

IMPLEMENTATION GUIDELINE ON “PROJECT LEVEL INDICATORS BASED ON PROMOTERS’ INPUT”

AS PER THE 3RD CBA GUIDELINE AND FOR THE PURPOSE OF THE TYNDP 2020

The 3rd CBA Guideline¹ identifies benefits that, although considered relevant for the assessment of a project, cannot presently be computed by ENTSO-E at pan-European level because there does not exist a verified guidance allowing pan-European computation. Although the main principles of these indicators are defined in the 3rd CBA Guideline and their pan-European nature is recognized, the Guideline foresees their assessment relying on a regional, or even national, perimeter due to their inherent complexity (e.g. the assessment of Balancing Energy Exchange). Therefore, these benefits are left to be assessed based on promoters’ input.

The validity of the project level benefits submitted by project promoters will be verified by ENTSO-E during a review process, as part of the TYNDP 2020 process. The submission of project level indicators does not guarantee their inclusion in the final TYNDP 2020.

The present document states how these benefits should be declared, justified and demonstrated by project promoters in the TYNDP 2020. The benefits presented in this document apply to both transmission and storage projects unless specified otherwise.

Why are project promoters invited to declare Project Level Indicators?

The TYNDP, like any study modelling future systems, will always be limited by the assumptions considered to render an uncertain future. Although the number of benefits assessed and/or monetized increases in each edition of the TYNDP, there will always be a need to consider what costs and benefits are missing from the analysis.

The latest evolution of the Cost Benefit Analysis Guideline recognizes these limitations and recommends to further improve the information presented in the TYNDP by collecting inputs from project promoters in a coordinated way for pre-identified indicators and sub-indicators.

¹ Draft 3rd ENTSO-E Guideline for cost-benefit analysis of grid development projects, version for ACER Opinion, February 2020

https://www.entsoe.eu/Documents/TYNDP%20documents/Cost%20Benefit%20Analysis/200128_3rd_CBA_Guideline_Draft.pdf

This stage of the TYNDP is very important in order to allow properly informed public support or investment decisions on infrastructure projects based on the TYNDP. The information collected by ENTSO-E could in particular be used by the European Commission to determine the full benefits of projects during the 2021 PCI selection process (the PCI process is under the responsibility of the European Commission, which maintains the right to decide what information presented in the TYNDP is relevant for its process).

Furthermore, the TYNDP may serve as basis for national and regional investment decisions. Project Level Indicators allow decision-makers and investors to have a complete picture of a project by complementing indicators computed by ENTSO-E at the pan-European level.

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What are Project Level Indicators based on promoters' input?

Definition

Project Level Indicators based on promoters' input (from now on Project Level Indicators) are indicators that satisfy all the following requirements:

- 1) have been considered relevant for a cost-benefit analysis in the 3rd ENTSO-E CBA Guideline for Cost Benefit Analysis of Grid Development Projects and as such are listed as indicator or special application for sub-indicators within this guideline;
- 2) the 3rd ENTSO-E CBA Guideline for Cost Benefit Analysis of Grid Development Projects clearly describes the main principles to assess this indicator as well as how they should be reported in the project sheet (quantitative or monetized value);
- 3) The ongoing TYNDP 2020 process does not foresee a methodology to be applied for a computation at pan-European level.

List of Project Level Indicators

The list of Project Level Indicators has been prepared by ENTSO-E taking into account the lessons learnt from the TYNDP 2018 process (and in particular the Guideline on the declaration of "Missing benefits" and "declared values of CBA indicators" in the TYNDP 2018) and the inputs from the different stakeholders (including ACER and the EC).

In the TYNDP 2020, the Project Level Indicators are :

A) Project Level Indicators applying to both Transmission and Storage projects for which there is no difference in the implementation of the methodology:

- B7.1 Security of Supply – System Flexibility: Balancing energy exchange
- B9: Avoidance of the Renewal/Replacement Costs of Infrastructure
- B10: Reduction of Necessary Reserve for Redispatch Power plants

B) Project Level Indicators applying to Transmission projects only or for which there is a special application for Transmission projects only:

- B8: Security of Supply – System Stability
- B8.1: Frequency stability: Focus on frequency quality targets (energy aspect): for HVDC interconnectors between synchronous areas
- B8.2: Blackstart services: specific application for Synchronisation with Continental Europe

C) Project Level Indicators applying to Storage projects only or for which there is a special application for Storage projects only:

- B8: Security of Supply – System Stability
- Frequency stability: qualitative indicator based on KPI score specifically designed for storage projects
- B8.2: Blackstart services

The above list is valid for the TYNDP2020 process. In future editions of the TYNDP, verified methodologies for computation at pan-European level may become available for some of these indicators. Therefore, this list is subject to updates in future TYNDPs and revised Implementation Guidelines for Project Level Indicators will be developed for the following editions.

Key principles, rules and process for the submission of Project Level Indicators

Key principles and rules

- 1) Submission of one or several Project Level Indicator(s) is optional. Promoters are free not to submit any. CBA Indicators listed in the 3rd ENTSO-E CBA Guideline, beyond those listed in Chapter 1, will be provided in TYNDP 2020 Project Sheets by ENTSO-E regardless of the submission of Project Level Indicator(s).
- 2) Available Project Level Indicators: The only Project Level Indicators based on promoters' input that can be provided by promoters are the ones included in the list presented in Paragraph 1.2. This list has been drafted considering the following necessary conditions:

Benefits from Project Level Indicators cannot overlap/constitute double counting with other benefits already covered by other indicators as identified in the 3rd CBA Guideline. In case of indicators that inherently contain the risk of double counting (as signaled in this implementation guideline in the dedicated description of each Project Level Indicator - see Chapter 4), the avoidance of double counting has to be proved and demonstrated in the implementation methodology applied and described by the promoter.

- 3) The Project Level Indicators submitted must be intended as a benefit to the overall European electricity system (countries in the ENTSO-E perimeter).
- 4) The Project Level Indicators and related declared values boxes in the TYNDP 2020 project sheets are under the responsibility of project promoters, which means that ENTSO-E will not include any element not explicitly provided by the project promoter unless it is specified otherwise in this implementation guideline (see Chapter 4).

- 5) Validity criteria: The mere submission of the Project Level Indicator does not guarantee that the submitted indicator is considered valid. Two conditions apply for a project-level indicator to be valid:
 - All required information must be provided by the end of the submission window (the required information for each indicator and the timeline are detailed in Chapter 3 and Chapter 4);
 - The validity of the inputs provided will be verified by ENTSO-E. ENTSO-E reviews the inputs provided and validates (or not) each submitted Project Level Indicator.

- 6) Applicable rules: Project promoters submitting Project Level Indicators must:
 - Comply with the methodology described in the 3rd CBA Guideline and with the instructions provided in this document.
 - In particular, project promoters must comply with the guidance for declaration and calculation and with the justification and validation requirements presented in Chapter 3 and Chapter 4 of this document.

Chapter 3 indicates the necessary standard inputs to be provided for a standard Project Level Indicator

Chapter 4 indicates, for each of the Project Level Indicators, what additional inputs are needed to validate the submission and/or what inputs are not necessary with respect to the standard inputs listed in Chapter 3. Unless explicitly mentioned in Chapter 4, all the inputs requested in Chapter 3 are needed to consider the input submission valid for the review process.

- 7) The validation of Project Level Indicator and Declared Values submitted in the TYNDP 2018 process does not guarantee that the same type of submission will be validated in the TYNDP 2020.

- 8) No qualitative assessment will be accepted, except when explicitly defined in the 3rd CBA guideline and/or in this document: All submitted indicators must be supported by a study and must be provided in monetized or quantified form depending of what is indicated in this document and in the 3rd CBA Guideline for each Project Level Indicator.

- 9) It is not possible to submit a Project Level Indicator for a TYNDP 2020 project that has opted out of the CBA assessment

- 10) Publication of information submitted by promoters: Unless specified otherwise in Chapter 3 and Chapter 4, the information provided by project promoters will be published in the TYNDP 2020 project sheets. It follows that promoters may only submit benefits which ENTSO-E can publicly display. The study, the dataset and other inputs on which the declared indicator is based will not be

published but may be shared with the European Commission and the Agency for Cooperation of Energy Regulators for their own processes.

- 11) The submission can be considered valid only if it is preliminarily agreed between all the project promoters.
- 12) Timeline and modalities of the publication: All submitted Project Level Indicators will be published in the draft TYNDP2020 project sheets in the draft version for public consultation (expected in October 2020, tentative date subject to confirmation). If the review process validates the submitted values, the submitted project-level indicator will be included in the TYNDP 2020 project sheets version after consultation (expected in Q1 2021). If the submission is to be invalid, it will be deleted from the project sheet.

ENTSO-E will publicly release the outcome of the review process for each submitted indicator. For the indicators that are considered invalid, ENTSO-E will specify the rationale.

- 13) Scenarios to be used:

Submitted indicators should be preferably based on ENTSO-E and ENTSG TYNDP 2020 Scenarios. The promoter can submit a Project Level Indicator based on any one of the ENTSO-E and ENTSG TYNDP 2020 Scenarios (2025 NT, 2030 NT, 2030 DG, 2030 GA). Promoters may submit values for multiple TYNDP 2020 Scenarios. However, to ensure consistency with the overall TYNDP CBA results, the use of National Trends in the evaluation of the indicator is recommended.

If the submission cannot be based on TYNDP 2020 Scenarios, project promoters may submit indicators based on one alternative scenario. ENTSO-E recommends, where possible, that promoters use scenarios and data sources that have been approved and/or released by relevant national or European institutions. Promoters will be asked to explain why it was not possible to use the TYNDP 2020 scenarios and to provide the external scenario to ENTSO-E for the review process.

Regarding the time horizon, a value must be submitted at least for 2030. When at least one value has been submitted for 2030, the promoter has the possibility to also submit a value for 2025.

Process

The process described below presents a tentative timeline for any step scheduled after end of August 2020.

Early May 2020: release of the guidance document

ENTSO-E releases the Implementation Guideline for Project Level Indicators. The document will be shared with TYNDP2020 promoters by email and published on the TYNDP website: tyndp.entsoe.eu

Project promoters have been preliminarily informed about the list and the methodology of the Project Level Indicators with the release of the draft 3rd CBA Guideline version for consultation (25th October 2019), the release of the version after consultation (17th February 2020) and a dedicated webinar held on 19th February 2020. The webinar informed promoters on the available Project Level Indicators, where to find the related methodology in the draft 3rd CBA Guideline and the information promoters are expected to provide and the process for submission. Project promoters were encouraged to start investigating how they could perform calculations of the proposed Project Level Indicators.

From May to 15 October 2020: project promoters submit Project Level Indicators

Project promoters submit Project Level Indicators based on the methodology of the 3rd CBA Guideline and the instructions given in the present document.

Submission of Project Level Indicators will be done via the TYNDP2020 online platform at <https://tyndp2020-project-platform.azurewebsites.net/>

ENTSO-E's TYNDP team will be available to provide support and clarification to project promoters during this period. The single point of contact for promoters is Johannes Moolman Johannes.moolman@entsoe.eu.

October 2020: publication of the submitted Project Level Indicators in the draft TYNDP2020 project sheets

All submitted Project Level Indicators will be published in the draft TYNDP2020 project sheets for public consultation. It will be mentioned that the indicators are undergoing validation by ENTSO-E and may be removed from the projects sheet before the submission of the TYNDP 2020 package to ACER for opinion.

From October until submission of the draft TYNDP 2020 package to ACER: ENTSO-E review

ENTSO-E reviews the information submitted by promoters and may liaise with promoters in case clarification is required. The review process will take place in two steps:

- 1) ENTSO-E verifies that all required input has been submitted on the platform. If an input requires clarification or further information from the promoter, ENTSO-E will contact the promoter and ask for clarifications to be provided by the promoter by a set deadline.

Indicators for which information is still missing after the deadline for clarifications has passed will be disregarded, and the promoter will be notified that the submission is not considered valid.

- 2) For indicators where the submission is considered complete, ENTSO-E runs a sanity check on the values declared and the methodology followed and verifies the compliance with the rules set in the CBA Guideline and in the present document.

ENTSO-E will publicly release the outcome of the review process for each submitted indicator. For the indicators that are considered invalid, ENTSO-E will specify the rationale. Only validated indicators will remain in the TYNDP2020 project sheets submitted to ACER for opinion as part of the draft TYNDP2020 package.

Justification, validation and datasets: standard requirements

This chapter focuses on the standard input promoters must provide in order to have they Project Level Indicator reviewed and validated (if the input comply with this guideline and the 3rd CBA Guideline). Unless otherwise specified in Chapter 4 these inputs are requested for all the Project Level Indicator submission.

In this chapter and in Chapter 4 it is explicitly indicated which inputs are meant to be published in the related project sheets and what is needed only for the review process.

The tables presented in this Chapter are only meant to provide an overview of the information that will be required in the submission forms and meant to be published. The exact fields to be completed and their order may be different.

Statement on CBA 3 compliance

The promoter has to state that the study performed, and the inputs submitted comply with the draft 3rd CBA Guideline. The promoter should further explain how the compliance is respected.

	Input	Published in the Project Sheet?
I hereby state that the study performed to provide the project level input for TYNDP 2020 is compliant with the draft 3 rd CBA Guideline	checkbox	Yes
I hereby certify that this indicator is submitted jointly and in agreement with all promoters of the project	checkbox	No
Promoter's explanation on how the compliance is respected	[text from the promoter]	Yes

Statement on Project Level Indicator assessment study

The promoter must state that the study performed to submit Project Level Indicator values has specifically assessed the submitted indicator for the project.

	Input	Published in the Project Sheet?
I certify that the study performed to provide this project-level indicator for the TYNDP2020 has assessed the selected indicator specifically for the project at hand	checkbox	No

Scenarios used

As specified in Chapter 2.1, submitted indicators should be preferably based on ENTSO-E and ENTSG's TYNDP 2020 Scenarios.

The promoter has then to declare whether ENTSO-E Scenarios have been used to compute the indicator and to specify for which Scenario (among 2025 NT, 2030 NT, 2030 DE, 2030 GA) the value is provided.

If the study has been performed using a scenario other than the TYNDP 2020 Scenarios, the promoter is requested to: (1) state it, (2) justify why the TYNDP 2020 scenarios could not be used, (3) provide the name of the scenario and a short description of the scenario for each of the possible time horizon, (4) indicate the data sources and references used to produce the scenario and (5) upload the dataset of the scenario used.

The promoter must declare for which scenario the Project Level Indicator is submitted:

	Input	Published in the project sheet?
Please select the scenario used to compute the project-level indicator	Select one in 2 options: <input type="checkbox"/> TYNDP 2020 scenarios <input type="checkbox"/> Other scenario	yes
[If "TYNDP 2020 scenarios" is selected] :		
The value is submitted under National Trends 2030	checkbox	yes
The value is submitted under for National Trends 2025 (optional)	checkbox	yes

The value is submitted under Distributed Energy 2030	checkbox	yes
The value is submitted under Global Ambition 2030	checkbox	yes

Information requested if 'Other scenario' is selected:

The value is submitted for horizon 2030	checkbox	yes
The value is submitted for horizon 2025 (optional)	checkbox	yes

For each selection of a scenario different from ENTSO-E scenarios, the following information needs to be given	Input	Published in the Project Sheet?
Justification: Reason for basing the study on another scenario than the TYNDP2020 scenarios	[text]	No
Name: Please provide the name of the Scenario	[text]	No
Description: Please provide a short description of the scenario	[text]	No
Data source: Please provide the data source for the scenario	{Upload data}	No
Data upload: Please upload the Scenario dataset chosen	{Upload Excel file}	No

Unit of the submitted value

This input is required for those indicators for which the unit has not already been identified in the guideline (see Chapter 4).

	Input	Published in the Project Sheet?
The indicator submitted has been:	<input type="checkbox"/> quantified <input type="checkbox"/> monetized [Meuro/year]	Yes
If quantified is selected, please specify the unit	[text from the promoter]	Yes

Value of the Project Level Indicator for each Scenario

This input is mandatory and has to be provided for each scenario as given in section 3.3, taking into account the unit already identified in the guideline OR provided above as per Section 3.4.

	Input	Published in the Project Sheet?
Submitted value for 2025 horizon (optional)	[number]	Yes
Submitted value for 2030 (ENTSO-E NT or non-ENTSO-E scenario based on scenario selection)	[number]	Yes
Submitted value for ENTSO-E 2030 DG	[number]	Yes
Submitted value for ENTSO-E 2030 GA	[number]	Yes

Additional assumptions (beyond scenarios)

In case the study submitted by the promoter is based on additional assumptions for the computation of the Project Level Indicators submitted, these have to be provided to complete the submission of the Project Level Indicator together with a justification for the assumptions taken. The promoter should also explain if additional assumptions have been taken in order to comply with this Implementation Guideline and/or the 3rd CBA Guideline.

	Input	Published in the Project Sheet?
If additional assumptions, beyond the scenarios, are needed to compute the specific indicator, please describe these assumptions	[text, max number of words 200]	Yes
Justification for the additional assumptions taken	[text, max number of words 200]	Yes
Upload additional assumption dataset	{Upload Excel file}	No

Information required for the review of the study

The promoter is requested to provide the necessary information to allow ENTSO-E to review the study performed to assess the Project Level Indicators. This includes the upload of the study report performed (in English), information related to the study performed (to understand if the study can be considered valid: not outdated, performed by a recognized entity). Additionally, the promoter is requested to facilitate the review process by providing information on where certain information (needed to validate the Project Level Indicator submission) is provided within the study report.

Study	Input	Published in project sheet?
Entity performing the study	textbox	yes
Year of the study	textbox	yes
Upload the study report (Only documents in English will be accepted)	Possibility to upload one or several documents	no
Description and justification of the study's assumptions and data source	textbox	no
Please indicate here the page number(s) of the study where the assumptions are described	textbox	no

Please indicate here the page number(s) of the study where the implemented methodology is described	textbox	no
Please indicate here the page number(s) of the study where the results of the study declared above for your project are displayed	textbox	no
I confirm that the values submitted and assessed in the study relate to countries located within the ENTSO-E perimeter only	Checkbox	yes
Short explanation on the methodology implemented	Textbox (optional)	no
(Not mandatory) Please specify if a body other than the one performing the study has reviewed or validated the study	Textbox (optional)	no

Guidance on the declaration and calculation of Project Level Indicators

This chapter is dedicated to each of the Project Level Indicators. It specifies whether the standard requirements presented in Chapter 3 are applied or if additional/different requirements are needed for the submission of that specific Project Level Indicator.

B7.1 Security of Supply – System Flexibility: Balancing energy exchange (for both Transmission and Storage projects)

Although the promoter is requested to provide all the information listed in Chapter 3, there are specific applications/exceptions that apply to this indicator. These are:

- 1) Unit of the submitted value: the value submitted is monetized and can be expressed in MEuro/year only
- 2) Submitted value: the value submitted by the promoter will not be published in the TYNDP 2020 project sheet. This value, after validation by ENTSO-E, will be converted into a qualitative indicator applying the following equivalences:

Value submitted within the range	Corresponding qualitative indicator shown published in the Project Sheet
< 1 M€	0
[1 M€; 15 M€)	+
≥ 15 M€	++

These thresholds result from the relationship between the socio-economic benefits (SEW) of TYNDP 2018 projects for all 2030 scenarios and the expected relation between Long Term + Day Ahead cross-border trade (associated to SEW) and balancing market integration.

Applying this ratio equals to 7.5% for all SEW values of all TYNDP 2018 projects for the 2030 scenarios, ENTSO-E calculated the probability associated with the expected balancing energy exchanges benefit of each project.

In this way, the probability of balancing energy exchanges benefit is below 1 M€ is 35% and below 15M€ is 87.5%.

B9: Avoidance of the Renewal/Replacement Costs of Infrastructure (for both Transmission and Storage projects)

The promoter has to provide all the information requested in Chapter 3 considering the following exceptions:

- 1) Scenarios: the indicator can be provided for up to three different years (depending when the benefit materializes), it is not required to provide information on the scenarios used.
- 2) Unit of the submitted value: the value submitted is monetized and can be expressed in MEuro only
- 3) Submitted value: the value submitted must be reported together with the year (along the assessment period of the project) when this benefit materializes.

B10: Reduction of Necessary Reserve for Redispatch Power plants (for both Transmission and Storage projects)

The promoter must provide both quantitative and monetized values.

B8.1: Frequency stability: Focus on frequency quality targets (energy aspect): for HVDC interconnectors between synchronous areas (for Transmission projects only)

Although the promoter is requested to provide all the information listed in Chapter 3, there is a specific exception that applies to this indicator:

Unit of the submitted value: the value submitted is quantified and the unit is pre-defined as in MWh/year only

B8.2: Black start services: specific application for Synchronisation with Continental Europe (for Transmission projects only)

Although the promoter is requested to provide all the information listed in Chapter 3, there is a specific exception that applies to this indicator:

Unit of the submitted value: the value submitted is monetized and can be expressed in MEuro/year only

B8: Frequency stability: qualitative indicator based on KPI score specifically designed for storage projects

For this indicator the promoter does not need to provide the information as presented in Chapter 3 but rather provide information on the following KPIs:

- Response time – FCR (Frequency Containment Reserve)
- Response time – including delay time of IT and control systems
- Duration at rated power – total time during which available power can be sustained
- Available power – power that is continuously available within the activation time

The statement of the KPIs of the storage project is considered a responsibility of the project promoter and will not be subject to ENTSO-E review.

The KPIs are expressed in ranges because ENTSO-E will convert the ranges selected by the project promoter into a qualitative indicator. The qualitative indicator will be shown in the project sheet.

KPI	Score	Motivation
Response time – FCR ⁴⁹	0 = more than 30 s + = less than 30 s ++ = less than 1 s	30 s : ramp time of FCR 1 s : typical inertia time scale
Response time – including delay time of IT and control systems	0 = more than 200 s + = less than 200 s ++ = less than 30 s	200 s: FRR ⁵⁰ ramp time 30 s: FCR ramp time
Duration at rated power – total time during which available power can be sustained	0 = less than 1 min + = less than 15 min ++ = 15 min or more	1 min : double the response time of FCR 15 min : Typical PTU ⁵¹ size
Available power – power that is continuously available within the activation time	0 = below 20 MW + = 20 - 225 MW ++ = 225 MW or higher	20 MW : 1%-2% of a typical power plant is reserved for FCR and reachable from a project perspective 225 MW : PCI size

B8.2: Black start services (for Storage projects only)

The promoter must provide all the information requested in Chapter 3 considering the following exceptions:

- 1) Methodology and review process: for this indicator the CBA 3 Guideline does not provide a comprehensive, solid methodology. For this reason, ENTSO-E will abstain from performing a review



of the methodology and study submitted by the promoter and from providing a positive or negative validation of the submission.

- 2) Unit of the submitted value: the value submitted is quantified only, the promoter can choose the unit but this cannot be expressed in MEuro/year or MEuro.