Modification to the TYNDP 2016 following the public consultation

ENTSO-E published in June 2016 the TYNDP package for public consultation. More than 370 comments were received from 23 organisations. A detailed assessment of these comments is available on ENTSO-E website.

It has to be noted that a majority of comments received address evolutions requested for the next version of the TYNDP to be published in 2018. These comments will be carefully taken into account by all TYNDP 2018 teams. Furthermore, they will all be discussed with the Network Stakeholder Development Group, which will be tasked with monitoring their follow-up throughout the project and in the next version of reports an project sheets.

A number of comments were addressing the current version of the TYNDP. Because of resources constraints, and because ENTSO-E chose to limit the changes to the TYNDP package (else a new consultation would have been necessary, which is impossible due to ENTSO-E obligation to publish the TYNDP in 2016), some of these comments could not be taken into account and will also be considered for the next version of the TYNDP.

Nevertheless, important changes were made both to the Executive Summary and Insight Reports, and to the Project Assessment Sheets. This document present the main changes between the draft TYNDP 2016 Package for consultation, and the current draft package for Regulatory opinion.

Changes to the Executive and Insight Reports

One of the most significant change to the Executive Summary Report is the addition of a new chapter: "Users Guide to an update TYNDP". This new Chapter is ENTSO-Es response to a large number of comments requesting further explanations on the content of the TYNDP package, the link between the different documents (including the Scenario Report, the CBA and the Regional Investment Plans), the position of the TYNDP in the European energy policy governance, its link with the PCI process, the way the assessment of projects was realised, CBA indicators, and other information.

Another significant change is the addition of new information to the Annexes presenting the challenges for each of the main electricity boundaries introduced by ENTSO-E. A list of projects relevant for each boundary has been added to each Annex. New information, which could not be included in the last TYNDP were added for the boundary between Ireland and Great Britain and the Continent. The Annex addressing the Nordics/Continental East and Baltic boundaries has been split in 2 to improve the consistency of the documents.

The following table provides a list of all changes made to the Executive or insight reports of the TYNDP: following the public consultation.

Report modified	Chapter/nature of the modification	Details
All reports	Professional layout of all Reports, and redesign of all graphs and figures taking into account stakeholders comments on consistency	To be delivered by early 2017 only
Executive Report	Addition to Chapter 11 (A new, updated and enriched TYNDP for electricity) and repositioning as new Chapter 1	Addition of information on the process and context of the TYNDP
Executive Report		
Executive Report		

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel +32 2 741 09 50 • Fax +32 2 741 09 51 • info@entsoe.eu • www.entsoe.eu

Executive Report		
Executive Report		
Executive Report		
Executive Report	Introduction	Addition of a paragraph to introduce the current status of the TYNDP 2016 package. Addition of an index of acronyms and abbreviations.
Executive Report		Addition of a footnote: "For a detailed explanation of the scenarios, how they were built or to find specific figures, check the Scenario Report published in 2015: LINK)"
Executive Report	Modifications to Chapter 1:"The TYNDP: mapping the Energy Union"	Addition of a footnote: the TYNDP is published in 2016, but scenarios are commonly performed in "round years". Therefore, N+15 refers to 2030 (instead of 2031) and N+5 to 2020 (instead of 2030)
Executive Report		Addition of the text in red: The TYNDP scenarios development supplying 45% to 60% of the total annual demand, depending on the Vision. These are paired with a huge reduction in CO2 emissions (-50% to -80% from the 1990 levels, depending on the scenario, see Figure 1)
Executive Report		Addition of a Map of Europe of all projects
Executive Report	Modifications to Chapter 2:"27% RES in Europe's energy supply by 2030 means more grid"	Addition of a footnote (in red) after "This integration effect is also shown in about 40% avoided congestion-hours across all borders in the most conservative scenario.": ** As compared to the existing grid situation*
Executive Report	Modification to Chapter 3	Removal of the part in red to avoid confusion: Past releases of the TYNDP used to pinpoint four "electric peninsulas" – namely Ireland and Great Britain, the Iberian Peninsula, Italy and the Baltic states – among a total of about 100 investment needs all across Europe.
Executive Report	Addition to Chapter 5 (2030 targets for interconnection capacities)	Addition of brackets (in red) : In a well-integrated Internal Electricity Market, it is economically sound that the grid is sized so that the load factor of every grid element is lower than 50% (this simplification is used by many TSOs across Europe to dimension their grid)
Executive Report	Addition to each Annex	Addition of a list of projects linked to each boundary (table with project name, GTC, project sheet ID)
Executive Report	Annex 1	Addition of information, including further explanation and a nex SEW/GTC curve
Executive Report	All annexes	Clarification of the available information
All regional insight reports	Addition of an introductory paragraph	This insight report builds on the European wide studies conducted by ENTSO-E, and on Regional Investment Plans developed by working groups of the XX and XX regions (including links).
A push for Projects of Common Interest insight report	Addition of a introductory paragraph	To understand what role the TYNDP and PCIs play in European Energy Governance, please consult the Chapter 1 of the executive report (link)"
A push for Projects of Common Interest insight report	Modification of a paragraph	Addition of the part in red (typo): The PCI status makes projects eligible for Union financial assistance in the form of grants for studies, financial instruments and under specific conditions in the form of grants for works.

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel +32 2 741 09 50 • Fax +32 2 741 09 51 • info@entsoe.eu • www.entsoe.eu

A push for Projects of Common Interest insight report	Update of figures	Replacing EC graph on the number of projects with latest figure
Data and expertise as key ingredients insight report	Addition of a table presenting the characteristics of each market tool, and where they were used in the process	

Changes to the Project Assessment Sheets

Following the public consultation, and taking into account comments directly received from project promoters (both 3rd parties and TSOs), ENTSO-E has updated and improved most of the project assessment sheets for transmission and storage investment projects. In particular, as requested by stakeholders, a particular effort has been put to better explain the context of projects (system needs and CBA explanations), and also to better justify benefits of projects, which cannot be at this stage monetised in the CBA results. For storage projects, new project sheets have been generated with extra information.

Because the TYNDP 2016 includes more than 650 pages of project assessment sheets, a full detailed log of changes between the consultation and the present version of the document would not be practical. TYNDP readers are invited to compare directly project assessment sheets if need be, and to contact directly ENTSO-E (tyndp2018@entsoe.eu) for any clarification or detail of changes for specific projects.

In general, the changes made in project assessment sheets fall within one of the following categories:

- The general layout of the Project Assessment Sheets has been formatted in order to improve the general appearance and increase the user friendliness of the documents. The format of tables including CBA indicators has been improved;
- The text in the Project Assessment Sheets has been carefully checked for grammar mistakes and typos and the inconsistencies were fixed;
- For the project connecting electric peninsula's, new comments were added in order to prove the additional benefits that projects can bring on annual basis (in avoided generation investments) and which were not numerically assessed during the TYNDP process. Sources of external studies confirming these benefits have been added where relevant (Ofgem study);
- The CAPEX values precision has been improved for some of the project to ensure rounded values for non-exact figures;
- Mini-maps and interactive map elements for some projects were updated either correcting wrong Investment IDs or improving the layout. In some cases the colour of the lines on the maps had to be changed according to the voltage level of the transmission projects;
- For some projects the PCI numbers were corrected;
- Some Project Assessment Sheets had errors in the indicated boundaries names, which has been improved;
- The Delta GTC/SEW graphs had to be corrected for all Project Sheets on the France-Spain border and 3rd parties' transmission projects to start the curve at the zero for SEW;
- Some projects were missing an element on the interactive map and on mini-maps (Example: Project ID 278). In this case the project shape has been updated for the interactive map and a mini-map has been generated for the Project Assessment Sheets at the description part;
- For some Investment incorporated in individual projects, the evolution since TYNDP2014 has been updated to better reflect the actual reason for status evolution . Some projects status were changed

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel +32 2 741 09 50 • Fax +32 2 741 09 51 • info@entsoe.eu • www.entsoe.eu

(Example: both ID 781 & 782 had modified evolution statement from “Rescheduled” to “Delayed”) , while precisions were added for others (Example: for both ID 781 & 782 the evolution driver “Delayed due to changes in the generation timescales.” has been added);

- For all the projects, which are internal and located in Germany, the GTC contribution for the projects has been updated to indicate the unified statement: “DE intern”.
- The text of the system needs sections of the project assessment sheets has been checked to make sure it present information different than the project descriptions;
- Some mistakes in the way margin of error of CBA were presented were corrected;
- For the storage projects the CBA indicators in the tables were either changed in case of erroneous numbers or improved in case of wrong precision especially when the precision equals to zero;
- For the storage projects the storage capacity and net capacity were checked with the project promoters to improve consistency. Most mistakes were related to confusion between MW and GWh scale of the quantification units;
- Most storage projects promoters believe that their projects contribute to LFC. Sentences were added pertaining to load having a contribution to frequency containment and potential revenues from this benefit which are not accounted in the CBA analysis;

ENTSO-E AISBL • Avenue de Cortenbergh 100 • 1000 Brussels • Belgium • Tel +32 2 741 09 50 • Fax +32 2 741 09 51 • info@entsoe.eu • www.entsoe.eu