contents

1. Key messages
2. Development of the gas balancing regime in Great Britain
3. The Code modification process in GB
4. GB approach to implementation of the Network Code
5. Implementation challenges
6. Conclusions

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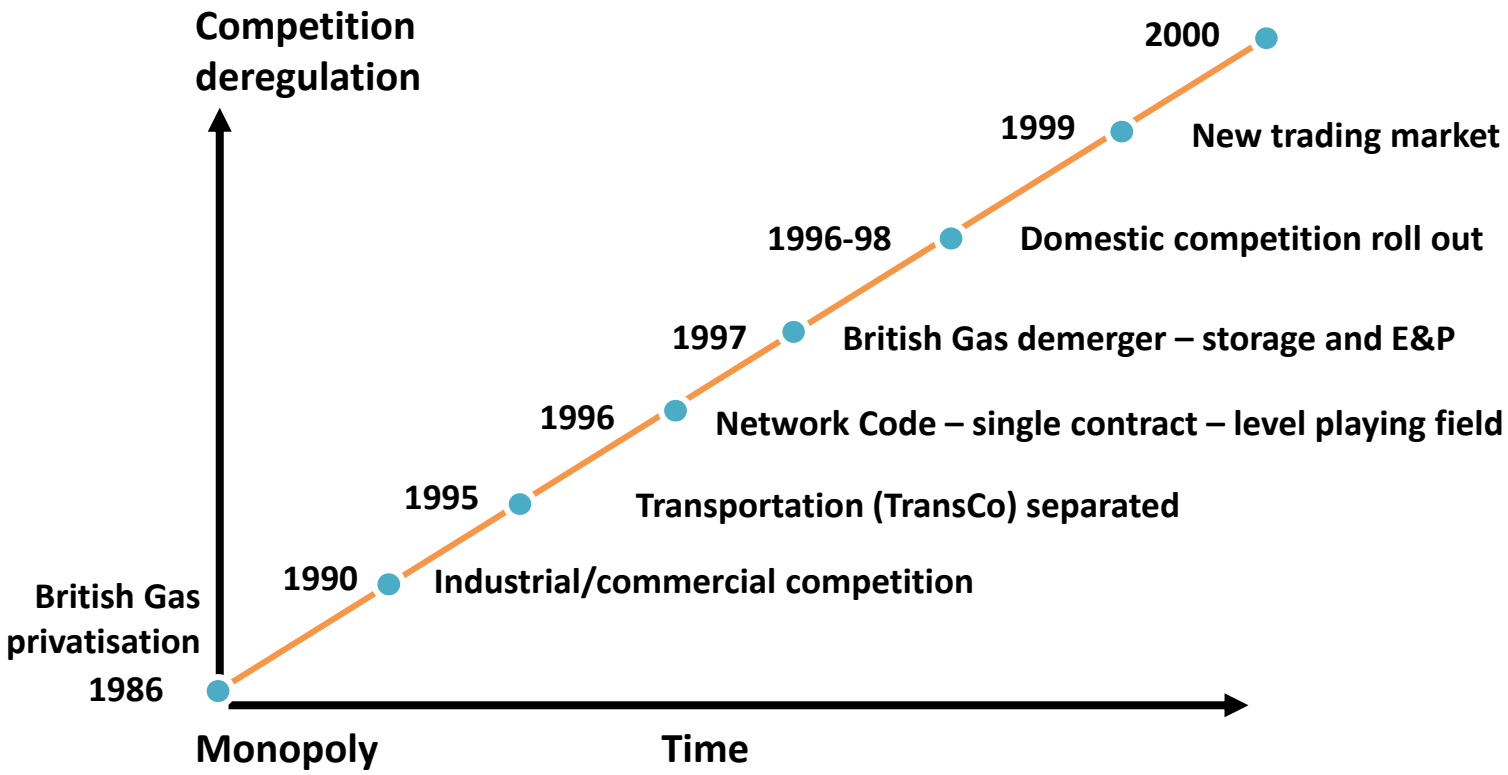
Key messages

- It isn't easy to establish a functioning wholesale market
- GB didn't achieve it overnight
- Transparency and a level playing field are crucial to foster competition
- Getting the right incentives is necessary
- Everyone should have a defined role
- Effective stakeholder engagement is critical

GB gas market 1986-2000



Development of GB balancing regime

- Initially, balancing conducted via Flexibility Mechanisms (FM)
  - Bilateral locational balancing contracts
  - TSO always transacting party

- Deemed to be holding up the development of a true market and replaced in 1999 for the On the Day Commodity Market (OCM)
  - Initial low liquidity was an issue

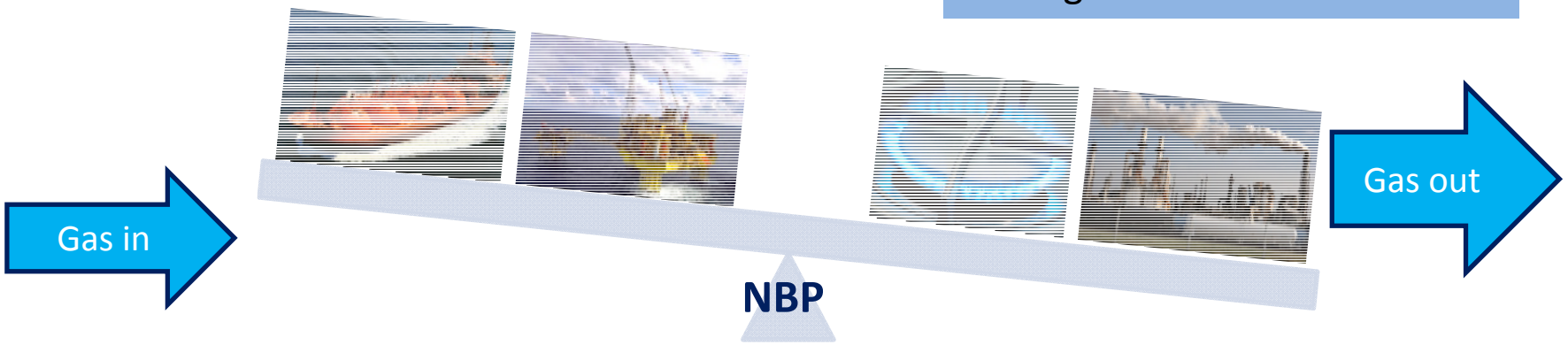
- Significant evolution over 15-20 year timeline

Monthly balancing and large tolerances	→	Daily balancing & penal marginal prices
Balancing via gas storage contract	→	Full market based balancing
Large, physical (locational) transactions	→	Title transfers
Beach trading	→	Liquid virtual hub

Balancing regime

Daily balancing – overall gas-in to the system needs to (roughly) equal gas-out over gas day

Shippers incentivised to balance own portfolios – through changes to flows and trading at NBP



Shippers out of balance face cash-out charges – based on cost of balancing system

National Grid Gas (SO) as SO carries out residual balancing

Trading and balancing

Shippers trade up to 2-3 years in advance

On-the-day **C**ommodity **M**arket

OCM covers trading within-day (and some day-ahead)
- used for fine-tuning

Main balancing tool for SO

Trades taken by SO set cash-out prices

Short shippers pay greater of:

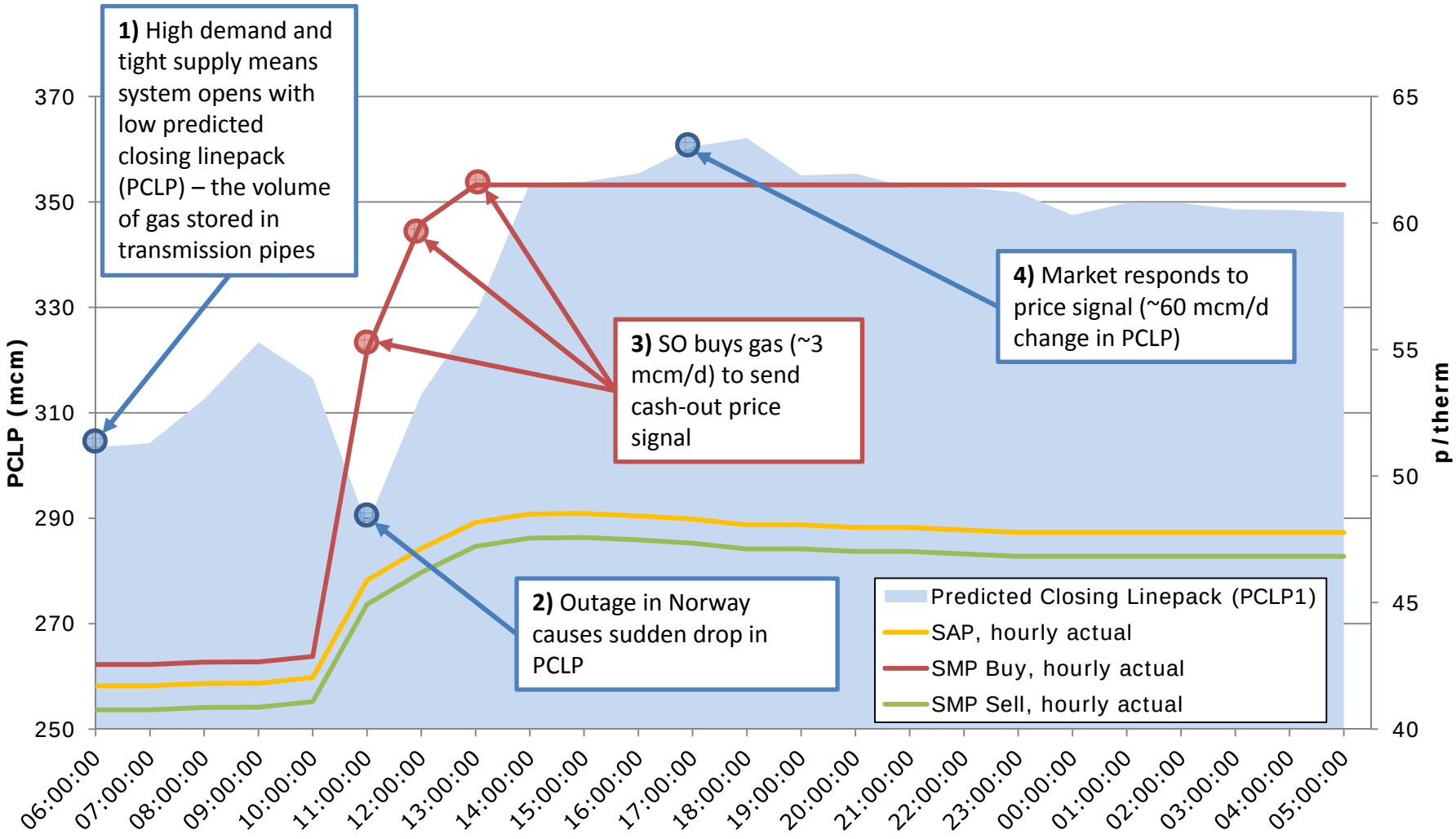
- Most expensive OCM trade taken by SO
- SAP (average price of on the day trades) + small adjustment

Long shippers receive lesser of:

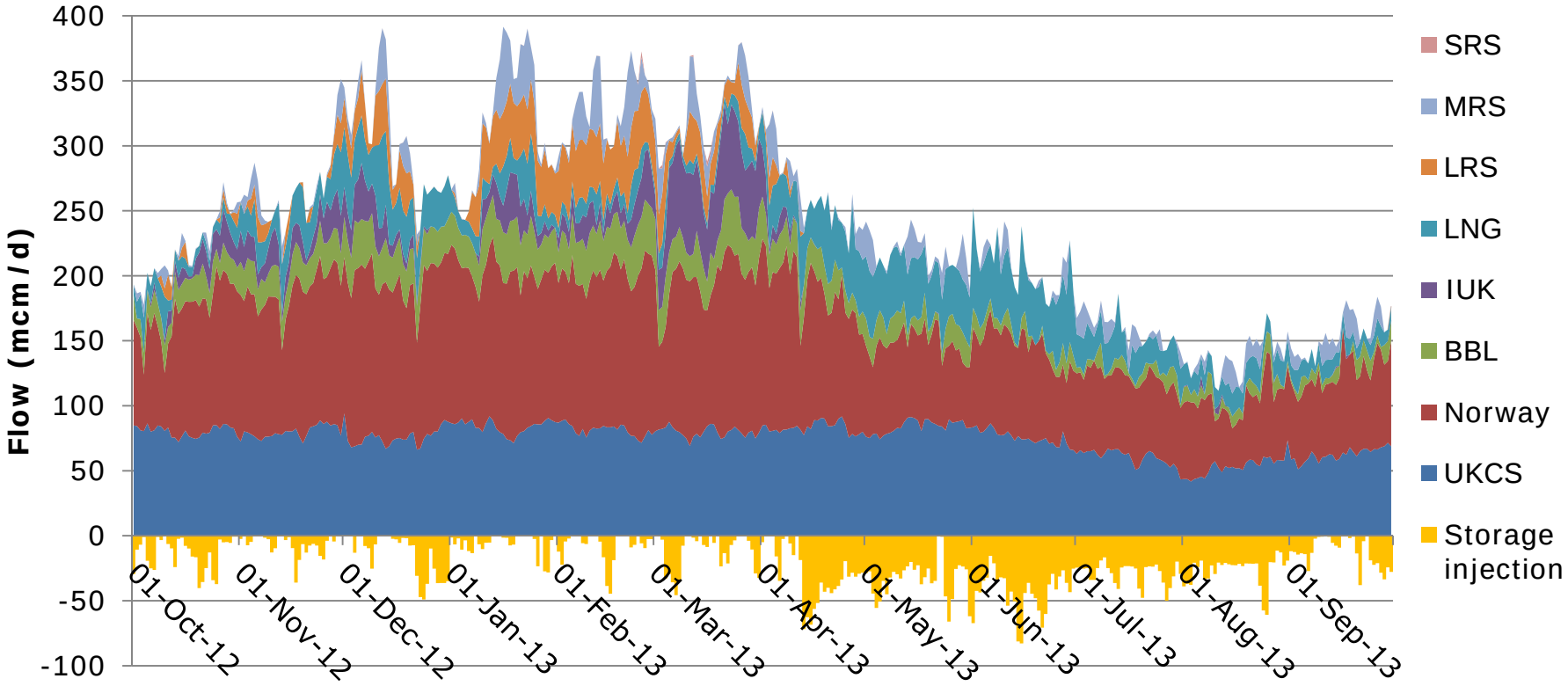
- Least expensive OCM trade taken by SO
- SAP– small adjustment

SO doesn't trade to procure entire system imbalance – instead trade small volumes to set cash-out prices, and rely on these incentives for shippers to trade or change physical supplies

An example: 4 January 2010



Gas supply and demand in GB

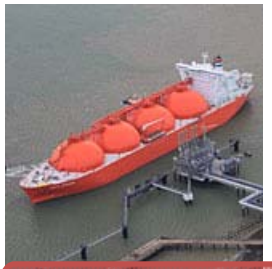


Demand seasonal, but volatile and unpredictable

Different sources of supply have varying degrees of flexibility

Everyone has a role to play

Producers

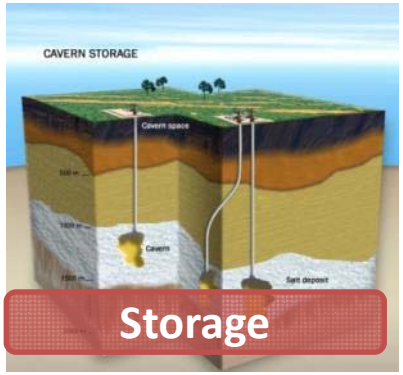


LNG terminals

Transporters

Shippers

Suppliers



Storage

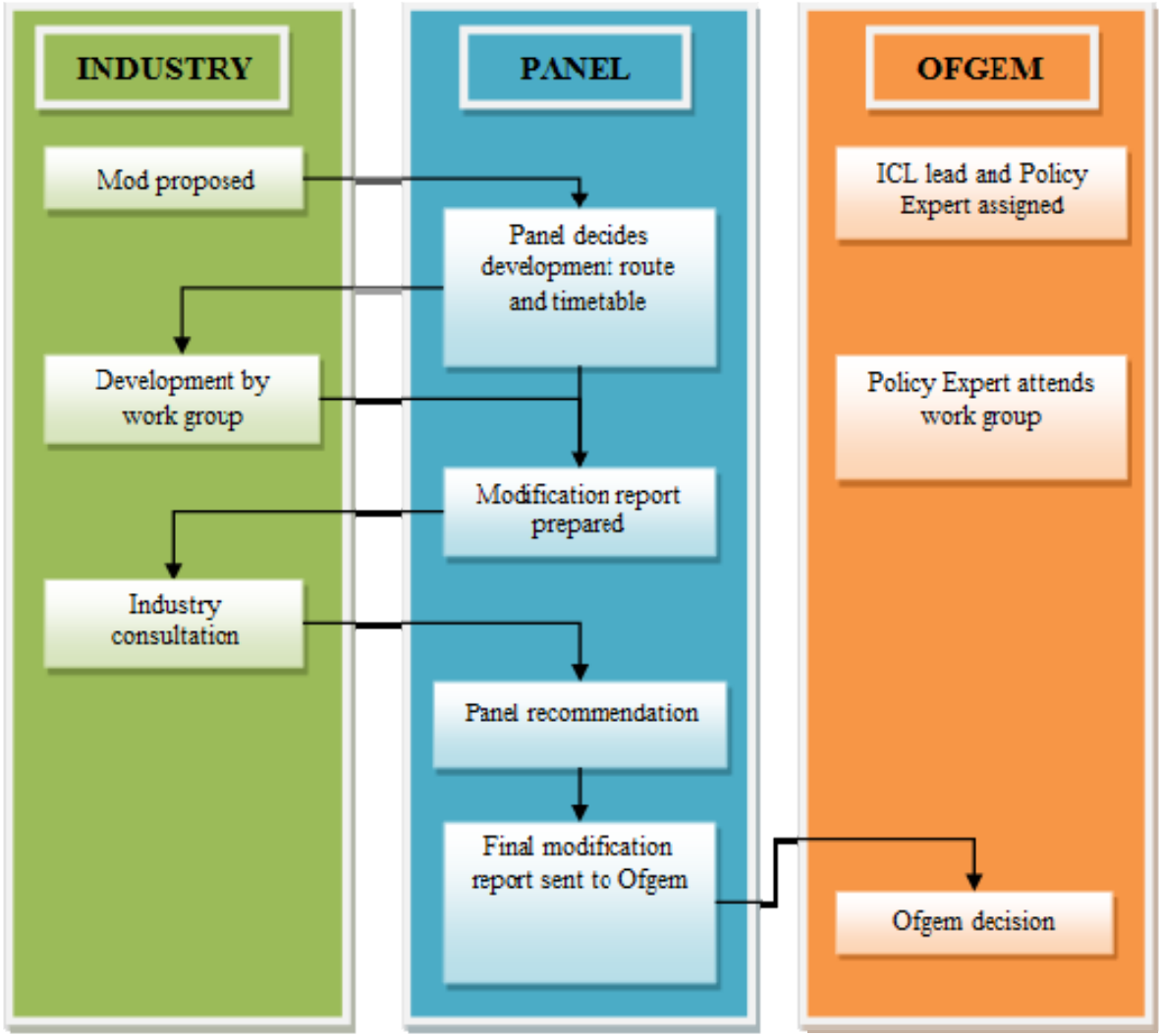
Consumers

Uniform Network Code

The legal contract between transporters and shippers, that defines the operation of the gas regime, providing "level playing field". Key elements are:

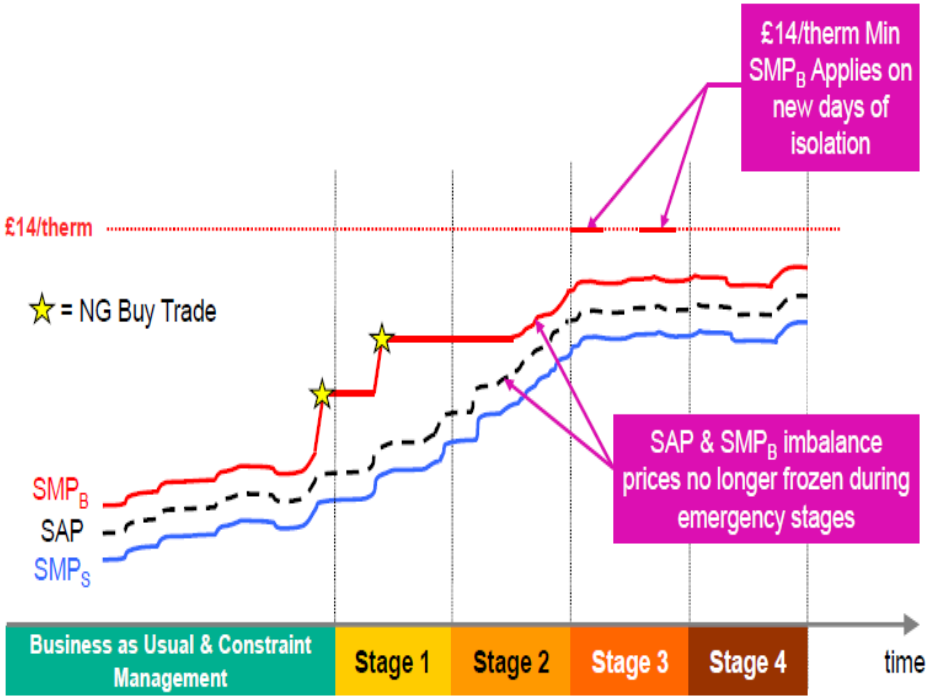
- Definition of players
- Capacity (access to the system)
- Gas trading
- Energy balancing (system clearing)
- Emergency procedures
- Invoicing and credit
- Supply point administration (customer management)

Code modification process



Gas SCR reforms

Problems identified	• Cash-out frozen at stage 2 of a gas deficit emergency (GDE) • Concerns may not attract gas during a GDE or provide sufficient incentives to invest in SoS • Interrupted firm customers not paid for the involuntary demand side response during a GDE
Key objectives	• Incentivise efficient levels of **security of supply** • **Reform current arrangements** to provide **more effective price signals**



Solution: strengthen price signals and incentives on shippers

- Cash-out unfrozen and dynamic throughout an emergency.
- The cost of network isolation is priced into cash-out at the estimate of a domestic consumer's value of lost load (VoLL) – £14/therm.
- Consumers are paid for the involuntary demand side response they provide if interrupted in an emergency using funds recovered from cash-out charges.
- NGG will develop a methodology to allow large consumers to provide voluntary demand side response ahead of an emergency

GB and BAL: already compliant?

- Implementing BAL required significant changes in GB
- Analysis undertaken in 2013 shows the scale of these changes

Changes required	Change to be confirmed	No change expected
37	46	231

- Codes delivered primarily via UNC (Code) Modifications in an integrated, phased approach
- Elements of CAM, BAL and INT rolled out together
- EU Phase II, delivered Oct/Nov 2015, was the most significant change to GB commercial arrangements for many years

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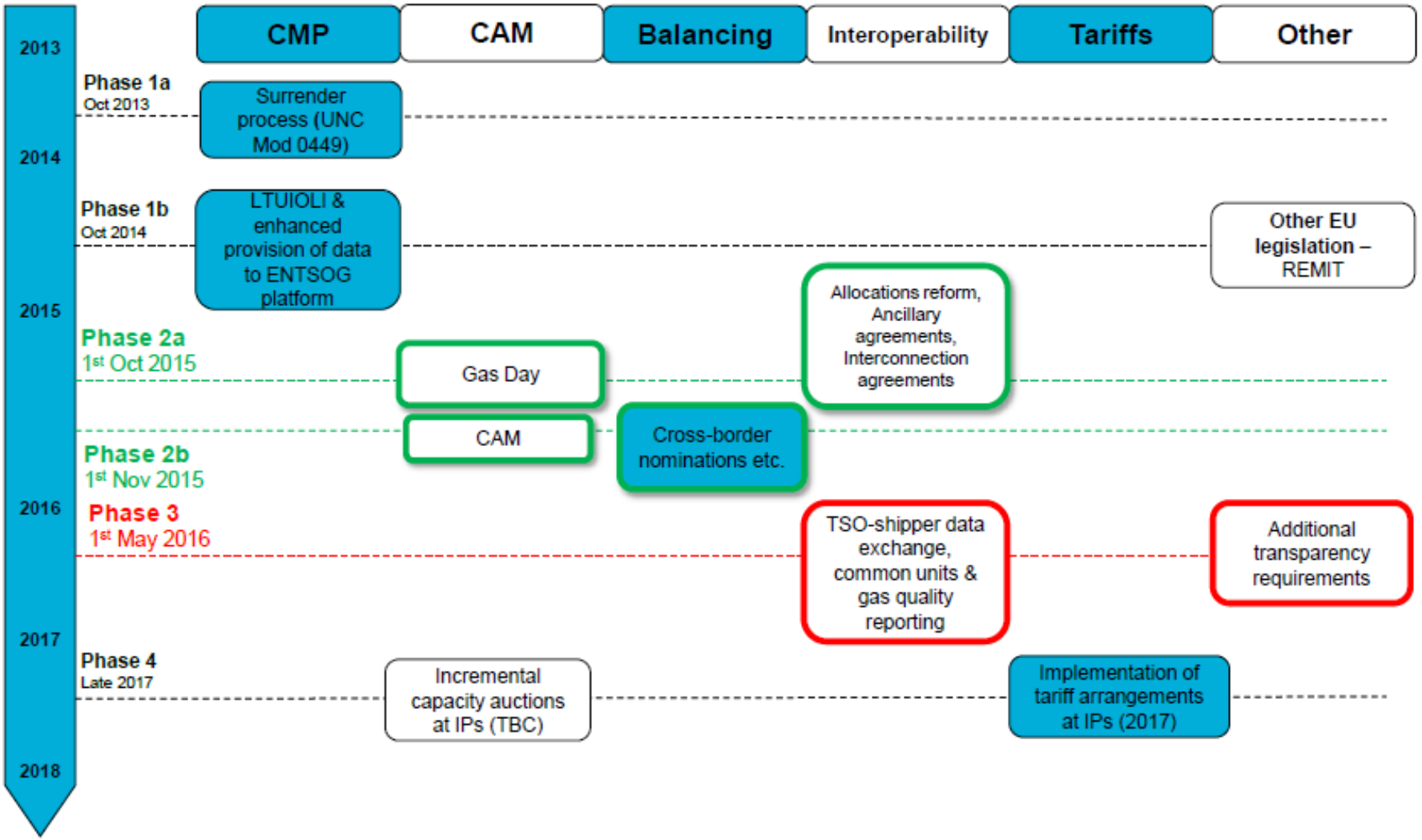
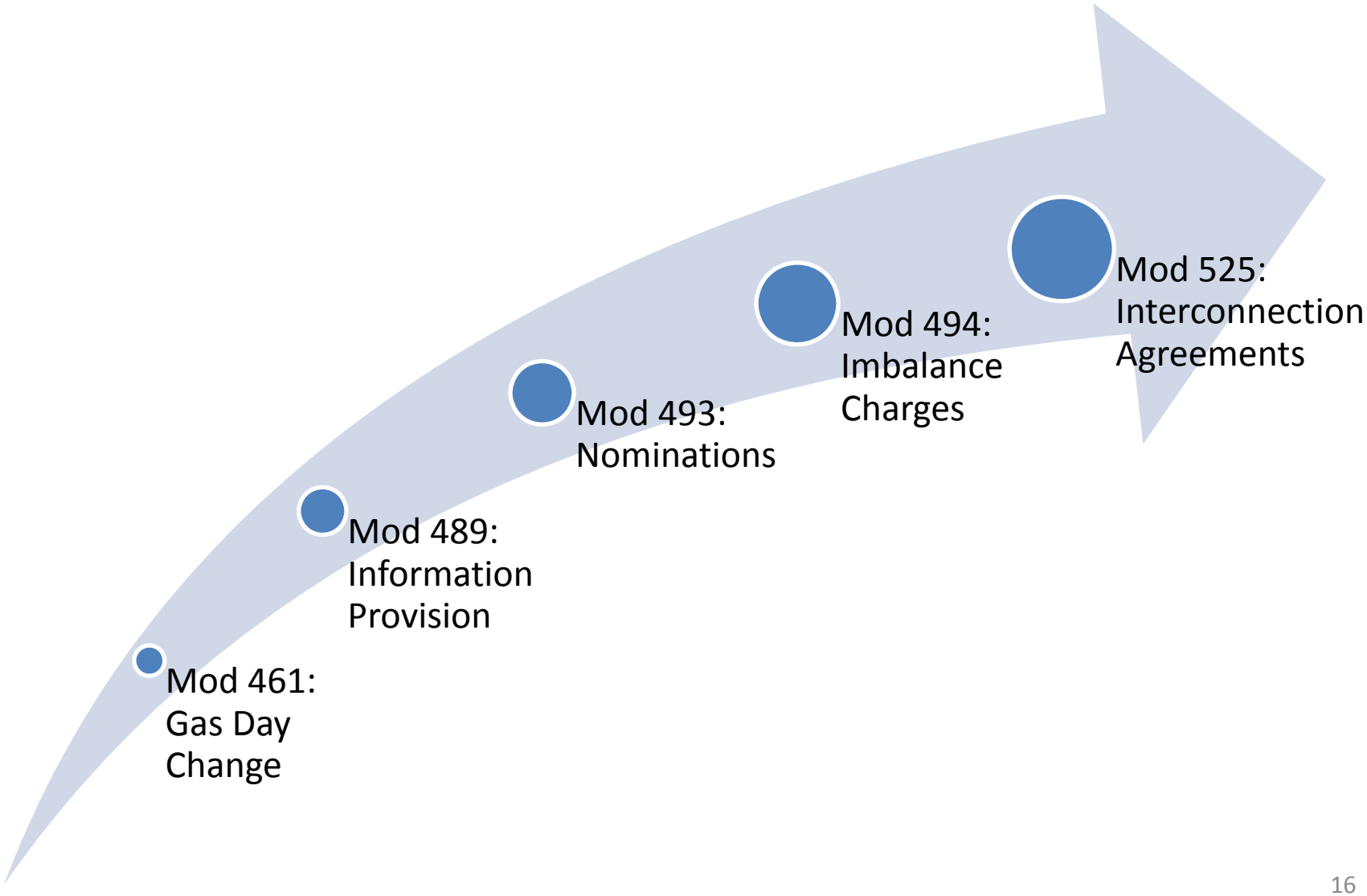
High-level code implementation roadmap



BAL: key UNC modifications required



Implementation challenges

Generic

- Lots of moving parts, multiple elements, multiple parties
- Short timescales with specified implementation dates
- Localised ‘non-standard’ existing arrangements

GB Specific

- Harmonising the gas day
- Separating IPs from domestic entry points
- Interconnection arrangements to NI and IE
- New transparency arrangements

Harmonising the Gas Day time

What was the Problem?

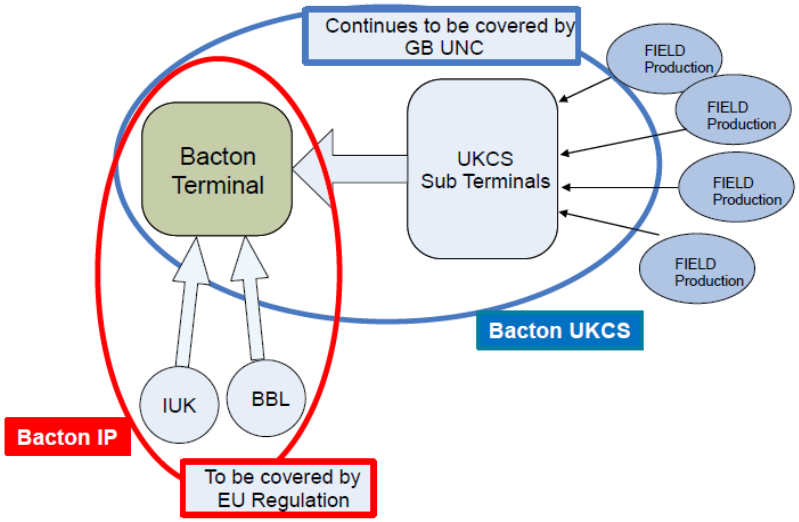
- Harmonised EU gas day required for balancing (BAL)and for IPs (CAM).
  - Simple change (one hour) led to major implications!
- EU legislation does not extend to upstream or onshore terminals, which retained the 06:00 gas day
- Complex web of information flows between onshore & offshore
- Initial downstream industry preference to retain 06:00 gas day not progressed

What was the Solution?

- Collaborative working across industry led to gas day interface solution
- Focused upon managing the interface between different gas days at 06:00 terminals, significantly reducing imbalance risk
  - Allowed terminals to either move to 05:00 or remain at 06:00, whilst providing compliant data to TSO
- Major impacts across the value chain, with significant work still ongoing

Separating IPs from domestic entry at Bacton

- Bacton is an aggregated system entry point
  - Two interconnectors, four offshore sub-terminals
  - Capacity sold up to 15 years in advance
- Requirement for bundling and different capacity allocation process for IP's
- Shipper concern about losing benefits of single capacity pool
- National Grid raised original code mod, three alternate modifications raised
- Proposed one-off split of existing booked capacity across two entry points, 'Bacton IP' & 'Bacton UKCS'



- Decision subject to delay due to regulatory impact assessment by Ofgem
- Final decision in July 2015 supported to implement National Grid's preferred modification
- Systems build was therefore tight but allowed GB to operate CAM and BAL compliant by 1st Oct & 1st Nov 2015

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Final thoughts

- Learn from the experience of others
- Key principles: transparency; defined roles for all market players; level playing field
- Timescales are tight
- Lots of moving parts to bring together
- Key to success is collaboration and engagement
- Many implementation challenges overcome
- Focused on achieving delivery of all elements on time

Thank you!

NetConnect Germany
simply gas

Joint ENTSOG/ACER Workshop on the Implementation of the Network Code Balancing

NC BAL Implementation in Germany

Agenda

1. **NC BAL implementation status in Germany**
2. Model of trading in adjacent markets

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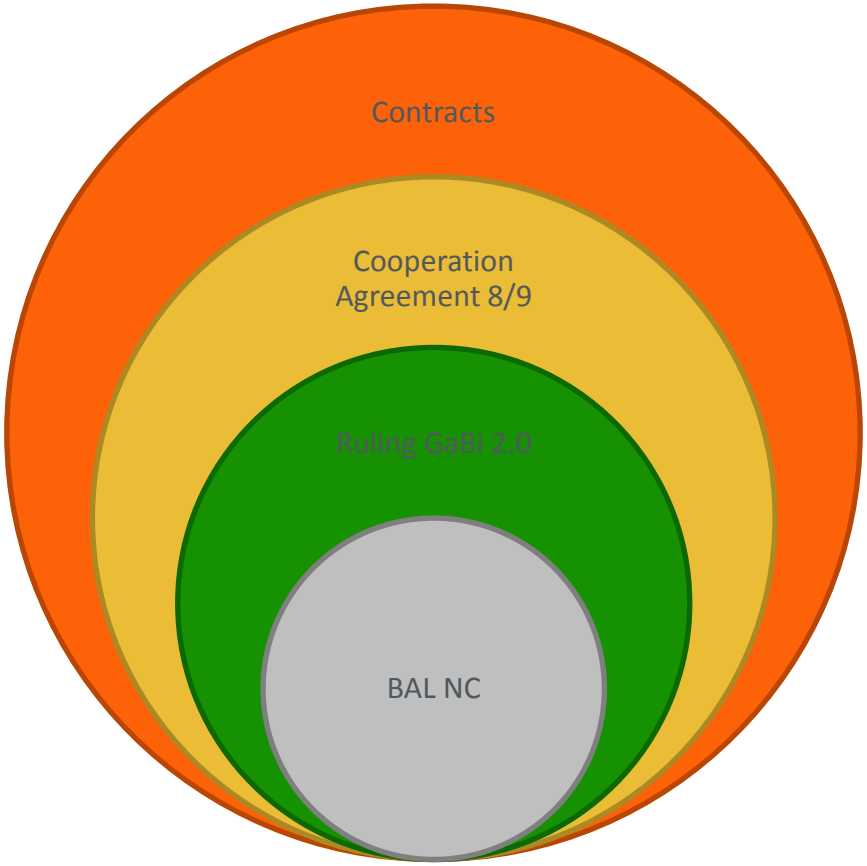
Transposing the BAL NC into German law

- Ruling GaBi Gas 2.0 of BNetzA sets balancing rules for German gas market compliant with BAL NC provisions
- As opposed to the previous GABi Gas (“1.0”) decision, no standard contracts are prescribed as part of the new ruling
- The decision only outlines the key elements of the new balancing regime
- Provisions have been implemented and detailed rules are defined in the new version of the German gas industry's TPA code (Cooperation Agreement, so-called “KoV”) and its appendices (standard contracts, best practice guidelines)



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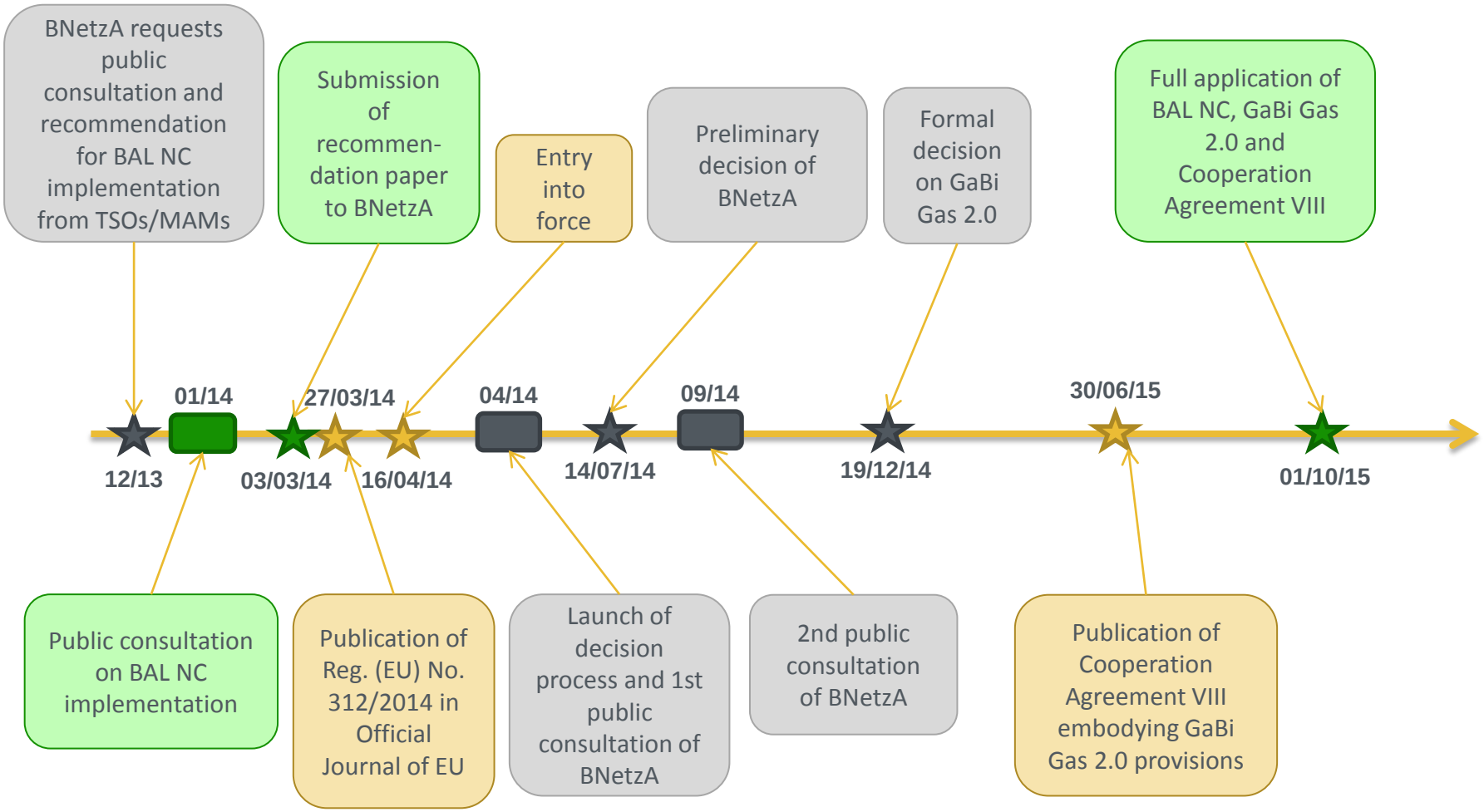
Process towards BAL NC compliance



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Major changes to German balancing model

Topic	Before BAL NC application	After BAL NC application
Imbalance price calculation	Average hub-price (based on price basket) +/- fixed adjustment	Max./Min. of marginal buy/sell price or average hub price +/- 2% adjustment
Within Day Obligations	Fixed charge for hourly imbalances above tolerance levels	Cost-reflective charge for hourly imbalances above tolerance levels in case of opposing balancing actions within a gas day
Information provision	One intra-day update for intra-day metered customers	Two intra-day updates for intra-day metered customers
Neutrality	Single neutrality pot	Separate neutrality pots for non-daily metered customers and for intra-day metered customers
Trade Notification lead-times	2 hours lead-time for submission of trade notifications	30 min lead-time for submission of trade notifications (effective from next full hour)
Balancing actions	Focus on wholesale market – use of balancing platform and flexibility services	Focus on wholesale market – balancing platform only as backup and flexibility services where technically required

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Agenda

1. NC BAL implementation status in Germany
2. **Model of trading in adjacent markets**

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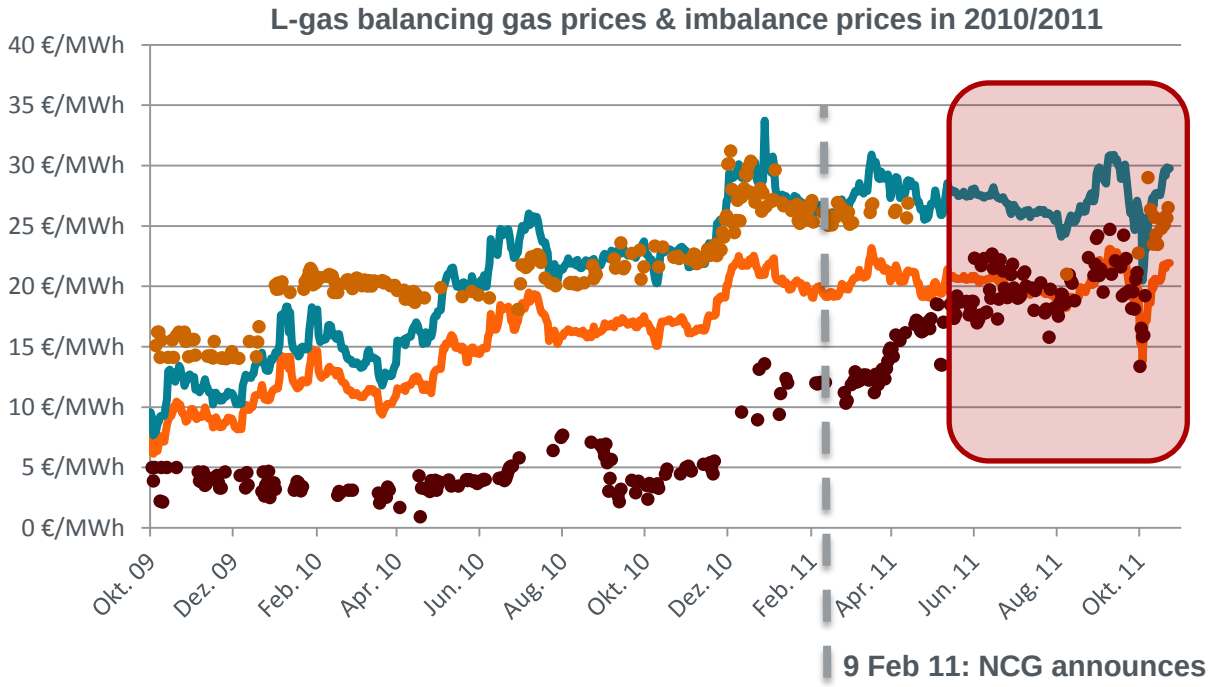
Background of NCG activities at TTF

- NCG is a cross-quality market area since 1st April 2011 with virtual conversion possibilities between H- and L-gas for network users
- For balancing of L-gas grid, physical L-gas could only be procured as locational products on bilateral balancing platform
- Due to limited size and supply-nature of L-gas grid, competition on bilateral balancing platform was limited leading to high balancing costs

Use of TTF for procuring L-gas immediately led to realisation of market prices!



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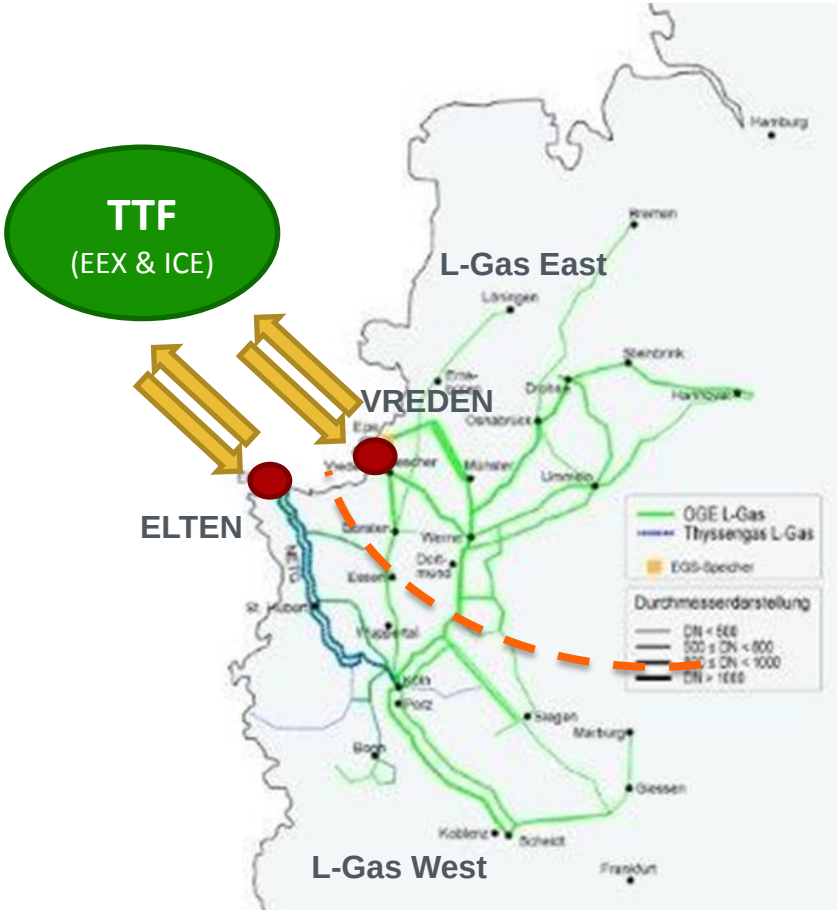
Operational execution of TTF trading

- NCG is registered as a shipper with GTS and at the wholesale markets EEX/TTF and ICE/TTF
- NCG books capacity at two IPs between GTS and NCG via PRISMA
- IP Elten allows access to the western part, IP Vreden to the eastern part of the L-gas grid (limited transport flexibility between east and west)
- Both directions are being booked, depending on season and forecasted demand
- Transport of L-gas is fully nominated by NCG



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Framework for trading in adjacent market

- **Trading in an adjacent market is an efficient tool that allows access to a liquid market for balancing actions and enables the TSO to realise locational effects with standard products due to own transport**

- Despite this, NCG applies the model within a clear framework in order to ensure that detrimental effects on NCG hub liquidity are avoided

  - TTF is only used in case physical L-gas is required – NCG hub is prioritised in case of global balancing gas demand (without need for a specific quality)

  - Locational L-gas product has been introduced at EEX/NCG to be used as an alternative to TTF – transportation costs to be taken into account when choosing between the two hubs

  - Capacities are booked as short-term based as possible and primarily on an interruptible basis

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ACER-ENTSOG Balancing Workshop

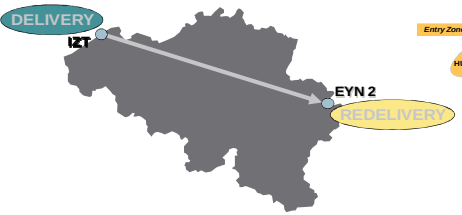
BeLux & our balancing model

17 November 2015

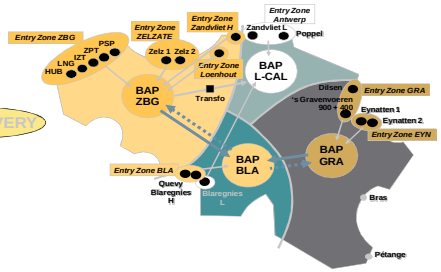
Belgian balancing model has evolved over time

2004

Border-to-border transmission

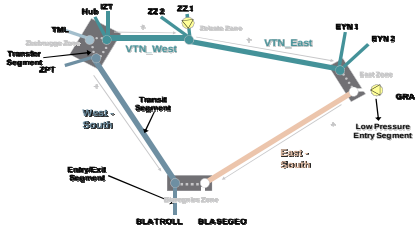


Domestic transmission

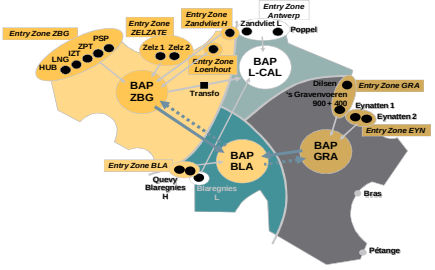


2010

Border-to-border transmission

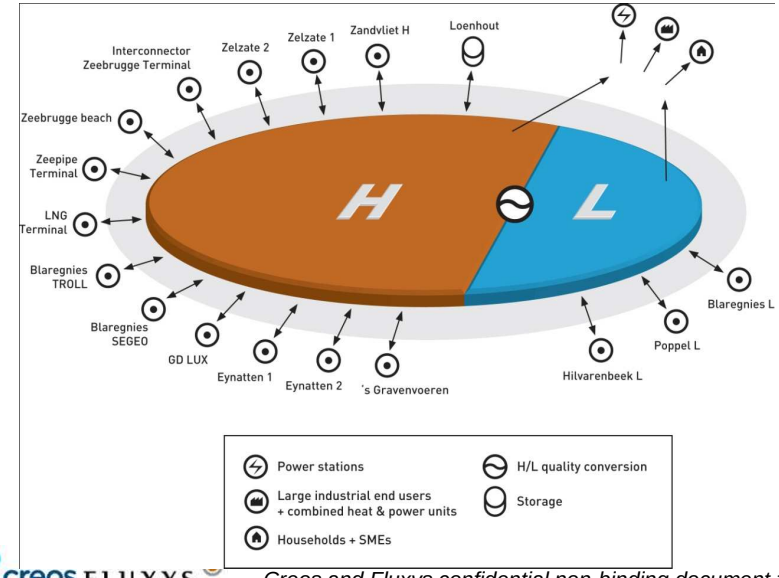


Domestic transmission



2012

Entry/Exit transmission model



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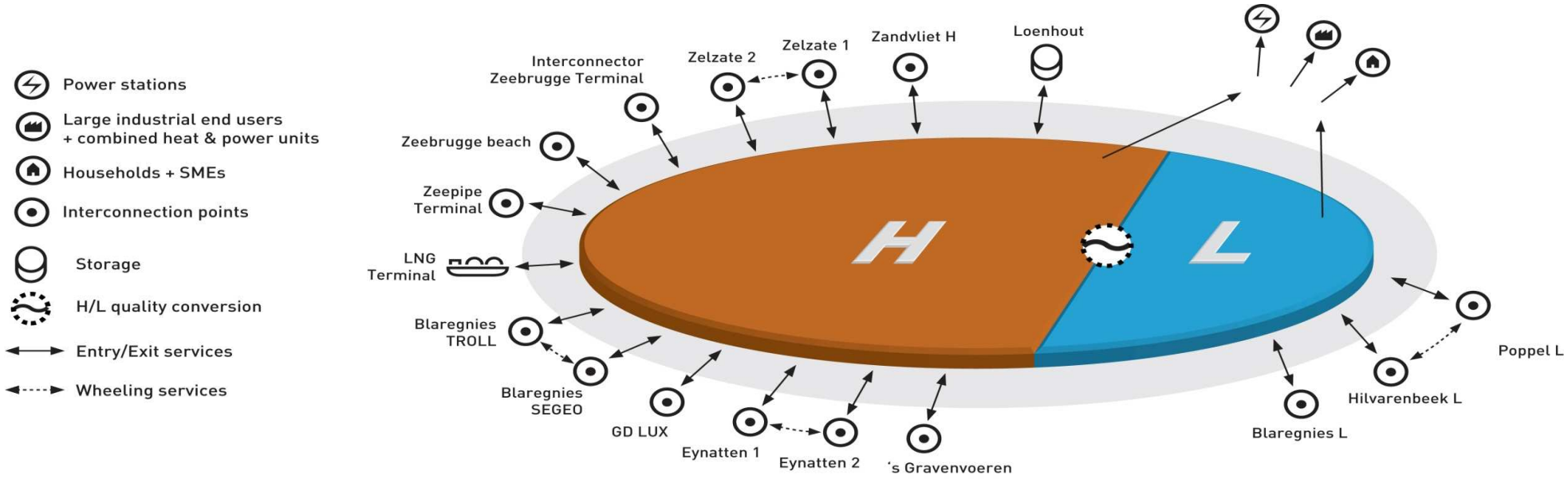
Entry/Exit 2012
→ EASY access model to the transmission grid



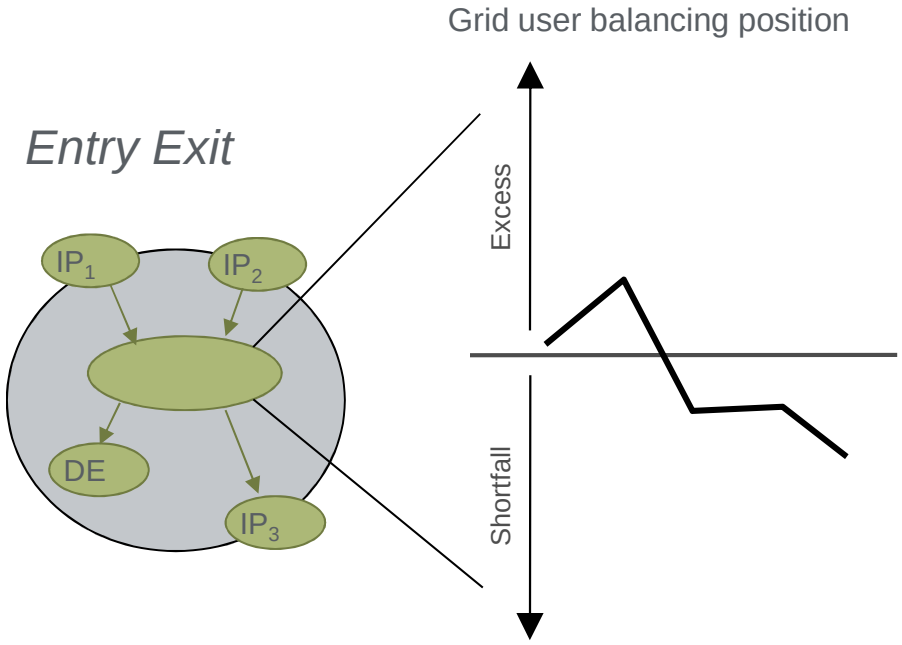
One Belgian gas market with 1 balancing zone for H-gas and 1 for L-gas

Optimum flexibility for shippers in managing their capacity portfolio

- Shippers able to book and operate entry & exit capacity independently
- Unified access model for domestic and border-to-border transmission

Easy access to downstream Belgian market, including sourcing options for large consumers

Entry/Exit without direct link implies a new balancing regime



We can track the gas "balancing" position of each Grid User in the system:

- Imbalance for hour h for a Grid User equals the sum of his entry quantities minus the sum of his exit quantities

Each Grid User has a 'gas account' in the system

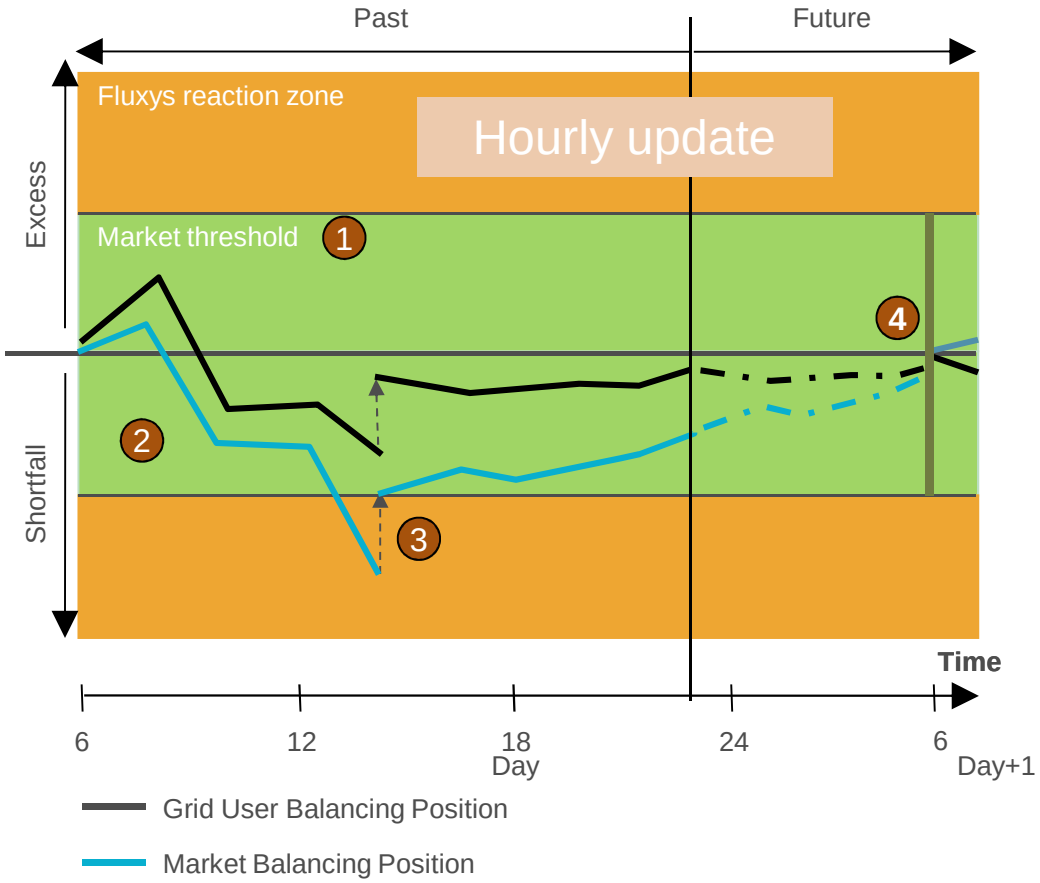
- The gas account is the Balancing Position
- A Grid user can be short, long or in equilibrium at a given moment

Opportunity to offer gas trading services within the system

- A trade between two parties is "simply" a transfer from the account of the seller to the account of the buyer
- This transfer takes place on a notional point in the "center" of the system: the Zeebrugge Trading Point (ZTP) (*notional trading services or virtual trading point)*

Creos and Fluxys confidential non-binding document for discussion & information purposes only (subject to management approval).

Balancing the network made easier, based on market behaviour



Comprehensive hourly information provision to the market
In line with EU Balancing Network Code

Fluxys Be's Daily Market-Based Balancing

1. **Thresholds to limit the aggregated market imbalances, sized to domestic market needs**
2. **No Fluxys Belgium action intra-day and no impact on market parties as long as market imbalance is within market threshold**
3. **Residual action initiated by Fluxys Belgium on the exchange when market position goes beyond market threshold, with cash compensation for causers**
4. **Residual end-of day imbalance settled in cash**

Creos and Fluxys confidential non-binding document for discussion & information purposes only (subject to management approval).

Balancing Information

In order to enable shippers adjusting their WD positions in a timely manner, grid users:

H+25 min

- Receive an hourly Balancing Message : contains its individual position and the market position
- Receive an hourly Allocation Message : contains for each IP, Domestic exit point the hourly allocation
- May revise its nominations by sending renominations at least H - 30 minutes (ZTP) or 2 hours before the change will take effect

Advantages of hourly info for Grid User

- No exposure to unexpected financial settlement as all tools at its disposal to adapt its individual balancing position → transparent and traceable
- Detailed allocation info available to steer its balancing position
- No cross-subsidization between different end-user profiles as all imbalances caused by certain types of End-users can be allocated to the causer
- New entrants can benefit of full flexibility (not limited to individual tolerances)

Advantages of hourly information for Operator

- Grid Users are primarily responsible to balance their portfolio
- Residual balancing = role as Balancing Operator
- Directly relates the cost of a Within-Day residual balancing action to the commodity market price at the moment of such action and can allocate the cost to the responsible parties
- Encourages utilisation of cross-border trades and promotes the development of a liquid market

Advantages of Entry-Exit model with system-wide within day obligations

Advantages for Grid User

- Through hourly data publication and short term renomination possibilities grid users are enabled to manage in a timely manner their WD/EoD positions in order to manage their financial exposure

- No cross-subsidization between different end-user profiles as all imbalances caused by certain types of End-users can be allocated to the causer

- Creates a level playing field for new grid users entering the market because new grid users with limited flexibility can enter the Belgian market and use the entire flexibility offered by Fluxys Belgium

Advantages for Operator

- No reservation of significant physical buffer for balancing model without WDO
  - The cost of this physical buffer doesn't have to be recovered on the grid users→ Low tariffs

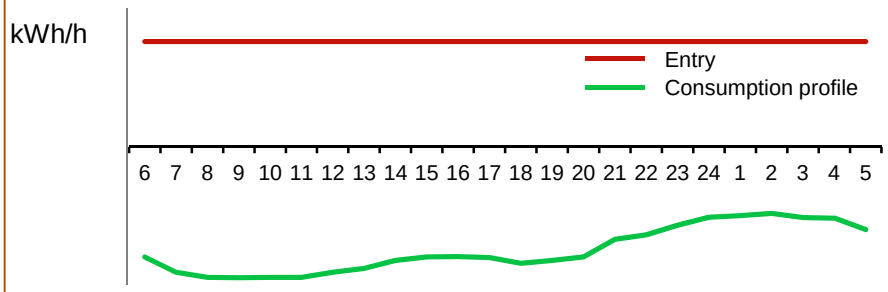
- Encourages utilisation of cross-border trades and promotes the development of a liquid trading market

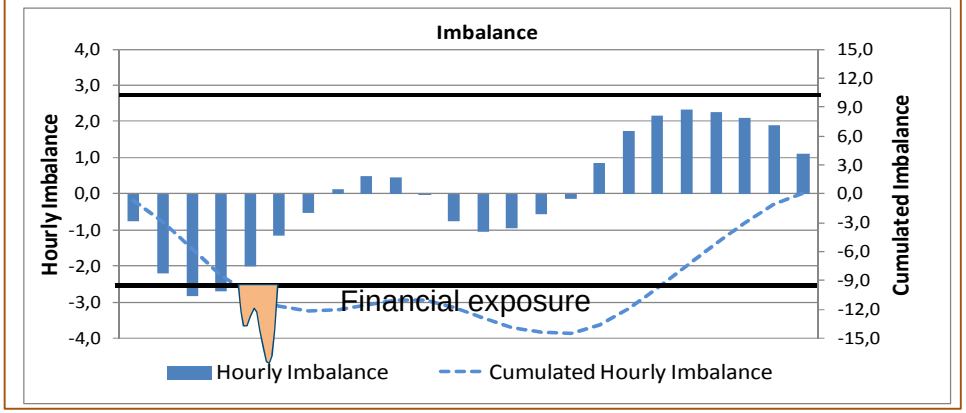
- Directly relates the cost or revenue of a residual balancing action to the actual commodity market prices at the moment of such action and can target those costs or revenues to responsible parties

Level Playing field for new grid users

In case of Individual Tolerances

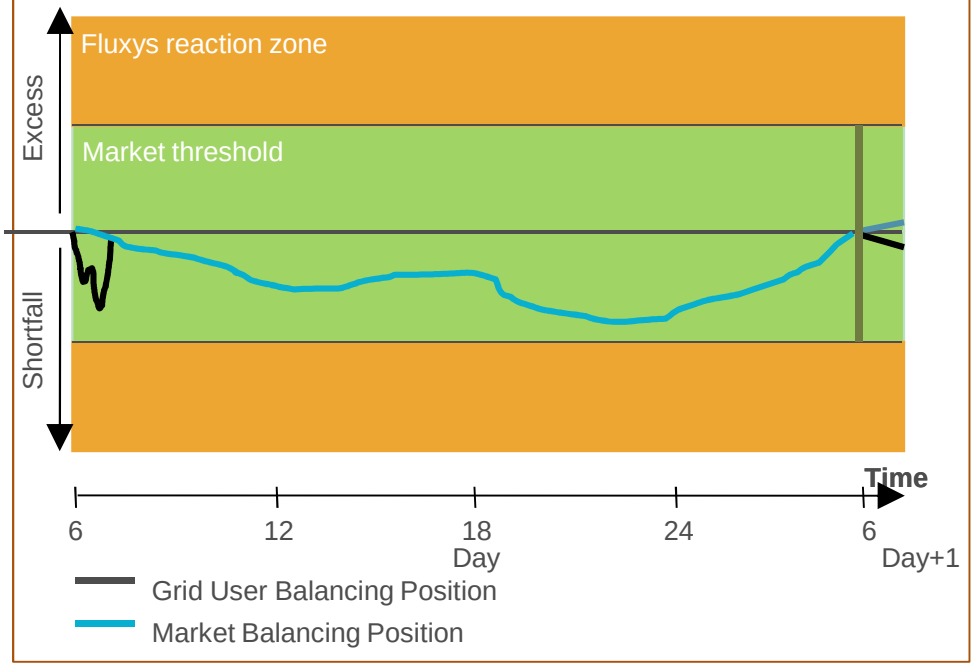
- Tolerances are normally calculated in function of the subscribed capacity or allocated volumes
- New entrant:
  - normally small individual tolerances
  - possibly no continues follow-up of individual balancing position → financial exposure





In case of Market Tolerances

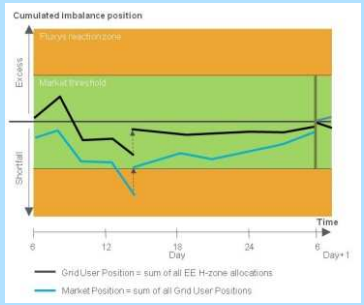
- Tolerances can be used by entire market
- Impact of small shippers rather limited, if major shippers do a good steering, the entire market will stay within the market threshold → no financial settlement
- Small shipper can benefit from the balancing actions of large shippers



Market-based balancing as input, amongst others, within the overall flow planning by operator

Market-based balancing, the level playing field of the market

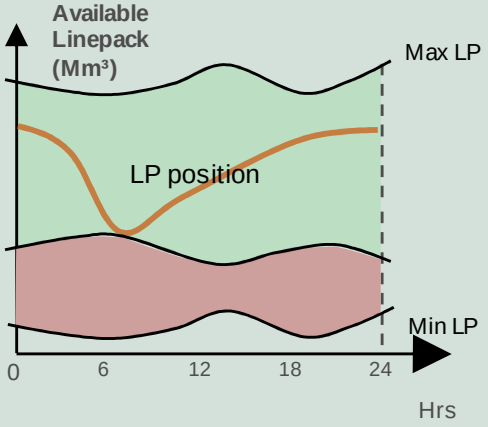
Market thresholds



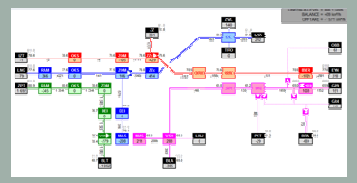
Market balancing position

Physical balancing of the network is the field of the TSO

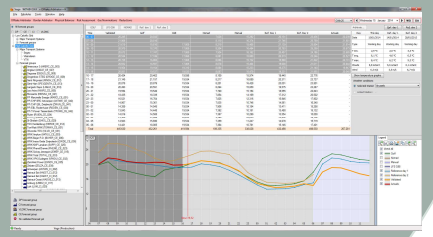
Flow planning & continuous safeguarding physical balance/system integrity of network



Minimum and maximum pressures



Consumption forecasts

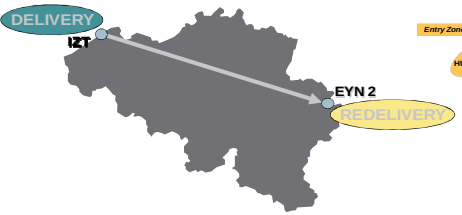


Online measurements

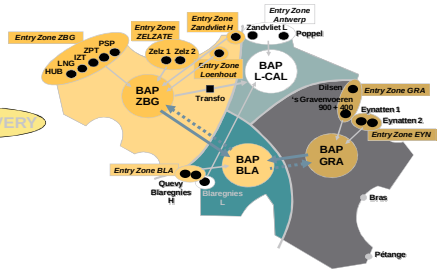
Belgian balancing model has evolved over time

2004

Border-to-border transmission

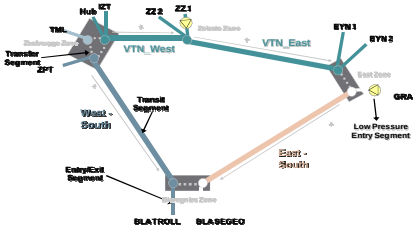


Domestic transmission

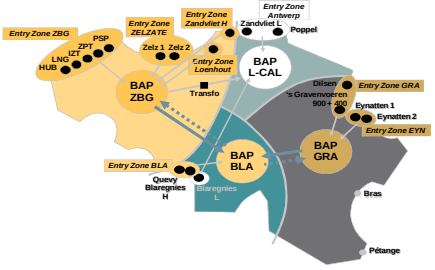


2010

Border-to-border transmission

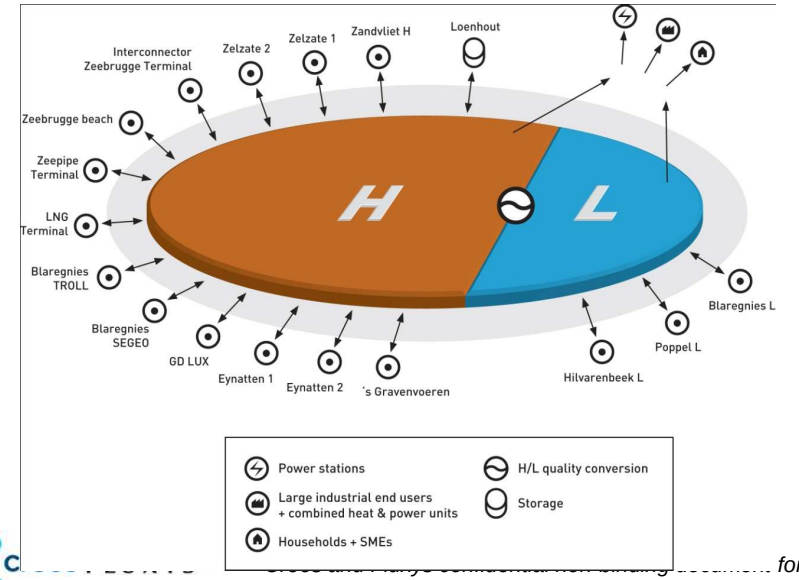


Domestic transmission



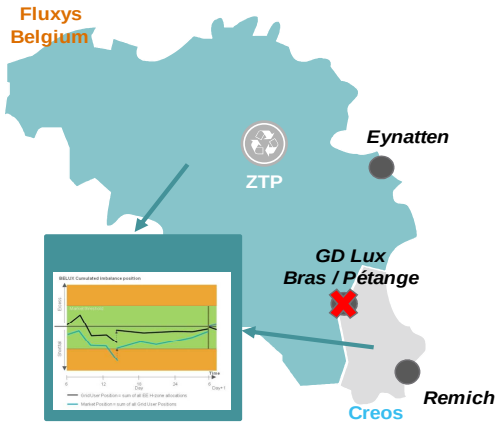
2012

Entry/Exit transmission model



2015

BeLux



BeLux: first step towards Market Merger Model

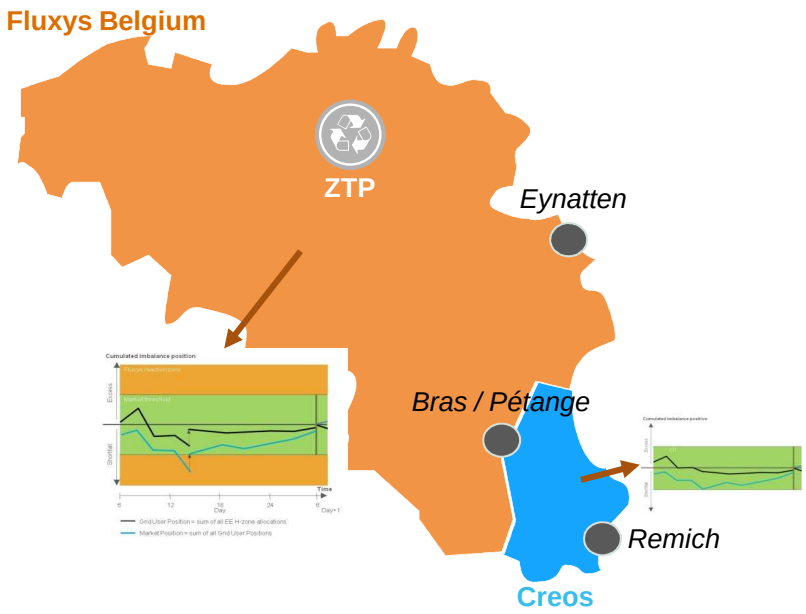
1 October 2015: Creos Luxembourg & Fluxys Belgium have integrated their national H-gas markets

- First market integration between two EU Member States;
- Balancing within the BeLux area harmonized and operated by a common balancing operator: Fluxys Be in first instance, Balansys later on;
- Facilitated by fruitful cooperation with ILR & CREG;
- BeLux is not a merger of companies: Creos Luxembourg and Fluxys Belgium remain two TSOs, commercializing services in their respective transmission grids.

BeLux integrated gas market in a nutshell

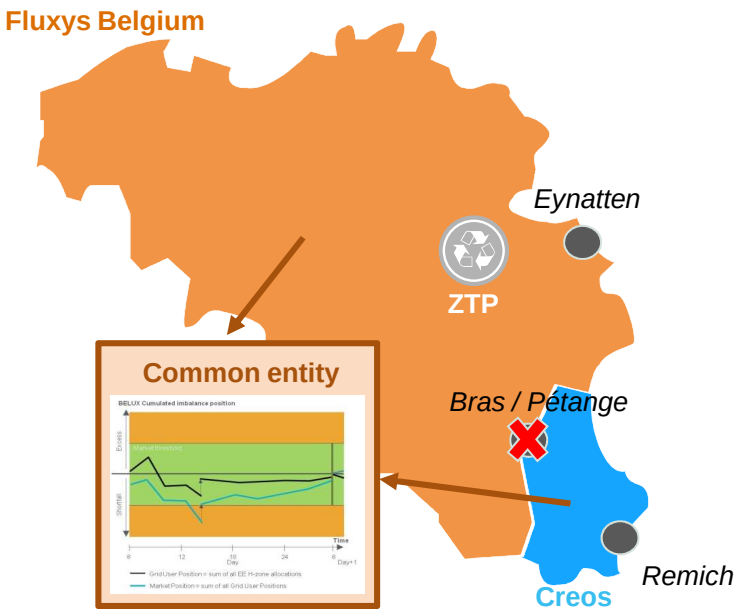
BeLux is about integrating the gas transport markets of the Grand Duchy of Luxembourg (TSO Creos Luxembourg) and Belgium (Hgas) in one balancing zone creating one common Entry/Exit system with one common balancing regime and one notional trading point (ZTP).

Situation today



- 2 Entry/Exit markets with capacity fees in-between
- Separate gas trading place in Belgium
- 2 independent sets of rules

BeLux



- Single E/E market capitalizing on TSO existing means
- Single gas trading place in BeLux, i.e. ZTP
- Harmonized balancing rules set; 1 common balancing contract with balancing operator **Balansys**

Benefits of the integrated Belgium-Luxembourg gas market

Improved market functioning & added value for customers

- Stronger foundation for competitive prices with increased number of suppliers
- Opportunities to pool end-user and supplier portfolios
- Wider sourcing possibilities to guarantee a correct price at all times

Position at the forefront of European market integration

- First TSO cross-border gas market integration in EU
- Huge experience gain for Fluxys Belgium, Creos Luxembourg and the regulators (CREG, ILR)

Realization of market integration in smart way – More brain with same steel

- Realization of market integration without 'steel' investments and with amount of (firm) capacity unaffected
- No impact on tariffs in Belgium since Creos Luxembourg compensates Fluxys Belgium for lost revenues of capacity bookings at the Belgian-Lux interconnection points (which disappeared)

Efficient implementation of European network codes

- Synergies for TSOs to implement European network codes in an integrated setting

Improved Security of Supply in Luxembourg

- Supply guaranteed to 60% of Lux customers compared to 37% today in case of a disruption of the single largest gas infrastructure

Market integration further improves market fundamentals

BeLux model is fully compliant with European Balancing Network Code

Fluxys Belgium's balancing model has already been built with a view on the European Balancing Network Code* (BAL NC)

- BAL NC was under development when designing current Entry/Exit model in Belgium (launched in Oct 2012)
- Therefore, current Fluxys Belgium's EE model was already broadly compliant with BAL NC

By entry into force of BAL NC on 1st October 2015, some minor adaptations have been brought to the currently applied model, of which:

- Application of a neutrality charge
- Adaptation of imbalance charges pricing to be applied to shippers for settlements of imbalance positions

Adaptations in regulatory documents & tariff for balancing have been approved

BeLux is a full cross-border balancing harmonisation based on BAL NC

* Commission Regulation (EU) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks

Conclusion

The Belgian natural gas transmission model has significantly evolved during the last decade …

… going from a separated model for domestic and border-to-border transmission …

… to a full entry-exit model, today being an integrated market with Luxembourg

The model offers a comfortable playing field to market players, being suppliers but also industrials aiming to source their gas:

- A notional trading point with gas prices most frequently cheaper than neighbouring gas market places, and showing adequate liquidity in order to source gas and balance positions
- A system-wide balancing regime, having shown huge reliability since 2012
- A high quality and frequency information stream to market players, allowing for a perfect steering of positions

TRADING REGION SOUTH **(TRS)**

November 17th, 2015,
ENTSOG/ACER joint WS in Budapest

GRTgaz
Marketing & Sales Division

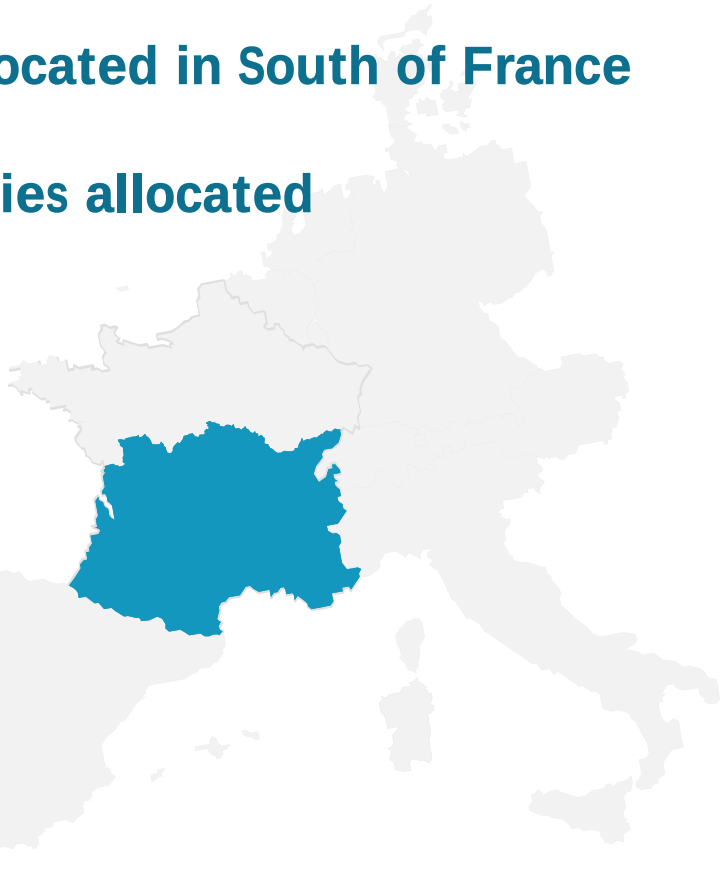
TIGF
Sales & Development Division

TRS TRADING REGION SOUTH
by GRTgaz & TIGF

GRTgaz TIGF

WHAT IS TRS ?

- **A new market area located in South of France**
- **Transmission capacities allocated by TIGF and GRTgaz**
- **No contractual IP between GRTgaz and TIGF.**



TRS TRADING REGION SOUTH by GRTgaz & TIGF

THIS IS AN ENTRY-EXIT SYSTEM

SECURITY OF SUPPLY

- **3 adjacent gas markets.**
- **2 LNG terminals.**
- **3 Storage groups.**

12 BCM
ANNUAL CONSUMPTION

TRS TRADING REGION SOUTH
by GRTgaz & TIGF

GRTgaz TIGF

TRADING ACTIVITY

- **For six months, 100 TWh notified at the Virtual Trading Point (VTP).**
- **80 network users.**

TRS TRADING REGION SOUTH by GRTgaz & TIGF

EUROPEAN MARKET

+42 %
QUANTITIES TRADED ON TRS MARKET

Q2 2015 vs Q2 2014

TRS TRADING REGION SOUTH
by GRTgaz & TIGF

GRTgaz TIGF

BALANCING CHARGES

- **Network user has to be balanced on the TRS.**
- **Imbalance settlement shared between TIGF and GRTgaz.**

MARGINAL PRICE IS THE SAME ON EACH BALANCING ZONE

TRS TRADING REGION SOUTH by GRTgaz & TIGF

OPERATIONAL BALANCING

- **Implicit physical flow between GRTgaz and TIGF**
- **Balancing actions undertaken separatly.**

TRS TRADING REGION SOUTH by GRTgaz & TIGF

TWO INDEPENDENT BALANCING ZONES

TRS MANAGEMENT

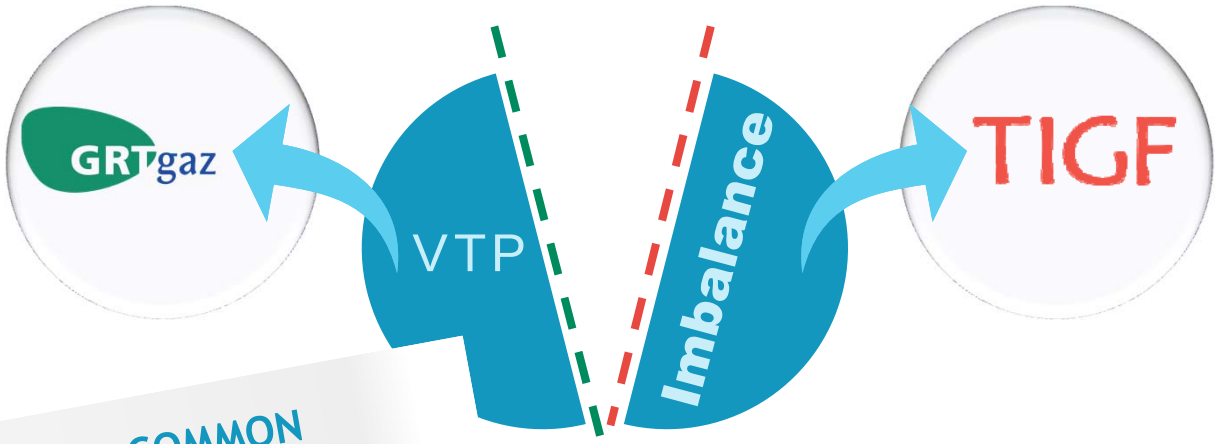
- **TIGF and GRTgaz share the TRS functionalities on the basis of cooperation.**

TRS TRADING REGION SOUTH by GRTgaz & TIGF

NO COMMON LEGAL ENTITY !

TRS MANAGEMENT

- **TIGF and GRTgaz share the TRS functionalities on the basis of cooperation.**



NO COMMON LEGAL ENTITY !

TRS TRADING REGION SOUTH by GRTgaz & TIGF

IT DEVELOPMENT

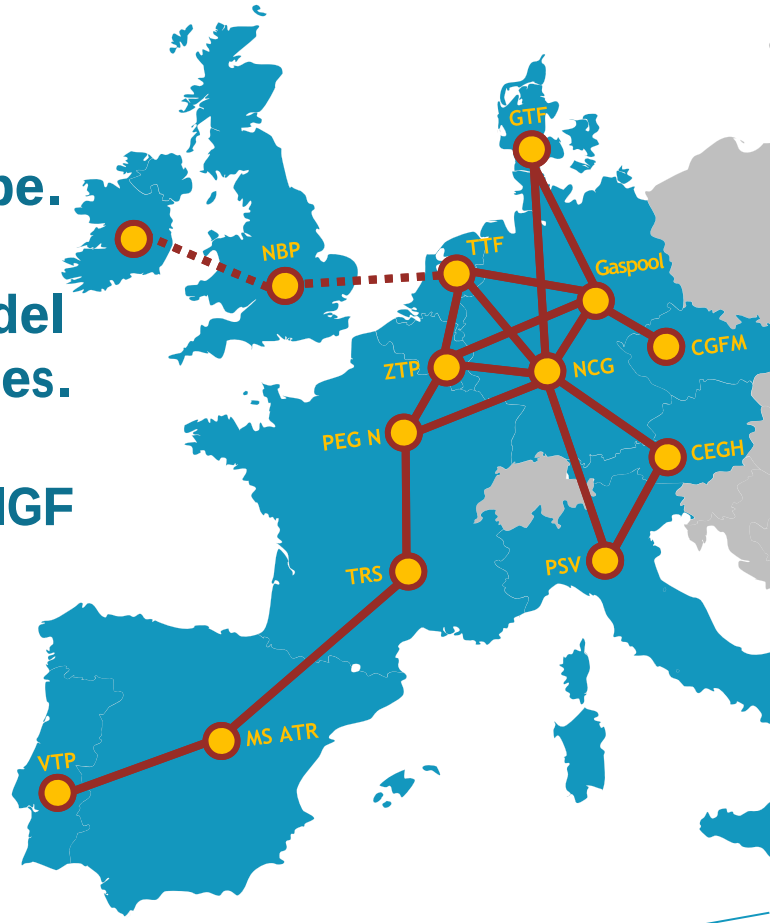
- **Very high flow of data based on numerous requirements.**
- **For six months, around 1 million data have been exchanged.**

1 MILLION
DATA EXCHANGED

TRS TRADING REGION SOUTH by GRTgaz & TIGF

6 MONTHS LATER

- **TRS is an effective market area in Europe.**
- **A Trading Region model with 2 balancing zones.**
- **Based on GRTgaz &TIGF cooperation.**



TRS TRADING REGION SOUTH by GRTgaz & TIGF

2018 … A UNIQUE MARKET AREA IN FRANCE

GRTgaz TIGF

ACER-ENTSOG Joint Workshop on Gas Balancing NC Implementation

Budapest, 17 November 2015

European Federation of Energy Traders

EFET's best practice model in developing balancing markets – initial views

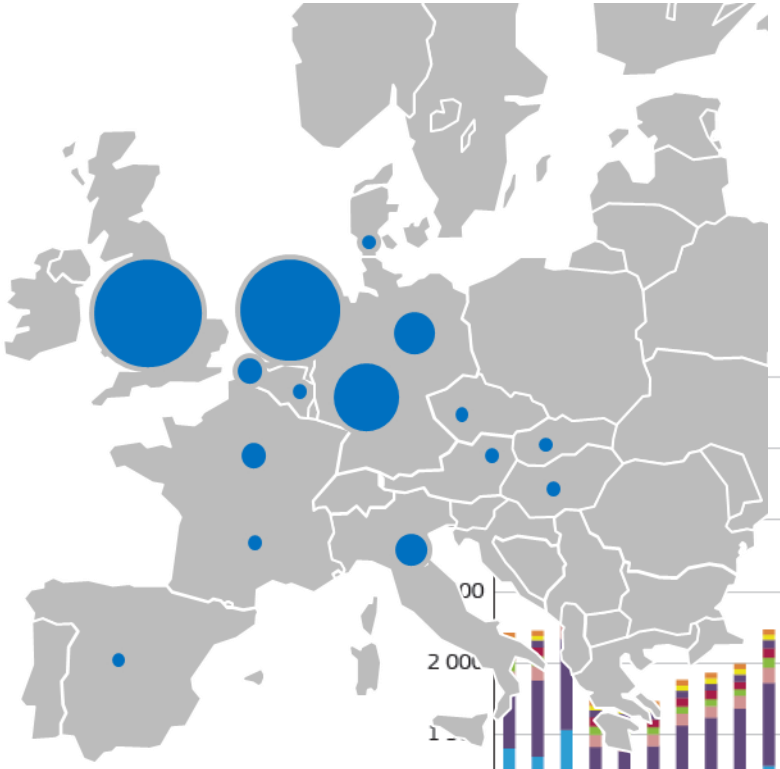
The BAL NC is about gas market development: efficient, liquid, competitive

(3) This Regulation supports the development of a competitive short term wholesale gas market in the European Union that enables the provision of gas flexibility, from whatever source, to offer it for purchase and sale via market mechanisms so that network users can balance their balancing portfolios efficiently or the transmission system operator can use the gas flexibility when balancing the transmission network.

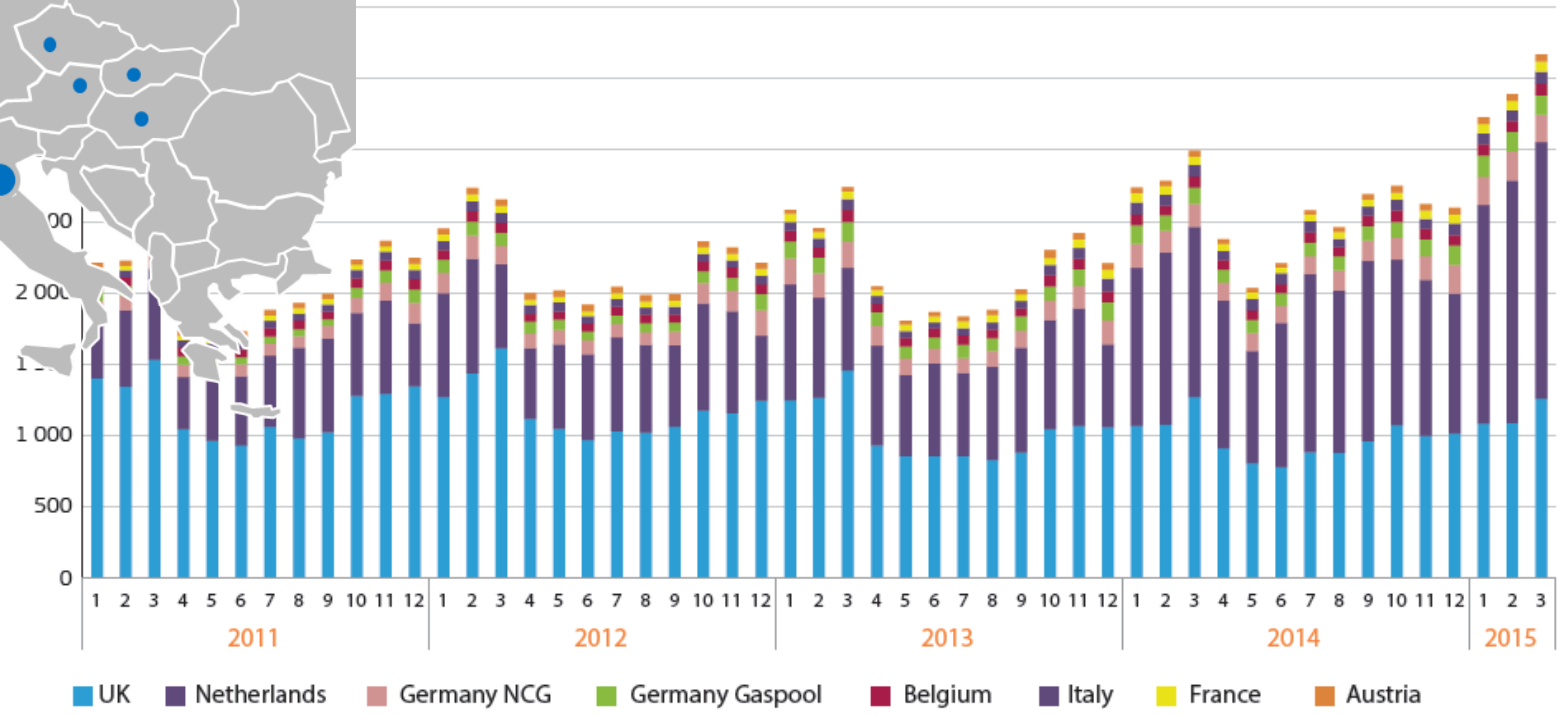
(1) OJ L 211, 14.8.2009, p. 36.

COMMISSION REGULATION (EU) No 312/2014
of 26 March 2014
establishing a Network Code on Gas Balancing of Transmission Networks

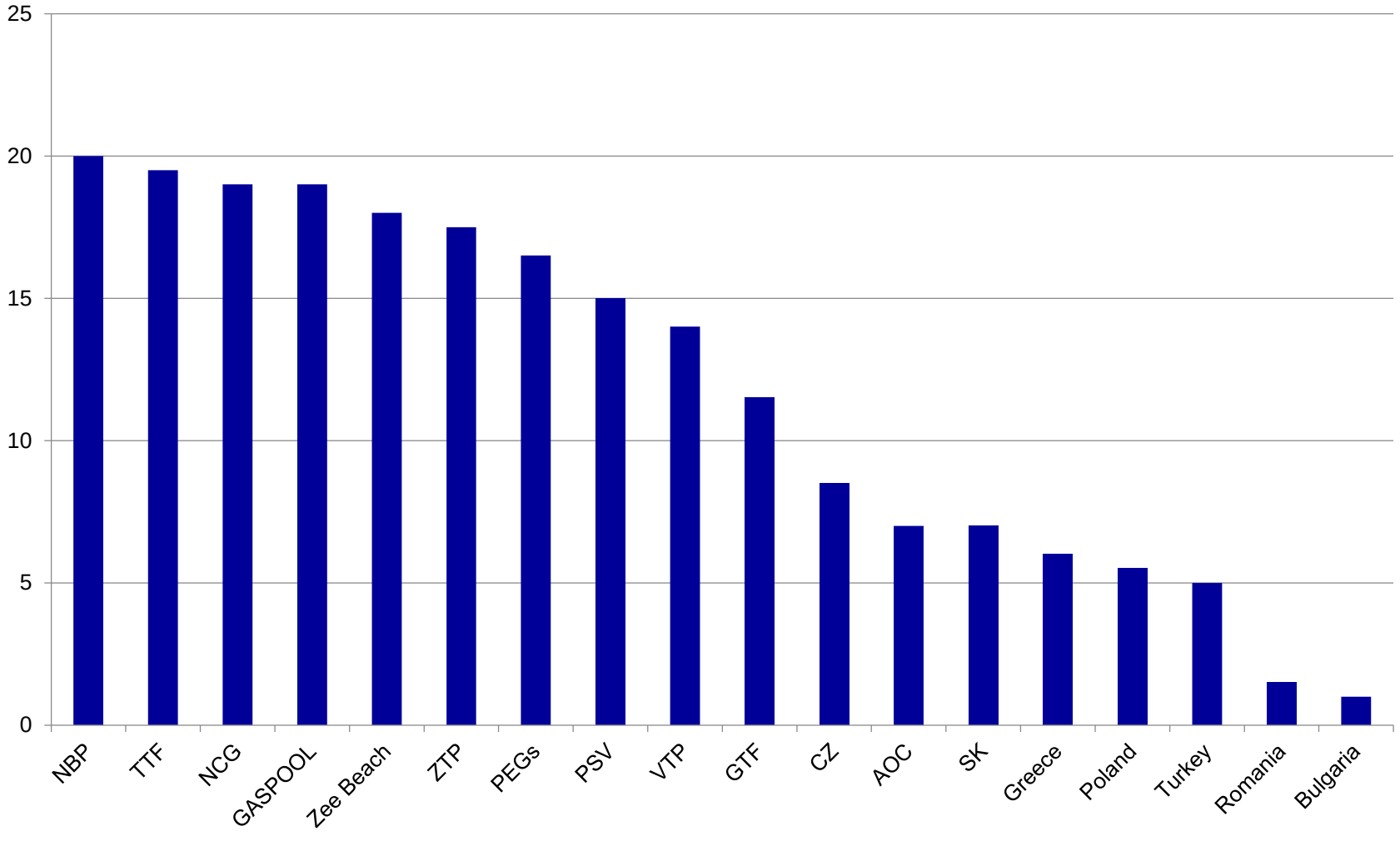
There is a difference between places where trading is possible and genuinely traded hubs.



Traded volumes at European Gas Hubs [TWh],
source: EC Quarterly Report on European Gas Markets Q1/2015



Market Design plays a crucial role in hub development, and balancing rules have the biggest impact.



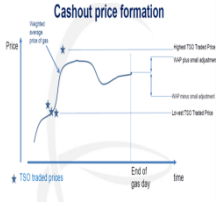
Total score of good hub design features, sequence not taken into account
EFET Hub Study, Q2/2015

Based on its 2014 Hub Development Study, EFET is developing a guide to balancing market design.

Operational balancing.

Information provision.

Cash-out mechanism.



	Responsible party	What should be done	Guideline for assessment	Score 2014	Comments 2014 (Fictitious)	Score 2017	Comments 2017 (fictitious)	Target model	Transitional model #1
1	NRA and TSO	Establish a consultation mechanism	1 if set up 2 if in English language	1.0	Frequent consultation, in national language only	1.5	in English, but not all; delayed publication of documents	legal acts, decisions of NRA, changes to TSO T&C should be consulted upon, including draft legal text in national language and English (simultaneous publication). Min of 4 weeks. Impact assessment. Potential alternatives.	
2	TSO	establish an entry-exit system	1 for Entry Exit in NTS only; 2 if a single VTP	1.0	VTP in NTS; downstream with separated balancing regime	1.0	VTP but limited transfer between transit idomestic	contracted entry capacity should give access to VTP, as should contracted exit or offtake (at DSO level) capacity. TSO (or subsidiary) balances inputs with offtakes through allocation of (groups of) exit to (groups of) entry capacities.	
3	TSO	Title Transfer (ability to trade imbalances d.a. and w.i.d. with other network users, by transfer between balancing groups)	1 for d.a. only 2 for d.a. and w.i.d.	1.0	d.a. only	1.0	./.	30 min lead time, operated by TSO or subsidiary, single-sided nomination by exchange, near real time info on 'trading' position (all title transfers = gas-x + broker platform + bilateral agreement) by TSO or subsidiary	
4	TSO	Cashout rules (long/short positions set to zero at the end of the balancing period against payment of penalty in €/MWh)	1 for e.o.d. cash-out plus w.i.d. obligations 2 for e.o.d. cash-out plus linepack flex product or tolerances 3 for dual price e.o.d. cash-out based on smp, no markup to sap.	1.0		1.0	./.	dual price end-of-day cash out based on smp. In case of no TSO buy/sell action cash out on base of sap without mark-up. Near real time info on TSO buy/sell action; linepack flex products only where this is the only way to access flex in absence of a market; no tolerances unless required to reflect poor data quality (>5% between w.i.d. info and final allocation)	
5	TSO	Information provision	1 – system status/ line pack with hourly update 2 – system status/ line pack, individual portfolio status, hourly updated and <5% deviation between ultimate update and final allocation 3 –12 min update	1.0		1.0	./.	**system info:** projected e.o.d. offtakes to e-border, storage, DSO projected e.o.d. inputs from e-border, storage, fields opening line pack, projected closing linepack, target linepack including tolerance actual offtakes and inputs, rolling update every 30 min TSO balancing actions: volume, time, location, price **portfolio info:** actual hourly metered offtake flows, apportioned/ calculated NDM offtake flows, updated close to real time (i.e. hourly and 30 min respectively **data quality** <5% deviation from final data	
6	TSO	Firmness of hub	0 if not firm; 1 if firmness is 'managed' by TSO; 2 if option based flex contracts, e.g. back-up-back-down 3 if fully market-based via d.a./w.i.d trading by TSO	1.0	Firmness managed by LT balancing services (storage lease)	2.5	yearly tender with daily strike price process	extent to which firmness of hub is secured through TSO actions on the balancing market (as opposed to ex-ante curtailments, mandatory buy/sell actions on behalf of network users); clear and transparent definition of emergency measures and of conditions of the balancing market being called off	
7	TSO	Operational balancing (extent to which TSO procures balancing gas needs on short term market)	0 - for balancing services (storage lease) 1 - for tender processes 2 - if d.a./w.i.d. market is used 3 - TSO buys/sells exclusively d.a./w.i.d. on gas-x	1.0	yearly tender of option fee based flex procuct	1.5	Quarters and Months added	TSO buys/ sells balancing gas d.a. and (predominantly) within-day exclusively at gas-x, clear merit order list (MOL) - title gas at VTP, MOL2 - locational/physical gas); P2LP enables network users to proactively trade imbalances between themselves, TSO setting price signals bethe procuring physical needs. TSO incentive to trade close to SAP; near real tie system status information and portfolio information facilitates proactive shipper2shipper trading and residual role of TSO.	**Balancing Platform #1:** Open yearly tender procedure for d.a. and w.i.d. flexibility (offtake from or input into grid at specified locations with min 3 hr lead time). Option+commodity fee. Adequate lot size (1 MWh). TSO acquiring annual options from incumbent, based on regulated fees. Winning conditions made transparent.

Sequential set-up.

Target model.

Transitional Measures.

Specified timelines.

Individual boarding.

Regular monitoring.

Score-card system.

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ACER
Agency for the Cooperation of Energy Regulators

ACER-ENTSOG Joint Worksop on Gas Balancing Early Implementation

PANELS

17/11/2015

Panel on Operational balancing

Standardised products, merit order, balancing services, TSOs trading in adjacent zones

- Chair: (FGSZ/ENTSOG)

- TSOs:
  - GRTgaz, NCG, National Grid
- NRAs: AEEGSI, CREG
- EFET

Panel on Operational balancing

Topics:

1. Reasons for the establishment of 100% balancing via STSP vs still keeping balancing services

2. Reasons for using only STSP title products vs using also STSP location products (trading in adjacent zones included)

3. How trading in adjacent zones preserves the competition and liquidity in the national market and how does not hamper cross border capacity allocation and CMP procedures?

4. How to carry out an annual review to reduce balancing services volumes to reduce balancing services volumes (all)?

Panel on Information provision and consultations for the Balancing code

Publication of three types of infomation, information models, final allocation

- Chair: AEEGSI/ACER
- TSOs:
  - Fluxys, TIGF, GTS
- NRAs:
  - HERA, ANRE
- EUROGAS

Panel on Information provision and consultations

Topics

1. How to ensure an almost real time information on elements of art. 32 (1) of the BAL NC?

2. What are the main barriers to implement the information provision chapter and in case of missing implementation, what mitigation measures network users could refer to?

3. How to interpret art. 32(1) for balancing areas where the overall balancing system is not set up in full?

4. Discussion on different implementation variants: on the models for the non- daily metered offtakes.

Panel on Imbalance charge and neutrality

Imbalance charge including standard approach and interim measures, WDOs, neutrality

- Chair: OFGEM/ACER

- TSOs:
  - Eustream, Gaz-System, GTS
- NRAs:
  - BNetZa
- EFET

Panel on Imbalance charge and neutrality

Topics:

1. Daily imbalance charge: how to set a fair and market based daily imbalance charge?

2. Within day obligations vs daily balancing

3. Experiences on neturality charges

4. Interim measures: which steps are the most important and why?

- Discussion about a reasonable order to undertake decisions. (e.g. planning and the role of annual reviews).
- Daily imbalance charge: how to set a fair and market based daily imbalance charge in case of lack of liquidity in title products?

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Thank you for your attention