

2nd ENTSOG Methodology for Cost-Benefit
Analysis of Gas Infrastructure Projects

ENTSOG Roadmap for future Projects CBA Assessment

2018

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ENTSOG roadmap for future projects CBA assessment



ENTSOG has developed the 2nd CBA Methodology in line with the provision of the Regulation (EU) 347/2013 (hereafter the Regulation).

Based on the experience of TYNDP 2015 and TYNDP 2017 and the 2nd and 3rd PCI selection processes, ENTSOG has updated and improved the CBA methodology, as foreseen in Article 11.6 of Regulation (EU) 347/2013, in view of its application from TYNDP 2018 onward.

The 2nd CBA Methodology, in its adapted version, is significantly improved from the 1st CBA Methodology, and also provides strong improvements compared to the draft version 2nd CBA Methodology submitted by ENTSOG to ACER and the Commission in July 2017. The 2nd CBA Methodology builds on the opinion issued by ACER on 24 October 2017, the report issued by Deloitte/Florence School of Regulation in December 2017¹ (hereafter EC Gas CBA Study), the opinion by the Commission submitted to ENTSOG on 17 October 2018 and addresses most of the recommendations stemming from all these documents.

In the specific “Stakeholders feedback”² accompanying document ENTSOG has mapped how the ENTSOG 2nd CBA Methodology meets the recommendations received from the ACER opinion (Opinion No 15/2017), the Commission opinion (C(2018) 6649 Final) and from the EC Gas CBA study.

Further to the 2nd CBA Methodology, ENTSOG is currently engaged with ENTSO-E in adapting the Interlinked Model. The Interlinked Model, will represent an additional cross-sectoral methodological improvement, which once approved will form an additional part of the 2nd CBA Methodology.

Beyond the CBA Methodology per se, the actual application of CBA Methodology will de facto be refined over time as part of the successive TYNDP processes. This is seen by ENTSOG as an opportunity to regularly improve projects CBA assessment, in a timely and efficient manner, while ensuring proper involvement of stakeholders under the ACER and Commission guidance.

1. Main Improvements of ENTSOG 2nd CBA Methodology and way forward

¹ <http://fsr.eui.eu/event/gas-cba-2-0-online-consultation/>

² The full title of the document is “Consideration of stakeholders’ feedback in the 2nd CBA Methodology and main changes compared to the 1st CBA Methodology”.

It is of importance to distinguish between the CBA methodology itself and its application to TYNDP. In this respect the 2nd CBA Methodology focuses on the methodological aspects, in order to provide users with a stable and reliable set of guidelines and principles to be applied for project assessment within TYNDP or beyond. Such application is expected to evolve over time. The ENTSOG 2nd CBA Methodology ensures a certain level of flexibility that allows to cover different user and with different modelling tools.

This section addresses how recommendations from both ACER and the Commission opinion as well as the EC Gas CBA study have been taken into consideration³. It also points at how the actual implementation of the CBA Methodology will be further improved, in a timely and efficient manner, as part of the development process of future editions of TYNDP.

1.1. Increase in transparency

Compared to previous TYNDP editions, the application of the CBA Methodology to TYNDP foresees the performance of project-specific CBA as part of the TYNDP process for all projects intending to apply for the PCI label.

This, together with the publication of full project-specific CBA results for all PCI candidates within the TYNDP following a consistent project fiche format, ensures transparency to all stakeholders and towards all purposes where PS-CBA can be used.

The 2nd CBA Methodology sets as a requirement that all project promoters provide cost data when submitting their project to TYNDP. Projects intending to apply for the PCI label are expected to be assessed on a level-playing-field and to comply with the highest level of transparency. Taking into account both these elements, for promoters having indicated their intention to participate in the PCI process and having marked their expected costs as confidential, for TYNDP 2018 ENTSOG will estimate costs. These costs will be however used only for publicity purposes since the project-specific assessment will still be based on the data provided by the promoters.

Additionally, the 2nd CBA Methodology recommends considering an infrastructure level formed by existing infrastructure and projects with FID status as the reference grid to be used for the identification of infrastructure gaps and against which to assess projects.

In line with the feedback received from the stakeholders an infrastructure level composed by existing infrastructure and all projects submitted to TYNDP (called “High infrastructure level”)

³ For more details please refer to the accompanying document “Consideration of stakeholders’ feedback in the 2nd CBA Methodology and main changes compared to the 1st CBA Methodology”.

was replaced by an infrastructure level considering only existing infrastructures and projects having an advanced status. This offers a more realistic and complementary assessment of projects.

> **Further improvements**

- (1) ENTSOG will provide with each TYNDP a specific Annex with a clear and transparent description of how the 2nd CBA Methodology is actually implemented;
- (2) As part of the TYNDP process, ENTSOG will develop an approach to the calculation of cost estimates when declared confidential by the promoters. This will be done already from TYNDP 2018, building on the methodology developed by ACER as part of the Unit Investment Cost document as well as on collected costs;
- (3) In line with the EC Gas CBA Study recommendation on “verification of PCI data”, during each TYNDP project collection, ENTSOG will verify the information submitted by promoters. The verification of the submitted data is a process that will be regularly improved in each subsequent TYNDP edition;
- (4) With reference to the Advanced status to be used in the definition of the Advanced infrastructure level, ENTSOG will look into the definition in concertation with the Commission and ACER, which may decide to review the criteria for the definition of the advanced status as part of the TYNDP process. In this case, it will be discussed with stakeholders as part of the stakeholder engagement process. If modified, criteria for the definition of project status shall be provided ahead of the relevant TYNDP project data collection.

1.2. Project Grouping Guidelines

In the 2nd CBA Methodology ENTSOG has included principles for the identification of the group of projects on which running the project specific assessment. This ensures consistency and transparency in the approach used.

> **Further improvements**

Any future update of those guidelines should be developed in consultation with the Commission and ACER as part of the future TYNDPs.

1.3. Refined market modelling assumptions

As one of the main expectations from ACER and stakeholders, the 2nd CBA Methodology provides an enhanced market modelling approach. The Methodology includes an extensive section that elaborates on market modelling assumptions and provides guidelines for the inclusion of additional market elements in the assessment. These market elements include in particular infrastructure tariffs and other commercial provisions such as long-term contracts.

The 2nd CBA Methodology also stresses the importance to consider LNG as multisource whenever relevant for the assessment.

The inclusion of such elements has been extensively tested by ENTSOG, in the time period between the draft and adapted versions of the CBA Methodology. While complex in its implementation, this significantly enhances the modelling approach stemming from the CBA Methodology guidelines application.

This improvement meets the short-term and most of the long-term recommendations from ACER and the Commission opinions and the EC CBA Study. Indeed, it provides guidelines for the inclusion of tariffs for all types of infrastructures (transmission, LNG terminals and storages) and for both existing infrastructure and projects.

The 2nd CBA Methodology therefore provides for a robust and consistent framework and clear guidelines for consideration of market elements in the assessment of the gas system and projects.

In terms of application, already from TYNDP 2018, the modelling introduces:

- > The use of tariffs for existing infrastructure, based on data stemming from the Transparency Platform or collected from LNG terminals and storage operators;
- > A methodology for modelling of tariffs for projects, with a default case based on the tariffs for the existing infrastructure complemented by a sensitivity analysis;
- > The consideration of long-term capacity bookings;
- > Consideration of LNG as a multi-source supply;
- > An enhanced approach to supply prices to better reflect import price differentiation.

ENTSOG has prioritised the implementation of the above elements. These elements were extensively consulted with infrastructure operators and stakeholders.

> **Further improvements**

(1) Building on the experience of TYNDP 2018 first implementation of the new methodology, further refinements of the market modelling approach (both in terms of tariffs and long-term capacity bookings) will be handled as part of the development process of next TYNDPs, ensuring the involvement of stakeholders;

(2) Consideration of long-term supply contracts is already covered by the CBA Methodology. It has not been implemented in TYNDP 2018 as this information is not public. While it will be implemented in later editions of the TYNDP, the unavailability of related data is seen as a serious barrier.

1.4. A multi-criteria analysis combining CBA and quantitative analysis

The 2nd CBA Methodology recommends combining a monetized CBA with non-monetized elements into a multi-criteria analysis. This is in line with the best practice followed by other institutions such as ENTSO-E and REKK.

ENTSOG values quantitative indicators as they provide detailed, understandable and comparable information independently from monetary values that are inherently uncertain and unpredictable.

In terms of monetisation and in line with ACER opinion, the 2nd CBA Methodology elaborates on the monetisation of the following monetary benefits:

- > Social economic welfare, which benefits from the enhanced market modelling;
- > Avoided curtailed demand, differentiated between climatic stress, supply stress and infrastructure stress, and to be monetised using Cost of Disruption of Gas supply (CoDG);
- > Substitution effect (fuel switching), related to gas displacing another energy in the power sector or end-use sectors;
- > Reduction in CO₂ emissions, monetised using CO₂ market price or alternatively the Social Cost of Carbon (SCC).

During the public consultation held from 19 May to 16 June 2017, stakeholders were consulted on possible improvement of the monetisation approach but did not provide further concrete proposals.

> Further improvements

(1) Beyond TYNDP 2018, ENTSOG will continue investigating possible ways to improve the monetisation of already monetised or currently assessed elements which are only on a quantitative basis;

(2) In particular, in terms of Cost of Disruption of Gas supply, ACER is currently running a study on the topic⁴. The 2nd CBA Methodology allows for considering any relevant value, which could be the outcome of this study. Consideration of this study to set specific CoDG for upcoming

⁴ At the time the last version of this document has been drafted.

TYNDPs will be considered once the study has been published if it achieves a sufficient consensus among stakeholders;

(3) In regard to the Social Cost of Carbon, ENTSOG intends to investigate values based on literature review, and will accordingly consult with stakeholders, in view of possible implementation for the future TYNDPs.

1.5. Indicators simplification

Compared to the 1st edition, the 2nd CBA Methodology focuses on the most relevant indicators from the perspective of decision-makers and project promoters. Overlapping indicators have been discarded, preventing from the risk of double counting.

Indicators taking a different perspective to a specific issue have been maintained. Possible partial overlap has been mapped, and the methodology indicates how to account for them to avoid double counting.

> Further improvements

Based on the experience gained and always considering the requirements set by Regulation (EU) 347/2013, the scope covered by the different indicators is now well established. Yet the practice has shown that detailed calculation of these indicators can be improved over time. ENTSOG is committed to perform such improvement as part of each TYNDP process. For such changes ENTSOG will seek the advice from the Commission and ACER and will consult stakeholders. The detailed updated formulae of the indicators will be part of an Annex to the subsequent TYNDP report.

1.6. Interlinked Model

In line with Article 11.8 of Regulation (EU) 347/2013, The ENTSOs have developed the draft version of the “consistent and interlinked model” (the Interlinked Model) and have submitted it to ACER and the Commission for their opinion in December 2016.

A fundamental element of this draft version is the ENTSOs joint scenario development process. The ENTSOs engaged in this joint process starting from TYNDP 2018. This joint process has allowed for valuable knowledge sharing between both associations. It has been very much welcomed by the stakeholder community and has contributed to enlarge the scope of stakeholders involved in the scenario development process⁵.

⁵ In this respect, ENTSOs approach to probability analysis is to define targeted and relevant scenarios (and related parameters) to be consulted with all stakeholders rather than focusing on Monte Carlo simulations (as per one of FSR study recommendations). The latter approach would in fact require thousands of simulations to have

> Further improvements

(1) In addition to this joint scenario process ACER and the Commission have pointed to the need to investigate further interlinkages. The ENTSOs, recognising this need, have subsequently launched a Focus Study. Stakeholders will be involved at the different stages of the study, including through a public consultation and workshop on the conclusions of the study.

(2) The Focus Study outcomes will be used by the ENTSOs to adapt the Interlinked Model. Once approved by Commission it will form part of the current CBA Methodology, and will be applied to relevant projects.

2. Conclusions

The ENTSOG 2nd CBA Methodology provides significant improvements from the 1st edition and addresses most of the recommendations expressed by ACER and the Commission. It will be complemented by the ENTSOs Interlinked Model once approved by the Commission.

The CBA Methodology is flexible, ensuring its applicability to future TYNDP editions. Its application will be regularly updated as part of the TYNDP processes, ensuring stakeholder consultation.

The actual application of the 2nd CBA Methodology and the above-mentioned further improvements will be refined over time as part of the successive TYNDP processes.

All the improvements will be elaborated in a transparent manner with the involvement of stakeholders and under the Commission and ACER guidance.

probabilistic distribution of assessment parameters (e.g. demand) and would replace the joint ENTSOs scenarios (as per FSR Study recommendation).



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