Network Code Interoperability and Data Exchange Rules

Third Countries Workshop

Introduction & Welcome

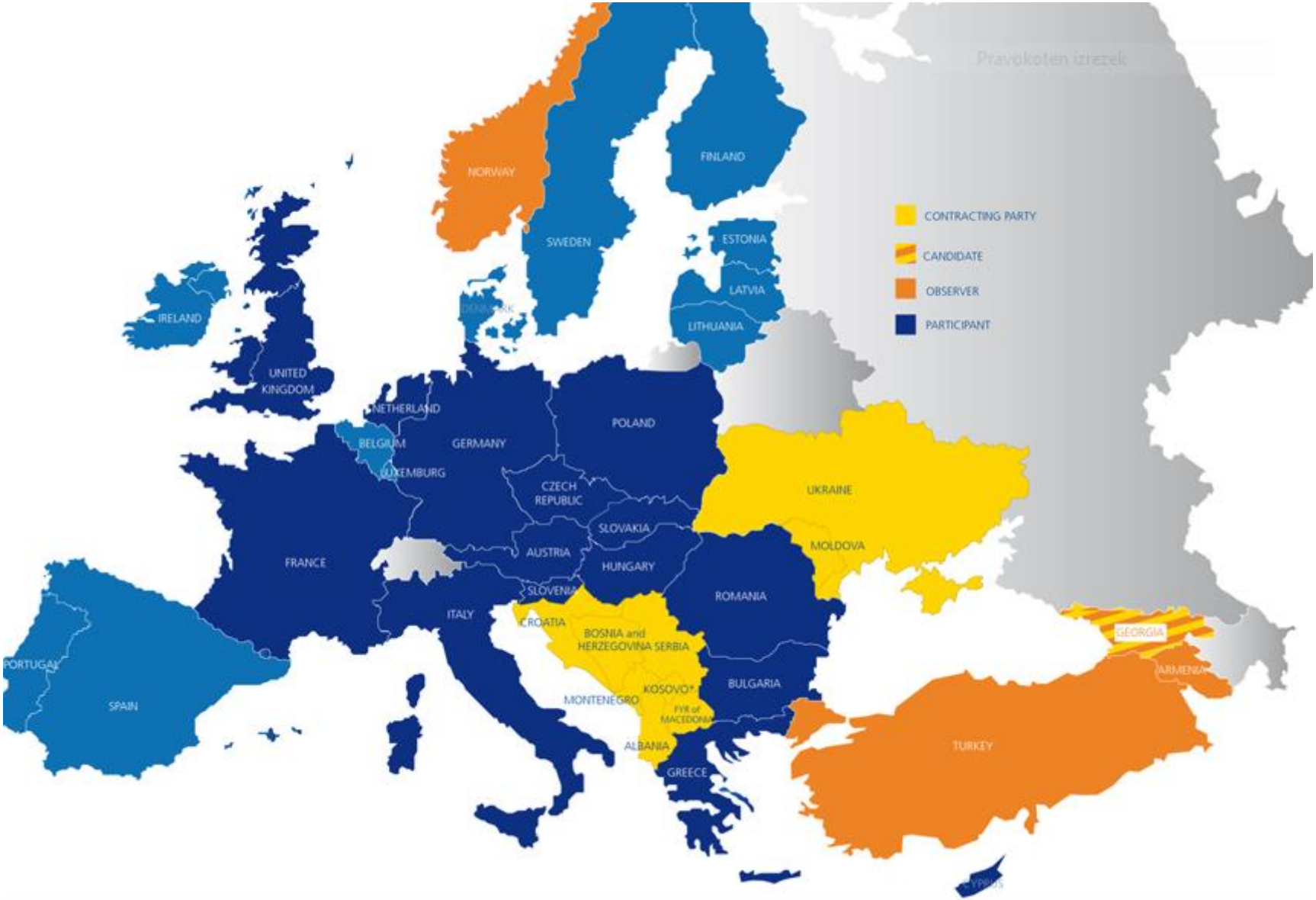
Energy Community

Vienna – 16 April 2013

ENERGY COMMUNITY

mag.Janez Kopač
Director, Energy Community Secretariat

THE COMMUNITY – A LOOK AT THE MAP



- **October 2005 – signature**
- **July 2006 – enters into force**
- 01/01/2007 BG + RO join EU
- May 2010 - Moldova
- February 2011 – Ukraine

Institutions

MINISTERIAL COUNCIL

PERMANENT HIGH LEVEL GROUP

} Political decisions

REGULATORY BOARD (ECRB) → Advisory body

↳ Working groups

SECRETARIAT (VIENNA) → Monitoring, coordination, support

Stakeholder involvement

INSTITUTIONS

compared to EU-structure

Energy Community		EU
Secretariat	Steering Monitoring	Commission, ACER
Ministerial Council(1p.a.)	Governments	Ministerial Council
PHLG (4 p.a.)	Ministries	~ COREPER
Gas, Electricity, Oil, Social	Fora	Gas, Electricity, Oil, Social/ Customers
ECRB (4 p.a.+ WGs)	Regulators	ENTSO, ACER (4 p.a.+ WGs)

THE COMMON LEGAL FRAMEWORK

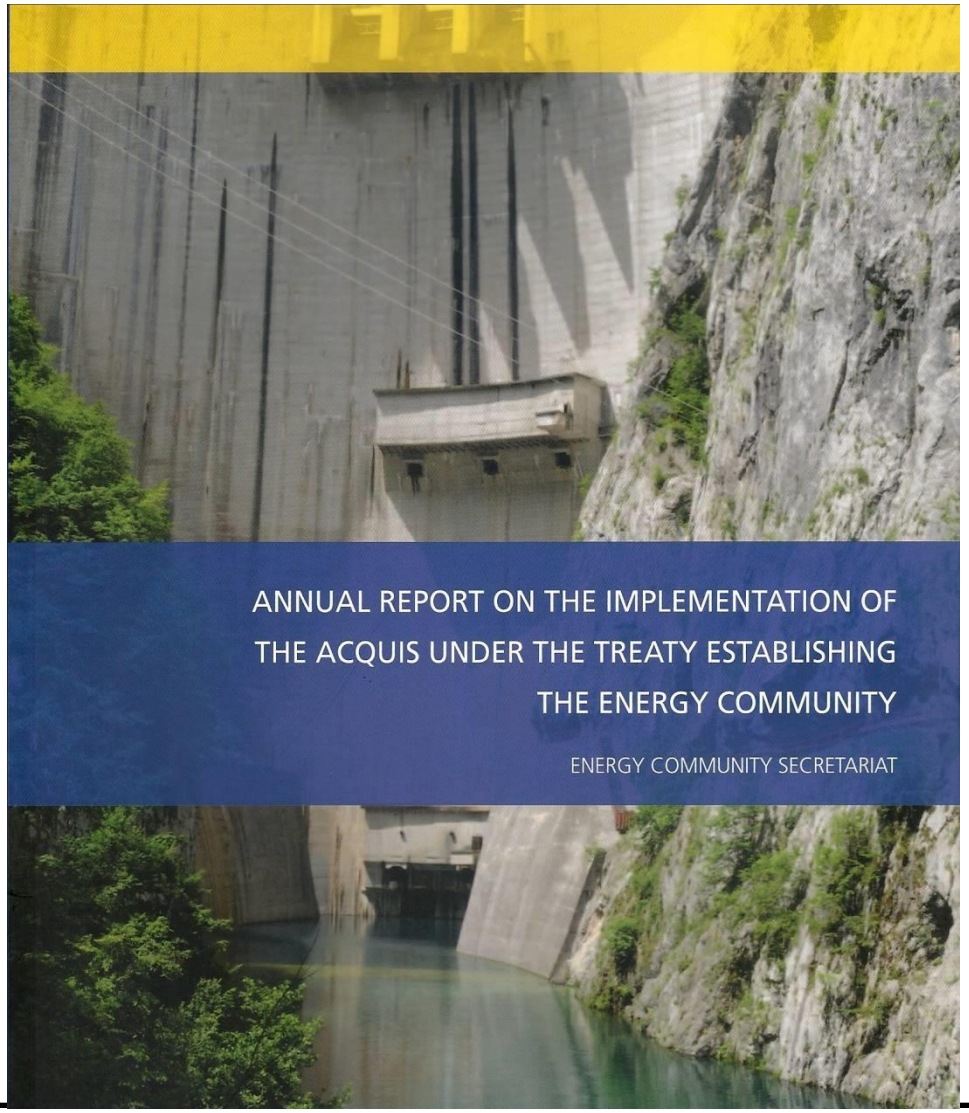
1) <u>Title II:</u> Implementation of the acquis communautaire

acquis of the Energy Community (in Contracting Parties)

- Gas (Third package)
- Electricity (Third package)
- Environment
  - Directive on environmental impact assessment
  - Large combustion plants directive
  - Sulphur in fuels directive
  - Endeavour to accede: Kyoto Protocol; Council Directive 96/61/EC concerning integrated pollution prevention and control
- Competition
- Renewable energy sources (Directive on the promotion of the use of energy from RES)
- Energy efficiency — Energy services, buildings and labeling directives
- Antitrust and state aid
- Statistics — Reg.on energy statistics, Dir.on the transparency of gas and electricity prices
- Oil — Directive on minimum stocks of crude oil/petroleum products

- Energy Statistics – by 31st December 2013
- Directive 2009/28 on Renewables – by 1st January 2014
- Third Package on electricity / gas – by 1st January 2015
  - + missing rules from “Second Package” !
- Large Combustion Plants Directive – by 31st Dec. 2017
- Sulphur in Fuels Directive was due for 31st Dec 2011 !!
- Energy Efficiency
- Oil stocks – by 1st January 2023

http://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Legal/EU_Legislation


ANNUAL REPORT ON THE IMPLEMENTATION OF
THE ACQUIS UNDER THE TREATY ESTABLISHING
THE ENERGY COMMUNITY
ENERGY COMMUNITY SECRETARIAT

Gas acquis in the Energy Community: Third Package

The original gas acquis evolved – starting from the Directive 2003/55/EC (2005 by the Treaty), Regulation (EC) 1775/2005 and Directive 2004/67/EC were introduced by the Ministerial Council Decision in 2007

9th Ministerial Council on October 6th 2011 adopted a Decision on the implementation of the Directive 2009/73/EC and Regulation (EC) 715/2009 ("Third Energy Package") – general deadline is January 1st 2015

Deadline for implementation of articles of Directive 2009/73:

- Article 9 (1) - TSO unbundling – 1 June 2016 (an extension in case of Moldova - 1 January 2020)
- Article 9 (4) - derogations from TSO unbundling – 1 June 2017
- Article 11 – certification in relation to third countries – 1 January 2017

Additional tasks and responsibilities of the Secretariat - Certification and new infrastructure TPA exemptions procedure:

The Secretariat issues an opinion (ECRB is requested to provide an opinion ahead)

Regional cooperation of TSOs and with ENTSOG

Art 25 of the Decision

"Transmission system operators shall promote operational arrangements in order to ensure the optimum management of the Energy Community network and shall promote the development of energy exchanges, the coordinated allocation of cross-border capacity through non-discriminatory market-based solutions, paying due attention to the specific merits of implicit auctions for short-term allocations, and the integration of balancing and reserve power mechanisms."

ENTSOG invited the TSOs from the Contracting Parties to participate as Observers in ENTSOG (Gas Forum 2011)

Plinacro and GAMA obtained the status of Observers

Excellent cooperation between ECS and ENTSOG has been established since beginning (from the time of GTE+)

Art 28 of the Decision
Network codes

"1. The Energy Community shall endeavour to apply the network codes developed at European Union level under the acts referred to in Article 1.
2. **The relevant network codes shall be adopted by the Permanent High Level Group, following the procedure laid down in Article 79 of the Treaty. Before taking a decision, the Permanent High Level Group shall seek the opinion of the Energy Community Regulatory Board.**
3. The Permanent High Level Group shall adopt a procedural act on application of this Article."

PHLG adopted the relevant Procedural Act No 1/2012 PHLG-EnC of 21 June 2012

Network Codes may be adopted by the Energy Community before the 3rd Package acquis – deeper coordination among national TSOs and with ENTSOG needed

Network Codes (2)

PHLG conclusions (March 2013): EC initiated internal discussions on the right approach for proposing adoption of the network codes by the Energy Community

The Energy Community to start considering on the timeframe and the priorities for the implementation, taking into account that some of the network codes may be easier and more appropriate to implement in the short term by the Contracting Parties

The Secretariat is invited to consult with ENTSO-E and ENTSO-G for their view on whether the transposition of network codes or guidelines by the Contracting Parties is required/urgent for the synchronous and seamless operation of networks and markets.

THANK YOU FOR YOUR ATTENTION!

CONTACT

Energy Community Secretariat
Web: www.energy-community.org

Delivering the new market rules framework

Third Countries Workshop

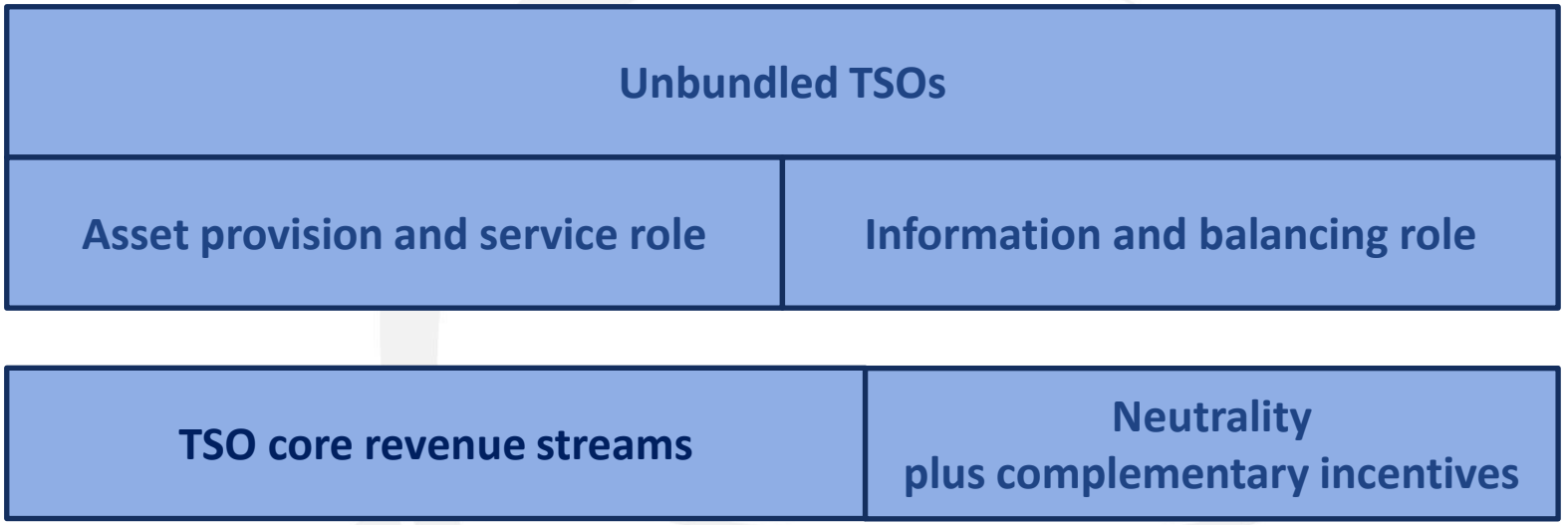
Nigel Sisman

Business Area Manager, markets

Vienna – 16 April 2013


entsog
european network of transmission system operators for gas
Gasum
GASSCO
swede gas
premier TRANSMISSION
SVENSKA KRAFTNÄT
LATVIJAS GĀZE
LIETUVOS DUJOS
ENERGINET.DK
gaslink Gas System Operator
nationalgrid
jordgasTransport
gasunie Transport Services
gas transport services
GR gaz Deutschland
GAZ system
Interconnector
GTG NORD
ontras VNG Gastransport GmbH
nowega
Open Grid Europe The Gas Wheel
FLUXYS
Thyssengas ERDGASLOGISTIK
GASCADE
NET4GAS
creos
FLUXYS
bayern erdgas transport systeme
eustream SLOVAK GAS TSO
terranets bw
3·G
GAS CONNECT AUSTRIA
GRTgaz
TAG Trans Austria Gasleitung GmbH
SWISSGAS
Plinovodi Connected through energy
TRANSGAZ MAGISTRALA ENERGIEI
plinacro
Infrastrutture Trasporto Gas
BULGARTRANSGAZ
TIGF
enagas
SNAM
SNAM RETE GAS
REN Gasodutos
DESFA
41 Members and 3 Associated Partners across 25 EU Countries
4 Observers from EU affiliate countries

Post Third Package – TSO context and role development



... TSOs performing a fundamental enabling role without the inherent hedges of incumbents

... the goal to deliver progress towards the Internal Energy market by 2014

ENTSOG mission and commitment

To deliver on Third package requirements including:

- Network codes
- Ten Year Network Development Plans

by listening, being responsive and identifying and promoting what enhances the prospects of a properly functioning market.

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fair partner to all

Content

> Process and current state of play

> CMP

> CAM

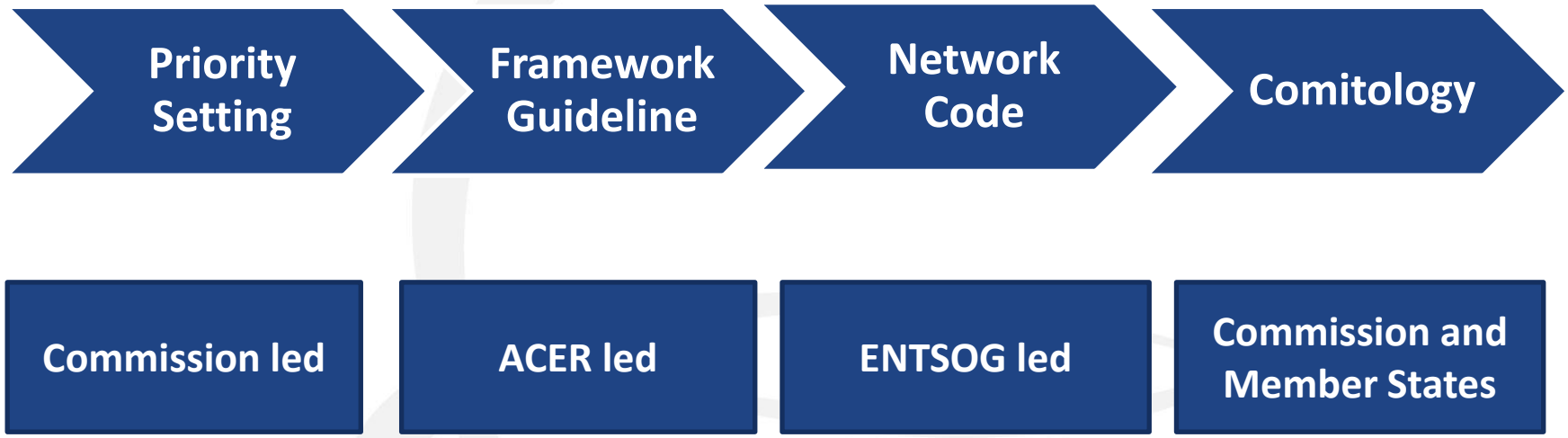
> Balancing

> Tariffs

> Conclusions

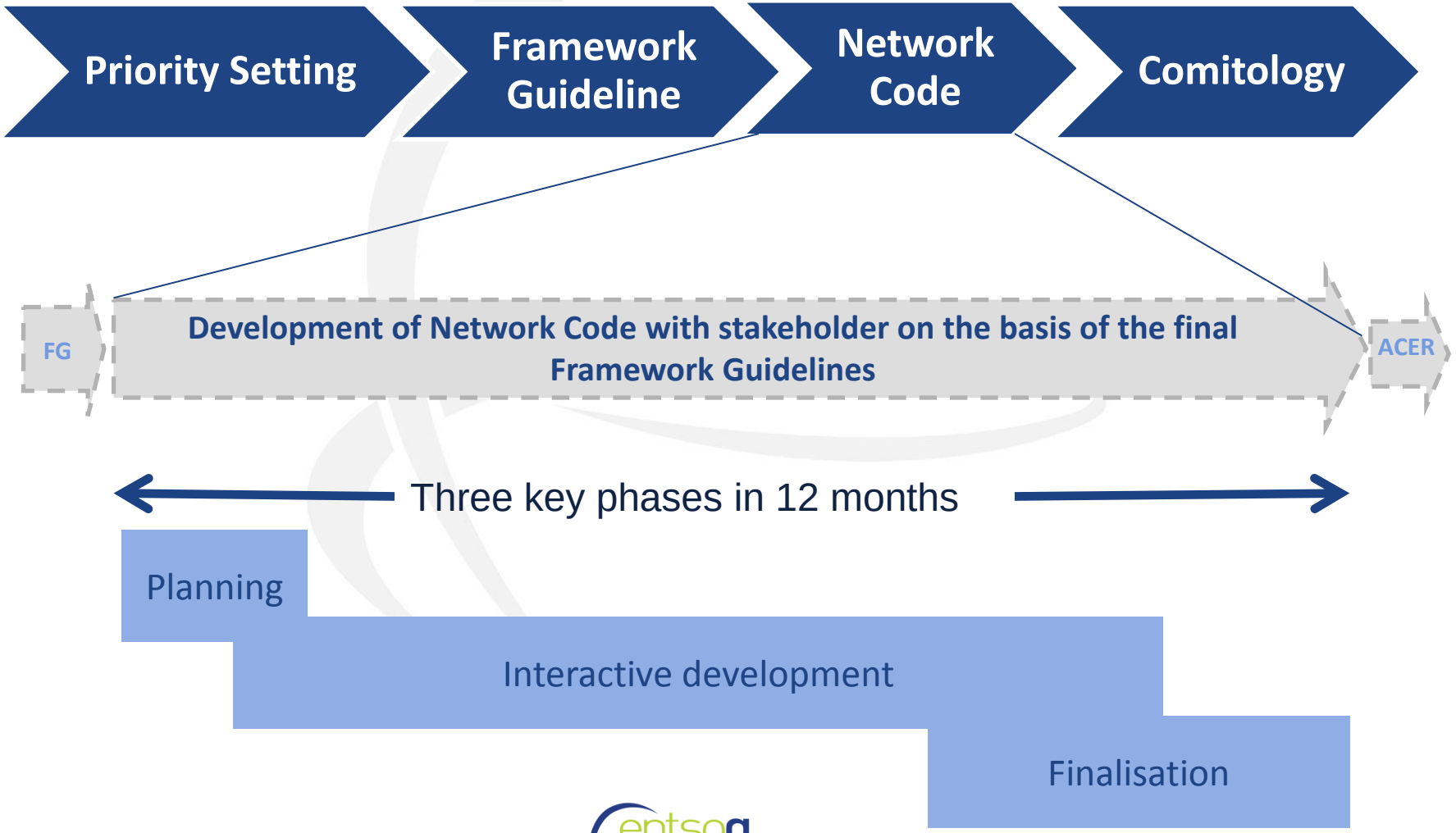
Process and current state of play

The Third Package Development Process



... but all actors, particularly stakeholders, must have an involvement throughout

ENTSOG's key contribution to the codes



On the way to EU law – current status

CMP

Binding rules for implementation October 2013

Network Code development: 12 months

CAM

Comitology process – second meeting April 15th 2013

BAL

Unqualified recommendation to proceed to comitology from ACER

INT

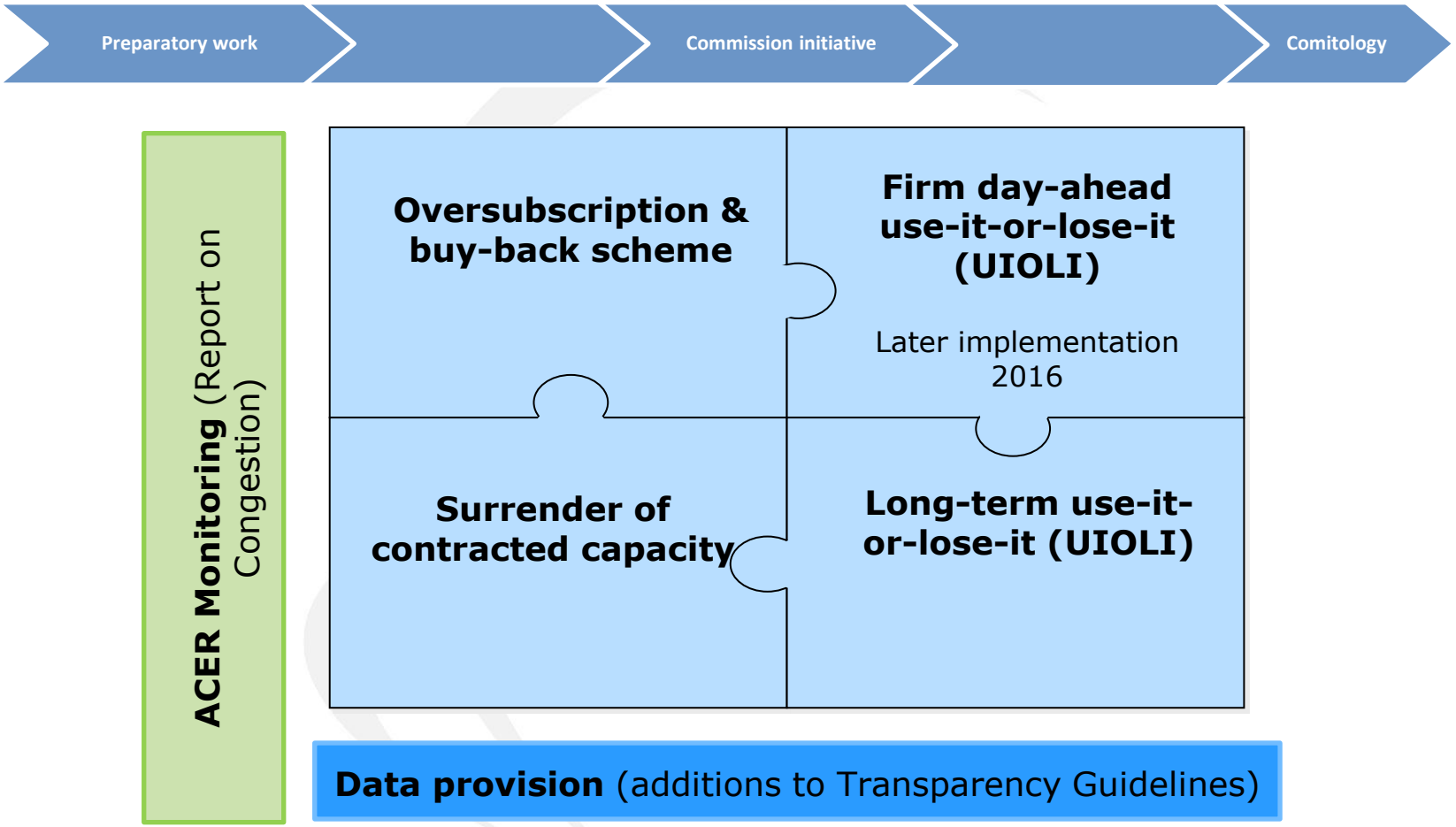
Public consultation ongoing

TAR

Framework Guidelines preparation

Congestion Management Procedures

Congestion Management Principles (CMP)



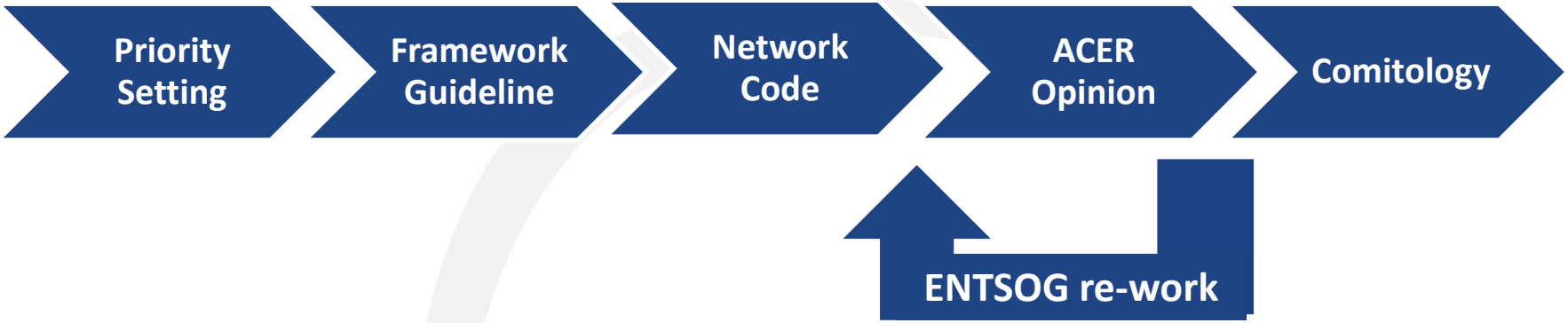
... to be implemented 1 October 2013

Capacity Allocation Methodology

Content of the CAM network code

Subject matter and scope	Articles 1-2
Definitions	Article 3
Principles of co-operation (maintenance, communication, calculation)	Articles 4-7
Allocation of firm capacity (products, auction design, algorithms)	Articles 8-18
Cross-border capacity (bundling)	Articles 19-20
Interruptible capacity	Articles 21-25
Tariffs (assumptions needed for auctions)	Article 26
Booking platforms	Article 27
Implementation time, Entry into force	Articles 28-29

Learning from CAM: “the submitted code to binding rules challenge”



Capacity Allocation Methodology code process has introduced a new concept

– the ACER “Qualified Recommendation”

… to recognise a faster process may be needed particularly to break deadlocks

Commission, too, have sought to introduce new ideas and structures …..

Recent changes to the CAM NC post-submission

Many aspects of CAM NC unchanged:
products, allocation timing, auction design, interruptible capacity...

Revisions to the sunset clause

New text on capacity calculation

EC's 'big changes'

20% minimum quotas for new and existing capacity

Restrictions on offer of unbundled capacity

Changes to tariff provisions

Changes on ACER/ENTSOG disputed issues

Implementation period

Legal drafting changes

Other changes

Constructive approach of Commission and Member States is welcome!

CAM NC: post resubmission timelines

Commission's key milestones

With a fair wind.....

17 September
Resubmission of NC to ACER

Oct-Dec
Commission internal processes (8 weeks)

24 January 2013
First Comitology meeting

September 2013?
NC adopted

5 October
ACER qualified recommendation to EC

December
Launch of Comitology

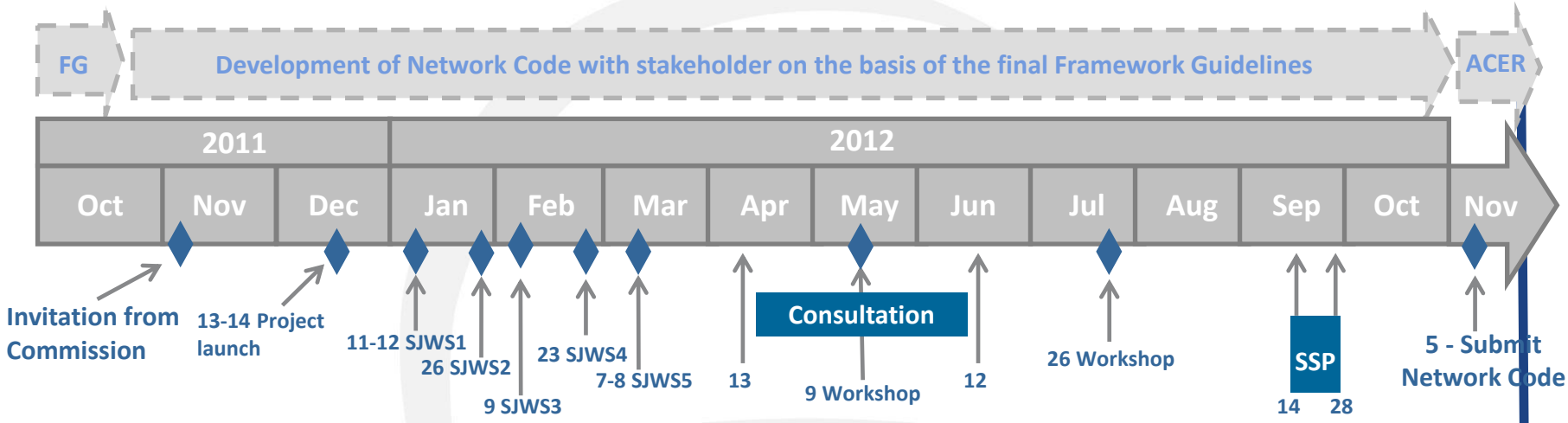
April 2013
Second Comitology meeting

2015?
Mandatory implementation

Early implementation of CAM via pilot projects

Balancing

Balancing Network Code development & consultation

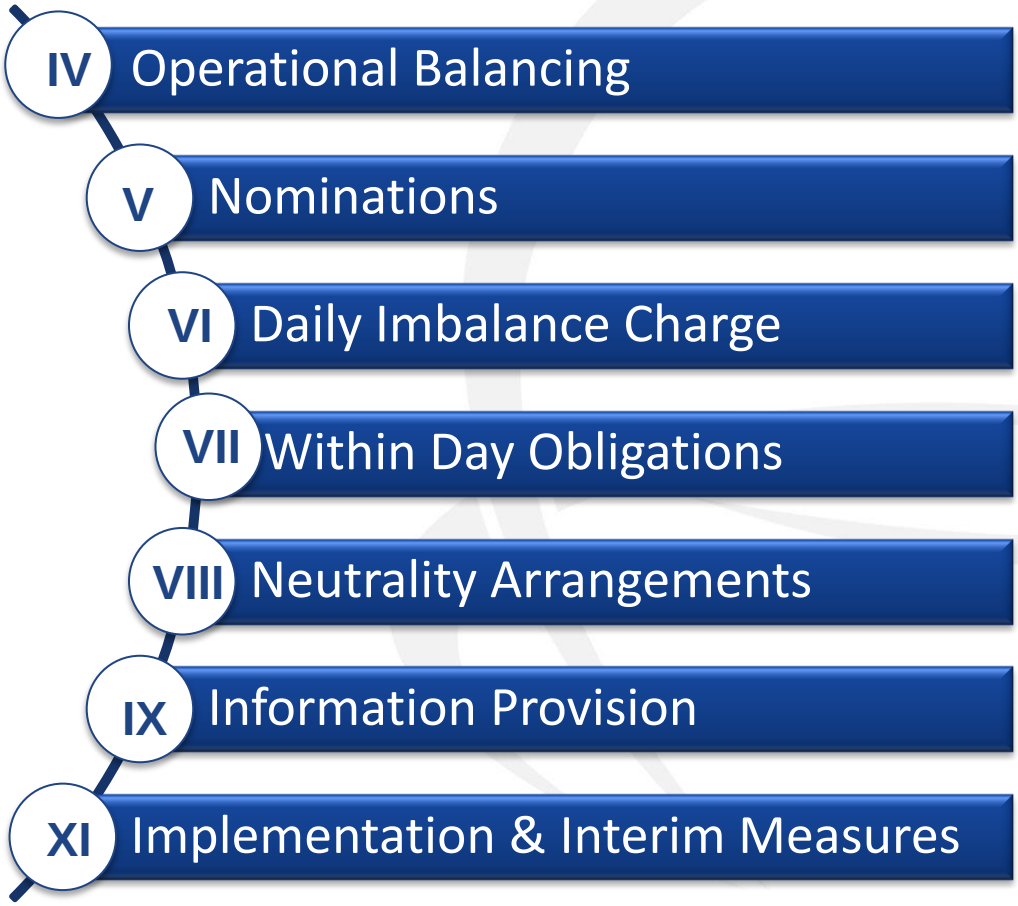


Main phases of activities of ENTSOG and stakeholders in BAL NC process

ENTSOG	Development of launch documentation	Development of draft Network Code in Cooperation with stakeholders						Refinement of Network Code based on the feedback by stakeholders		
Stakeholders		SJWS	SJWS	SJWS	SJWS	SJWS	Feedback on drafted Network Code by ENTSOG		Work shop	SSP

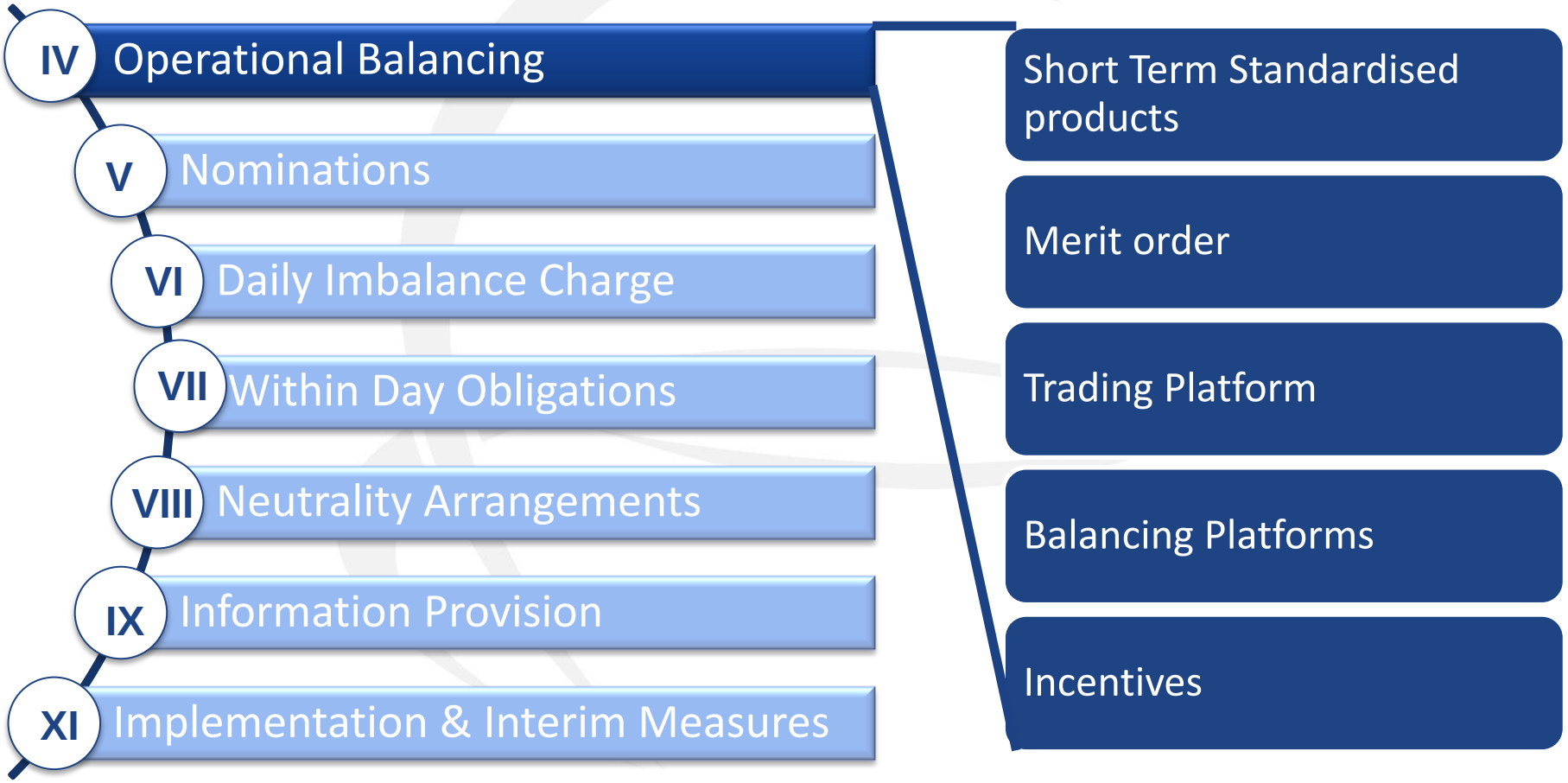
... we believed we had a framework guideline compliant and 'fit for purpose' Network Code

Balancing Network Code – Key chapters

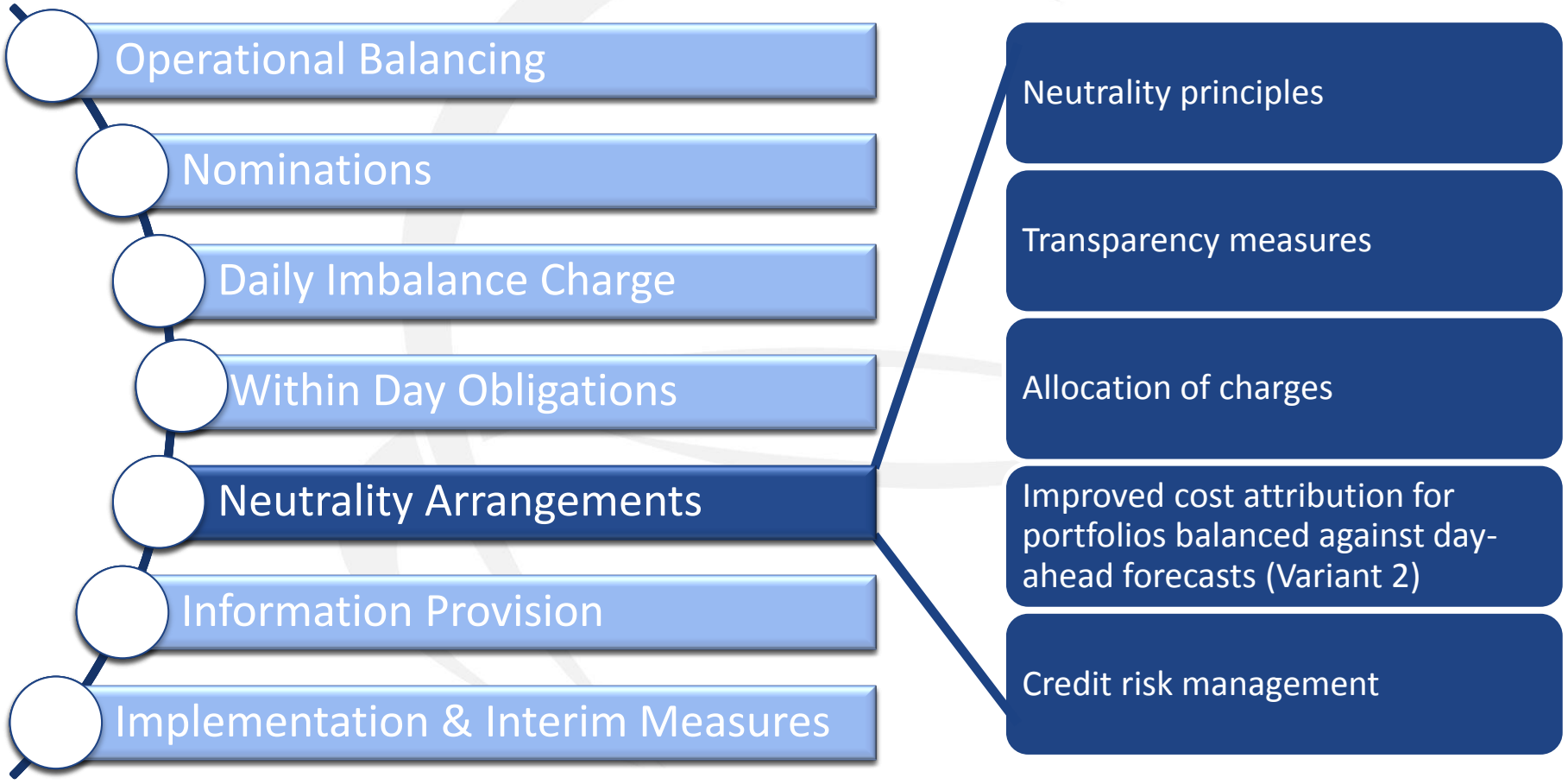


A critical network code to provide an enabling framework for Network User balancing and the foundation of a robust short term market

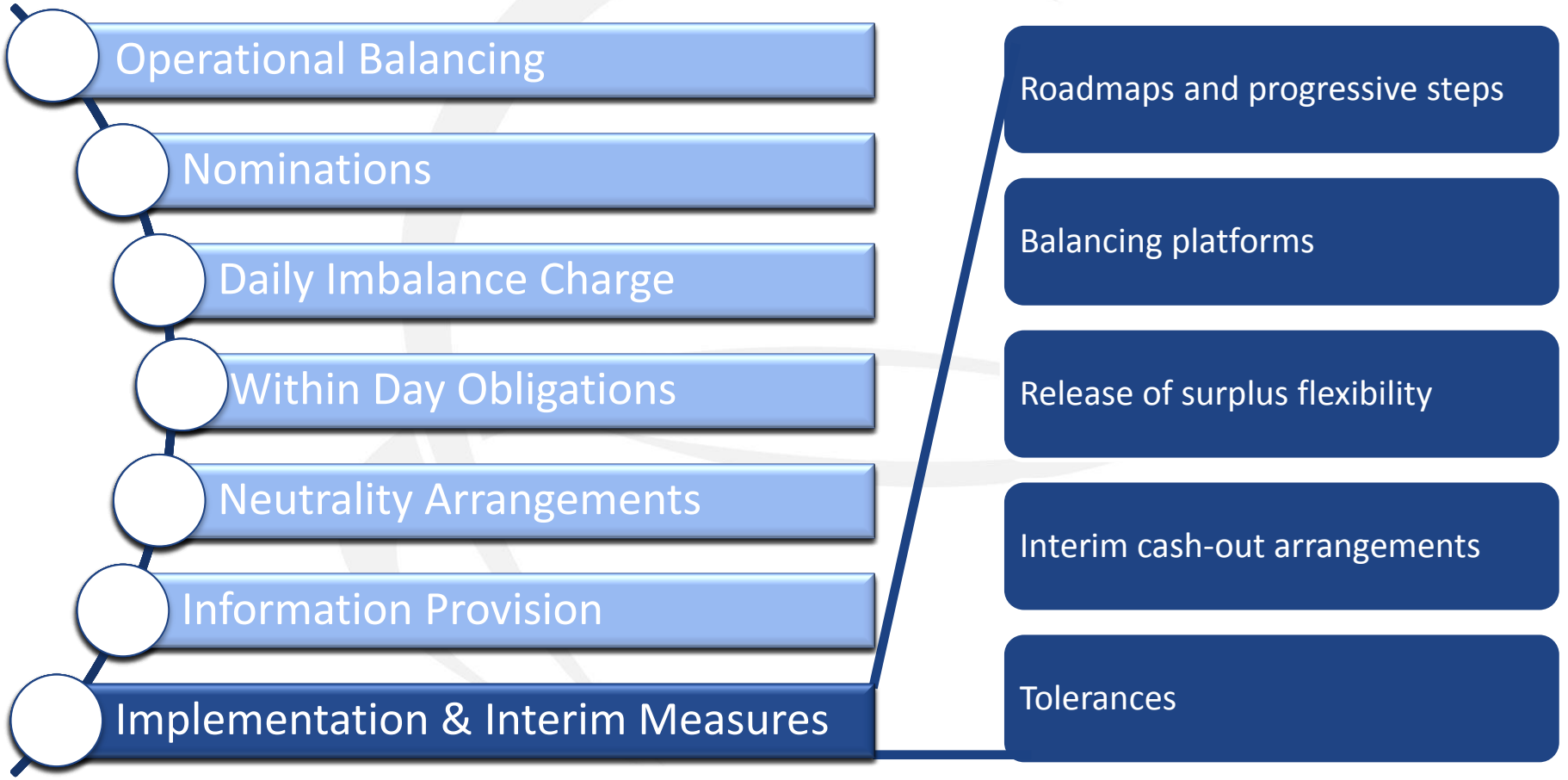
Balancing Network Code – Key chapters



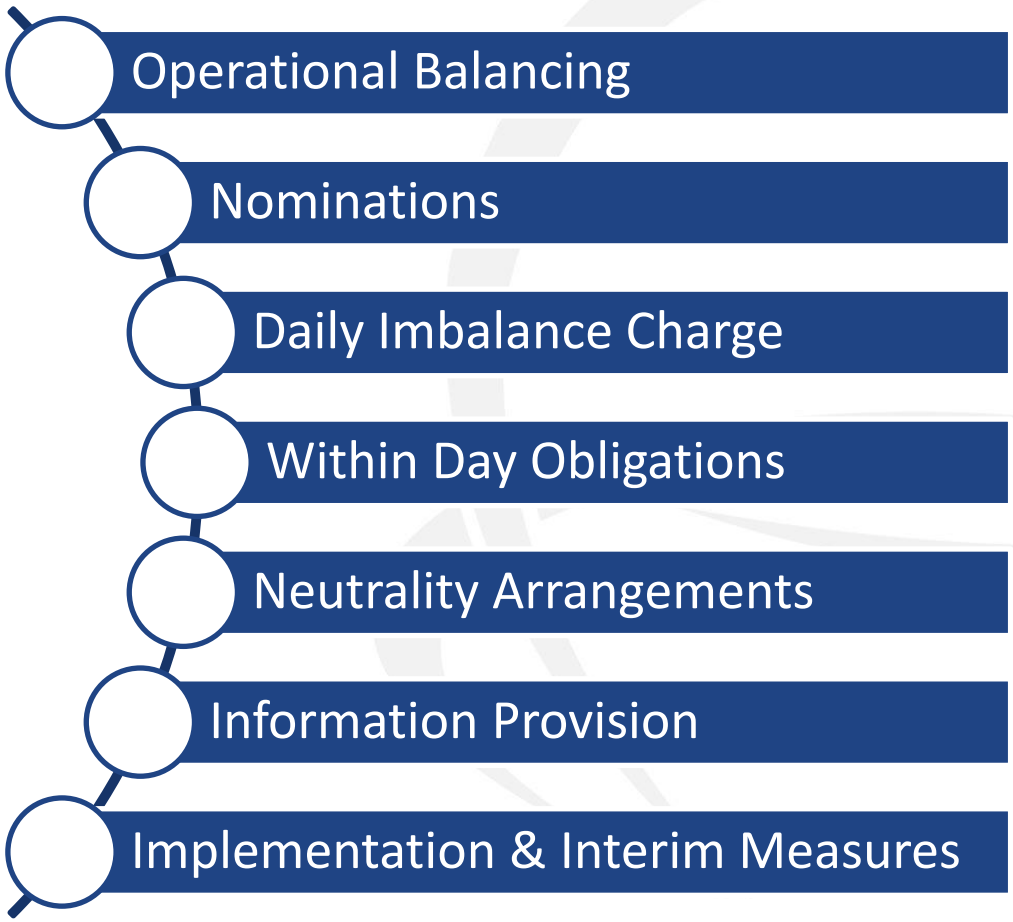
Balancing Network Code – Key chapters



Balancing Network Code – Key chapters

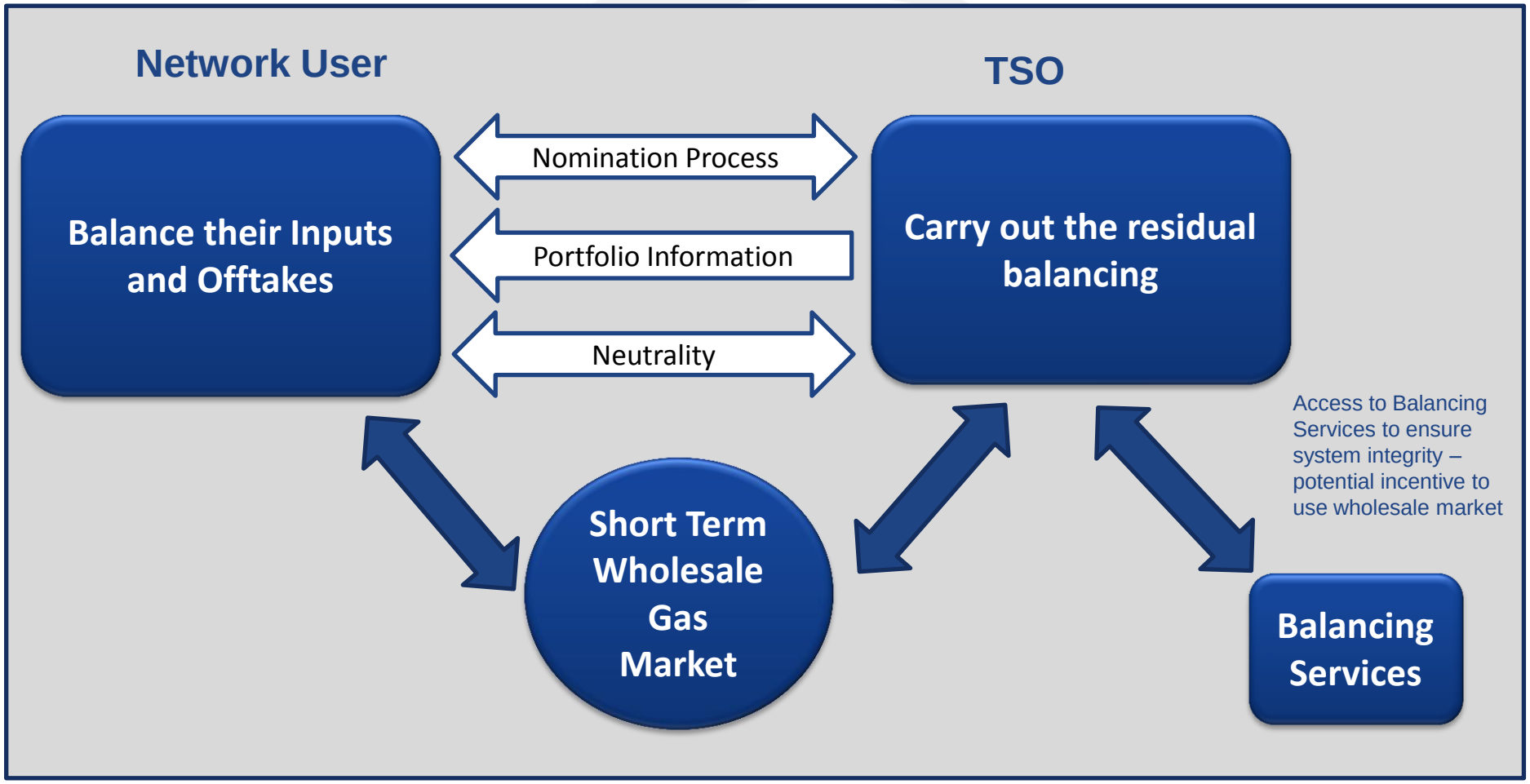


Balancing Network Code



Overall a “fit for purpose” Network Code going far beyond the original framework guideline

Delivering the “Balancing Target Model”



… the focus is on short term wholesale market and hub liquidity and transition will be necessary in many parts of Europe

Submitted Balancing Network Code

entsog
european network of transmission system operators for gas

Balancing Network Code
BAL350-12
26 October 2012

Network Code on Gas Balancing

of Transmission Networks

An ENTSOG Network Code for ACER review and Comitology Procedure

…. considerable scrutiny from ACER (and EC too!)

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Balancing had to provide a better process …..

Afforded opportunities to:

- prove a better, more co-operative process
- deliver a coherent and widely accepted code
- progress to implementation as soon as possible

‘Parallelism’ has enabled timely delivery

ACER delivery of reasoned opinion → 25 January 2013

ENTSOG deliver revised code → 22 February 2013

ACER approval of code → 25 March 2013

ACER Agency for the Cooperation of Energy Regulators

HEREBY RECOMMENDS:
The adoption of the amended Network Code by the European Commission.

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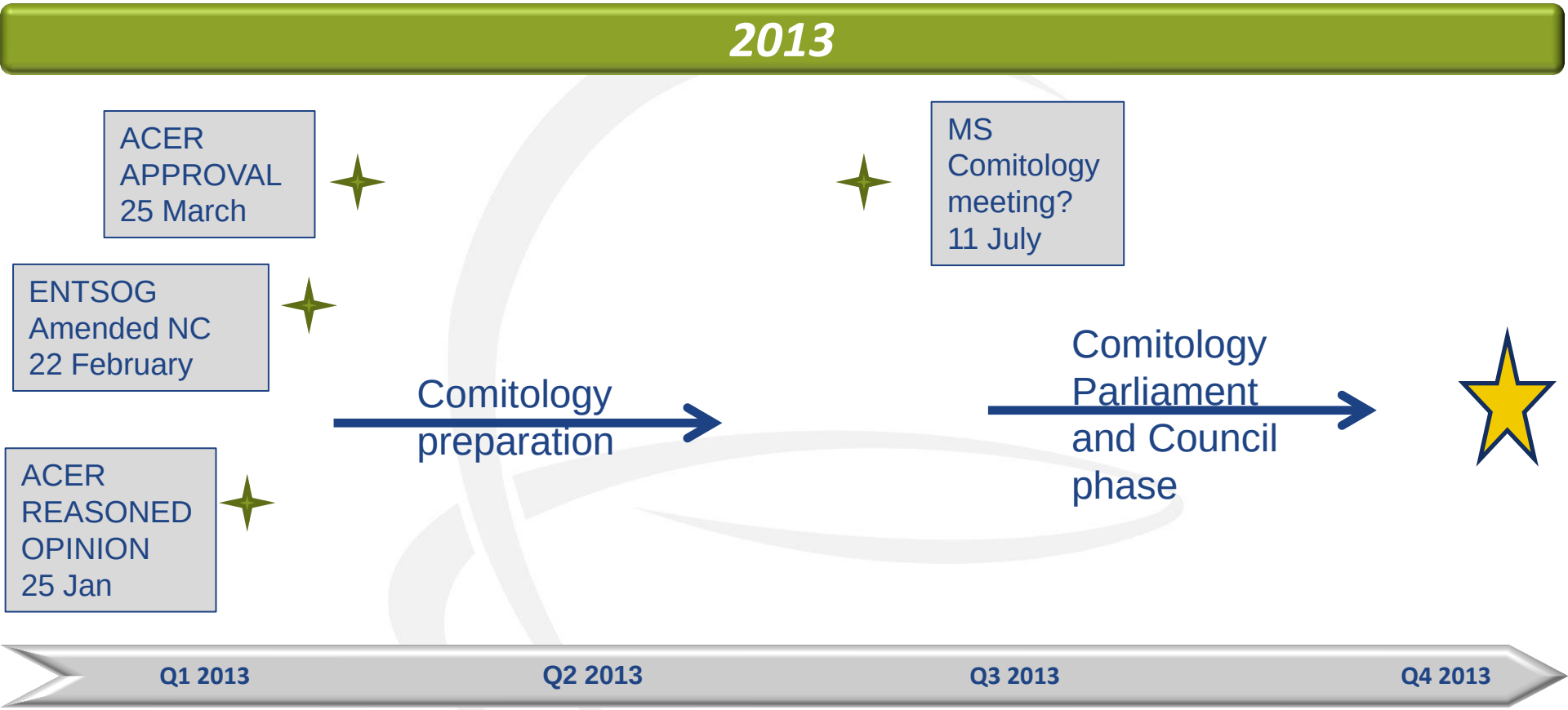
Entry into force of Balancing Network Code?



... is a single comitology meeting sufficient?

Perhaps the process has matured such that the code can complete comitology during 2013?

..but the Balancing Network Code is only a necessary condition

What else is requied?	by whom?
Customer databases to support the balancing	DSOs
Load profiles/algorithms	DSOs/Agents
Access to short term flexible gas	Market players
Trading and balancing platforms	Platform operators & TSOs
Transition and interim measure implementation	TSOs and all market players

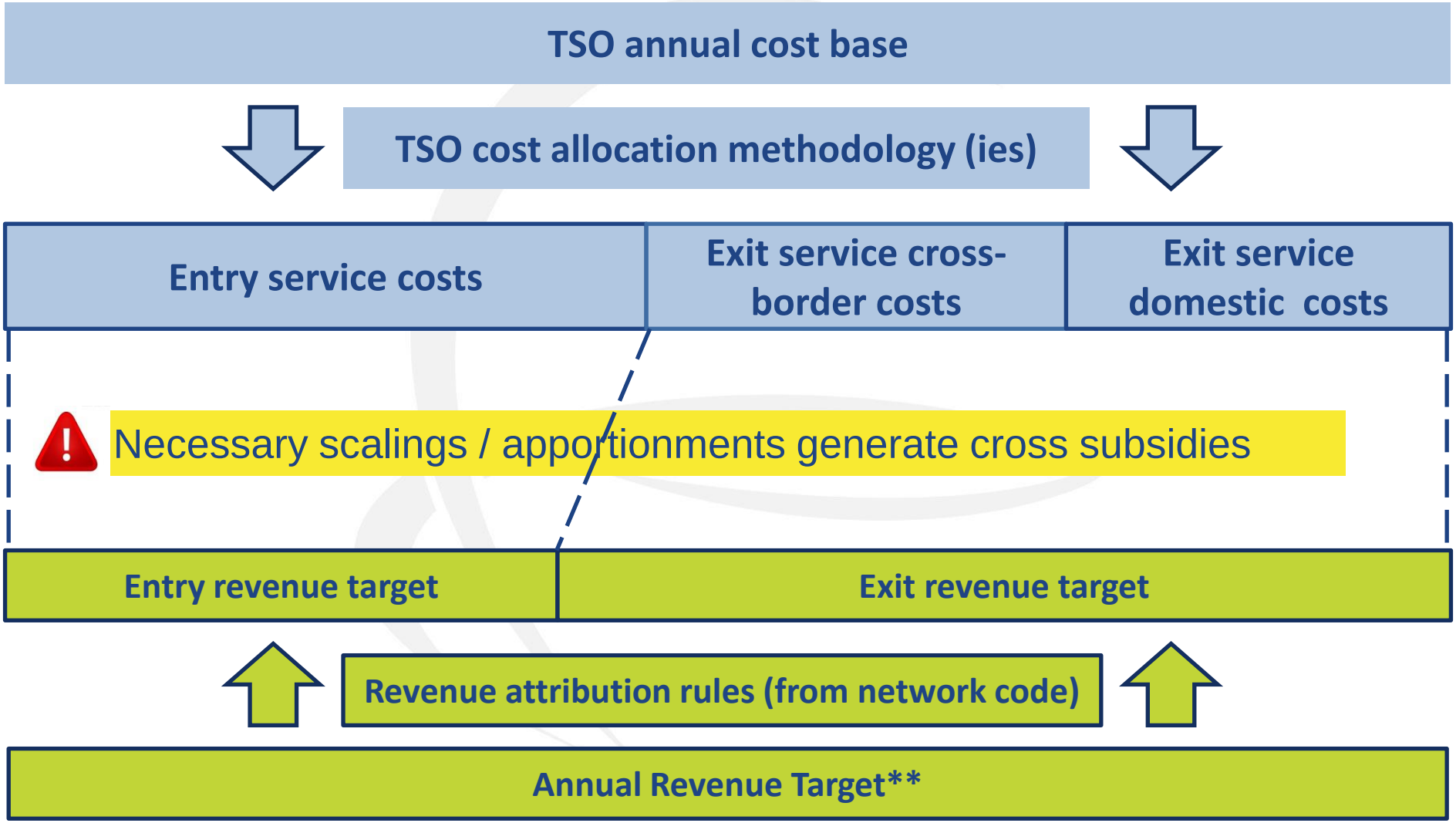
..NRAs have a critical role to deliver sufficient conditions to deliver a properly functioning short term market

Tariff

Tariff – Key issues

ISSUE	“Proportionate Pricing”	Pricing and long or short lead time time booking
DESCRIPTION	Fairness between pricing for cross-border flows and “domestic” offtake flows	Fairness between pricing for those booking capacity years before flow and those purchasing close to gas flow
CHALLENGES	**Cost allocation approaches?** **Revenue apportionment?**	**Long v short term?** **Physical v trading flows?**

Price setting – cost and revenue based approach

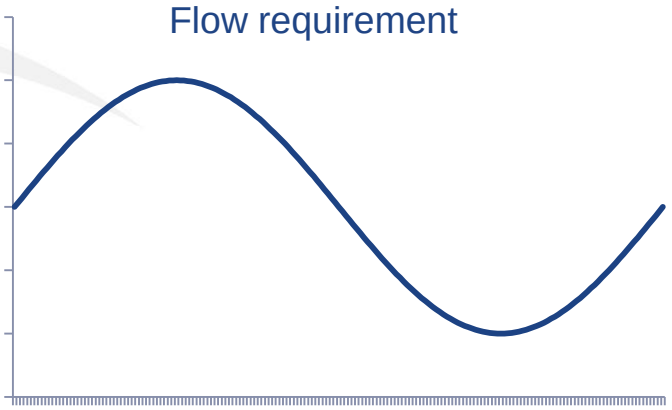


**may only be applicable in revenue cap regimes or cost-plus regimes

The Short Term v Long Term booking conundrum

What are the objectives:

- Users to signal long term needs?
- Users should have cheap capacity, where available closer to use?

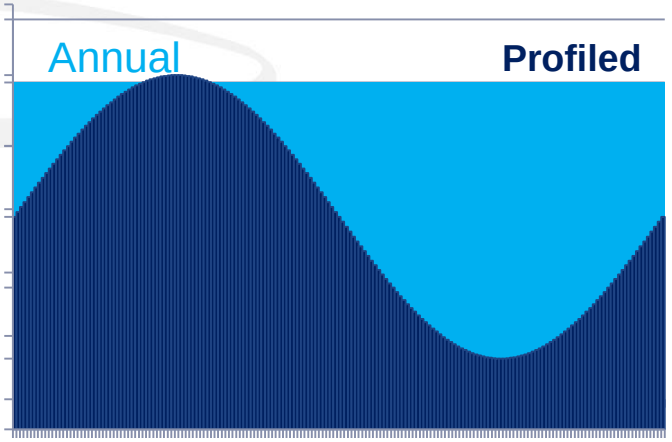


Tilting towards longer duration

- Encourages early purchase of capacity
- zero cost of capacity holder to arbitrage

Tilting towards shorter duration

- may encourage shorter term trading opportunities
- but every user would then have incentive to profile capacity



... relative pricing will determine shape of bookings; users respond to the incentives provided

Upcoming activities

Progressing towards the new gas framework

Conclusions

Process	Experience growing; processes proven; stakeholders like ENTSOG process
Capacity	Comitology progressing well; binding rules imminent, implementation progress evident
Balancing	Agreement on code expected; timely comitology progress; some regimes already starting to move towards code
Interoperability	ENTSOG's consultation on code shortly to begin; inputs canvassed from stakeholders
Tariff	Objectives now better understood? Focus needed; but changes create redistributions which some won't like!

Substantial progress towards 2014 will be made this year!

entsog

fair partner to all

Thank You for Your Attention

Nigel Sisman
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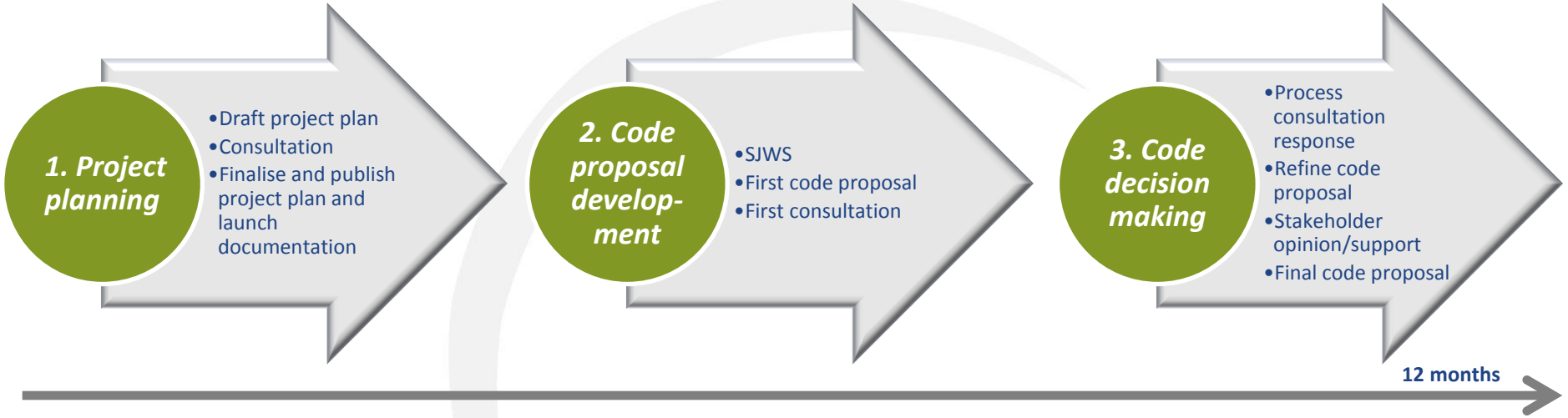
Network Code Interoperability and Data Exchange Rules

Third Countries Workshop

Interoperability Team

Vienna – 16 April 2013

NC Development: NC development process

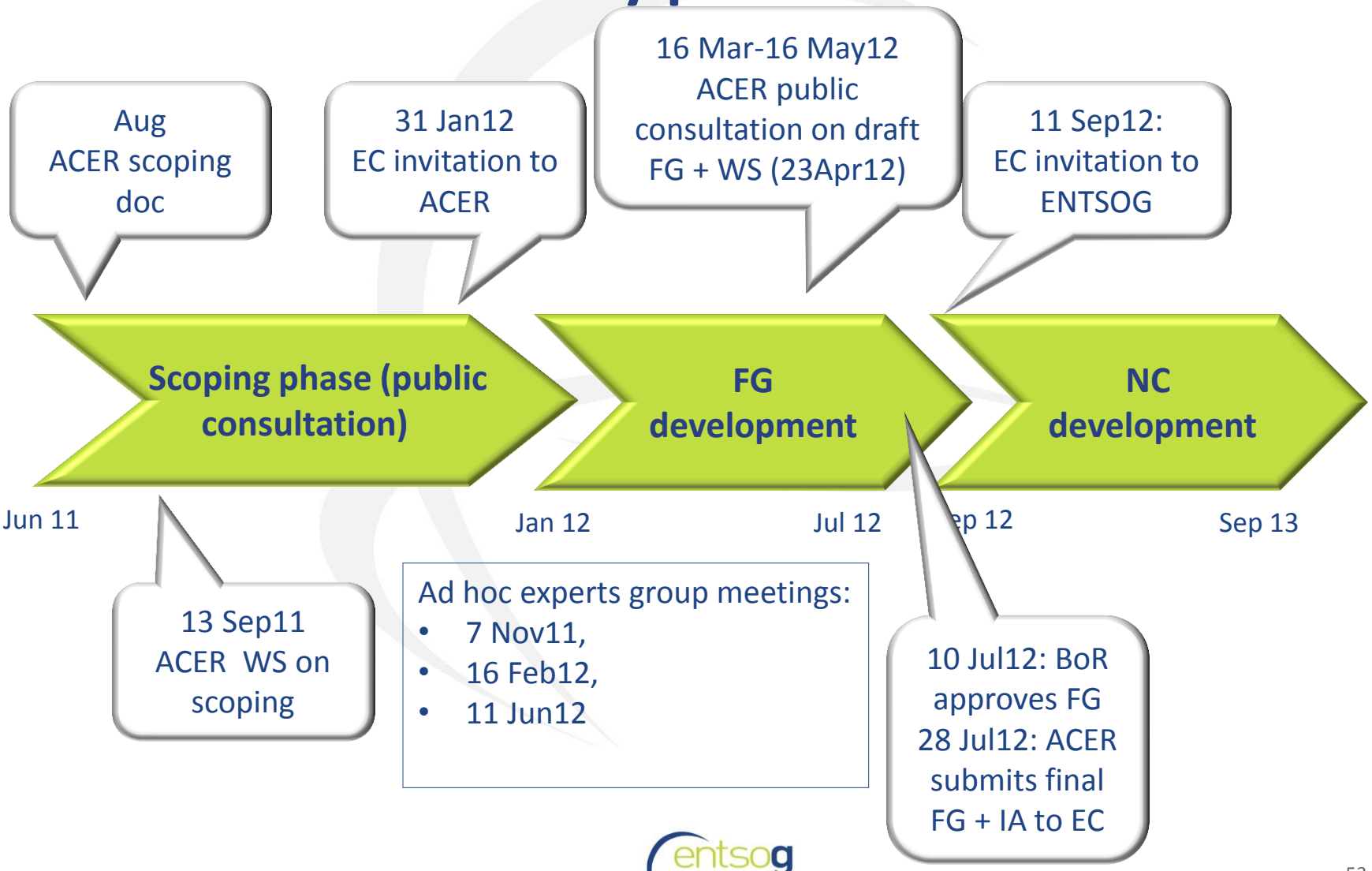


STAKEHOLDER INVOLVEMENT

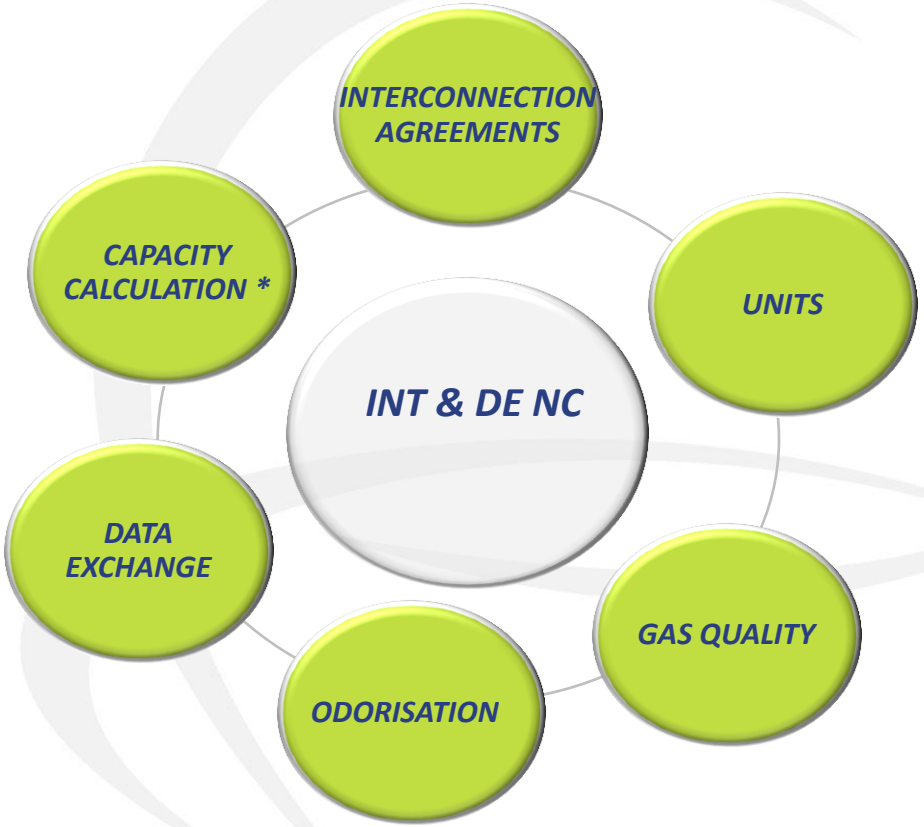
PROJECT PLAN CONSULTATION	STAKEHOLDER JOINT WORKING SESSIONS	CONCLUSIONS WORKSHOP
	FORMAL CONSULTATION	
INTRODUCTORY WORKSHOP	CONSULTATION WORKSHOPS	"STAKEHOLDER SUPPORT" PROCESS

INFORMAL, BI-LATERAL and ADHOC INTERACTIONS AS REQUIRED THROUGHOUT THE PROCESS

Interoperability NC development: dates and activity performed



Framework Guideline: Content



* EC is considering making use of its right of proposal to put forward a text for comitology in NC CAM.

Rules applicable to TSOs + cooperation with stakeholders and as much as possible with Third Countries TSOs + implementation within 12 months after entry into force

ENTSOG Interoperability team

Michel
Van den Brande

System Operation

Panagiotis
Panousos

Interoperability

Transparency

Advisory KG

Platform Development KG

IT&C Roadmap KG

Business Rules KG

Gas Quality KG

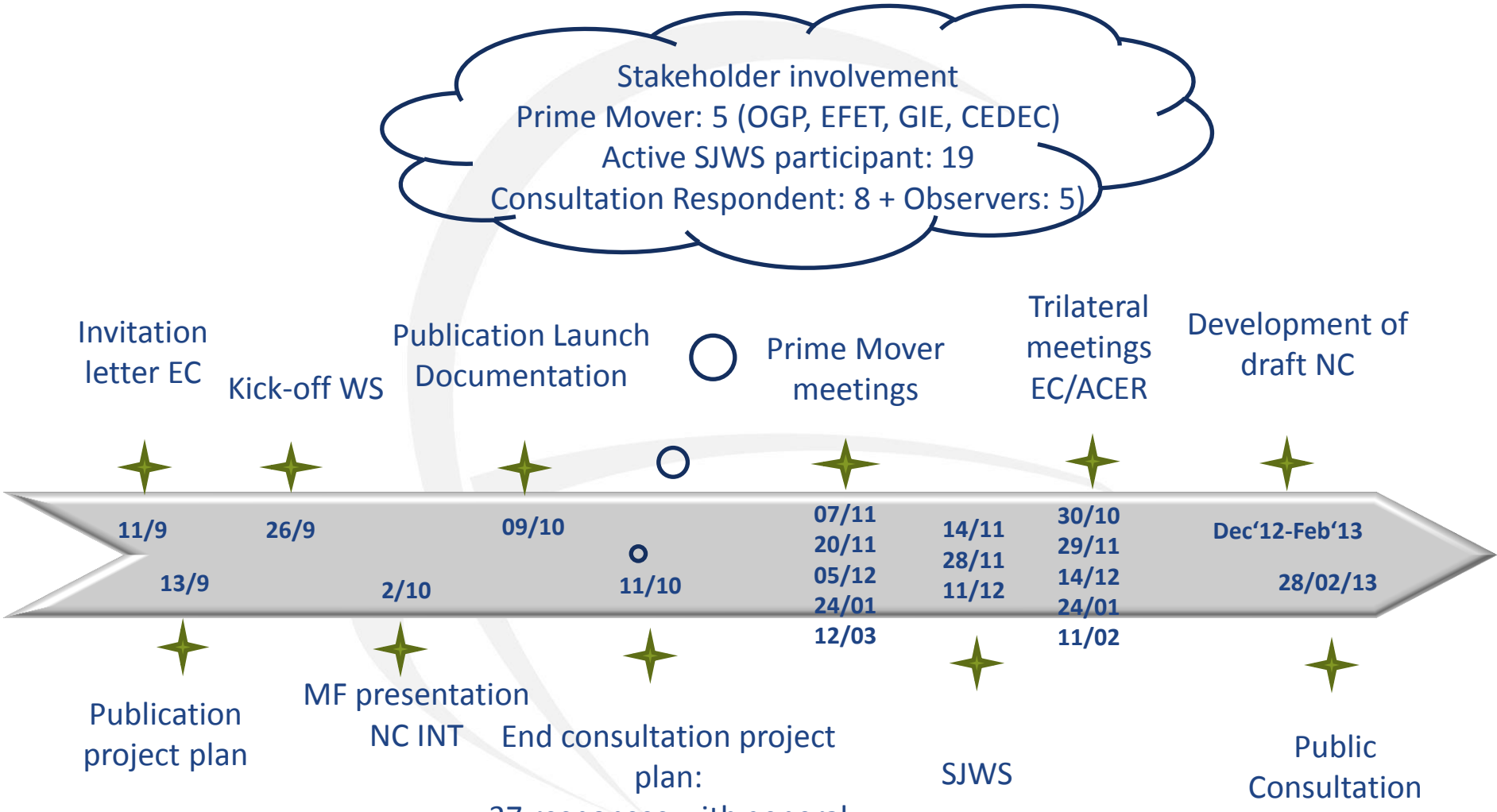
hnical Solutions Adoption
d Implementation Group

Jef
De Keyser

Hendrik
Pollex

Monika
Kaldonek

NC development process: actual state



Stakeholders involvement structure

LEVEL	DESCRIPTION	COMMENTS
1	Prime Mover	Committed to work on a bilateral basis and dedicate a lot of resources to assist, formulate and evaluate/refine ideas/proposals for SJWS consideration – commitment to be intensive and involving many days during intensive phases of the network code development
2	Active SJWS Participant	Expected to attend all SJWS and to read and review all material prior to meetings and to be prepared to explore detail within SJWS – commitment of around 2 days per month during intensive period of activity
3	Consultation Respondent	Will respond to consultations
4	Observer	Expected not actively contribute to the development effort or to participate in the formal consultations

Launch Documentation

Launch documentation is intended to:

- Analyse framework guidelines and include current situation and different policy options.
- Provide the basis for the discussions in the SJWS and it therefore contains questions for Stakeholders' input.
- Describe the interactions with other areas, for example:
  - CAM network code
  - CMP guidelines
  - BAL network code
  - TRA guidelines

Draft NC and Support doc for consultation

DRAFT NETWORK CODE

on
Interoperability and Data Exchange Rules

An ENTSOG Draft Network Code for Public Consultation

This document constitutes the draft network code on Interoperability and Data Exchange Rules for European gas transmission networks developed by ENTSOG (hereinafter the 'Network Code') in accordance with Article 8, (6) of the Regulation (EC) No 715/2009.

The Network Code was developed following an Invitation Letter from the European Commission to draft a Network Code on Interoperability and Data Exchange Rules which was received by ENTSOG on 11 September 2012 (hereinafter referred to as the 'Invitation Letter').

The development of this Network Code is based upon the Framework Guidelines on Interoperability and Data Exchange Rules published by the Agency for the Cooperation of Energy Regulators (hereinafter referred to as 'ACER') on the 26 July 2012 and the Invitation Letter.

This Network Code was developed upon the basis of the ENTSOG Interoperability and Data Exchange Rules Launch Documentation which was published on 9 October 2012 (INT0276-120611) at the beginning of the code development process and inputs from ENTSOG members via its Interoperability Working Group and from external stakeholders via the Stakeholders' Joint Working Sessions (SJWSs) held in November 2012 and December 2012. The materials from the SJWSs can be found on:
http://www.entsog.eu/publications/interoperability .

This Network Code is accompanied by a Supporting Document for Public Consultation on the Network Code (Ref. INT0367-130227, available on the ENTSOG website hereinafter

Network Code on Interoperability and Data Exchange Rules for European Gas Transmission Networks

Supporting Document for Public Consultation draft Network Code

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ENTSOG website: Information and documents

Menu

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european network of transmission system operators for gas

Secure Area

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INTEROPERABILITY 2013

2009 | 2010 | 2011 | 2012 | 2013

The Interoperability Working Group has the obligation to support and provide input into the development of the network codes and other tools to facilitate the efficient exchange of gas between different transmission networks.

The working group has the clear task to develop, in line with ACER Framework Guidelines and within the agreed time frame, a network code which responds to the relevant market needs in relation to the aims of the Third Package.

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CONSULTATION DOCUMENTATION

STAKEHOLDER SESSIONS / WORKSHOPS

PROJECT PLAN & LAUNCH DOCUMENTATION

EC & ACER COMMUNICATION

DOWNLOADS

entsog

NC Development Process: consultation docs

DRAFT NETWORK CODE

- Developed by INT team in close cooperation with INT KG/WG and legal advisers taking into account:
  - External Stakeholders: SJWS/Prime Movers/Bilateral meetings
  - EC + ACER
  - ENTSOG Members: internal consultation
  - Input WG CAP + WG BAL: compatibility with other NCs

SUPPORTING DOCUMENT

- Policy options + clarification chosen options
- Questions for Public Consultation (32); DEADLINE: 26 April
- On-line response form with 3 possibilities:

YES

YES with minor comments

NO

NC Development Process: conclusions

- All expected deliverables on time
- Significant input ENTSOG Members at KG and WG level
- Important Stakeholder involvement
  - Kick-off WS: 67 participants (all gas market segments)
  - Public Consultation Project Plan: 37 responses
  - SJWS1: 79 participants
  - SJWS2: 62 participants
  - SJWS3: 60 participants
  - Consultation WS: 90 participants
- Very active contribution Prime Movers
- Constructive and transparent cooperation process with EC and ACER

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
  - 42 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”

What are the big steps forward?

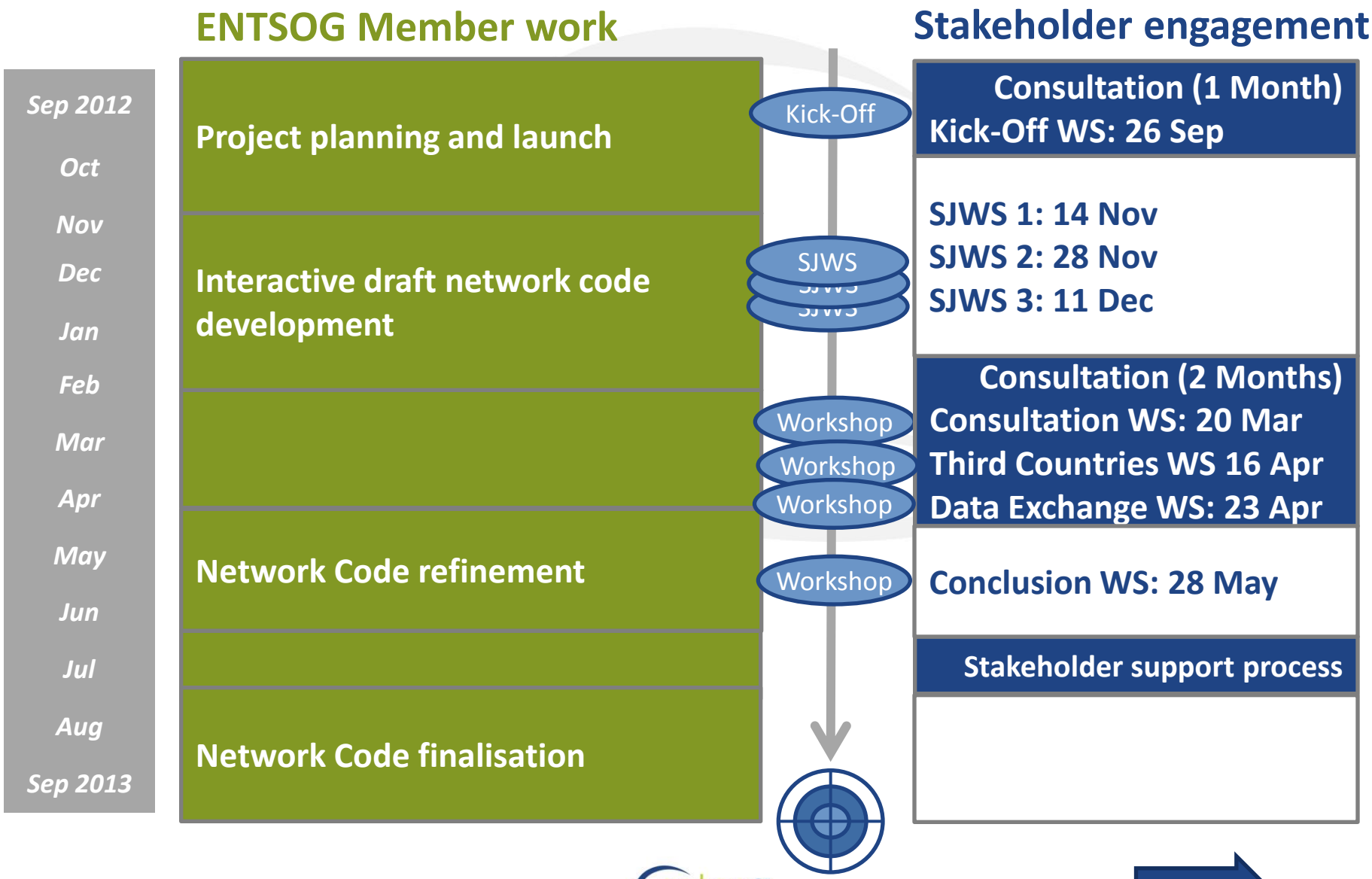
- Transparency is improved
- Continuous stakeholders involvement foreseen
- Rules are set
- Harmonisation offered to a necessary level
- Some flexibility is retained
- Roles and responsibilities are defined
- Cooperation among TSOs is safeguarded

Can we improve further?

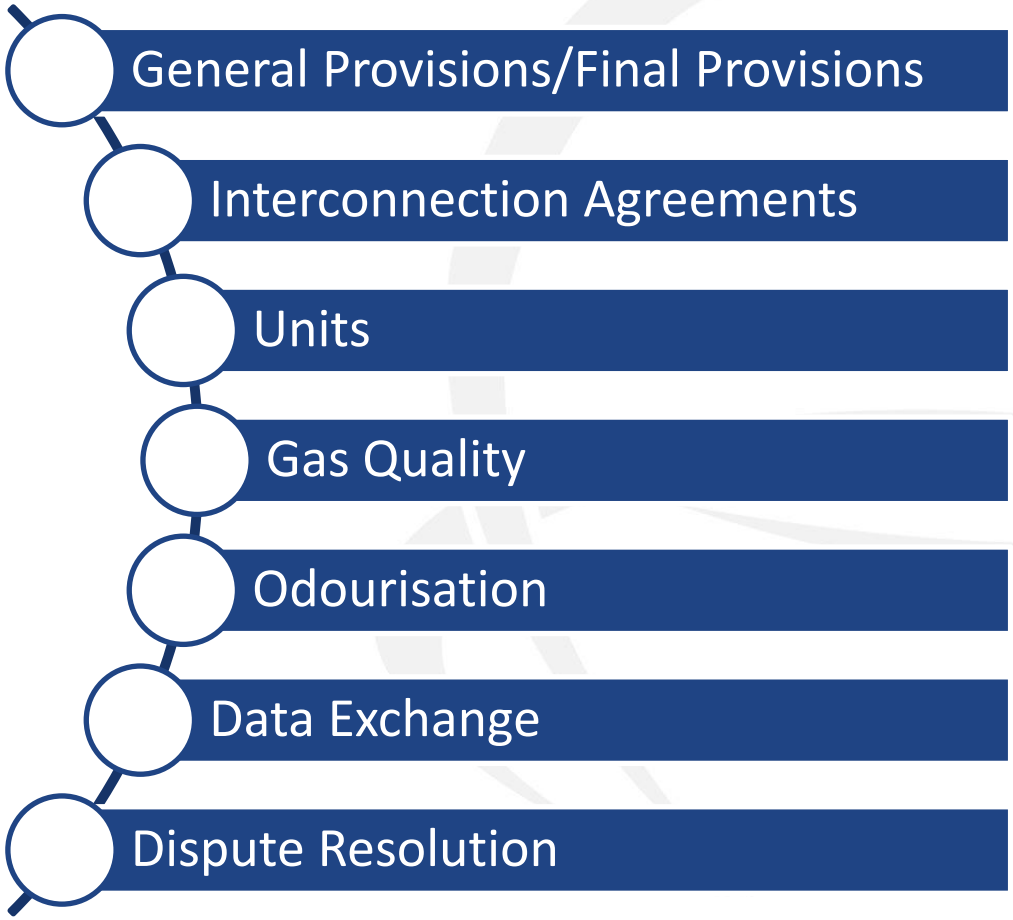
What is next?

- Analyze comments/text proposals received during consultation
- Re-discuss open issues with prime movers / stakeholders
- Discuss with EC / ACER on received comments
- Agree internally on necessary changes
- Present proposed changes on next WS (28 May)
- Refine legal text NC
- Ask for stakeholder support in the final text
- Go through internal approval process
- Deliver proposed NC to ACER

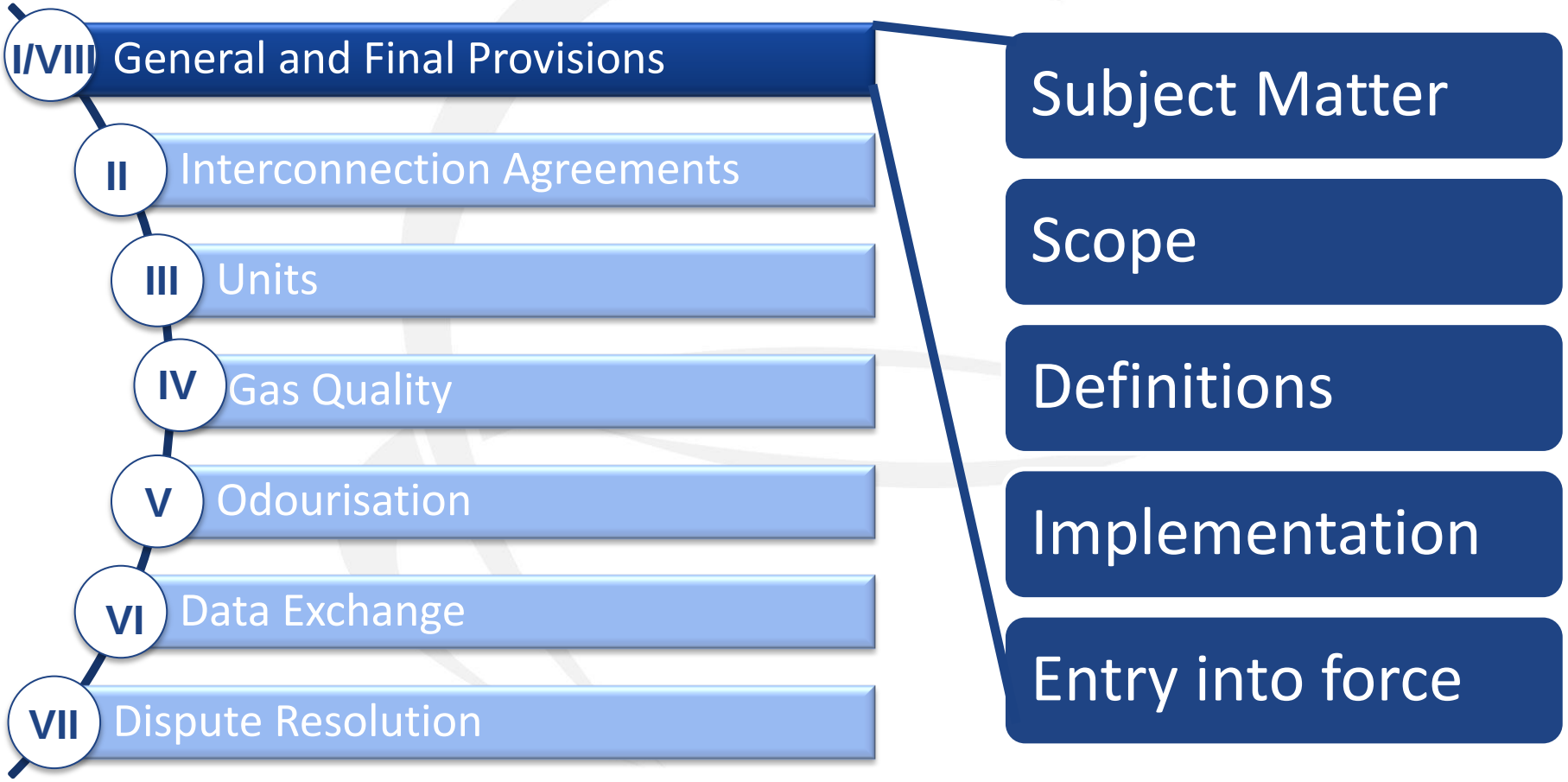
NC Development Process steps



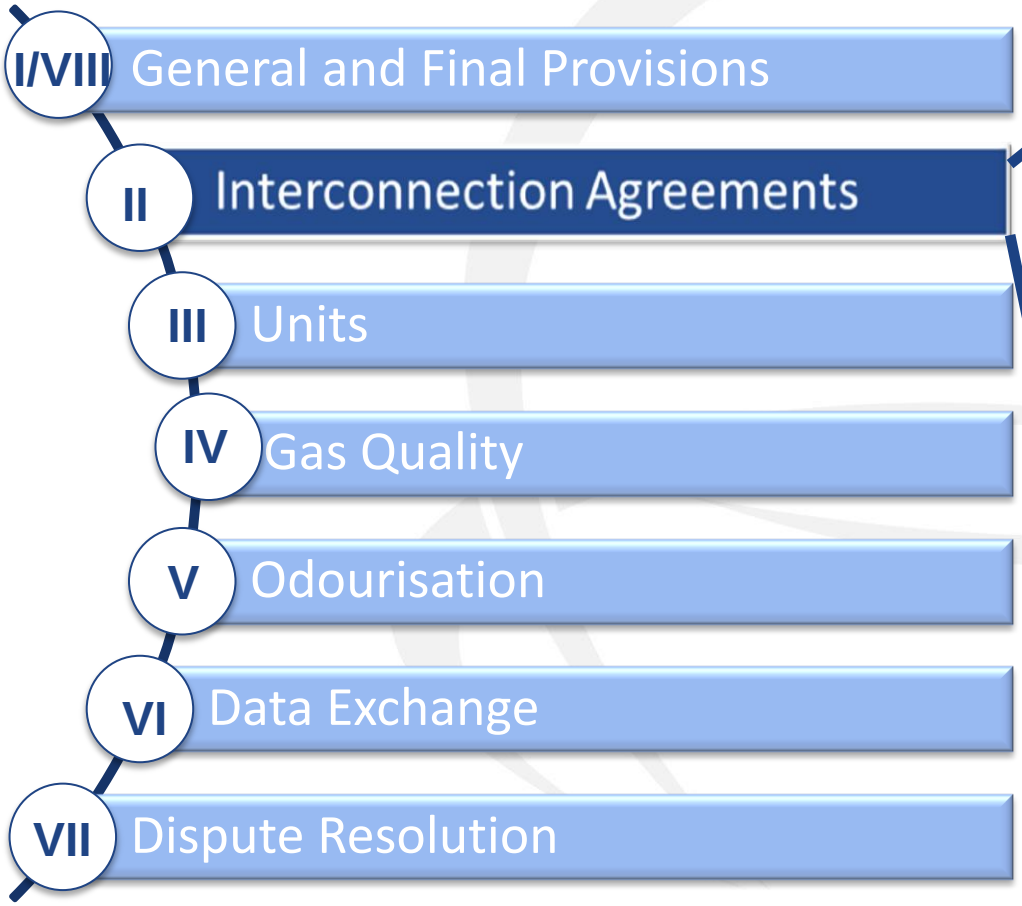
NC Interoperability and Data Exchange: Content



NC Interoperability and Data Exchange: Content



NC Interoperability and Data Exchange



Mandatory for each IP: 12 month period

Communication to NRAs

Mandatory terms + Default rules:

- Amendment Process
- Flow Control
- Measurement principles quality and quantity
- Matching
- Allocation of gas quantities
- Exceptional events
- Settlement of disputes IA

Other issues to be bilaterally agreed in IA

Article 4: General Provisions

- NC focuses on 7 mandatory terms in line with the FG
  - Amendments to the interconnection agreement
  - Flow control
  - Measurement principles for gas quantities and quality
  - Matching
  - Allocation of gas quantities
  - Exceptional events
  - Settlement of disputes

- Changes to 3 of the 7 mandatory terms can have a direct impact on Network Users
  - NUs have to be informed about and before any change
  - NUs will be invited to comment on the possible consequences the change may have on their activities
  - Timeframe of 1 to 3 months unless otherwise specified in national rules

- New IAs or any amendments changing any of the 7 mandatory terms shall be communicated to NRAs

Article 5: Development of new and alignment of existing interconnection agreements

12 month period from entering into force of this NC

- Within 12 months after the Network Code enters force, TSOs shall have:
  - In force IAs in compliance with the provisions of the NC at each IP
  - This is also valid for IPs starting commercial operation for the first time
  - Reviewed their existing IAs and shall amend where necessary to be NC compliant

- When TSOs can't reach an agreement about the mandatory terms TSOs shall
  - Apply the default rules as described in this NC
  - Inform its NRA

- When TSOs can't reach an agreement about items other than the mandatory terms TSOs shall have settled the dispute as soon as reasonably practicable
  - With the support of NRAs
  - Or any other dispute resolution mechanisms under this NC

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Article 6: Amendment to interconnection agreements

- IAs shall specify a transparent and detailed amendment process
- Obligation to amend an IA can have different reasons
  - Applicable legislative or regulatory framework
  - If either party to the IA requests by means of a written notice
- Timing for the amendment
  - Deadlines imposed by applicable legislative or regulatory framework or
  - Deadlines agreed upon among the involved TSOs
- If TSOs don't agree on the amendment of the relevant provisions or the timeline of the amendment process
  - The dispute shall be settled in accordance with the provisions of the dispute resolution part of the IA

Article 7: Rules for flow control

- IA shall address the following matters:
  - Rules to facilitate a controllable, accurate, predictable and efficient flow across the IP
  - Provisions for TSOs **how to steer** the flow and **obligations to use their reasonable endeavours to minimize the deviations from the agreed flow**
  - Determination of the TSO who is responsible for the installation, operation and maintenance of the flow control equipment

- To agree on the direction and quantity of gas flow for the IP for each hour of the gas day taking into account
  - The results of the matching process
  - OBA corrections
  - Flow control arrangements

- In addition TSOs may alter the flow when it is required under certain circumstances like
  - To comply with requirements laid down in safety legislation
  - To comply with requirements laid down in Emergency Plans or Action Plans in accordance with EU regulation No. 994/2010
  - An exceptional event
  - Any other reason specified under national rule

Risk for NUs

Article 7: Rules for flow control

- TSO in charge of the flow control equipment shall in cooperation with the other TSOs be responsible for steering the gas flow across the IP at a level of
  - Accuracy sufficient to minimize the steering difference
  - Stability in line with the efficient use of the gas transmission network
  - Pressure that complies with contractual obligations

Best practice

- **Flow control actions taken at an IP are done only on an operational basis meaning that network users' confirmed quantities are not affected as long as an operational balancing account is in place and any flow alteration action as described under paragraph 2, (c) of this Article doesn't have to be applied.**
- **Where no operational balancing account is in place network users' confirmed quantities will be affected only to the minimum extent possible.**

Article 8: Measurement principles for gas quantity and quality

- The IA shall as a minimum specify the following matters
  - Details of all measurement responsibilities
  - Details of the applicable standards
  - Determination of the TSO who is in charge of the installation, operation and maintenance of the measurement equipment
  - Obligation for the aforementioned TSO to provide all necessary information and data of the measured gas quantity and quality to the other party
    - Within the timeframe as specified in the IA
    - At a frequency as specified in the IA

- The installation, operation and maintenance of the measurement equipment at an IP shall take into account both relevant national requirements of the involved TSOs
  - TSOs shall use their reasonable endeavours to reach an agreement about this
  - If no agreement can be reached then the provisions of the overarching dispute resolution of the NC shall apply

Article 8: Measurement principles for gas quantity and quality

Default rule

Where the contracting parties do not agree on a standard for the measurement of volume and energy, the latest version of European standard EN1776 Functional Requirements for Gas Measuring Systems shall apply.

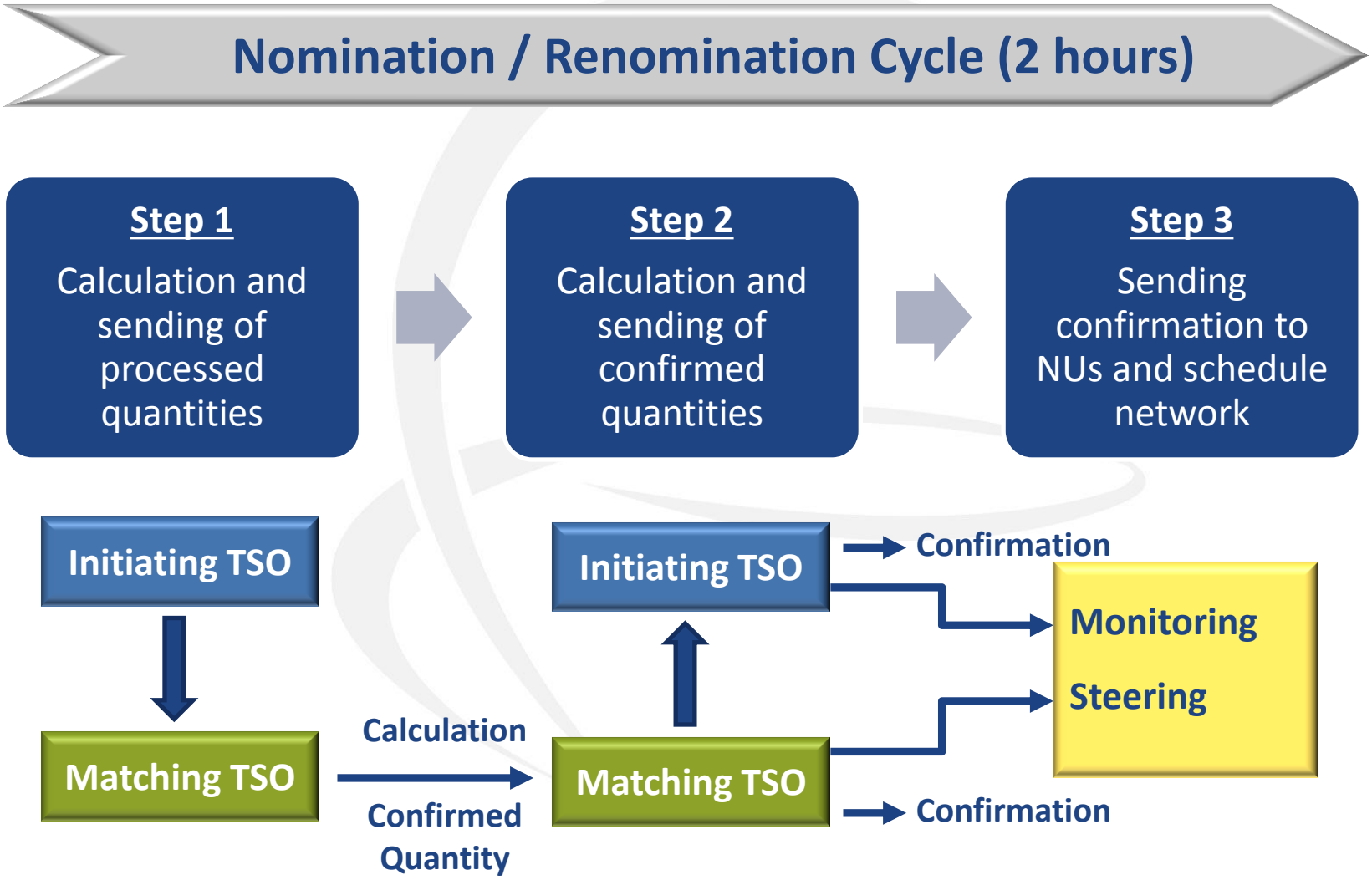
Article 9: Matching

- General Provisions
  - All TSOs whose systems are connected at an IP shall implement a Matching Process
- The Matching Process shall describe
  - Communication and processing of the relevant data among the TSOs
    - Roles (Initiating/Matching TSO)
    - Timing
    - Data formats
  - Calculation of the Processed Quantities and Confirmed Quantities of Network Users
    - Matching Rules

Default rule is the Lesser Rule

Examples: Results of Lesser Rule		
Processed Quantity A	Processed Quantity B	Confirmed Quantity
100	100	100
-100	-120	-100
100	80	80

Article 9: Matching



Article 10: Rules for the allocation of gas quantities

- The allocation rules have to be consistent at both sides of the IP
- IA shall define the OBA as the applicable allocation rule, however
  - For existing IAs TSOs may agree to maintain the existing allocation rules and inform their NUs thereof
  - For new IAs TSOs may agree on another allocation rule. In that case and if a network user of either of the TSOs requests the allocation rule should be the OBA then the TSOs have to conduct a public consultation

Default rule

IA shall define the OBA as the applicable allocation rule

Article 11: Exceptional events

- A general obligation for any TSO affected by an exceptional event shall be to
  - To comply with the provisions set forth by EC No 1227/2011
  - Inform the other TSO about the occurrence of the event and
  - Provide all necessary information to the other TSO

- TSOs shall agree on the
  - Communications means to be used to inform all relevant parties fast and simultaneous
    - Telephone for information or otherwise agreed
    - Written confirmation

- Content of communication between TSOs and TSOs
  - Nature of the event
  - Expected duration
  - Possible consequences on quantities that can be transported over the IP

- Content of communication between TSOs and their respective NUs
  - Nature of the event
  - Expected duration
  - Consequences for the confirmed quantities

Article 11: Exceptional events

- When the exceptional event ends the relevant affected TSO shall as soon as reasonable practical inform the relevant other TSOs and the affected NUs

Best practice

- **The relevant TSO shall inform without delay and keep informed the other TSO and shall inform as soon as reasonable practical its affected NUs**

FG: Dispute resolution (Articles 12 and 28)

In line with the FG require a twofold approach to the issue of dispute resolution in the NC is needed:

- an overarching procedure for disputes arising between TSOs ➡ page 7 of the FG
  - in case an IA is not yet in force;
  - In relation to the implementation of any provisions set forth in any NC's sections (units, gas quality, odourisation etc.) other than in the IAs.

- a procedure regarding the disputes arising out of or in connection to IAs between TSOs ➡ page 8 of the FG
  - including, but not limited to, the existence, validity, content, amendment or termination of the IA

The overarching principle is *ipso iure* (automatically) applicable.
The IAs' dispute resolution procedure must be foreseen by each IA as one of its mandatory terms.

Article 12: Settlement of disputes arising from Interconnection Agreements

- As a minimum, the IA shall specify **how** to settle any dispute that can't be amicably settled by the TSOs
  - Either define the court of jurisdiction
  - And / Or describe terms and conditions for the appointment of experts

- The applicable conflict-of-law rules shall apply in case
  - The jurisdiction deemed to be not competent
  - Any of the involved TSOs doesn't comply with the obligation in connection with the appointment of experts

Default rule

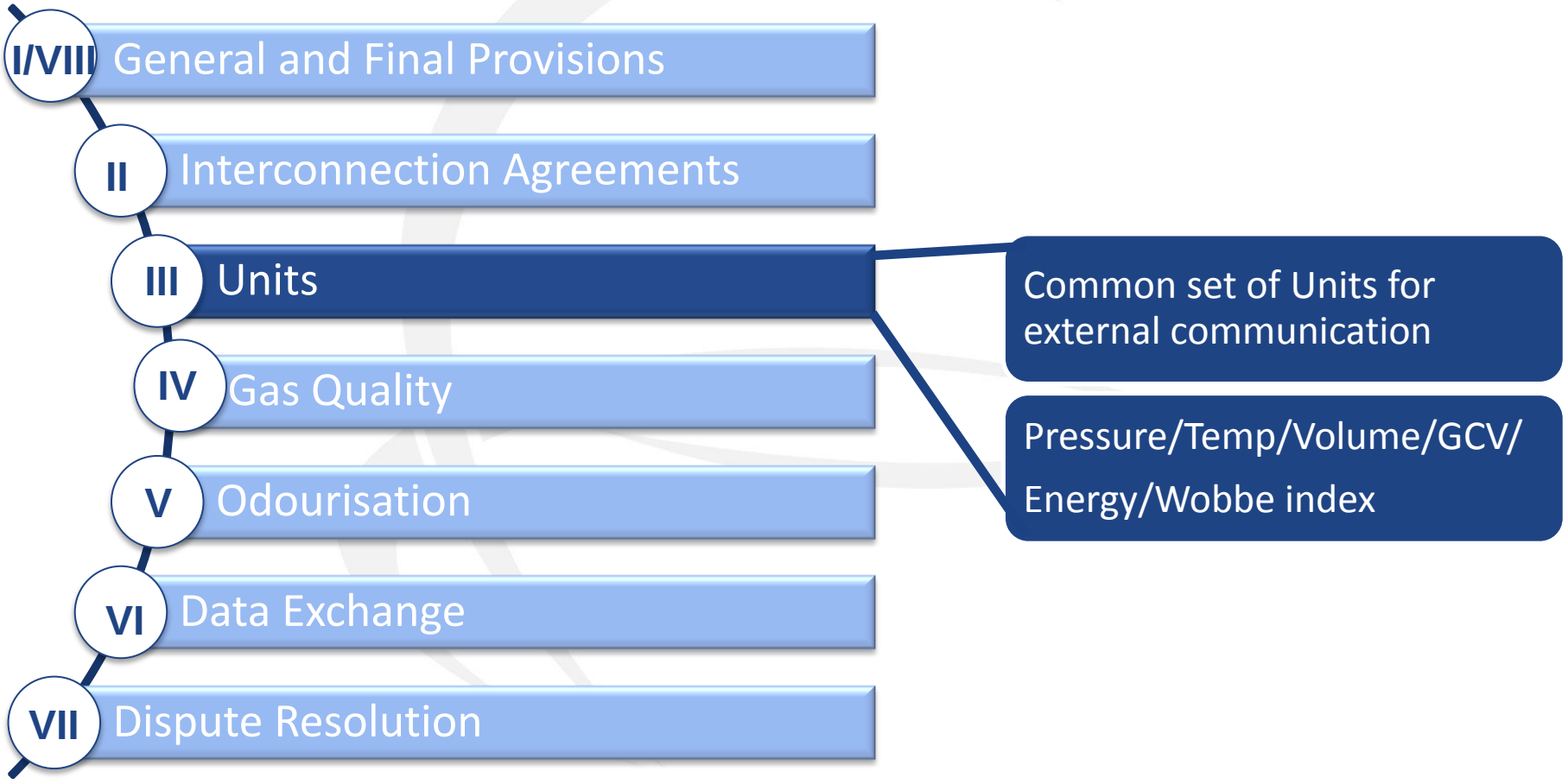
Should the TSOs not agree on a jurisdiction clause to finally settle the dispute the applicable conflict-of-law rules shall apply

Article 28: Overarching dispute resolution procedure

In this respect, in line with the FG:

- TSOs shall endeavour to settle the dispute;
- TSOs shall resort to any available dispute settlement mechanism(s) in place in their respective Member State pursuant to Article 41(11) of the Directive (EC) 2009/73;
- in case a common final decision cannot be reached, ACER shall take appropriate measures pursuant to Article 8 of the Regulation (EC) 713/2009.

NC Interoperability and Data Exchange



Article 13: General provisions

- Each TSO shall use the common set of units as defined in the NC for the communication related to the information exchange described in the network codes developed so far with other TSOs or with other counterparties or in respect of the publication of data on a common platform

- The above mentioned provisions are without prejudice to existing EU regulations covering harmonisation of units for other parameters

Article 14: Common set of units

Parameter	Unit
Pressure	bar
Temperature	° C (degree Celsius)
Volume	m3(n)
Gross Calorific Value	kWh/m3(n)
Energy	kWh (based on GCV)
Wobbe-index	kWh/m3(n) (based on GCV)

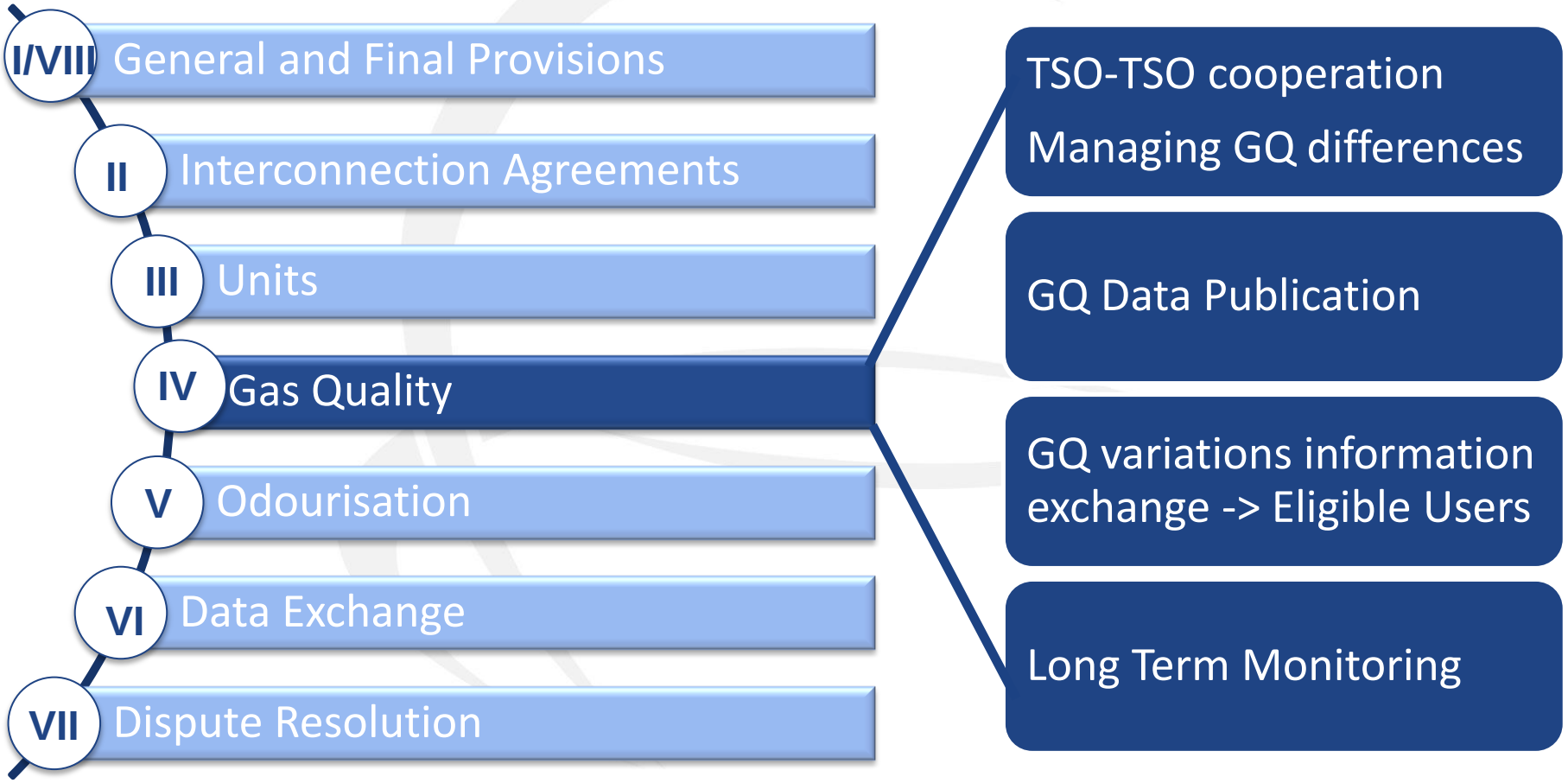
- For pressure, it should be indicated whether it refers to absolute (bar(a)) or gauge (bar(g)).
- The reference conditions for volume shall be 0° C and 1.01325 bar(a).
- For GCV, Energy and Wobbe-index the combustion reference temperature shall be 25° C.

Article 15: Additional units

- In addition to the units as described in article 13 and 14 other units or reference conditions for the exchange of data between TSOs and TSOs and between TSOs and NUs are allowed when the involved parties agree on it

- Conversion factors consistent with the procedures described in the latest version of ISO 13443 shall be provided where required

NC Interoperability and Data Exchange



Gas Quality – Managing Gas Quality Differences Art. 17

Application area:

- Cross border IPs
- Where the physical flow occurs
- Where the barrier has been identified (based on the real and/or historical flows and/or expected future flows (outlook))

Article 17 requires to manage the real identified problems that create a barrier to the cross border flow

Gas Quality – Managing Gas Quality Differences Art. 17

12 month period from entering into force of this regulation

Adjacent TSOs shall within 12 months…

> … agree whether or not there is a barrier persisting on IPs
> … inform relevant NRAs that barrier has been identified
> … develop technically feasible and financially reasonable options
> … jointly carry out CBA
> … conduct a public consultation
> … submit recommended solution to NRAs for approval.

> *TSOs shall review the situation with the frequency not less than once per year*

The dispute resolution procedure in Art 28 applies if TSOs fail to reach an agreement on whether the barrier exists and/or how it should be overcome.

Gas Quality – Managing Gas Quality Differences Art. 17

Issues beyond the scope:

> Responsibilities (who is responsible for gas quality) – national responsibility

> Defining gas quality parameters and their acceptable ranges – defined in national rules/further recommendations for harmonised gas quality standards are elaborated by CEN (Mandates by EC)

Short term monitoring – data publication Art. 18

- Provide real time gas quality data
- **Wobbe-index & gross calorific value publication**
- Frequency – at least **once per hour**
- Data measured at **physical IPs**
- No warranty given by TSO for any consequential loss or damage related to the use of the information by any third party

Short term monitoring on gas quality variation information exchange – Art. 19

Criteria for parties being eligible to potentially receive gas quality information:

- Any end consumer directly connected to the TSOs network, whose operation may be affected
- OR any network user that has a contract in force with a relevant end consumer (in regimes that prevent direct contracting TSOs to end consumer)
- Any DSO directly connected to the TSOs network
- Any SSO directly connected to the TSOs network, whose operation may be affected

Eligible parties to potentially receive gas quality variation information shall be specified at national level

Short term monitoring on gas quality variation information exchange – Art. 19

12 month period from entering into force of this regulation

TSOs obligations:

> Define and maintain a list of eligible parties

> For identified end consumers TSOs shall assess:

- The nature of indicative information
- Frequency of an update
- Lead-time
- How the information may be exchanged

TSOs shall use their reasonable endeavours using **existing equipment** to provide such information

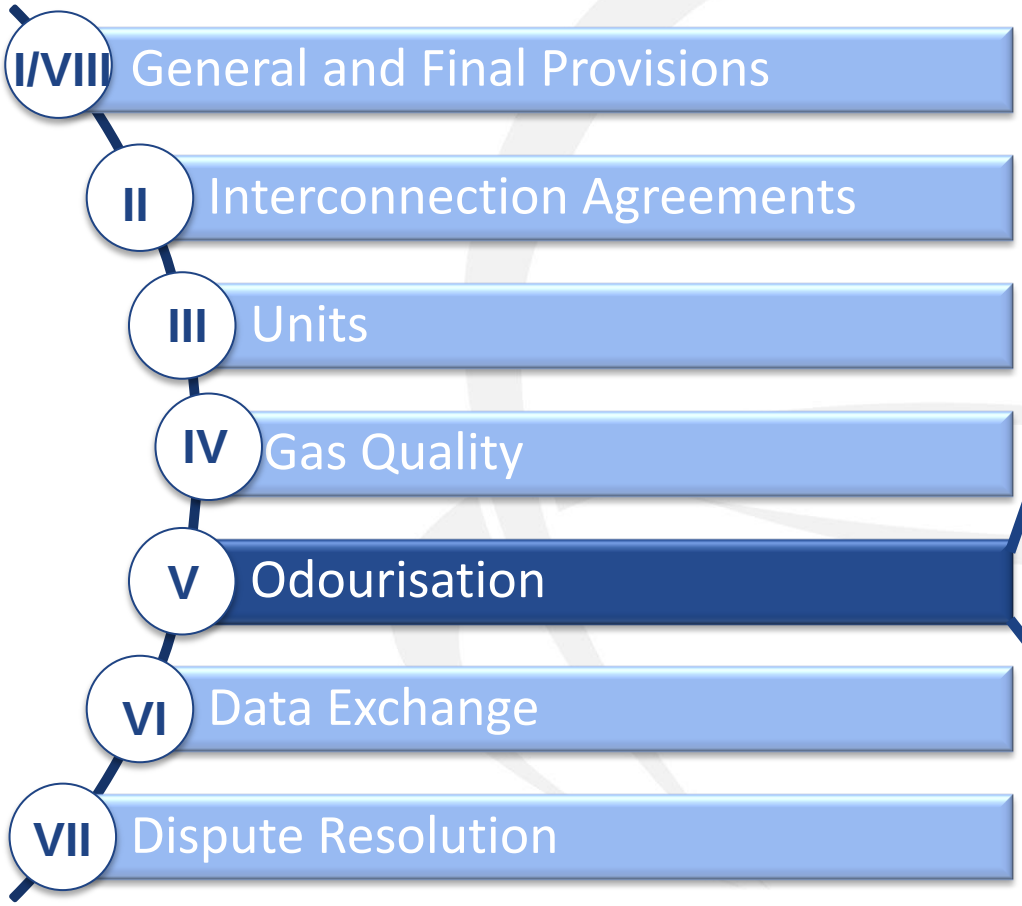
> No warranty given by TSO for any consequential loss or damage related to the use of the information by any third party

Long term monitoring – Art. 20

Scope of the outlook:

- To be produced every 2 years
- At least Wobbe-index – detailed parameters can be defined after stakeholders' consultation (TYNDP)
- New supply sources including **indigenous** and **non-conventional gases** production
- For each relevant parameter and every region → result in a range within which the parameter is likely to evolve
- The outlook shall be consistent and **in line with TYNDP** regarding:
  - Preparation and timing
  - Selection of the most relevant cases focusing on the year plus 5 and 10
  - Consultation process with stakeholders

NC Interoperability and Data Exchange



Process description
Bilateral agreement: 6 m

Detailed plan: 12 m

Member States' involvement

Safety issue

If no bilateral agreement: shift towards non-odourised gas

Odourisation – Art. 21

1st phase → 6 months period:

> TSOs shall:

- Identify differences in practices that might create a barrier
- Inform their NRAs if the barrier has been identified
- Actively cooperate to identify and assess the consequences related to:
  - Potential flow of odourised gas into non-odourised network
  - Possible acceptable level of odourant
  - Conversion towards non-odourised gas
- Submit the agreement, including cost recovery mechanism, for approval to relevant NRAs, with the involvement of the relevant authorities where required.

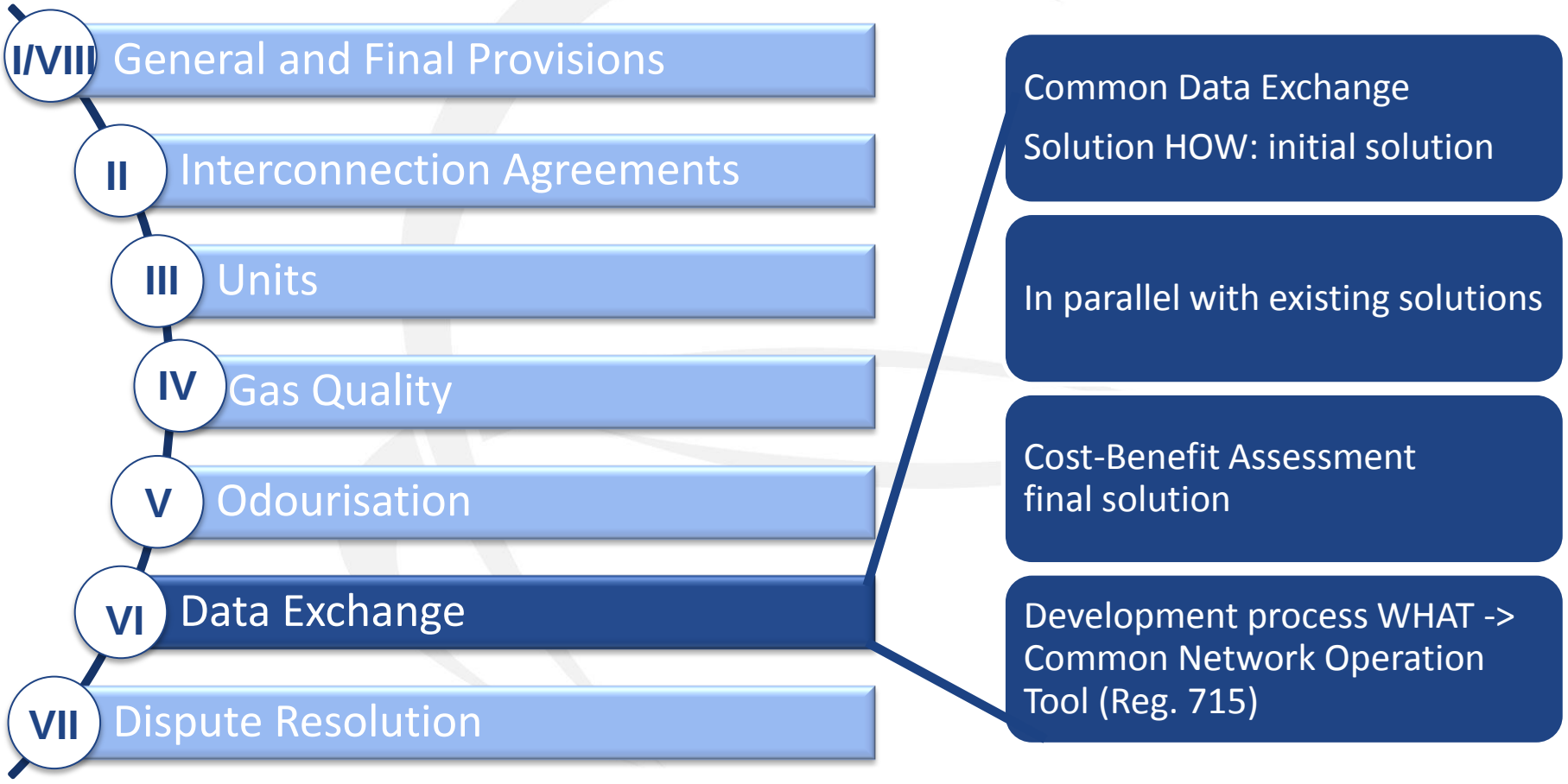
Odourisation – Art. 21

2nd phase → If no agreement can be reached between the TSOs or if the agreement is not acceptable to the relevant NRAs, then during 12 months period:

> TSOs shall in cooperation with relevant authorities:

- Develop options to remove barrier
- Define most cost effective option to deliver physical flows of non-odourised gas after producing cost estimates
- Implementation time
- Define final solution including cost recovery mechanism

NC Interoperability and Data Exchange



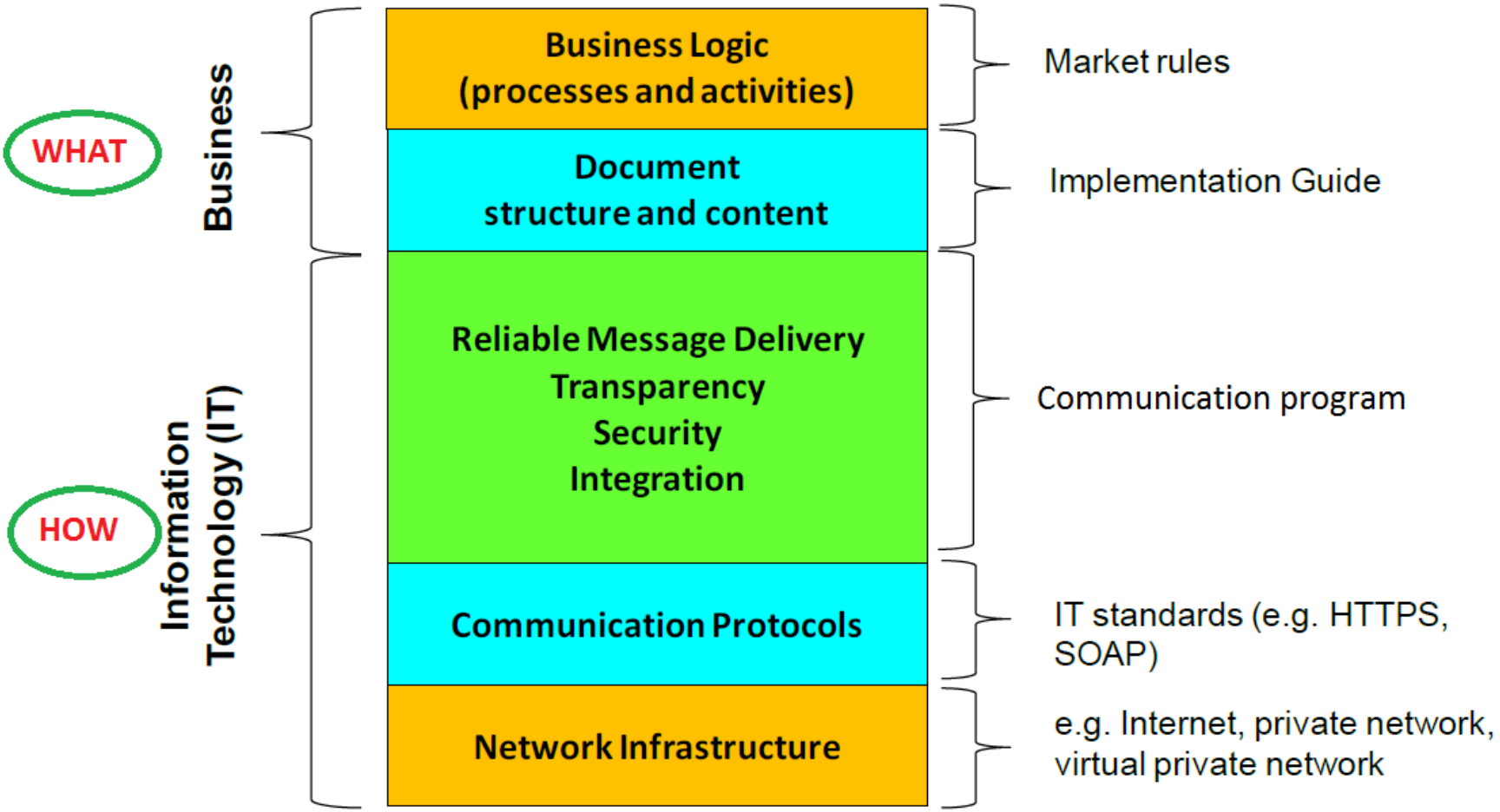
Introduction

- **Components for Data Exchange (HOW):**
  - Data Network
  - Data Exchange Protocol
  - Data Format

- **Types of Data Exchanges - toolbox:**
  - Document based (3 technical alternatives)
  - Integrated (web services – one technology)
  - Interactive (web browser – one technology)

Introduction

INTRODUCTION: WHAT & HOW



Data Exchange - Art 22

> Art 22: General provisions

- What: Regulation 715/2009
- Who: TSOs , TSOs – CP
- Network: Internet

Data Exchange- proposed solutions – Art 23

		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)

1. Data Content Format Edig@s-XML: Use of Edig@s-XML is subject to legal assessment
2. Initial proposed solutions based on a technical evaluation. Final solutions will be based on a detailed Cost-Benefit analysis

Data Exchange

Initial assessment:

- **Synergies: Protocol**
  - EFET: protocol ebMS.v2 for trading activities
  - ENTSO-E: MADES/ECP web service based solution for communications with e-TSOs. Not supported by all TSOs
  - → No technical compatibility between the existing solutions
- **Synergies: Data format**
  - XML generally used
  - → Common data content formats for electricity and gas will:
    - increase maintenance cost for unnecessary updates
    - increased risk for failures due to changes

Data Exchange

Initial assessment- actual spread

- Actual protocols
  - FTP
  - AS2
  - SMTP sFTP
  - Web service (http(s))
  - SOAP
  - E-mail

- Actual data formats
  - Edigas XML
  - Edigas – edifact
  - Excel (KISS-A)
  - Pdf
  - Proprietary formats
  - Csv files

- Many protocols and formats in use
- No compatibility between these solutions

Data Exchange

Initial assessment

- **Volume of data traffic**
  - Evaluate existing data exchanges (not subjected to any regulation)
  - Estimate number of messages (/hour,/day) 180.. 26100/d
    →Scalability
  - Estimate size of messages (define limitations of the evaluated solutions)
  - Performance criteria and transmission delay

→ Technical requirements

→ Security requirements (encryption, signing)

→ Commercial requirement (acknowledgement, non repudiation, potential new functionalities …)

Data Exchange

Initial assessment

- **Avoid discrimination of small shippers and new market entrants:**
  - Keep existing solutions in place as long as compliant with the business requirements
  - Services offered by service providers avoid big IT developments
  - Interactive data exchange solutions (depending on the application) will allow easy access from a PC via a browser

Data Exchange

Initial assessment- actual spread

- Actual protocols
  - FTP
  - AS2
  - SMTP sFTP
  - Web service (http(s))
  - SOAP
  - E-mail

- Actual data formats
  - Edigas XML
  - Edigas – edifact
  - Excel (KISS-A)
  - Pdf
  - Proprietary formats
  - Csv files

Existing Protocols and Data Formats taken into consideration for the evaluation for a Data Exchange solution

Data Exchange

Initial assessment

- **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

Data Exchange

Initial assessment

- **Cost evaluation** (to be confirmed by a detailed CBA)
  - Implementation cost expected to be equal
  - Maintenance cost expected to be similar
  - Expected life cycle – AS4 expected to last longer (most recent technology)

- **Risk evaluation:**
  - AS2: lower implementation risk, proven technology
  - ebMS: technology well known but many option possible
  - AS4 (based on ebMS)
    - higher risk since no experience by TSOs;

Data Exchange

	Options		Cost	Compliant with FG	Conclusion	remark
Data format	1	keep existing formats	no cost	no harmonization; incompatible solutions in EU --> not compliant	not compliant with FG	
	2	implement all existing formats	high cost for all parties to maintain all data formats	Barriers removed for interoperability No common set of data formats --> Not compliant	not cost efficient	
	3	Harmonisation : develop Business Requirements Specifications and common data formats	Minimal cost: All parties implement the same business model and data formats	full compliant	best solution for a minimum cost	Central governance of data formats required: ENTSOG-EASEE-gas cooperation on the EDIGAS-XML data format
Comm. Protocol	1	keep existing situation: different (incompatible) protocols in use	no cost	Limited communication possible between TSOs and CP	not compliant with FG	
	2	implement all existing protocols	high cost for all parties to maintain all protocols	Partial interoperability: no common agreement -->No harmonization	not compliant with FG	
	3	one protocol	cost for all parties to implement the protocol	Full interoperability	Not realistic seen the high number of local communications in some member states.Only a limited number of them need to communicate with other TSOs.	
	4	common protocol: co-existence with existing (local) protocols	All TSOs and, only CP that do not support the existing (local) protocols, need to implement the "common" protocol.	Full interoperability	Most cost efficient seen the limited number of implementations --> best solution for a minimum overal limplementation cost	It is expected that the common solution will replace over time all existing solutions

Data Exchange

- **Detailed Cost-Benefit Assessment study**

  Detailed study by ENTSOG with support of an external consultant

  - Focus on cost / benefit for the different technical options
  - Take the technical evaluation as a starting point

  Schedule:

  - 20-30/3/2013: Send questionnaire and collect information
  - 23/4/2013: Workshop to exchange views and collect opinions (present first results of the survey)
  - 28/5/2013**:** Presentation CBA results (during conclusion workshop NC)

Data Exchange – Art 24

Art 24: Security and Availability

Security:

- Each party is responsible for its own infrastructure
- Each party is responsible for the confidentiality of the information
- Each party shall inform other parties that might be compromised in case of any IT problem

Availability: TSOs shall take appropriate measures to

- avoid single points of failure in their data exchange systems
- obtain appropriate services from the internet service provider(s)
- minimize downtime (planned and unplanned) and inform their counterparties in case of planned unavailability

Data Exchange – Art 25

Art 25: Implementation

→ **Common solution** parallel to the existing solutions

- TSOs implement the common DE solution within 12 month when NC comes into force.
- Parties who cannot communicate with TSOs with their existing DE protocol shall also use the common DE solution
- Existing solutions can stay in place as long as they are compliant with the data exchange requirements for the corresponding business processes

Data Exchange – Art 26

> Art 26: Technology evolution

> Changes to the common solution may be necessary in the future due to:

- New business requirements
- New technology requirements
- Obsolescence of existing technology
- …

➢ ENTSOG will be responsible to take appropriate initiatives to meet the requirements for data exchange as defined in the regulations

➢ If required an amendment will be submitted to ACER

Data Exchange – Art 27

Art 27: Development process

- Data exchange requirements under regulation 715/2009 shall :
  - be controlled and developed by ENTSOG
  - be based on Business Requirements Specification (**BRS**)
  - be published by ENTSOG

- **CNOT** :
  - ENTSOG shall adopt Common Network Operation Tools
  - For Data Exchange: all information for the implementation of the network code

Network Code Interoperability and Data Exchange Rules

Third Countries Workshop

Discussion Panel

Vienna – 16 April 2013

Discussion panel: ENTSOG views

- Interoperability Network Code content and expectations
  - Hope it is satisfactory, harmonising things at the necessary level, but leaving room for flexibility
- How can Energy Community members contribute?
  - TSO-TSO cooperation is essential, same rules can be followed (including gas day definition)
- How can NRAs of Energy Community members contribute?
  - NRAs to respond
- How can operational cooperation between adjacent TSOs be improved?
  - Adopt common rules and procedures
  - Improve communication

3rd IEM Package Network Codes

- Implementation in the Energy Community -

Nina GRALL-EDLER, Energy Community Secretariat

ENTSO-G Third Countries Workshop – Vienna, 16 April 2013

AT A GLANCE

1. APPLICATION OF EU NETWORK CODES IN THE ENC
   - Not a theoretic discussion
   - Application is not voluntary
   - Not far ahead - adoption procedures are defined
     - Oct 2011 MC decision
     - June 2012 PHLG PA on Adoption of Network Codes
     - June 2012 ECRB PA on Adoption of Network Codes
   - Why necessary?
     - Smooth operation of interconnected systems requires harmonised rules
2. IN-TIME POSITIONING OF ENC INPUT IS CRUCIAL
   - How can EnC stakeholders contribute best?
   - Already established channels
   - Support by the ECS

PROCEDURES

EU

- **EC priorities**
- **ACER FG**
- **ENTSO-G NC → ACER recommendation**
- **Comitology → EU Regulation** (directy binding in the EU MS*)

EnC

- **MC Decision Oct 2011 / PHLG PA June 2012**
- EC to propose to PHLG for adoption
- Circulation to PHLG by ECS
- **ECRB PA June 2012**
- **Transposition* & implementation by CP** (stakeholders
- In time input needed for streamlined adoption
- **ECRB participation in PCs**

QUESTIONS

HOW TO ENSURE ADEQUATE REFLECTION OF ENC POSITIONS

- Already established procedures (ECRB / ENTSO-G)
- Actual TSO awareness / input?
- Challenges? – NRAs, TSOs, other stakeholders
- ECS support?

THANK YOU FOR YOUR ATTENTION!

QUESTIONS?

CONTACT

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plinacro D.O.O. OPERATOR PLINSKOGA TRANSPORTNOG SUSTAVA

INTEROPERABILITY

Current Status and Future Expectations

Vienna, 16. April 2013

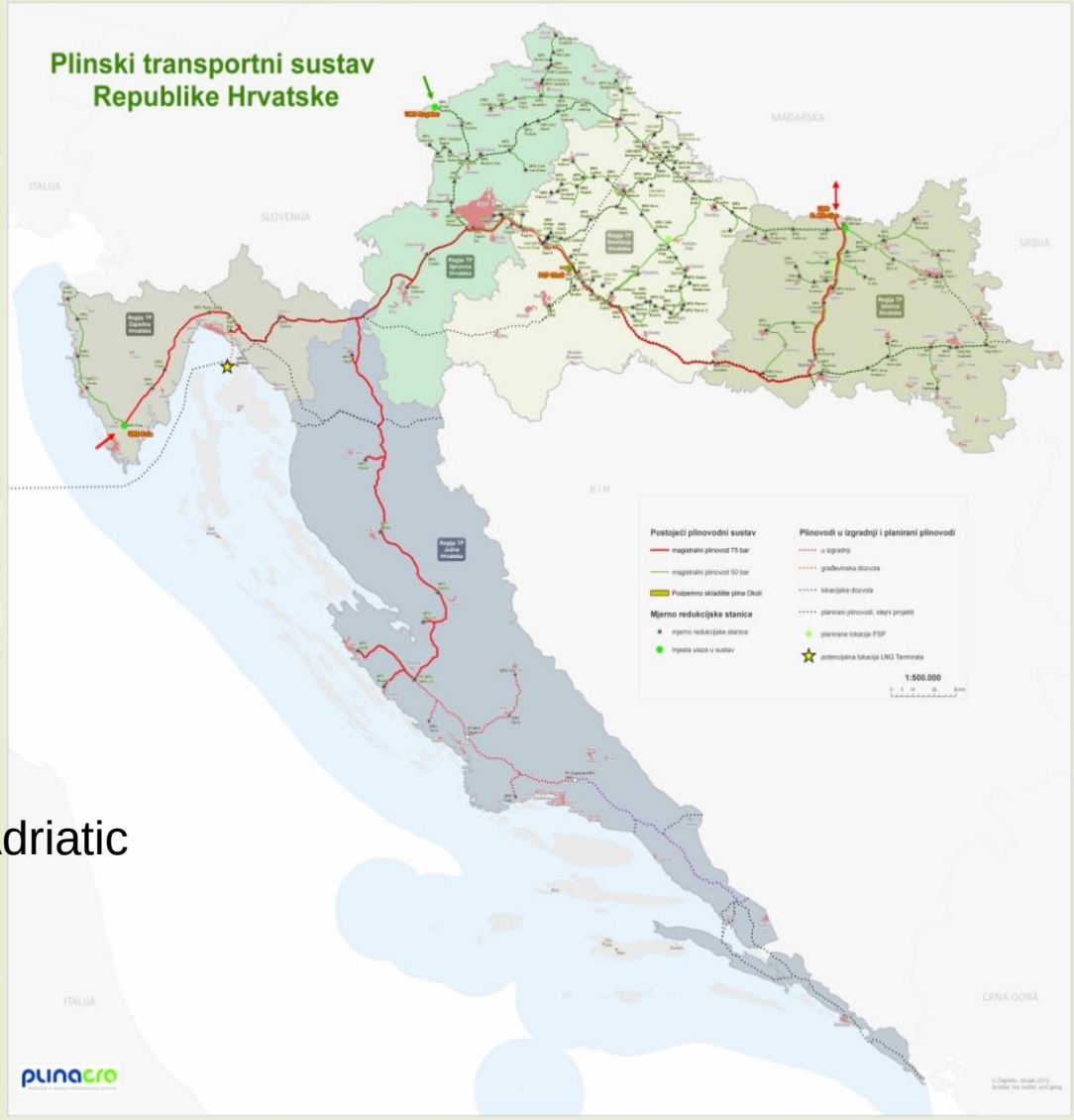
Ivana Marković, B. Sc. Petrol. Eng., Plinacro Ltd, Director of the Capacity Management Division

TECHNICAL DATA – 2012

- 2.530 km pipelines
- 10 entry points
- 157 exit points

CONNECTED SYSTEMS:

- 37 distribution systems
- 2 interconnections
- underground gas storage
- production fields of the North Adriatic
- production fields of Pannon



Interconnection Points

	IP Rogatec *CRO/SLO border*	***IP Dravaszerdahely*** *CRO/HU border*
	one directional	bidirectional
Capacity:	210.000 m^3/h	300.000 m^3/h
Booked capacity:	100%	30%
Utilisation:	65%	11%
NU:	4	5
Shipper pair:	7	9
Gas day:	08:00 – 08:00	06:00 - 06:00
Energy:	kWh (GCV 25^0C / 0^0C)	kWh (NCV 15^0C / 15^0C)
Matching TSO:	Plinovodi	FGSZ
Initiating TSO:	Plinacro	Plinacro
IA:	NO (final adjustment)	Yes (2011)

CONTENT (IA Rogatec, IA Dravaszerdahely):

- ***Flow control***
  - responsibility, obligations, rules
- ***Measuring gas quantity and quality***
  - responsibility, standards, rules
- ***Matching process***
  - less rule
- ***Allocation of volumes***
  - OBA
- ***Gas quality***
- ***Exchange of data and information***
  - KISS A, e-mail
- ***Control and maintenance of metering equipment***
  - procedures, terms
- ***Force majeure***
  - comunication
- ***Dispute resolution***

Conclusion

The contents of the NC is acceptable, clear and generally feasible

Introducing uniform rules and units facilitates business activities of operators and contracting parties

Additional defining of procedures is required for cases when the operators fail to reach a mutual solution as well as of the role of regulatory agencies

For complete implementation and adjustment sufficient time should be provided as well as the required financial means, through the tariff

Thank you for your attention!

ENERGY AGENCY OF THE REPUBLIC OF SERBIA

Network Code Interoperability and Data Exchange Rules Discussion panel

Aleksandar Popadić

Senior Expert for Natural Gas

Energy Community Workshop

Vienna, April 16, 2013

Interoperability Network Code content and expectation (1)

- Interconnection agreement (IA)
  - IA content is detail and clear
  - Serbian TSO has 2 interconnectors with Hungarian and B&H TSO
  - IA on interconnector should be in line with NC
  - Amendment for IA with Hungarian TSO - matching and allocation principles missing
  - New IA for Serbian and B&H TSO

- Units
  - IA content is clear
  - Almost all Units in NC is disagree with Units in Serbia
  - (GCV, LCV; kWh, MJ; referent conditions for volume 0°C, 15°C; default combustion referent temperature 25°C and 0°C for density; 15°C and 15°C)
  - Units from NC can be implemented in Serbia,
  - referent conditions for volume – calculation, others direct implementation

Interoperability Network Code content and expectation (2)

- Gas Quality and Odourisation
  - Gas quality specification range is expected in NC
  - More details about consumers whose operational processes can be affected by gas quality changes would be useful
  - Short term monitoring on gas quality is possible on interconnectors
  - There are differences in odourisation practices between Hungarian and Serbian TSO
  - Hungarian TSO sent reports about S, H2S and merkaptan

- Data exchange
  - Defined protocol is standard
  - Data format: Edig@s-XML - it is new for Serbian TSO
  - Security and availability – should be implemented in TSO software which communicate with network users and adjacent TSO

How can Energy Community members and their NRAs contribute

- Energy Community members contribution
  - Can participate in public consultation using data from ENTSO-G, ACER, EC web-site
  - Workshops about NC implementation is useful
  - Energy Community can be link between ENTSO-G, ACER and Energy Community members
  - NC should be implemented in Energy Community members

- Energy Community NRAs contribution
  - NRAs can participate in public consultation using data from ENTSO-G, ACER, EC web-site
  - Activity in WG should be in line with NC implementation
  - Workshops about NC implementation is useful

How can operational cooperation between adjacent TSOs be improved

- Problems for TSOs cooperation
  - In some Energy Community members gas market and TSOs not exist
  - Adjacent countries, but TSOs are not connected
  - Members adopt laws in line with EU legislation, but not implement them
  - Not enough investment for TSOs adequate equipment and software
  - Higher influence of politics than in EU countries

- Adjacent TSOs cooperation
  - Legal obligation to adopt EU legislation in national laws
  - EU control how EU legislation is implement in praxis
  - Regional meetings, like Energy Community Gas forum
  - Regional TSOs cooperation

Thank You for Your Attention

Interoperability Team

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