

Elements of the project sheet

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TYNDP 2018: Project Promoters Workshop on Project Sheets finalization

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- Overall view of the standard project sheet (transmission projects)
- Storage project sheet: differences
- What has been already provided
- What will be requested
- Which element ENTSO-E is working on

Overall view of the standard project sheet (transmission projects) – 1st page

Project description [PROMOTER]: *this part includes:*

- *the name of the project, short technical description of the project*
- *Specify if the project is an interconnector or is a generation connection project*

System Needs addressed by the project [ENTSOE and PROMOTER]:

- *Need selected from list prepared by ENTSOE*
- *Justification by project promoter*

Overall view of the standard project sheet (transmission projects) – 1st page

PROJECT PROMOTERS [PROMOTERS]:

PROJECT CONSIDERED IN THE REFERENCE GRID [ENTSO-E]: *[yes/no]*

NETWORK BOUNDARY IT HELPS MITIGATE [ENTSO-E]:

PCI LABEL – 3RD LIST 23 NOVEMBER 2017 [PROMOTER]:

LAST APPROVED NATIONAL DEVELOPMENT PLAN/S NUMBER & PAGE [PROMOTER]:

- *[name country, NDP number and page (for the page mention the page where you have the first time the project description)]*
- *[if not yet in a final NDP then include here the explanation of why not – e.g. currently is only in the draft NDP; the NDP is will be updated in 3 years and the project will opt to be included in the next NDP...]*

Location of the project on the map [PROMOTER]

[Extract from the TYNDP map – note: this map shall include also the boundary the project helps mitigating]

SEW vs. GTC curve *(if relevant)*

Overall view of the standard project sheet (transmission projects) – 1st page

INVESTMENTS PART OF THE PROJECT [PROMOTER]

Inv ID	Short description	NTC increase [ENTSO-E]	Substation 1 (country 1)	Substation 2 (country 2)	Present status	Commissioning date	Evolution driver	Explanation in case of delay
	[new 200 km, double circuit 400kV AC line, between substation (country abbreviation) and substation 2 (country abbreviation)],							

Overall view of the standard project sheet (transmission projects) – 1st page

CLUSTERING EXPLANATION [PROMOTER]:

- explain here why the investments above form a project – basically why you clustered them

Overall view of the standard project sheet (transmission projects) – Project CBA results


HOW TO READ THE CBA RESULTS [ENTSO-E]: *[This is expected to be a general text common for all the projects]*

DISCLAIMER [PROMOTER]: *[Any disclaimer we find useful to have for this specific project]*

PROJECT BENEFITS [ENTSO-E FOR ALL VOICES BUT B4 ASSIGNED TO PROMOTERS ONLY]

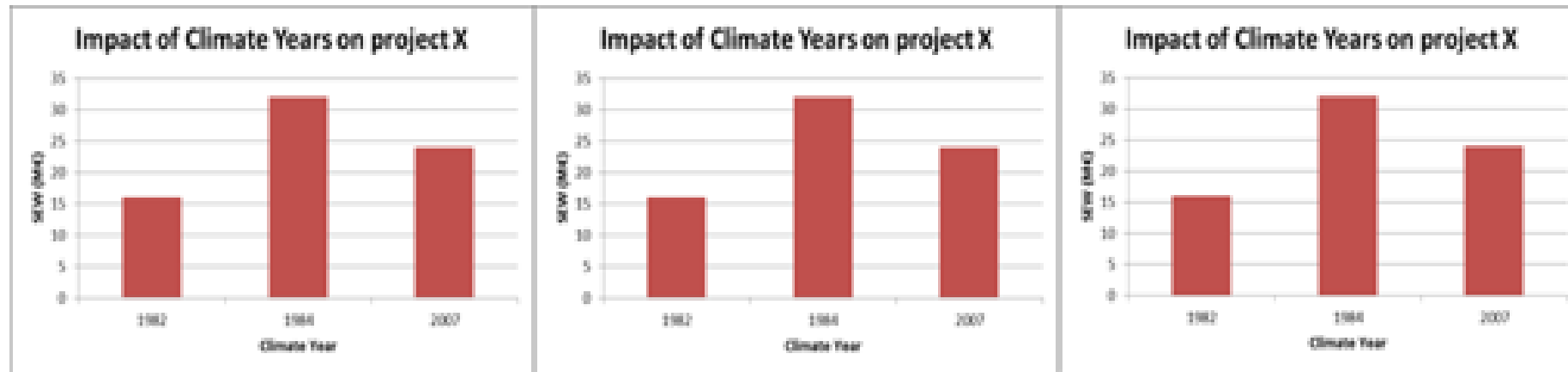
CBA indicator		2025 Best Estimate	2030 Sustainable transition	2030 EUCO	2030 Distributed generation
Transfer capacity increase* [MW] (note: ranges to cover different climate years)	Direction A -> B				
	Direction B -> A				
	Disclaimer here * it <u>has to be</u> transparently displayed whether it is a regular cross-border transfer capacity, an internal project with transfer capacity, or a combination of both types of transfer capacities is provided				
Additional Disclaimer in case of a sequential project: sequential results are available here the main table and non-sequential results are shown in the appendix of the project sheet.					

Overall view of the standard project sheet (transmission projects) – Project CBA results

CBA indicator	2025 Best Estimate	2030 Sustainable transition	2030 EUCO	2030 Distributed generation
B1. Socio-economic welfare [M Euro/year] <i>(note: ranges to cover different climate years)</i>	 (Ctrl) ▾
<i>Out of which fuel savings due to integration of RES [M Euro/year]</i>
<i>Out of which avoided CO2 emission costs [M Euro/year]</i>
B2. RES integration [MW or MWh/year]	....<i>[specify the measuring unit]</i>	....<i>[specify the measuring unit]</i>	....<i>[specify the measuring unit]</i>	....<i>[specify the measuring unit]</i>
B3. Variation in CO2 emissions [k ton/year] <i>("-" decrease; "+" increase)</i>


Overall view of the standard project sheet (transmission projects) – Project CBA results

3 CLIMATE YEARS SENSITIVITY BAR CHARTS ENTSO-E proposal: B1 SEW, B2 RES, B3 CO2



link to the TYNDP report section in which the methodology used to choose the 3 CY is explained and a disclaimer to underline special climate conditions of the region

Overall view of the standard project sheet (transmission projects) – Project CBA results

CBA indicator		2025 Best Estimate	2030 Sustainable transition	2030 EUCO	2030 Distributed generation
B4. Societal well-being as a result of RES integration and a change in CO2 emissions  [promoter]	Societal well-being as a result of integrating RES	<ul style="list-style-type: none"> Valorisation (Monetarised value [M Euro]/year, If not possible Quantified value - mention also the unit , If not possible Qualitative information (concise) Justification (Which share of the benefit addresses EU countries, Name of the study the value above resulted from, Main assumptions of the study, who has conducted the study, Year of the study, Study horizons, did any national authority approve the study, Link to the study, Link to a study from a well-known institute used as solid base for the indicator provided 			
	Societal well-being as a result of avoiding CO2 emissions				

Overall view of the standard project sheet (transmission projects) – Project CBA results

CBA indicator		2025 Best Estimate	2030 Sustainable transition	2030 EUCO	2030 Distributed generation
B5. Variation in grid losses [M Euro/year] (" <i>-</i> " decrease; " <i>+</i> " increase)		...	...	...	...
B6. Security of supply – Adequacy to meet demand					
<i>Energy not served [MWh/year]</i>		....	....	....	....
<i>Additional adequacy margin [MWh]</i>		....	....	...	....
B7. Security of supply - system flexibility [%]					
B8. Security of supply - system stability (invariable over scenarios)	Transient Stability				
	Voltage Stability				
	Frequency Stability				

Overall view of the standard project sheet (transmission projects) – on Project CBA results

Explanation of the project CBA benefits – this part to not be more than ½ page [promoters]

- This cell is to be used by promoter to comment the CBA results presented above
- Guidelines examples TYNDP 2016

How the project fits to the regional trends [promoters using storyline – ENTSO-E]:

Here you can add an additional comment on top of the needs already declared.

You will need to extract the key messages/drivers of the Regional Investment Plans that are matched by your project.

- Region BS: *select among the drivers of Section 1.2: Key messages of the region*
- Region CCE: *select among the key messages of Section 1.2: Key messages of the region*
- Region CCS: *select among the main drivers of Section 1.2: Key messages of the region*
- Region CSE: *select among the main drivers of Section 1.2: Key messages of the region*
- Region CSW: *select among the main findings of Section 1.2: Key messages of the region*
- Region NS: *select among the challenges of Section 1.2: Key messages of the region*

Overall view of the standard project sheet (transmission projects)

PROJECT ALTERNATIVE INDICATORS:

B6 indicator: Security of Supply - Adequacy to meet demand [Test ENTSO-E and/or promoter]	<ul style="list-style-type: none">• <i>Valorisation (Monetarised value [MEuro]/year, If not possible Quantified value - mention also the unit, Justification for the absence of monetarised value)</i>• <i>Justification (Which share of the benefit addresses EU countries, Name of the study the value above resulted from, Main assumptions of the study, Who has conducted the study, Year of the study, Study horizons, Did any national authority approve the study, Link to the study, Link to a study from a well-known institute used as solid base for the indicator provided, Link to/Upload of a document with methodology presented (it must be aligned with the guidance on the monetisation provided in the "Guideline on the declaration of "Additional benefits" and "monetisation of CBA indicators "in the TYNDP 2018" for alternative indicators, copy the relevant text here and include the reference page and chapter</i>
B7 indicator Security of Supply – System Flexibility [promoter]	

Overall view of the standard project sheet (transmission projects)

Additional benefits [Promoter]

This cell is to be used by promoters to include additional benefits which are not reflected in the European assessment.

All the benefits highlighted here are expected to be monetized or least quantified and the assumptions behind these additional benefits to be clearly presented and if available the links to the studies behind this information to be added.

*The additional benefits will be collected according the process defined in the ENTSO-E document: **Guideline on the declaration of “Additional benefits” and “monetisation of CBA indicators “in the TYNDP 2018***

Overall view of the standard project sheet (transmission projects)

RESIDUAL IMPACT [PROMOTER + ENTSO-E]

Residual environmental impact [ENTSO-E]	....[km]
Residual social impact [ENTSO-E]	....[km]
Other residual impacts [promoter]	- Text from the promoter

Overall view of the standard project sheet (transmission projects)

RESIDUAL IMPACT [PROMOTER + ENTSO-E]

Residual environmental impact [ENTSO-E]	....[km]
Residual social impact [ENTSO-E]	....[km]
Other residual impacts [promoter]	- Text from the promoter

Overall view of the standard project sheet (transmission projects)

Complementary information about the border on which the project is located [ENTSO-E]

	2025 Best Estimate	2030 Sustainable transition	2030 EUCO	2030 Distributed generation
Average marginal cost difference in the reference case [€/MWh]				
Standard deviation marginal cost difference in the reference case [€/MWh]				
Reduction of marginal cost difference due to all mid-term and long-term projects [€/MWh]				
Congestion rates avoided with the project				

Evolution of the 10% and 15% interconnection target - impact of the project implementation [ENTSO-E]

- *Computation NTC/NGC currently and with the project implemented; including the explanation of the evolution*

Overall view of the standard project sheet (transmission projects)

Additional Information [PROMOTER]:

- Include useful links: [project website, NDPs links, national legislation where the need for the project is specified, etc.]



Overall view of the standard project sheet (transmission projects)

COST [PROMOTER]:

- ◀ - for more advanced projects the costs is the promoters own estimation

Invest nr.	CAPEX [M Euro]	Uncertainty range	OPEX [M Euro/year]
Total project cost			

Explanation of the cost values and uncertainty range [promoter]

Overall view of the standard project sheet (transmission projects)

COST [PROMOTER]:

- ◀ - for more advanced projects the costs is the promoters own estimation

Invest nr.	CAPEX [M Euro]	Uncertainty range	OPEX [M Euro/year]
Total project cost			

Explanation of the cost values and uncertainty range [promoter]

Overall view of the standard project sheet (transmission projects)

- *for investments under consideration the costs is derived by using the standard cost multiplied complexity factor*

Invest nr.	Standard cost [M Euro] [source: ENTSO- E/ACER]	Complexity factor	OPEX [M Euro/year]
Total project cost			

Explanation of the chosen complexity factor [promoter]

Questions?

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In what storage project sheets are different

- Technical data of the project
- B7. Security of supply – system flexibility
- Environmental and Social Residual impacts
- Additional Benefit list → focus in the afternoon
- Alternative Indicator list → focus in the afternoon

In what storage project sheets are different

INVESTMENTS PART OF THE PROJECT [PROMOTER]

Inv ID	Short description	Type of storage [ENTSO-E]	Present status	Commissioning date	Evolution driver	Explanation in case of delay
	The project ...					

Inv ID	Storage Capacity (GWh)	Connection Point Voltage (kV)	Max Active Power (MW)	Lifetime (years)	Efficiency (%)	Total Generating Capacity (MW)	Total Storage Capacity (MW)
	The project ...						

In what storage project sheets are different

B7. Security of supply - system flexibility [%] [promoter]	Response time – FCR (Frequency Containment Reserve)	0 = more than 30 s += less than 30 s ++= less than 1
	Response time – including delay time of IT and control systems	0 = more than 200 s += less than 200 s ++= less than 30 s
	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
	Available power – power that is continuously available within the activation time	0 = below 20 MW += 20 - 225 MW ++= 225 MW or higher

In what storage project sheets are different

RESIDUAL IMPACT [PROMOTER]

Residual environmental impact [promoter]	Text from the promoter
Residual social impact [promoter]	Text from the promoter
Other residual impacts [promoter]	Text from the promoter

In what storage project sheets are different

PROJECT ALTERNATIVE INDICATORS:

B6 indicator: Security of Supply - Adequacy to meet demand [Test ENTSO-E and/or promoter]	<ul style="list-style-type: none"> • <i>Valorisation (Monetarised value [MEuro]/year, If not possible Quantified value - mention also the unit, Justification for the absence of monetarised value)</i> • <i>Justification (Which share of the benefit addresses EU countries, Name of the study the value above resulted from, Main assumptions of the study, Who has conducted the study, Year of the study, Study horizons, Did any national authority approve the study, Link to the study, Link to a study from a well-known institute used as solid base for the indicator provided, Link to/Upload of a document with methodology presented (it must be aligned with the guidance on the monetisation provided in the "Guideline on the declaration of "Additional benefits" and "monetisation of CBA indicators "in the TYNDP 2018" for alternative indicators, copy the relevant text here and include the reference page and chapter</i>
Monetarisation of B7 indicator Security of Supply – System Flexibility [promoter]	
Alternative indicator of CBA benefits better captured with time granularity of the models (15 minutes steps for storage projects instead of 1h step foreseen in the CBA)	
B6:Security of supply- Adequacy to meet demand: alternative indicator to quantify avoided investments in peaking capacity	

What storage projects won't have in the project sheet

- SEW VS NTC curve
- Delta NTC in CBA results
- Evolution of the 10% and 15% interconnection target - impact of the project implementation

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What has been already provided by promoters

- Project description
- System needs addressed by the project
- Project promoters
- Technical data of the investments
- Clustering explanation

What has been already provided by promoters

- Other residual impacts
- Residual environmental and social impact (storage only)
- Additional Information
- CAPEX and OPEX (overall for the project and per investment)

Questions?

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What will be requested to project promoters

Deadline 06/06//2018

- PCI label (3rd list 23 November 2017)
- Last approved national development plan/number and page
- Location of the project on the map
- Disclaimer
- **CBA indicator B4. Societal well-being as a result of RES integration and a change in CO2 emissions**

What will be requested to project promoters

Deadline 06/06//2018

- Explanation of the project CBA benefits
- How the project fits to the regional trend
- **Alternative Indicators**
- **Additional benefits**
- Uncertainty range/complexity factor for CAPEX and explanation

What will be requested to project promoters

Deadline 06/06//2018

The working session we will dedicated to the new inputs:

- what is requested,
- how to provide it,
- by when

Questions?

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What will be requested to project promoters

- Network boundary it helps to mitigate
- SEW VS GTC curve
- Consolidation of proposed needs (expected this week)
- All CBA Results (B4 excluded)
- 3 climate years sensitivity bar chart (SEW, CO2 and RES)
- Residual environmental and social impacts (for transmission only)

What will be requested to project promoters

- Complementary information about the border on which the project is located
- Evolution of the 10% and 15% interconnection target - impact of the project implementation
- Standard costs and complexity factor guidance

We would like to get your opinion on The guidance on complexity factor

We will ask to choose among 3 level of complexity for each relevant element: .

- Level 1: less complex than normal/standard
- Level 2: normal/standard
- Level 3: complex

Critical element	Choose a level of complexity (from 1 to 3)
Terrain	
Routing	
Presence of historical landmarks	
Presence of other infrastructure	
Population density	
Special materials	
Special designs	
Protected areas	

Complexity factor

From the points to the complexity factor:

- 8 points → Complexity factor = 0,75
- 16 points → Complexity factor = 1
- 24 points → Complexity factor = 1,25

This factor will be applied to the standard values we will provide (extracted from the implementation guideline)

Points	Complexity factor
8	0,75
9	0,78125
10	0,8125
11	0,84375
12	0,875
13	0,90625
14	0,9375
15	0,96875
16	1
17	1,03125
18	1,0625
19	1,09375
20	1,125
21	1,15625
22	1,1875
23	1,21875
24	1,25

We would like to get your opinion on

The guidance on complexity factor

- Standard costs and complexity factor must be chosen if the promoter does not already have an estimation for the CAPEX of the project
- Further guidance on each critical element is needed:

Critical element	Level 1	Level 2	Level 3
Presence of historical landmarks	within 10 km	within 5 km	within 1 km

We would like to get your opinion on The guidance on complexity factor

- Suggestions? :

Critical element	Level 1	Level 2	Level 3
Terrain			
Routing			
Presence of historical landmarks			
Presence of other infrastructure			
Population density			
Special materials			
Special designs			
Protected areas			

Questions?