

To the attention of:

Alberto Pototschnig  
Director  
ACER  
Trg republike 3  
1000 Ljubljana  
Slovenia

**Laurent Schmitt**  
Secretary-General

Tel +32 2 741 09 55  
Fax +32 2 741 09 51

Laurent.Schmitt@entsoe.eu

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**Subject: RESPONSE TO THE ACER OPINION ON THE ENTSO-E DRAFT TEN YEAR NETWORK DEVELOPMENT PLAN 2018**

Dear Alberto,

Our ENTSO-E teams have reviewed and considered every element of the interesting opinion that the Agency released on the TYNDP 2018.

The Ten-Year Network Development Plan plays a major role in enabling the energy transition by pointing to the critical set of infrastructures that are required to respond to the future power system needs. It is also an important cornerstone of the current European energy governance and represents a flagship product for our organisation. For these reasons, we pay a particularly close attention to the evolution of this plan to adapt its roadmap to medium and long term needs and your feedback is particularly valuable in this context.

We spent time to share the details of your opinion internally considering both observations and suggestions. We weighted them against other considerations, taking account our technical constraints (for instance modelling tools capabilities) as well as the expectations of other stakeholders (such as the European Commission, the PCI Regional Groups, project promoters and the civil society). We paid a particular attention to the growing complexity and volume of the necessary information and datasets used in each successive edition of the TYNDP and the impact on delivery deadlines, in a context where all parties involved agree that timely delivery is very important while insisting of the use of highly robust data accompanied by well communicated analysis and executive summaries.

As your agency Opinion is issued at the end of the process, we intend to consider its content for the preparation of the next TYNDP which is planned to be release in 2020. For few cases, we also tried to incorporate your feedback to the TYNDP 2018 package when possible. In particular:

- Publication of accompanying material (presentation) used at the public workshops associated with the TYNDP process (downloadable at the page dedicated to those events)
- Publication of CAPEX and OPEX, with detail per investment, for projects where promoters provided this information under dedicated and explicit request OR correction in case of publication error
- Publication of commissioning year where missing and available
- Publication and application in the project sheet of the Missing Benefit review provided by ACER

- Correction of NTC figures as requested: we confirm that the correction was due to an editorial mistake and so did not affect benefit calculations.

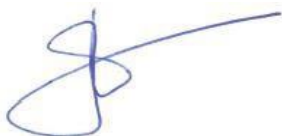
I attach in Annex to this letter detailed and exhaustive answers to all the recitals in the Opinion. We would like to continue to discuss some elements your team brought up (for instance in a new set of ACER/NRAs/ENTSO-E/TSOs foras as they have proven useful formats). In the meantime, we have already included in our next TYNDP project plan the following changes as a direct response of your Opinion:

- Inclusion of CAPEX and OPEX as administrative criteria to be admitted in the TYNDP: missing information will result in project exclusion
- Review the criterion for inclusion of projects in the Reference Grid
- Review the TYNDP Guideline for TYNDP project application considering the observations received in the Opinion
- Publicly display the list of projects admitted to the next TYNDP and provide explanations for those who were not admitted
- Addition of the 2030 study year to the identification of infrastructure investment needs
- Refinement of the methodology used to identify the infrastructure investment needs
- Application of a due diligence to the clustering of projects according to the most recent update of the status of the investments
- Publication of a new CBA guideline, “3rd ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects”
- Publication of the CBA implementation guideline to accompany the “3rd ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects”: the new version will improve the definition and methodology description of some of the already existing indicators and will include some of the Missing Benefits used in TYNDP2018.
- Review of the TYNDP editorial package and project sheets in order to satisfy the request of our main stakeholders.

This list is not exhaustive and is meant to be enriched by the exchanges we, ENTSO-E and ACER, will have along the TYNDP2020 process.

In conclusion we would like to once again thank your team for the relevance of your opinion, as well as for their continuous work with our teams without which the TYNDP delivery would not have been as impactful as it is today. We sincerely hope the development of the next TYNDP 2020 will allow our organisations to continue to progress in our way to collaborate at every stage of the process.

Yours faithfully,



Laurent Schmitt  
Secretary-General  
ENTSO-E

## 1. Annex: ENTSO-E detailed answers to [ACER Opinion No 11/2019](#)

Section in the ACER Opinion No 11/2019	Recital number in ACER Opinion No 11/2019	ENTSO-E answer
1. Introduction	1	-
1. Introduction	2	-
1. Introduction	3	-
1. Introduction	4	-
1. Introduction	5	-
1. Introduction	6	-
2. Summary of the draft ENTSO-E TYNDP 2018	7	-
2. Summary of the draft ENTSO-E TYNDP 2018	8	-
2. Summary of the draft ENTSO-E TYNDP 2018	9	An investigation of project 271 "Northern Seas Offshore Grid Infrastructure" was requested by the EC earlier, thus this global scheme had been treated as if it was one project. This was done to demonstrate the impact of all projects together on the Region. The Project number (271) has been used due to historical reasons and in order to be able to merge it into the TYNDP. The project description clarifies that this is an artificial project, as it is composed of all projects together, which are listed in a table in the NSOG report.
2. Summary of the draft ENTSO-E TYNDP 2018	10	ENTSO-E confirms that all the project admitted in the TYNDP have met technical criteria
2. Summary of the draft ENTSO-E TYNDP 2018	11	ENTSO-E confirms that when not specified the value of the uncertainty range are symmetrical. Along the process ENTSO-E has requested the uncertainty range in multiple occasions via email and in a workshop dedicated to further input requested to promoters.
2. Summary of the draft ENTSO-E TYNDP 2018	12	-
3. Assessment of the draft ENTSO-E TYNDP 2018	13	-

Section in the ACER Opinion No 11/2019	Recital number in ACER Opinion No 11/2019	ENTSO-E answer
3. Assessment of the draft ENTSO-E TYNDP 2018	14	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	15	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	16	-
3. Assessment of the draft ENTSO-E TYNDP 2018	17	-
3. Assessment of the draft ENTSO-E TYNDP 2018	18	ENTSO-E acknowledges these delays and regrets them. They were attributable in particular to the pressure put on experts to deliver state of the art analysis with little to no possibility to experiment at large scale prior to implementation, and to additions to the TYNDP or PCI process on the initiative of ENTSO-E or external parties unforeseen during the project initiation and planning. In order to mitigate the risks, ENTSO-E has put in place a new innovation management process including stricter rules on the maturity of approaches to be included in the final TYNDP. ENTSO-E has also reshaped entirely the TYNDPs governance and project management structure. However, in the next TYNDP cycle, the specific situation of NECPs creates an uncertainty which cannot be managed by ENTSO-E on its own.
3. Assessment of the draft ENTSO-E TYNDP 2018	19	-
3. Assessment of the draft ENTSO-E TYNDP 2018	20	ENTSO-E has made available to all TYNDP2018 promoters the workshop material within 1 business day after the workshops have occurred. ENTSO-E takes note of ACER observation and has consequently uploaded, although in delay but still for transparency purposes, the material presented during workshops dedicated to promoters.
3. Assessment of the draft ENTSO-E TYNDP 2018	21	-

Section in the ACER Opinion No 11/2019	Recital number in ACER Opinion No 11/2019	ENTSO-E answer
3. Assessment of the draft ENTSO-E TYNDP 2018	22	As mentioned to the Stakeholders, the public consultation outcomes are considered, not through a MAF update but through the coming edition of MAF (so here MAF 2019). Indeed, the very dense process of a yearly assessment allows continuous updates and improvements, as performed for seasonal outlook. Having additional updates within the yearly assessment cannot match with such challenging assessment timeline.
3. Assessment of the draft ENTSO-E TYNDP 2018	23	In the package submitted to the Agency, ENTSO-E created a new document compiling all the key methodologies and annexes in order to ease the review by Regulators. In the next editions ENTSO-E will make sure that all documents presented to stakeholders as part of the TYNDP are submitted to ACER.
3. Assessment of the draft ENTSO-E TYNDP 2018	24	In the package submitted to the Agency, ENTSO-E created a new document compiling all the key methodologies and annexes in order to ease the review by Regulators. In the next editions ENTSO-E will make sure that all documents presented to stakeholders as part of the TYNDP are submitted to ACER.
3. Assessment of the draft ENTSO-E TYNDP 2018	25	The submission of project is responsibility of the project promoters; however, ENTSO-E intends to improve the existing guideline for TYNDP project submission and the related review process for inclusion.
3. Assessment of the draft ENTSO-E TYNDP 2018	26	-
3. Assessment of the draft ENTSO-E TYNDP 2018	27	-
3. Assessment of the draft ENTSO-E TYNDP 2018	28	ENTSO-E is looking forward to a discussion with ACER on the next version of the TYNDP Guidelines, and on the nature of information to be released by ENTSO-E through the process. Interim lists of candidate projects may be published on ENTSO-E website as proposed in the draft Guideline put up for consultation in June 2019.

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3. Assessment of the draft ENTSO-E TYNDP 2018	29	-
3. Assessment of the draft ENTSO-E TYNDP 2018	30	-
3. Assessment of the draft ENTSO-E TYNDP 2018	31	The information presented in this recital is correct
3. Assessment of the draft ENTSO-E TYNDP 2018	32	The difference in counts is due to reclustering of projects in the final TYNDP. ENTSO-E will strive to insure consistency in the next editions of the TYNDP.
3. Assessment of the draft ENTSO-E TYNDP 2018	33	-
3. Assessment of the draft ENTSO-E TYNDP 2018	34	This point is addressed in the new draft version of the TYNDP guidelines with a due process put in place to guarantee 3rd Party Promoters receive the information.
3. Assessment of the draft ENTSO-E TYNDP 2018	35	We thank you for this observation and will strive to guarantee consistency in the next TYNDPs. Disclaimers on the only reference for project counting could also be included.
3. Assessment of the draft ENTSO-E TYNDP 2018	36	-
3. Assessment of the draft ENTSO-E TYNDP 2018	37	The lack of the mentioned data in the version for ACER is due to minor updates that were not properly saved in the TYNDP Project platform. The problem has been investigated and data are now available and published for the investment of P 85, P349. The data, although requested, was not provided by one of the promoters of P 74. The selection Guideline for the TYNDP 2018 did not include the description of a due process for the exclusion of projects at the end of the TYNDP development.
3. Assessment of the draft ENTSO-E TYNDP 2018	38	ENTSO-E has conducted a series of workshops or webinars set in different European cities (Brussels, Rome, Berlin) to explain and discuss the content of the analysis with project promoters, in addition to the written material circulated to them.

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		Additionally, ENTSO-E favored and held numerous bilateral meeting with 3rd party Promoters to help them navigate and challenge the TYNDP results. The draft TYNDP Guidelines for the next edition will be put up for public consultation, and a questionnaire put in place during projects collection on the preferred way to receive information for promoters.
3. Assessment of the draft ENTSO-E TYNDP 2018	39	b. ENTSO-E takes note on the ACER opinion regarding the Scenario development process. The process is lengthy as requires a significant data collection, analysis of the results and consultation process, which in view of ENTSO-E can't be implemented in shorter term, unless the process decreases in transparency (less consultations) and quality and the process is simplified significantly. c. The data has been transparently and timely provided to all the project promoters on request during TYNDP 2018 process. Corresponding NDAs have been signed to ensure confidentiality of the data.
3. Assessment of the draft ENTSO-E TYNDP 2018	40	ENTSO-E preferred to have more quality in the results instead of quantity. For that reason and for every project, the assessment was done using multiple tools and considering three different climate years (with different climate conditions Wet, Dry) what gave ENTSO-E more confidence in the final results published.
3. Assessment of the draft ENTSO-E TYNDP 2018	41	-
3. Assessment of the draft ENTSO-E TYNDP 2018	42	The hourly NTC is highly related with the generation mix of that hour, the available Market/Network tools don't allow the hourly NTC calculation with the corresponding adjustment of the generation mix.

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3. Assessment of the draft ENTSO-E TYNDP 2018	43	<p>a. ENTSO-E has developed a new product, the IoSN report (Identification of System Needs report: “Europe Power System 2040: completing the map &amp; assessing the cost of non-grid”), which focused on the year 2040 for three scenarios. After discussion with EC/ ACER the country needs have additionally been assessed for the study horizon 2030 for three scenarios as well. These sheets have been provided to EC/ACER.</p> <p>b. The IoSN identified capacities are provided in TYNDP ANNEX, Annex 4. Additionally, by providing the information applying the ITG methodology, ENTSO-E provided needs indication. As boundaries are composed of several countries' borders, which might benefit in different ways of an increase of the boundary capacity, e.g an Interconnection between countries A and B provides SoS (Security of Supply) benefits for country A, but eats SEW from country C, which as well might consider to connect to country B.</p> <p>c. all necessary information is described in the methodology of IoSN report (Identification of System Needs report: “Europe Power System 2040: completing the map &amp; assessing the cost of non-grid”),</p> <p>d. information is provided in the appendix of the IoSN report (Identification of System Needs report: “Europe Power System 2040: completing the map &amp; assessing the cost of non-grid”)</p> <p>e. the results are based on calculations of 3 tools, each calculating 3 CY's of each 8760hrs.</p> <p>f. the objective of the IoSN, is not to identify other-than-transmission or storage options, but to assess needs. These are indicated giving the reason (IEM, SoS (Security of Supply), RES) - see maps fig.4 in IoSN report (Identification of System Needs report: “Europe Power System 2040: completing the map &amp; assessing the cost of non-grid”) p 10. Project Promoters can develop solutions based on the information given in the IoSN (maps).</p>
3. Assessment of the draft ENTSO-E TYNDP 2018	44	-



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3. Assessment of the draft ENTSO-E TYNDP 2018	45	No changes were made following the public consultation.
3. Assessment of the draft ENTSO-E TYNDP 2018	46	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	47	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	48	-
3. Assessment of the draft ENTSO-E TYNDP 2018	49	The majority of the very valuable information or advice provided by ACER and by stakeholders on the needs' analysis regarded methodological elements which could not be taken into account for that edition, without restarting the full analysis. These comments are considered as a central element of the next TYNDP methodologies design.
3. Assessment of the draft ENTSO-E TYNDP 2018	50	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	51	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	52	ENTSO-E has started further collaboration with the Open Modeling Community and will put at the agenda of the discussions the nature of information that we should release in order for others to replicate the studies.
3. Assessment of the draft ENTSO-E TYNDP 2018	52 a	3.7. (52) a: All these 7 tools were involved in the CBA assessment. During the Scenario Building process and consequently during the CBA initiation phase, the market models have been calibrated in order to receive comparable results. Therefore, the main differences may lie in the solver that is used (open source or commercial) or the additional functionality that the tool may have.
3. Assessment of the draft ENTSO-E TYNDP 2018	52 b	3.7. (52) b: Some studies require higher level of granularity of data to be used. Such cases are, as example, internal re-dispatch calculations for internal projects CBA assessment. This requirement can't be fulfilled at overall ENTSO-E perimeter as

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		this would increase the computational time and workload significantly at first place and would give no additional benefits in terms of quality of results for the projects that are located far from the vicinity of the project under investigation.
3. Assessment of the draft ENTSO-E TYNDP 2018	52 c	3.7. (52) c: ENTSO-E takes note on the comment and is planning to provide detailed explanations in the new TYNDP 2020 edition.
3. Assessment of the draft ENTSO-E TYNDP 2018	52 d	ENTSO-E delta NTC calculation methodology already considers the DC power flow calculations. These already can define the loop flow constraints at any perimeter.
3. Assessment of the draft ENTSO-E TYNDP 2018	53	ENTSO-E sees no violation with the clustering rule as defined within the 2nd CBA guideline. If singular exception has been identified, they were due to necessary changes occurred during the process.
3. Assessment of the draft ENTSO-E TYNDP 2018	54	According the 2nd CBA guideline, approved by the European Commission, a cluster with investments whose status is "under consideration" and investments whose status is "planned, but not yet in permitting" is allowed.
3. Assessment of the draft ENTSO-E TYNDP 2018	55	ENTSO-E has made available a dedicated space in the project sheets where promoters were requested to provide an explanation for the clustering.
3. Assessment of the draft ENTSO-E TYNDP 2018	56	-
3. Assessment of the draft ENTSO-E TYNDP 2018	57	-
3. Assessment of the draft ENTSO-E TYNDP 2018	58	ENTSO-E agrees in this instance with the observation that the Reference Grid criteria were not defined in a way allowing a uniform and consistent application across Europe. This was also due to different procedures in the permitting process across Europe.
3. Assessment of the draft ENTSO-E TYNDP 2018	59	For the identifications of projects in the reference grid, the rule (commissioning year $\leq 2027$ and in permitting) was only applied for the main investment. Considering the rules for clustering, investments also in "planned, but not yet in permitting" would be allowed to be included in the

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		project if those investments are necessary for the full potential of the main investment.
3. Assessment of the draft ENTSO-E TYNDP 2018	60	ENTSO-E is already working to improve the Reference Grid definition for the next TYNDP.
3. Assessment of the draft ENTSO-E TYNDP 2018	61	As noted also by ACER in its opinion every project indicates in its project sheet whether it belongs to the TYNDP2018 Reference Grid or not. ENTSO-E will consider alternative or further options in order to make this information more immediate in the next TYNDP package.
3. Assessment of the draft ENTSO-E TYNDP 2018	62	In the assessment ENTSO-E used sequential assessments to account for the sequence of project commissioning in the same border based on the commissioning date provided by project promoters.
3. Assessment of the draft ENTSO-E TYNDP 2018	63	With the CBA guideline and its implementation guideline for the TYNDP, ENTSO-E aims at delivering methodology descriptions in order to allow project promoters to assess their projects in a consistent way. In this frame, the CBA guideline acts as a more general description of the main principles while the implementation guideline should deliver everything needed to actually perform the simulations. ENTSO-E tries to be as precise as possible, but on the other hand also needs to allow different simulators using different tools to be able to participate in the TYNDP. Although in principle different simulation tools, for the same indicator, should rely on the same assumptions and data needed, differences might occur, that need to be captured by the respective guidelines.
3. Assessment of the draft ENTSO-E TYNDP 2018	63a	In general, for all projects, the SEW indicator has been calculated using market simulations only. Only for internal projects assessment the 2nd CBA guideline allows the uses of redispatch calculations, for which the distinction between internal ones with major cross-border impact, like for internal PCIs, and internal projects without significant cross-border impact, can be made. Within the project sheets ENTSO-E gave the project promoters the opportunity to give additional

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		information on the calculation of the SEW indicator. Some used this to also highlight the methodology used, i.e. market only, redispatch etc. ENTSO-E sees the need of more transparently display with which methodology the benefit indicators have been assessed and will consider that in the future TYNDP (and CBA guideline).
3. Assessment of the draft ENTSO-E TYNDP 2018	63b	The prerequisite for internal projects, driving the choice whether to use pure redispatch simulations, pure market simulations or a combination shall be based on the main aim of the project: if the project is mainly build for reducing internal congestions (which of course will also have an impact on a pan-EU scale) pure redispatch simulations can be used, although the project might also have an cross border impact. The implementation guideline should be formulated less restrictive.
3. Assessment of the draft ENTSO-E TYNDP 2018	63c	Based on the 2nd CBA guideline only for internal projects the use of redispatch simulations was foreseen, therefore there was no need to specify for cross border projects the method used. For the future TYNDP and also for the 3rd CBA guideline, ENTSO-E is also considering to apply redispatch calculations also for cross border projects. Together with this the need to transparently display the used methodology is foreseen to be included in the TYNDP.
3. Assessment of the draft ENTSO-E TYNDP 2018	63d	For the 3rd CBA guideline ENTSO-E is going to remove the B4 - societal well-being indicator by including the societal part of CO2 reductions under the B2 indicator. The RES part will no longer be given as a separate part of this indicator. The compensation rates considered for the projects mentioned in the footnote 38 of ACER opinion (Project 26, "Reschenpass Inerconnector Project", Project 325, "AT, SI, IT - Sout-East Alps Project" and Project 375, "Lienz (AT)-Veneto region (IT) 220 kV") are in line with the ones applied in the countries mainly affected by the project (taking into account power flows are mainly from Austria and Slovenia to Italy, leading to lower RES curtailment in these countries).

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		We further confirm that there is no double counting between B4 and B1 indicator. In the TYNDP 2020 the TSOs will update the studies based on the new scenarios in order to avoid any risk of inconsistencies.
3. Assessment of the draft ENTSO-E TYNDP 2018	63e	1. ENTSO-E also sees this inconsistency and will consider within the next TYNDP and CBA guideline. 2. the disclaimer introduced to the implementation guideline came up during the assessment phase. ENTSO-E has streamlined the whole losses calculations (plus monetization) and has shared with you the outcome of our internal investigation.
3. Assessment of the draft ENTSO-E TYNDP 2018	63f	The process of performing the CBA assessment within the TYDNP is based on pre-defined scenarios. ENTSO-E also acknowledges that the scenarios in general will have a major impact on the CBA results. For B6 calculations the methodologies as describe within the 2nd CBA guideline have been used. Furthermore ETNSO-E has introduced a first test case in the TYNDP to better value the impact of projects on adequacy under the term 'Declared values of CBA indicators'. This new methodology will be introduced under the 3rd CBA guideline and applied within the next TYNDP.
3. Assessment of the draft ENTSO-E TYNDP 2018	63g	Projects that received a CBA assessment but no figures for the indicator B7 are internal projects for which it was not possible to compute B7 due their characteristics and due to the way B7 computation has been defined.
3. Assessment of the draft ENTSO-E TYNDP 2018	64	For very mature and conceptual project ENTSO-E has given the possibility to not receive a CBA assessment under Project Promoter agreement.
3. Assessment of the draft ENTSO-E TYNDP 2018	65	ENTSO-E has produced a dedicated report "TYNDP CBA from assessment indicators to investment decisions" in the TYNDP package focused on explaining the TYNDP2018 CBA results. In particular, Section 4 of this report is focused on the comparison among TYNDP2018 and

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		TYNDP2016. In order to understand the differences among the two packages the analysis has been performed by group of projects.
3. Assessment of the draft ENTSO-E TYNDP 2018	66	ENTSO-E is looking forward further discussions on the topic with ACER and the European Commission for the next TYNDP cycle. The approach proposed by ACER would only have been possible if more delays were considered.
3. Assessment of the draft ENTSO-E TYNDP 2018	67	ENTSO-E thanks ACER for recognizing these improvements.
3. Assessment of the draft ENTSO-E TYNDP 2018	68	ENTSO-E has requested CAPEX and OPEX multiple times via general emails and reminders to promoters, dedicated emails and during the workshop dedicated to inputs from promoters. Only in special cases the data are now missing.
3. Assessment of the draft ENTSO-E TYNDP 2018	68 a	The problem has been further investigated and the mentioned data is not available: - for P345 due to the very long-term and conceptual nature of the project - for P347 due to the very long-term and conceptual nature of the project
3. Assessment of the draft ENTSO-E TYNDP 2018	68 b	The problem has been further investigated: - For P37 the lack of the mentioned data in the version for ACER is due to minor updates that were not properly saved in the platform: the data was already provided for the whole project which is composed of only investment 142: investment 406 is no longer part of the cluster since TYNDP2016, its appearance in the Project Sheet of P37 is due to a bug in the platform now solved. - For P 74 the missing data related to only one investment of the cluster has been requested to the promoter. - For P 231 the data is missing due to the very long-term and conceptual nature of the project - For P 256 the data is missing due to the very long-term and conceptual nature of the project

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3. Assessment of the draft ENTSO-E TYNDP 2018	68 c	<p>The problem has been further investigated:</p> <ul style="list-style-type: none"> <li>- For P 77, P 78, P 351 the missing data have been requested to the promoter.</li> <li>- For P 245: the project is an additional phase shifting transformer in the 380kV substation Meeden in the Netherlands. According to internal assessment of the promoter the OPEX cost for this investment is 0 Meuro/year as stated in the project sheet: the data is not missing.</li> <li>- For P 263, P 264, P 265, P 266, P 333: OPEX = 0 M€/a was provided, because OPEX is much lower than CAPEX and because it is not currently possible to estimate OPEX.</li> </ul>
3. Assessment of the draft ENTSO-E TYNDP 2018	68 d	The project sheets of the mentioned projects has been corrected and now the total investments costs are equal to the sum of the costs of the investment items.
3. Assessment of the draft ENTSO-E TYNDP 2018	68 e	The uncertainty range was an input repeatedly requested to promoters via general communications and during the workshop dedicated to input for the project sheets.
3. Assessment of the draft ENTSO-E TYNDP 2018	68 f	The CAPEX input has been requested to the promoter indicating in the project platform the commissioning year as the reference year.
3. Assessment of the draft ENTSO-E TYNDP 2018	68 g	<p>Along the TYNDP process ENTSO-E has reminded promoters what were the costs to be considered as CAPEX</p> <ul style="list-style-type: none"> <li>•Expected costs for permits, feasibility studies, design and land acquisition</li> <li>•Expected cost for equipment, materials and execution costs (such as towers, foundations, conductors, substations, protection and control systems</li> <li>•Expected costs for temporary solutions which are necessary to realize a project (e.g. a new overhead line has to be built in an existing route, and a temporary circuit has to be installed during the construction period);</li> <li>•Expected environmental and consenting costs (such as environmental costs avoided, mitigated or compensated under existing legal provisions, cost of planning procedures</li> <li>•Expected costs for devices that have to be</li> </ul>

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		replaced within the given period (consideration of project life cycle); and •Dismantling costs at the end of the equipment life cycle
3. Assessment of the draft ENTSO-E TYNDP 2018	69	-
3. Assessment of the draft ENTSO-E TYNDP 2018	70	-
3. Assessment of the draft ENTSO-E TYNDP 2018	71	-
3. Assessment of the draft ENTSO-E TYNDP 2018	72	-
3. Assessment of the draft ENTSO-E TYNDP 2018	73	-
3. Assessment of the draft ENTSO-E TYNDP 2018	74	ENTSO-E agrees that the timeline is extremely challenging for all the stakeholders involved.
3. Assessment of the draft ENTSO-E TYNDP 2018	75	ENTSO-E is working to include as many of the 'missing benefits' from TYNDP18 within the 3rd CBA guideline, which should then act as the sole basis for the next TYNDP.
3. Assessment of the draft ENTSO-E TYNDP 2018	76	ENTSO-E review has been now published in the project sheet whenever ACER could not express any opinion on the submission. This reflects the priority given to ACER assessment (when available), as agreed with ACER and EC.
3. Assessment of the draft ENTSO-E TYNDP 2018	77 a	ENTSO-E welcomes these comments and will consider them in the next edition of the TYNDP



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		(where missing benefits are considered to be included in the CBA)
3. Assessment of the draft ENTSO-E TYNDP 2018	77 b	ENTSO-E welcomes these comments and will consider them in the next edition of the TYNDP (where missing benefits are considered to be included in the CBA)
3. Assessment of the draft ENTSO-E TYNDP 2018	77 c	A double accounting for this indicator will not occur as the SEW for the projects where this missing benefit has been applied has been done using the redispatch methodology. The SEW is then extracted from the change in dispatch, thus the redispatch, which is based on the redispatch energy. The missing benefit is based on the capacity that needs to be allocated to be able to cover the peaking hours of redispatch. In some countries power plants are contracted to provide capacity just with respect to redispatch. The costs for these power plants were taken from actual numbers given in the quarterly report from the German NRA. Thus, a reduction in the maximum power of redispatch during the year is also an indication of the reduction of needed power plants contracted for redispatch.
3. Assessment of the draft ENTSO-E TYNDP 2018	77 d	ENTSO-E welcomes these comments and will consider them in the next edition of the TYNDP (where missing benefits are considered to be included in the CBA)
3. Assessment of the draft ENTSO-E TYNDP 2018	77 e	This indicator will be included in the 3rd CBA guideline with more detailed description
3. Assessment of the draft ENTSO-E TYNDP 2018	77 f	This indicator will be included in the 3rd CBA guideline with more detailed description
3. Assessment of the draft ENTSO-E TYNDP 2018	78	-
3. Assessment of the draft ENTSO-E TYNDP 2018	79	-
3. Assessment of the draft ENTSO-E TYNDP 2018	80	ENTSO-E welcomes these comments and will consider them in the next edition of the TYNDP (where missing benefits are considered to be included in the CBA)

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3. Assessment of the draft ENTSO-E TYNDP 2018	81	This indicator will be included in the 3rd CBA guideline with more detailed description
3. Assessment of the draft ENTSO-E TYNDP 2018	82	ENTSO-E is already working on a 3rd CBA guideline which will include the experience from the TYNDP18, especially with respect to the "missing benefits" and "declared values" in order to avoid any "missing benefits" to occur during the future TYNDPs on top of what is describe inside the CBA guideline.
3. Assessment of the draft ENTSO-E TYNDP 2018	83	Before data collection, all TSO data correspondents at ENTSO-E were asked not to include the storage projects into their base data provided. This way the non-discriminatory assessment has been ensured for all storage projects.
3. Assessment of the draft ENTSO-E TYNDP 2018	84	Following the 2nd CBA guideline, storage projects have to be assessed using the same methodologies applied for the same indicators as transmission projects. On top of that, the 2nd CBA guideline gives a detailed description of the applicability of each indicator for storage projects, including an addition on how to assess the B6 - Flexibility indicator for storage projects.
3. Assessment of the draft ENTSO-E TYNDP 2018	85	We welcome ACER comments. The TYNDP is a flagship product of ENTSO-E and provides valuable information to the public on the future of the European energy system. The design of the TYNDP package is made in order to maximize access to the information for a very wide audience. The public consultation confirmed the request by stakeholders to have many, very content specific documents rather than a very large one. It is also impossible for stakeholders to provide valuable information on the whole package at once. The structure therefore allowed stakeholders to focus on the areas most relevant to them. However, ENTSO-E is looking forward a discussion with ACER on the nature of material to prepare to facilitate Regulatory Review of the Package.
3. Assessment of the draft ENTSO-E TYNDP 2018	86	ENTSO-E thanks ACER for recognizing these improvements.

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3. Assessment of the draft ENTSO-E TYNDP 2018	87	A specific Insight Report "TYNDP CBA Storyline" was published on this topic.
3. Assessment of the draft ENTSO-E TYNDP 2018	88	Should not occur any more with CEP Elec Reg recasting 2019/714
3. Assessment of the draft ENTSO-E TYNDP 2018	89	CEP Elec Reg recasting 2019/714 sets 1-10 year horizon. This will be implemented stepwise in future MAFs. The coordination with TYNDP will be maintained.
3. Assessment of the draft ENTSO-E TYNDP 2018	90	ENTSO-E thanks ACER for recognizing these improvements. Interdependency of individual outage is indeed a potential investigation for further methodology evolutions. Data on outage statistic are however extremely limited, which prevent a probabilistic approach. These specific cases are rather proposed within Risk Preparedness framework, or possible dedicated sensitivity of Seasonal Outlook Adequacy.
3. Assessment of the draft ENTSO-E TYNDP 2018	91	Strategic reserves, as being out of the market, are not considered in the base case calculations. They could however be used in sensitivities, and rather in Seasonal Outlook than mid term adequacy.
4. Conclusion	92	Comment acknowledged
4. Conclusion	93	See detailed answers in this document, and summary of key learnings and actions attached to the letter
4. Conclusion	93 c	ENTSO-E acknowledges the need to constantly improve the CBA guideline and also sees the need for better displaying the projects benefits with regard to SoS (Security of Supply). Therefore ENTSO-E has already started the work on a 3rd CBA guideline with a strong focus on SoS (Security of Supply) indicators, including a monetized Adequacy and more sophisticated flexibility indicator.
4. Conclusion	94	See detailed answers in this document, and summary of key learnings and actions attached to the letter
4. Conclusion	94 c	Wherever feasible the conflicting/missing information highlighted in the recitals above have been addressed in the project sheets.

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4. Conclusion	94 d	Wherever feasible the conflicting/missing information highlighted in the recitals above have been addressed in the project sheets.
4. Conclusion	94 f	<p>Dispatch costs in the market models are always the same not depending on the software tool. What is compared is the outputs: generation per fuel type, balances, exchanges, ENS, DSR. This is compared to find out the errors. Normally the results should not differ for more than 10-15% on yearly basis for all the ENTSO-E between the market models. The CBA indicators are also compared (market, as we have the rule of 3 software tools assessing each project in TYNDP). In such case ENTSO-E identified absolute and MAD (median average deviation) thresholds to identify outliers among the results of tools. The thresholds are identified after first CBA run for representative projects. The average difference is identified between all software tools involved in calculation for the SEW indicator. For TYNDP 2018 it was 10 MEuro/year. This has been an absolute threshold. For the CO2 indicator the threshold has been computed by division of SEW threshold (10 MEuro/year) on the CO2 price for each Scenario separately. The RES indicator threshold has been identified as SEW threshold (10 MEuro/year) divided on price difference between hardcoal new technology dispatch cost minus CCGT new dispatch cost. These technologies account for the most sensitive are in the merit order on ENTSO-E perimeter. The relative threshold applied simultaneously with the absolute was 2 MAD. Any result that deviated more than 2 MADs from the median was subject to exclusion from results consolidation.</p> <p>Since we have 3 tools involved per project, this criterion rejected the value furthest from the median only if it were to be a distance from the median of two times the difference between the other two values. This threshold has been used based on investigated behavior of results on CBA, when in case of low results in magnitude, the</p>

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		differences were growing, while with increase this difference was diminishing.
4. Conclusion	94 g	Sequential assessment assumptions were identified by experts in ENTSO-E centrally and consulted with each promoter separately in case the project is involved in sequence.
4. Conclusion	94 h	ENTSO-E sees no violation with the clustering rule as defined within the 2nd CBA guideline. If singular exception has been identified, they were due to necessary changes occurred during the process.
4. Conclusion	94 k	All data provided by the promoters have been highlighted in orange in the Project Sheets: B4 submission included. Furthermore, with regard to the development on a 3rd CBA guideline, ENTSO-E is already working on including the B4 indicator under the CO2 and RES indicator respectively. The need for a harmonized indicator is also shared by ENTSO-E for the next TYNDP.
4. Conclusion	94 l	Project sheet were updated with ACER review published
4. Conclusion	95	ENTSO-E also regrets the delays. As suggested in the recital, we are putting in place all possible measures to avoid delays in future TYNDPs (project management, innovation management, moving targets mitigation, ...). However, ENTSO-E also observes that as the TYNDP matures, it tends to become more complex and is requested to present an ever-increasing amount of information to serve its different audiences. As such, ENTSO-E considers that keeping the TYNDP in its 2 years allocated time

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		frame will become an ever increasingly complex challenge.
4. Conclusion	96	See detailed answered in this document. The sequence of projects interactions is proposed to be modified to match with this suggestion (creation of a second window). However, the recommendation needs to be balanced against the request to deliver the TYNDP within the 2 years timeframe.
4. Conclusion	97	See detailed answer in this document and list of key actions attached to the letter to ACER
4. Conclusion	98	See ENTSOs answer to the mentioned opinion on Scenarios
4. Conclusion	99	See detailed answers in this document, and summary of key learnings and actions attached to the letter
4. Conclusion	100	See detailed answers in this document, and summary of key learnings and actions attached to the letter
4. Conclusion	101	The projects on such long-term horizon may be quite uncertain and therefore the quality of such analysis might be negatively affected.
4. Conclusion	102 a	With regard to the development on a 3rd CBA guideline, ENTSO-E is already working on including the B4 indicator under the CO2 and RES indicator respectively. The need for a harmonized indicator is also shared by ENTSO-E for the next TYNDP.
4. Conclusion	102 b	For ENTSO-E displaying transparency on the calculated indicators is always a priority. With regard to the B4 indicator detailed descriptions were demanded by the respective project promoters in order to avoid any possible double accounting.
4. Conclusion	103	ENTSO-E is already working on a 3rd CBA guideline which will include the experience from the TYNDP18, especially with respect to the "missing benefits" and "declared values" in order to avoid any "missing benefits" to occur during the future TYNDPs on top of what is describe inside the CBA guideline.
4. Conclusion	104	ENTSO-E is already working on a 3rd CBA guideline which will include the experience from the

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		TYNDP18, especially with respect to the "missing benefits" and "declared values" in order to avoid any "missing benefits" to occur during the future TYNDPs on top of what is describe inside the CBA guideline.
4. Conclusion	105	See detailed answers in this document. ENTSO-E looks forward to discussing with ACER how to consider sensitivities that bring valuable information to decision makers and the European citizens while avoiding overloading the TYNDP with too much information and guaranteeing the quality of the presented material within the allocated time frame.
4. Conclusion	106	In TYNDP 2020 ENTSO-E is expecting to test the implementation of these requirements in parallel to the main TYNDP 2020 process and is planning to implement it for TYNDP 2022.
4. Conclusion	107	Comment noted and will be considered for additional material in the TYNDP
4. Conclusion	108	See detailed answers in this document, and summary of key learnings and actions attached to the letter. ENTSO-E will review the package format to better suit to all audiences of the TYNDP. As one of the most important clients of the TYNDP, the opinion of regulators on the format of the package will be considered as a priority input in the revision.
4. Conclusion	109	CEP Elec Reg recasting 2019/714 sets Resource Adequacy as full ENTSO-E product, not anymore sub-part of TYNDP. However, the coordination with TYNDP will be maintained, especially focusing on NECP scenarios.
4. Conclusion	110	See detailed answers in this document, and summary of key learnings and actions attached to the letter
4. Conclusion	111 a	The clustering of these projects is in line with the EC approved 2nd CBA guideline where no restriction to 5 years is given.
4. Conclusion	111 b	In general, for most of the projects under construction and under consideration no CBA assessment has been performed, this was applied to projects for which promoters agreed a further assessment was not necessarily due to the status of the project.

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4. Conclusion	111 c	Wherever feasible the conflicting/missing information highlighted in the recitals above have been addressed in the project sheets.
Opinion adopted	1	-
Opinion adopted	2	-
Opinion adopted	3	-
Annex I	CRE remarks	<p>For P 270 and P276:</p> <ul style="list-style-type: none"> <li>- Regarding the status of the project: The status of the project is coherent with last info provided to ACER in the last monitoring process (31st March 2019) by both project promoters (REE and RTE TSOs).</li> <li>- Regarding the accelerated project implementation benefit proposed by REE: This benefit is presented outside the CBA assessment in a qualitative approach, for that reason this information is included in the additional information section and not in the CBA one of the project sheet.</li> </ul> <p>REE considers important highlight that the use of a more expensive technology, as a social and environmental requirement, is improving the project realization and thus improving societal welfare with the benefits provided by the project. REE also thinks that additional costs for improving project realization will need further investigation and even a regulatory recognition in the future in order to achieve the EC's 2050 targets.</p> <p>For P16, P270 and P276:</p> <ul style="list-style-type: none"> <li>- Regarding REE assessment of the social return of the investment:</li> </ul> <p>REE has provided specific documents which include either the description of the methodology in detail and the assessment of that methodology considering Biscay Gulf, Navarra-Landes and Aragón-Atlantic Pyrenees project.</p> <p>As it is said in those documents the methodology developed by REE allows estimating not just the direct economic impact of the investment but also the impact on the entire Spanish economy, taking into account the chain of value and entire income generated, which is detailed in an estimate of</p>



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		<p>indirect and induced effects obtained after the initial direct investment. These effects are estimated both nationally and regionally, using the Input-Output Tables (IOT) published by the Spanish Statistical Institute (INE) and the estimated regional breakdown carried out by CEPREDE (Economic Prediction Centre integrated into the L.R. Klein Economic Prediction Institute of the Autonomous University of Madrid: <a href="http://www.ceprede.es">www.ceprede.es</a>).</p> <p>As it is also said in the documents the analysis has not taken into consideration other socio-economic effects of the investments made derived from improving the quality of service, access to new customers, reduced losses for the system and reduced costs for the technical restrictions. The methodology proposed means an advance regarding nowadays situation in which no information of this type is provided. Nevertheless, future improvements can be considered for example including environmental effects.</p>

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Annex I	ARERA remarks	<p>For P 28: The project consists of 2 HVDC modules of 600 MW each. The first module is under construction (it will be commissioned by end 2019). The completion of the second module with a new HVDC subsea cable is completely permitted already (same authorization of the first module) and its implementation is subject to the realization of the trans-Balkan corridor. Therefore, the two investment items are part of the same project. At this stage of the TYNDP2018 it is not possible to de-cluster projects and/or modify the structure of the reference grid.</p> <p>In the new TYNDP 2020 and in the National Plan, Terna will include only the investment relative to the second HVDC module because the first one will be already in operation.</p> <p>For P 29: In the TYNDP2018 the project was intended to respect the criteria for the inclusion in the reference grid, since the Intergovernmental agreement and the starting of permitting procedure were expected in 2018. At this stage of the TYNDP2018 it is not possible to de-cluster projects and/or modify the structure of the reference grid.</p> <p>In the new TYNDP 2020 and in the National Plan, Terna will update the project status.</p> <p>For P 250: At this stage of the TYNDP2018 it is not possible to de-cluster projects and/or modify the structure of the reference grid.</p> <p>For P 323: ENTSO-E has properly corrected the mentioned figures. It is confirmed that the editorial mistake did not affect benefit calculations.</p> <p>For P 324: ENTSO-E has properly corrected the mentioned figures. It is confirmed that the editorial mistake did not affect benefit calculations.</p> <p>For P 127: ENTSO-E has properly corrected the mentioned figures. It is confirmed that the editorial mistake did not affect benefit calculations.</p>

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		<p>For P 150: The project is under permitting on Italian side since 2012 and it is now close to finish the authorization procedure.</p> <p>Terna and ELES are cooperating to progress with the assessment of the project on Slovenian side, so that it can be updated in TYNDP 2020.</p> <p>For P 325: In general, it is only possible to modify the projects within the window of the project application. At the deadline of the project collection for the TYNDP2018, this project was valid and planned. In the last two years the project development went on and led to a different situation. This cannot be respected in the running or finished TYNDP process, but only in the new TYNDP. The TSOs will respect the latest information accordingly in the new plans.</p> <p>For P 375: In general, it is only possible to modify the projects within the window of the project application. At the deadline of the project collection for the TYNDP2018, this project was valid and planned. In the last two years the project development went on and led to a different situation. This cannot be respected in the running or finished TYNDP process, but only in the new TYNDP. The TSOs will respect the latest information accordingly in the new plans.</p>
Annex I	BNetzA	At this stage of the TYNDP2018 it is not possible to de-cluster projects and/or modify the structure of the reference grid. In TYNDP2020 we will update the status of all investments including the change to “under consideration” for investment 682. As a consequence, the investment will no longer be part of project 206.
Annex II	Missing Benefits	Project sheets updated reporting ACER review