

# Network Code Interoperability and Data Exchange Rules 3rd Stakeholder Joint Working Session

Brussels – 11 Dec 2012



# Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

#### Welcome

ENTSOG 3<sup>rd</sup> Stakeholder Joint Working Session on the development of a Network Code on Interoperability and Data Exchange Rules Tuesday 11 December 2012 at ENTSO-E conference area in Brussels

# Welcome





# Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

#### **Panagiotis Panousos**

#### **Business Area Manager, System Operation**

Brussels – 11 Dec 2012

# from the FG to the first draft of the NC

> 1st phase of consultation process is being concluded

#### 3 SJWSs

- 3 meetings with Prime Movers
- 3 meetings with EC/ACER
- Interaction with GRI NW Member States
- Starting from launch documentation...
  - received comments
  - discussed during meetings / WSs
  - clarified issues with ACER / EC
  - identified needs and what can be delivered
- ...we delivered pre-reading material





# Has the process been?

#### > Transparent:



material published: Project plan, minutes, launch doc, responses, presented material...

### > Open:

participants from TSOs, Regulators, commission, shippers, traders, endconsumers, other system operators, 3rd country TSOs, technical associations...

### > Focused on the required deliverable:



legal text concrete proposals and discussion on text

### > Within the timeline:

project plan

### > Adequate:

hopefully!!!





# What have been the challenges?

- > Understanding FG "behind the lines"
  - discussion with ACER, Commission
- > Understanding stakeholders' expectations
  - different groups with different needs, sometimes with conflicting views
- > Getting increased involvement
  - more "technical" code, but which affects stakeholders
- > Dealing with strict timeline
  - Time consuming phases restrict the official consultation period
- > Develop an internally agreed proposal that fits the needs
  - 40 different networks, operating under diverse rules developed and evolved according to national and regional needs
- > Proposal in-line with other codes
  - Under adoption procedure (CAM, BAL), foresee for future needs (data exchange)
- > Harmonise but also keep the door open to evolutions
- Prove that ENTSOG is always a "fair partner"





## Why SJWSs concluded so early?

- > Ideas to be transformed to text, as close as possible to final format
- > Text to serve as a reference point for refinements
- Period for internal processes necessary
- > Period for consultation necessary
- Next consultation phase should focus more on detail





## What are the big steps forward?

- > Transparency is improved
- > Continuous stakeholders involvement foreseen
- > Rules are set
- Harmonisation offered to a necessary level
- > Some flexibility is retained
- > Roles and responsibilities are defined
- Cooperation among TSOs is safeguarded

Can we improve further?





# What is next?

- Refine business rules (use feedback from this meeting)
- > Develop support document
- Develop legal text for the 1st draft NC
- Refine legal text and support doc internally
- > Consult our members
- > Approve the 1st draft internally
- > Publish the 1st draft NC and support doc for consultation (end of Feb)





### How shall Stakeholders be involved from now on?

- > We are always available to receive comments and discuss views
- Consultation on 1st draft (end Feb end Apr 2013):
  - Request for your view
  - Request for possible text proposal
- > Next WSs:
  - <sup>20</sup> Mar 13

<sup>28</sup> May 13





### What is to be expected today?

- > Present current status of project and next steps
- > Present received views
- Present changes to pre-reading material
- > Receive feedback and discuss





### **Outlook NC INT Development Process**

#### Stakeholder engagement **ENTSOG Member work Consultation (1 Month)** Sep 2012 Kick-Off Kick-Off WS: 26 Sep **Project planning and launch** Oct Nov **SJWS 1: 14 Nov SJWS SJWS 2: 28 Nov** Dec Interactive draft network code SJWS 3: 11 Dec JUVVJ development Jan Feb **Consultation (2 Months)** Mar Workshop **Consultation WS: 20 Mar** Apr May **Network Code refinement Conclusion WS: 28 May** Workshop Workshop **Stakeholder support process** Aug **Network Code finalisation** Sep 2013

### **Thank You for Your Attention**

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# **Interconnection Agreements**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

### Hendrik Pollex Adviser Interoperability ENTSOG

Brussels – 11 Dec 2012

### What is on the Agenda

- Stakeholders involvement
- Key Issues for the BR on IAs
  - Transparency
  - Matching
  - Flow Control
  - Allocation
- List of default rules
- Summary



## **Stakeholders' involvement**

#### Stakeholders involved in refinement of draft Business Rules for

#### IAs process:

- > End-users (IFIEC)
- > Shippers (Edison, Gas Terra, GDF Suez, RWE)
- > Traders association (EFET)
- > Producers (OGP)
- >Infrastructure Operators (GIE, CEDEC)
- > Technical Association (EUROMOT)
- > External Consultants
- > ACER
- **>** EC
- > Prime Movers
- > Stakeholders' input at a very early stage and throughout the whole process is of key importance for an excellent NC



## **KEY ISSUE: Transparency and clear rules**

#### >A lot of discussions about transparency

- NUs and ACER / NRAs want to be involved in the development process
  - Requests for consultation in case there is more than one option defined for the different business rules in IAs
  - Because business can be impacted by the rules of IAs
  - Clear timing in the development and amendment process is essential
  - Default rules to be instantly applicable in case TSOs haven't concluded IAs by the end of the compliance period





# **KEY ISSUE: Transparency and clear rules**

#### >How to meet the requirements for transparency and clear rules

- TSOs are obliged to submitted all new or amended IAs to the NRAs
- Whenever the rules for the following items will be changed NUs will be involved in due time
  - Measurement principles
  - Matching rule
  - Allocation rule
  - Exceptional event
- Development, amendment and modification process all have to follow the same timing
- Default rules for all mandatory items will be defined in the NC and can be instantly applied in case TSOs haven't concluded IAs by the end of the compliance period
- Two extra paragraphs as stated in the Framework Guideline will be inserted in the overarching part of the NC to also care for more transparency



# **KEY ISSUE: Matching of Bundled Products**

#### > Request of NUs

- Single nominations only
- Integrate in the existing matching process or leave it out and create a new process
- Shorter lead-time as for unbundled products



#### > How to meet the requirements

Nominations are no longer in here because they are dealt with in the NC for balancing

#### The new process for the matching is not defined yet

- TSOs are starting to define such a process in the first quarter of 2013 under the umbrealla of ENTSOG
- Responsibility within ENTSOG BAL
- Concerning the leadtimes we also following what is stated in the NC for Balancing => 2 hours will remain to be the leadtime



## **KEY ISSUE: Flow Control**

#### >NUs and ACER want to have clear rules for Flow Control

- No commercial interests involved
- Basis is the result of the matching process
- Provided NUs are not affected TSOs may alter the flow
- TSOs may alter the flow in case of extraordinary events
- Default rule that can be applied

#### >How TSOs meet the requirements of the NUs and ACER

- All actions taken for Flow Control at an IP are done only on an operational basis without any commercial aspects
- Basis of the flow control are the confirmed quantities
- TSOs always try to steer the flow as close as possible to the agreed flow calculated out of the sum of the confirmed quantities and taking possible operational requirements into account
- Of course TSOs try to leave NUs unaffected when altering the flow but that can not been guaranteed from a legal point of view
- ONLY TSOs can decide when and why to change the flow Nobody else!



# **KEY ISSUE: Allocation rule OBA**

#### >Requirement according to the FG and by NUs

- OBA should be the preferred allocation rule
  - Quantities are allocated as nominated
  - Shippers know the exact quantities in their portfolios
- OBA should only be used for operational purposes
- OBA should be the default allocation rule

#### >How to meet these requirements

- It is now clearly stated that OBA is the preferred allocation rule
- OBA will only be used for operational purposes
  - In-kind balancing of the OBA
  - Not any commercial activities
  - o It's not a CBA, pure operational!
- OBA shall serve as the default rule
  - Challenge: not possible for TSOs to define a "One-fits-All" size for the OBA for all IPS in Europe as the characteristics of the systems are very different
  - Nearly 60 IPs for 40 TSO in 27 member states
  - This is still under discussion





### **Default rules for the mandatory items**

#### Modification of IA

No default rule necessary because has only to be applied after the compliance period for IAs concluded in accordance with the new NC interoperability

Matching

Lesser-of-rule

Measurement principles

Most likely EN 1776 but under discussion

Flow Control

>No commercial actions involved – pure operational

Allocation

>OBA => The "how" is still under discussion

- Exceptional Events
  - Inform all relevant TSOs and NUs as soon as possible about the impact and duration
  - Fall-back allocation rule => Pro-rata
- Dispute resolution
  - The rules applied before the start of the dispute shall remain applicable until the dispute has been resolved.



### Summary

- We are on track in respect of timing and progress
- A lot of minor refinements after discussion with stakeholders
- Still some hurdles to overcome but no K.O. criterion foreseen



Transparency



Flow Control





Some more remarks about the key issues received already





# Questions and Answers





# **Interconnection Agreements**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

**Stakeholders' views** 

Brussels – 11 Dec 2012

Interoperability network code – position of an association representing the European gas wholesale, retail and distribution sectors

Preliminary views of Eurogas

Jean-Louis Martinaud Chairman of the Interoperability Expert Group



THE EUROPEAN UNION OF THE NATURAL GAS INDUSTRY



### <u>General comments</u> (1)

It is important that a firm policy is developed on IAs, to use these as a vehicle for extending harmonized practices. Connection points with storages and LNG terminals are part of the system and the application of different rules with reference, for instance, to units, data exchange and gas quality, seems an avoidable complication.



#### <u>General comments</u> (2)

Full harmonization should be the goal to the extent that cross-border trade is involved or harmonization is necessary in order to make progress towards market integration. A common template outlining a framework for IAs will contribute to solving interoperability problems, ensuring a certain degree of consistency among IAs signed by different TSOs. As the TSO systems are very different across Europe it would not be feasible to draft a detailed IA that could sensibly apply to all of them.



### <u>General comments</u> (3)

As there are different Gas specifications in each Member State it is necessary to harmonize them across Europe to ease the flow of gas across borders. Therefore Eurogas has raised the question of the links between the Code and the CEN Standard. The Code could also include provisions relating to criteria and procedures if network access is refused on grounds that the gas is non-spec.



### **General comments** (4)

Regarding data exchange one format for communication is essential as it will reduce costs for all participants and would prevent misunderstandings and mistakes.



#### **Interconnection agreement** (1)

When an IA has direct or indirect impacts on network users a consultation should be carried out and information should be provided on the final agreements of these **issues**. This consultation should not be carried out only in case of modification of IAs but also when an IA is first developed. In addition shippers should be provided with sufficient time to adapt to new practices and they should also be allowed to terminate the transmission contract if they consider the new terms as not acceptable.



#### **Interconnection agreement** (2)

> IA should have in addition to the topics listed in 2.1.3. of the Business Rules for Interconnection Agreements, rules on capacity calculation. This section should deal with maximization of capacity, common understanding of methodology to calculate capacity (for example implementation of oversubscription & buy-back mechanisms..), ways to have consistent capacity products (i.e. same firmness of the product on both sides of the IP, consistent bundled products, usable unbundled capacity, ...).



#### **Interconnection agreement** (3)

The NC must guarantee that network users will receive timely information with respects to modifications involving rules on flow control, matching or allocation, that may have an impact on their activity, and will have enough time to intervene on their IT systems or internal procedures, after the modification to the IA rules are made public and before they become effective.



#### **Interconnection agreement** (4)

Concerning the IA's development process, for new IPs it should be ensured that the IA is agreed by a predefined time. If an agreement is not reached, default rules should be automatically applied in order to start commercial operations as planned. The rationale is that shippers who booked capacity should not be exposed to delay due to the TSOs' failure in reaching an IA.



### **Default rule on allocation of gas quantity (1)**

Regarding the allocation options in 2.3.5.2., <u>for</u> <u>sake of simplicity</u> and because it will not jeopardize the functioning of the network, **Option A (OBA – Operation Balancing Agreement)** should not only be the default rule but **should be the only rule in place.** 



### **Default rule on allocation of gas quantity** (2)

### Gas quality (1)

Article 4.1.9. it is said that "TSOs may commence implementation activities in respect of any solution following the approval by the relevant NRAs ". Do we understand that if the relevant NRA does not agree that a solution is required, the TSOs will not be obliged to conduct any further work on the issue? If it is the case, Eurogas considers that **before deciding** not to intervene, the Code should also foresee a verification by ACER that this choice does not represent a relevant barrier to cross-border trade.


#### **Default rule on allocation of gas quantity** (3)

### Gas quality (2)

**Short term monitoring :** Former articles 4.2.4. to 4.2.9. on Eligible Customers' consultation on quality criteria which will be published (technical parameters, frequency,..) have been replaced by a pure definition of these criteria by TSOs which do not take in account network users needs.



### **Default rule on allocation of gas quantity** (4)

#### **Data exchanges**

Although we understand that in this case of Data Exchange contents are business dependent, it would be helpful for users if there was at least a standardization of the mechanisms to upload/ download data. For instance, a standardization of the type of files (e.g. excel, pdf, etc.).

preliminary views

Presenter: Kees Bouwens 'prime mover' on behalf of OGP kees.bouwens@exxonmobil.com

ENTSOG Interoperability network code SJWS-3, Brussels 11 December 2012

What is the overall aim ?

The overall aim of the *interoperability* rules is to ensure that users of two or more transmission systems operated by separate entities in Europe do not face technical, operational, communications or business-related barriers higher than those that would be reasonably expected if the relevant networks were efficiently operated by a single entity.

ENTSOG Interoperability network code SJWS-3, Brussels 11 December 2012

### Transparency

•Where the Network Code allows for different options, the selection process should involve the parties that might be affected and should be transparent

e.g. matching and allocation rules

•Preferably the Network Code defines a clear default rule which could limit consultations to situations where TSOs believe it is justified to use another option

• e.g. default rule for allocation is OBAs

### **Flow Control**

•TSOs shall determine amount and direction of the flow based on user (re-)nominations and the results of the matching process

- Provided NUs are not affected, TSOs may adjust the flow:
  - To correct operational balancing accounts;
  - Based on flow control agreements agreed between the TSOs for the purpose of ramp-up, ramp-down, minimum flow, ...
- In exceptional circumstances, TSOs may alter agreed amount and direction of gas flow when required to comply with:
  - Emergency situations; Safety requirements; Security of supply requirements; Other reasons specified in national rules

Regulation 994/2010 requires that access to cross-border infrastructure is maintained as far as technically and safely possible in the event of an emergency (Art. 10.4)

### **Allocation Rules**



### **Benefits of OBA:**

- Allows NUs to manage imbalances
  - User who ships 100 across the IP is not faced with imbalances on both sides of the IP
  - TSOs should manage IP flow
- Compatible with Hub products
  - User who buys 100 at VP-1 to sell at VP-2 does not run the risk that quantities do not match

### **Allocation Rules**



#### How to correct OBA:

- TSOs settle imbalance in-kind
  - Appropriate for operational balancing not affecting NUs
  - Should not reduce line-pack available to NUs

ENTSOG Interoperability network code SJWS-3, Brussels 11 December 2012

### **Allocation Rules**



#### How to correct OBA:

- TSOs settle imbalance in-kind
  - Appropriate for operational balancing not affecting NUs
  - Should not reduce line-pack available to NUs

#### • TSOs settle imbalance at VP

- When TSOs balance their system by buying/selling gas at the VP
- OBA should not be used for commercial reasons



## **Interconnection Agreements**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

#### **DISCUSSION PANEL**

Brussels – 11 Dec 2012



### Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

#### Welcome

ENTSOG 3<sup>rd</sup> Stakeholder Joint Working Session on the development of a Network Code on Interoperability and Data Exchange Rules Tuesday 11 December 2012 at ENTSO-E conference area in Brussels

# **Coffee break**





# **Gas Quality and Odourisation**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

Monika Kaldonek Adviser Interoperability ENTSOG

Brussels – 11 Dec 2012

### **Stakeholders' involvement**

#### Stakeholders involved in refinement of draft Business Rules

#### process:

- > End-users (IFIEC)
- > Shippers (Edison)
- > Producers (OGP)
- >Infrastructure Operators (GIE, CEDEC)
- > ACER
- **>** EC
- > Prime Movers

SJWSs gave a great opportunity to collect stakeholders' input – best endeavours to refine ENTSOG's initial Business Rules

> Stakeholders' inputs are the feed for first draft of Network Code that will be duly consulted during the 2 months consultation period (March – April) when all Stakeholders are welcomed to express their views



### AGENDA



**Stakeholders' General Support expressed during SJWSs** 



### AGENDA





### **KEY MESSAGES**

#### >General support for BRs and proposed steps:

- 1. analysis
- 2. agree if solution is needed
- **3.** CBA
- 4. Public Consultation
- 5. NRAs approval



- >Early involvement of NRAs will be beneficial
- >ENTSOG propose review of the situation every subsequent year after NC comes into force



### Handling of gas quality differences

#### If TSOs jointly agree that solution is needed, then:

Agreement

> Inform NRAs that solution is required
> Cost Benefit Analysis of potential options
> Develop potential cost recovery mechanisms
> Submit for consultation to all relevant stakeholders:
> Submit proposal for NRAs approval

NRAs involvement diminished only to informing about outcome of TSOs cooperation and approval of proposed solution  $\rightarrow$  if NRAs disagree – ACER in line with 3<sup>rd</sup> Energy package



### Handling of gas quality differences



> ENTSOG foresees Reviewing process of the current situation

#### > Within 12 months after NC comes into force:

- > TSOs analyse IPs in order to check if there is any barrier
- > TSOs list up potential solutions





### AGENDA



- 1. Handling of gas quality differences
- 2. Odourisation practices

**TRANSPARENCY:** 

- 1. Short Term Monitoring
- 2. Long Term Monitoring



### **Framework Guidelines requirements**

"The network code shall oblige TSOs to provide relevant network users with *pertinent indicative information* on Gas Quality and variations thereto. The network code shall classify the cases where it is **necessary or useful** to provide further information to end-users or suppliers on fluctuations of gas quality in order **to allow them to take preventive measures**. The network code shall identify the nature and frequency of submission of such information after duly consulting all concerned parties, so as to allow the concerned parties to take account of the gas quality variations."





### First proposal of draft Business Rules

>The consultation shall seek views from all the Eligible Customers to the following:

- the gas quality parameters
- leadtime
- frequency of update;
- method of communication;
- method of cost recovery
- service level, i.e. quality and reliability of service,

in each case requesting the Eligible Customer to provide **reasoning for** its answers.

TSO shall analyse the responses and identify potential options for delivering services based on the identified requirements







### First proposal of draft Business Rules

>TSOs shall then discuss with their NRAs:

- whether or not gas quality services are required;
- if such services are required, the potential options for delivering the services;
- the initial and ongoing costs;
- cost allocation and cost recovery; and
- an indicative timescale for the introduction of such services.

>Contracts shall be required to be signed between the TSO and each Eligible Customer to whom services are to be provided, following which provision of gas quality information would commence.





### **Received comments:**

#### >Extent of the gas quality variation information exchange:

Informing about significant changes of in-spec gas quality variation is valuable for large-scale end-users sensitive to gas quality

Service shall be dedicated towards specified Eligible Customers

Dedicated 'alert system' rather than publishing short time forecast of gas quality

#### Cost allocation

Cost should be shared by identified Eligible Customers
Contracts shouldn't be part of EU legislation
Socialized costs

#### >Level of details

Minimum service level shall be identified at NC level

- Investment needs for TSOs
- Less involvement of NRAs in the process

>There is need for further / **better cooperation** between TSO and Eligible Customer in a cost efficient way

More Stakeholders' involvement required



### **Refined Business Rules**







>ENTSOG initiative to reinforce transparency

>TSOs to alert parties to potential within gas quality spec variations

>Selection process of Eligible Customers defined at national level



In order to define more details – more Stakeholders' input is required



### **Network Code Content - Transparency**



•Additional need of reinforcement of transparency: TSOs will publish at least once per hour near real time values of Wobbe index and GCV for gas entering the physical interconnection points



### **Network Code Content**

>TSOs are **obliged** to provide affected Eligible Customers with *pertinent indicative information* to inform them about within spec gas quality variations

> There is a need of further consultation to be able to define more details in the Network Code! – Stakeholder's input required





### **Potential Customers – Selection criteria**

>It has to be identified where *necessary or useful* to give variation information in order to allow potential customers *to take preventive measures = customised dedicated service* 



any end-user directly connected to that TSO's network, whose operational processes can be affected by within spec gas quality variations;

any DSO directly connected to that TSO's network; and

any SSO directly connected to that TSO's network, whose operational processes can be affected by within spec gas quality variations.

# >Detailed criteria of potential Eligible Customers shall be identified at national level





### **Thank You for Your Attention**

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### ENTSOG SJWS 11 december 2012

### Gas Quality Short Term Monitoring

#### Fluxys Experience





#### **Fluxys Natural Gas Transmission Network**





#### What does Fluxys do today?

- Online follow-up of gas quality variations
- How?
  - 72 chromatographs installed (on borders and within the grid)
  - all chromatograph readings are sent online to SCADA(\*)
  - SCADA generates gradient or rate alarm
    - > for Wobbe and GCV
    - > variations > 0.28 *kWh/m³(n)/60min*
  - Dispatching operator Fluxys analyses alarm
  - If this variation flows to sensitive end user → phone call to control room of end user

(\*) SCADA = supervisory control and data acquisition



#### SCADA-image of chromatograhs on the Fluxys-grid





#### What does Fluxys do today?

- Who? Limited list of 16 sensitive end users (of 250 in total)
  - Lime producers
  - Fertilizers
  - Glass producers
  - Ceramic producers
  - Chemical industry
  - CCGT + CHP
- List historically grown (>15 years) in dialogue with end users
- Free service, reasonable endeavours, no contractual obligation in Connection Agreement
- Pragmatic and low cost
- A project for quality tracking was started in 2009 but was stopped due to high complexity and costs (capex & opex)





# **Gas Quality and Odourisation**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

Stakeholders' views

Brussels – 11 Dec 2012
Draft Network Code on Interoperability and Data exchange Rules

SJWS3

### IFIEC-CEFIC position on monitoring of gas quality

Dirk Jan Meuzelaar

11 December 2012, ENTSO Building, Brussels



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Industrial end consumers need monitoring for safety operations because the future bandwidth for some applications run out of its Spec

#### Wobbe index MJ/m3 (n)



Max collar (Technical Conditions NMa)



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OEM's are working hard to increase range of Fuel Qualities, but additional scope is required and OEMs do not give guaranties outside gas specifications for equipment

#### **Fuel Gas Flexibility**

### SIEMENS

#### - Performance in dependence on Quality Range



Effects of rapid quality fluctuations leads to reduced liability of operations which has an impact on safety

- Feedstock applications Instable production process / Key process parameters outside normal operation windows
  - Plant trips
  - Unplanned shut down of units
  - Off spec products
- Fuel applications CO formation & flame instability
- We know some examples that variable gas qualities damages equipment
  - Due to deviations of gas qualities some Gas turbines faced high combustion dynamics leading to several failure
  - Easy and simple solutions with existing combustion system not possible
  - In some cases serious damages are possible Flashback damage to burners has





hydrocarbons

Source: E-ON, David Abbott; EDI Quarterly Volume 4 No 1 April 1012 The need for specific information depends more on processes and equipment than for different end-users categories

- Operators of complex equipment and processes need to know the forecast and current value of the Wobbe Index and Caloric Value on a near real-time frequency.
  - Wobbe Index is crucial for GT's
    - During start ups the Wobbe index has to be known and preferably stable for several hours, ideally the Wobbe index at the moment of start up is in the middle of the range...
  - GCV is a driver for feedstock in the process industry
- For gas engines the Methane Number is important
- Operators like to know other components e.g. sulfur, PE number or other impurities.

An alert system is insufficient, because it is impossible to know the specific needs of every end user on a specific moment.



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### Example on-line information Quality prediction system in cooperation with GTS



#### Beside near time information.....

GC Ravenstein GTS

Customer (Geleen NL)

operators also need info at least 2 hrs in advance of gas quality changes



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### Current information provided by Gastransportservices can be used as an example of good practice



*lifiec europe* 

The exposure to fast changes also depend on the location connected to the grid.



### Information is provided by internet

- Gas Chromatographs (GC) are installed at important point in the gas grid
- Its relative cheap to provide other information taken from these GC
- Due to the increased bandwidth of the WI in combination with an increased volatility, end users are forced to monitor and manage the gas quality on a 24/7 basis
- The costs of providing the information may not transferred to these end customers that already are panelized by these new quality specs.



# View of DSOs: Gas Quality





THE EUROPEAN UNION OF THE NATURAL GAS INDUSTRY

**Thomas Deuschle** 





#### "National regulations: (sensitive) customers connected on DSO level shall be informed by DSOs if gas quality is changing."

(Industry (in particular primary industry), NGV-charging stations, local SSOs in total up to several hundreds large customers per MS besides millions of household customers)

- 1) DSOs are responsible to inform customers about GQ change (depend on national regulations in some cases even effects!)
  - · deviation levels must be discussed with (sensitive) customers
  - regarding
    - GCV, Wobbe Index, CO<sub>2</sub> content, Sulphur content ....
- 2) DSOs have to inform customers on a timely manner (timely means enough time for the customer to prepare)

<u>or</u>

implementation of gas quality analysis on demand site where necessary  $\rightarrow$  who is paying that?

3) DSOs are (financial) liable to end users if hold accountable for not proper informing end users

### **Gas Quality**



#### DSOs ask:

- 1) Although not part of this NC, DSOs ask for the proper (legal) tools to match GQ demand and supply from a customer perspective in order to facilitate the market.
- 2) It is vital for DSOs to be part of information chain to allow for proper information provision
- 3) An early warming system should be set up, information from TSO is always correct and on time
- 4) Liability of TSOs for quality of gas which is injected in the DSO system

### **Questions?**





### **Back-up slide: example specs**

	exit RNB		entry RNB			exit LNB / entry RNB		entry LNB
	Aansluit- en transport- voorwaarden Gas - RNB		Aanv. Voorw. RNB Groen Gas Invoeders	Aansluit- en transport-voorwaarden Gas - RNB		Netkoppelingsvoorwaarden Gas-LNB		Invoedvoorwaard en Gas - LNB
	vigerende tekst per 09-02- 2012	concept N2012-531 versie 13-01-2012	versie 14 15-01-2009	vigerende tekst per 09-02-2012	concept N2012-531 versie 13-01-2012	vigerende tekst per 09-02-2012	voorstel N2010-336 d.d. 17-02-2010	voorstel N2010- 336 d.d. 17-02-2010
Calorische Upper Value			34,5 – 36,0 MJ/m³ <sub>n</sub> èn ≥ GTS- waarde	31,6-38,7 MJ/m³ <sub>n</sub>	≥ gem.GTS-waarde			
Wobbe-index	43,46- 44,41 MJ/m³n	43,46-44,41 MJ/m³ <sub>n</sub>	43,46-44,41 MJ/m³n	43,46-44,41 MJ/m³n	43,46-44,41 MJ/m³n	43,46-44,41 MJ/m³n	43,46-44,41 MJ/m³ <sub>n</sub>	43,46-44,41 MJ/m³ <sub>n</sub>
Water dew point			-10 °C (8 bar)	-10 °C (8 bar)	≤ -32 °C (8 bar)			≤ -8 °C (73 bar)
Temperature( Feed in))			0-20°C	0-20°C	5 – 20 °C			10-40°C
Zwavel (totaal)	≤ 45 mg/m³ <sub>n</sub>	≤ 30 mg/m³ <sub>n</sub>	≤ 45 mg/m³ <sub>n</sub>	≤ 45 mg/m³ <sub>n</sub>	≤ 30 mg/m³ <sub>n</sub>	≤ 45 mg/m³ <sub>n</sub>	≤ 30 mg/m³ <sub>n</sub>	≤ 30 mg/m³ <sub>n</sub>
Anorganisch gebonden zwavel	≤5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>	≤ 5 mg/m³ <sub>n</sub>
Mercaptanen/Alkylthiolen S-gehalte	≤ 10 mg/m³ <sub>n</sub>	≤ 6 mg/m³ <sub>n</sub>	≤ 10 mg/m³ <sub>n</sub>	≤ 10 mg/m³ <sub>n</sub>	≤ 6 mg/m³ <sub>n</sub>	≤ 10 mg/m³ <sub>n</sub>	≤ 10 mg/m³ <sub>n</sub>	≤ 6 mg/m³ <sub>n</sub>
Odorant(THT)	voldoend e ruikbaar	10-40 mg/m³ <sub>n</sub>	10 - 40 mg/m³ <sub>n</sub>	10 - 40 mg/m³ <sub>n</sub>	10 - 40 mg/m³ <sub>n</sub>	> 10 mg/m³ <sub>n</sub>	10-36 mg/m <sup>3</sup> n	0 mg/m <sup>3</sup> n
Ammonia			≤ 3 mg/m³ <sub>n</sub>	≤ 3 mg/m³ <sub>n</sub>	geen			
Chloorhoudende verbindingen			≤ 50 mg/m³ <sub>n</sub>	≤ 50 mg/m³ <sub>n</sub>	geen			
Fluorhoudende verbindingen			≤ 25 mg/m³ <sub>n</sub>	≤ 25 mg/m³ <sub>n</sub>	geen			
Waterstof Chloride (HCl)			≤ 1 ppm	≤ 1 ppm	geen			
Waterstof cyanide (HCN)			≤ 10 ppm	≤ 10 ppm	geen			
(CO)			≤ 1 mol%	≤ 1 mol%	0 mol%			
Kooldioxide in droge gasnetten			≤ 10,3 mol%	≤ 6 mol%	≤ 10,3 mol%		≤ 8 mol%	≤ 3 mol%
BTX (benzeen,tolueen,xyleen)			≤ 500 ppm	≤ 500 ppm	•			
Aromatische koolwaterstoffen			≤ 1 mol%	≤ 1 mol%	≤ 250 ppm			0,025 mol%
Zuurstof in droge gasnetten	≤ 0,5 mol%	≤ 0,5 mol%	≤ 0,5 mol%	≤ 0,5 (3) mol%	≤ 0,5 mol%	≤ 0,5 mol%	≤ 0,5 mol%	0,5 mol% (RTL)
Waterstof			≤ 12 vol%/m³ <sub>n</sub>	≤ 12 vol%/m³ <sub>n</sub>	≤ 0,5 mol%			0,02 mol%
Methaangetal			> 80	> 80				
Stof			technisch vrij	technisch vrij	technisch vrij			technisch vrij
Siloxanen			≤ 5 ppm	≤ 5 ppm	≤ 5 mg/m³ <sub>n</sub>			
Ruikbaarheid			voldoende	voldoende				reukloos
Fosfine			technisch vrij					
Pathogenen /corrosieve micro-org.			technisch vrij		geen			
koolwaterstofdauwpunt					≤ -3 °C			
PE-waarde					≤ 5			
o.a. methanol, glycol, virussen					geen			
relatieve dichtheid							0,555 – 0,700	
aardgascondensaat								≤ 5 mg/m³ <sub>n</sub> (-3 °C)
vaste koolwaterstoffen								technisch vrij

# View of DSOs: Odourisation





THE EUROPEAN UNION OF THE NATURAL GAS INDUSTRY

**Thomas Deuschle** 

"De-odourisation of currently odourised gas in transmission grids has consequences for DSO"

- In case the IP connections also feed DSO grids, certain responsibilities (and liabilities) are pushed to the TSO exit points and to DSOs before had no experience with dealing with those responsibilities.
- 2) In above cases, the consideration of safety for end-users must always be the first priority!
- 3) Additional, investments in infrastructure on TSO exit points are needed.
- There are no marketable technical solutions for de-odourized gas reinjection in TSO system (biomethane injection on DSO level and re-feed in to TSO level)



### **Odourisation**



### DSO ask:

- Thorough investigation by the MS about the consequences (legal, operational, liability) in cases were IP connections also feed into DSO grids
- 2) Proper planning within the MS for DSOs to take up their new protocols.

### **Questions?**







# Business Rules for Odourisation Chapter V



# **Position of GrDF – french DSO**

We consider that the current draft business rules are insufficient to solve issues related to different odourisation practices.

In order to encourage TSOs to reach an agreement to effectively address barriers resulting from differences in odourisation practices, <u>the NC shall clearly ask all parties involved</u> in analysing the hurdles related to different odourisation practices to:

- Identify and give an assessment of the impacts related to the eventual transit of odorised gas.

- Evaluate local solutions to mitigate those impacts.

- Define the level of odorants in the gas below which those impacts are acceptable

- Evaluate the differents solutions to reach this level at IP

GrDF





These elements are necessary in order to have a realistic view of the impacts related to the transit of odourised gas and to have a reliable cost benefits analysis when compared to a shift toward the transit of non-odourised/deodourised gas



The 1st question raised in the presentation made by ENTSOG on november 14<sup>th</sup> during SJWS1 was:

What criteria should define the existence of a barrier in the context of odourisation?

Some problems linked to the transit of odourised gas have been identified, but none of them seems to dramatically hamper the cross border flows between some countries, as was shown during SJWS1 in Marcogaz's presentation.

In France we observe that all industries are using odourised gas. Only certain chemical facilities may need gas desulfurization.

 $\rightarrow$  There is a need to define whether or not there is a barrier



11 décembre 2012

### Odourised gas; non odourised gas; de-odourised gas!

The assumption of non-odourised gas at IP is mentioned in the guideline of NRA but the shift toward non odourised gas would radically change the odourisation practices of certain countries and <u>may adversely affect the</u> <u>safety of the gas chain</u>.

This matter is not under the sole consideration of National Regulation Agency but in the scope of Health & Safety authorities and, in France, subject to approval by the DSO's.



When addressing a safety issue, the expectations of the parties are not only functional equivalence but equivalence in terms of performances between the proposed system and the current one

To meet such expectations may lead to **very costly solutions** that have to be weighed against

• the costs of implementing local mitigation solutions in the countries that would receive odourised gas.

• the costs of implementing at IP processing devices of deodourisation at an acceptable (and realistic) level.



11 décembre 2012

# **Proposal for the chapter Odourisation**

Paragraph 5.2 : we propose to add the blue parts to the existing text :

At IPs where gas is capable of physically flowing from a TSO's network in which gas is odourised to one that does not odourise the gas but is prevented from flowing due to the different odourisation practices, adjacent TSOs shall reach an agreement to resolve the barrier within six months after the entry into force of this Network Code or, where the barrier is identified after this time, within six months from the date that both TSOs agree that such a barrier needs to be removed.

For this purpose, adjacent TSOs should actively, during this six months period :

- Identify and give an assessment of the impacts related to the eventual flow of odorised gas

- Evaluate local solutions to mitigate those impacts

- Define the level of odorants in the gas below which those impacts are acceptable

- Evaluate the differents solutions to reach this level at IP

Where such agreement is reached, TSOs shall submit details of the impact assessment and the proposed solution to their NRAs.

GrDF

# nce : , adjacent

TSOs in cooperation with relevant Member State Authorities shall, within the following twelve months:

 develop options to remove the barrier, produce cost estimates and estimation of implementation time of each potential option; and

• define a detailed plan, including funding arrangements, to use the most cost effective option to facilitate a shift towards physical flows of nonodorised/deodorised gas at the specific cross-border interconnection point or to implement local solutions to mitigate the effects of odorised gas. The assessment leading to the choice of one of those options shall take the implementation time into account and be submitted for approval to the Member State Authorities and the concerned NRAs (as indicated in Article 7(4) of Regulation (EC) No 713/2009).



11 décembre 2012



# **Gas Quality and Odourisation**

### **3<sup>rd</sup> Stakeholder Joint Working Session**

**Discussion Panel** 

Brussels – 11 Dec 2012



### **3<sup>rd</sup> Stakeholder Joint Working Session**

### **Colin Hamilton, National Grid**

**Brussels – 11 Dec 2012** 

### 3.1 Common set of units:

(i) The common units for pressure, temperature, volume, calorific value, energy, and Wobbe-index shall be:

<ul> <li>Pressure</li> </ul>	:bar
<ul> <li>Temperature</li> </ul>	: ° C (degree Celsius)
✓ Volume	: m <sup>3</sup> (n) (at 0° C and 1.01325 bar(a))
✓ Gross Calorific Value	: kWh/m³(n)
<ul> <li>Energy</li> </ul>	: kWh (based on GCV)
<ul> <li>Wobbe-index</li> </ul>	: kWh/ m <sup>3</sup> (n)(based on GCV)

- (ii) For pressure, it should be indicated whether it refers to absolute (bar(a)) or gauge (bar(g)).
- (iii) Combustion reference temperature for GCV, Energy and Wobbeindex shall be 25°C



### 3.1 Common set of units:

Units are aligned to EC 715/2009:

"in consistent units, in particular kWh (with a combustion reference temperature of 298,15 K) shall be the unit for energy content and m 3 (at 273,15 K and 1,01325 bar) shall be the unit for volume".

Not consistent with European Standards for the gas infrastructure CEN/TC 234



# 3.1 Utilisation of Common Set of Units:

(i) The common set of units shall at least be used for communications associated with the operational procedures and information exchange described in the European network codes between adjacent TSOs and between TSOs and other Counterparties (electronically received communications) related to transportation of gas across an Interconnection Point or in respect of the publication of data on a common platform.



# 3.3 Utilisation of other Units:

- (i) The utilisation of other units in addition shall be permitted for data communication between adjacent TSOs where both parties agree and between TSOs and other Counterparties if required by national regulatory/legislative frameworks.
  - Text above consistent with EC 715/2009
    - "In addition to the format above, publication in other units is also possible";





# Questions and Answers





# Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

#### Welcome

ENTSOG 3<sup>rd</sup> Stakeholder Joint Working Session on the development of a Network Code on Interoperability and Data Exchange Rules Tuesday 11 December 2012 at ENTSO-E conference area in Brussels

# Lunch





# Data exchange

### **3<sup>rd</sup> Stakeholder Joint Working Session**

### Jef De Keyser

### **Adviser Interoperability, ENTSOG**

Brussels – 11 Dec 2012
# **Data Exchange - Agenda**

#### 1. Feedback SJWS2

- 2. Data Exchange NC objectives
- 3. Evaluation document based DE
- 4. Cost Benefit an approach
- 5. Data Exchange Solutions
- 6. Questions & Answers



# **Stakeholders' involvement**

#### Stakeholders involved in refinement of draft Business Rules

#### process:

- > End-users
- > Shippers (EFET, Edison,...)
- > Producers (OGP)
- >Infrastructure Operators (GIE, Eurogas,...)
- >External consultants
- > ACER
- **>** EC

#### SJWSs gave a great opportunity to collect stakeholders' input – best endeavors to refine ENTSOG's initial Business Rules

> Stakeholders' inputs are the feed for first draft of Network Code that will be duly consulted during the 2 months consultation period (March – April) when all Stakeholders are welcomed to express their views



#### Feedback SJWS2

- Need for flexibility in implementation timeline
- Handbook supported for technical details
- Support to include standard solutions for protocol, network and format in NC
- Stakeholder involvement in defining and evolving standards as well as in definition of content of communication

#### Legal attention points

Network code is the only binding document
 Network code must define the protocol for the supported communication types

No reference to Handbook in NC

Implementation time – 12 months



## Data Exchange - Agenda

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### Framework Guidelines

#### **BARRIERS**

#### → appears 7 x in Framework Guidelines

The overall aim of the interoperability rules is to ensure that users of two or more transmission systems operated by separate entities in Europe do not face technical, operational, communications or business-related **barriers** higher than those that would be reasonably expected if the relevant networks were efficiently **operated** by a **single entity**.



### Framework Guidelines

#### >No barriers:

 Remove obstacles in order to facilitate gas transmission in EU (59 internal TSO connection points in EU)

#### Single entity:

 $\rightarrow$  Virtual one operator for the whole network

> What does this mean for data exchange?

Make data exchange systems compatible for all TSOs in EU

→ Harmonization

→ IT wise: One common supported solution for data exchange in EU
 → Business wise: Harmonisation of Business Processes



### Framework Guidelines

6. Data exchange

Without prejudice to existing legislation, these Framework Guidelines aim at extending **harmonisation of data exchange solutions** to all areas where TSOs exchange data among themselves or communicate data to counterparties.

The Network Code shall foresee a **common** set of data formats, data network and exchange protocol (**'data exchange solution**') for the reliable, secure and smooth exchange of information among TSOs, as well as from TSOs to relevant counterparties.

The selection of such a data exchange solution by ENTSOG shall be based on a **cost-benefit analysis** subject to **public consultation**. This analysis, as well as the subsequent selection process will take into account in particular the following considerations:

- > best available technologies, particularly in terms of security and reliability;
- > the actual spread (whether the solution considered is widely used) of the solutions considered;
- > the volume of data traffic required to transfer information;
- > the costs of first introduction and cost of operation;
- > the potential for discrimination of small shippers or new market entrants;
- > the synergies with current electricity data exchange rules;
- > the compatibility with counterparties' data exchange solutions.



#### **INTRODUCTION: WHAT & HOW**





#### Components for Data Exchange:

- Data content
- Data Network
- Data protocol

#### Types of Data Exchanges - toolbox:

- Document based (3 technical alternatives)
- Integrated (web services one technology)
- Interactive (web browser one technology)



## **Data Exchange - Agenda**

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### **Data Exchange – Evaluation document based DE**

Evaluated protocols (together with external expert)

- AS2
- ebMS
- AS4

#### Technical evaluation

AS4 best score; offers more options for the future:

- Rich Meta Data in msg header (e.g. service, action)
- Reception awareness
- Duplication detection
- Pull functionality

#### **Cost evaluation**:

- Implementation cost expected to be equal
- Maintenance cost expected to be similar
- Expected life cycle AS4 expected to last longer (most recent technology)



# **Data Exchange – Evaluation document based DE**

#### Risk evaluation:

- AS2: lower implementation risk, proven technology
  - used by 35% TSOs
- ebMS: technology well known but many option possible
  - oused EFET, Entso-e (MADES)
- AS4 (based on ebMS)
  - higher risk since no experience by TSOs;
  - Risk can be minimized by setting up an ENTSOG group to support implementation and share experiences

#### Conclusion:

AS4 is the proposed communication protocol for doc. based DE

**ENTSOG will manage the whole process** 



## **Data Exchange - Agenda**

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#### **Cost-Benefit analysis:**

Easy to say but ...

not so easy to answer

- Proposed approach:
  - Make a distinction between
    - Format
    - Protocol
  - How can we meet the requirements of the FG?
  - What is the impact (cost) for all involved parties?





#### **Cost-Benefit analysis: Format**

- Option 2: Accept all current data formats -Possible to communicate in all different data formats
  - High cost to implement and maintain all data formats by all parties
  - Partial/Full interoperability
     →No harmonization
  - → NOT AN OPTION



#### **Cost-Benefit analysis: Format**

- Option 3: Go for full harmonisation: Develop Business Requirements specifications and common data formats
  - Cost: good (one) investment for all (one implementation)



 Full harmonisation (same format supported by all TSOs)

Standardisation of Data Exchange Content

→ EDIGAS XML format





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#### **Cost-Benefit analysis: Protocol**

- Option 1: do nothing
  - No cost
  - Limited communication
     →No harmonisation
     poor interoperability

#### → NOT AN OPTION



#### **Cost-Benefit analysis: Protocol**

- Option 2: Keep current situation- different protocols
  - High cost to implement and maintain all protocols
  - Partial interoperability no common agreement
     →No harmonization

#### ➔ NOT AN OPTION

#### **Cost-Benefit analysis: Protocol**

- Option 3: Go for full harmonisation: One protocol for the whole market
  - High cost seen # parties
     Not all parties need to communicate with parties of other EU member states
  - Full interoperability (is it needed?)

#### ➔ NOT A REALISTIC OPTION





#### **Cost-Benefit analysis: Protocol**

- Option 4: One common protocol for the whole market
   co-existence of common and current protocols (transitional)
  - Cost for TSOs and CP who need to communicate with a different (local) protocol with another TSO
    - "<u>limited" number of implementations</u>
       Not all parties need to communicate with parties of other EU member states
      - More time to migrate to one solution
  - Full interoperability at the require levels

➔ MOST REALISTIC OPTION



## **Data Exchange - Agenda**

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### **DATA EXCHANGE- Solutions overview**

		Data Content Format		Data Exchange Protocol	
Toolbox	Network	Structure Format	Content Format	B2B Standard	Communication Protocol
Document based Data Exchange	Internet	XML	Edig@s	AS4	HTTP(S)
Integrated DE	Internet	XML	Edig@s	SOAP	HTTP(S)
Interactive DE	Internet	none	tbd		HTTP(S)



#### Data Exchange – the European future...



## **Data Exchange - Agenda**

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#### **3<sup>rd</sup> Stakeholder Joint Working Session**

Stakeholders' views

Brussels – 11 Dec 2012

## View of DSOs: Data Exchange





THE EUROPEAN UNION OF THE NATURAL GAS INDUSTRY

#### **Distribution Committee**

Joost Gottmer

### Data exchange: general



	TSO	DSO	
Number of organizations in the EU	39	2,200+	
Number of organizations per MS	1-3	5-800	
Number of customers per organisation	50-500	100,000-10,000,000	
Market facilitation	$\checkmark$	$\checkmark$	
- Switching (Shipper / Suppliers)	$\checkmark$	$\checkmark$	
- Customer usage measurements	$\checkmark$	$\checkmark$	
- Allocation process	$\checkmark$	$\checkmark$	
Total length of grid (2011)	2,043,476 km		
Total number of connections (2011)	115,800,000		



#### DSOs supports the objective of the NC on data exchange

- A common set of data formats, data networks and exchange protocols to facilitate efficient trading and transport of gas for network users
- 2) However there are a few issues we would like to take into consideration when developing the NC







# "The scope of DE is in reality much bigger and the consequences exceeds those expected in the FWGL and NC"

- 1) In some MS it is not allowed to have different systems for local use and international use side-by-side
  - The common model implies that in the end EU-wide not 40 TSOs but 40 TSOs+ >2200 DSOs + >1000 suppliers need to change their IT
- 2) DSOs fear to be pushed by international operating Network User into the common model.
  - DSOs communicate with TSOs and NU's about allocation and reconciliation data, needed to balance the network users portfolio
- 3) NC too prescriptive, should only describe the goals and not the means
  - Technical details should be in a side document, details in a code make it ridged
- 4) The objective of the FWGL "users...do not face technical, operational, communications or business-related barriers higher than those that would have been reasonably expected, if the relevant networks been efficiently operated by a single entity." can be met if the DSO-world is taken into account.



#### DSOs would like:

- A full risk analysis and CBA looking at for instance scalability with full discussion on all aspects with all stakeholders before any selection is made
- 2) A more moderate first step, going to today's most used system would be advisable
- 3) To gain much needed flexibility a side document containing technical details should be considered

### **Questions?**







# Some remarks on Data Exchange

Philipp Daniel Palada, ENTSOG SJWS INTER, 11 Dec 2012




#### ... best approach top achieve common targets

- The financial impacts or additional costs for non-TSO's may exceed those of the TSO's by far
- buy-in and commitment of entire market needed
- Mandatory solutions and investment obligations will just cause resistance





## **Pragmatic solution**

### With involvement of concerned parties

- Buisiness Requirements Specifications will transform Business Rules of Network Codes (such as CAM/CMP, BAL) into Data Exchange solutions
- Network Code INTER will deliver needed toolbox for implementation of Data Exchange
- Network Code INTER will define a <u>common</u> data exchange solution, which will be implemented by TSOs within 12 months after adoption
- Local counterparties and TSO's can communicate with existing communication solution if compatible with business requirements of Network Codes
- Further harmonization via migration will come as a joint effort





## Harmonization





## Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

#### Welcome

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# **Coffee break**





## Network Code Interoperability and Data Exchange Rules 3<sup>rd</sup> Stakeholder Joint Working Session

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# **Closing remarks**



## Conclusions

#### Interconnection Agreements:

- Foresee Nus involvement in developing and revision of las
- Transparency important when Nus are affected
- Investigate how to promote OBAs as preferred solution

## Gas Quality

- End-users prefer tailor-made solution (at national level) / communication of GQ real time (WI, GCV) from selected network points, when values are outside a range of  $\pm 5\%$
- Odorisation practices are related to safety rules / investigation necessary before changing (Member States responsibility)

#### Units

 No coherence between proposed units (also included in existing Reg and proposed NCs) and CEN standards. Problems to be investigated

#### Data exchange

- Support of flexible implementation time / co-existance of local solutions with european common solution
- Stakeholders involvement in evolution of standards



## Conclusions

#### Feedback

- Always welcomed and expected
- Publication
  - 1<sup>st</sup> draft of NC to be expected end Feb'13 (2-month public consultation)

### Workshop

• 20 Mar 2013 (details to be sent)







## **Thank You for Your Attention**

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