entsog

european network
of transmission system operators
for gas

28 March 2017

CAM NC amendment and Incremental capacity process

Implementation Workshop for Stakeholders

Image Courtesy of Thyssengas

Agenda

Nr	Session	Time
	Welcome Coffee	10:00-10:30
1	ENTSOG opening and introduction	10:30-10:40
2	View on the CAM NC amendment by DG ENER	10:40-10:50
3	Incremental capacity process	10:50-13:00
	• General view - Incremental capacity process (Jan Vitovsky, ENTSOG) • Demand assessment phase (Maria Jost, ENTSOG) • Design phase + NRA approvals (Pedro Miras, ENTSOG) • Capacity allocation and Economic test (Nicolas Peugniez, GRTgaz) • INC process on booking platforms – views by booking platform operators (Paolo Maffeis, PRISMA; Gabor Dudas, RBP, Rafał Celiński, GSA) • Test case – Virtual INC project - "INC reality check WG" (Thomas L'Eglise, Fluxys) • View on the final version of the INC process by NRA (Markus Krug, E-Control)	
	Lunch Break	13:00-14:00
4	Overview of all changes in the CAM NC amendment (Peter Hlusek, ENTSOG)	14:00-14:20
5	ENTSOG capacity conversion model proposal	14:20-15:30
	• Issue description + ENTSOG's recommendations in 2015 (Jan Vitovsky, ENTSOG) • Early implementation of Conversion service by NET4GAS, Fluxys BE and GRTgaz – capacity conversion implementation experience (David Urban, Net4Gas; Thomas L'Eglise, Fluxys; Daniel Bonnici, GRTgaz) • ENTSOG capacity conversion model 2017 (Maria Jost, ENTSOG)	
	Coffee Break	15:30-16:00
5	ENTSOG capacity conversion model proposal	16:00-16:45
	• ACER's view on ENTSOG capacity conversion model (Francois Levielle, ACER/CRE) • Discussion, stakeholder's feedback	
6	Conclusions of the workshop, next steps and timescales	16:45-17:00

1 ENTSOG opening and introduction

2 View on the CAM NC amendment by DG ENER

3 Incremental capacity process

Agenda – Incremental capacity

- General view - Incremental capacity process (Jan Vitovsky, ENTSOG)
- Demand assessment phase (Maria Jost, ENTSOG)
- Design phase + NRA approvals (Pedro Miras, ENTSOG)
- Capacity allocation and Economic test (Nicolas Peugniez, GRTgaz)
- INC process on booking platforms – views by booking platform operators (Paolo Maffeis, PRISMA; Gabor Dudas, RBP; Rafał Celiński, GSA)
- Test case – Virtual INC project - “INC reality check WG” (Thomas L’Eglise, Fluxys)
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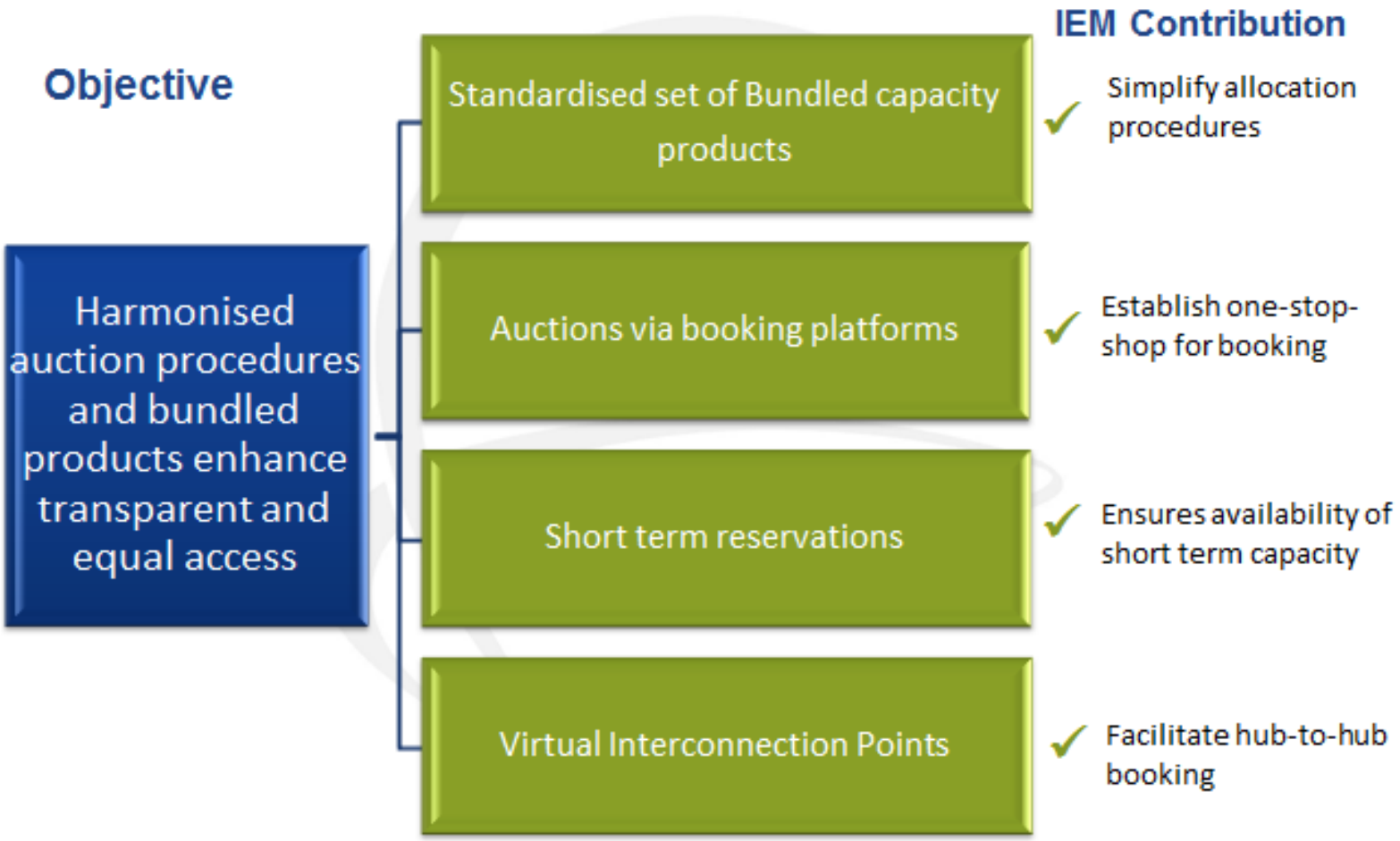
Introduction to INC capacity

Jan Vitovsky, ENTSOG

Capacity Allocation Mechanisms NC, applicable since 11/2015



Why CAM NC amendmend on Incremental capacity?

- How to deal with INC capacity according to the Third Energy package?
  => DIRECTIVE 2009/73/EC, Article 13.2:

> ***"TSOs shall build sufficient cross-border capacity to integrate European transmission infrastructure accommodating all economically reasonable and technically feasible demands for capacity"***

- **CAM NC EC 984/2013 refers to available capacity** => deals with utilization of existing capacity, **but not with development of incremental capacity**
- Stakeholders asked for EU-wide harmonized market-based procedure for development of incremental capacity

Incremental capacity

What is incremental capacity?

"a possible increase in technical capacity that may be offered based on investment or long term capacity optimization and subsequently allocated subject to the positive outcome of an economic test"

- At existing interconnection points
- By stablishing a new interconnection point
- A physical reverse flow capacity at an interconnection point, which has not being offered before

Incremental Proposal

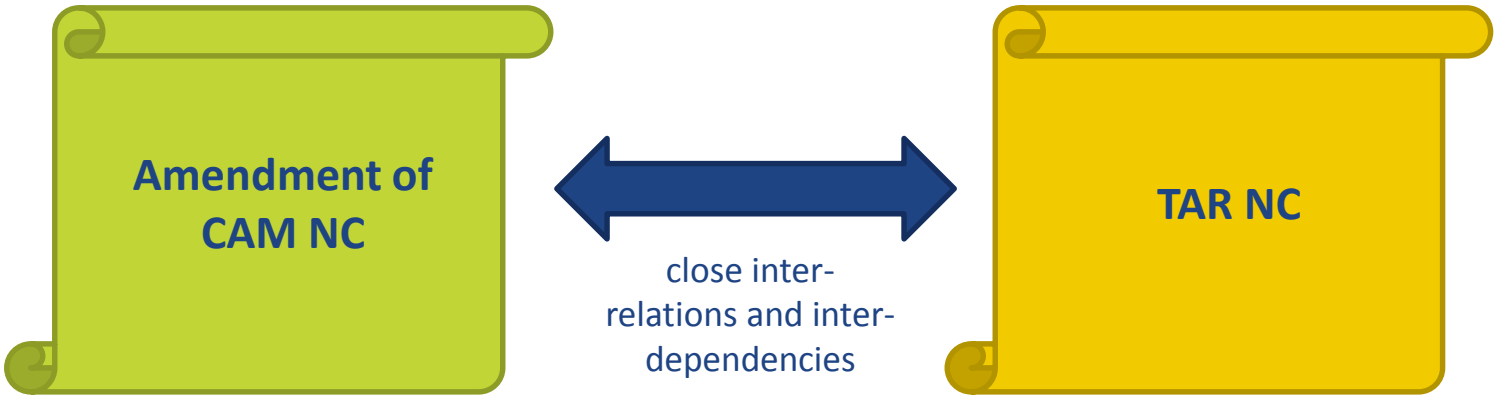
Objective of Incremental Proposal

"to stablish a market-base procedure to satisfy all economically reasonable and technically feasible demand for capacity"

- Standardised and coherent process for the realisation of incremental capacity
- Core is a harmonised and simultaneous assessment of demand for incremental capacity across the Union
- Intensive cooperation and coordination between TSOs, NRAs and network users

What is the CAM NC amendment on Incremental capacity?

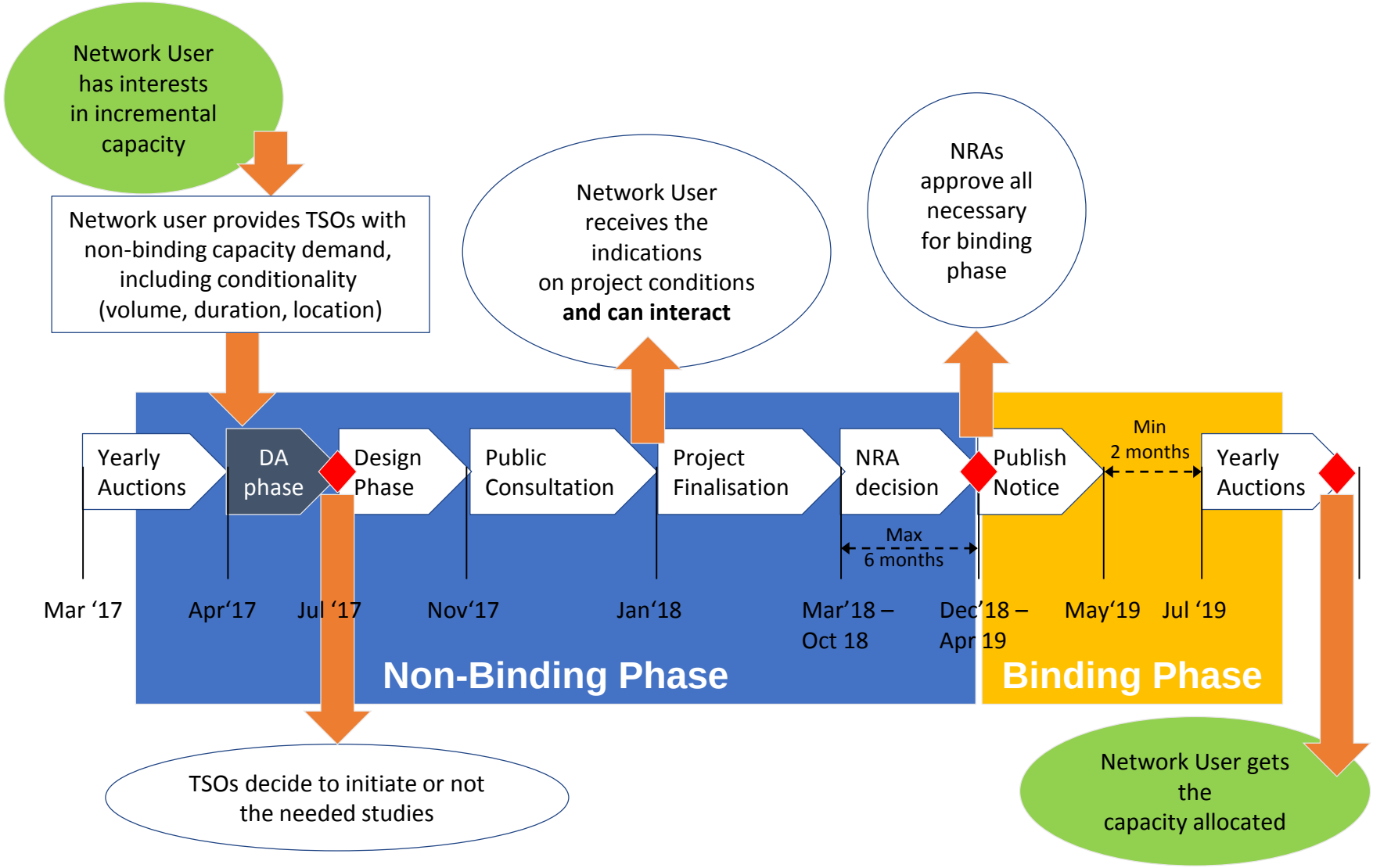
- ACER submitted **Guidance for amendment of CAM NC** on incremental capacity and **Framework Guidelines for TAR NC** in Dec 2013
- EC invitation to submit incremental proposal before end of 2014
- ENTSOG submitted incremental proposal to ACER on 26 December 2014
- The incremental proposal consists of two parts:



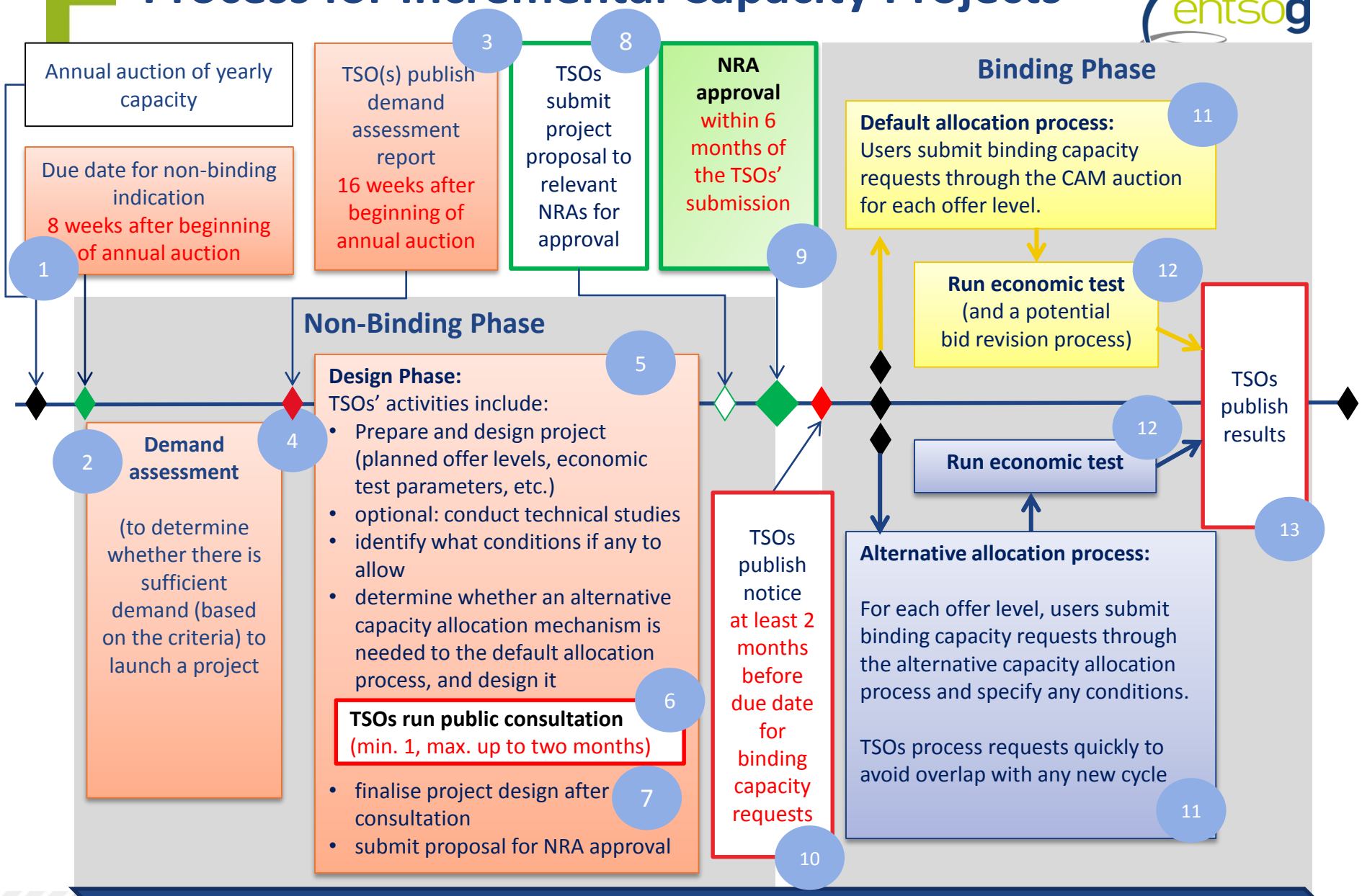
What CAM NC amendment on INC capacity has delivered?

- Harmonised and simultaneous assessment of demand for incremental capacity across the EU
- A standardised way for market participants to flag appetite for incremental capacity
- An integrated offer of incremental and existing capacity
- A standardised process to establish economic viability of an incremental capacity project with local input parameters

INC process - 1st initiation in April 2017



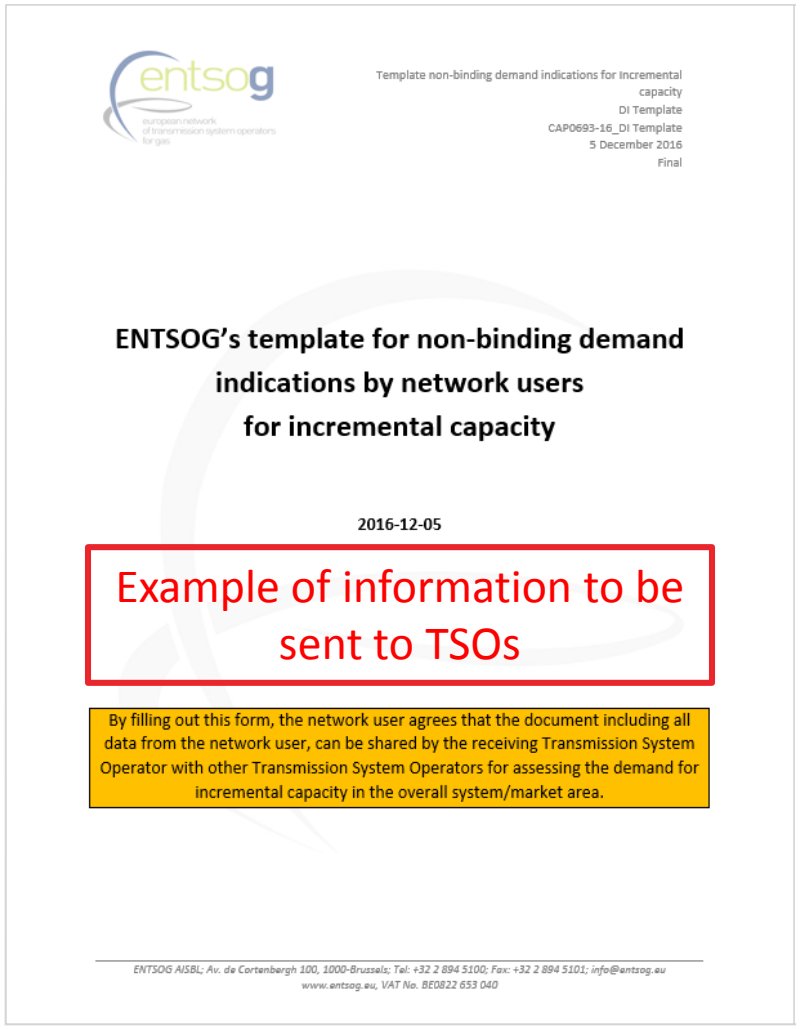
Process for Incremental Capacity Projects



Demand Assessment Phase

Maria Jost

Non-binding Demand Indications



Template non-binding demand indications for Incremental capacity
DI Template
CAP0693-16_DI Template
5 December 2016
Final

ENTSOG's template for non-binding demand indications by network users for incremental capacity

2016-12-05

Example of information to be sent to TSOs

By filling out this form, the network user agrees that the document including all data from the network user, can be shared by the receiving Transmission System Operator with other Transmission System Operators for assessing the demand for incremental capacity in the overall system/market area.

ENTSOG AISBL; Av. de Cortenbergh 100, 1000-Brussels; Tel: +32 2 894 5100; Fax: +32 2 894 5101; info@entsog.eu
www.entsog.eu, VAT No. BE0822 653 040

Example

ENTSOG and TSOs webpages

To be used template

Demand Assessment Phase

At least **every odd-numbered year after annual yearly auctions** per entry-exit-system border

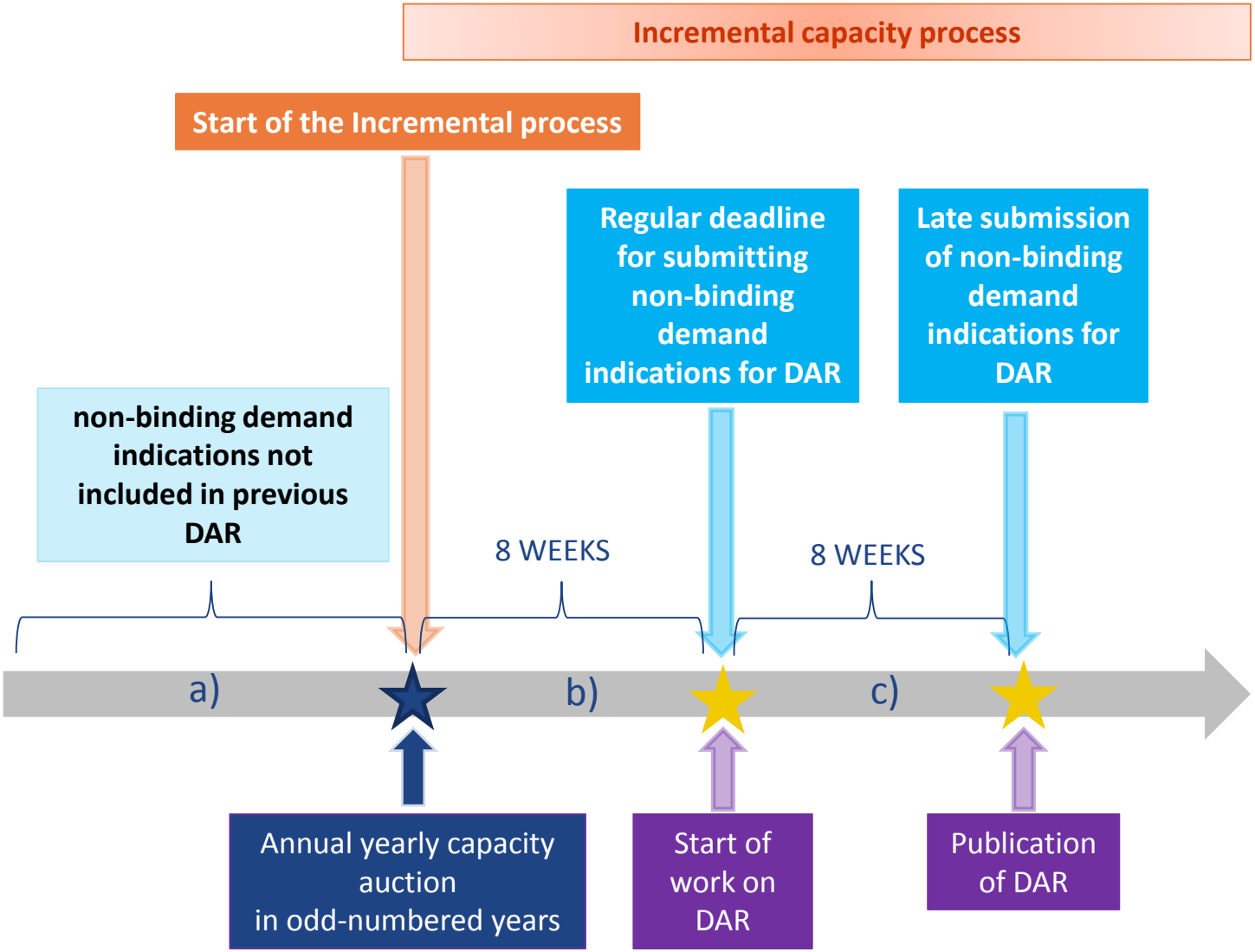
Efficient due to **coordinated timing** and **evaluation** of demand indications

- easy realization of interdependencies between demand indications and potential capacity projects among several IPs

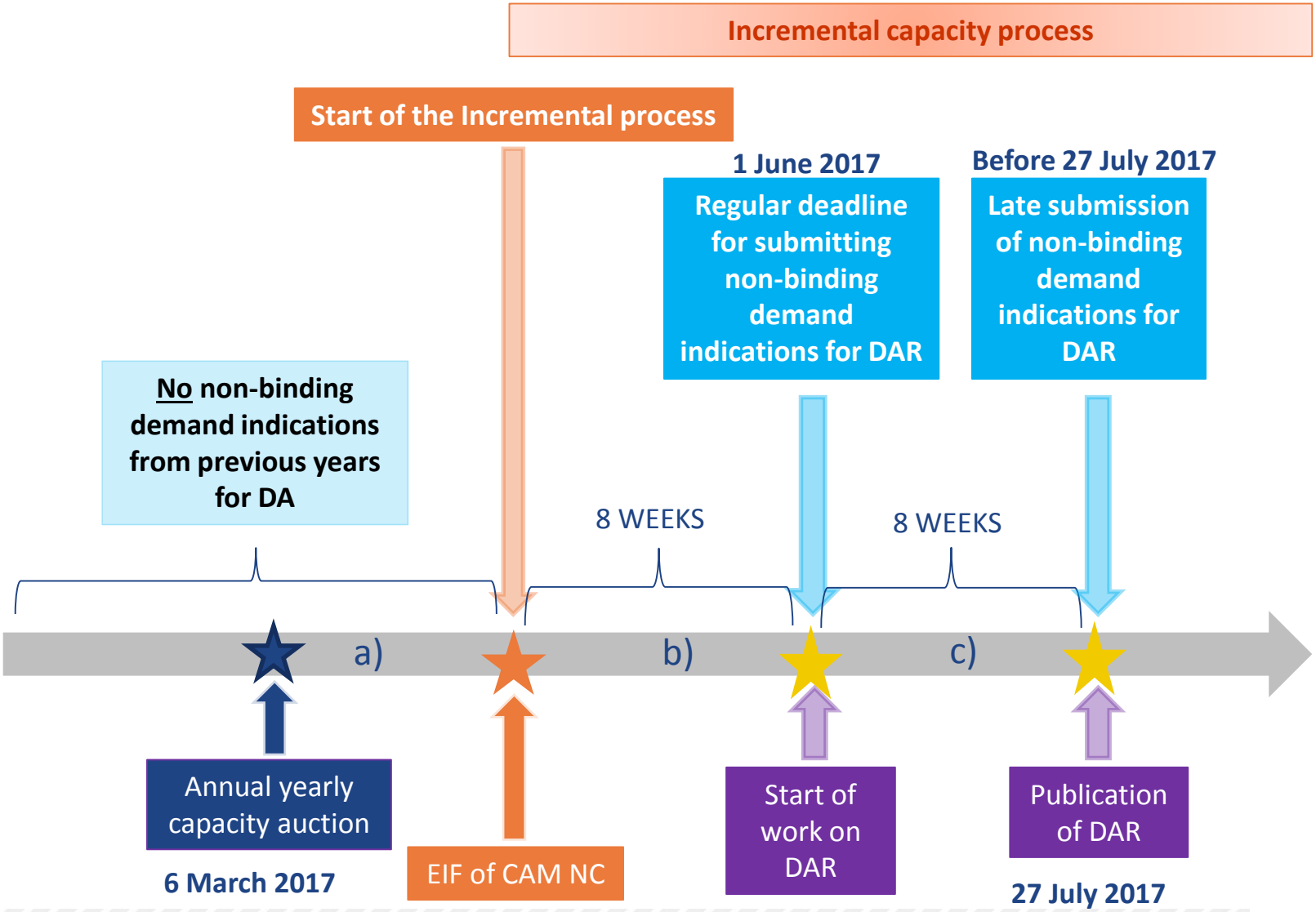
Process transparent and **open to everyone**

Demand assessment based on expressed **demand indications**

Demand Assessment Timeline



Demand Assessment Timeline



Demand Assessment Report

- Demand Assessment Report (DAR) to analyse demand for incremental capacity per entry-exit-system border

- Criteria to be taken into account in DAR includes:
  - ✓ Network Users' requests for incremental capacity
  - ✓ Availability of long-term yearly standard capacity products in annual yearly auction
  - ✓ Supply gaps or transport requirements identified in TYNDP or national NDP

Demand Assessment Report

Conclusions for the incremental capacity project/process:

- Whether the incremental capacity process will be proceeded
- Whether technical studies for an incremental capacity projects will be conducted
- Technical studies shall specify:
  - IP/VIP,
  - expected demand level(s) they will be conducted, and
  - which TSOs may be affected

Demand Assessment Report Structure

A. Non-binding Demand indications

B. Demand assessment

- i. Historical usage pattern
- ii. Results of current annual yearly auction
- iii. Relations to GRIPS, TYNDP, NDPs
- iv. Expected amount, direction and duration of demand for incremental capacity

C. Conclusion for the (non)-initiation of an incremental capacity project/process

D. Provisional timeline

E. Interim arrangements for the auction of existing capacity on the concerned IP(s)

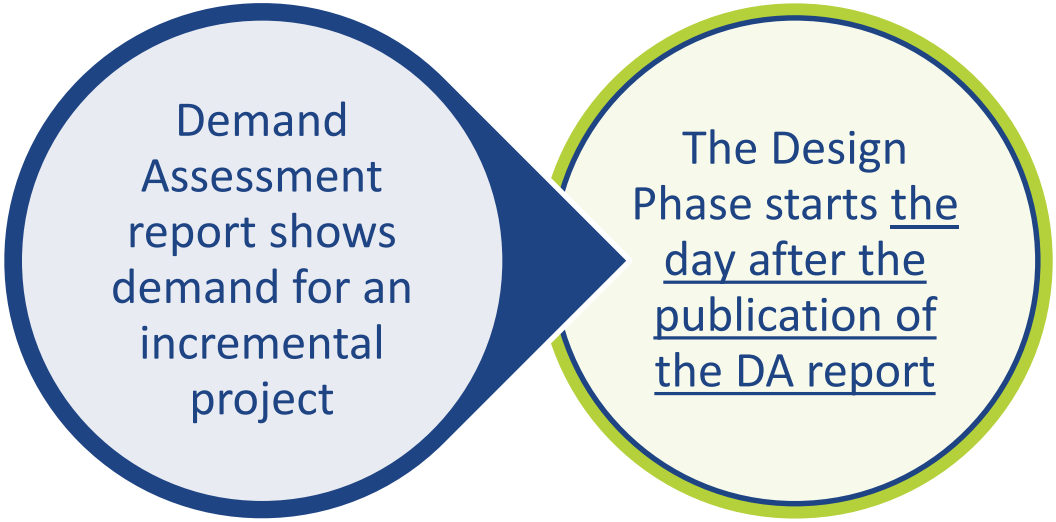
F. Fees

G. Contact information

Design Phase and NRAs approvals

Pedro Miras

Design Phase



- TSOs shall conduct technical studies for incremental capacity projects to co-ordinated offer levels based on:
  - technical feasibility
  - market demand assessment reports
- Latest 12 weeks after the start of the design phase a joint public consultation on the draft project proposal is run by the TSOs

Design Phase – Offer level

- *"**'offer level'** means the sum of the available capacity and the respective level of incremental capacity offered for each of the yearly standard capacity products at the interconnection point where yearly standard capacity products for incremental capacity are offered at an interconnection point"*

Offer Level Base Case (only existing capacity)

Price	Offer	Year 5	Year 6	…
X	100	100	100	…

Offer Level 1 (existing plus 25 INC capacity)

Price	Offer	Year 5	Year 6	…
Y	125	125	125	…

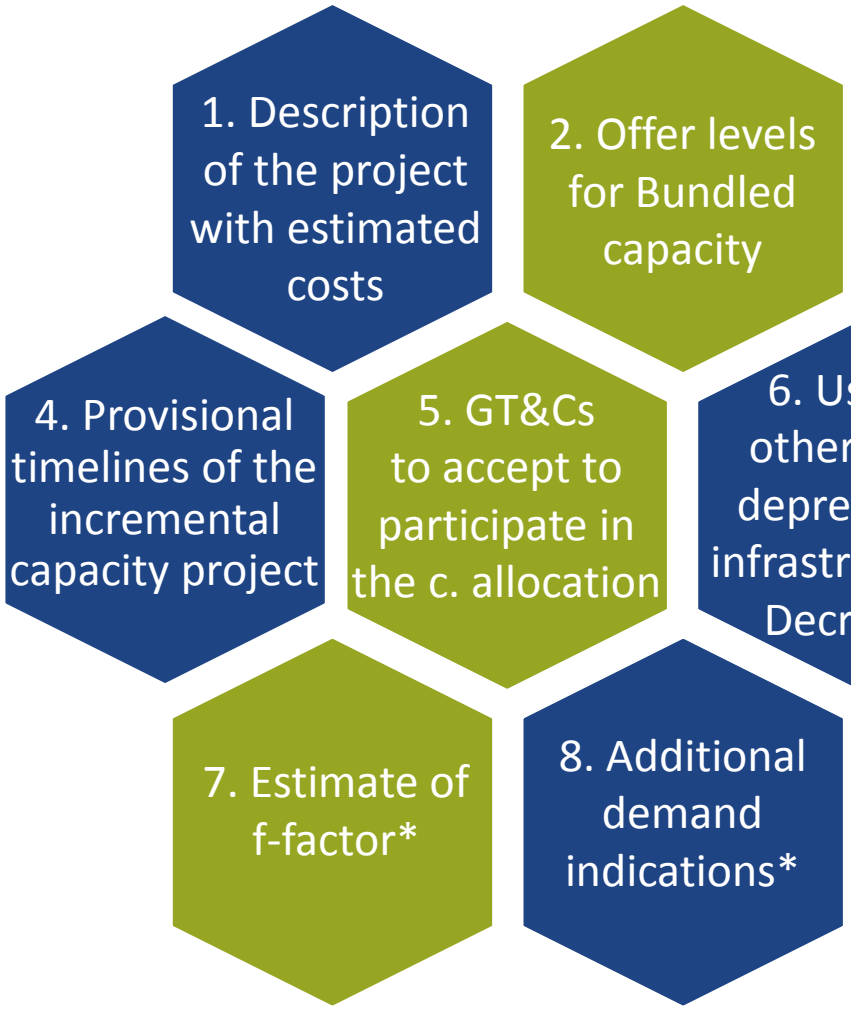
Offer Level 2 (existing plus 50 INC capacity)

Price	Offer	Year 5	Year 6	…
Z	150	150	150	…

In this process, the transmission system operators shall closely cooperate with the involved national regulatory authorities and coordinate across borders in order to enable offers of incremental capacity as bundled products.

Design Phase

Content of the consultation:



3. If receive any conditional demand indications

7. Proposed by the NRA after consulting with TSO

8. Received after the deadline (8 weeks after the start of the annual yearly auction).

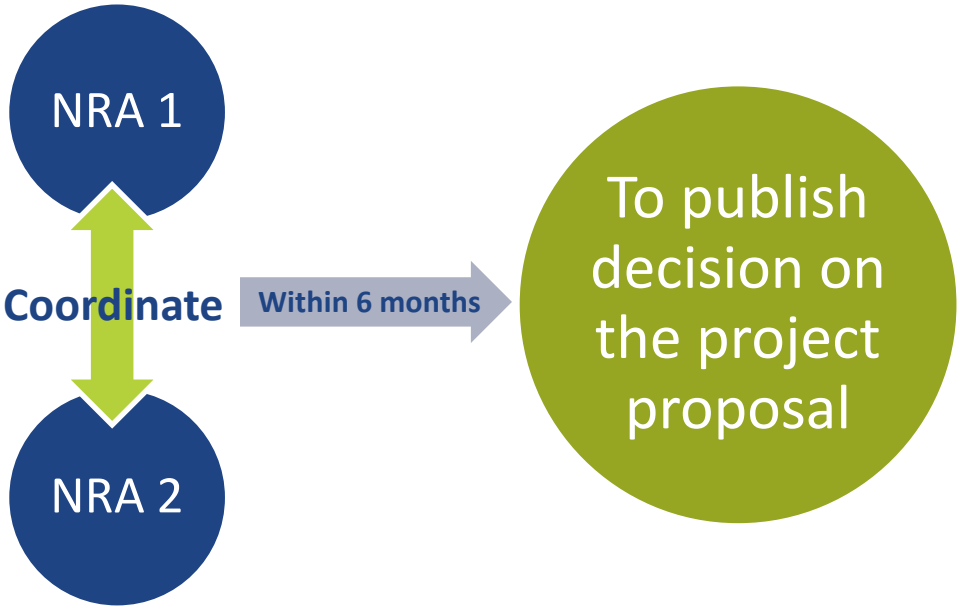
9. Where a fixed price approach is followed

Approval and Publication

- Once consultation is finalized, the involved TSOs shall submit the project proposal for an incremental capacity project to the NRAs for coordinated approvals with the following information:

1. All offer levels, reflecting the range of expected demand
2. The general rules and conditions that a Network User must accept to participate in the binding phase
3. Timelines of the incremental capacity project
4. Parameters defined in the Economic Test
5. Whether an exceptionally extended time horizon of up to 5 years may be required
6. The proposed alternative allocation mechanism including its justification as well as the conditions
7. If fixed price approach is followed, the elements described in TAR NC

Approval and Publication



- In case of objection by one NRA, NRAs obliged to reach common agreement
  - If NRAs cannot reach an agreement → ACER decides
- After NRAs decision + latest 2 months before yearly capacity auction, TSOs publish jointly a notice including the following minimum information:
  - as described in previous slide, as approved by the NRAs
  - a template of the contract(s) related to offered capacity

Capacity allocation and Economic test

Nicolas Peugniez

Market Test Phase

Allocation procedure

- Standard yearly CAM NC auction or alternative allocation mechanism to be used for the allocation of incremental capacity
- All offer levels are offered separately and in parallel
- Economic tests applied to the outcomes of all auctions for each offer level

Economic Test

- Defines economic viability by setting the minimum required level of upfront user commitment
- Single economic test to be defined before auction per offer level
- Reflecting the financial requirements of all TSOs

Auctions vs. alternative CAM

CAM NC auction as default and **alternative Capacity Allocation Mechanism (aCAM)** only in specific cases:

- when the project involves more than two entry-exit systems

and

- bids with a duration of more than one year are requested

One procedure shall be applied for all points in a common project. If aCAM criteria is met, the entire project shall be offered in via aCAM.

Alternative allocation mechanism

Alternative Allocation Mechanism
➢ Application of alternative Allocation Mechanism subject to NRA approval ➢ Conditional bids may be requested by Network Users ➢ Alternative CAM covers maximum 15 years after the start of operational use – booking horizon can be extend by up to 5 additional years if economic test could not be passed based on the 15 years' bookings ➢ Prioritisation of booking duration or bids for higher amounts of yearly capacity products possible → 10% - 20% of incremental capacity has to be set aside

Parallel bidding for incremental capacity

Shipper bidding for bundled capacity at one IP with incremental capacity on offer

Offer Level Base Case (only existing):

Price	Offer	Year 5	Year 6	…
X	100	100	100	…

Offer Level 1 (existing plus 25):

Price	Offer	Year 5	Year 6	…
Y	125	125	125	…

Offer Level 2 (existing plus 50):

Price	Offer	Year 5	Year 6	…
Z	150	150	150	…

- One auction for each incremental capacity offer level, combining the existing capacity and the respective amount of incremental capacity
- Auctions run in parallel and Network Users can place bids separately, allowing them to differentiate their willingness to pay according to the amount of capacity available
- In case the auction clears with a premium, bid revision is applied to allow Network Users to replace the premium by a demand increase.

Economic Test

The **Economic Test** is passed, if:

PVUC ≥ **f-Factor** x **PVAR**

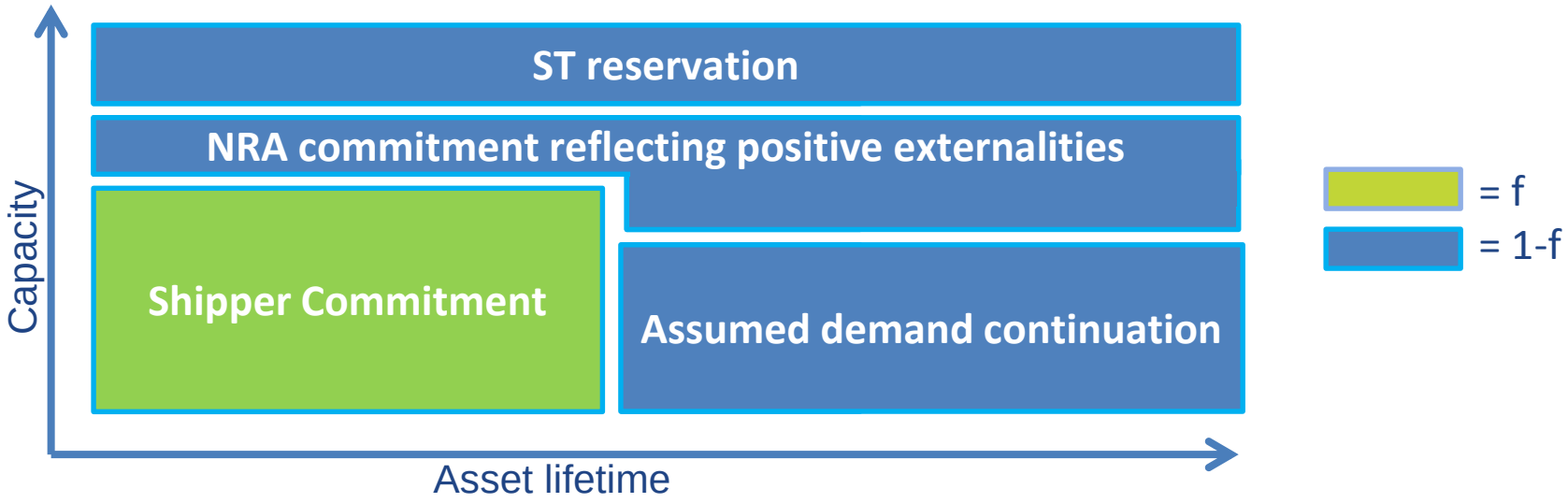
PVUC = Present Value of User Commitment,
Based on tariff assumption, possible premium and user demand, per offer level

PVAR = Present Value of Allowed Revenues (or target revenues)
Reflecting the increase in allowed revenues caused by the investment

f-Factor = The share of PVAR, that needs to be covered by PVUC in order to pass the economic test

The **Economic Test** shall reflect the financial requirements of all involved TSOs and NRAs

How is level of f-factor determined?



- NRA determines level of f-factor by quantifying these three parameters
- 1-f will be covered by future bookings and – to the extent future bookings do not exist – by bookings of capacity at other points of the system

Tariff principles for INC capacity

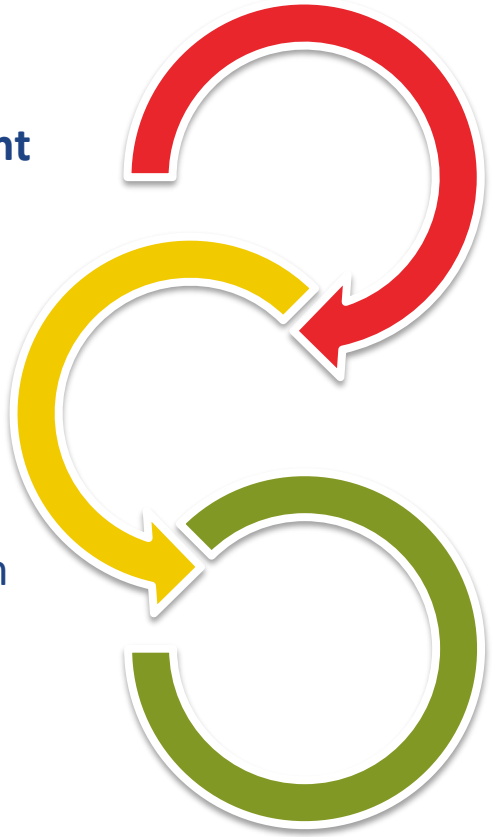
- **Minimum price = reference price:** at which TSOs shall accept a request for incremental capacity

if

- **∑€ allocation of all incremental capacity < ∑€ sufficient revenues →** economic test outcome not be passed

→ mandatory minimum premium may be applied

  - level of **mandatory minimum premium shall enable a positive economic test outcome**
  - range of level for mandatory minimum premium shall be submitted to relevant NRA for approval



INC process on booking platforms – views by booking platform operators

Paolo Maffeis, PRISMA

PRISMA's view on auctioning of INC capacity

ENTSOG' workshop: 28.03.2017, Brussels

Main processes affected by “Incremental Capacity”

The several important processes, in which Shippers are directly involved, will need to be adjusted or modified:

- Shipper registration;
- Publication of yearly auctions and eventually of repeated yearly auctions;
- Credit limits management (only for the TSOs who are using this functionality);
- Confirmation of the auctions results;
- Publication of the auctions results.

PRISMA

What PRISMA's TSOs want to achieve

The redesign of the existing and new processes will be done taking in consideration the following aspects:

- Avoid undue increase of complexity;
- Support Shippers in the process of buying yearly products;
- Maintain high level of transparency;
- Provide proper information and trainings to Shippers.

Strong cooperation between TSOs is fundamental before and after the implementation of Incremental Capacity on PRISMA

PRISMA

INC process on booking platforms – views by booking platform operators

Gabor Dudas, RBP

The RBP Operator's view on the Incremental Capacity Auctions

RBP – CEE/SEE „Hot” from INC Point of View

RBP REGIONAL BOOKING PLATFORM

RBP | News and Events | UMM | Secure Area | Capacity Auctions | Buy-back Auctions | Members and IPs | Useful Information

TSO MEMBERS (8)

- BULGARTRANSGAZ — Bulgartransgaz EAD
- DESFA — DESFA S.A.
- eustream SLOVAK GAS TSO — Eustream, a.s.
- FGSZ Zrt.
- GAS CONNECT AUSTRIA — Gas Connect Austria GmbH
- MAGYAR GÁZ TRANZIT ZRT. — Magyar Gáz Tranzit Zrt.
- plinacro — Plinacro, d.o.o.
- TRANSGAZ — SNTGN Transgaz SA

NETWORK USER MEMBERS (98)

INTERCONNECTORS (14)

BULGARIAN DOMESTIC POINTS (233)

HUNGARIAN DOMESTIC POINTS (319)

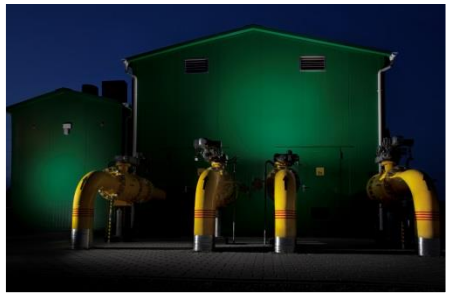
ROMANIAN DOMESTIC POINTS (2)

Changes in RBP due to INC Capacity Auctions

- RBP's software architecture was developed with Incremental Capacity Auctions (then parallel bidding ladders) and Open Season procedures in scope, therefore the provisions of the final NewCAM can be met by small effort
- **Open Season product („Strip")**  **100% ready**
  - Non-binding OS
  - Binding OS
- **Offer Levels**  **80% ready**
  - With the appropriate manual settings, RBP can run incremental capacity auctions ➔ from a platform operator's point of view, however, the setup of offer levels are not sufficiently automated yet
  - From the functional point of view (bidding, auction results communication), no changes are foreseen for Network Users ➔ additional information for increased transparency reasons will be displayed regarding incremental auctions
  - Current business workflow has to be minimally altered from the TSO's point of view for incremental scenarios ➔ new TSO decision point to be applied
- **DAR** – planned but implementation only in case of TSO demand

INC process on booking platforms – views by booking platform operators

Rafał Celiński, GSA



Incremental capacity process on the GSA Platform

Rafal Celiski, Specialist
Gas Transmission Operator GAZ-SYSTEM S.A.

Brussels, 28 March 2017

GAZ system

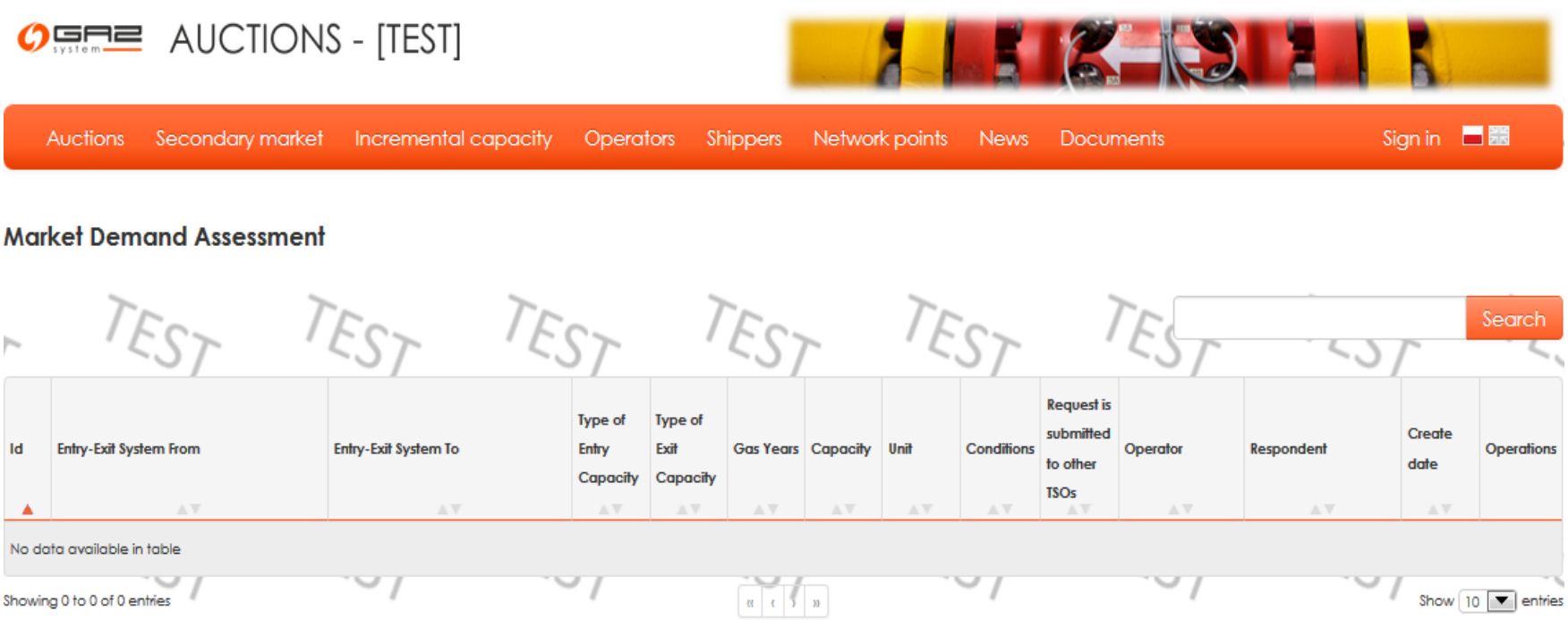
GSA Platform

Incremental capacity process on the GSA Platform

GSA Platform is currently under preparation for the entire incremental process

1. **User registration on the GSA Platform (additional rights for incremental process)**
   - Additional rights for existing Network Users
   - New Users' registration required for non-binding phase
2. **Non-binding market demand assessment**
   - Submission of non-binding demand indications based on approved template
3. **Market demand assessment report**
   - Report generation with aggregated demand indications received
   - Forward of the aggregated results to the TSOs for the preparation of Demand Assessment Reports
4. **Auctioning of incremental capacity**
   - Determination of offer levels by TSOs for each incremental capacity product
   - Yearly auctions of incremental capacity
5. **Auction results for economic test calculation**
6. **Publication of auction results**

Market demand assessment phase

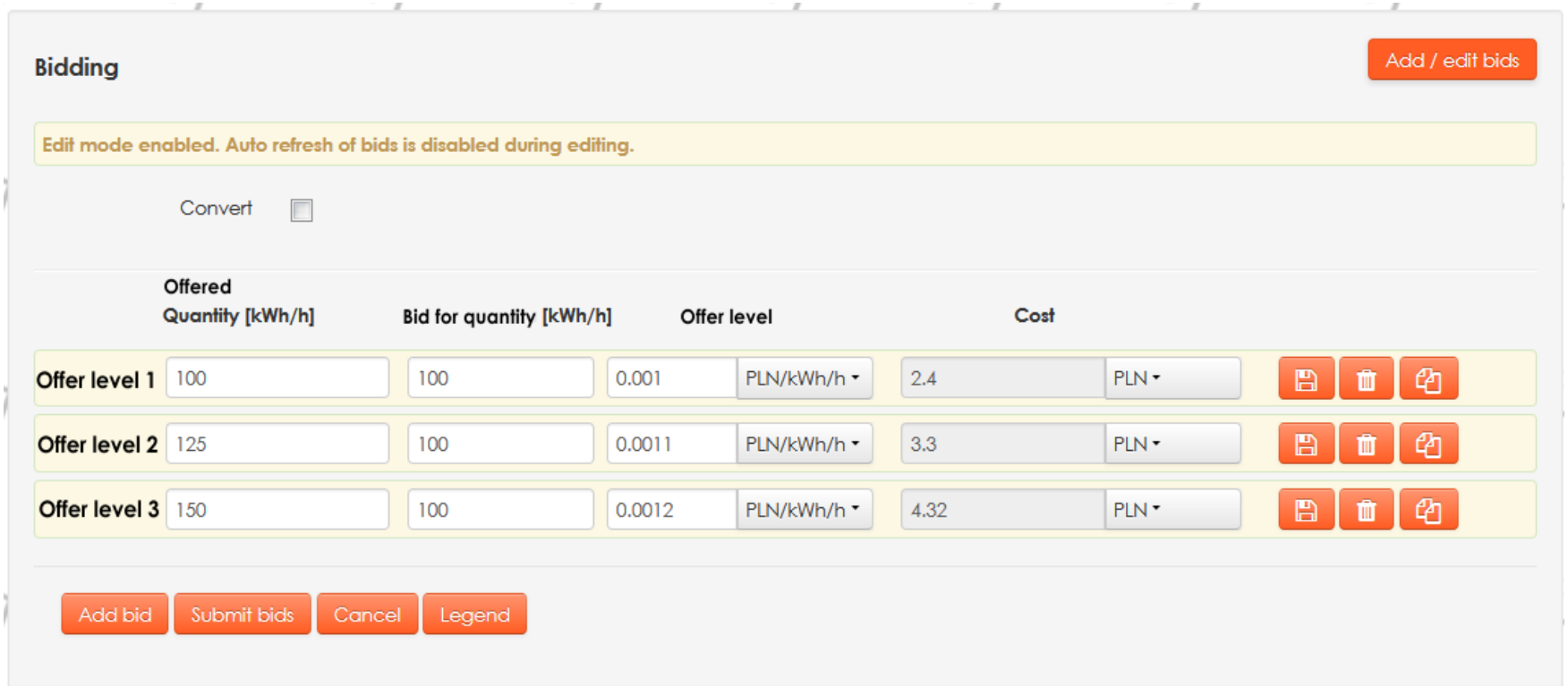


GSA Platform is considered to be also a main tool for non-biding market demand assessment phase

- **Based on new NC CAM requirements and ENTSOG's template**
- **Implementation of test version on the GSA Platform**
- **Testing phase planned for Q3 2017**

GAZ system AUCTIONS

Auctioning of incremental capacity

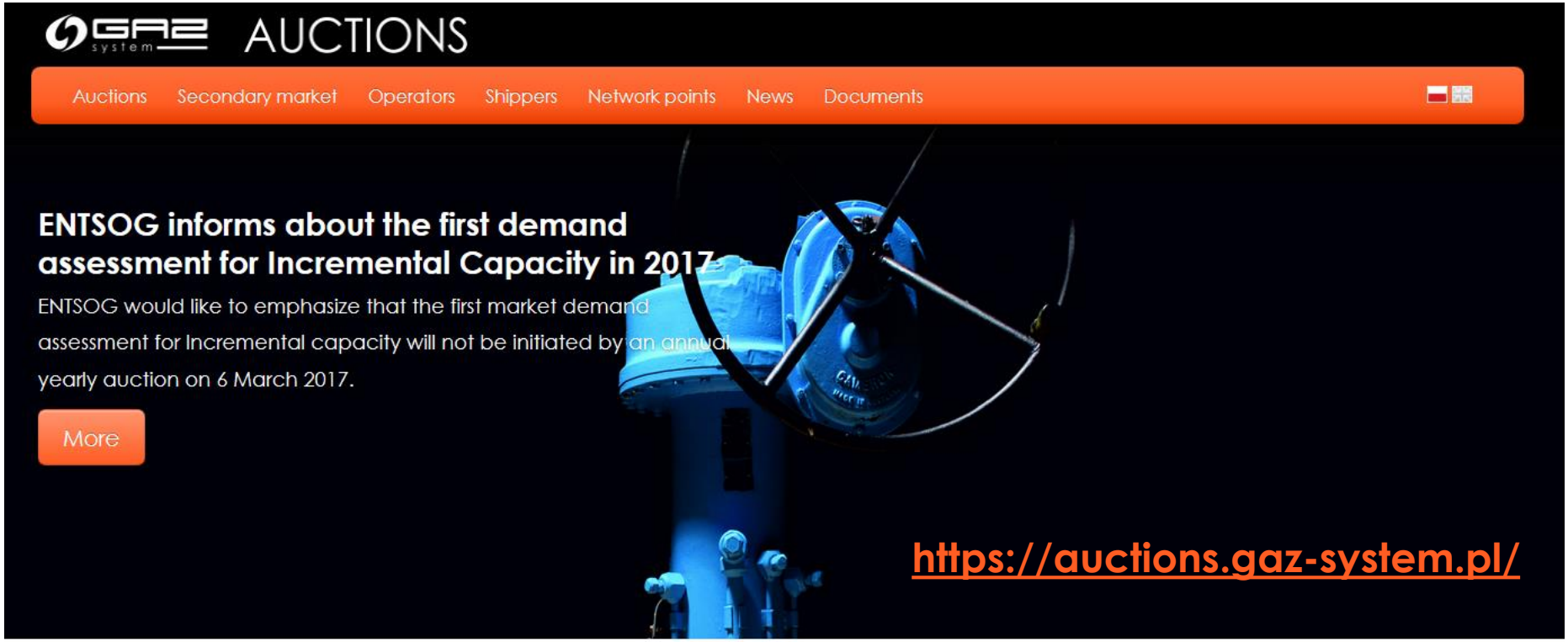


- GSA Platform will be a main tool for bidding incremental capacity
- GSA Platform is also open for potential use of the Platform to allocate incremental capacity by alternative mechanism on TSOs demand

GAZ system AUCTIONS

Conclusions

- GSA Platform is ready to conduct auctions of incremental capacity which may result from the first incremental capacity process
- Should a need occur to use an alternative allocation mechanism at the Platform, GSA is open for tailor-made solutions for TSOs
- GSA Platform is considered to be a tool for TSOs to conduct the entire incremental process (non-binding / binding phase)



Operators

We invite all of the new Transmission System Operators interested in cooperating with the GSA Platform to register.

Register »

Shippers

We invite all of the new Network Users interested in cooperating with the GSA Platform to register.

Register »

Sign in

Login

Password

Forgot your password?

Login

TEST ENVIRONMENT AVAILABLE (for interested TSOs, Shippers and NRAs):
https://auctions.gaz-system.pl/test

GAZ system AUCTIONS

Thank you for your attention

GAZ system

GSA Platform

Test case – Virtual INC project - “INC reality check WG”

Jan Vitovsky

Test case – Virtual INC project

Initiation

- EU- Russia Gas Advisory Council, Work stream 2 on Market issues
- At GAC WS2 meeting in January 2016 both Russian and European sides supported establishing “Reality check” workgroup on Incremental capacity

Task

- Develop detailed understanding of the Incremental process
- Test INC process with virtual but realistic case for additional cross-border capacity
- Propose improvements on CAM NC amendment:
    - for identified inconsistencies or bottlenecks of the INC process (based on the results of the “Reality Check”)
    - to be considered within CAM NC comitology process in Q2-Q3/2016

Timeframe

- February to October 2016

INC reality check WG

WG members

- ENTSOG
- 16 TSOs: Enagas, eustream, Fluxys Belgium, Fluxys TENP, FGSZ, Gas Connect Austria, Gascade, Gasunie Deutschland, Gaz-System, GTS, GRTgaz, National Grid, NET4GAS, Ontras, Open Grid Europe, SNAM
- INC Prime Movers: Gazprom, IFIEC, IOGP and GIE
- European Commission (observer)

Organisation

- INC Reality Check WG was chaired by ENTSOG
- 12 WG meetings in 2016

Key findings of the reality check process

9 recommendations of the WG fed into comitology process

- All recommendations have been included into CAM and TAR NC

Success of the WG based on:

- Excellent cooperation between TSOs and stakeholders on expert level
- Representative realistic case (virtual INC project) to unveil problems and solutions provided by the Network Code amendment
- Mature version the NC to be checked against reality
- Balanced view of interests (TSOs, different type of Network Users)

Great opportunity to gain insights for TSOs and stakeholders on future network codes

Test case – Virtual INC project - “INC reality check WG”

Thomas L’Eglise

Virtual realistic case NL-BE-FR project for Incremental capacity

DISCLAIMER

This presentation constitutes the final outcome of the discussions within the INC Reality Check Working Group which took place from February to October 2016.

The figures for tariff, investment cost and all other numbers are

- not binding,
- realistic – *not real* - given all the assumptions and simplification that have been taken into account,
- given without any prejudice with regards to possible future developments, be it tariff design changes, market circumstances changes or economic situation evolutions, and
- therefore by no means a binding reflection of what the tariff or other numbers will or would be in the future, should the virtual case materialize or not

Virtual realistic case NL-BE-FR

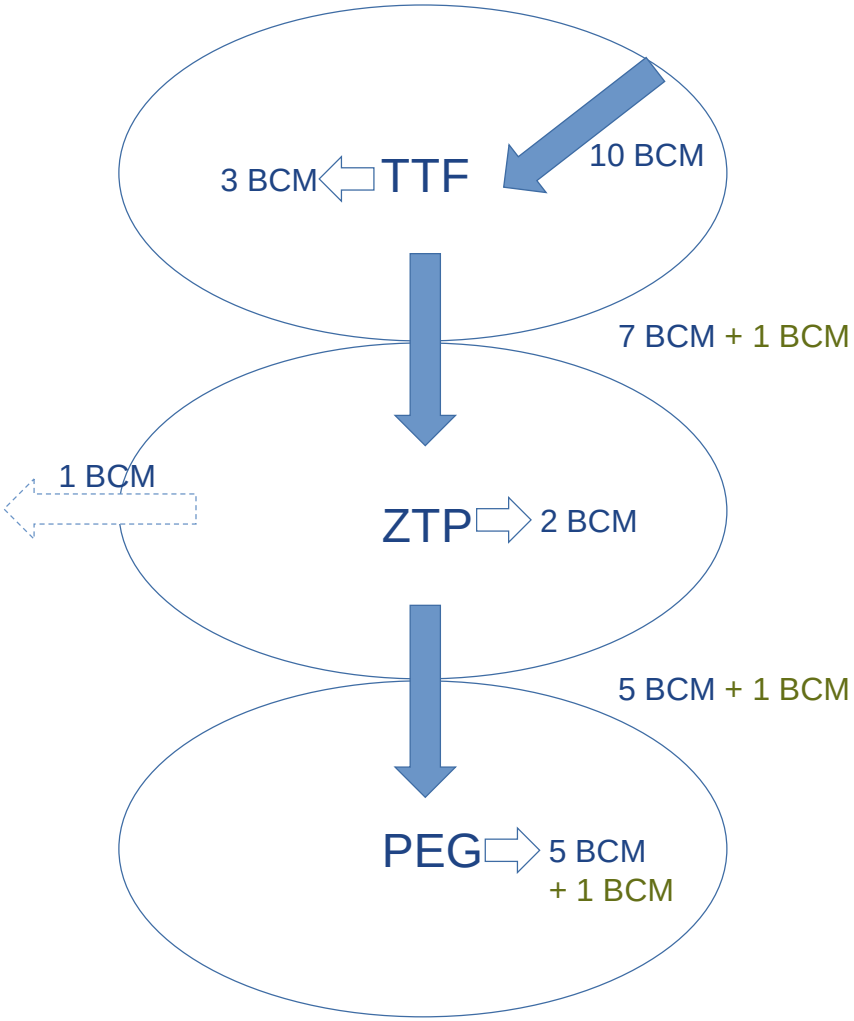
Virtual Demand & Demand Assessment

Offer level and associated projects

Economic aspects

Conclusion

The (virtual) demand



GCV = 10 kWh/m³(n)
Load Factor = 8000h
1 BCM/y = 10 TWh/y → 1,25 GW

Producer

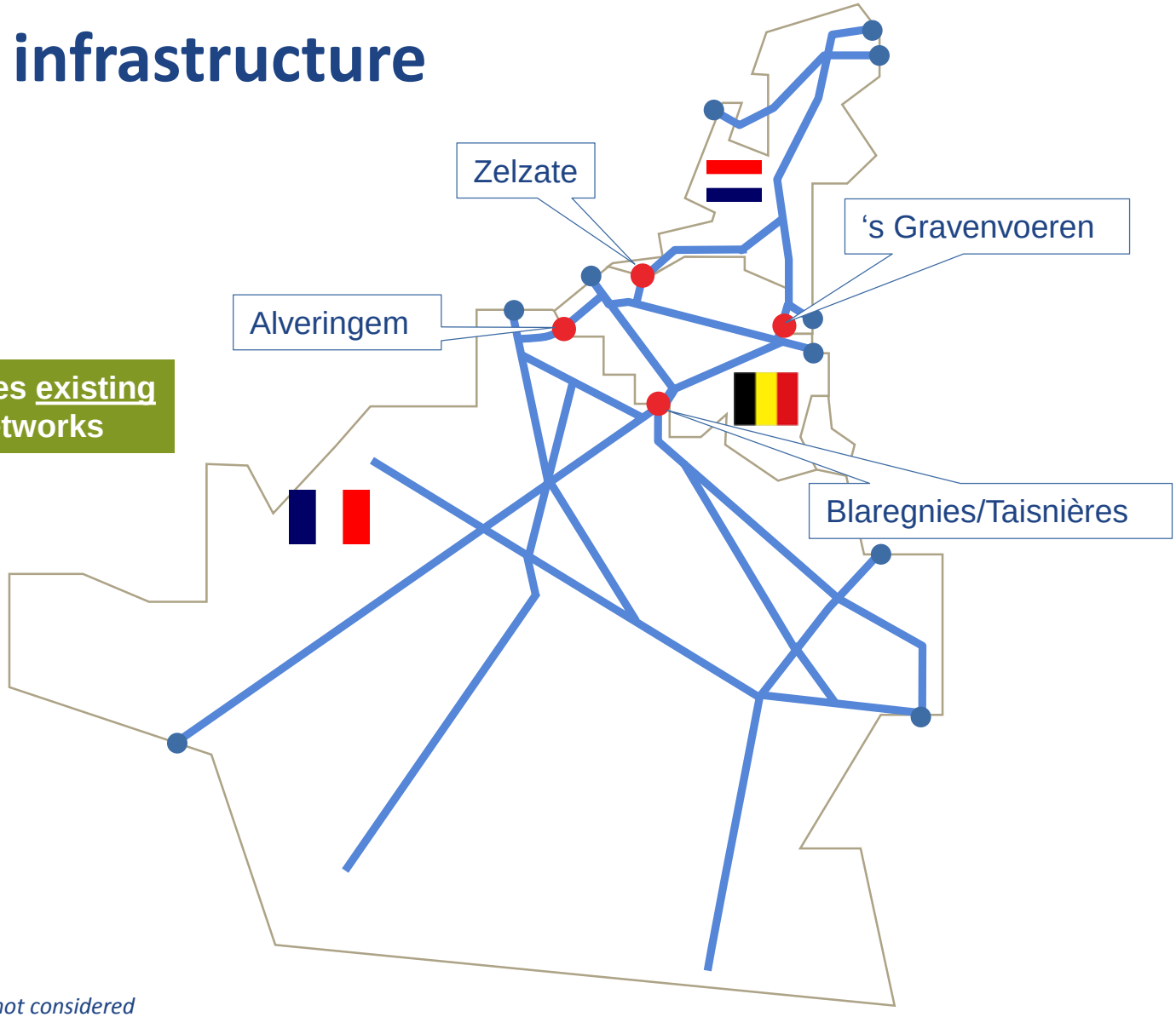
- NL→BE: 7 BCM = 8,75 GW
- BE→FR: 5 BCM = 6,25 GW
- Assumed 20 years, as from 2024
- All or none, over the route and years
- Fixed price option and alt. method

Industrial customer

- NL→BE: 1 BCM = 1,25 GW
- BE→FR: 1 BCM = 1,25 GW
- Assumed 10 years, as from 2024

Concerned infrastructure in NW-EU

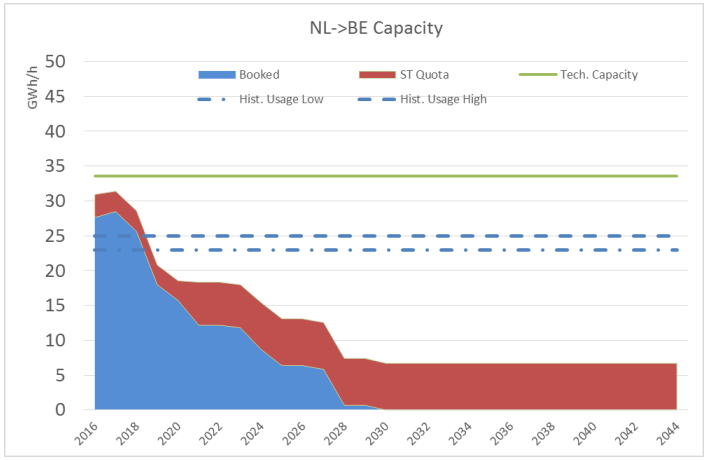
Realistic case involves existing highly meshed networks

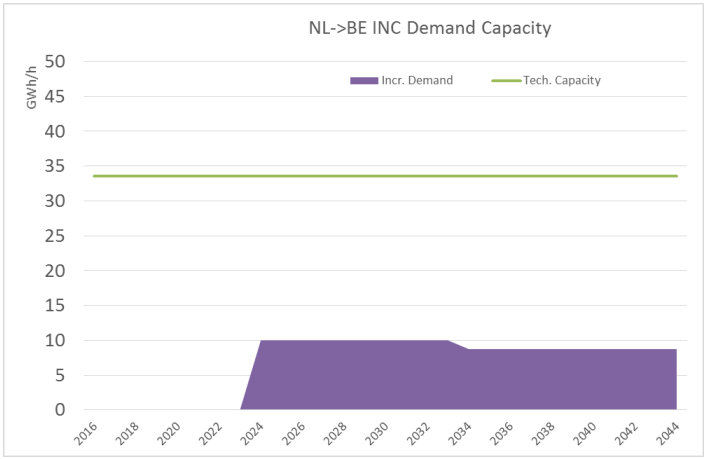


Simplified H-gas infrastructure – L-gas not considered

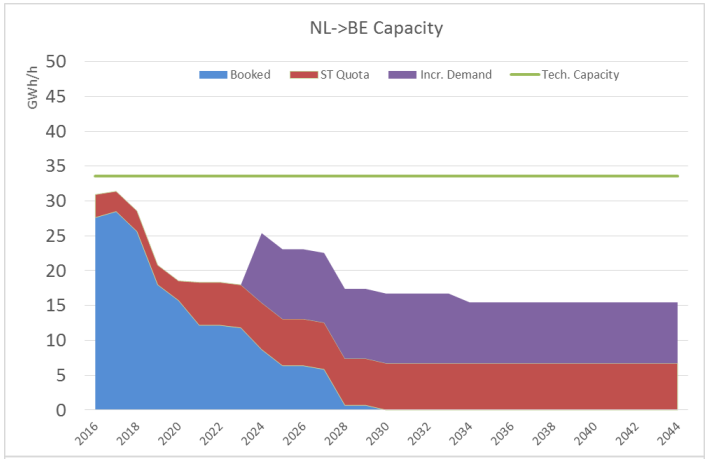
Incremental Demand vs. Existing Capacity

NL → BE illustration

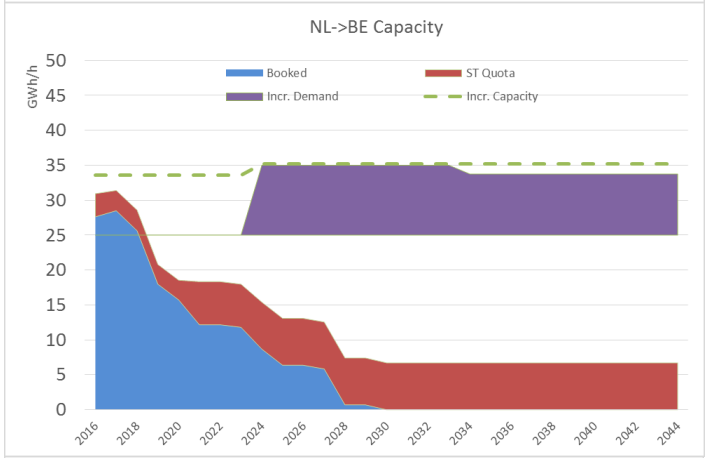




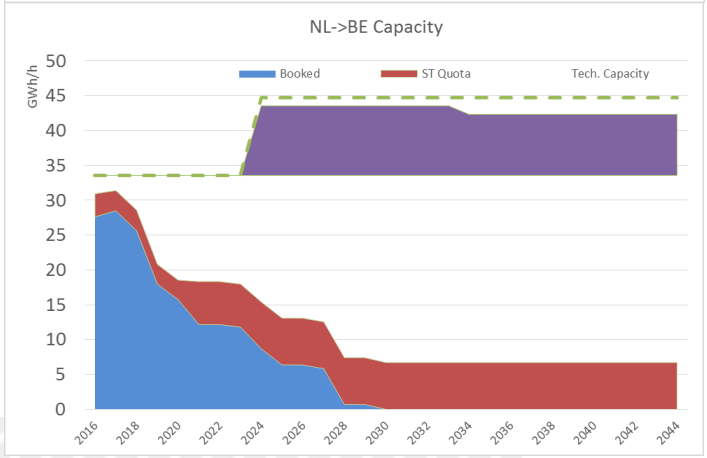
Option 1:
On top of Existing Contracts + Quotas
→ No Incremental capacity needed



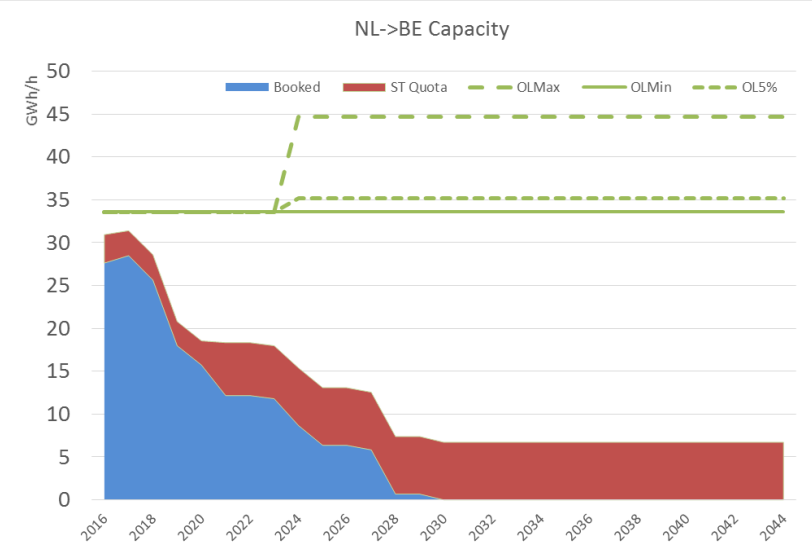
Option 2:
On top of High Hist. Usage
→ +1,6 GW, incl. 10% Quotas

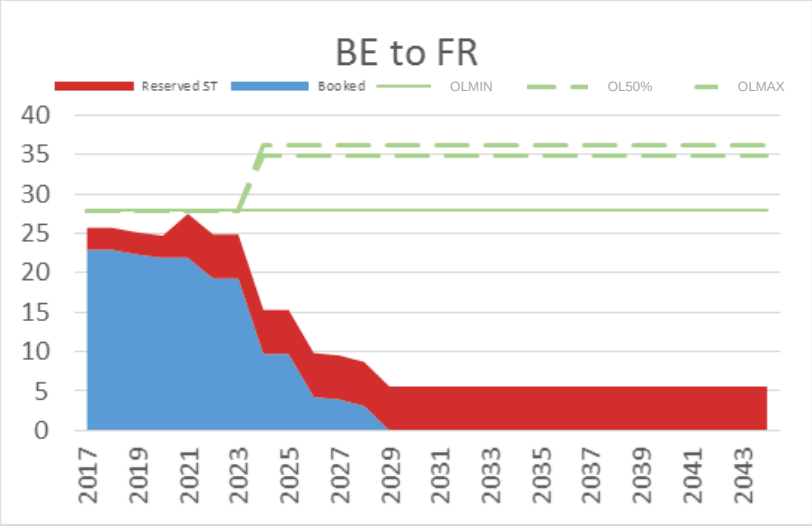


Option 3:
On top of Existing Tech. Capacity
→ +11,1 GW, incl. 10% Quotas



DAR Conclusions => projected offer levels





4 demand scenarios leading to 4 offer levels (OL)*

- OL_{Min} = Existing Tech Capacity
- $OL_{5\%}$ = INC Demand met with 95% existing and 5% incremental
- $OL_{50\%}$ = INC Demand partially met with 50% existing and 50% incremental
- OL_{Max} = INC Demand on top of existing

Quotas applied on all offered level (10% for the incremental part – 20% on existing)

Adequately integrating existing and incremental into a single process is realistic and key to success

** OL_{Min} and $OL_{5\%}$ are the most realistic cases - $OL_{50\%}$ and OL_{Max} are studied for sake of illustration*

Virtual realistic case NL-BE-FR

Virtual Demand & Demand Assessment

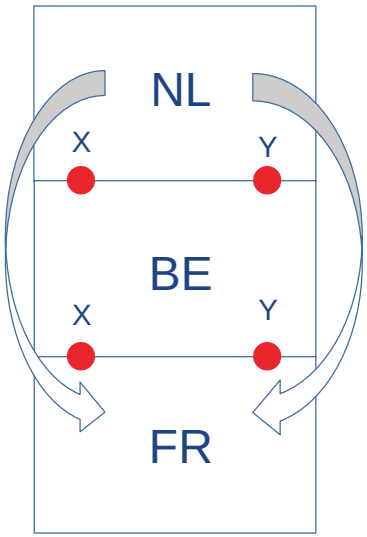
Offer level and associated projects

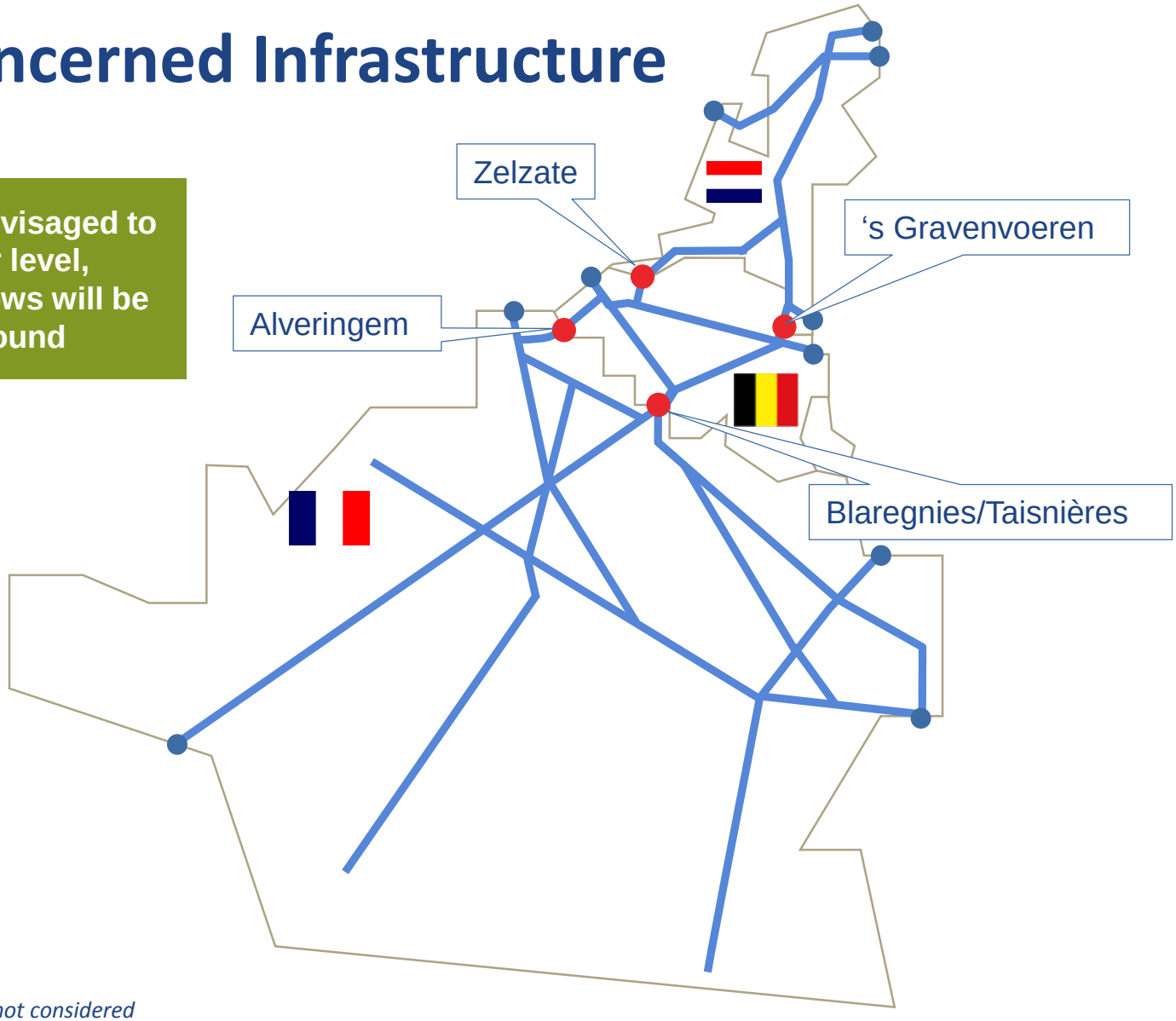
Economic aspects

Conclusion

Design: Concerned Infrastructure

Several options can be envisaged to realize the same offer level, depending on how the flows will be split east or west-bound





Simplified H-gas infrastructure – L-gas not considered

Reference cases for different offer levels

OL_{Min} → No investment needed, as this concerns only existing capacity

$OL_{5\%}$

- Minimal investments in pipelines and metering stations at all 4 IP's
- Minimal investments yields a marginal increase of the capacity, and maximum re-use of existing infrastructure

$OL_{50\%}$

- 2 combinations of investments in all 3 countries, yielding the same capacity increase, at a comparable on total cost ~550 M€, yet distributed differently over the systems

OL_{Max}

- 4 combinations are comparable for a total cost ~1.3 G€

For the record, a 10 BCM greenfield project over transporting gas over 1200km and accessing to three markets would probably twice as expensive

* Fluxys and GRTgaz costs are not considering the possible re-use of the L-gas infrastructure (transit capacity of ~10GW). GTS costs assume maximum synergy between H and L infrastructures

DESIGN: Conclusion on offer levels

Lowest overall cost options are retained → most beneficial to the market

- Potential complex choices have to be made due to a remaining number of options for each offer level wand widespread of investment possibilities in the different systems → realistic in highly meshed areas

Each option is characterized by different investment profiles in each country → this will lead to different views – from different stakeholders

These views will be influenced by:

- ✓ Quotas
- ✓ F-factor
- ✓ Minimum mandatory premium

Cooperation between all NRAs & TSOs involved in such a project is key to select the most suitable combination for each Offer Level

Virtual realistic case NL-BE-FR

Virtual Demand & Demand Assessment

Offer level and associated projects

Economic aspects

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Economic Test → necessary elements

PV of User Commitments >= f * PV of Increased Allowed Revenue

Present value (PV) of User Commitments

(i) the sum of the respective estimated reference prices and a potential auction premium and a potential mandatory minimum premium multiplied by the amount of contracted incremental capacity;

(ii) the sum of a potential auction premium and a potential mandatory minimum premium multiplied by the amount of available capacity that was contracted in combination with the incremental capacity;

Present value (PV) of <u>increased Allowed Revenue</u>

- associated with the incremental capacity included in the respective offer level
- based on estimated costs

<u>f -> f-factor</u>

- The minimum proportion of project costs, to be “paid” via ex-ante user commitments

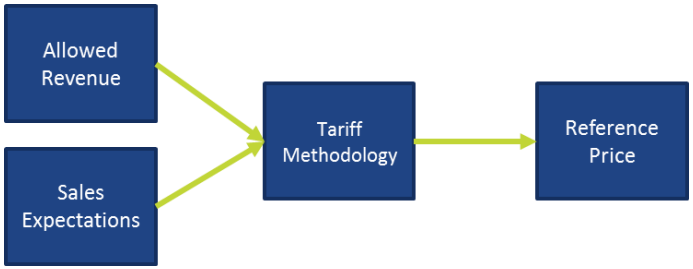
Will the economic test pass with the reference price only?

The considered investment (400 M€ in BE for OL_{MAX} example) yields

- An allowed revenue of ~30 M€/Y*, which means a NPV of 518 M€ on the lifetime of the assets (50Y)
- With a f=0.9 we need a PV(UC) of 466 MEur

Reference price stems out of tariff methodology

- links incremental with existing network,
- Estimated Reference price: 2,5 €/kWh/h/y (floating)



Considering during the allocation of offer levels that

- 10% quota yields no return and commitments can be expressed for a maximum of 20Y
- the PV(UC) at reference price yields a max of 338M€ → MMP is necessary

Mandatory Minimum Premium = "goalseek" to pass the Economic test

- In our example, the MMP is 0,26 €/kWh/h/y (~10% of the Reference Price) in case the binding phase is fully successful (100% of offered capacity is allocated), and considering that this MMP is applied to the full offer level (including the resale of existing capacity.

** Considering realistic WACC, OPEX, depreciation and inflation rate*

Results of Sensitivities – Illustration

1. existing capacity is sold before auction
2. part of binding bids do not cover the full 20Y
3. 20% ST quota instead of 10%
4. 20Y depreciation period for INC instead of 50Y

Tariff in €/kWh/h/y	Entry+Exit	mMP	Other
OL_{Max}	*2,50*	*0,26*	*2,40*
Sens. 1	2,50	0,97 ↗	2,40
Sens. 2	2,50	0,3 ↗	2,40
Sens. 3	2,52 ↗	0,23 ↘	2,42 ↗
Sens. 4	2,59 ↗	0,13 ↘	2,49 ↗

Any assumption with <u>less binding</u> bid assumption (either quantity or time) triggers a <u>higher MMP</u>

- Esp. on existing capacity, which can have a significant impact.
- This case is realistic if existing shippers would opt for a short term strategy.
- In this case, if INC shippers are not willing to support the full burden of the investment (eg bid enough at high price), the economic test will fail
- However OL_{Min} remains evenly accessible → INC demand will be met using the existing infrastructure

Higher quotas trigger higher tariffs, for both the concerned IPs and other Network Users, when socialized

- Mechanically the MMP reduces, <u>as f is reduced proportionally</u>

Shorter depreciation period increases tariff level (higher yearly Allowed Revenue)

- Mechanically the MMP reduces as PV of increased Allowed Revenue decreases
- The total price on the INC route is slightly lower
- All in all this solution is realistic to reduce the risk of future stranded asset, which in the concerned time horizon (2025-2045-2075) is not un-material

A range of Mandatory Minimum Premium is necessary to capture the uncertainty

Virtual realistic case NL-BE-FR

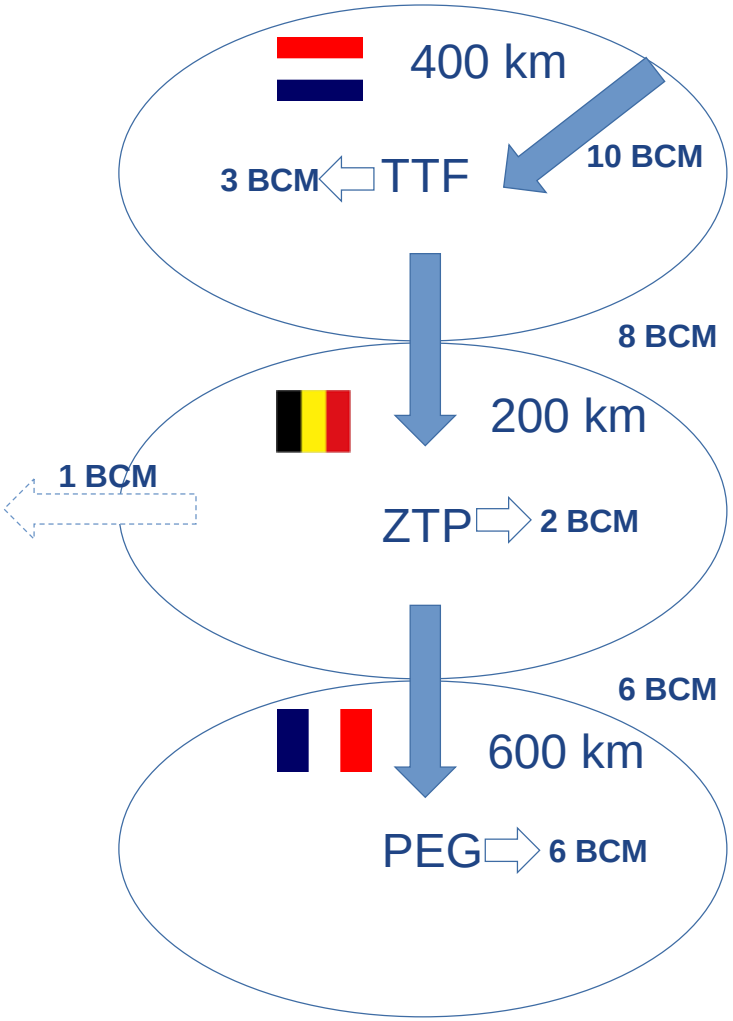
Virtual Demand & Demand Assessment

Offer level and associated projects

Economic aspects

Conclusion

Conclusions on volumes, costs and tariffs



Tariffs for 1200 km transport and access to three markets			
Offer level	Investment M€	Tariff* €/kWh/h/y	Increase %
OL_{Min}	-	9,63	-
$OL_{5\%}$	82	9,87	+2,5%
$OL_{50\%}$	550	10,8	+12%
OL_{Max}	1350	12,62	+28%

Costs are 97% to 50% lower than in a greenfield development

CAM guarantees access to IP capacity in all cases, be it existing or incremental

*From Entry NL to exit FR, Including MMP
assuming 50Y depreciation, 10% ST quotas and 20Y booking (100% binding bids)

GENERAL CONCLUSION ON VIRTUAL CASE

CAM NC is workable instrument to promote the development of new infrastructure, which is positive

Incremental cornerstones are

- Demand assessment → ensures the process is fed with valid market input (e.g. realistic non-binding indication so that Offer Levels are meaningful for the next phase)
- Offer Levels → allows to optimally make use of the existing system when and where relevant
- Design Phase → allows to select the appropriate investment case and requires close cooperation amongst TSOs and NRAs (minimizing total costs of investment and adequate burden sharing across affected parties)
- Economic Test → allows to detail the payable price according to several assumptions and to select the most adequate case in function of market willingness to pay → f factor and Mandatory premium are essential tools to adjust the burden of the project across the various Network Users

A successful Incremental capacity process requires several attention points

- The process can be perceived as cumbersome, lengthy and not necessarily flexible
- Lots of choices are to be made at early stages - with limited options to iterate and adjust in the course of the process
- Wrong assumptions could preclude the outcome if turning not in-line with the actual level of binding demand → **non-binding phase is even more critical than before**

View on the final version of the INC process by NRAs

Markus Krug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View on the INC process by NRA

28 March 2017, Brussels

Testing the INC process in practice

E-CONTROL

Lessons from ROHUAT

- Alternative allocation mechanism

Lessons from Murfeld SI->AT

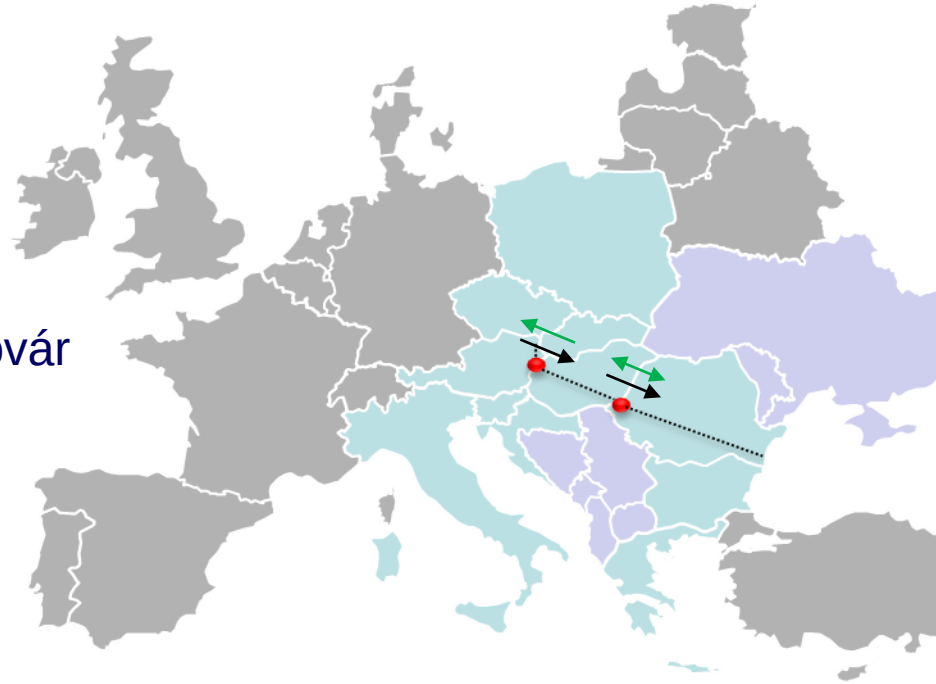
- Auctioning of incremental capacity

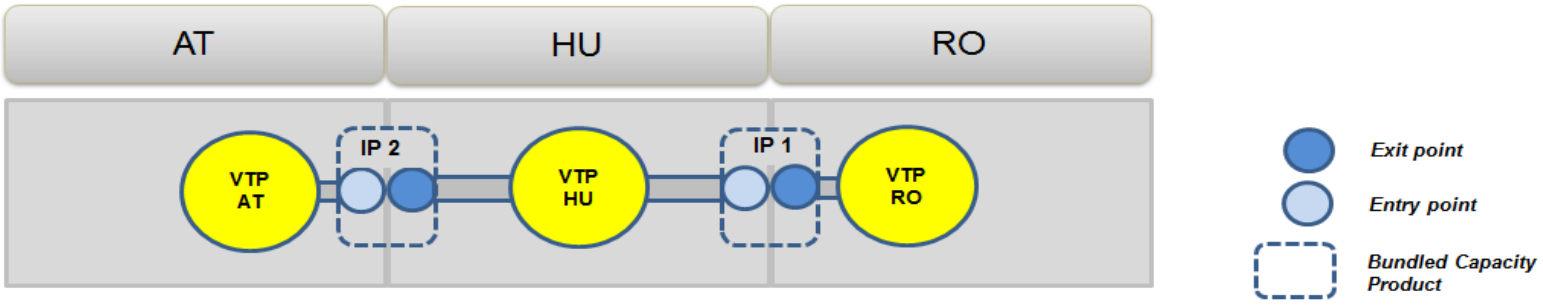
ROHUAT project

E-CONTROL

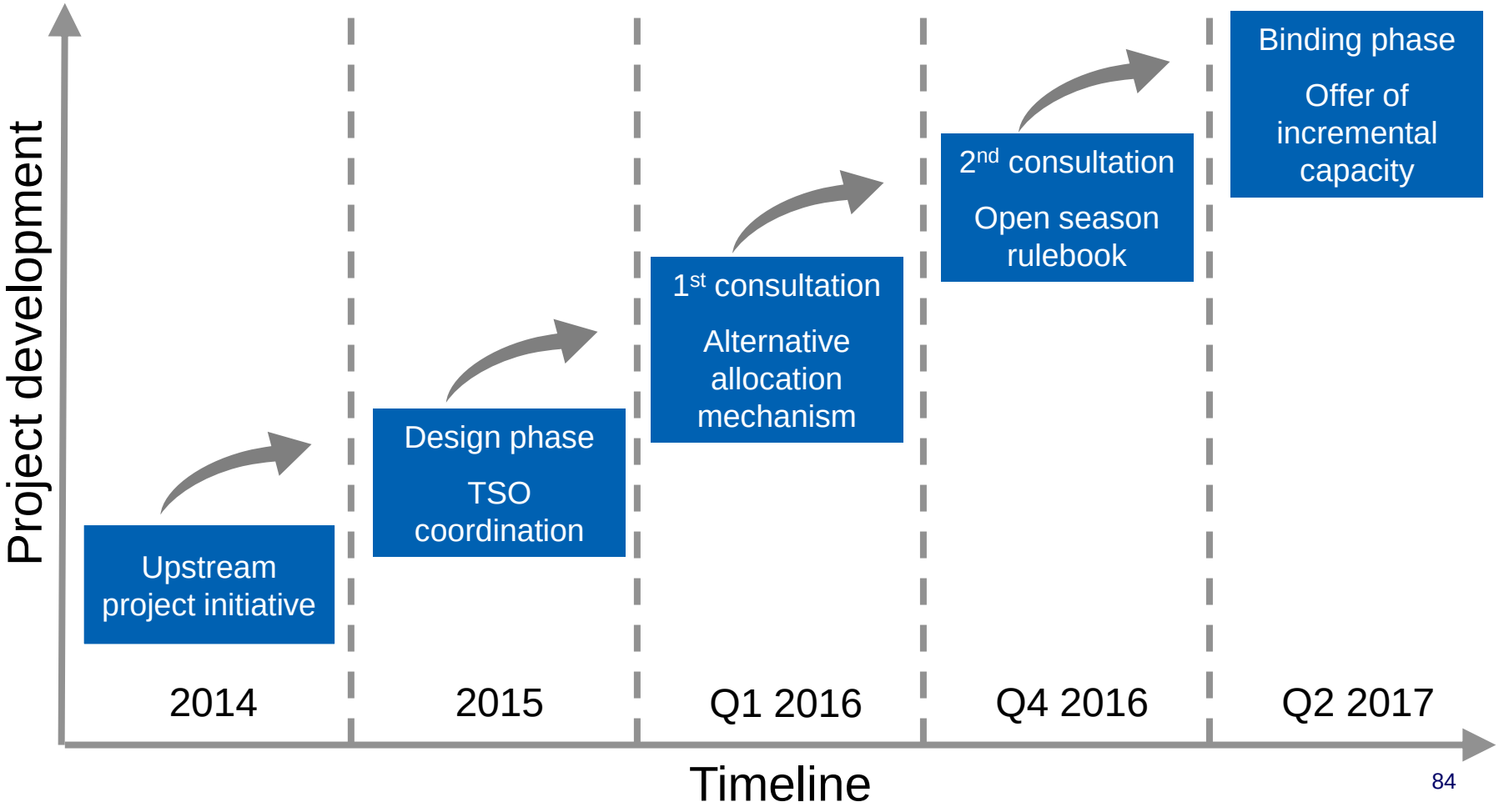
Relevant interconnection points

- **RO/HU border** @ Csanádpalota (IP1) in both directions
- **HU/AT border** @ Mosonmagyaróvár (IP2) just in Austrian direction





ROHUAT timeline



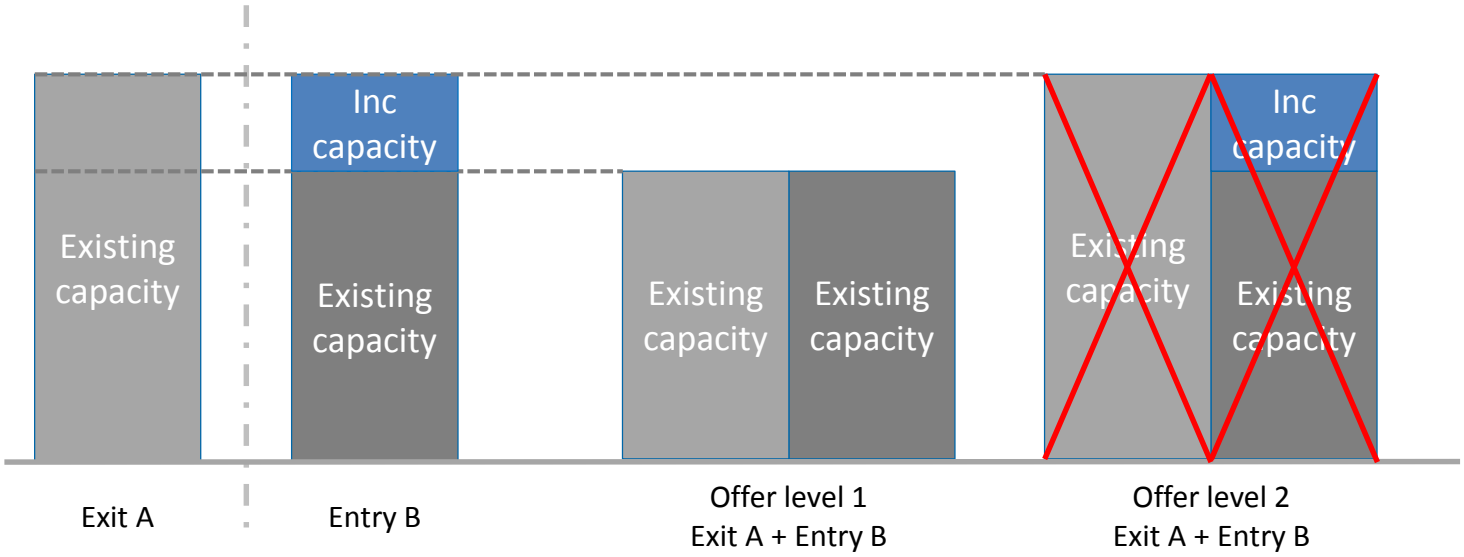
Design phase
Development and agreement takes time

E-CONTROL

- Three alternative allocation mechanisms have been consulted
  1. Regular CAM NC ascending clock auction
     - Independent auctions
     - No conditionality (between IPs and/or years)
  2. Auctions for groups of years and IPs
     - Ex-ante conditions set
  3. Highest individual bidder commitment
     - Conditionality to be stated by bidders
- Preference of respondents for 3rd mechanism
- TSO coordination on project design
  - Overall optimum for pressure provision

Bundling of existing and incremental capacity…

…not explicitly mentioned in the new CAM NC…



… but dependence between the auction processes for the two offer levels ensures that shippers will not be stuck with unbundled capacity if economic test for offer level 2 is negative

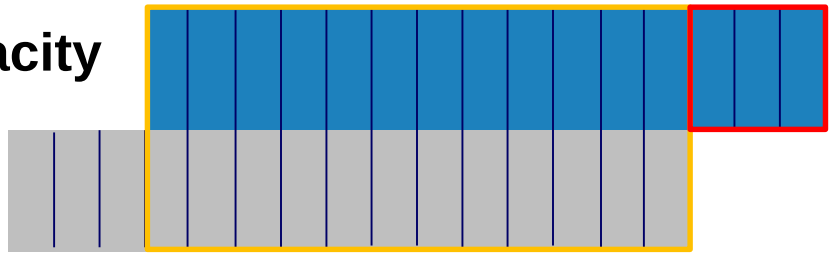
Booking platforms need to be transparent about incremental capacity

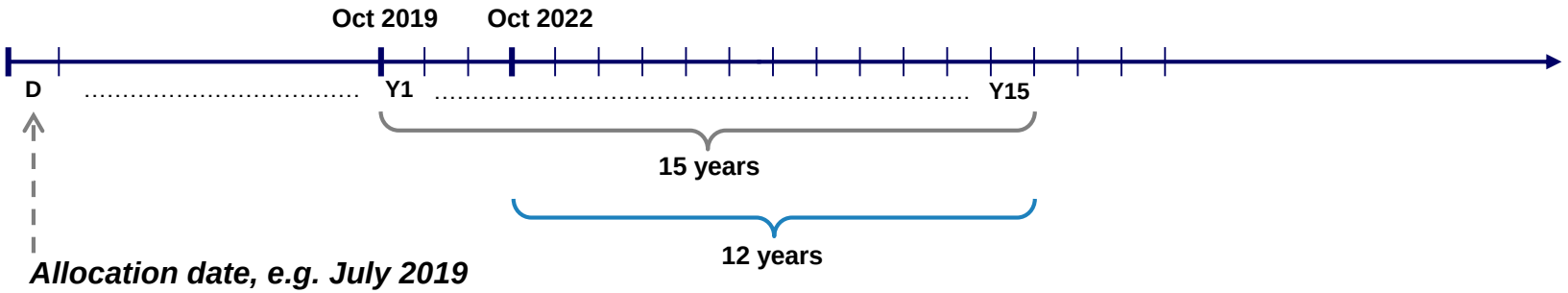
Enabling a positive economic test outcome through…

E-CONTROL

Incremental capacity
Offer TSO B

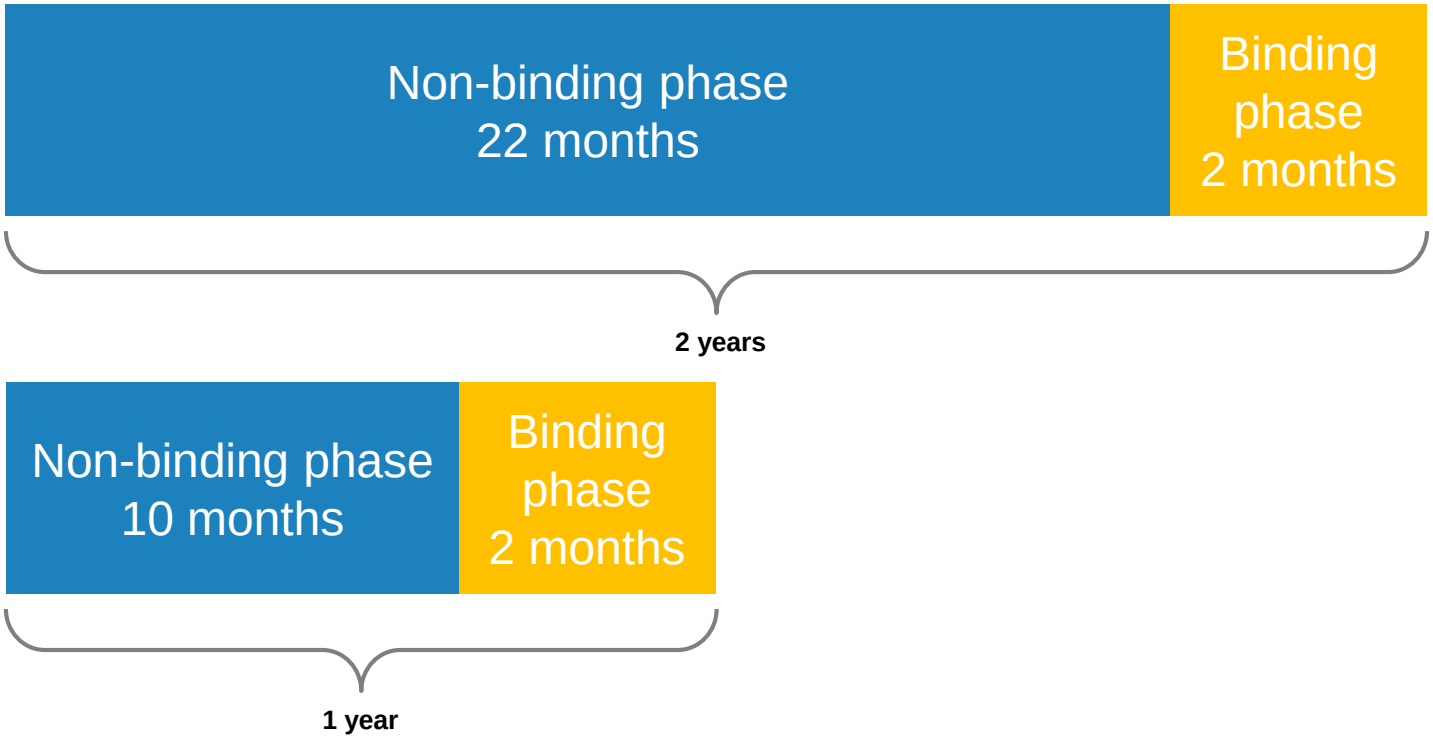
Existing capacity
Offer TSO A





…(higher) mandatory minimum premium or request for unilaterally binding capacity booking commitments for last 3 years

INC process should be triggered…



… annually, if non-binding demand persists and

… if a corresponding project has already been designed in the previous process

… by TSOs' own initiative if future demand is expected

Summary of lessons learned

- Lesson learned 1
  - Cooperation takes time
- Lesson learned 2
  - Flexibility needed when bundling existing with incremental capacity
- Lesson learned 3
  - Booking platforms need to be transparent about incremental capacity

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Mechanism 1 – CAM NC auction

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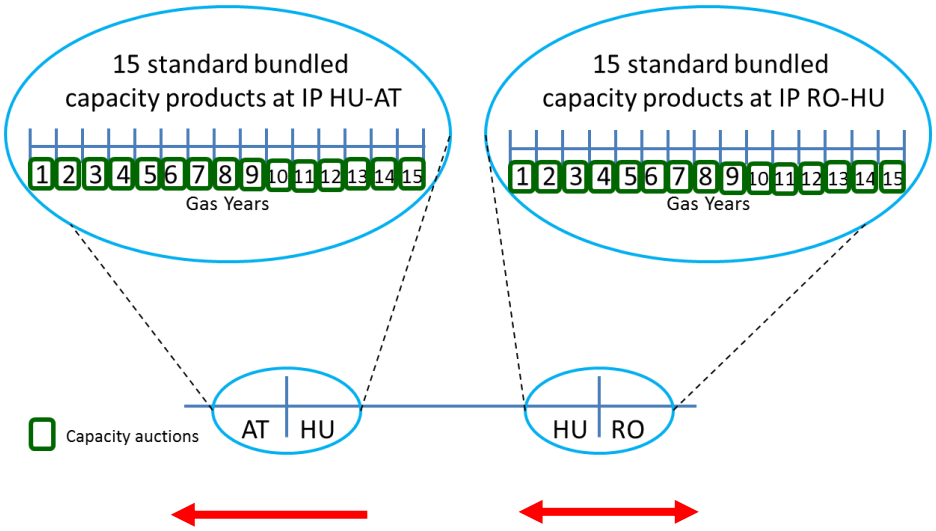
- **<u>Ascending clock auction algorithm</u>** according to Art. 17 of the CAM NC
- Bundled capacity offered as single years in the auctions



Mechanism 2 – “super-bundles”

- Auctions for groups of years and IPs
- 3 allocation rounds foreseen

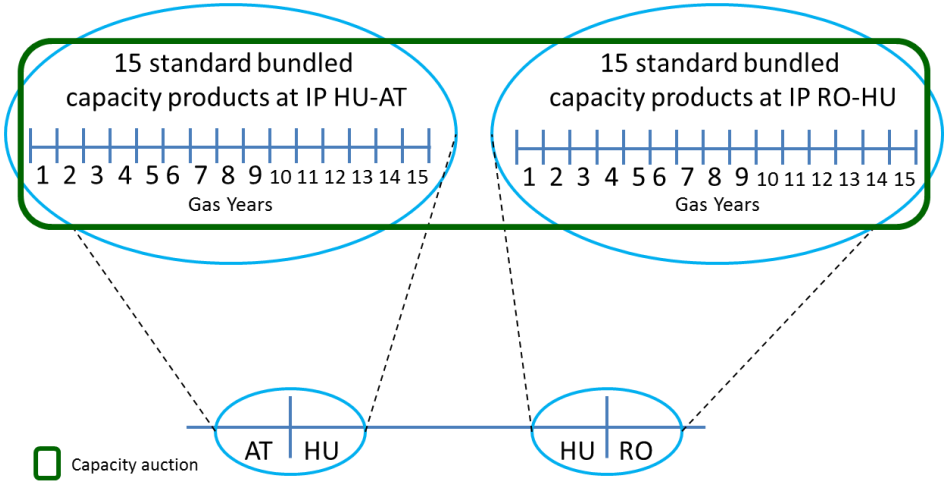
Allocation rule core logic:

Round 1: 15 year commitment for both IPs

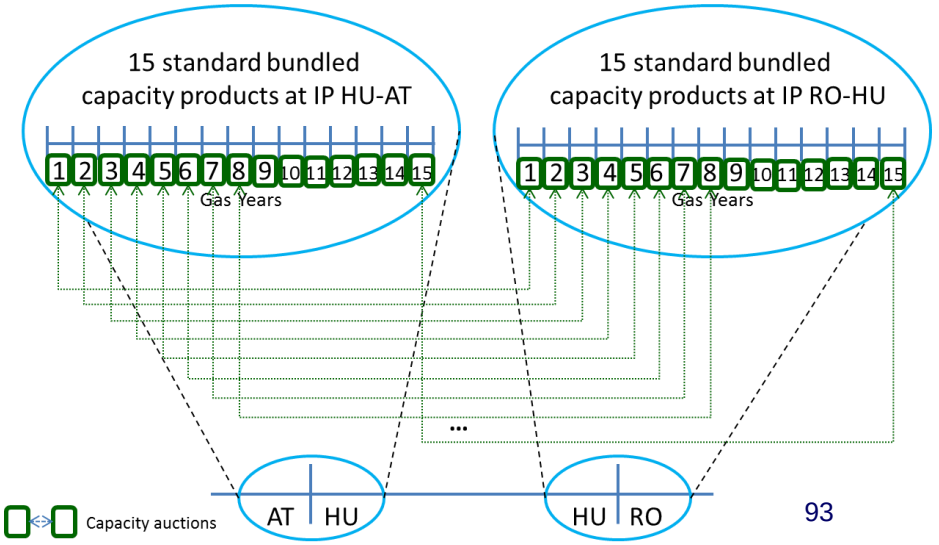
Round 2: 1 year commitments for both IPs

Round 3: 1 year commitments for single IPs (same as Mechanism 1)

Round 1



Round 2



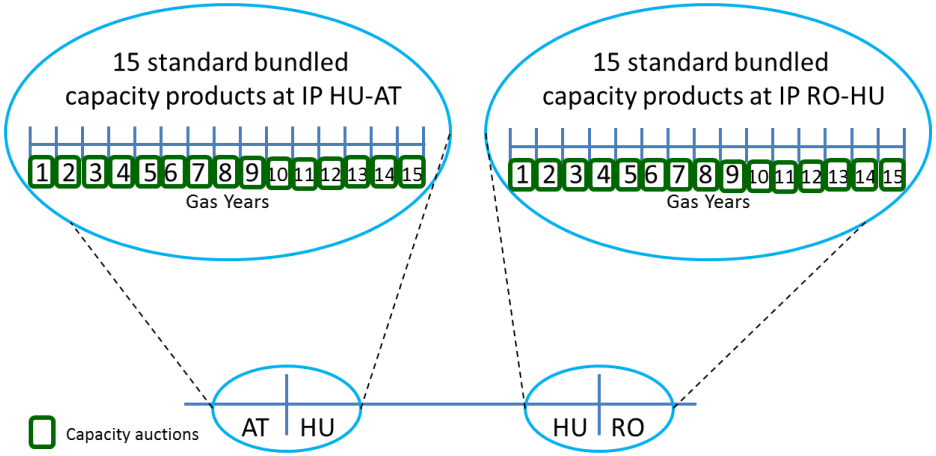
Mechanism 3 – Highest individual bidder commitment

- Bundled capacity offered as single years in the auctions (same as Mechanism 1)
- If **demand > offer**, capacities shall be allocated on the basis of the highest individual bidder commitment in all auctions conducted throughout the period of 15 years at IP Csanádpalota and IP Mosonmagyaróvár

Allocation rule core logic:

*NU contribution = price IP1 * demanded capacity IP1 * number of years*

*+ price IP2 * demanded capacity IP2 * number of years*



Lunch Break

Agenda

Nr	Session	Time
	Welcome Coffee	10:00-10:30
1	ENTSOG opening and introduction	10:30-10:40
2	View on the CAM NC amendment by DG ENER	10:40-10:50
3	Incremental capacity process	10:50-13:00
	• General view - Incremental capacity process (Jan Vitovsky, ENTSOG) • Demand assessment phase (Maria Jost, ENTSOG) • Design phase + NRA approvals (Pedro Miras, ENTSOG) • Capacity allocation and Economic test (Nicolas Peugniez, GRTgaz) • INC process on booking platforms – views by booking platform operators (Paolo Maffeis, PRISMA; Gabor Dudas, RBP, Rafał Celiński, GSA) • Test case – Virtual INC project - "INC reality check WG" (Thomas L'Eglise, Fluxys) • View on the final version of the INC process by NRA (Markus Krug, E-Control)	
	Lunch Break	13:00-14:00
4	Overview of all changes in the CAM NC amendment (Peter Hlusek, ENTSOG)	14:00-14:20
5	ENTSOG capacity conversion model proposal	14:20-15:30
	• Issue description + ENTSOG's recommendations in 2015 (Jan Vitovsky, ENTSOG) • Early implementation of Conversion service by NET4GAS, Fluxys BE and GRTgaz – capacity conversion implementation experience (David Urban, Net4Gas; Thomas L'Eglise, Fluxys; Daniel Bonnici, GRTgaz) • ENTSOG capacity conversion model 2017 (Maria Jost, ENTSOG)	
	Coffee Break	15:30-16:00
5	ENTSOG capacity conversion model proposal	16:00-16:45
	• ACER's view on ENTSOG capacity conversion model (Francois Levielle, ACER/CRE) • Discussion, stakeholder's feedback	
6	Conclusions of the workshop, next steps and timescales	16:45-17:00

4 Overview of all changes in the CAM NC amendment

Peter Hlusek

Changes introduced in CAM NC amendment

Changes in comparison to Regulation (EC) 984/2013:

- Article 6 - Calculation methodology and rules of making available capacity shall have regard to **specific situations where competing capacities across systems involve interconnection points and exit points to storage facilities**
- Article 11 – In the auction process for annual yearly capacity auctions shall cover the **period for at least the upcoming 5 gas years**
- Article 11 – Default auction date for **yearly capacity products in July from year 2018**
- Article 12 – Default auction date for **quarterly capacity products in August from year 2017 + additional three quarterly auctions in November, February and May**
- Article 20 – Alignment of main terms and conditions (see following slides)
- Article 21 – Bundling of existing transport contracts – capacity conversion (will be discussed later)

Changes introduced in CAM NC amendment

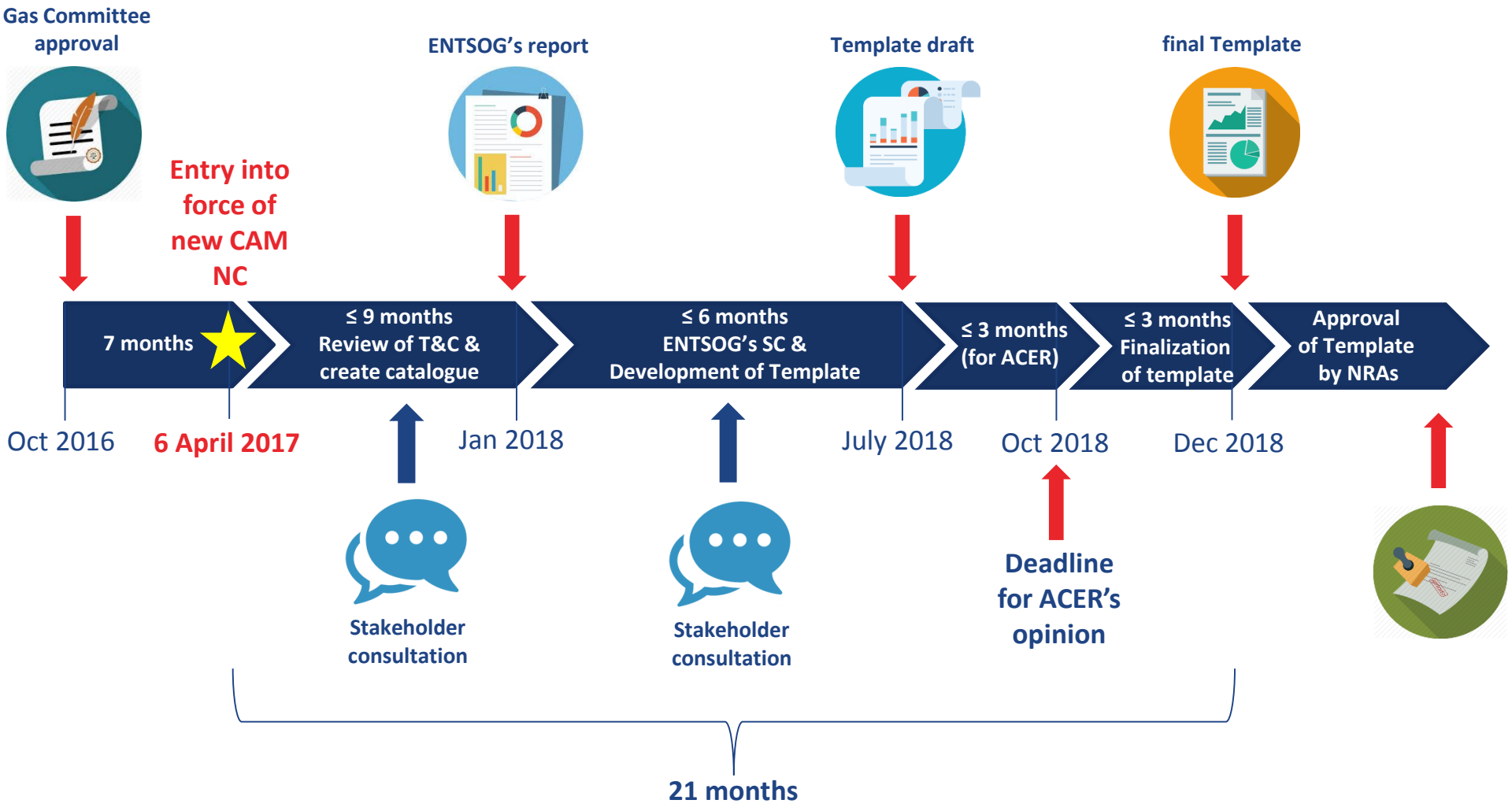
Changes in comparison to Regulation (EC) 984/2013:

- Article 22 to 31 – Incremental capacity process
- Article 32 – From 1 January 2018 **yearly, quarterly and monthly interruptible capacity products** may be offered **only if corresponding firm capacity product was sold** at an auction premium, was sold out, or was not offered
- Article 37 – **Booking platforms** – Obligations for adjacent TSOs, NRAs and ACER to agree on a booking platform to be used for offer bundled capacity products + fall-back provisions if no agreement by TSOs
- old Article 26 – Tariffs – has been deleted from CAM NC

Alignment of main terms and conditions

1. **ENTSOG shall**, after consulting stakeholders, **create a catalogue of the main terms and conditions** of the transport contract(s) of TSOs for bundled capacity products.
2. **ENTSOG shall analyse existing transport contracts, identifying and categorising differences** in relation to the main terms and conditions and the **reasons for such differences and publish its findings in a report**.
3. **ENTSOG**, after consulting stakeholders, **shall** within 6 months after the publication of the report develop and **publish a template for the main terms and conditions** covering contractual provisions which are not affected by fundamental differences in principles of national law or jurisprudence
4. **ACER**, having due regard to the opinions of the national regulatory authorities, **shall provide an opinion on the template for the main terms and conditions**
5. Taking into account the opinion provided by the ACER, **ENTSOG shall publish on its website the final template for the main terms and conditions**
6. After the publication of the final template for the main terms and conditions, **TSOs** , subject to the approval of national regulatory authority, **may apply the terms and conditions set out in the template** in the case of **newly** contracted bundled capacity products.

Timescales of Art. 20 of CAM NC



Application dates of CAM NC

1. Application Date 1 = **entry into force - 6 April 2017**
   - Chapter I ‘General provisions’
   - Chapter II ‘Principles of co-operation’
   - Chapter III ‘Allocation of firm capacity products’
   - Chapter IV ‘Bundling of capacity at Interconnection points’
   - Chapter V ‘Incremental Capacity process’
   - Chapter VI ‘Interruptible capacity‘
   - Chapter VII ‘Capacity Booking Platform‘
   - Chapter VIII ‘Final Provisions‘

2. Application Date 2 = **1 January 2018**
   - Chapter IV Article 21 Capacity conversion service
   - Chapter VI Article 32 Allocation of interruptible services for yearly, quarterly and monthly products

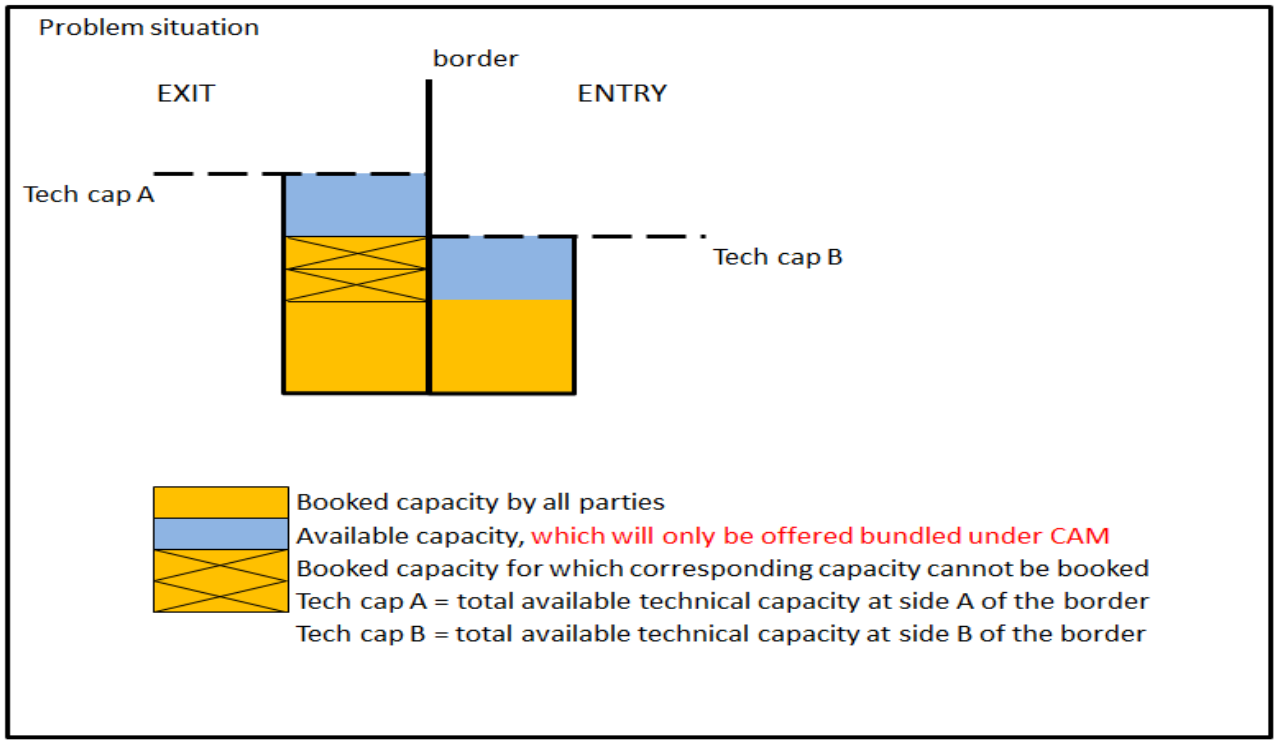
5 ENTSOG capacity conversion model proposal

Jan Vitovsky

Problem description

- Network User has already contracted unbundled capacity and TSOs only offer bundled products

- Lack of corresponding unbundled capacity to be matched with already existing contracts of unbundled capacity on the other side of the IP



Background on Capacity conversion

- ENTSOG developed options to solve lack of offer of unbundled capacity in 2015 together with Stakeholders and ACER
- ACER published its “position on capacity mismatch issue”
- EC included this topic in CAM NC amendment
- mandatory implementation of capacity conversion by all TSOs as of 1 January 2018
- early implementation of capacity conversion service by some TSOs

Early implementation of Conversion service in Czech Republic, Belgium and France – capacity conversion implementation experience

NET4GAS

Connecting Markets

Capacity Conversion Service

David URBAN | Workshop for the CAM NC amendment

28 March 2017, Brussels

WHY DO WE OFFER CAPACITY CONVERSION SERVICE?

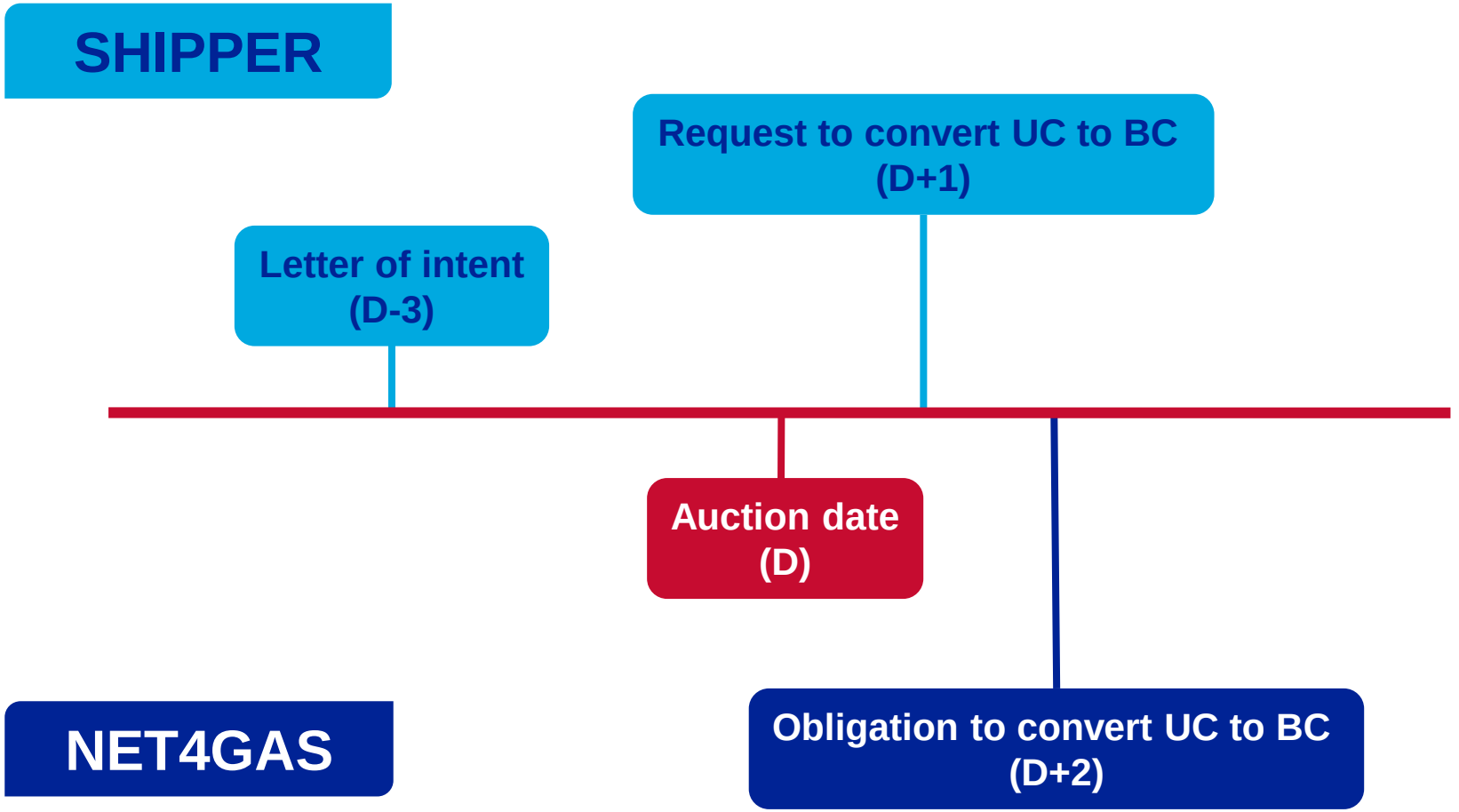
CONTRACTED UNBUNDLED CAPACITY EXISTS

PROBLEM = DOUBLEPAYMENT

OFFER OF UNBUNDLED CAPACITY IS LIMITED

SOLUTION = CAPACITY CONVERSION SERVICE

HOW DO WE OFFER CAPACITY CONVERSION SERVICE?



NET4GAS

Connecting Markets

Thank you for your attention

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Commercial Operations
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www.net4gas.cz

CAPACITY CONVERSION SERVICE

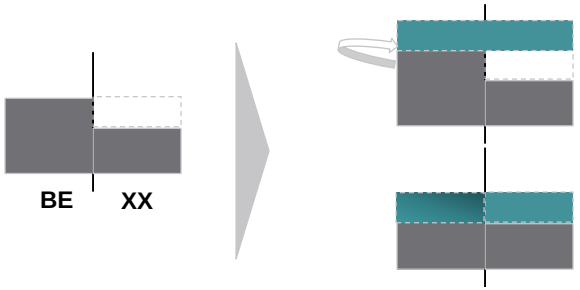
ENTSOG CAM Workshop | 28 March 2017

Thomas L'Eglise – Marketing Manager – Fluxys Belgium

FLUXYS

EARLY IMPLEMENTATION OF CAPACITY CONVERSION SERVICE FOR UNBUNDLED CAPACITY

- Starting situation: Existing unbundled contract at BE side
  - Acquisition of new bundle on PRISMA + capacity conversion “CAM 2.0 style”
    - » Existing unbundled contract is converted into the BE leg of the new bundle
    - » No double payment → payable price after conversion =
      - > payable price of the initial contract* + BE part of auction premium on the new bundle
      - > No service fee
    - » No double nomination right → existing contract is reduced with the converted quantity
  - For Y, Q, M standard durations
  - Conversion requested
    - » within 5 business days after the auctions
    - » using manual process and form on the website
    - » full duration of the new bundle – quantity up to what is available in portfolio



- The service is operational since 27/02/2017

* Short-term multipliers or seasonal coefficients do not apply unless they where already applicable on the existing contract

PROCESS TO DEVELOP THE SERVICE

2016.03

First formal request received from Network Users to apply the capacity conversion as detailed by ENTSOG in 2015

2016.09

EC inserts Art. 21.3 in CAM amendment

2016.10

Simple Concept developed based on “CAM NC 2.0” principle

1. manual ex-post process
2. Y, Q, M products
3. Old contract Price (+ New Auction Premium)

2016.11-12

Public Market Consultation

Broad support for the concept and its early implementation

Main requested adjustments:
1. Extend to day-ahead / within-day
2. Maintain old contract price only

2017.01

Final proposal submitted to CREG for approval

Concept submitted as consulted upon
Changes subject to further evolutions following discussions at EU level

2017.02

CREG approved our proposal on 23/02/2017

2017.03

Capacity Conversion service available as from 27 February 2017

First cases successfully executed for monthly product Mar ‘17 and yearly product GY ‘17-’18

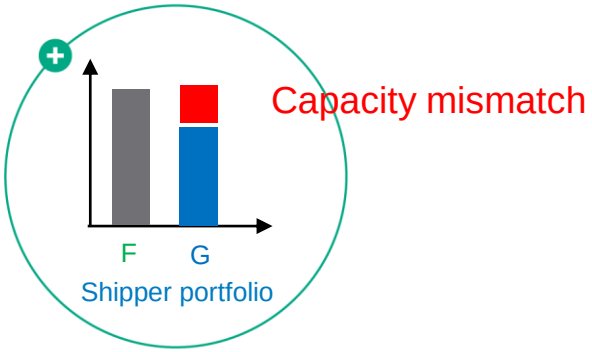
GRTgaz

- Conversion: a mechanism to solve the « capacity mismatch »
- GRTgaz substitution offer

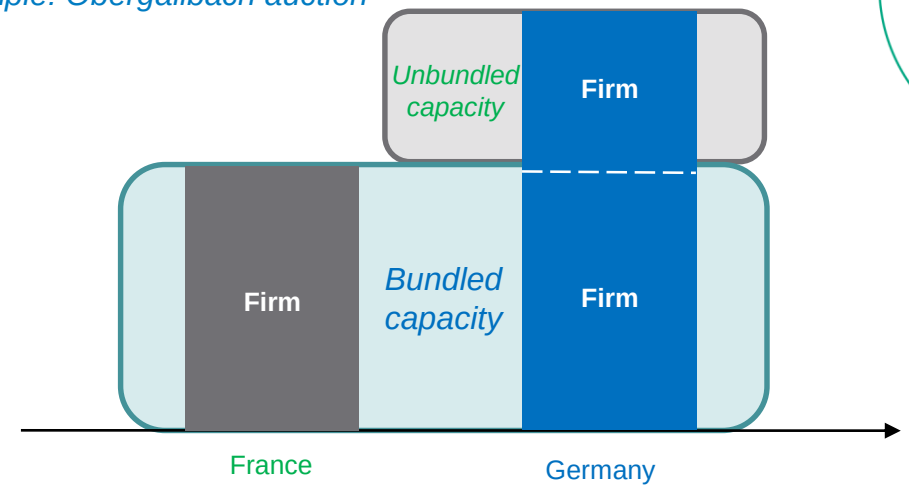
More flexibility with conversion

- A mechanism to solve the « capacity mismatch »

» Capacity mismatch example:



Example: Obergailbach auction



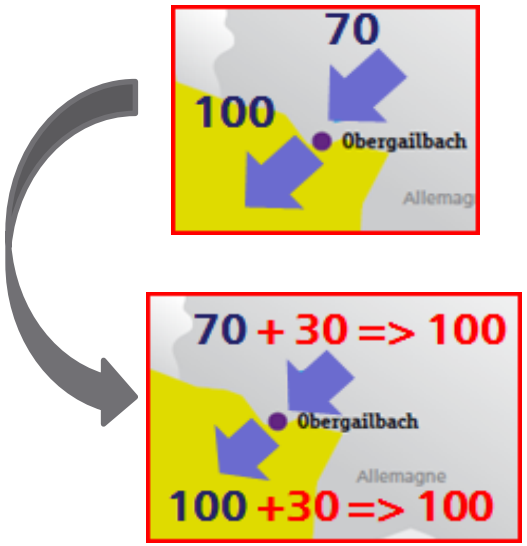
- New CAM Network Code: *as of 2018 TSOs shall offer Network Users holding mismatched unbundled capacity at one side of an interconnection point a free-of-charge capacity conversion service*.

• GRTgaz substitution offer

- The principle

The shipper buys a bundled product and substitutes his unbundled capacity in portfolio to it on the same point

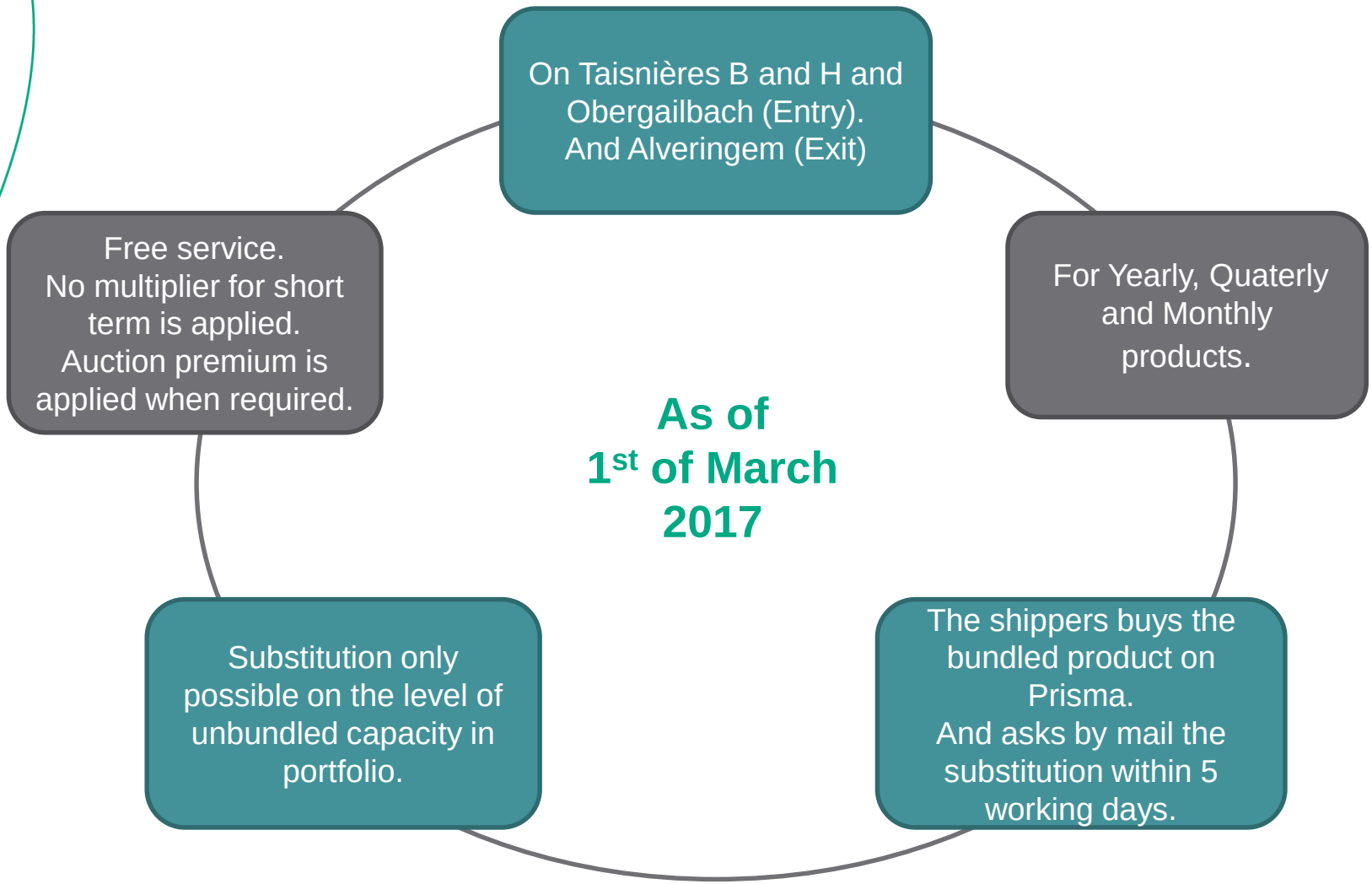
Substitution



» *The shipper buys 30 as a bundled product on Prisma*

» *And then asks to substitute 30 from his unbundled portfolio to the new 30*

• Substitution offer in details



ENTSOG capacity conversion model 2017

Maria Jost

Capacity Conversion according to Art. 21 CAM NC

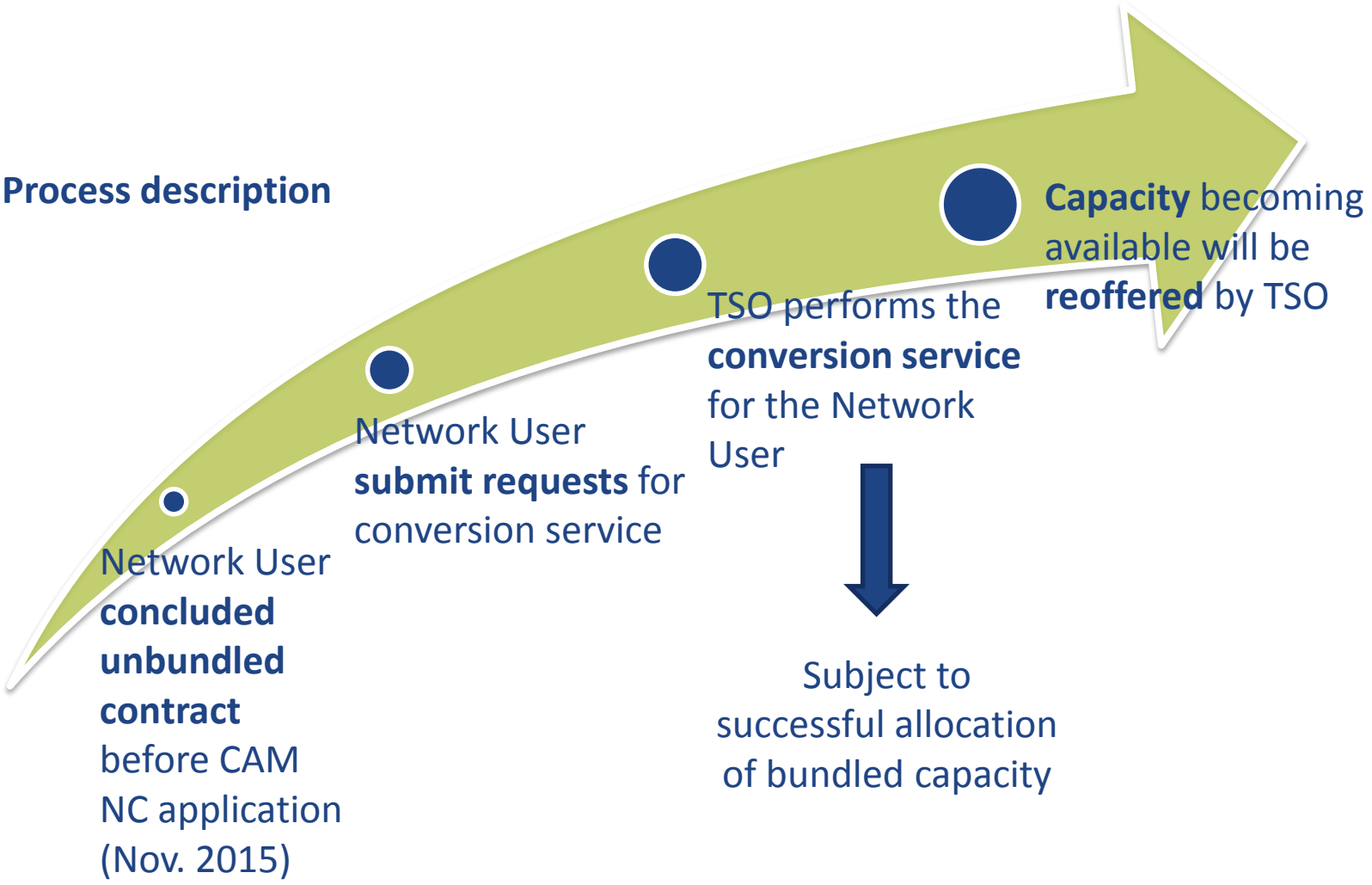
1. As from 1 January 2018, **transmission system operators shall offer** Network Users holding mismatched unbundled capacity at one side of an interconnection point a **free-of-charge capacity conversion service**.
2. Such a **capacity conversion service shall apply to annual, quarterly or monthly capacity products** for bundled firm capacity
3. **This service** shall be offered on a non-discriminatory basis and shall **prevent additional charges from being applied to Network Users for capacity they already hold**. In particular payments for the part of the contracted bundled capacity, which Network Users already hold as mismatched unbundled capacity shall be limited to a possible auction premium.
4. This service **shall be based on the conversion model** under development by **ENTSOG** and **to be finalised at the latest by 1 October 2017** after consulting stakeholders and the Agency.

Capacity Conversion model proposal

Main Considerations

- Options and Feedback from Network Users in 2015
- Room for adjustment according to national specifics
- Fulfils legal requirements
  - Possibility for Network Users, holding unbundled capacity to acquire missing capacity on other IP-side
  - no double charging for capacity
  - Capacity conversion service applies to firm capacity only

Capacity Conversion model proposal



Capacity Conversion model proposal

Conversion set-up:

- **Conversion** possible up to the **capacity (amount) and runtime** of the **unbundled contract(s)**, provided Network User acquired enough bundled capacity
- Service results in standard capacity products

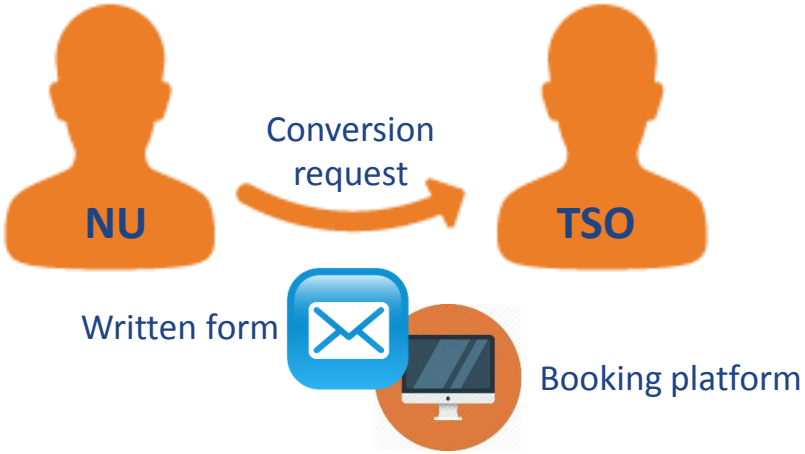
- TSO may set specific conditions under which the capacity conversion cannot be applied (subject to NRA approval)

Applicable charges:

- **Contractual payable price** + only **potential auction premium** (subject to NRA approval)
- **No conversion service fee** will be imposed to the Network User

Capacity Conversion model proposal

Conversion service request



Information needed in capacity conversion request:

- ✓ Reference number of the auction of bundled capacity
- ✓ Interconnection Point
- ✓ Flow direction
- ✓ Capacity(amount) and runtime(duration) to be converted
- ✓ Reference number of unbundled contract(s)

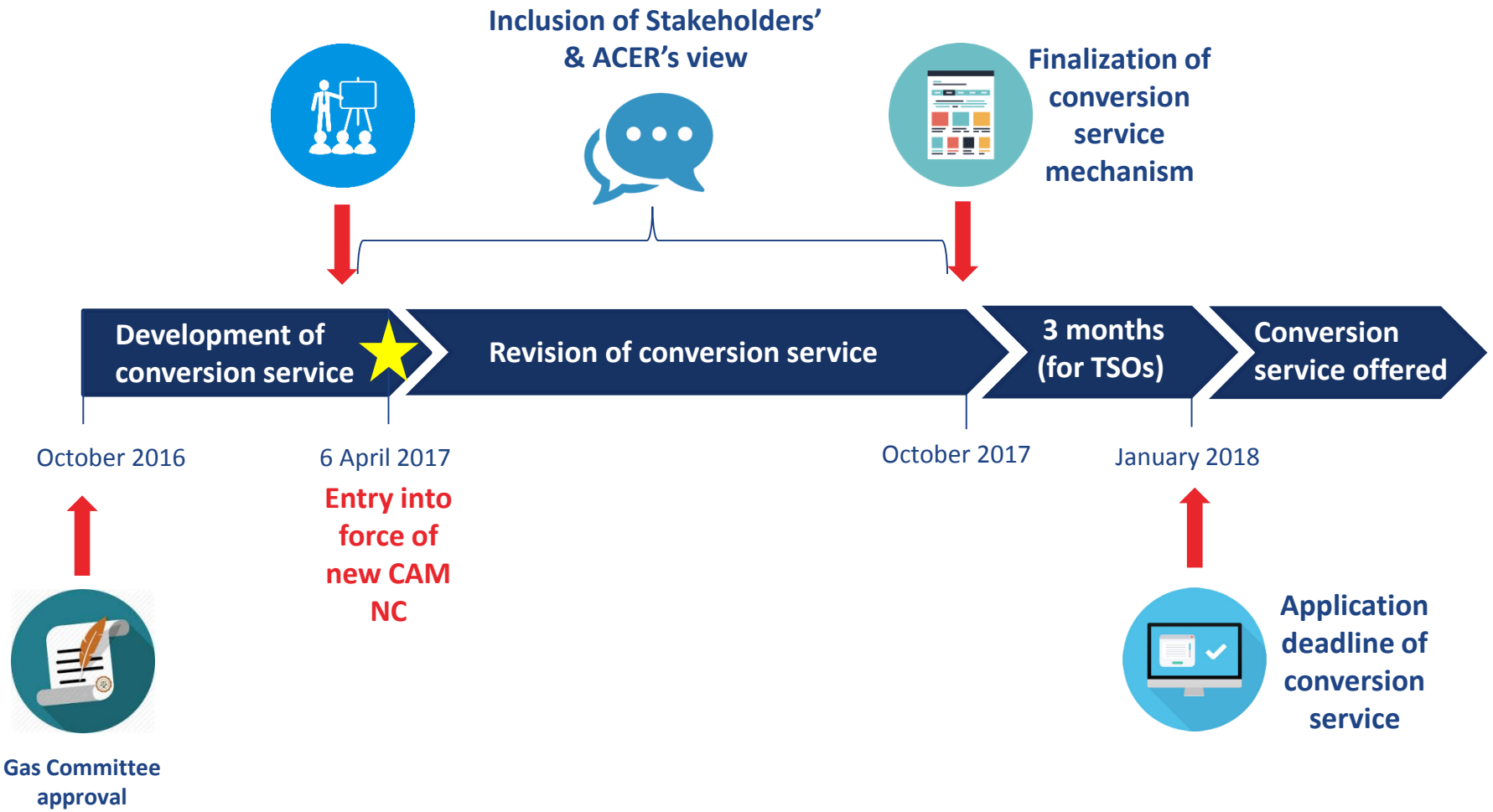
Capacity Conversion model proposal

Conversion service confirmation

Information included in capacity conversion conformation:

- ✓ Reference number of the auction of bundled capacity
- ✓ Interconnection Point
- ✓ Flow direction
- ✓ Capacity(amount) and runtime(duration) converted
- ✓ Reference number of unbundled contract(s)

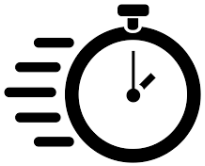
Timescales of Art. 21 of CAM NC



Benefits of ENTSOG's model proposal

- Includes feedback from discussion in 2015
- Fulfils requirements from Article 21.3 CAM NC
- Provides for an European-blueprint

  → ready for adoption on national level with possibility for adjustment due to national specifics



- Provides adequate solution for holders of unbundled long-term contracts
- Fast and simple process
- Cost-efficient process
  - no additional costs for Network User application
  - inexpensive implementation for TSOs

- Allows reoffering of converted capacity by TSO in subsequent auction

Coffee Break

ACER’s view on ENTSOG’s capacity conversion model

ACER
Agency for the Cooperation of Energy Regulators

ACER preliminary views on ENTSOG capacity conversion model

François LEVEILLE, on behalf of ACER CAM Task Force

Stakeholders workshop for CAM NC amendment
Tuesday, 28th March 2017, Brussels

- **NC CAM provisions, Article 21.3:**
  - TSOs shall offer a conversion service for yearly, quarterly and monthly products as from January 2018.
  - ENTSOG shall finalize the conversion model by 1st October 2017, after a public consultation.
  - The network users booking bundled capacity while holding mismatched unbundled capacity at the same IP shall be released from capacity charges (except auction premia) on the newly acquired bundled product which is redundant with the unbundled one (amount & duration) in their portfolio.
- **The network users requested such a service to make use of remaining unbundled capacities in their portfolio.**

ENTSOG CAPACITY CONVERSION MODEL – ACER PRELIMINARY VIEWS

- **ENTSOG published a first proposal of a capacity conversion model last week.**
- **The ACER CAM Task Force welcomes this document which seems mostly not to go beyond the NC CAM.**
- **However, we would like the public consultation to clarify the following questions:**
  - Shouldn't the service be also offered for unbundled capacities allocated after 1st November 2015? [e.g. at borders where no bundles were offered so far; → currently, there is no legal basis for a restriction.]
  - The service is obligatory for yearly, quarterly and monthly capacities. Shouldn't the ENTSOG model at least allow for the conversion service to be offered also for shorter term products (day-ahead) on a voluntary basis?
    [→ cf. request by EFET]

- **Further considerations for the model & consultation:**

  - Shouldn't the model also specify the form/template and process for the **standardized annual reporting** of the use of the service to NRAs? NRAs and ENTSOG could coordinate on such content
  - Wouldn't it be useful to provide (in the model documentation) **a detailed numerical example** of the application of the conversion service with all its process steps, deadlines and consequences?
  - For an EU **harmonized conversion model process**, wouldn't an "ex-ante" binding request for the conversion service (i.e. before the bundled auction) be preferable over an "ex-post" conversion request?
    [→ The ex-ante request could increase the TSO's visibility and ability to maximize the offer of bundled products.]
  - Shouldn't the booking platforms' involvement be considered as proposed by Art. 21 (3)?

- **More generally, ENTSOG's conversion model remains quite general and open for a flexible interpretation.**

- **We agree that a certain level of flexibility is required to accommodate each particular national circumstances. However, shouldn't the model be a bit more specific than the NC CAM by prescribing e.g. harmonized process steps and deadlines?**

- **An important caveat: The conversion service is not meant to facilitate the abandoning of existent long-term unbundled contracts: the capacity holders' rights and obligations remain in place. The discount shall apply to the newly booked capacity.**

Capacity conversion model proposal

6 Conclusions of the workshop, next steps and timescales

Next steps and timescales

1. ***Start of first incremental capacity process on entry into force-date of CAM NC amendment***
   - 8-weeks period for Network Users to submit non-binding demand indications from entry-into-force (6 April 2017) until 1 June 2017

2. ***GT&Cs alignment for bundled capacity - Data gathering, analysis of existing transport contracts of 45 TSOs, identifying and categorising differences, publication of findings in a report***
   - Public consultation for stakeholders on “main GT&Cs” from 7 March to 7 April
   - Publication of report in December 2017

3. ***Capacity conversion - development of conversion model incl. all parameters***
   - Public consultation for stakeholders and ACER in April 2017
   - Publication of final capacity conversion model proposal by ENTSOG aimed for in Q3/2017

Thank You for Your Participation

ENTSOG -- European Network of Transmission System Operators for Gas
Avenue de Cortenbergh 100, B-1000 Brussels

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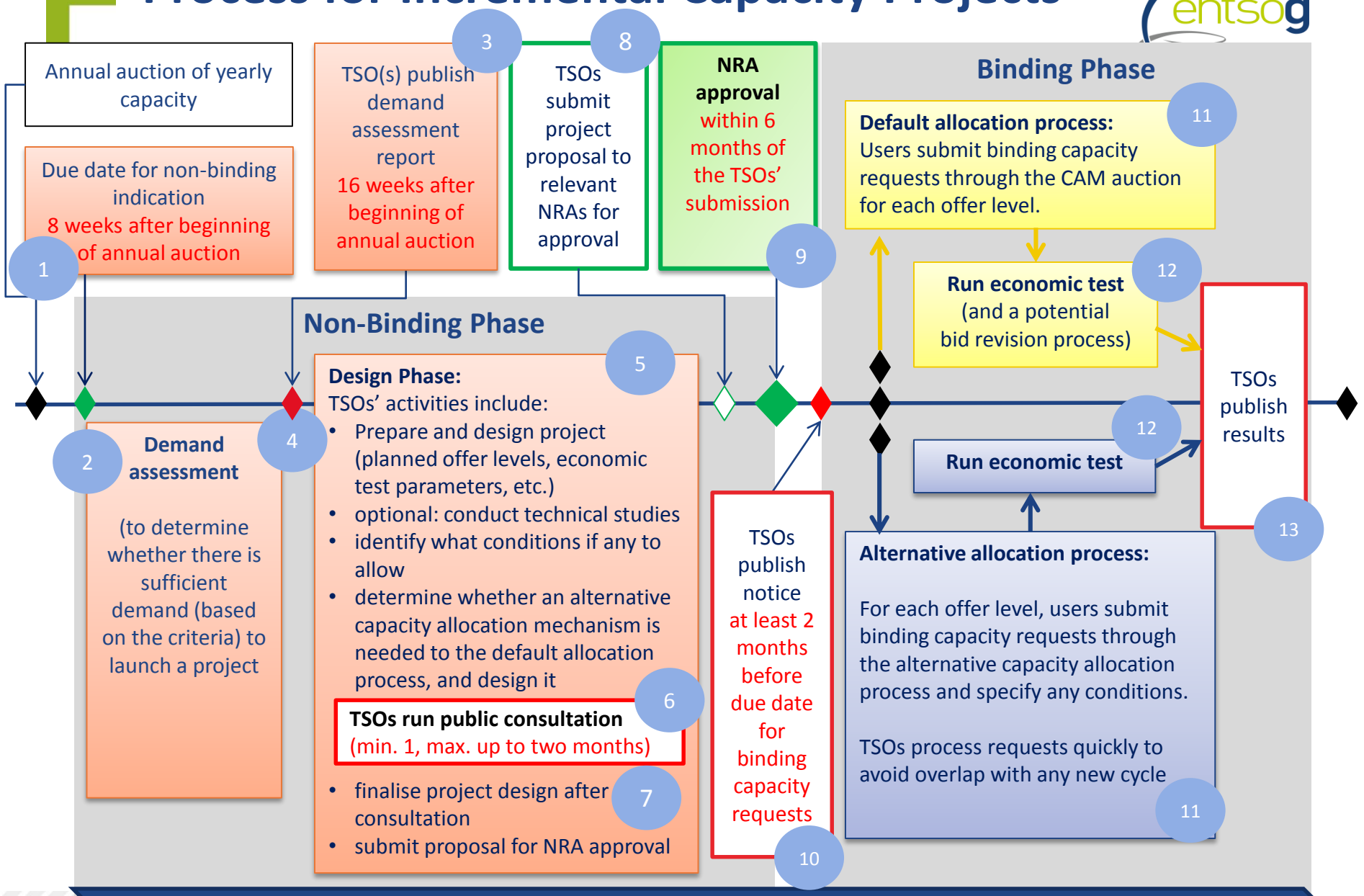
Back-up

Process for Incremental Capacity Projects



Reference table

Point	Issue	Article in Incremental Proposal	Timeline
1	Non-binding demand indications to be respected in the standard demand assessment shall be submitted no later than 8 weeks after the start of the annual yearly capacity auction (after entry into force of the amended CAM NC in 2017)	CAM NC Art. 26	April – June 2017
2	Development of demand assessment report	CAM NC Art. 26(2-4)+(12-13)	June – July 2017
3	Demand assessment report to be published no later than 16 weeks after start of annual yearly auction (after entry into force of the amended CAM NC in 2017)	CAM NC Art. 26(3)	July 2017
4	Start of Design phase on day after publication of demand assessment report	CAM NC Art. 27(1)	July 2017
5	Technical studies for incremental capacity projects in for designing incremental capacity project and co-ordinated offer levels	CAM NC Art. 27(2)	July – October 2017
6	Public consultation on draft project proposal no later than 12 weeks after start of design phase	CAM NC Art. 27(3)	October – December2017
7	Finalisation of project proposal	CAM NC Art. 28(1)	* November 2017 – June 2018
8	Submission of project proposal including offer levels to NRAs	CAM NC Art. 28(1)	January – June 2018
9	Publication of decision of NRAs on project proposal	CAM NC Art. 28(2)	June 2018 – April 2019
10	Publication of approved project proposal including offer levels and economic test parameters and template of contract(s) related to offered capacity	CAM NC Art. 28(3)	May 2019
11	Annual yearly auction for incremental capacity	CAM NC Art. 29(1)	July 2019
12	Alternative allocation mechanism	CAM NC Art. 30	July 2019
13	Economic test procedure	CAM NC Art. 22-24	July 2019
14	Publication of auction results	CAM NC Art. 17(21)	July 2019