Network Code Interoperability and Data Exchange Rules

2nd Stakeholder Joint Working Session

Brussels – 28 Nov 2012
Welcome
Introduction to 2\textsuperscript{nd} SJWS

- Kick-off workshop 26\textsuperscript{th} Sep:
  - \approx 80 participants
  - Presented material & notes published

- Project Plan consultation:
  - 37 responses received
  - Non-confidential responses & report published

- 1\textsuperscript{st} SJWS
  - 79 participants
  - Presented material & notes published

- 2\textsuperscript{nd} SJWS
  - Agenda & pre-reading material published

- 3\textsuperscript{rd} SJWS
  - Registration is open (till 7\textsuperscript{th} Dec)
## Outlook NC INT Development Process

### ENTSOG Member work

<table>
<thead>
<tr>
<th>Stage</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Project planning and launch</td>
<td>Sep 2012</td>
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<tr>
<td>Interactive draft network code development</td>
<td>Oct, Nov, Dec</td>
</tr>
<tr>
<td>Network Code refinement</td>
<td>Jan, Feb, Mar</td>
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<tr>
<td>Network Code finalisation</td>
<td>Apr, May, Jun</td>
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### Stakeholder engagement

<table>
<thead>
<tr>
<th>Consultation (1 Month)</th>
<th>Kick-Off WS: 26 Sep</th>
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<tbody>
<tr>
<td>SJWS 1: 14 Nov</td>
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<td>SJWS 2: 28 Nov</td>
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<td>SJWS 3: 11 Dec</td>
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<td>SJWS 3: 11 Dec</td>
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<tr>
<th>Conclusion</th>
<th>Conclusion WS: 28 May</th>
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<td>Stakeholder support process</td>
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NC development process: actual state

Invitation letter EC: 11/9
Publication project plan: 13/9
MF presentation NC INT: 2/10
End consultation project plan: 11/10
Publication Launch Documentation: 10/10
Publication material for SJWS1: 25/10
Prime Mover Meeting 1: 7/11
Stakeholder involvement
Prime Mover: 5 (OGP, EFET, GIE, CEDEC)
Active SJWS participant: 19
Consultation Respondent: 8 + Observers: 5)
Publication pre-reading material for SJWS2: 14/11
SJWS 1: 15/11
Publication material for SJWS1: 29/10
Trilateral meeting EC/ACER: 28/11
SJWS 2: 20/11
Prime Mover Meeting2: 15/11
NC development process: upcoming activity

28/11 SJWS2

30/11 Trilateral EC/ACER

04/12 Publication pre-reading material for SJWS3

05/12 Prime Mover Meeting3

11/12 SJWS3

13/12 Trilateral EC/ACER

Dec’12-Jan’13 Development of draft NC
Code development – from topic to draft text

Draft project plan

Consultation

Stakeholder involvement

Launch documentation

Pre-reading material

Final Business Rules

Legal support

Draft NC for consultation (27 Feb)

Response feedback

Prime movers’ feedback (3 meetings)

ACER / EC feedback (trilateral meetings)
SJWS1 – input received

> Gas Quality and Odourization:
  - How CEN standards will become binding? Role Member States.
  - End–users: it is important to receive information on WI and GCV variations
  - Relevance of Long Term Monitoring?
  - Odourization: changing practices is MS responsibility (safety issue)

> Interconnection Agreements:
  - More transparency in developing/amending IA's
  - Impact Bundled products (Matching, ...) to be clarified. Procedures to be defined based on bundled products
  - OBA as preferred allocation rule?
  - List of standards for measurement principles
Structure of event

AGENDA

Please note all sections (other than the Welcome) will allow time for open discussion

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<thead>
<tr>
<th>No</th>
<th>Description</th>
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<td>Opening (ENTSOG: P. Panousos)</td>
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<td>&gt; Objectives</td>
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<td>2</td>
<td>Data Exchange Selection process</td>
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<td>(ENTSOG: Y. Jones/ D. Mazzotti/ D. Serruys/ C. Hamilton, J. De Keyser)</td>
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<td>&gt; Data Exchange – Network code Development process</td>
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<td>&gt; Communication Types and technologies</td>
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<td>3</td>
<td>Data Exchange Solutions and Roadmap</td>
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<td>&gt; Selection criteria &amp; Proposed communication</td>
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<td>&gt; Migration Roadmap proposal</td>
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<td>&gt; Stakeholders’ view</td>
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<td>EFET - F. Sleeuwagen</td>
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<td>GIE – P. Palada</td>
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<td>Units (ENTSOG: C. Hamilton)</td>
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<td>&gt; Proposed common set of Units</td>
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<td>EFET - F. Sleeuwagen</td>
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<td>Lunch</td>
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<td>Coffee Break</td>
<td>15:30-15:45</td>
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<td>7</td>
<td>Closing remarks (ENTSOG: P. Panousos)</td>
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* EC is considering making use of its right of proposal to put forward a text for comitology in NC CAM.
Objectives of SJWS

> “The SJWS are working sessions which will enable exchange and development of ideas for inclusion in the network code. During this phase of the network code development activity ENTSOG envisages wide interaction with all participants.”

**Detailed thoughts and positions are to be discussed during the 3 SJWS**

IMPORTANT STAKEHOLDER INVOLVEMENT -> REFINEMENT DRAFT BUSINESS RULES
Thank You for Your Attention

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Data exchange

2nd Stakeholder Joint Working Session

Jef De Keyser, ENTSOG
Yvette Jones, Gaslink
Dirk Serruys, Fluxys
Daniele Mazzotti, SNAM
Colin Hamilton, National Grid

Brussels – 28 Nov 2012
Data Exchange - Agenda

1. Introduction: Data Exchange and Business Processes
2. Data Exchange Network code development
3. Data Exchange Solutions
4. Selection criteria for Data Exchange solution
5. Implementation Roadmap
6. Questions & Answers
INTRODUCTION: Scope of Network Code INTEROPERABILITY

- **Covered** by this Network Code

1. **Data Exchange:**
   → Define the **HOW** = define the communication types between TSOs and their Counterparties

2. **Interoperability:**
   → Define the **WHAT** for the INT business process(es)
     - Identify the data that have to be exchanged for the Matching process

- This Network Code is the **technology basis** for the development of the Data Exchanges for the **other network codes** (CAM, BAL, ...)

Proposed development process for Data Exchanges of other NCs:
  - Define communication requirements
Data Exchange

INTRODUCTION: WHAT & HOW

WHAT

- Business Logic (processes and activities)
  - Market rules

- Document structure and content
  - Implementation Guide

HOW

- Reliable Message Delivery
  - Communication program
  - Transparency
  - Security
  - Integration

- Communication Protocols
  - IT standards (e.g. HTTPS, SOAP)

- Network Infrastructure
  - e.g. Internet, private network, virtual private network
1. Development Network Code
   - NC development (ENTSOG & Stakeholders)
   - Selection of the appropriate communication tools (ENTSOG)

2. Data solution development
   - Based on NC: define Business Requirement Specifications (BRS)
     - Business Process Model (Actors, Systems, Use Case Diagram)
     - Business Requirements (Text Document)
     - Functional Specification (Sequence & Workflow Diagrams)
     - Information model (identify the required business information for every data flow)
   - Based on the BRS: develop implementation guideline document
     - Define the detailed structures for every data flow (Edig@s-XML)
     - Define implementation recommendations
     - Update document change log

   - Validation period (publication draft version on ENTSOG website & stakeholder consultation)

3. Publication of Implementation Guidelines
Example of BRS (Business Requirement Development CAM)

1. **Data solution development**: Business Process Model (Actors, Systems, Use Case Diagram)
Example of BRS (Business Requirement Development CAM)

2. Data solution development: Business Requirements (use case)

Determine the capacity that is presented to the market for auction.

Diagram:
- Auction office
- Transmission System Operator
- Registered Network User
- Define offered capacity
- Establish additional capacity following bidding round closure
- Notify network users of offered capacity
Data Exchange
Example of BRS (Business Requirement Development CAM)
Data Exchange
Example of BRS (Business Requirement Development CAM)

4. Data

Diagram showing the process of data exchange in an auction process. The diagram includes steps such as submitting a bid, receiving a bid, and various decision points and actions within the auction process.
Data Exchange

Example of BRS (Business Requirement Development CAM)
Data Exchange

Example of BRS

6. Next steps
   • Develop the detailed message specifications (ENTSOG & EDIGAS WG)
   • Add implementation details
   • Produce a complete Implementation Guideline

   • **Validate** the Implementation Guideline (ENTSOG + Stakeholders)
     – Publish draft version
     – Stakeholder session with presentation & feedback
     – Update Implementation Guideline (review if required)

   • **Publish** the implementation Guideline
     – General overview
     – Functional definition
     – Workflow scenarios
     – References
     – Information model
     – XML implementation
     – Document change log
Data Exchange - Agenda

1. Introduction: Data Exchange and Business Processes
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6. Questions & Answers
What is Data Exchange?

• Example 1 – nomination:
  – Data Exchange is the method used by a NU to inform a TSO of the quantity of gas that he wants to transport from A to B in the network

• Example 2 – capacity auction bid:
  – Data Exchange is the method used by a NU to inform a Capacity Auction platform of the transport capacity he wants to buy in the network

→ Parties & Data
Reasons for harmonisation:

- Operational efficiency
  - Facilitate entry of new market participants
  - Common technologies can be used to communicate with all TSOs in EU
  - Reduction of maintenance cost
  - Reduce number of Data Exchange technologies
  - More efficient use of IT staff to keep systems operational
  - Improve stability and availability by focusing on one technology

  → Harmonisation of the data exchanges

- Modeling of Business Processes
  - Same (business) rules for all users

  → Harmonisation of Business Rules for the same business process
## 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.
Data Exchange- Harmonisation of Data Exchanges

Data Formats

Data Network

Exchange Protocol

TSOs

Relevant counterparties

Data Exchange Solution (s)
TSO-TSO and TSO to counterparties

Network code on Interoperability - Data Exchange section
Data Exchange - Scope

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.

- Areas and Counterparties
  - Areas
    - To cover all data exchanges required for the Network Codes and Guidelines adopted by EC
  - Communication
    - Limited to electronic data exchanges
  - Counterparties
    - All parties that exchange data with TSOs
The selection of any solution can only come after following the sequence:

1. **Requirements**
   - Framework guideline
   - ACER
   - Evaluation criteria

2. **Capabilities/Toolbox**
   - Document DE
   - Integrated DE
   - Interactive DE

3. **Technical assessment**
   (compare solutions ↔ Requirements)

4. **Cost/Benefit analysis**

5. **Solution & migration path**
Data Exchange - Agenda

1. Introduction: Data Exchange and Business Processes
2. Data Exchange Network code development
3. **Data Exchange Solutions**
4. Selection criteria for Data Exchange solution
5. Implementation Roadmap
6. Questions & Answers
Data Exchange: ICT physical context
Data Exchange: ICT logical context

[Diagram showing data exchange and formats]
DATA EXCHANGE

What you see

behind the scene

process flow

Validate & archive
Translate to standardized format
Encrypt & sign
Lookup recipient address details
send
Internet transfer
Acknowledge receipt
receive
verify sender
decrypt & verify signature
translate to in-house format
Validate & archive

process flow
Data Exchange – Framework Guidelines

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.

Data Exchange Solutions

- Data Exchange **types**
- Data **network**
- Data Exchange **protocols**
- Data **formats**
Data Exchange

> Data Exchange Types

“Toolbox”

- Document based Data Exchange
- Integrated Data Exchange
- Interactive Data Exchange
Document based Data Exchange

- File transfer between IT systems
- The smallest unit of information transfer is a ‘document’
- Adheres to the concept of ‘loose’ coupling
- Traceability (documents)
- Typically needs translator software

Document based Data Exchange - Solutions

- ebXML, ebMS
- Applicability Statement 2 (AS/2)
- Applicability Statement 4 (AS/4)
**Integrated Data Exchange**

- Direct exchange of information between applications
- Initiator can be the sender or requestor of the information
- Used for big data volumes & time critical processes
- Offers flexible query possibilities
  - Frequently changing data structures
Interactive Data Exchange

Exchanges of information based on an interactive dialog controlled by the initiator of the communication

- Not suited for big data volumes
- Alternative solution for small users
- Big overhead and risk for human errors
- Manually upload or download of files possible

Interactive Data Exchange solution: Web browser

- Low (no) implementation cost for end-users (browser is standard offered in PC software)
- Quick set-up for operation
Data Exchange

> Data Network

- Business requirements
  - Accessibility for all parties involved in the international gas business
  - Operator independent network connections due to the geographical spread of connected user
  - Easy and fast, flexible and worldwide accessibility
  - Reliability and up-time of the network

- Technical solutions
  - Public networks
    - X25 (outdated)
    - Internet
  - Private networks
    - ISDN (digital telephone lines)
Data Exchange

> Data Formats

- **Structure** formats → How the file is structured IT wise
  - CSV – comma separated values
  - XLS files (excel)
  - EDIFACT (electronic data interchange for administration commerce and transport) – UN
  - XML - Extensible Markup Language

- **Content** formats → How the content is organized business wise
  - Free text (no content structure)
  - EDIGAS
Data Exchange

Data Formats – Example XML-EDIGAS format for Nomination

```xml
<Nomination Version="EGAS40" Release="2">
  <Identification v="NOMINT1111"/>
  <Type v="01G"/>
  <CreationDateTime v="2012-09-30T11:18:00Z"/>
  <ValidityPeriod v="2012-10-01T04:00:00Z/2012-10-02T04:00Z"/>
  <ContractReference v="STAIZTSHIPPERACCOUNT"/>
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## Data Formats – Example Excel format for Nomination

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Coffee break
Data Exchange - Agenda

1. Introduction: Data Exchange and Business Processes
2. Data Exchange Network code development
3. Data Exchange Solutions
4. Selection criteria for Data Exchange solution
5. Implementation Roadmap
6. Questions & Answers
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.
Data Exchange

Evaluation Criteria

Selection criteria

- Non Technical Requirement
- Compatibilities
- Synergies
- Small Users
- Cost – Benefit
- Best Technology: Technical Requirements
- Actual spread
- Cost first introduction & operation

Evaluation Criteria

Cost – Benefit

Best Technology:
• Technical Requirements

Actual spread

Cost first introduction & operation
Data Exchange - Actual Spread

Data format example

Edig@s XML & Edifact

Kiss-A:

(*) Overview based on a TSO questionnaire Q2 2012
Data Exchange - Actual Spread

Communication protocols used (*)

AS2:

FTP:

WS:

ebMS:
Data Exchange - Synergies

Synergy & Compatibility (Technical)

ENTSOG (AS2, AS4, ebMS, WS, ...)

ENTSOE (MADES)

EFET (ebMS)
Security & Confidentiality

- Confidentiality: Encryption of messages
- Identification of counter party (Signature of messages, user or system password, ...)
- Acknowledgement of message receipt and message processing
- Non repudiation (Proof of Receipt)
- At least one message delivery

Data Exchange – Criteria
Data Exchange – Criteria

Technology [Technological requirements:]
- Performance
- Information Carrier
- Payload
- Traceability

Risk
- Expected life cycle (e.g. 10 years life cycle)
- Maturity
- Actual spread & available products on the market
- Customer support
Data Exchange – Criteria

Cost

- Costs assuming to implement a solution from scratch
  - Implementation
  - Infrastructure

- Maintenance Cost
  - System patching
  - System upgrade
  - Configuration changes
# DATA EXCHANGE - Solutions overview

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<th>Toolbox</th>
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<th>Data Exchange Protocol</th>
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Data Exchange - Agenda

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Interoperability NC – Data Exchange Roadmap

**Delivery Timescales**

**Design, Build & Implement Common DE Solution**
- Early Adopter TSOs & New Market Participants

**Implement & Migrate to Common DE Solution**
- Existing Counterparties & New Participants

---

**Interoperability Network Code**

- Development
- Comitology
- Implementation
- Interoperability

**Other Network Codes**

- CMP
- CAM & Balancing
- Gas Day

**Governance**

- Develop ITC Policy
- Review & Approve
- Define long-term view for Working Groups (e.g. TOIR)
- NC Requirements & Data Exchange review, change control and stakeholder feedback
- Monitoring & Assurance (Int WG)
- ENTSO governance for EDIG@S Data Format in place

**Data**

- CAM/Balancing Data Formats / Messages V1
- CAM/Balancing Data Formats / Messages V2
- Deliver Gas Day Forms / Messages
- Review, Optimise, Issue updated Data Codes & Formats
- Monitoring & Assurance (TSAIG)
- EDIG@S Knowledge Transfer & Governance
- EDIG@S Governance and Maintenance

**Technology Migration Path**

- Design and Approve Common Data Exchange solution
- Bilateral DE Solutions
  - TSO - TSO
- Bilateral DE Solutions
  - TSO – Market Participant
- Monitor Implementation of Bilateral Solutions and migration path to Common Solutions
- Integrated Data Exchange Solution
- Document-based Data Exchange Solution
- Interactive Data Exchange Solution
- Implementations aligned to IT investment strategies
- Data exchange using Common Solutions

**Participant Implementation**

- Deliver Data (EDIG@S) for CAM & Balancing
- Deliver Data (EDIG@S) for Gas Day

**Design Common Data Exchange solution with ENTSOG**

Available time period for implementation of Common Data Exchange Solution
Data Exchange

Migration Roadmap:

- Roadmap provides a single point of reference and a coordinated overview of different activities

- Many technologies in use: roadmap demonstrates a migration path to a common solution

- Implementation timings of solutions by TSOs shall coordinate with implementation of corresponding business processes

- Some flexibility of implementation schedules by NUs may be allowed
# Data Exchange - Agenda

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Data Exchange

Questions

> What do you see as an important criteria to take into consideration for the selection of a new Data Exchange solution?

> Do you see a problem with implementing the new communication standard within 12 months by the TSOs’ Counter Parties? If so what is the timeframe you would recommend?

> What is the level of details do you consider relevant in the Network Code?

> Do you see a need to have more detailed technical information in order to support the implementation of the NC? (e.g. to take into account technological evolutions)

> How do you see the consultation process for the development of the implementation support document? (e.g. stakeholder involvement)

> Consultation process for evolutorial changes in the future
Data Exchange

Thank you
Data exchange

2nd Stakeholder Joint Working Session

Stakeholders’ views

Brussels – 28 Nov 2012
EFET presentation to ENTSOG SJWS2 on Data Exchange & Units Brussels, Nov 28th 2012

Filip Sleeuwagen

f.sleeuwagen@efet.org
Agenda

1. Intro
2. EFET’s position on:
   - Data Exchange
3. Additional Remarks
1. Intro

- The objective is not complete but efficient harmonization.
- Current ways round many of the barriers involve an additional layer of complexity or, worse still, are papering-over-the cracks to hide the differences and increase the level of unpredictable risk.
- Improved interoperability is essential if the single market is to operate efficiently with well connected balancing zones established over the whole of Europe. The forthcoming Network Code (and its Impact Assessment) should aim to help this process by looking forward to what will be necessary in 5-10 years time rather than relying solely on analysis the status quo.
2. EFET’s Position on: Scope and Application

- **Interconnection Points between EU member states** and between TSO systems if they are operated separately within a Member State. Optimal to extend to Interconnector Points with non-EU States if practical.

- **Consistent approach for all communication protocols, processes and procedures** between the user and the ‘national’ TSO regarding all their operations within the EU. The use of standard data formats and content needs to be specified in the Network Code.

- If **DSOs, SSOs & LSOs cooperate in applying the same rules**, it would enhance the FG’s application and help to facilitate greater interoperability, since they are integrant part of the gas market. A pragmatic approach must be found to achieve this recognizing the implementation times involved and the need to keep the primary focus on the services provided by TSOs.
2. EFET’s Position on: Scope and Application

- We favour **a very high level of harmonisation** within the whole EU in order to achieve the creation of the single gas market.

- "Business as usual" is not acceptable, ‘full’ harmonisation is necessary for units, conversion rules and data exchange, and possibly for Odorisation depending on the resolution of current issues. A very high level of harmonisation with built-in contingency between TSOs is essential for interconnection agreements and for capacity calculation, but if these are extended to inter-governmental agreements or arrangements between TSOs and SSOs, DSOs and LSOs, then only partial harmonisation (standardised principles, local implementation) should be required for those cases.

- The level of harmonisation is difficult to separate from the geographic installation scope of the Framework Guidelines.

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EFET’s Position on: Data Exchange

- Data exchange is crucial for gas trading. The more data communicated then the more cross-border trading is made efficiently. **Harmonization of the data format and data content** is also necessary to avoid undue discrimination between traders. Furthermore, EFET has a strong preference that the **same format for Data exchange is used also by SSOs and LSOs** to ensure their integration into a fully interoperable EU gas market.

- EFET is in favour of a **full harmonisation process for data exchange with a standardised messaging protocol**: the format of this protocol must be harmonised, but the content should be more flexible and adapted to the context.

- **Capacity bookings** (real and estimations), **gas flows** (real and estimations), **actual gas quality**, **maintenance periods** (scheduled and unscheduled) and the data required for **nomination and re-nomination processes** must all have standardized and clearly defined format and content.

- The **open standard** for Data exchange should define **format, content and communication (messaging) protocol** to standardize at maximum the processes to be implemented, minimize the implementation efforts by potentially offering a reference non-exclusive software implementation. Such data format must be maximally based on existing market data standards as currently in place for the energy community (**Commodity product Markup Language – CpML**)

- **Information disclosure** on real time is essential for the EU market functioning, its liquidity and integration. Both the format and content needs to be standardized if data processing is to be practical and the efficiency benefits realized.

- Voluntary rules lead to interpretation and implementation variants, which increase the operational issues of such a process exponentially (e.g. difficulties in connecting the implemented process variants to TSOs, operation burden to foresee reconciliations between the different variants, etc.). It is crucial to lay down all of these rules (process, content, data format and messaging/communication topics) in **strict mandatory guidance**.
3. Additional remarks

- All proposals in these Framework Guidelines that improve interoperability are welcomed, whether by bringing simplifications that reduce risk (harmonisation of units for instance) or by tackling major hurdles to cross-border trade such as odorisation. But there are other interoperability issues that may have been missed. EFET suggests to write the Framework Guideline in such a way that it allows for small but important interoperability issues to be raised during the Network Code development process.

- Harmonisation of nomination and renomination seems to have disappeared from these FG on interoperability. The lack of harmonization related to the nomination procedure as a whole (deadlines for nomination & renomination by shippers and confirmation by TSO) is an obstacle to the efficient functioning of the market, as it affects the efficient allocation and use of capacity with a direct impact on the efficiency of the gas market. We fully support the establishment of harmonised timelines for Day-Ahead and Within-Day Nomination/Re-nomination/Confirmation procedures.

- Whilst it is helpful that at a high level an outline standardised timeline is now proposed in the Balancing Network Code, this does not cover all the nomination procedures, nor does it provide the detailed level of harmonisation that is required for full interoperability. It is essential that these issues are fully addressed. To the extent that this proves not to be the case in the balancing network code then the topic will need to be included in this interoperability Framework Guideline.
Thanks for your attention

European Federation of Energy Traders

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www.efet.org
EFET Gas Committee has responded to the Questionnaire

Summary of our response:

- We strongly support sufficient harmonization to enable efficient operation of wholesale gas trading markets throughout Europe: “what would an ISO do?”
- Some parts of the framework guidelines on interoperability, in particular data exchange rules, will need to apply to DSOs, SSOs and LSOs.
- Need standard units to be used for TSO communication (e.g. for information provision, capacity bookings, nominations etc.)
- Open standard data formats, content definitions, processes and communication protocols that must be applied between TSOs, Shippers, Traders, Regulators and all relevant market participants
- Harmonization of nomination and re-nomination processes is necessary (and will need to be in the scope if it is not in other Network Codes.)
Some remarks on data exchange

Philipp Daniel Palada, ENTSOG SJWS INTER, 28 Nov 2012
The deliverables of this NC

• The scope of the NC is clearly limited to Interconnection Points, but
• It will have at least indirect impact on the data exchange of the entire market (and consequently go beyond the scope)
• The financial impacts or additional costs for non-TSO’s may exceed those of the TSO’s by far
• Excessive IT-requirements could act as an entry barrier,
  • existing solutions must not be devaluated,
  • data exchange harmonization requires CBA-justification
ENTSOG approach to overcome timing problem

• FG requires harmonization of Data Exchange prior to implementation of the respective business rules
  • Neither CAM/CMP nor Balancing finalized
  • Even if INTER-NC could pre-describe some procedures of these NC’s a NC is too in-flexible in the fast changing environment of IT (and data exchange)

• Implementation Guideline (Handbook) best way to handle these issues (even if not legally binding)
  • NC to describe process of set up data exchange rules
  • Detailed business rules/procedures and respective IT-implementation in Implementation Guideline (Handbook)

• Stakeholder involvement key for proper implementation
  • Broad acceptance success factor
  • Envolvement not only now but during all future adjustments
  • Potential IT-investment obligations for market participants require transparent economic evaluation and transparent approval mechanisms (and consequently the right to reject proposals)
What to fix in NC and Handbook

**Flexibility essential**

- There are existing formats and procedures for data exchange, the proposed solution shall take into account the actual spread
- An implementation roadmap and potential exemptions needed to avoid stranded investments
- Fit for purpose solutions instead of expensive over-engineering to protect non TSO’s
Data exchange

2nd Stakeholder Joint Working Session

Discussion

Brussels – 28 Nov 2012
Units

2nd Stakeholder Joint Working Session

Colin Hamilton, National Grid

Brussels – 28 Nov 2012
A lack of harmonisation with regards to the units used by TSOs along the gas value chain may constitute a barrier to cross-border trade and access to markets. The Network Code shall determine the use of harmonised units at least for energy, volume, pressure and gross calorific value, for the TSOs to use when communicating to counterparties.

Where the harmonisation of units has already been covered by EU legislation or in a Network Code adopted by ENTSOG under Art 8(2) of the Gas Regulation, the Network Code shall not duplicate these provisions, but shall introduce further harmonisation, insofar it is deemed necessary for the purposes of interoperability as defined in these Framework Guidelines.
Units

Common set of units:

- The common units for pressure, temperature, volume, calorific value, energy, and Wobbe-index shall be:
  - Pressure: bar
  - Temperature: °C (degree Celsius)
  - Volume: m³(n) (at 0°C and 1.01325 bar(a))
  - Gross Calorific Value: kWh/m³(n)
  - Energy: kWh (based on GCV)
  - Wobbe-index: kWh/ m³(n)(based on GCV)

(i) For pressure, it should be indicated whether it refers to absolute (bar(a)) or gauge (bar(g)).

(ii) Combustion reference temperature for GCV, Energy and Wobbe-index shall be 25°C.
Utilisation of Common Set of Units:

- 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.
Utilisation of other Units:

- 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.

- Where TSOs use other units the conversion factors used shall be published by the TSO.
Units

Questions and Answers
Units

2nd Stakeholder Joint Working Session

Stakeholders’ views

Brussels – 28 Nov 2012
EFET presentation to ENTSOG SJWS2 on Data Exchange & Units
Brussels, Nov 28th 2012

Filip Sleeuwagen

f.sleeuwagen@efet.org
Agenda

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2. EFET’s position on:
   - Units
3. Additional Remarks
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EFET’s Position on: Units

- Although the current situation does not appear to be a major barrier that prevents trading opportunities within the more liquid markets, the use of non-standardised units, however, introduces unnecessary operational risk, complexity and costs to the daily activities of shippers and could therefore discourage new entrants or limit cross-border trading activity.

- Harmonization of units principally eases the communication among TSOs and between TSOs with other involved parties and contributes to efficient market functioning, whilst contributing positively to the management of measurements.

- EFET is in favour of full harmonisation of units (especially any units underlying capacity bookings, nominations and balancing) across Europe. Harmonisation should include all units that are used for capacity, nominations, gas flows, gas quality or balancing. Whilst extending beyond that is not necessary from a network user perspective, it would be helpful to have official naming conventions for other units and an official conversion table.
3. Additional remarks

- All proposals in these Framework Guidelines that improve interoperability are welcomed, whether by bringing simplifications that reduce risk (harmonisation of units for instance) or by tackling major hurdles to cross-border trade such as odorisation. But there are other interoperability issues that may have been missed. EFET suggests to write the Framework Guideline in such a way that it allows for small but important interoperability issues to be raised during the Network Code development process.

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Summary of our response:

- We strongly support sufficient harmonization to enable efficient operation of wholesale gas trading markets throughout Europe: “what would an ISO do?”
- Some parts of the framework guidelines on interoperability, in particular data exchange rules, will need to apply to DSOs, SSOs and LSOs.
- Need standard units to be used for TSO communication (e.g. for information provision, capacity bookings, nominations etc).
- Open standard data formats, content definitions, processes and communication protocols that must be applied between TSOs, Shippers, Traders, Regulators and all relevant market participants.
- Harmonization of nomination and re-nomination processes is necessary (and will need to be in the scope if it is not in other Network Codes).
Harmonisation of units – Use in CEN standards related to gas infrastructure

ENTSOG JSWS 2, 2012-11-28, Brussels

Daniel Hec, Marcogaz for CEN/TC 234
© Hiltrud Schülken, CEN/TC 234 Secretary
Units already used and defined in European and international standards

With view to the general European harmonisation and the use of units in the generally acknowledged European Standards for the gas infrastructure, CEN/TC 234 respectfully propose to switch the units to those used in the European Standards.
## Use of units in related CEN standards

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ENTSOG Business Rules INT 0327-121023</th>
<th>European Standards for gas infrastructure (CEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume((^1))</td>
<td>(m^3) (0°C, 1.01325 bar(a))</td>
<td>(m^3) (15°C, 1.01325 bar(a))</td>
</tr>
<tr>
<td>Gross Calorific Value (GCV)</td>
<td>(\text{kWh/m}^3) (25°C, 0°C, 1.01325 bar(a))</td>
<td>(\text{MJ/m}^3) (15°C, 15°C, 1.01325 bar(a) or 1013.25 hPa (a))</td>
</tr>
<tr>
<td>Energy((^2))</td>
<td>(\text{kWh}) (25°C, 0°C, 1.01325 bar(a))</td>
<td>(\text{MJ}) (15°C, 15°C, 1.01325 bar(a) or 1013.25 hPa (a)(^3))</td>
</tr>
<tr>
<td>Wobbe Index</td>
<td>(\text{kWh/m}^3) (25°C, 0°C, 1.01325 bar(a))</td>
<td>(\text{MJ/m}^3) (15°C, 15°C, 1.01325 bar(a) or 1013.25 hPa(a)(^3))</td>
</tr>
<tr>
<td>Reference combustion temperature</td>
<td>25 °C</td>
<td>15 °C</td>
</tr>
<tr>
<td>Reference Volume measurement temperature</td>
<td>0 °C</td>
<td>15 °C</td>
</tr>
<tr>
<td>Reference pressure</td>
<td>1,01325 bar (a)</td>
<td>1,01325 bar(a) or 1013,25 hPa (a)</td>
</tr>
</tbody>
</table>

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\(^1\) Note: ISO 13443 recommends that the reference conditions are stated as: volume measurement reference temperature, reference pressure.

\(^2\) Note: ISO 13443 recommends that the reference conditions are stated as: combustion reference temperature, volume measurement reference temperature, reference pressure.

\(^3\) Note: Currently, the draft EN on gas quality uses 1013.25 hPa (a), all other relevant European Standards use 1.01325 bar (a).
### Relevant CEN/ISO Standards in the context of ENTSOG units

<table>
<thead>
<tr>
<th>CEN/ISO Standards</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 1594 &quot;Gas infrastructure - Gas pipelines with maximum operating pressure over 16 bar – Functional requirements&quot;</td>
<td>Volume is defined under normal and standard conditions. Gas quality is defined by making reference to ISO 13686 (see below).</td>
</tr>
<tr>
<td>EN 1776 &quot;Gas infrastructure – Gas measuring systems&quot;</td>
<td>Volume and combustion reference defined by making reference to EN 437 (see below).</td>
</tr>
<tr>
<td>EN 437 &quot;Test pressures – test gases – Appliance categories&quot;</td>
<td>All CEN/TC 234 standards refer to one or the other of these both standards for the gas quality until the new M/400 standard is available.</td>
</tr>
<tr>
<td>ISO 13686 &quot;Natural gas – quality designation&quot;</td>
<td></td>
</tr>
<tr>
<td>CEN/ISO Standard</td>
<td>Remark</td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
</tr>
<tr>
<td>WI 00234070 Gas Quality – Type H – present draft scope (M/400)</td>
<td>Draft scope refers to Wobbe Index given in EN 437 and is currently subject to discussion. The draft standard is based on M/400 and ISO 12443 and is basis for the final scope. Mandate M 400 states that &quot;The standards shall be defined according to reference conditions as recommended by the technical committee ISO/ TC 193. (ISO 13443)&quot;</td>
</tr>
<tr>
<td>ISO 13443 Natural gas Standard reference conditions</td>
<td>States &quot;The standard reference (or base) conditions of temperature, pressure and humidity (state of saturation) to be used for measurements and calculations carried out on natural gases, natural-gas substitutes and similar fluids in the gaseous state are 288.15 K and 101,325 kPa(^{(4)}) for the real dry gas.&quot; And gives recommendation for conversion in other conditions.</td>
</tr>
</tbody>
</table>
Thanks for your attention and the consideration of the CEN/TC 234 statement!

Contact address:

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Mail: schuelken@dvgw.de
Marcogaz comment on Business Rules Chapter III units

ENTSOG SJWS 2
28th November 2012 Brussels
• ENTSOG proposal
  - Use kWh, reference conditions 25°C, 0°C, 1.01325 bar(a)
  - Use for TSO-TSO communication and other parties

• Marcogaz point of view
  - GCV used to express energy on the whole gas chain
  - Proposal harmonises only one part of the chain,
  - Some National references different
  - Consequences still a lot of complexity will remain
Wobbe index

• Wobbe index is a **specification essential for safety purposes**
• As such it shall be:
  – Unambiguous
  – Clear
  – Understandable by everyone

• Standards are using MJ/m$^3$ (15°C, 15°C, 1013.25 hPa)
  – EN 437 basis for certification of gas appliances
  – Future gas quality standard should use same units and references

• Network code should use same unit and references
  – Wobbe index: MJ/m$^3$
  – Reference combustion temperature 15°C
  – Reference Volume measurement temperature 15°C
  – Reference pressure 1013.25 hPa
- Units and reference conditions to be defined carefully
- Develop a unique set of units and reference conditions is preferable
- To be applied on the whole gas chain
- In association with NRA and National & European metrology
- Minimising the global cost introduced by changing metering conditions, information system, etc.
Units

2nd Stakeholder Joint Working Session

Discussion

Brussels – 28 Nov 2012
Coffee break
Closing remarks
Conclusions

- *Notes and presented material to be published next week*
- *Feedback for business rules welcomed, preferably before 4\textsuperscript{th} Dec (on non-binding basis)*
- *Official consultation on draft NC in Mar-Apr’13*
- **Data exchange:**
  - Need for some 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
- **Units:**
  - Have to stay in line with existing Reg. and NCs
  - Interaction with CEN activity is necessary so as to achieve harmonisation
Thank You for Your Attention

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