

A construction site under a blue sky with scattered white clouds. Several large, black, corrugated pipes are laid out on wooden supports in a trench. A worker in a yellow safety vest and blue hard hat stands in the background. An orange excavator is visible further back. The ground is dirt and gravel, with some snow patches on the right side.

**2017  
END USERS  
DAY  
11th Edition**

# AGENDA

**09h00: Welcome**

**09h30: Introduction**

**A. Bux**

**09h40: Gas supply and demand outlook**

**A. Bux**

**10h30: Focus on Belgium**

**H. Bettonville**

***11h10: Break***

**11h25: L/H Conversion**

**D. Bawin**

**11h45: Metering (operational procedures + indexation)**

**A. Goossens & Q. Vroye**

**12h05 : HUB perspectives and transparency**

**FX. Van Houtte**

***12h30: Lunch***

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## **GAS SUPPLY AND DEMAND OUTLOOK**

Arno Bux,  
Chief Commercial Officer



# **GAS SUPPLY AND DEMAND OUTLOOK**

**Gas market highlights 2016/2017**

**Energy demand trends**

**Gas system evolution**

**Belgian energy system**

**Focus on LNG**

# **GAS SUPPLY AND DEMAND OUTLOOK**

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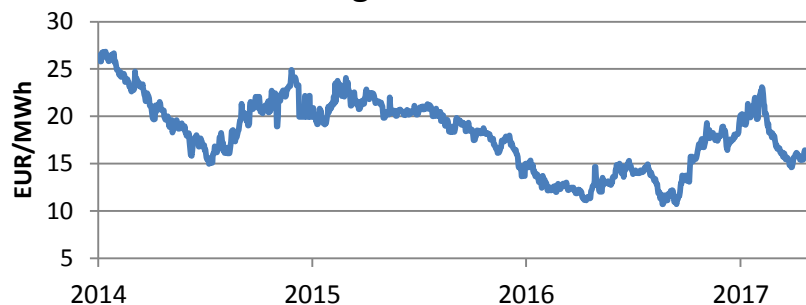
**Belgian energy system**

**Focus on LNG**

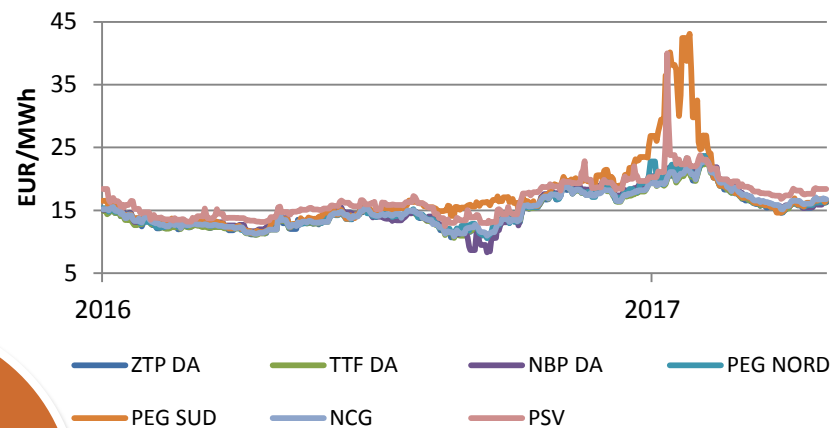


# GAS MARKET HIGHLIGHTS

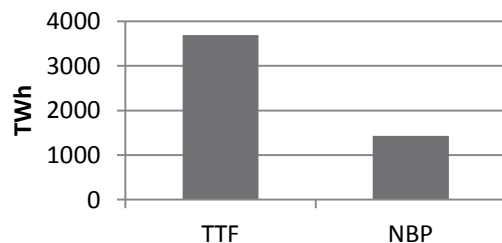
## Decreasing ZTP-H DA Price



## Competitive prices on W-EU hubs

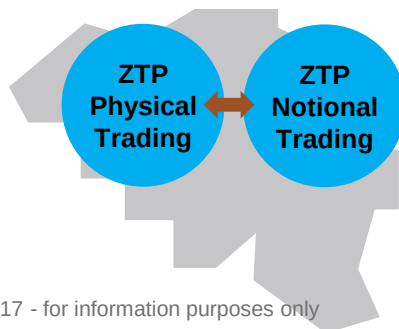


## Q4 2016 OTC volumes\*

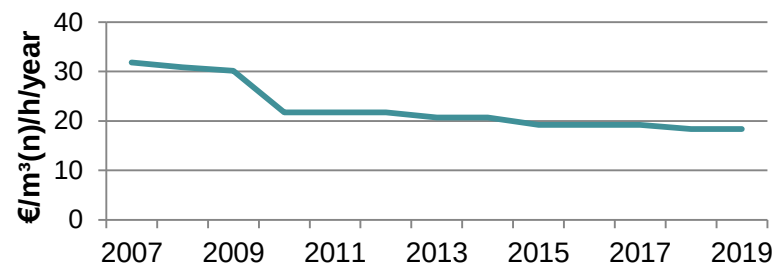


2016/2017

Convergence of ZTP notional and physical trading services



## Steady decrease of tariff\*



\* Data from ICICS 2016 Q4 Hub report

\*\* Entry tariff + HP supply tariff

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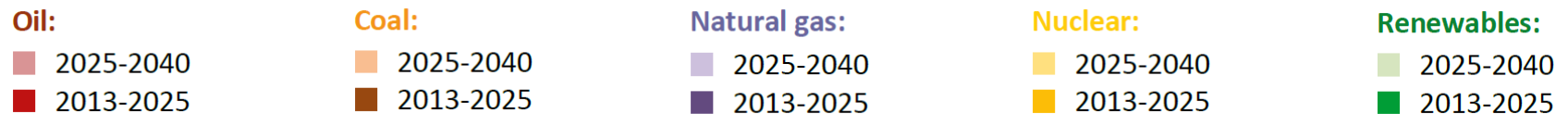
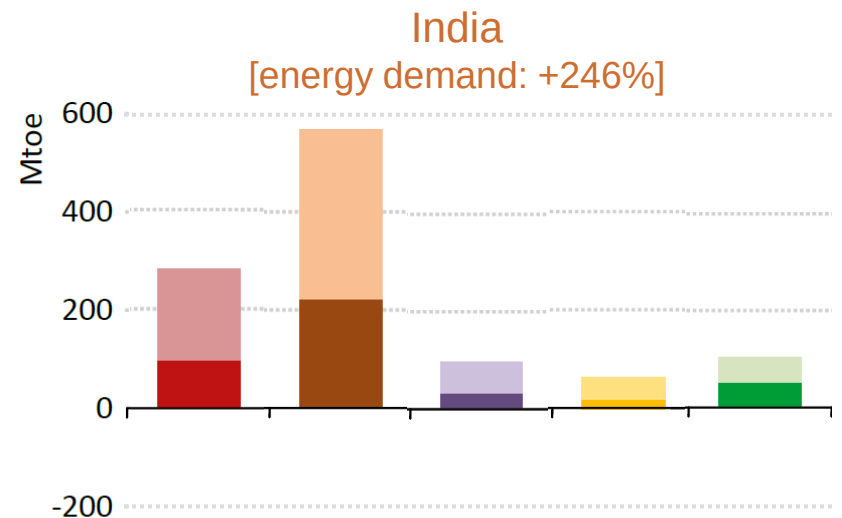
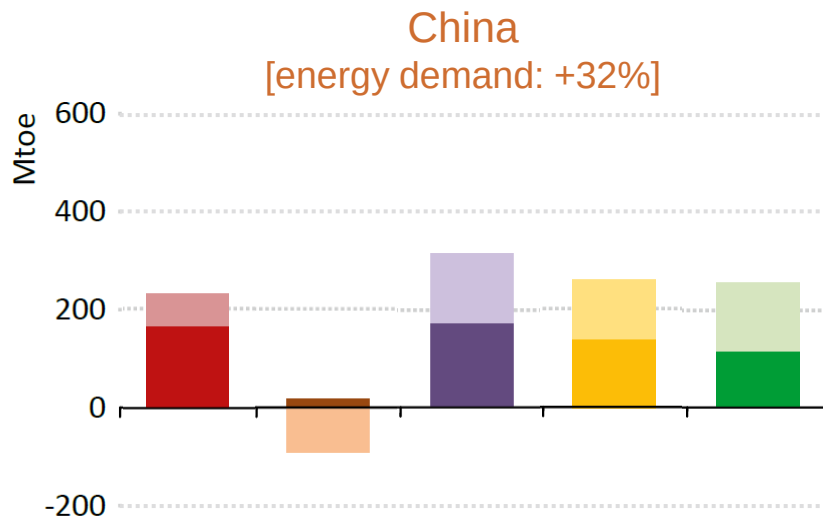
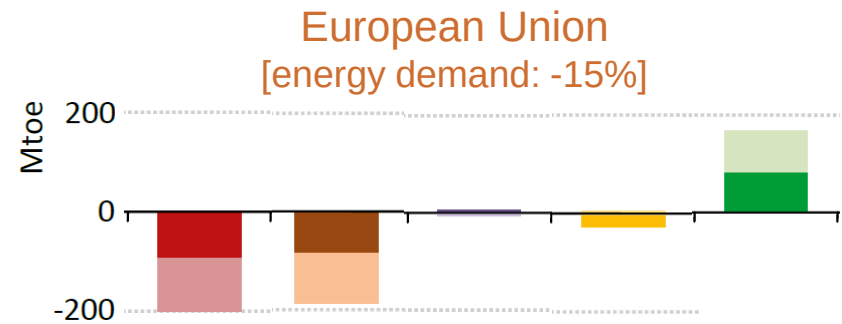
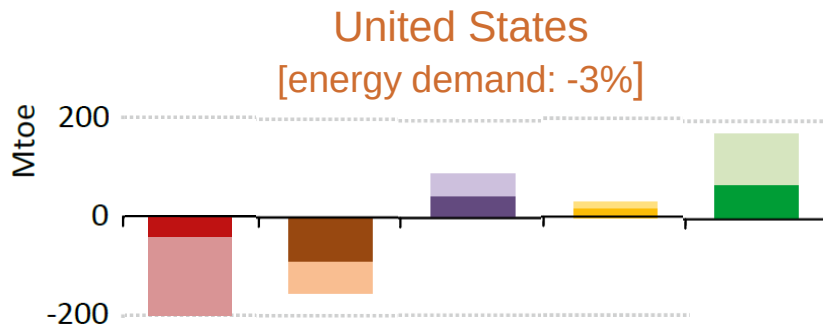
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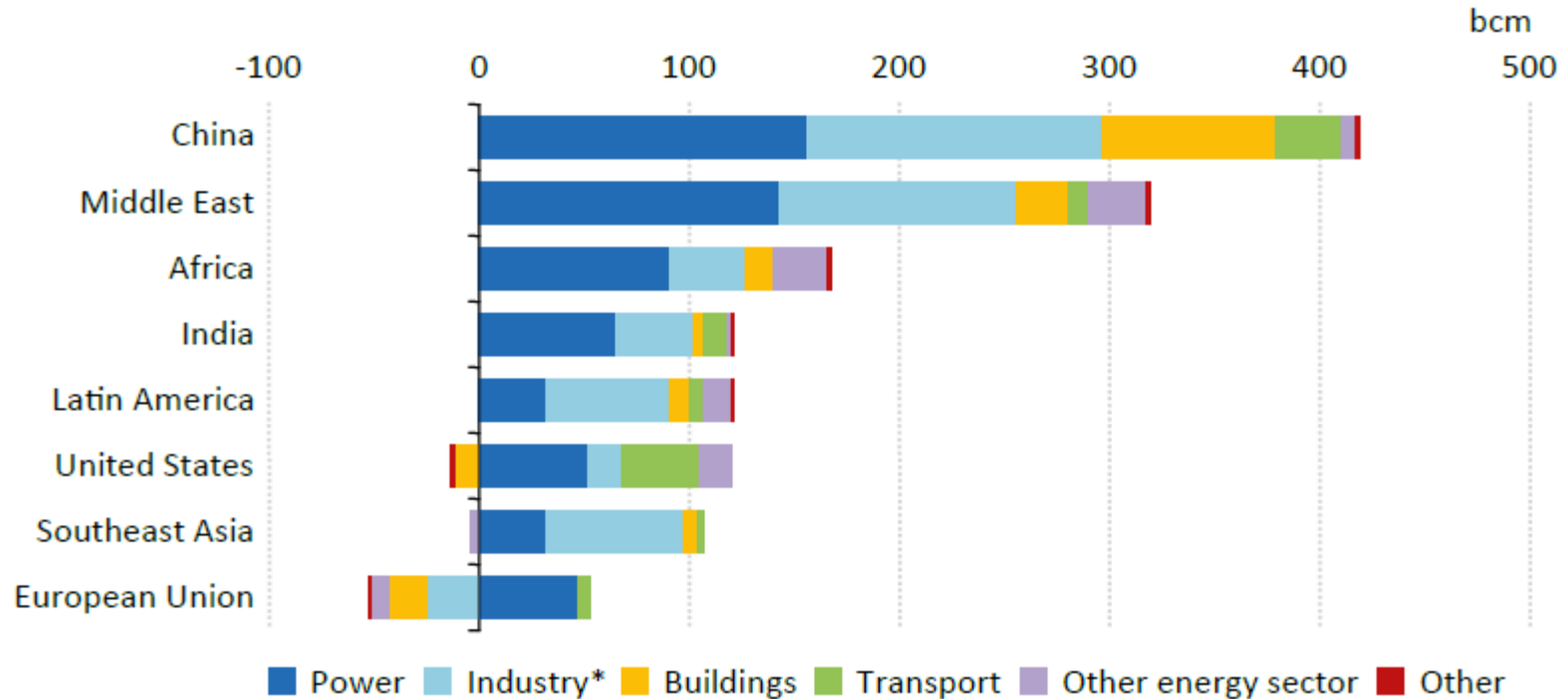
**Focus on LNG**

# ENERGY DEMAND EVOLUTION: STRONG REGIONAL DIFFERENCES



[IEA – World Energy outlook 2015]]

# CHANGE IN NATURAL GAS DEMAND BY KEY SECTORS 2013-2040



- Power generation remains a growth vector in all regions
- EU: growth in power and transport offset by decline in residential and industrial

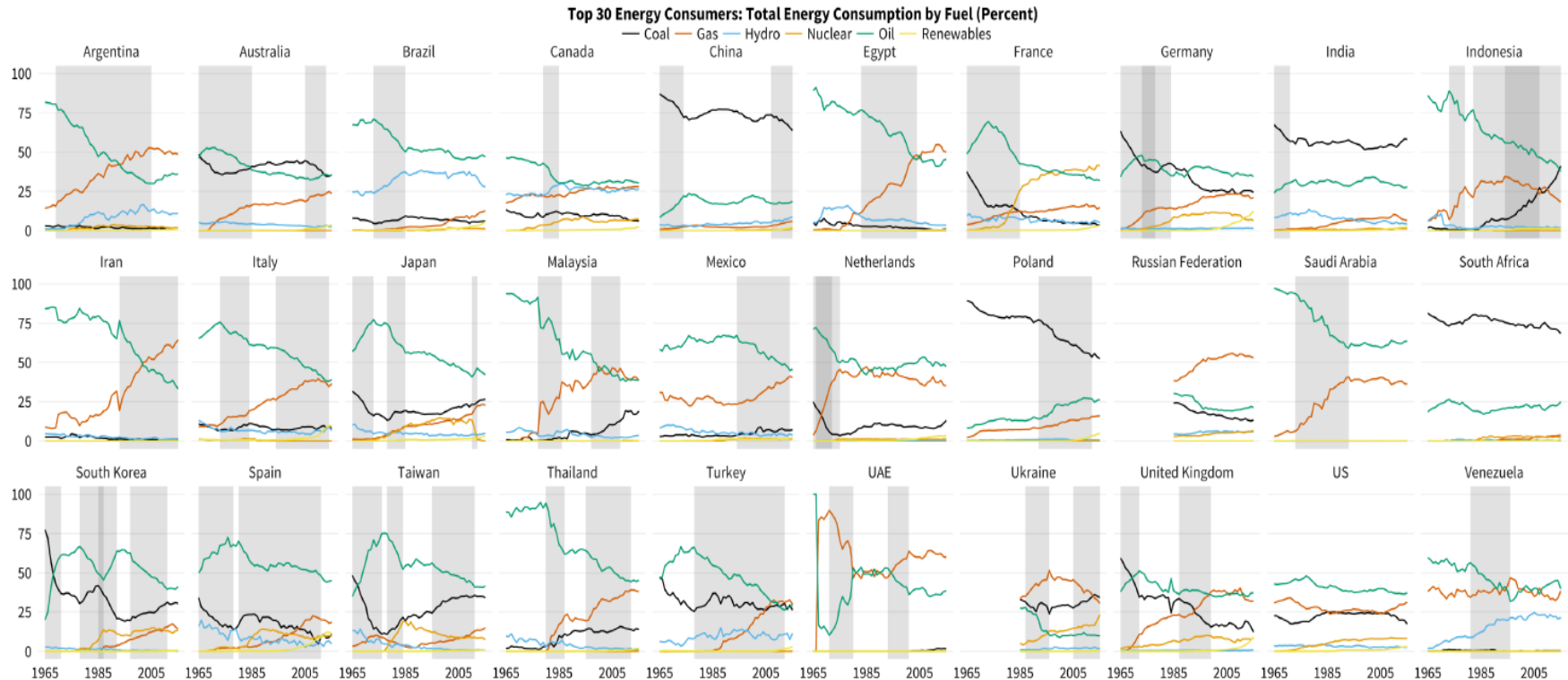
[IEA World Energy Outlook - Gas demand outlook in the New Policies scenario]



# ENERGY SYSTEMS ARE INERTIAL—BUT TRANSITIONS CAN BE FAST

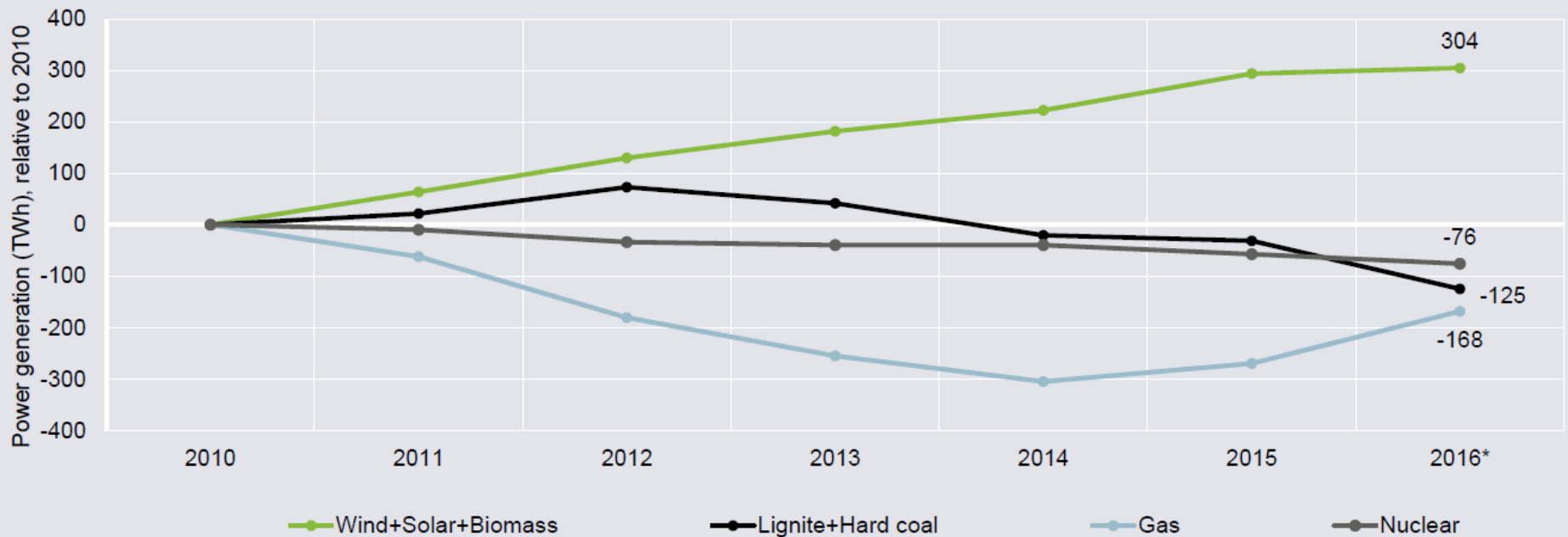
For 30 largest energy consumers, 50 energy transitions from 1965 to 2015 (shown in grey below).

Energy transitions: episodes when a fuel has lost over 10% market share in short period of time (e.g. from 50% of total energy to 40%).



Source: analytica based on BP Statistical Review of World Energy (June 2016)

## POWER GENERATION: WHILE IN 2010-2014 GAS WAS PUSHED OUT BY RENEWABLES & COAL, IN 2016 GAS PUSHED OUT COAL



- Coal-to-gas switch in UK, Germany, Italy, The Netherlands and Greece
- Carbon price is key
- More coal-to-gas switch possible without new infrastructure: gas-fired generation still ~ 170 TWh below 2010 levels in 2016

[Agora Energiewende – Sandbag 2017]

# GAS-FIRED POWER GENERATION KEY ENABLER OF RENEWABLE GENERATION AND NUCLEAR PHASE-OUT

- Gas-fired generation & gas supply infrastructure is available to provide dispatchable power instead of nuclear
- Gas-fired generation at the same time enables renewable generation to take up as it can cope with the increasing need for flexibility
- Keeping existing gas-fired power stations open is the most cost-effective option to ensure flexibility and security of supply in the short and medium run
  - Optimum use of existing infrastructure: no need to build new gas-fired power stations a few years after existing ones would have been closed & no unused capacity in the gas system
  - Keeping existing gas-fired power stations alive through a support mechanism comes at an affordable cost
  - No regret option: creates room for other future-oriented solutions to develop and mature
- In the longer run nuclear phase-out will require replacement power production capacity of which gas-fired power stations will be part of.

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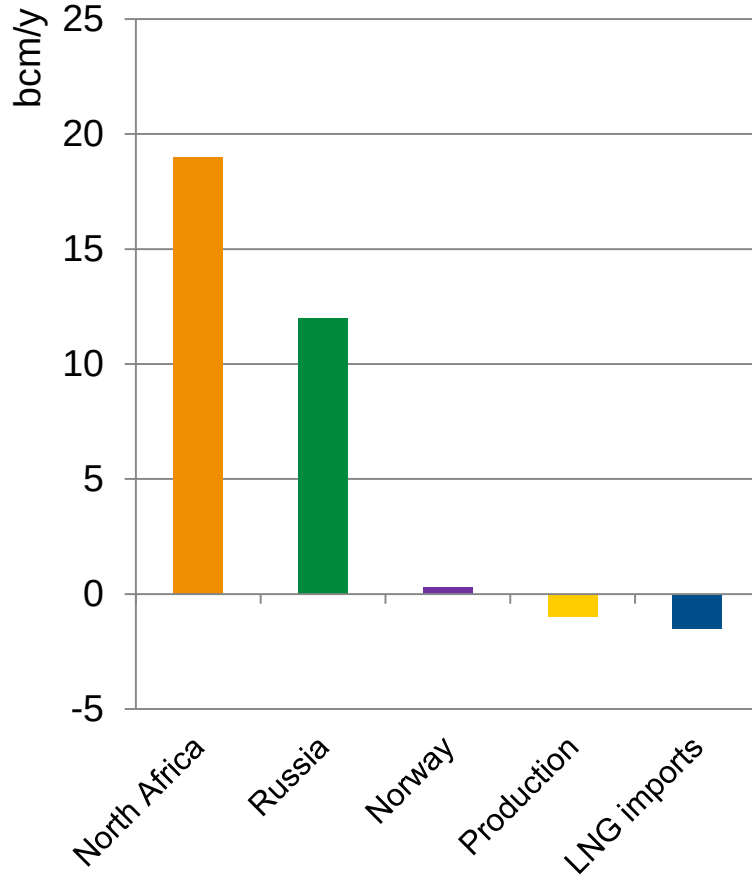
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**Belgian energy system**

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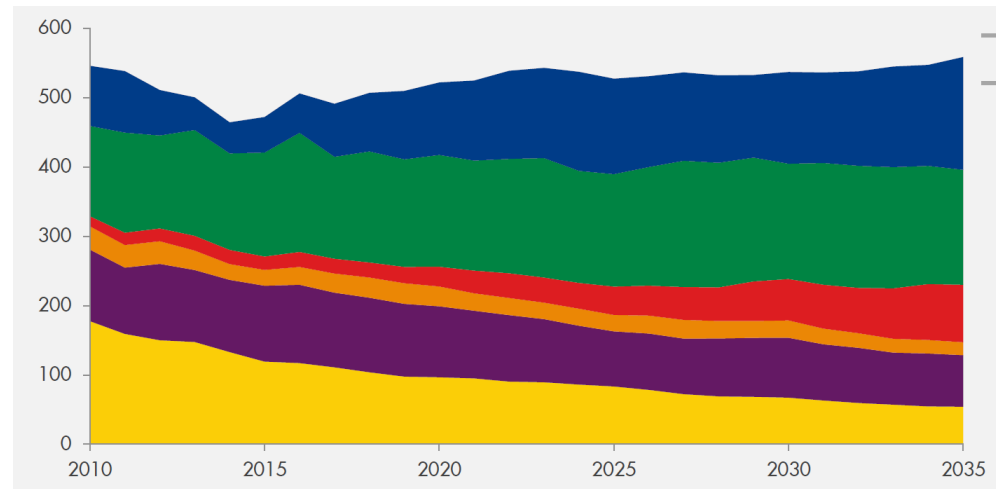
# SUPPLY INTO EUROPE

## Change in supply 2016/2015



[Timera Energy 03.2017]

## Evolution European gas supply



LNG

Russia pipe

Other pipe

Algeria

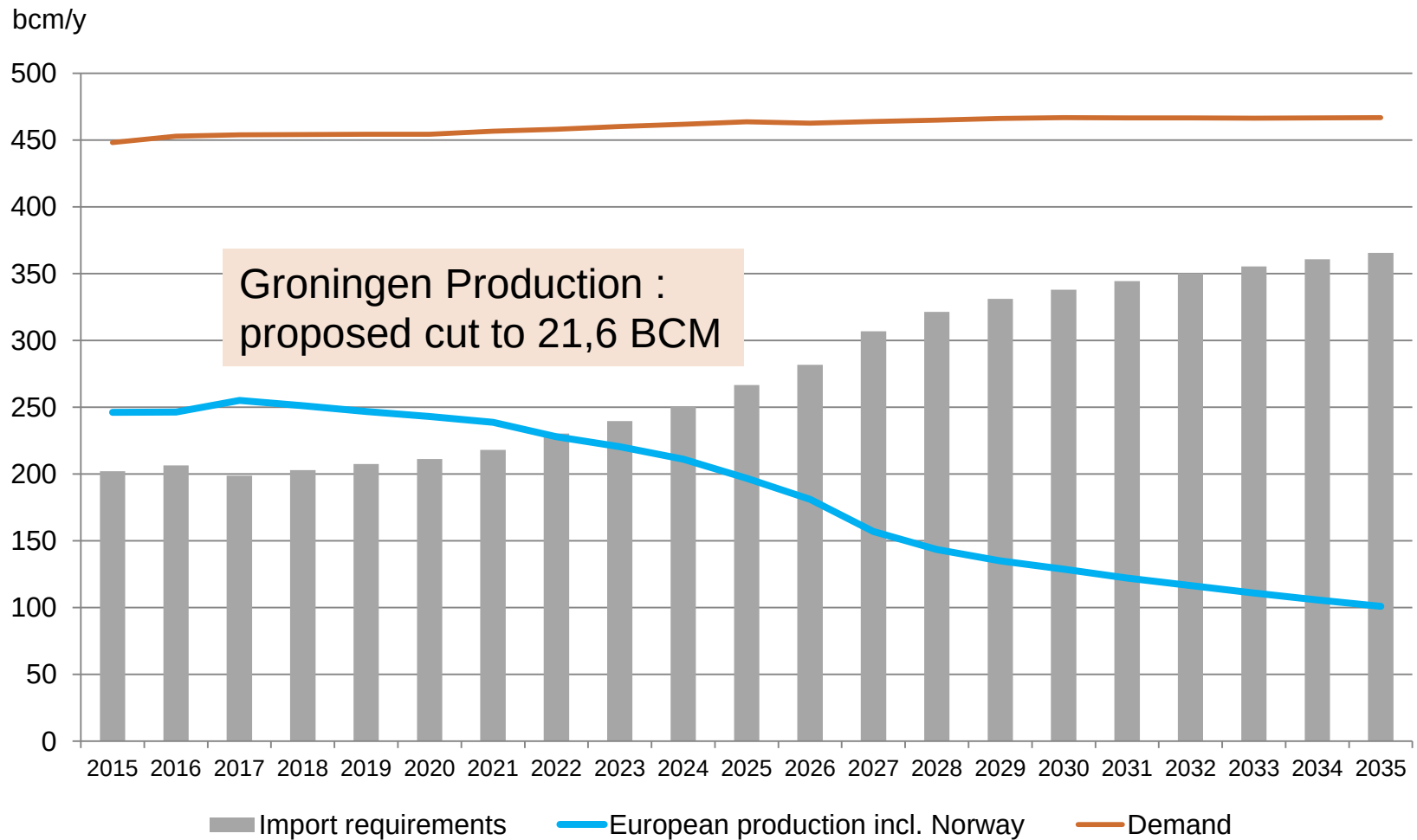
Norway pipe

Indigenous production

[Shell interpretation 02.2017 of Wood Mackenzie Q4 2016, IHS, and Eurogas data]

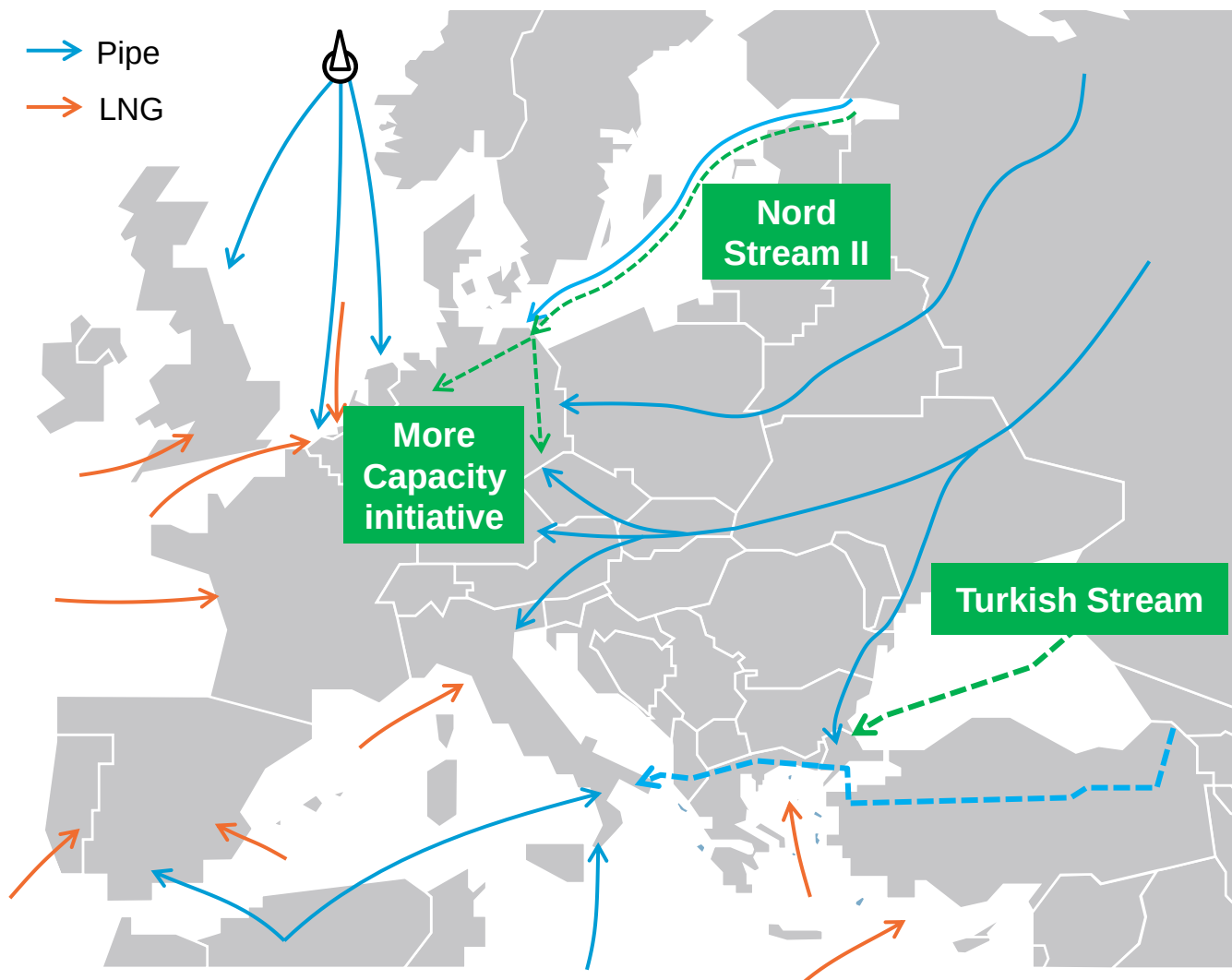


# DESPITE FLAT DEMAND OUTLOOK: EUROPE NEEDS ADDITIONAL IMPORTS



Source: Entso-g TYNDP 2015

# INFRASTRUCTURE DEVELOPMENTS



# **GAS SUPPLY AND DEMAND OUTLOOK**

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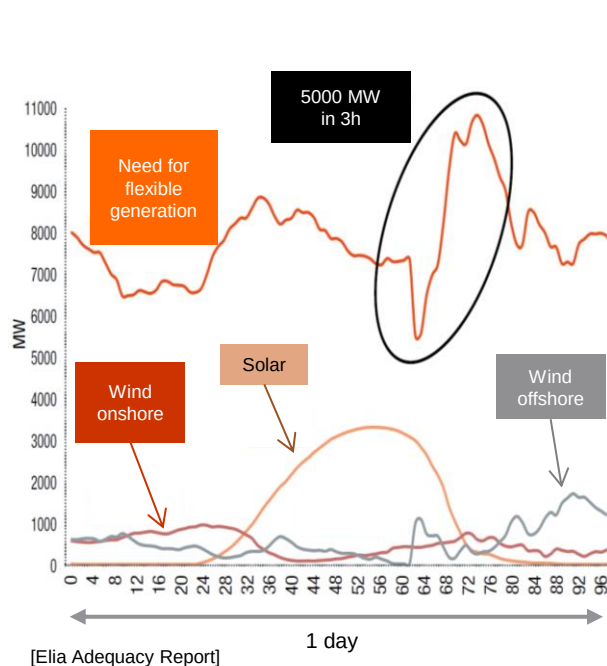
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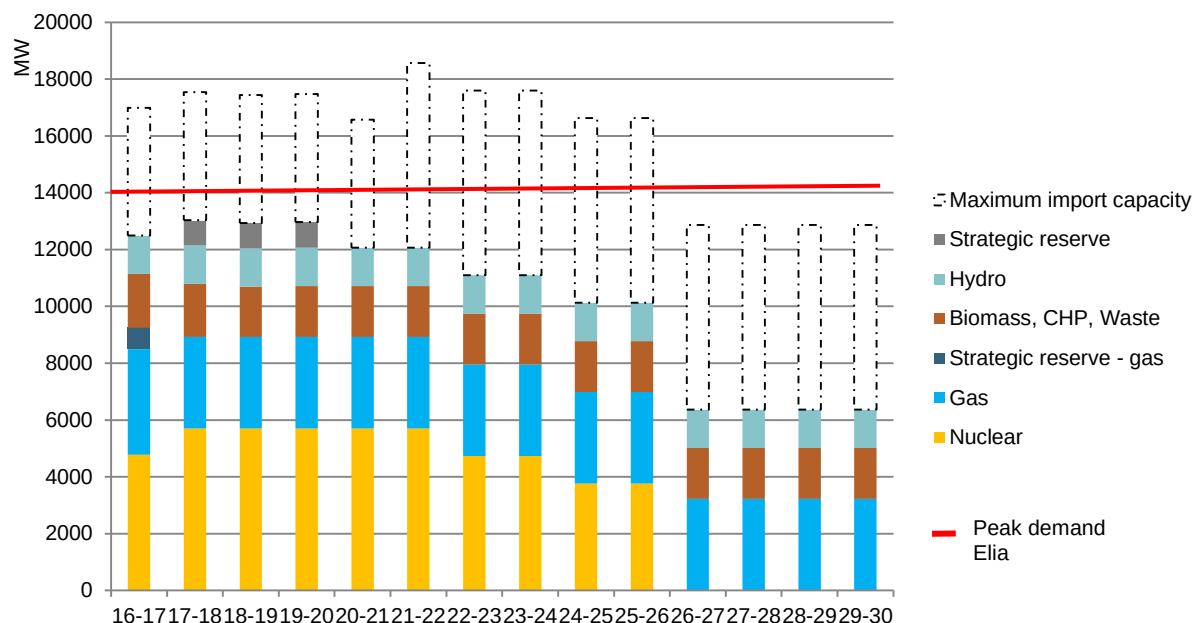
**Belgian energy system**

**Focus on LNG**

# WHAT DOES OUR POWER SYSTEM NEED TO BE ROBUST ON?



**Sufficient flexibility** – As more and more renewable capacity gets installed, increasingly more flexibility is needed to back-up for the variable generation profile



**Sufficient baseload capacity** – When the nuclear phase-out kicks in, alternative baseload capacity will be needed as renewable generation cannot provide the baseload required  
 → The accelerated closing down of gas-fired capacity we witness today jeopardises security of supply

# **GAS SUPPLY AND DEMAND OUTLOOK**

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# SMALL SCALE LNG: NEW DEVELOPMENTS BASED ON MARKET DEMAND

- **Large-scale LNG:** LNG is delivered on a large scale, stored and regasified for injection into the natural gas grid



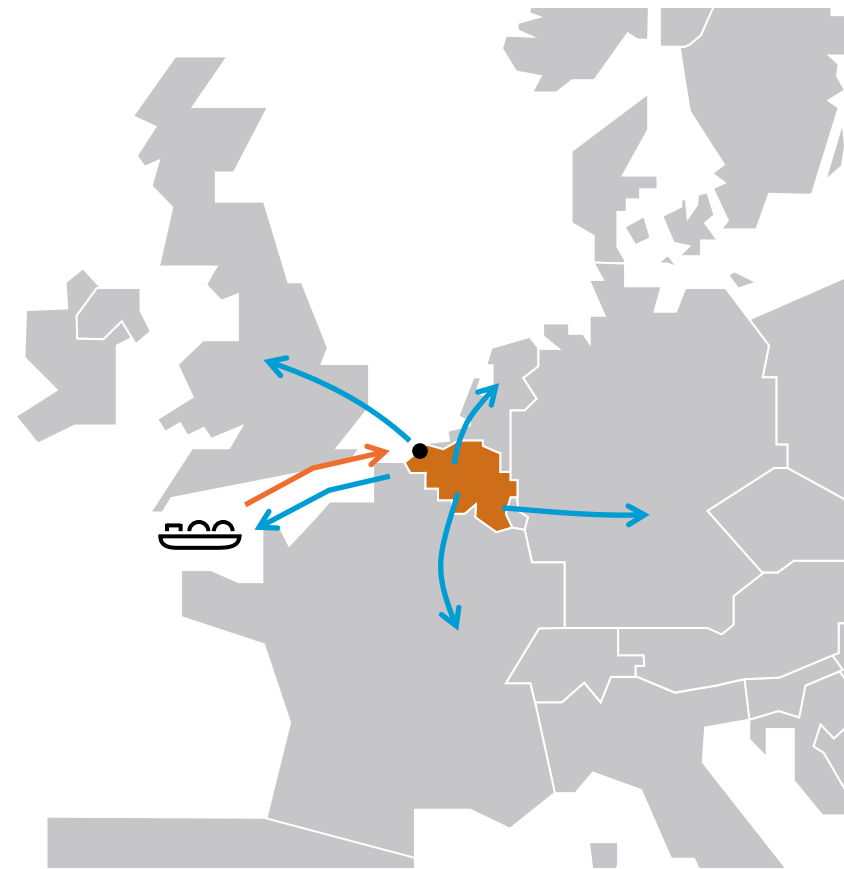
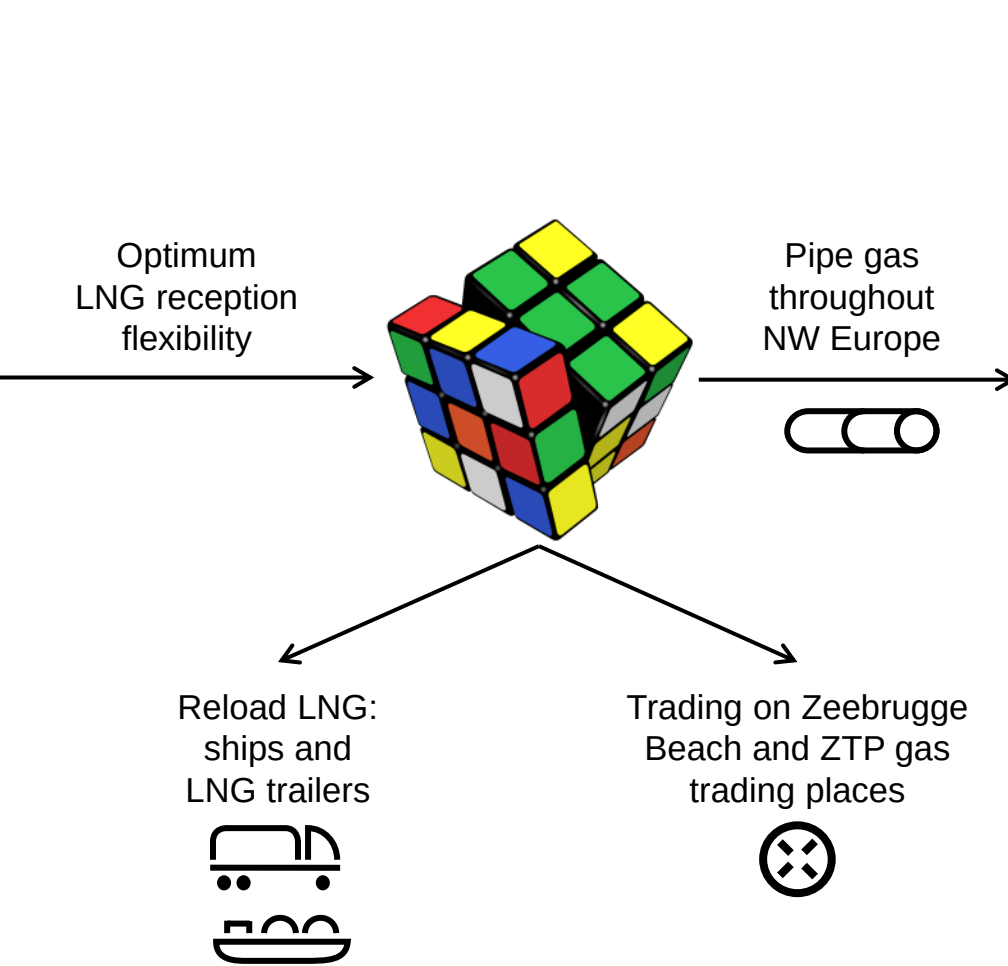
- **Small-scale LNG** applications cover the use of LNG



- as a sustainable alternative fuel for ships and long-haulage trucks
- as an attractive energy source for industries in areas that are not connected to the natural gas grid



# KEY STRENGTH ZEEBRUGGE LNG TERMINAL: OPTIMUM DESTINATION FLEXIBILITY





# GAS AS FUEL IN TRANSPORT: FLUXYS PUSHES THE BOAT OUT



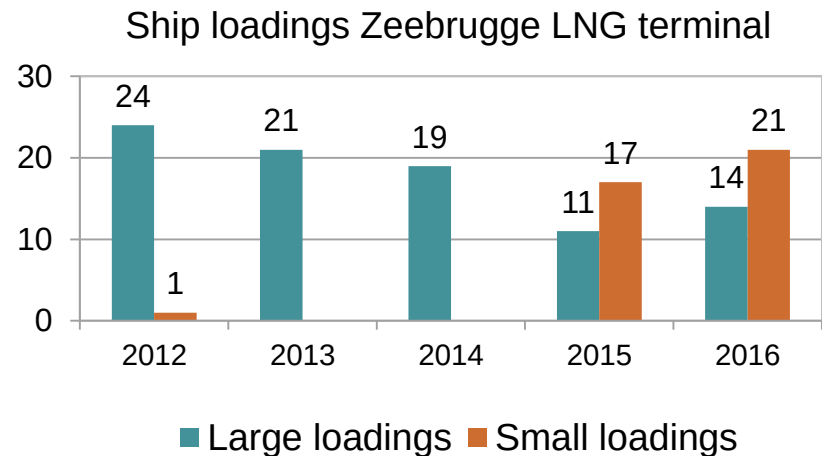
Fluxys partner in bunker ship with home port Zeebrugge



2nd jetty Zeebrugge LNG terminal



LNG fuelling stations



# SMALL SCALE LNG: ENGIE ZEEBRUGGE FIRST LOADING OPERATION



World's first purpose-built LNG bunkering vessel:

- Bunkering ops for UECC LNG powered vessels
- First loading operation successfully completed
- First bunkering operation: Coming soon

Fluxys partner in bunker ship with home port Zeebrugge

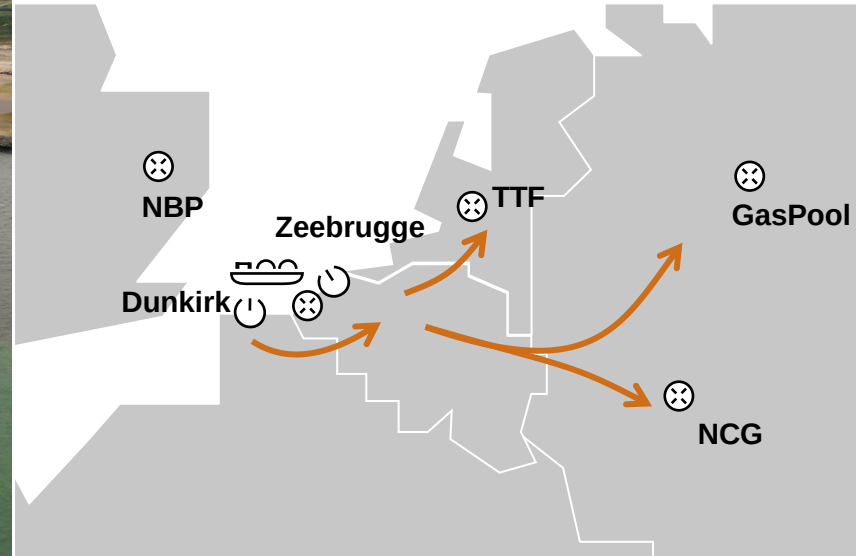
## FID TAKEN ON SECOND TRUCK LOADING BAY



- 19 active truck loading companies
- 24/7, online day-ahead scheduling
  - > Industrial sites without pipe gas >50%
  - > LNG refuelling stations <40%
  - > LNG as fuel for shipping <10%
- Destinations: Belgium, UK, France, Germany, the Netherlands, Poland, Switzerland, Sweden, Norway, Italy

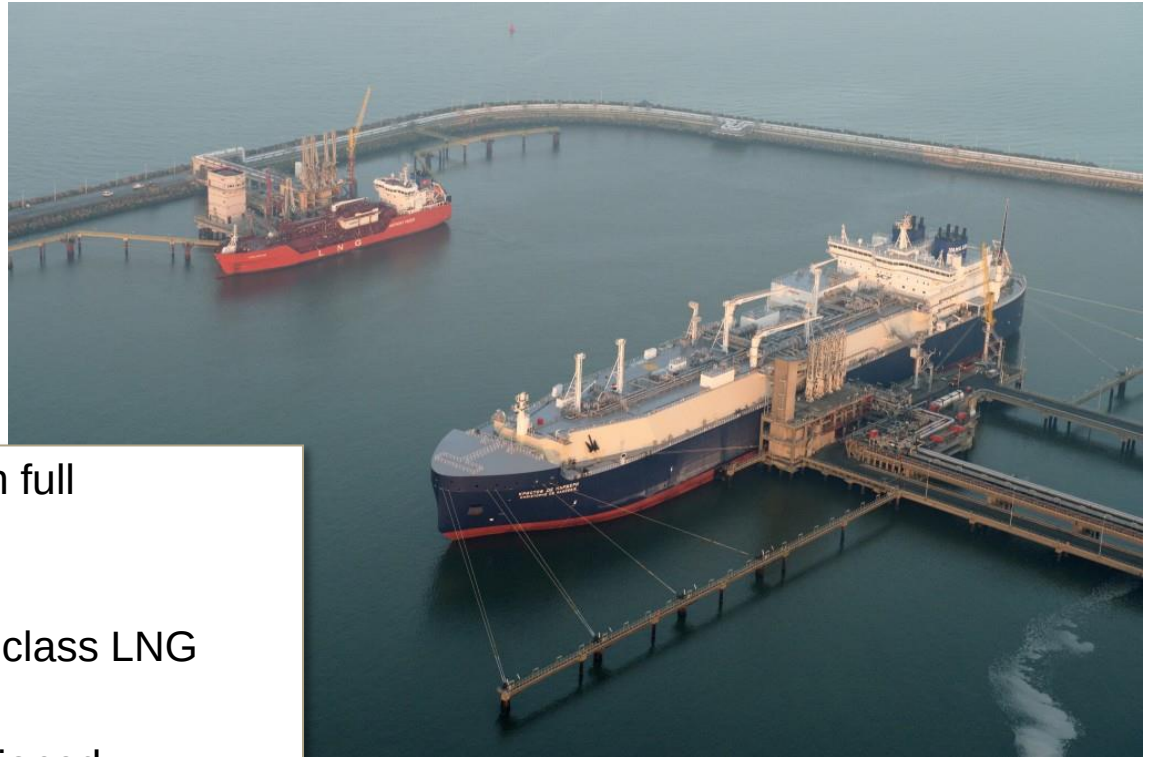


# DUNKERQUE LNG TERMINAL COMMISSIONED



- New entry point for gas into NW Europe: 13 bcm/y - commissioned early 2017
- Fluxys 25% stake in asset owner and 49% in joint venture for operating the terminal
- New pipeline Fluxys Belgium and GRTgaz linking the Dunkirk facility to the Zeebrugge area: optimum destination flexibility for Dunkirk terminal users

# WORLD'S FIRST TOP ICE CLASS LNG CARRIER CALLS AT ZEEBRUGGE LNG TERMINAL



- Zeebrugge LNG Terminal in full preparation for Yamal LNG transshipment services:
  - First operations of ice class LNG carrier
  - Second jetty commissioned
  - Additional compressors arrived
  - 5th tank under construction



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© Fluxys Belgium

**Focus on  
Belgium**

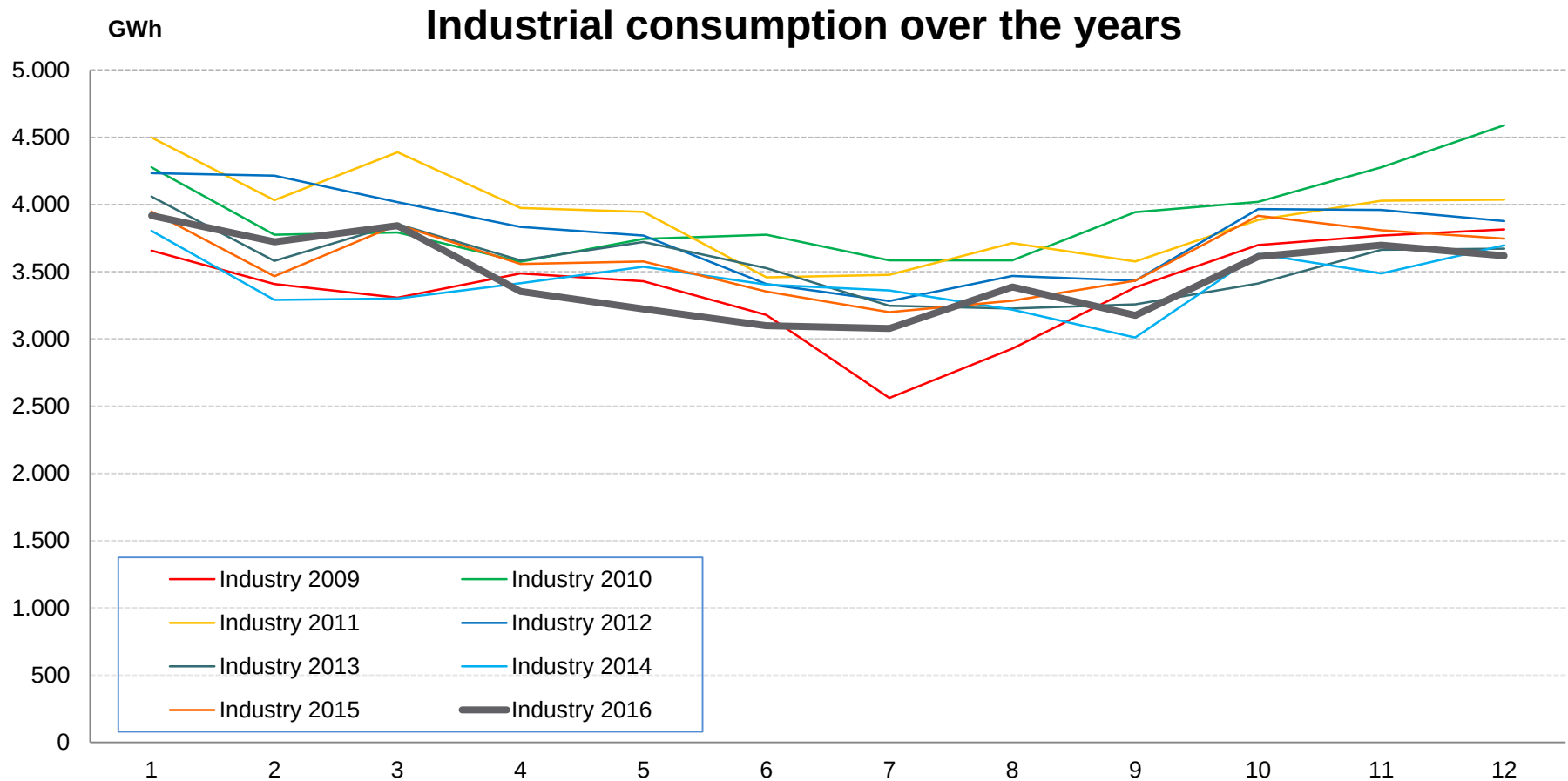
Huberte Bettonville  
Director Commercial Regulated



# AGENDA

- Belgian Consumption in 2016
- New services
  - Imbalance pooling
  - Capacity conversion
  - Recent consultations
  - Vip Model
  - Hub Revamp
- Implementation of network Codes
- GAS regulatory development in EU:
  - Evolution of regulatory bodies
  - Data Monitoring & Transparency
  - Tariff structures and ITCs
  - Security of Supply
- Continuous effort to offer Competitive Transmission Tariff

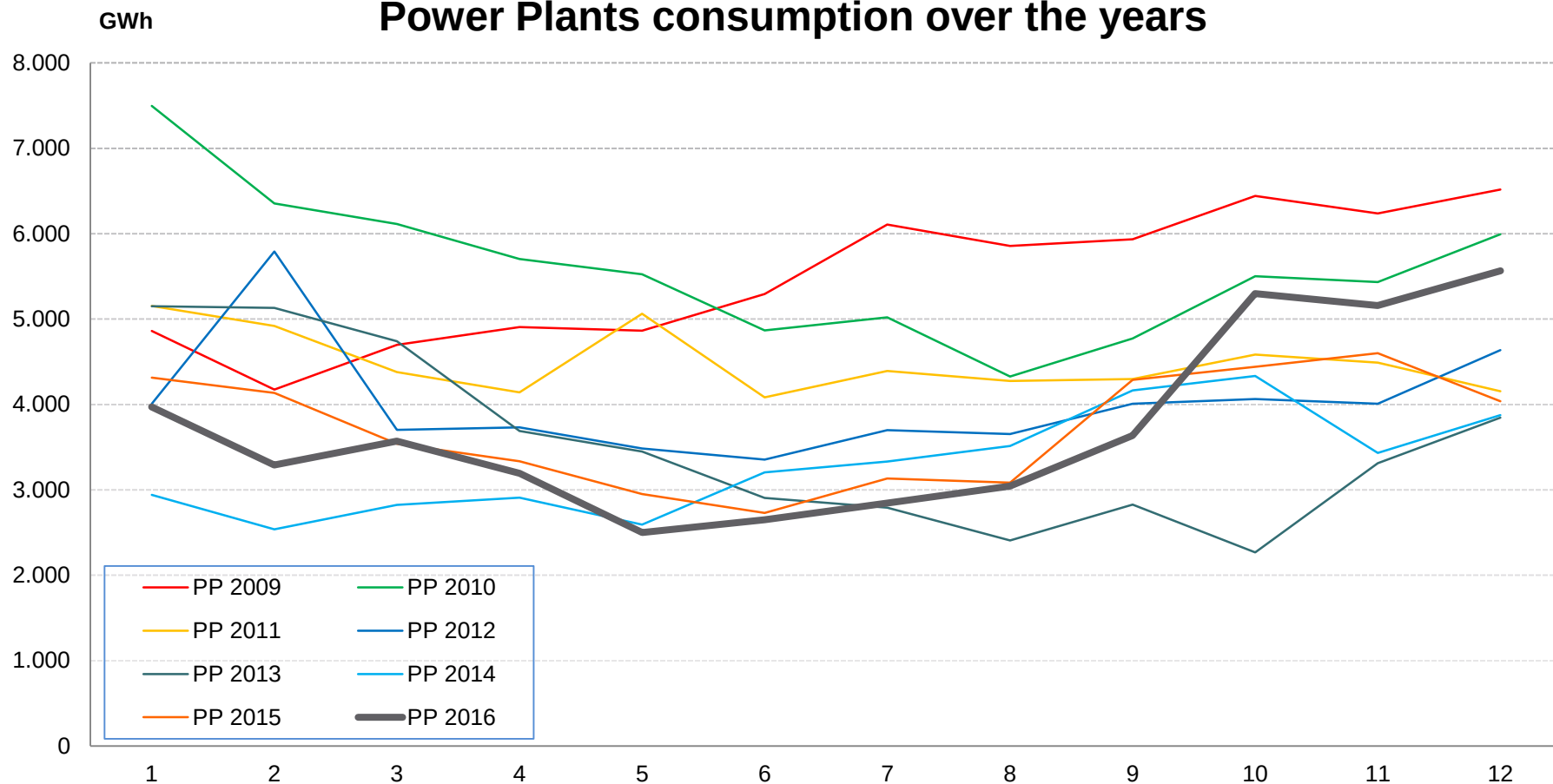
# TRANSMISSION : CONSUMPTION OF INDUSTRIALS IN GWh



**2016 : small decrease of consumption for industrial consumers (-3,2%)**

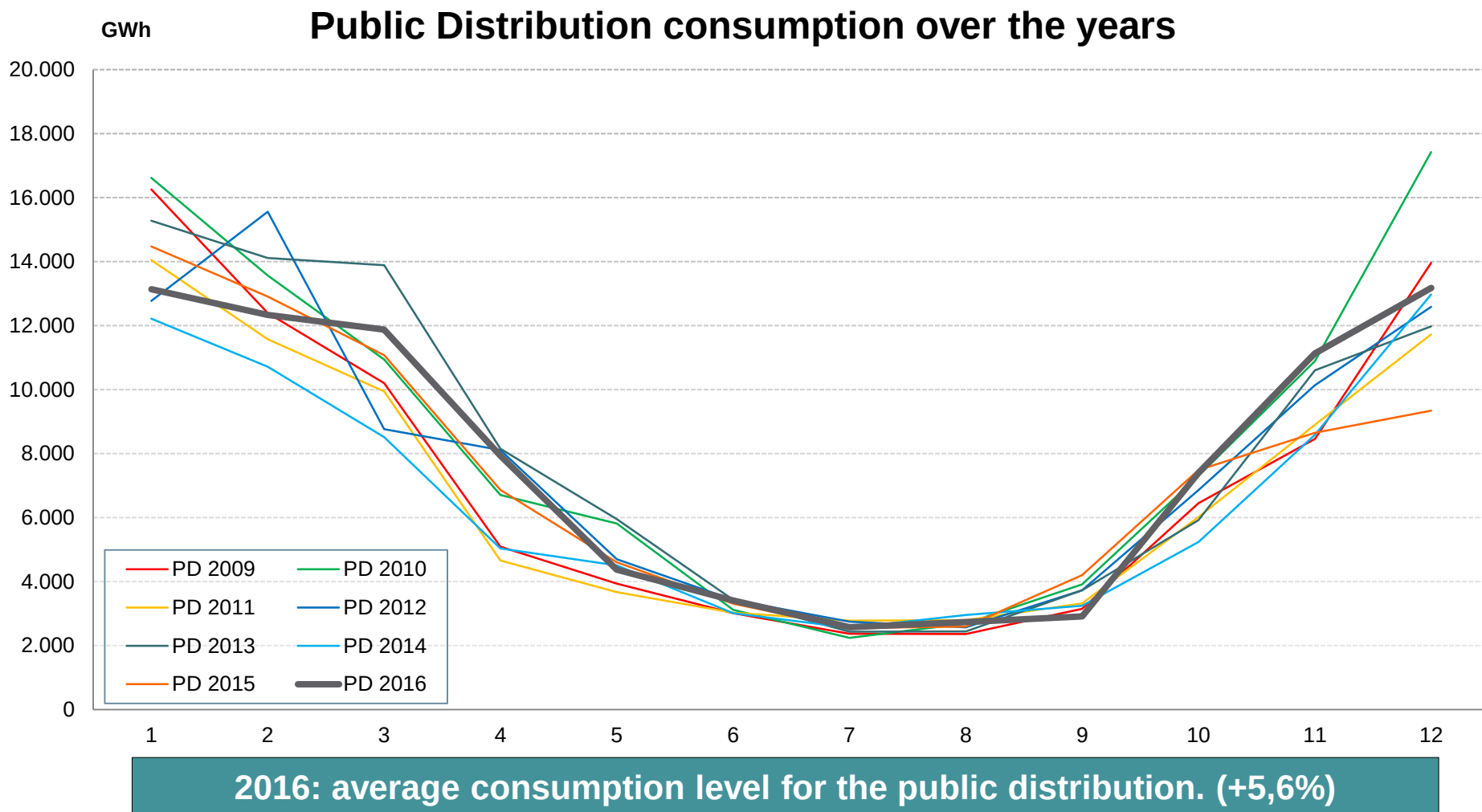
# TRANSMISSION : CONSUMPTION OF POWER PLANTS IN GWh

## Power Plants consumption over the years

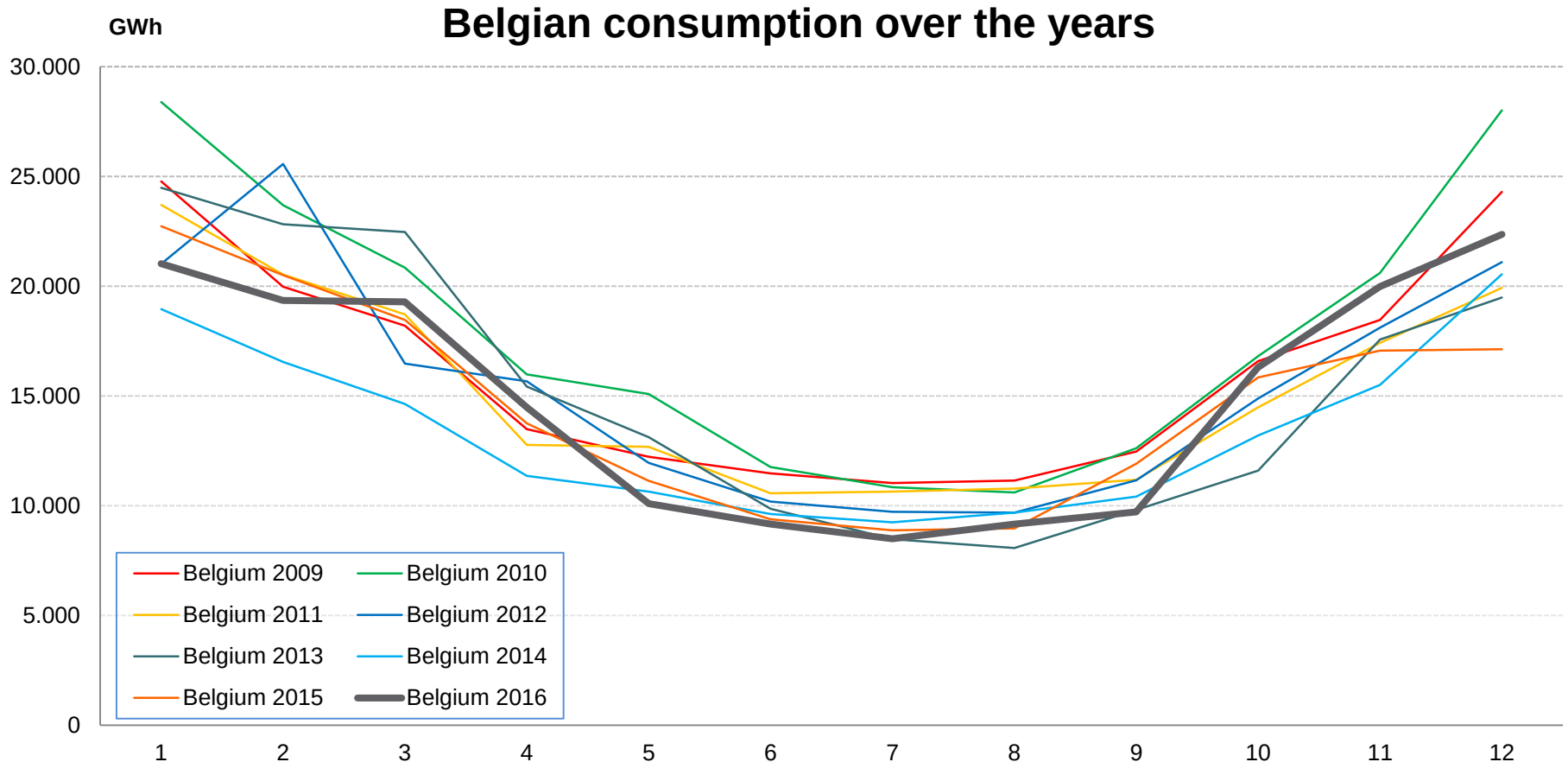


2016: status quo compared with 2015 (+0,2%)

# TRANSMISSION : CONSUMPTION OF DISTRIBUTION IN GWh



# TRANSMISSION : TOTAL CONSUMPTION IN GWh



**2016 : higher consumption level for the Belgian market (+2,1%)**

# IMBALANCE POOLING SERVICE

- Several Grid Users have asked to provide an “Imbalance Pooling Service”
  - Where the total imbalance of one shipper is transferred to another-one (a.k.a balancing responsible)
- We proposed to develop this service the following way
  - The service is uni-directional per balancing zone (H for H and L for L)
  - The transfer between parties is executed on hourly basis, for 100% of the hourly imbalance<sup>(1)</sup>
  - The service itself is facilitated without additional charge
  - The service implies an implicit ZTP deal<sup>(2)</sup>
    - » The amounts are registered as ZTP traded volumes
    - » The ZTP variable fee applies to the transferred amount
- The service in a first phase will be offered by Fluxys Belgium by 01/04/2017 but in fine – BELUX plan A – will be offered by Balansys<sup>(3)</sup>.



**CREG approved  
on 23/02/17**



**FLUXYS**

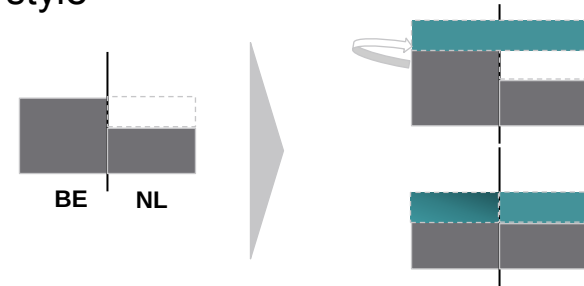
1. This is performed on the aggregated BeLux steering imbalances. Off-line allocations settlements remain with each separate zone (BE and LUX) and grid user  
2. Implies that shipper must be a ZTP trader – which is the case for any STA signatory  
3. As the request is to transfer 100% of the aggregated position over BELUX area, which only Balansys will know about in Plan A



# CAPACITY CONVERSION SERVICE FOR UNBUNDLED CAPACITY

- If Unbundled at BE side

- Acquisition of new bundle + “capacity conversion” CAM 2.0 style
  - » The existing unbundled is converted into the new leg
  - » No double payment (initial payable price + auction premium)
  - » No double nomination right
- After the auctions – for Y, Q, M standard durations



- If Unbundled at Adjacent TSO

- Conversion into bundled product by addition of missing BE capacity – up to available capacity – subject to effective registration of bundled contract
- Conversion to OCUC possible
- After the auctions – for Y, Q, M standard durations



- The service is operational since 1/3/2017



**CREG approved  
on 23/02/17**

# MAIN TOPICS CONSULTED RECENTLY

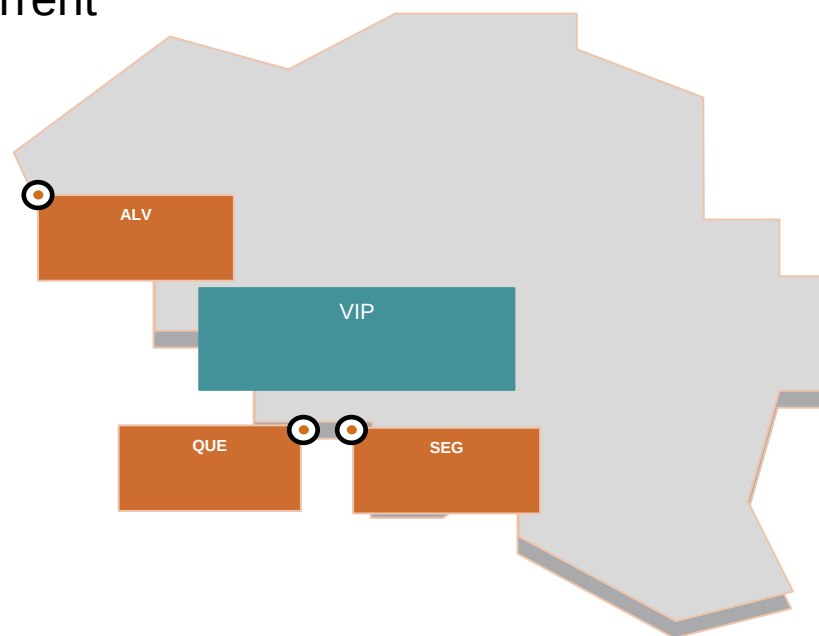
- HUB Revamp > Target 1/10/17
  - Remove IN=OUT, Back-up and off-take service, apply lesser-of-rule, create ex-post transfer service allocation,...
- VIP BE-FR > Target 1/10/17
  - Merge ALV and BLA\_H into single VIP (contracts, nominations and allocations), remove backhaul\* (map to interr.).
  - IP name and code of existing contract are aligned on VIP name
- ATRIAS impact > Start delayed 1/9/18
  - Change ARS hourly and monthly allocation process and ARS capacity allocation in function of new common clearing house for DSO, incl. new segmentation of households and SMEs.
  - This change was agreed with FEBEG and CREG in late 2013
- NC INT – CNOT Compliancy > Start 1/11/17
  - New Edig@s messages for interruption notice (replacing fax template) and surrender capacity sold
- NC CAM 2.0 > Start 1/4/17
  - New CAM calendar
  - Process description for Incremental Capacity, complementary to Open Season
- Technical changes
  - Improve document quality

\*kept for ancillary services if any

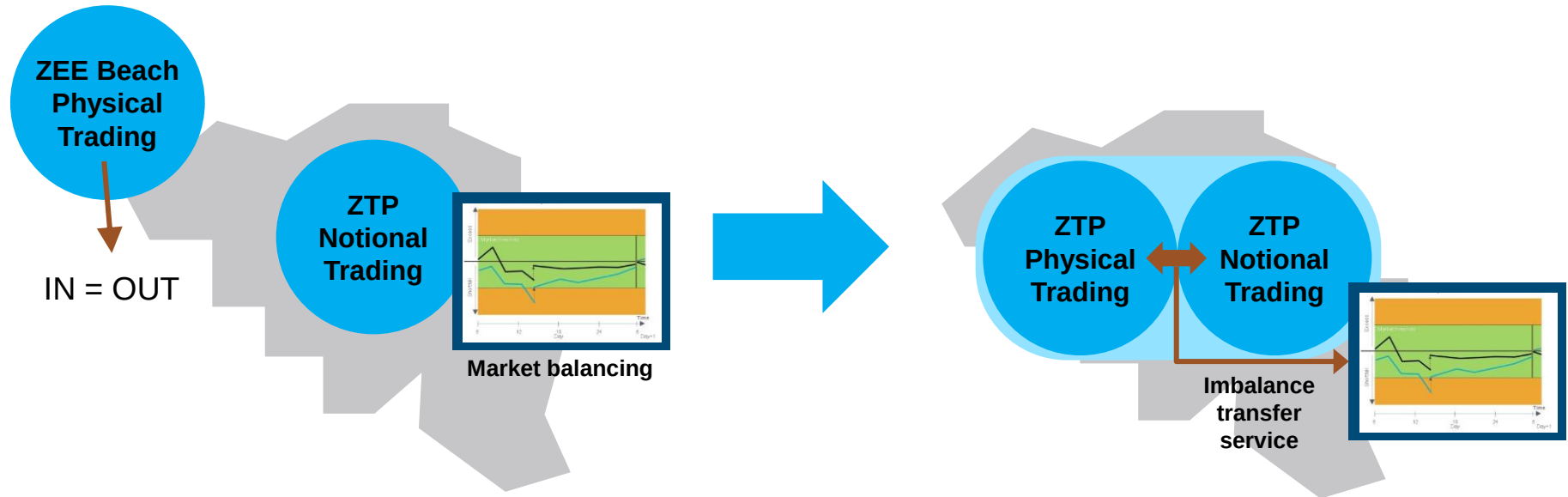
# VIP – MODEL & PRODUCTS ON VIP FR-BE

## MODEL

New H-VIP point will replace Blaregnies Troll/Segeo and Alveringem. Existing IP's will disappear. All existing contracts will be transferred to this new point. Total offered firm and interruptible capacity equal to current situation



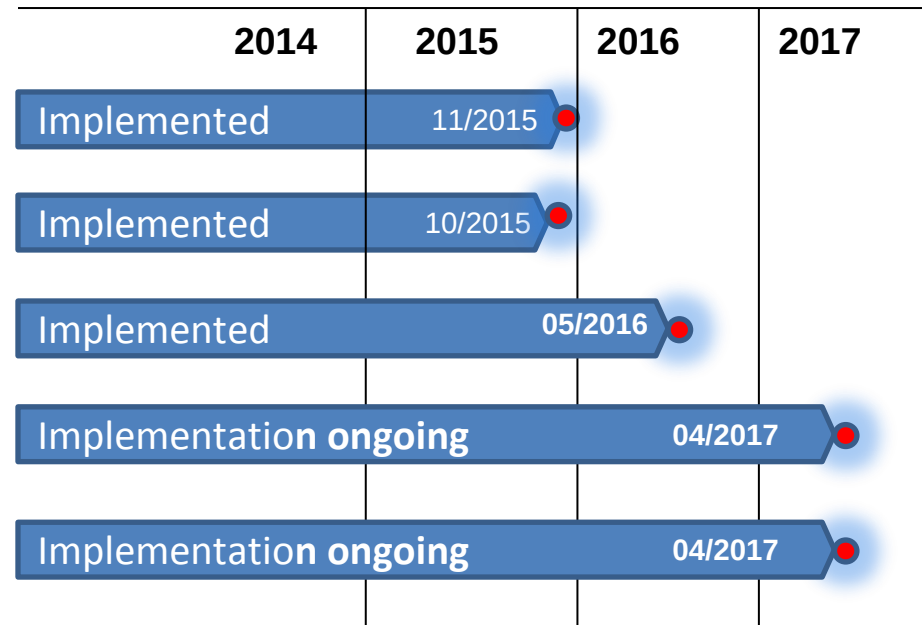
# HUB REVAMP: ZTP PHYSICAL AND NOTIONAL TRADING SERVICES



Coupling of physical trading with ZTP notional trading by automatic transfer of imbalances to ZTP account: physical trading becomes simpler and more flexible

# FLUXYS BELGIUM : IMPLEMENTATION OF NETWORK CODES

- Capacity (CAM+CMP)
- Balancing (BAL)
- Interoperability (INT)
- Tariff (TAR)
- **Amendment CAM**



- Tariff: TAR NC was accepted per end September 2016.
- Amendment CAM NC (including incremental proposal) was accepted per mid October 2016.

→ After a scrutiny period of 3 months, the TAR and CAM network codes have been automatically adopted by the Council of the European Union and the European Parliament => Entry into force ~ 1<sup>st</sup> April 2017.

## GAS REGULATORY DEVELOPMENT IN EU: A SELECTION OF MAJOR DOMAINS

- Evolution of Regulatory bodies
- Data monitoring & Transparency
- Tariff structures and ITCs
- Security of Supply

# Evolution of Regulatory bodies







# DATA MONITORING & TRANSPARENCY

# TRANSPARANCY

## MORE AND MORE ...



<https://gasdata.fluxys.com/>

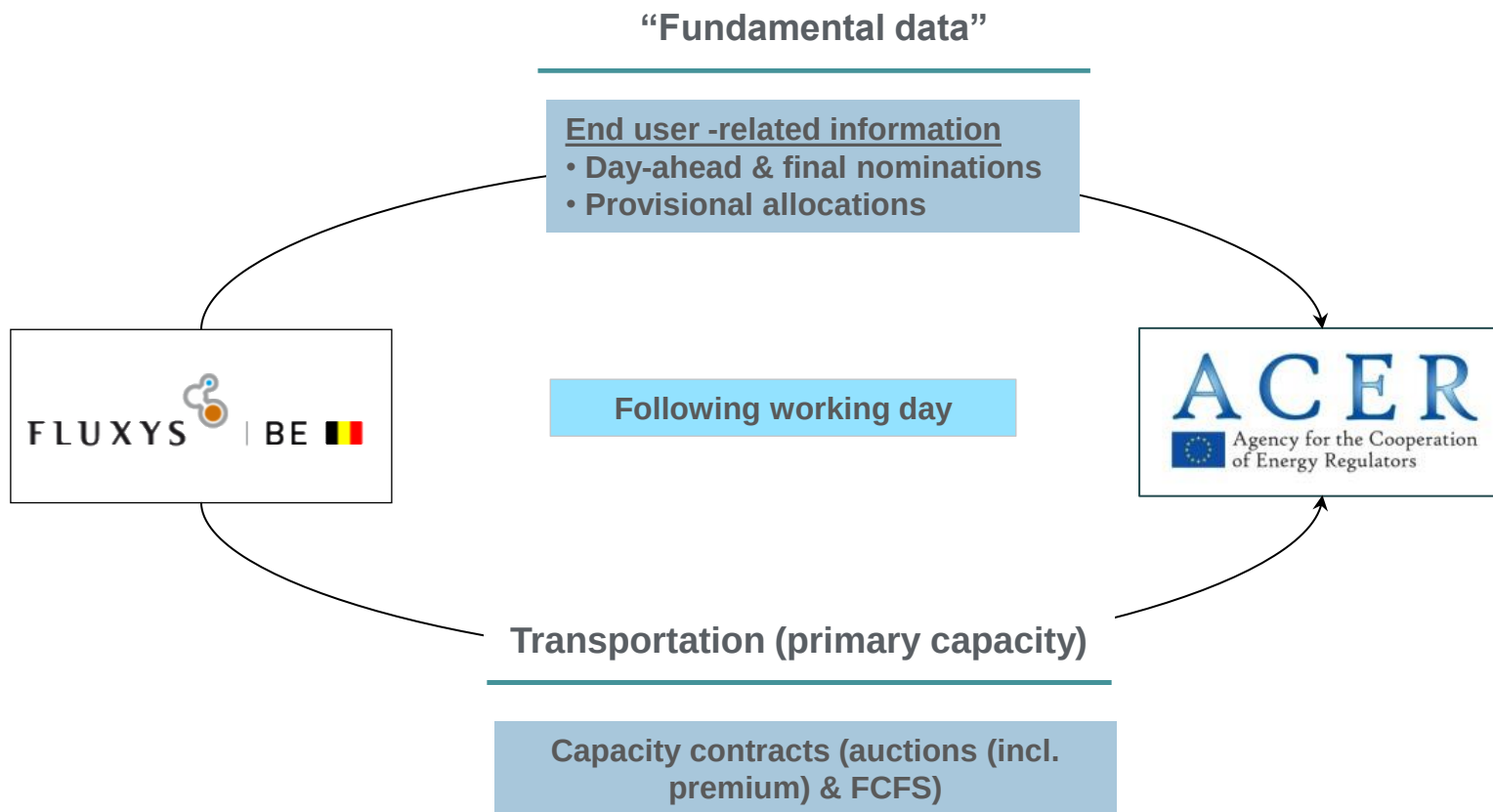
- A lot already published...
  - Nominations
  - Re-nominations
  - Allocations
  - Technical / booked / available capacities
  - gas quality parameters,...



- ... and more to come with TAR NC
  - Proposed reference price methodology
  - Technical details
  - A simplified Tariff Model

- ... and Incremental (CAM NC)
  - Demand Assessment Reports
  - Detail the possible project(s) ...
  - Economic test

# FOR INFO: DATA PROVIDED BY FLUXYS BELGIUM TO ACER WITH RESPECT TO CONCERNED END USERS\*



**Reminder** Each year Fluxys Belgium sends a letter to Industrial Customers in order to be informed whether or not Fluxys Belgium needs to report Remit data. In case of no answer, situation of Y-1 will be applicable.

\* consumption unit capable to consume 600 GWh/year or more

# TARIFF STRUCTURES AND ITCs



# TARIFF NETWORK CODE

## A REFERENCE TARIFF METHODOLOGY

Tariffs must be cost-reflective

- Transmission tariff must be capacity based
- As an exception, a part of the transmission tariff can be commodity based (e.g. to cover compression station fuel requirements and other flow-based items like losses, unaccounted for gas,...)
- **Reference methodology = Capacity Weighted Distance (CWD)**
  - It takes account of actual costs at network points, by considering 2 key cost drivers (distance between points and forecasted contracted capacity at each point)
  - It does not involve too 'complex' calculations compared to some other methodologies
  - General principle (e.g. for an entry point): the longer the distances between this point and all the exit points it is connected with (taking into account exit capacities), the higher the tariff at this point
  - Entry/Exit split: 50/50

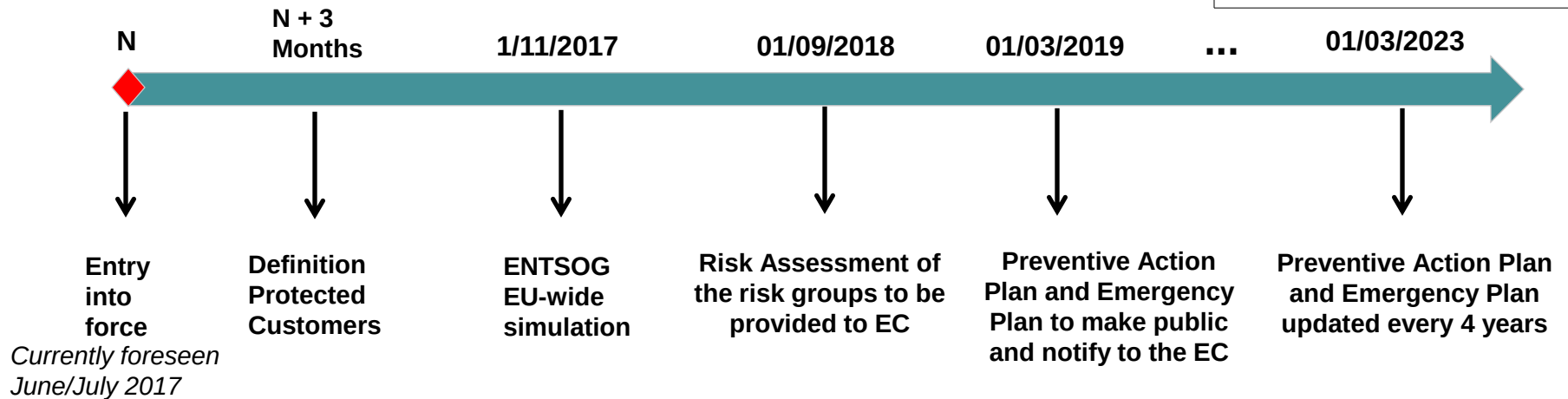
→ May 2019



SOS

# REVISED SOS REGULATION

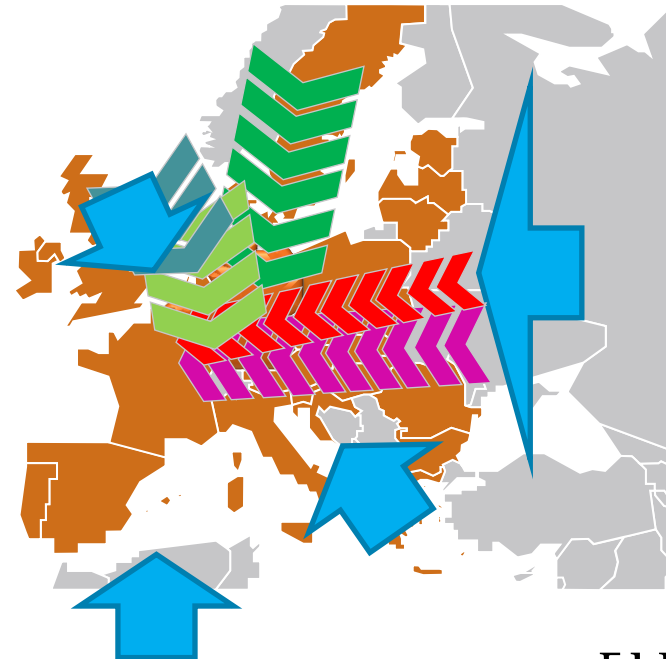
## TIME LINE



- Supply corridor concept consisting of 4 main corridors (each consisting of multiple supply routes)

> example: routes impacting Belgium:

- Eastern gas supply corridor :
  - » Belarus route ●
  - » Baltic Sea route ●
- North Sea corridor:
  - » Norwegian supply ●
  - » Low calorific gas ●
  - » UK production ●
- North-African corridor;
- Southern gas corridor;



# SOS REGULATION – ZOOM ON SOLIDARITY PRINCIPLES

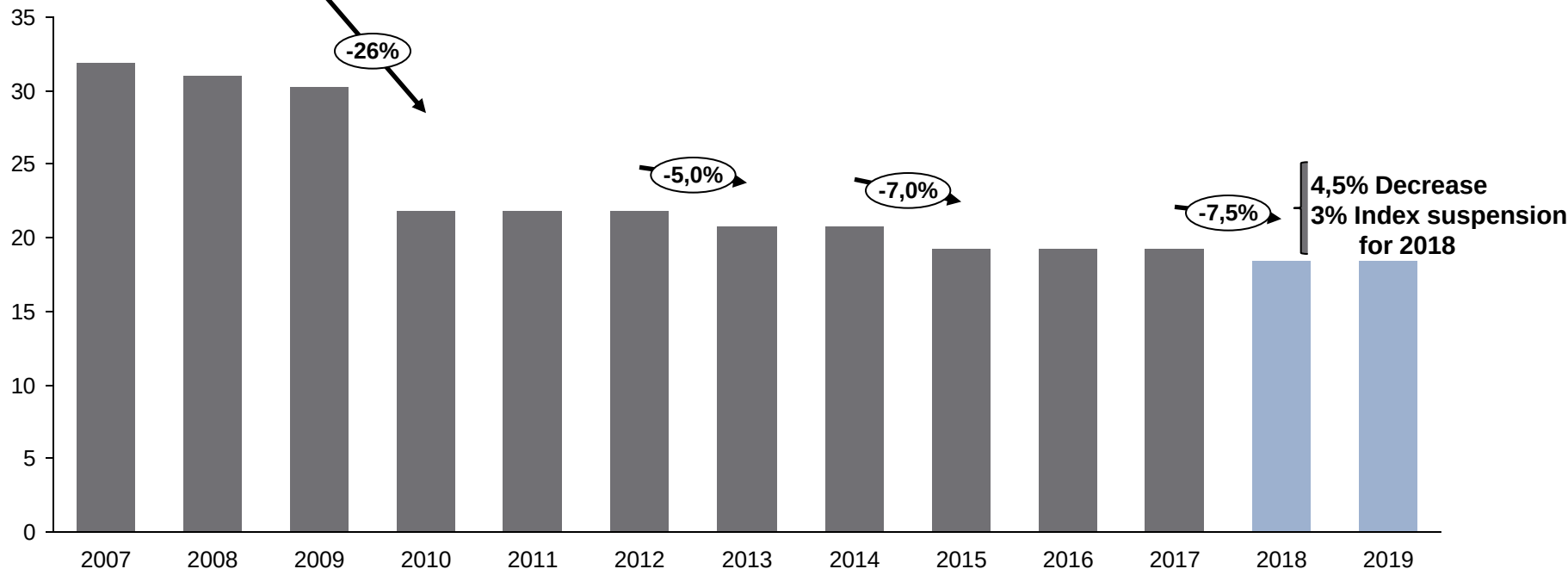
- Basis principle – “solidarity measures of last resort”:
  - “ the gas supply to customers other than protected customers in any other Member State, (...) shall not continue to the extent necessary to supply the protected customers in the Member State having called for the application of solidarity measures.”
- Practically ? Some extracts from the draft regulation (council text):
  - “adopt the necessary measures, including ... technical, legal and financial arrangements,
  - (...) gas prices to be applied and the methodology for their setting, ... may include damages for curtailed industry.
  - Member State requesting solidarity shall promptly pay (...) a fair compensation (...) shall include reimbursement for any compensation resulting from judicial proceedings, arbitration proceedings and settlements and the judicial costs of such proceedings involving the Member State providing solidarity.
  - compensation to be promptly passed on to the relevant entities involved (...)
  - It shall not create perverse incentives (...) ”



## CONTINUOUS EFFORTS TO OFFER COMPETITIVE TRANSMISSION TARIFFS ...

### Fluxys Belgium's transmission tariff evolution (entry + HP supply tariff)

€/m<sup>3</sup>(n)/h/year



Entry + HP supply tariff in real terms (basis 2010)





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**16h00: Return Trainworld**

**16h30: Drink**

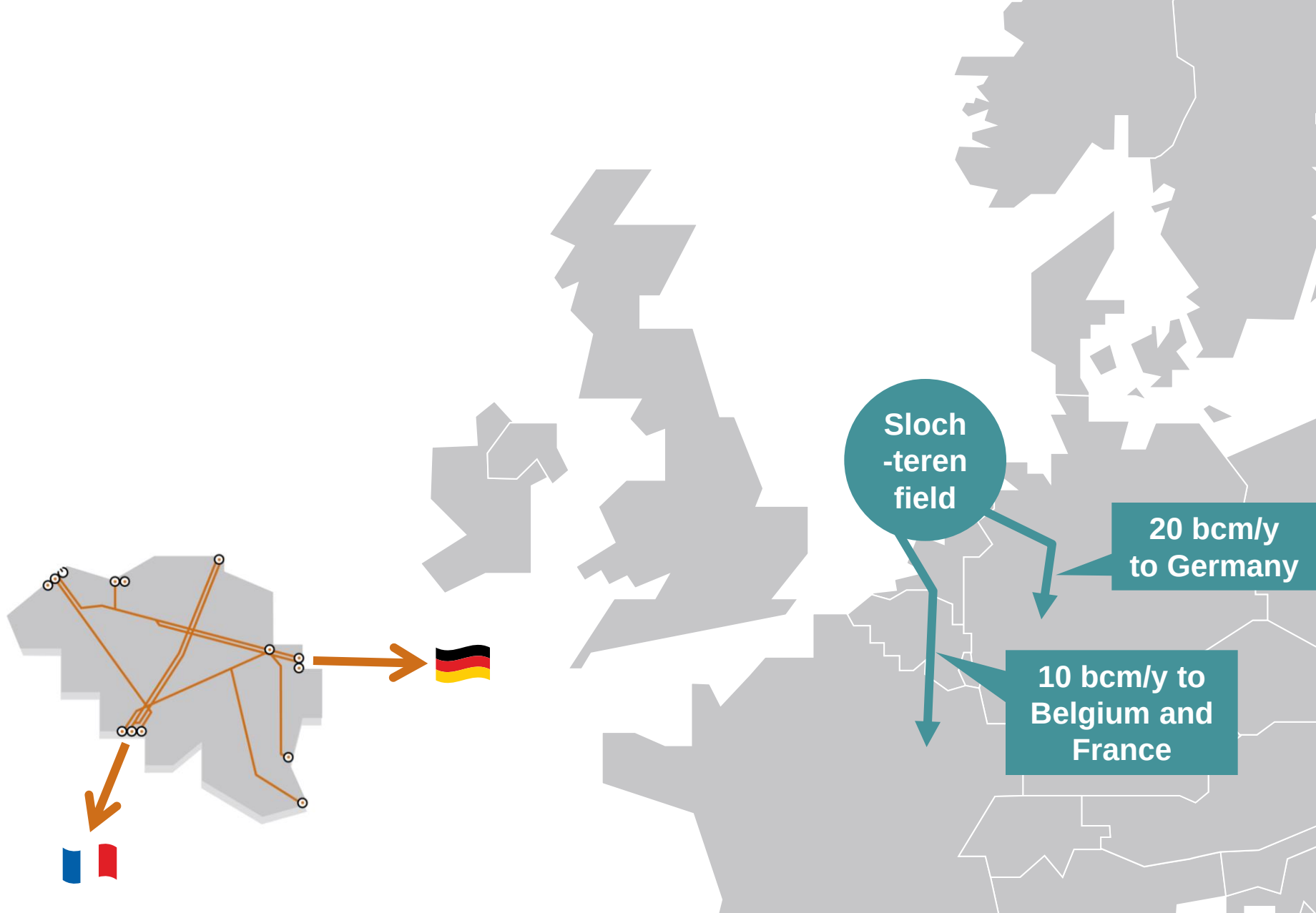


**Conversion L/H**

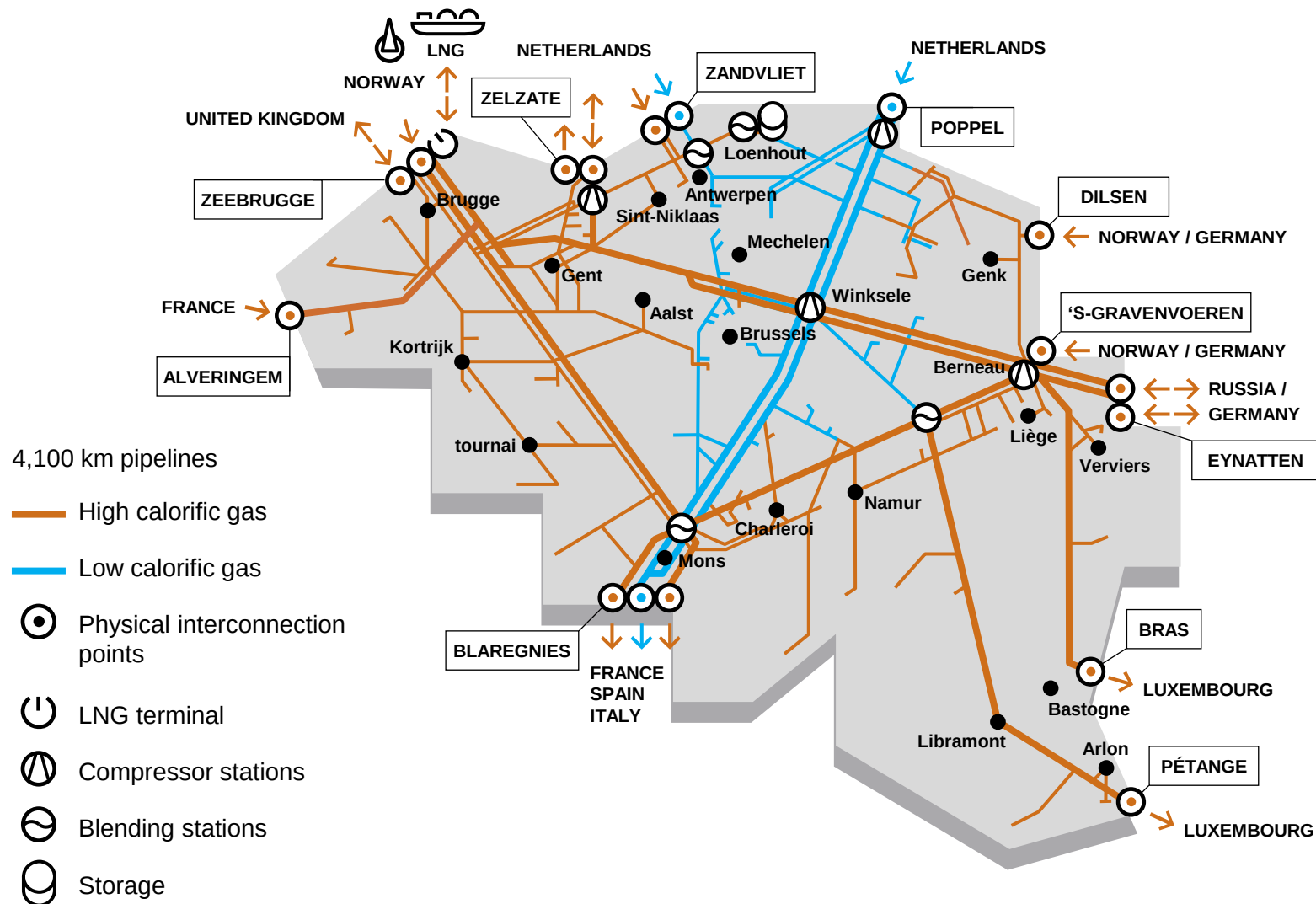
Denis Bawin  
Public Distribution Interface Manager

# CONVERSION L/H AGENDA

1. **L gas in Belgium**
2. Situation in NL
3. Conversion L-H in Belgium: planning



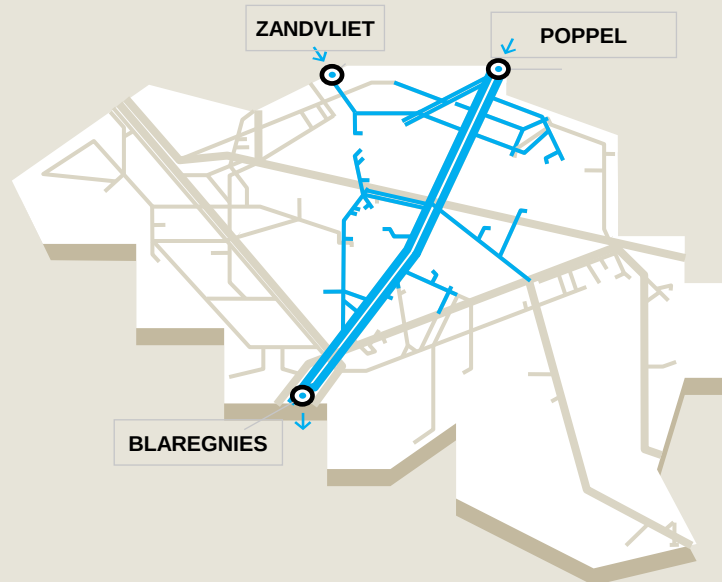
# TRANSMISSION INFRASTRUCTURE





# COEXISTENCE OF TWO TYPES OF GAS IN BELGIUM

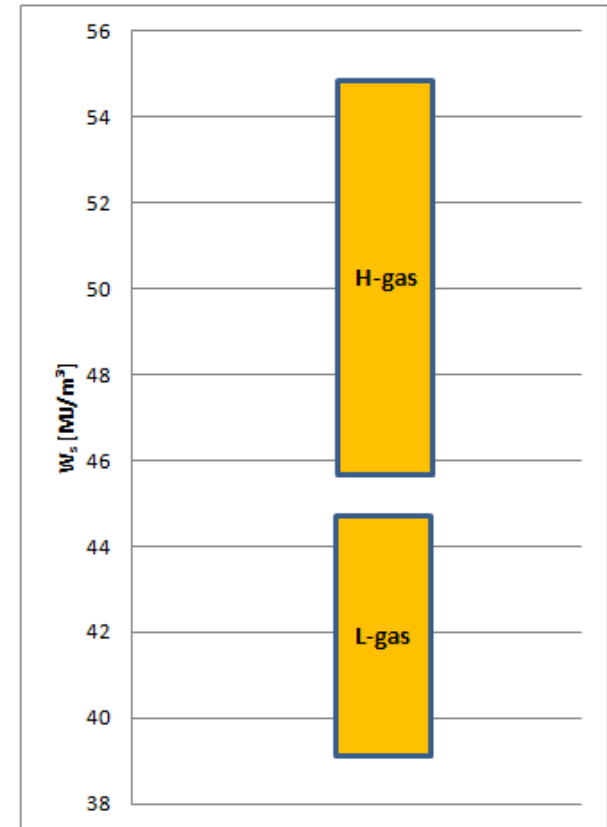
- The natural gas from the Netherlands (L-gas) is the first natural gas imported in Belgium (1966)
- Due to the increase of natural gas consumption, Belgium imported H-gas as from end 1970 also from other sources (Algeria, Norway, United Kingdom, Qatar, etc) → existence of two types of natural gas: L-gas (single source) and H-gas



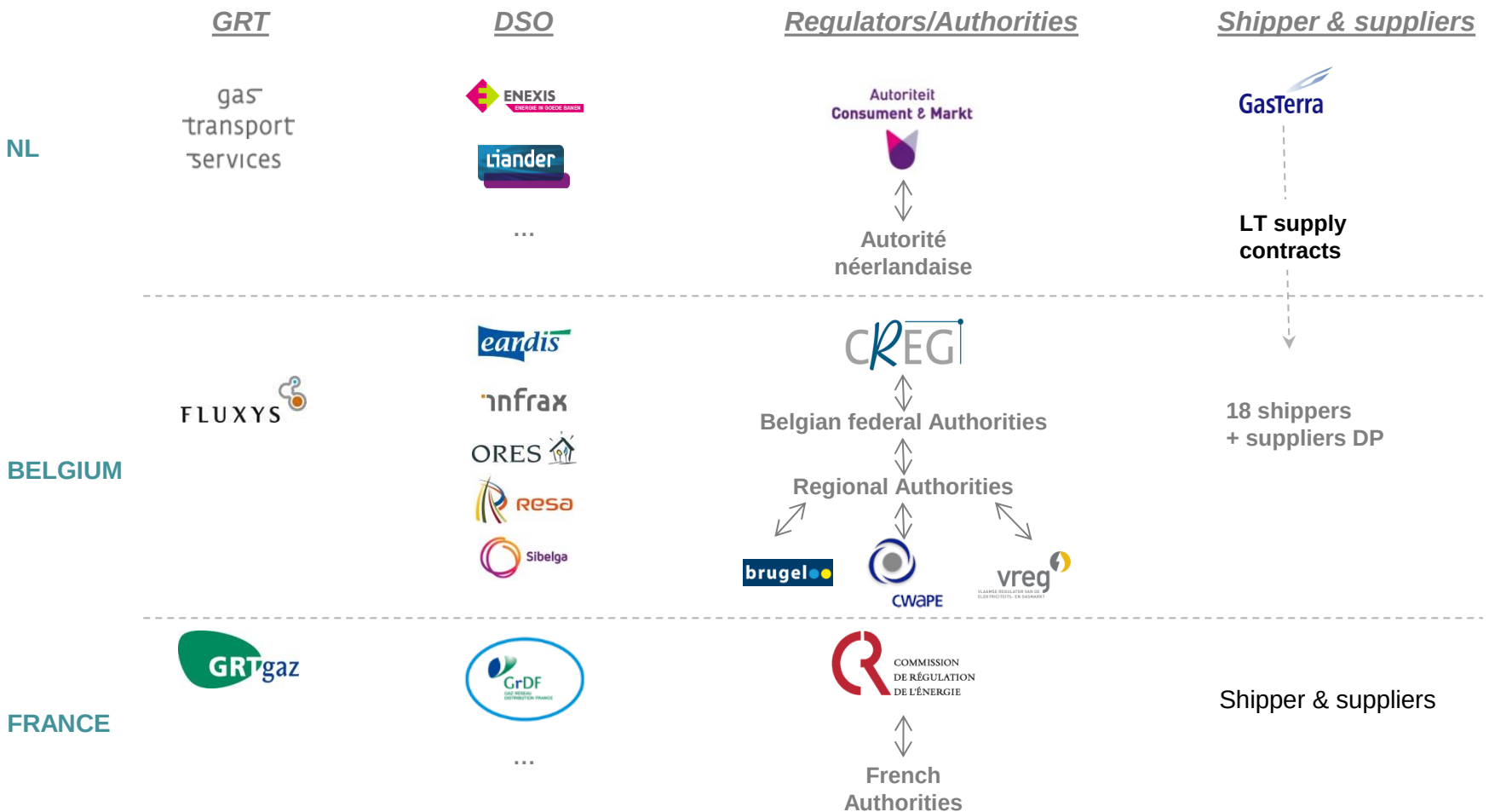
- Annual consumption of L-gas : 5 bcm
- 1/3 of the total Belgian consumption
- 50% of the public distribution consumption
- 36 industrial clients connected to the transport network
- 1.6 million connections on L
- 100% provisioning of the French L-market
- No production, no storage

## H-GAS / L-GAS

- H & L gas groups are defined by European Norm EN437
- High calorific gas contains more energy by cubic meter
- Low calorific gas contains more nitrogen and therefore less energy by cubic meter
- The technical conditions for distribution are different (H-gas : 21 mbar, L-gas : 25 mbar)



# L GAS : STAKEHOLDERS



# CONVERSION L/H AGENDA

1. L gas in Belgium
2. **Situation in NL**
3. Conversion L-H in Belgium: planning

## TIME LINE OF MOST RECENT NL AUTHORITIES DECISIONS

- Groningen production 2013 : **54 bcm**
- Initial decision on the production level for the gas year 2015/16: **39.4 bcm**
- 9 February 2015 : decision to put more emphasis on level of production needed to secure supply of L-gas: max production of **33 bcm** (+ 2 bcm as technical back-up)
- 18 November 2015 : verdict of the Council of State
  - Production of the Groningen field in the gas year 2015/16 limited to **27 bcm\***
  - Decision for production after 1 October 2016 will be taken in the third quarter of 2016
- 23 September 2016 : decision of the Minister of Economic Affairs
  - Yearly volume of **24 bcm** allowed (+**6 bcm** in case of colder years)
  - Decision for a period of 5 years , with a yearly review
- 18 April 2017 : **proposed 10% cut** to production announced by the minister
  - Reason : possibility of more efficient use of Dutch nitrogen blending capacity
  - Minister decision to begin the process of reducing the production cap for the next gas year by 10% (**21,6 bcm**), in line with the advice from the state supervision of mines

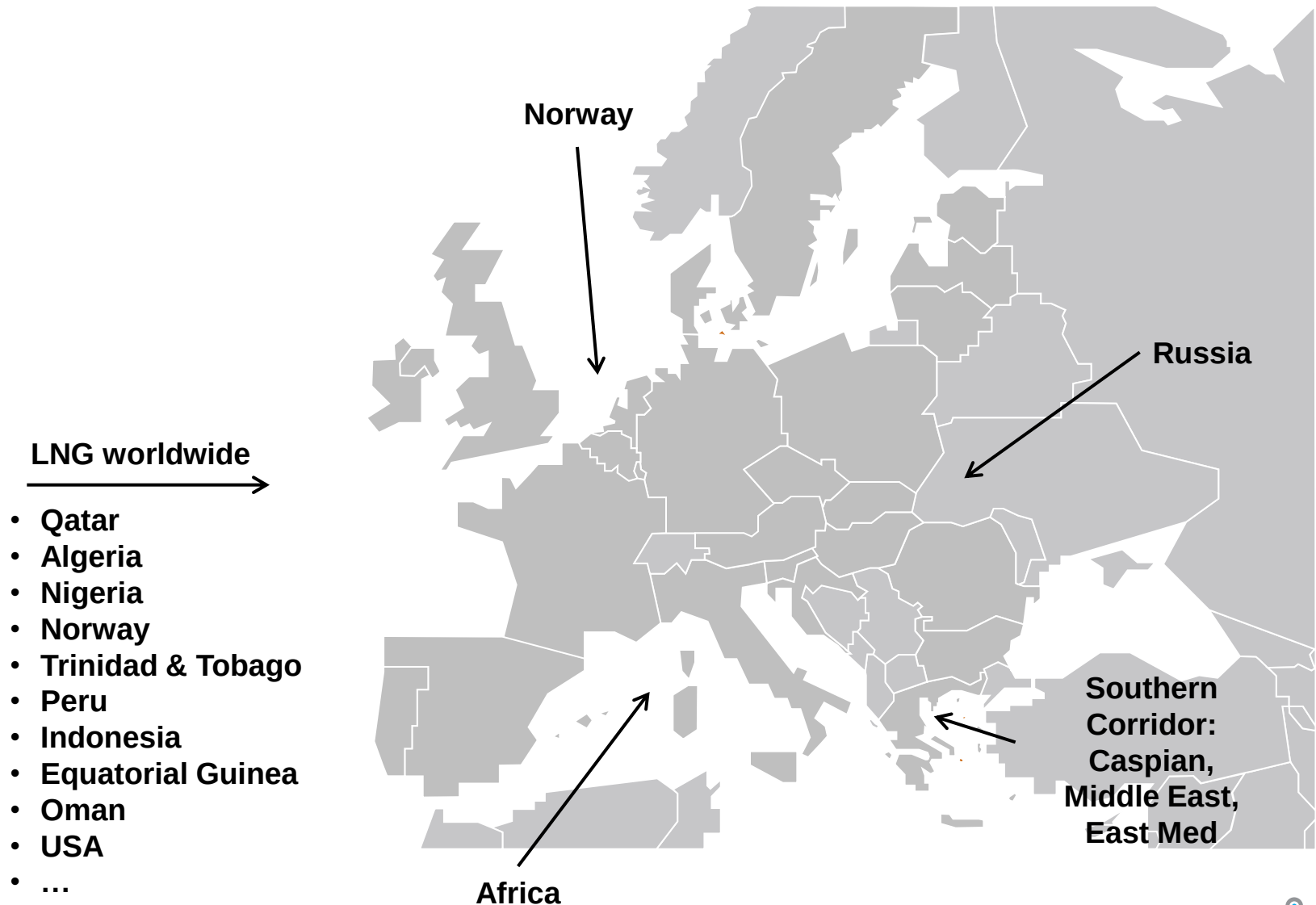
\*Which may only be exceeded, up to max 33 bcm (+2 bcm as technical back up), if the average temperature is lower than in the reference year 2012

# CONVERSION OF L-MARKET IN BELGIUM IS NECESSARY

- **Quality conversion\* is not economically sustainable**
  - Cost price of nitrogen → permanent impact on gas price
  - Substantial infrastructure to build
  - Issues regarding redundancy levels and back up
- **Availability and diversity of the supply sources of H-gas**
  - Huge new liquefaction capacities coming on stream (LNG)
  - Norway, Africa, Russia, Middle East, ...
- Note : In the past, several market conversions have been conducted
  - Starting from 1966: domestic gas to L-gas
  - From 1979 to 1983 : L-gas to H-gas in some areas
  - Conversion of (limited) residential zones and industries in 2012, 2015 and 2016

**\*Nitrogen continuously added to H-gas in order to reduce calorific value**

# H-GAS SOURCES ARE AVAILABLE TO REPLACE L-GAS



# CONVERSION L/H AGENDA

1. L gas in Belgium
2. Situation in NL
3. **Conversion L-H in Belgium: planning**



# THE MAIN CHALLENGES OF THE CONVERSION IN BELGIUM

- Convert about 1.6 million clients from L-gas to H-gas by 2030
- Maintain the performance of gas appliances
- Maintain the transport (including transit to France) and distribution capacities
- Maximum re-use of the existing infrastructures
- Maintain a good functioning market

| EANDIS  | SIBELGA | INFRAX  | ORES    | RESA  |
|---------|---------|---------|---------|-------|
| 860.000 | 500.000 | 135.000 | 120.000 | 2.000 |

Number of customers to be converted per DSO (rounded)

## INDICATIVE CONVERSION PLANNING

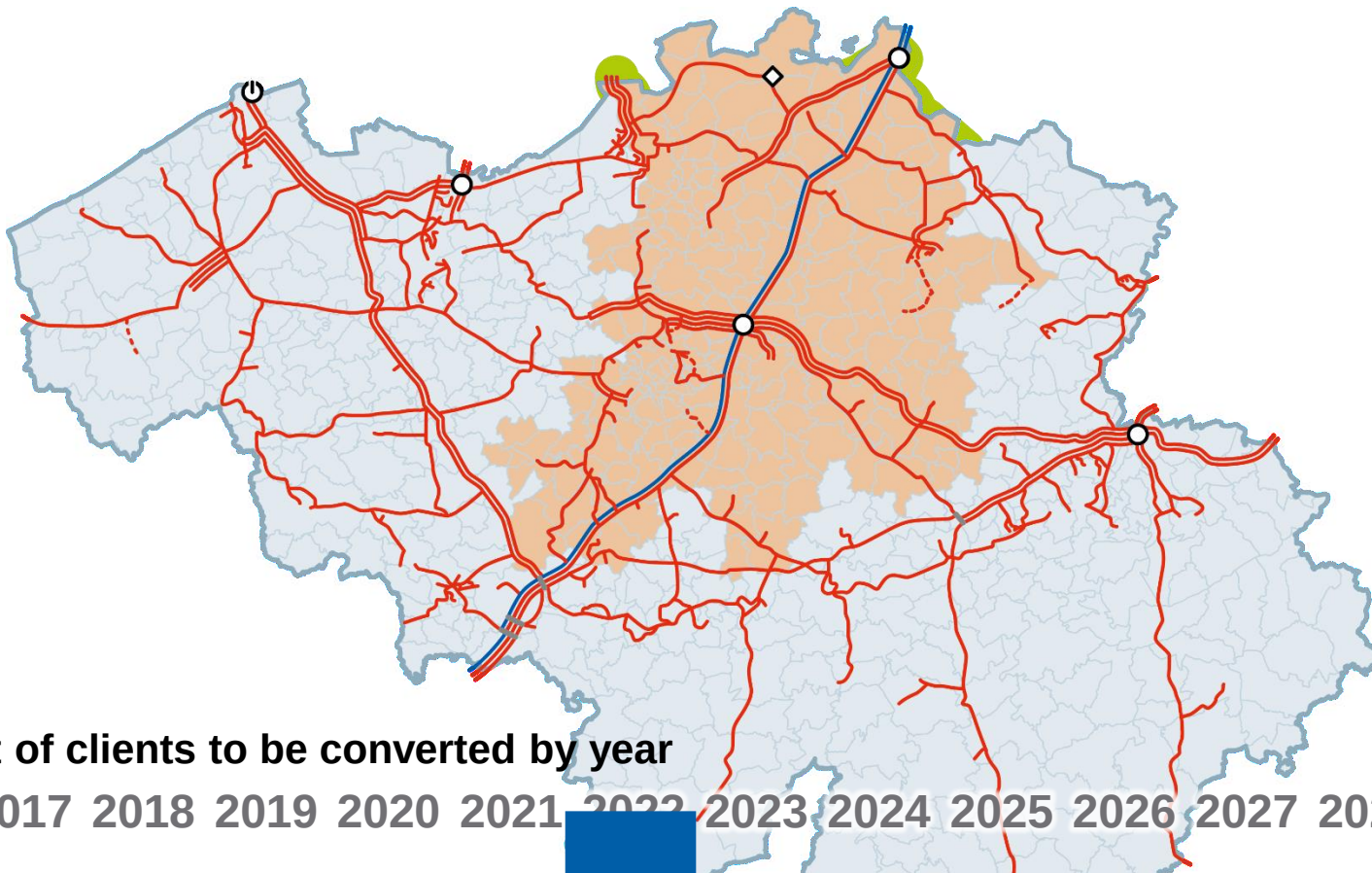
- The main criteria used to develop the indicative planning are :
  - Ensuring the availability and continuity of the transport and distribution capacity for the market (including transit capacities to France)
  - Maximum re-use of existing transport and distribution infrastructure (cost efficiency)
  - Progressive conversion of clusters up to ~250 000 clients per year
  - Have the L-market completely converted to H-gas by the end of the summer 2029

# INDICATIVE PLANNING

## DISCLAIMER

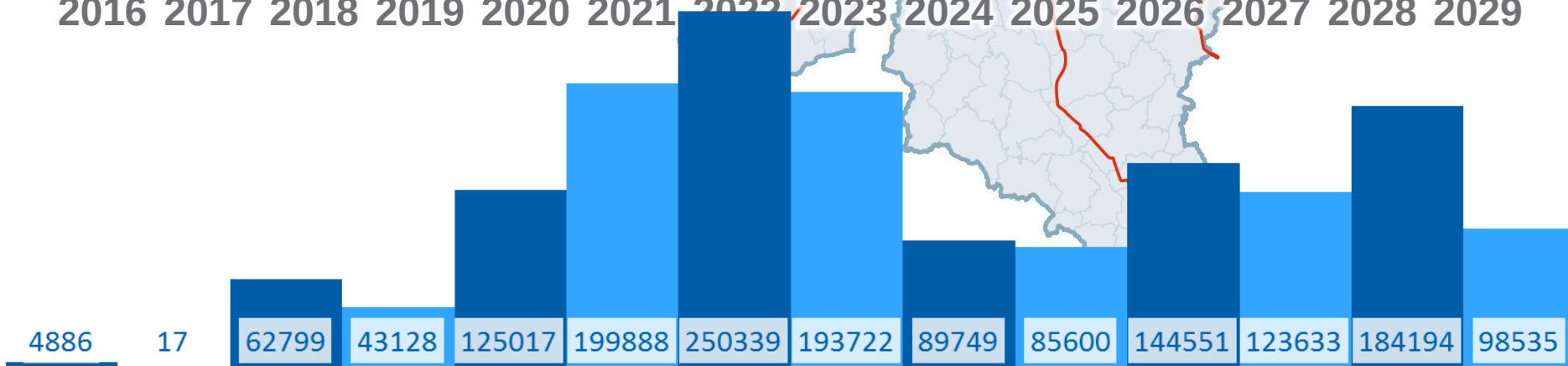
The mention of municipalities as well as the mentioned dates in this L-H conversion time card is a non-exhaustive, indicative information that corresponds to the basic planning of the conversion of the distribution networks at a certain time and on the basis of the, at that time, known and considered suppositions. As well in Belgium as in associated third countries the network infrastructure, purchasing volumes and delivery volumes of a certain gas quality are subject to possible changes which can evolve a change of the considered suppositions and as a result of the abovementioned fundamental planning stated on this time card.

The listed information on this time card, nor any other provided information by a system operator or derived from its acts or inaction, offers no contracting warranty for the whether or not being included in a defined year target of the conversion plan. The system operators therefore rejects any liability that might arise from this time card, not only by an implemented modification or by a wrong interpretation of these indicative data but also by any inaccuracies, shortcomings or errors in the time card, or on-site by changes in relation to the time card as well as any recognition of obligations or liability by its drawing up.



## Amount of clients to be converted by year

2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029



Established for non-binding information only, on the basis of today's knowledge and hypothesis.

## TIMING

- The indicative planning has started in 6/2016 and will finish by end 2029
  - The precise timing of the conversion of each end user depends on the localisation on the Fluxys network.
- Synergrid organised an info session for the shippers on 1st July 2016 concerning the indicative planning
- Fluxys organised a specific info session for the end users connected on its L-network in September 2016 and sent a letter mentioning the indicative date of conversion
- Fluxys will contact proactively each concerned end user minimum 1 year before the date of its conversion



# AGENDA

**09h00: Welcome**

**09h30: Introduction**

**A. Bux**

**09h40: Gas supply and demand outlook**

**A. Bux**

**10h30: Focus on Belgium**

**H. Bettonville**

***11h10: Break***

**11h25: L/H Conversion**

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**11h45: Metering (operational procedures + indexation)**

**A. Goossens & Q. Vroye**

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**Metering  
(operational  
procedures +  
indexation)**

Aart Goossens  
Contract Accounting Manager  
Quentin Vroye  
Metering Projects Manager



## EDP : ELECTRONIC DATA PLATFORM





# EDP : ELECTRONIC DATA PLATFORM

<https://gasdata.fluxys.com/>



User Manual ? [www.fluxys.com](http://www.fluxys.com) FR NL EN

Sign in

Transmission & Hub-services Storage LNG terminalling

**Welcome to the Fluxys Belgium Electronic Data Platform**

Please contact your company SPOC for problems with signing in.

Please contact our commercial department for further information relating to contractual aspects and questions relating to roles and user management of the Electronic Data Platform.  
Phone : +32-(0)2-282.77.77 - Fax : +32-(0)2-282.02.50  
e-mail : [info.transport@fluxys.com](mailto:info.transport@fluxys.com)

Please contact our dispatching for information on operational data  
Phone : +32-(0)2-282.70.07 - Fax : +32-(0)2-282.70.06  
e-mail : [dispatching@fluxys.com](mailto:dispatching@fluxys.com)

- 3 different services : Storage, LNG Terminalling, Transmission & Hub-services
- Public & Private figures (via 'Sign in' – Contact your SPOC! - Ownership)
- For Shippers, End-users, Adjacent Operators and other interested people (Public).
- Bidirectional (read – write , speak - listen).

# FOCUS FOR END-USERS

## Transmission & Hub-services

This section of the Electronic Data Platform groups all transmission and HUB related reports and available data, both public and private (requires sign-in).

### Capacities and Contract

This section of the Electronic Data Platform gives access to public capacity data and to the Electronic Booking System (Sign-in).

### Maintenance

This section of the Electronic Data Platform gives access to public data relating to maintenance activities at the Transmission grid.

### Nominations

This section of the Electronic Data Platform gives access to public flow data relating to Nominations.

### Metering

This section of the Electronic Data Platform gives access to private metering information.

### Balancing and Allocations

This section of the Electronic Data Platform gives access to both private and public data relating to market based balancing system and Allocations.

### Flow data

This section of the Electronic Data Platform gives access to publically available flow data reports as to pre-defined reports in the context of the obligation of transparency.

### Invoicing

This section of the Electronic Data Platform gives access to private data relating to invoices and their appendices.

### Regulatory and contractual documents

This section of the Electronic Data Platform gives access to all relevant standard documents related to Transport Services.

### Remit Messages

Publication according to Article 4(1) of Regulation (EU) No 1227/2011.

### Notifications

General information

# FOCUS FOR END-USERS

## Capacities and Contract

This section of the Electronic Data Platform gives access to public capacity data and to the Electronic Booking System (Sign-in).

### Allocation Agreements

In this section, Allocation agreements are listed, available for consultation and approval - private.

## Allocation Agreements

### Allocation Agreements

Allocation agreement details: 1/01/2017 - 31/12/2017

Period From:

Period To:

Search:

Filter

### AGREEMENT DETAILS

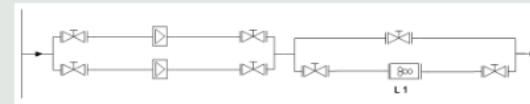
Validity period:

1/01/2017 - 31/12/2017

Approval deadline:

24/11/2016

Station schema:



Allocation rules description:

- Shippers & Allocation rules for concerned period and concerned Delivery Point.
- Bidirectional Electronic Workflow (Approval Process)

# FOCUS FOR END-USERS

## Metering

This section of the Electronic Data Platform gives access to private metering information.

### Daily refreshed measurements on nodes and lines

Metering information on nodes and lines with daily granularity. The data is refreshed at the beginning of each gas day - private.

### Hourly refreshed measurements on nodes and lines

Metering information on nodes and lines with hourly and daily granularity. The data is refreshed at the beginning of each gas hour - private.

### Realtime measurements on interconnection points

Metering information on interconnection points available in real time (subject to subscription of specific service) - private.

### Hourly refreshed measurements on nodes and lines - New Codification

Metering information on nodes and lines. The data is based on the new codification which makes it possible to visualize information on line-level for every type of metering

### Topology

Topological description of the metering installation (metering lines and nodes) - private.

### Wobbe Index

GCV divided by the square root of the relative density of the Natural Gas - private.

### Metering Index Update - New Codification

Interface that allows the end-user to encode the index-readings of the meter and the convertor - private.

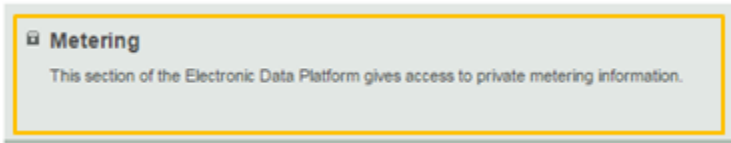


### Daily refreshed measurements on nodes and lines - New Codification

Metering information on nodes and lines with daily granularity. The data is based on the new codification which makes it possible to visualize information on line-level for every

[> Legal notice](#)

# FOCUS FOR END-USERS



## ➤ Most important information :

- Hourly volume, energy, gascomposition and gascharacteristics (for maximum 1 month, in order to protect the DB for overloads)
- Daily volume, energy, gascomposition and gascharacteristics (for long periods)
- Validation workflow (status)
- Topology of the gas receiving station (codification/weight of metering lines)

## ➤ We listen to you :

- Downloads with hourly granularity for 1 year, provided that only 1 line or 1 node is selected.
- Gascharacteristics extended with the CO2 EF (Emission-reports)
- Electronic Metering Index Update – NEW (see next slides)!
- Inspection Reports (audits) on EDP? – Under Investigation



# METERING INDEX UPDATE BY ENDUSER (1)

## Metering Index Update - New Codification

Interface that allows the end-user to encode the index-readings of the meter and the convertor - private.



**Counter**



**Convertor**

Indexes are the best indicators for the flowed volumes :

- Take forward as well as reverse flow into account ( ↔ pulses)
- Continue to register and increment during power failure ( ↔ pulses)

**BUT...** remote reading of indexes is very difficult (mostly mechanical).

## METERING INDEX UPDATE BY ENDUSER(2)



Therefore the transmitted pulses should be regularly assessed with the indexes directly read from the counter, in order to check the correctness of the invoiced volumes and to limit retroactive corrections to a minimum :

- Avoid too high (or double) registrations (when forward- and reverseflow have occurred within the same period)
- Avoid too low registrations (when pulses have been missed or have not been transmitted due to, for example, power failure)

**THAT'S WHY** the Enduser is invited to record the indexes and to register them on a regularly basis. (cfr. Operationele Procedures, §4.4 Meteropnemings // Procédures Opérationnelles, §4.4 Enregistrements d'index)



## METERING INDEX UPDATE BY ENDUSER(3)

A new interface **via EDP** has been developed, where the indexes can be registered and consulted ( also the indexes registered by Fluxys are visible.)

| Last Indices counter |               |               |              | Last Indices Converter |               |               |              |
|----------------------|---------------|---------------|--------------|------------------------|---------------|---------------|--------------|
| TimeStamp            | Index (m³(b)) | Delta (m³(b)) | Name Encoder | TimeStamp              | Index (m³(n)) | Delta (m³(n)) | Name Encoder |
| 10/01/2017 10:20     | 3740470       | 871810        | Fluxys Agent | 10/01/2017 10:20       | 7380566       | 3167144       | Fluxys Agent |
| 28/06/2016 15:16     | 2868660       | 356555        | Fluxys Agent | 28/06/2016 15:16       | 4213422       | 1297637       | Fluxys Agent |
| 07/04/2016 09:57     | 2512105       | 0             | Fluxys Agent | 07/04/2016 09:57       | 2915785       | 0             | Fluxys Agent |

We listen to you : if indexations registered VIA EDP :

- ✓ Telemetered installations : weekly → monthly (+ in case of trouble)
- ✓ Other installations : remain daily



✓ [Info.transport@fluxys.com](mailto:Info.transport@fluxys.com)

✓



✓

#### ❏ Metering Index Update - New Codification

Interface that allows the end-user to encode the index-readings of the meter and the convertor - private.  
User manual is available by clicking on 



- 
- Operational procedures
  - Measur-W

# Procédures Opérationnelles

## Introduction

- La relation entre Fluxys et les Consommateurs Finaux raccordés au réseau de transport est régie par le « Contrat Standard de Raccordement ».
- Les « Procédures Opérationnelles » font partie du « Contrat Standard de Raccordement ». Elles décrivent :
  - Les prescriptions techniques minimales des stations de réceptions raccordées au réseau de transport
  - La manière dont les quantités prélevées sont définies.
- La version 2.33 des Procédures est actuellement d'application depuis le 1 janvier 2011.
- Les Procédures ont été révisées afin de:
  - référer à la PED (Pressure Equipment Directive)
  - améliorer la qualité métrologique des installations
  - simplifier les procédures



# Procédures Opérationnelles

## Modifications majeures

### 1. Référence à la PED (Pressure Equipment Directive)

- D'application immédiate pour les nouveaux projets et toute modification future des stations à dater de la prise d'effet de la nouvelle version des Procédures.
- Les Procédures actuelles restent d'application pour les projets démarrés avant la prise d'effet de la nouvelle version.



# Procédures Opérationnelles

## 2. Introduction de réétalonnages périodiques des compteurs

### Compteurs à turbine

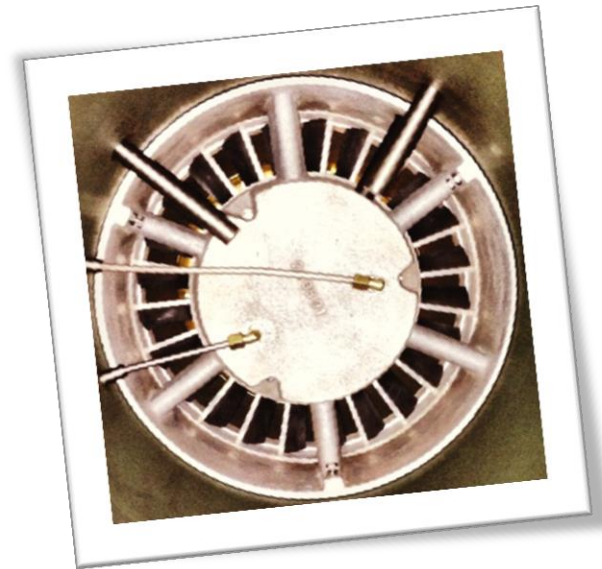
- Déjà d'application auprès des GRD's
- En l'absence de mise en série un réétalonnage est prévu tous les 15 ans  
En présence d'une mise en série un réétalonnage est prévu tous les 30 ans

### Compteurs à pistons rotatifs

- Réétalonnage tous les 15 ans

### Compteurs à ultrasons

- La périodicité sera déterminée par le gestionnaire en fonction des tolérances admises par les normes internationales applicables



# Procédures Opérationnelles

## 2. Introduction de réétalonnages périodiques des compteurs

### Général

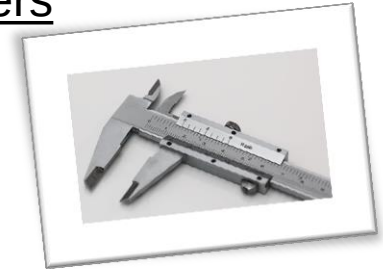
- D'application immédiate pour toutes les stations avec une période de mise en conformité de 5 ans à dater de la prise d'effet de la nouvelle version des Procédures.
- La périodicité de réétalonnage proposée par Fluxys est moins contraignante que les périodicités communément préconisées par l'Emission Trading System qui est de l'ordre de 5 à 10 ans (fonction de la région et de la technologie installée).



# Procédures Opérationnelles

## 3. Introduction de la courbe de correction dans les flow computers

- Concerne les compteurs étalonnés en pression càd lorsque la pression d'exploitation est supérieure ou égale à 4bar effectif.
- Concerne les compteurs à turbine et les compteurs à ultrasons
- D'application immédiate pour les **nouveaux projets** et tout **remplacement** de flow computers à dater de la prise d'effet de la nouvelle version des Procédures.
- Pour les **stations existantes** :
  - » Une période de mise en conformité de 12 mois est prévue lorsque:
    - > les flow computers installés permettent la programmation des courbes de correction
    - > la courbe de correction des compteurs est disponible
  - » Une période de mise en conformité est prévue jusqu'en 2030 à dater de la prise d'effet de la nouvelle version des Procédures pour introduire les courbes de correction dans les flow computers





# Procédures Opérationnelles

## 4. Révision globale de la structure du document

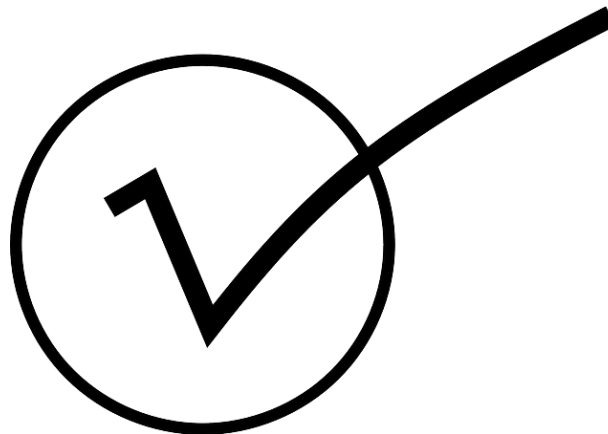
- Respect de la chronologie d'un projet de la phase d'étude jusqu'à la phase d'exploitation
- Séparation des aspects commerciaux, conceptions et métrologiques



# Procédures Opérationnelles

## Etapes de validation

- Une consultation informelle auprès de Febeliec a été effectuée fin 2016
- Une consultation informelle auprès de la CREG est en cours
- Lorsque la décision sera prise de modifier les procédures:
  - Consultation officielle du marché (en même temps que pour la modification du contrat standard de raccordement)
  - Soumission à la CREG pour approbation en prenant en compte les commentaires éventuels
  - ...



# Projet Measur-W

- Remplacement de l'ensemble des Wattman installés en Belgique par des nouveaux Measur-W.
- Le Measur-W permet la conversion des débits bruts en énergie et la mise à disposition des données utilisées pour les allocations horaires et pour la facturation mensuelle.
- Planning
  - En cours: Finalisation de la certification (EN12405-1 et OIML R140)
  - 2017 : Remplacement d'un nombre limité de Wattman
  - 2018-2022: Remplacement de l'ensemble du parc de Wattman en Belgique





# AGENDA

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**Hub  
Development**

© Fluxys Belgium - J. Van Droogenbroeck

François-Xavier Van Houtte  
Key Account Officer

# AGENDA

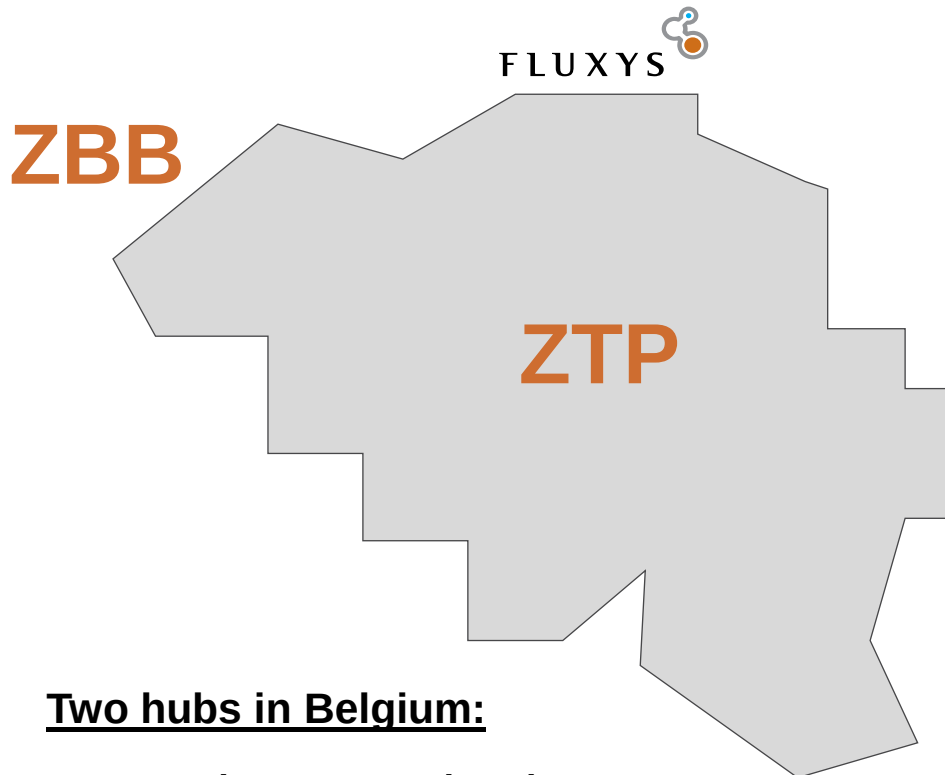
1. Hub context
2. Hub performance update
3. Hub development for 2017
4. ZTP supply contracts indexation

# AGENDA

1. Hub context
2. Hub performance update
3. Hub development for 2017
4. ZTP supply contracts indexation



# HUB CONTEXT



| Sold via                                                                                                                                                       |                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Brokers                                                                                                                                                        | Exchange                                                                                                                                                                   |
| <ul style="list-style-type: none"><li>- Prebon</li><li>- GFI</li><li>- TFS</li><li>- ICAP</li><li>- Griffin Markets</li><li>- Spectron</li><li>- ...</li></ul> | <br> |

- **Two hubs in Belgium:**

1. **Zeebrugge Beach Hub:**

- Zeebrugge area concentrates lots of gas flows (ZPT, LNG TML, IZT)
- Launched in 1999 after the commissioning of the Interconnector
- Physical hub → specific rules

2. **ZTP (H & L):**

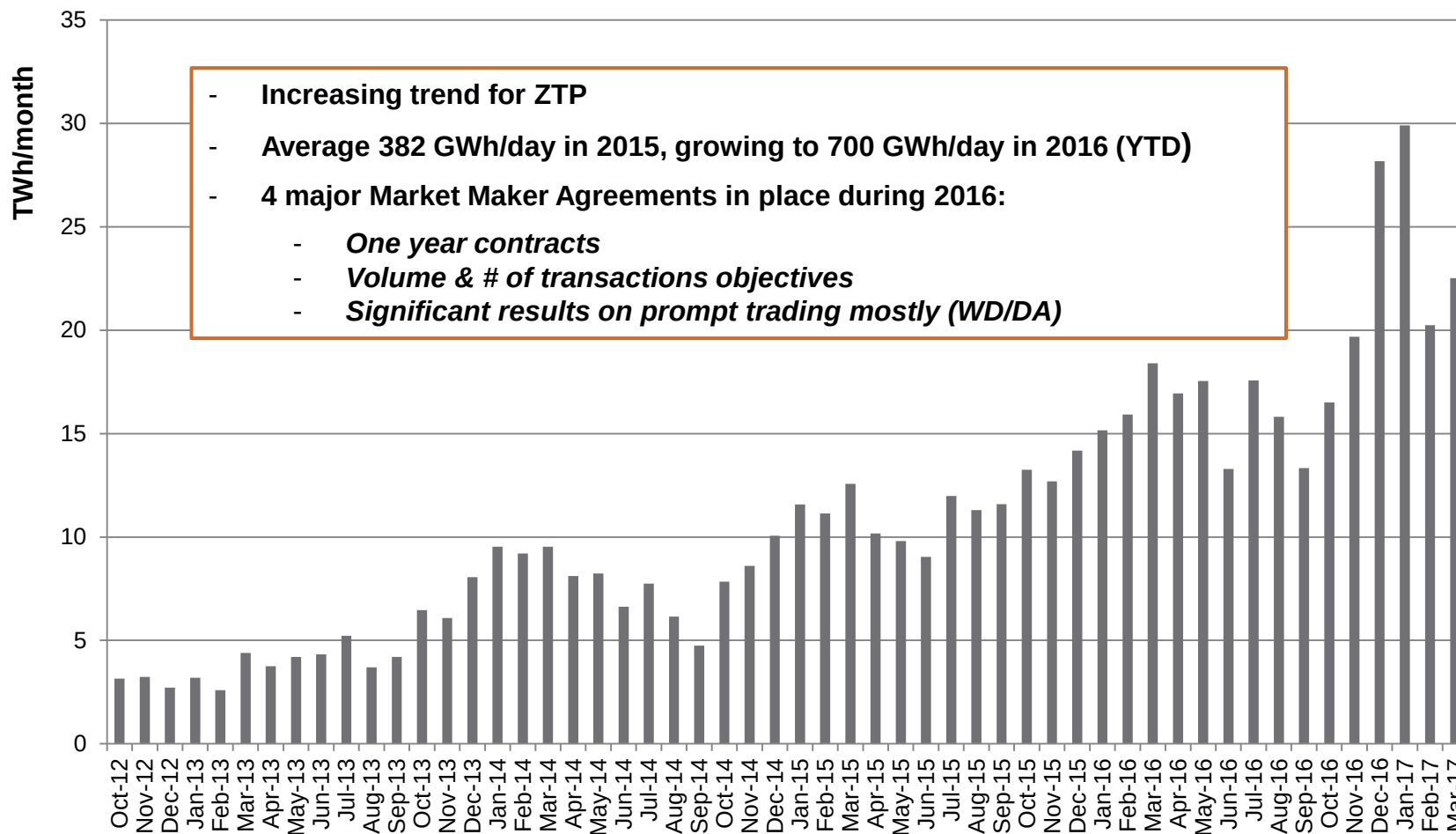
- Launched in 2012 with the entry-exit model
- Notional hub (property title transfer) → aligned on European Standard

# AGENDA

1. Hub context
2. Hub performance update
3. Hub development for 2017
4. ZTP supply contracts indexation

# HUB PERFORMANCE UPDATE (1/5)

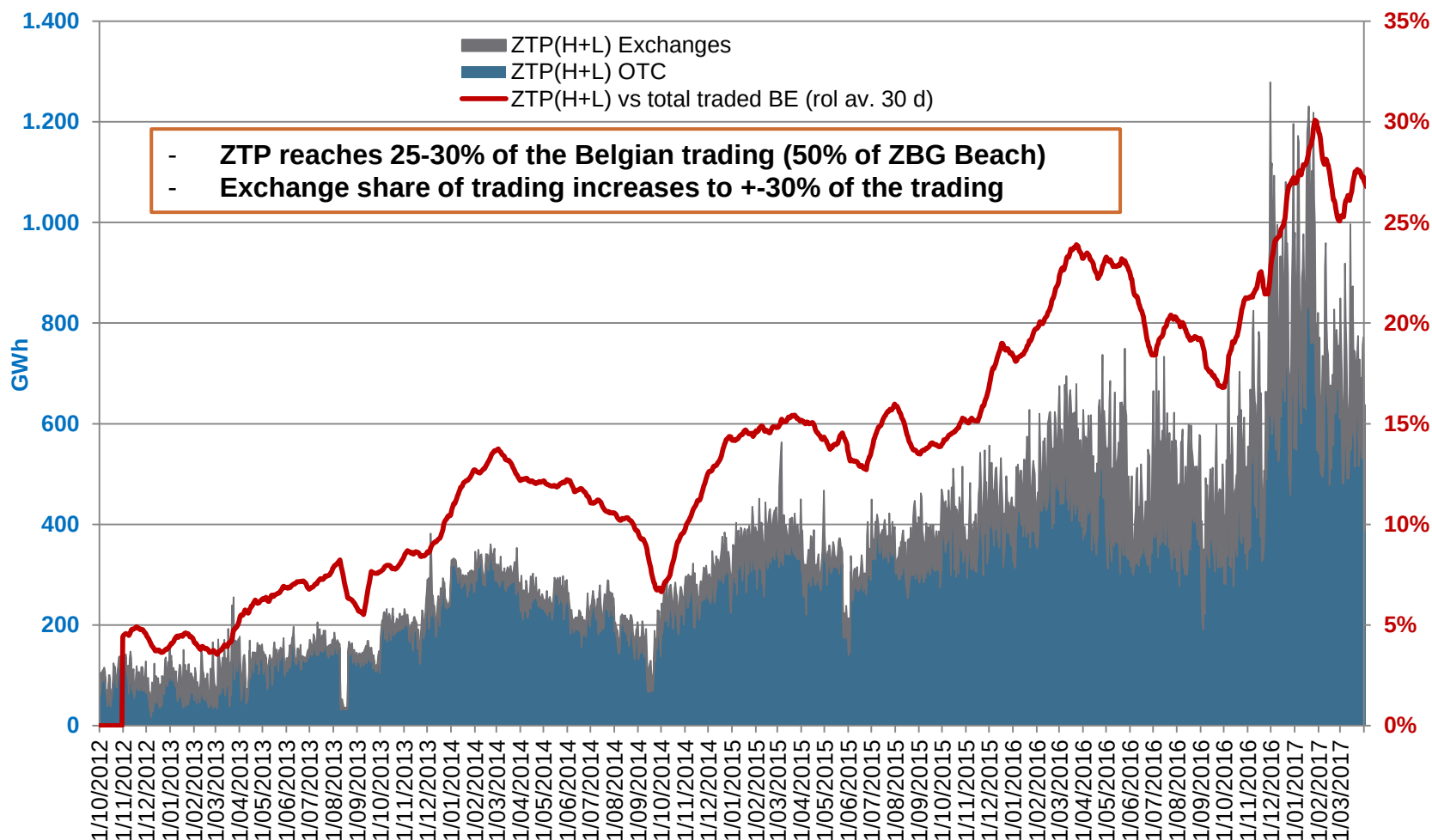
## ZTP(H+L) net traded volumes\*



***\*based on nominations***

# HUB PERFORMANCE UPDATE (2/5)

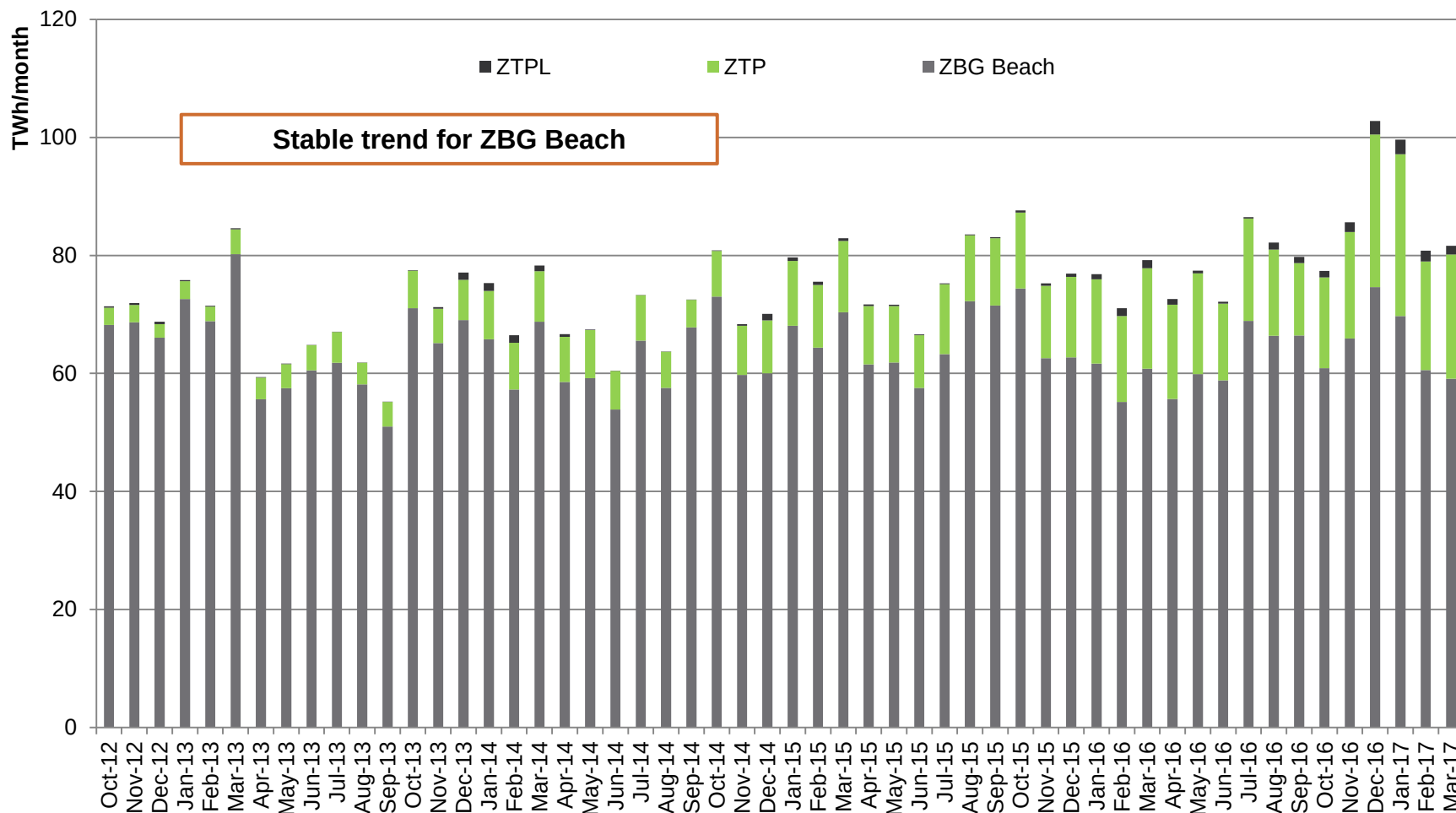
## ZTP(H+L) Evolution\*



*\*based on nominations*

# HUB PERFORMANCE UPDATE (3/5)

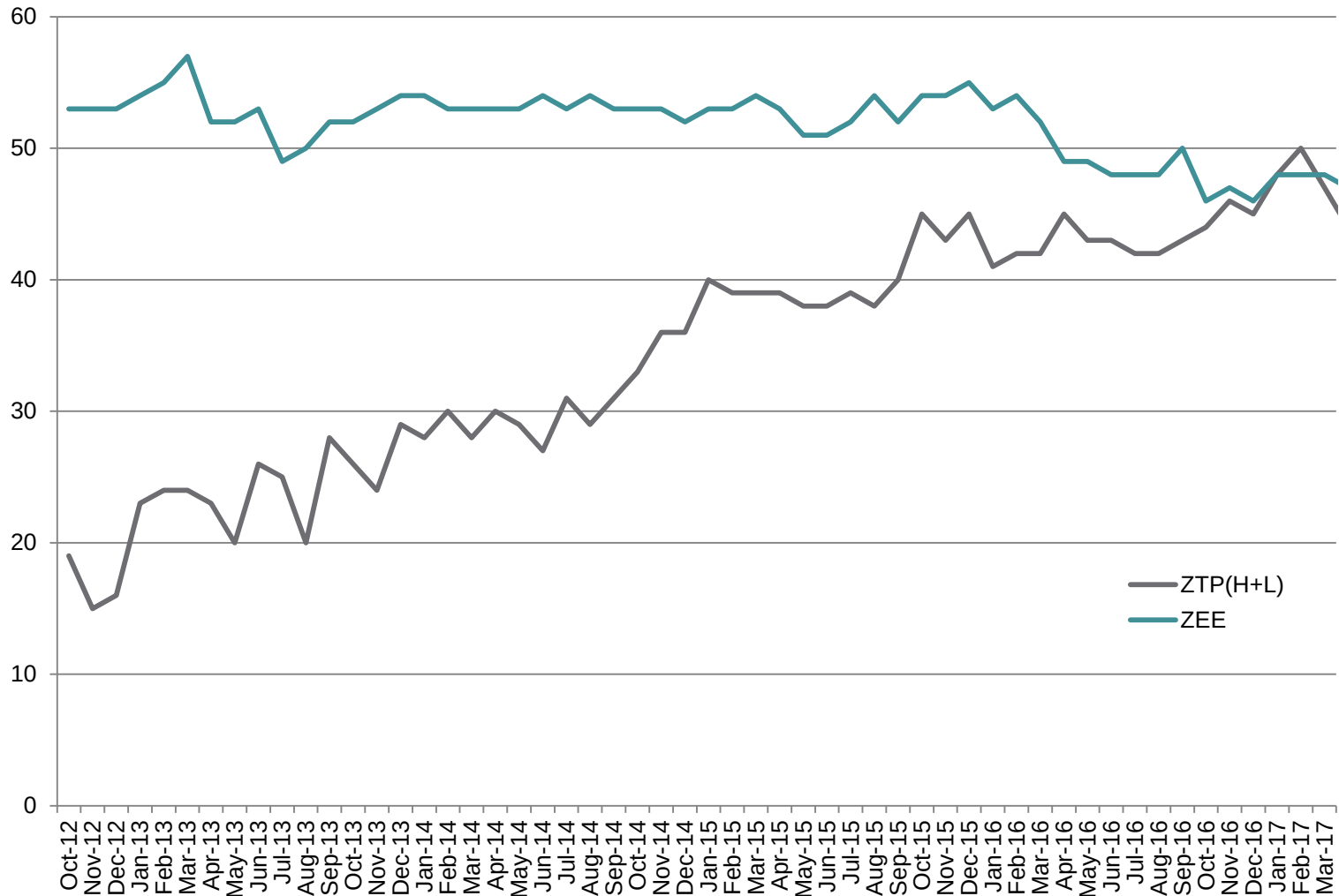
## Hub traded volumes\*



*\*based on nominations*

# HUB PERFORMANCE UPDATE (4/5)

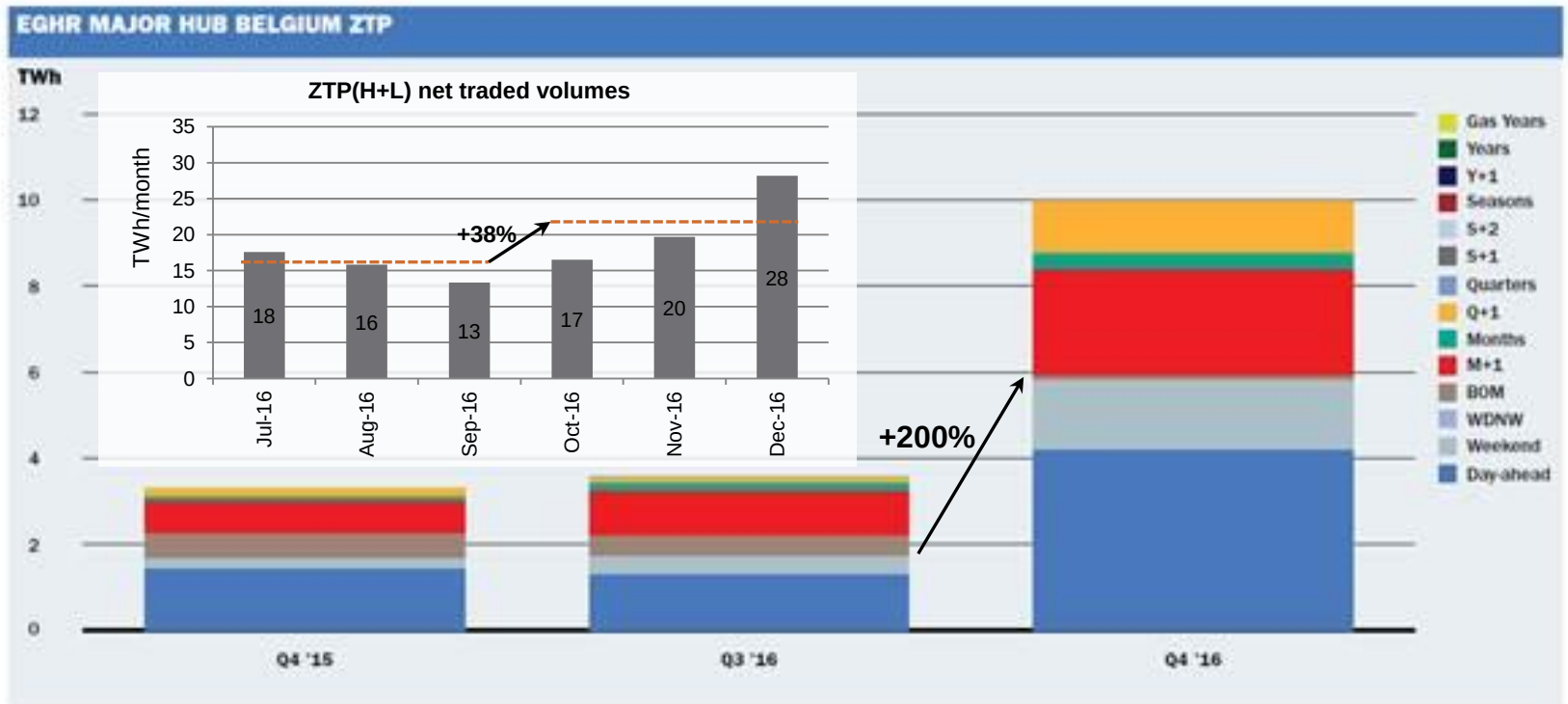
## Number of active parties



End User Day Meeting 4 May 2017 - for information purposes only

# HUB PERFORMANCE UPDATE (5/5)

- Liquidity improvement based on trading volume VS nomination
  - Trading includes a churn → more significant improvement
  - Based on nominations → net traded volume
- Improved liquidity at the end of 2016
- Futures trading seems to develop



Source: ICIS – European Gas Hub Report Q4 2016

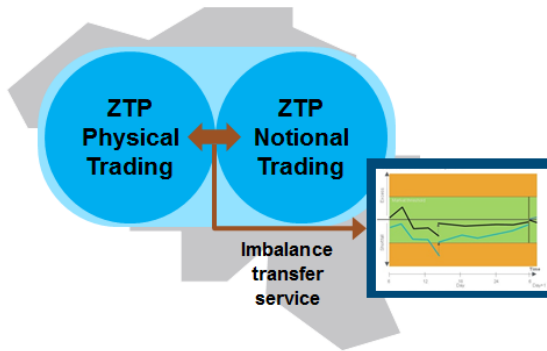
# AGENDA

1. Hub context
2. Hub performance update
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# HUB DEVELOPMENT FOR 2017

- Hub model rethinking
  - Virtualizing (alignment on European standard – consultation ended on 31/03/2017) → simplifying trading on Zeebrugge beach hub



- Merge of HSA in STA → simplified contractual framework
- 4 major market agreements started on Q2 2017
  - Focus on monthly products
  - One year contracts
  - Significant result expected

**130 monthly transactions during 2016 → 384 expected under the four MMA's**

# AGENDA

1. Hub context
2. Hub performance update
3. Hub development for 2017
4. ZTP supply contracts indexation

# ZTP SUPPLY CONTRACTS INDEXATION (1/2)

- Indexation on the ZTP hub fosters sourcing on the ZTP hub

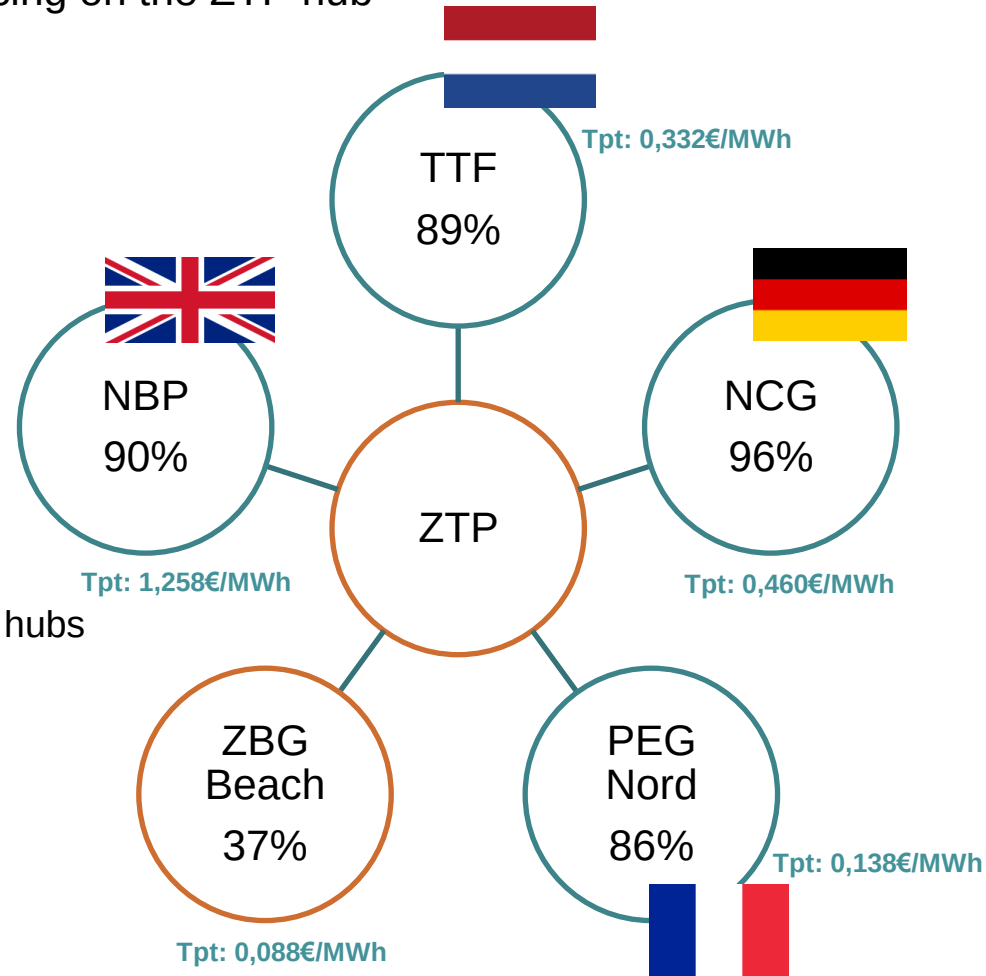
- Improving hub liquidity
- Benefits for the end user

- Cheaper sourcing option:

- Hypothesis:
  - » Analysis based on 2016 figures
  - » Yearly transport tariffs (“Tpt” in chart)
  - » Variable fee included
  - » Gas price: 15€/MWh & 1£=1,14€
- ZTP sourcing is between 86 to 96% of the time cheaper than on the adjacent hubs
- **Belgian sourcing is the cheapest**
- ZBG sourcing is still cheaper than ZTP sourcing but £/€ risk

- Belgian hubs influenced by NBP price

- Brexit influence on gas price to be assessed



## ZTP SUPPLY CONTRACTS INDEXATION (2/2)

- Day ahead index:
  - Reliable index publicly available on Pownext website: <http://www.pownext.com/>
- Monthly index:
  - Currently not published due to the lack of liquidity
  - Current initiative: Market Maker Agreements (at least trippel the current # of transactions)
    - » Aim: Pegas to publish a public monthly index
    - » Aim bis: CREG to publish this index on their website
  - Timing: end of this year (subject to success of MMA's and cooperation with Pownext)
- Contracts renegotiated end of this year → push for ZTP indexation!



# AGENDA

**09h00: Welcome**

**09h30: Introduction**

**A. Bux**

**09h40: Gas supply and demand outlook**

**A. Bux**

**10h30: Focus on Belgium**

**H. Bettonville**

***11h10: Break***

**11h25: L/H Conversion**

**D. Bawin**

**11h45: Metering (operational procedures + indexation)**

**A. Goossens & Q. Vroye**

**12h05 : HUB perspectives and transparency**

**FX. Van Houtte**

***12h30: Lunch***

**14h00: Departure to labo gas.be + Turbo-pressure reduction Sibelga**

**14h15: Start tour**

**16h00: Return Trainworld**

**16h30: Drink**

