

**OPINION OF THE AGENCY FOR THE COOPERATION OF ENERGY
REGULATORS No 08/2017**

of 3 April 2017

**ON ELECTRICITY PROJECTS
IN THE NATIONAL TEN-YEAR NETWORK DEVELOPMENT PLANS
AND
IN THE UNION-WIDE TEN-YEAR NETWORK DEVELOPMENT PLAN
2016**

THE AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

HAVING REGARD to Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003¹, and, in particular, Article 8(11) thereof,

WHEREAS:

- (1) Article 8(11) of Regulation (EC) No 714/2009 tasks the Agency for the Cooperation of Energy Regulators (“the Agency”) with providing an opinion on the national ten-year network development plans (“the NDPs”)², to assess their consistency with the Union-wide ten-year network development plan (“the EU TYNDP”)³.
- (2) National regulatory authorities (“NRAs”) have provided the Agency with essential cluster- and investment-specific information regarding those EU TYNDP 2016 clusters⁴ which are at least partially hosted by their countries and on those investments which appear on their

¹ OJ L 211, 14.8.2009, p. 15.

² Similar to the Agency’s previous practice, the Agency considers all relevant national network planning instruments, even if they were referred to with a different title, e.g. investment plan, as “national ten-year network development plans” pursuant to Article 8(11) of Regulation (EC) No 714/2009.

³ On 28 November 2016, the European Network of Transmission System Operators for Electricity (“ENTSO-E”) sent to the Agency and published on its website the draft EU TYNDP 2016, a package of reports and project sheets, accompanied, later on, by an assessment of consultation responses and an explanatory documents on changes following the consultation, on which the assessment of the Agency was carried out. On 20 December, ENTSO-E published the EU TYNDP 2016 with the last set of other accompanying documents: the full TYNDP results in spreadsheet form and detailed market modelling outputs. As communicated by ENTSO-E to the Agency, there is no change between the documents, except an editorial typo in the Assessment Sheet Britib (EU TYNDP 2016 project number 296). Therefore, these two documents are jointly considered in this Opinion and referred to as “EU TYNDP 2016”.

⁴ In this Opinion, the term “cluster” (corresponding to ENTSO-E’s term “project”) and “investment” are used to clearly identify the elements of the EU TYNDP 2016. The term “projects” can be used when referring to the elements of the NDPs and the EU TYNDP.

NDPs, have a cross-border relevance, but do not appear in the EU TYNDP 2016. The data collection was completed on 15 February 2017⁵.

- (3) The Agency's assessment related to the inputs and the methodologies used for the development of the NDPs as well as their key features was carried out in 2016 and presented in the Agency's Opinion No 04/2016⁶.

HAS ADOPTED THIS OPINION:

1. Background and purpose of this Opinion

Although the NDP is not legally binding in most jurisdictions within the European Union, the implementation of the EU TYNDP 2016 clusters strongly relies on the electricity network planning at national level.

This Opinion therefore provides detailed information regarding the NDP projects with cross-border relevance and aims at assessing whether all NDP projects with cross-border relevance appear in the EU TYNDP 2016 and whether EU TYNDP 2016 clusters are included in the relevant NDPs.

The Opinion also highlights any substantial difference between the projects in the NDPs and the ones in the EU TYNDP 2016 in terms of their technical description, way of clustering, transfer capacity, status, costs or any other important element of the project, without necessarily qualifying these differences as inconsistencies, pursuant to Article 8(11) of Regulation (EC) No 714/2009.

The Agency notes that the EU TYNDP and the NDPs are updated with different frequency and timing, while the projects are continuously evolving over time, which does not enable to capture a snapshot where all NDPs are up-to-date and fully comparable vis-à-vis the EU TYNDP. The main findings are highlighted in this Opinion, while more details can be found in the Annex to this Opinion.

⁵ The information was collected primarily through an online template via the EUSurvey tool.

⁶ Agency's Opinion No 04/2016 on the national ten-year electricity network development plans pursuant to Article 8(11) of Regulation (EC) No 714/2009

http://www.acer.europa.eu/official_documents/acts_of_the_agency/opinions/opinions/acer%20opinion%2004-2016.pdf

2. Analysis of project inclusion in the EU TYNDP 2016 and the NDPs and related recommendations for the EU TYNDPs and NDPs

The Agency received 239 reports on national parts of the EU TYNDP 2016 transmission clusters⁷, hereinafter referred to as “national parts of clusters”, which represent 90% of the expected 266 submissions⁸ and covers 161 out of the 171 relevant EU TYNDP 2016 clusters⁹.

This Opinion did not perform a difference check regarding cluster 271 (“Long term conceptual project “Northern Seas offshore grid infrastructure”) and cluster 261 (Long-term conceptual “West-East corridor in North Sea), which are not considered sufficiently concrete to be compared with the NDPs¹⁰.

The Agency reaffirms its recommendation to ENTSO-E not to include non-concrete projects in the EU TYNDP¹¹. For the credibility of the TYNDP exercise, clusters 261 and 271 should then be taken out from the EU TYNDP 2016.

The Agency also notes that three other clusters of the EU TYNDP 2016 do not present a benefit assessment. While ENTSO-E provides reasons for the case of clusters 170 and 291, due explanations are missing for cluster 284 (“Greece-Libya interconnection”, capacity 2000 MW). The Agency considers that the lack of a benefit assessment for cluster 284 may be related to the lack of market and network data for South-Eastern Mediterranean countries.

The Agency reaffirms its recommendation to ENTSO-E for greater transparency and enhanced cooperation with TSOs of third countries, in order to provide a comprehensive picture of grid development¹².

Out of 239 national parts of clusters, the NRAs identified 150 parts (63%) which are fully included in the NDPs, 11 national parts (4%) which are only partially included in the NDPs

⁷ In this Opinion the part of an EU TYNDP 2016 cluster which belongs to a national jurisdiction is called “national part of a cluster”. E.g. if an EU TYNDP cluster consists of an interconnector between countries A and B, and an investment item located in country A, it is considered that there are two national parts, one consisting of the part of the interconnector and the investment item located in country A, and the other one consisting of the part of the interconnector located in country B.

⁸ The number of reports (assessments) is higher than the number of clusters as in case of an interconnection the Agency expected each NRA of the hosting jurisdictions to submit a separate assessment.

⁹ The TYNDP 2016 includes 177 clusters. However, this Opinion did not assess TYNDP clusters 271 and 261. In addition, the following clusters are hosted solely by jurisdictions which are not under the remit of the Agency: Clusters 147 (“South Balkan, CSE9”), 227 (“CSE8 Transbalkan Corridor”), 272 (“Network upgrade in Central Serbia from 220 kV to 400 kV voltage level”) and 273 (“Closing of 400 kV ring around Belgrade region”)

¹⁰ Cluster 271 is a corridor rather than a project and does not display any concrete investment description, while cluster 261 does not display any concrete investment description, location, cost, transfer capacity, nor benefit assessment.

¹¹ Agency's Opinion No 01/2017 on the ENTSO-E draft Ten-Year Network Development Plan 2016, p.13.
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2001-2017.pdf

¹² Agency's Opinion No 01/2015 on the ENTSO-E draft Ten-Year Network Development Plan 2014, p.19.
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2001-2015.pdf

and 78 national parts (33%) which are not included in the NDPs. 82 clusters¹³ (out of 132 clusters for which the Agency received full information¹⁴) are included in all the relevant NDPs, 7 clusters are only partially included¹⁵. There are 18 interconnection clusters¹⁶ where one NDP includes fully or partially the cluster, while the other NDP(s) do not. There are 25 clusters¹⁷ which do not appear in any of the NDPs.

These full or partial absences of the national parts of clusters from the NDPs (89 national parts, 37%) represent a very significant increase in the absences compared to the finding of the Agency's analysis carried out in 2014 (slightly below 10%)¹⁸. In terms of absolute values, the number of absent national parts is the highest in France, Germany and Great Britain (14, 8 and 8 national parts, respectively). However, this is also due to the higher number of clusters in these jurisdictions. In relative terms absence is most frequent in Greece, Switzerland and the Netherlands (around 80% in all cases compared to their total submissions), when only jurisdictions hosting at least 4 clusters are considered.

The Agency also remarks that the vast majority (71%) of the fully or partially absent national parts are classified as "future projects", while the remaining absent parts (29%) belong to "long term" and "mid-term projects". The Agency considers that this finding raises doubts on the credibility and feasibility of many clusters included in the "future projects" category of the EU TYNDP 2016¹⁹. In the Agency's view, investments "under consideration", investments expected to be commissioned beyond ten years, or both should be considered as "future projects"²⁰. In this regard, the Agency notes that the EU TYNDP 2016 meets the above criteria in most instances, however, in some cases, the Agency identified clusters²¹ which were classified as "mid-term" or "long-term projects", while they include investments which are still under consideration or whose expected commissioning date is beyond 2027.

The Agency recommends ENTSO-E to include in the EU TYNDP 2016 and future EU TYNDPs two separate Appendixes: one listing the "TYNDP mid-term and long-term projects" and the other listing the "TYNDP future projects". This will allow better to highlight the significantly different level of uncertainty accompanying the evolution and implementation of these projects. The EU TYNDP 2016 and future EU TYNDPs should classify all clusters including at least one investment "under consideration" as "future project".

¹³ 51 internal clusters and 31 interconnections.

¹⁴ "Full information" means that the Agency received the NRA's assessment on each of the national parts of the cluster.

¹⁵ 4 internal clusters and 3 interconnections (one interconnection is partially included in all relevant NDPs and 2 interconnections are fully included in one NDP and partially included in the other NDP).

¹⁶ 16 interconnections between 2 jurisdictions and 2 interconnections among 3 jurisdictions.

¹⁷ 8 internal clusters and 17 interconnections (one of the interconnections belongs to 3 jurisdictions).

¹⁸ Agency's Opinion No 08/2014 on the National Electricity Ten Year Network Development Plans http://www.acer.europa.eu/official_documents/acts_of_the_agency/opinions/opinions/acer%20opinion%2008-2014.pdf

¹⁹ Approximately 40% of the clusters of the EU TYNDP 2016 are "future projects" and they correspond to approximately half of the total investment costs of the EU TYNDP 2016.

²⁰ Agency's Opinion No 01/2015 on the ENTSO-E draft Ten-Year Network Development Plan 2014, p.17.

²¹ Approximately for 10% of the EU TYNDP 2016 mid-term and long-term clusters.

The most frequent reason for absence of a national part in a NDP reported by the NRAs is that the commissioning date of the cluster or a part of it is beyond the time horizon of the NDP. This reason was indicated in 36 instances either as single reason or as one of the multiple reasons for absence²². The second most frequent reason, reported in total in 27 instances, is that the cluster or a part of it is not advanced enough to enter the NDP.

The Agency recommends that NDPs include studies, even if they may go beyond the time horizon of the NDP, and clearly flag them as such, in order better to align the scope of the NDPs and the EU TYNDP.

In the case of 18 national parts²³, the necessity of the cluster or a part of it is not confirmed by the NRA or still under discussion. In 6 cases for the clusters²⁴ and in 1 case for an investment item²⁵, the NRA(s) expect them to be deleted from the EU TYNDP 2016.

In those cases where the reason for absence is due to opposition from the concerned NRAs to the cluster or to the investment(s) promoted by TSOs, the Agency recommends that these clusters or investments are not included in the EU TYNDP. Further, NRAs should carefully assess the necessity of the proposed (TSO and third party) studies and projects and signal whether to include (or exclude) them in the NDPs, and consequently in the EU TYNDPs.

7 investments (corresponding to 8 national parts²⁶) have been mentioned by NRAs as having cross-border relevance, but do not appear in the EU TYNDP 2016. Most of them are in Italy, while the other investments are in Romania, Slovak Republic and Slovenia. Based on the available information²⁷, the Agency notes that these investments were not proposed by the project promoters as candidates for the EU TYNDP 2016.

²² In most cases the NRAs provided more than one reason why the national part of the EU TYNDP 2016 cluster is missing in the NDP. In these cases the reasons for absence were taken into account separately to show the real volume of each reason.

²³ 2 internal clusters and 16 national parts of interconnection clusters.

²⁴ EU TYNDP 2016 cluster 233 (“Spanish Pumping”) (ES NRA); cluster 257 (“Douro Spanish-Portuguese reinforcement”) (ES NRA); cluster 281 (“ANAI: Abengoa Northern Atlantic Interconnection”) (ES and FR NRAs); cluster 282 (ASEI: Abengoa Southern Europe Interconnection) (ES, IT and FR NRAs), cluster 296 “Britib” (ES and FR NRAs).

²⁵ Investment item 8 (“New single circuit 400kV OHL Seia-Penela of 90km”), investment item 478 (“New double circuit 400kV OHL (15km) to connect Penela substation to Paraimo-Batalha line”), and investment item 481 (“Expansion of the existing Penela substation to include 400kV facilities”) (PT NRA), part of cluster 2 (“RES in center of Portugal”) and investment item 1210 (“New substation Pamplona area 400 kV and connection to the existing lines”) (ES NRA), part of cluster 276 (“FR-ES project -Navarra-Landes”).

²⁶ One investment is an IT-SI interconnector, which was reported by both NRAs as an investment in the NDP which has a cross-border relevance but does not appear in the EU TYNDP 2016.

²⁷ ENTSO-E consultation data sheet. https://consultations.entsoe.eu/system-development/have-your-say-to-the-tyndp-2016-candidate-projects/supporting_documents/160624TYNDP2016%20project%20candidates%20%20draft%20for%20consultation.xlsx

The Agency reaffirms its recommendation²⁸ that, given the principle of consistency between the EU TYNDP and the NDPs defined in Regulation (EC) No 714/2009, ENTSO-E, when preparing future EU TYNDPs, should include all the projects having cross-border relevance from the NDPs. The Agency recommends that NDPs explicitly flag their projects having cross-border relevance.

Based on the Agency's Opinion No 04/2016, the Agency notes that the NDPs include or refer to third-party projects²⁹ only in 5 jurisdictions. Therefore most NDPs cannot provide the proper basis for the EU TYNDP regarding the inclusion (and exclusion) of third-party projects. This finding has also been confirmed by this Opinion, as only less than one third of the national parts of clusters promoted by third-party promoters appear in the relevant NDPs³⁰.

The Agency reaffirms its recommendation³¹ that ENTSO-E should define, after consultation with stakeholders, and duly apply a procedure for inclusion (and exclusion) of additional candidate projects which are not included in the NDPs.

3. Analysis of project differences in the EU TYNDP 2016 and in the NDPs and related recommendations for the EU TYNDPs and NDPs

Substantial differences in project characteristics between the EU TYNDP 2016 and the NDPs have been identified for 41 national parts (17%) out of 239, but in many cases multiple differences were reported by the NRAs, which amount to 71 differences in total. The most frequently reported difference is the commissioning date of the investments which emerged for 24 national parts and constitutes 33% of all reported substantial differences. Further, NRAs reported differences regarding the transfer capacity, the clustering of the investments, the technical description, the costs, the status and the classification of the projects.

The Agency underlines that the EU TYNDP 2016 seems more optimistic in terms of commissioning date and advancement status than the relevant NDPs.

To avoid excessively optimistic projections on commissioning dates, the Agency recommends ENTSO-E to define reference project timelines (e.g. number of years from start of permitting to commissioning). For projects with status "under consideration" or "planned, but not yet in permitting", the future EU TYNDPs should provide the project promoters' estimate together with the "reference timeline" estimate. In case of differences, the project promoters should explain them.

²⁸ Agency's Opinion No 01/2017 on the ENTSO-E draft Ten-year Network Development Plan 2016, p.5.

²⁹ Agency's Opinion No. 04/2016 on the national ten-year electricity network development plans pursuant to Article 8(11) of Regulation (EC) No 714/2009, p.18.

³⁰ Third -party investments of the EU TYNDP 2016 are included in the NDPs of FR, GB, and IE.

³¹ Agency's Opinion No 01/2017 on the ENTSO-E draft Ten-year Network Development Plan 2016, p.5.

In order to address substantial differences as well as to achieve alignment of the projects in the NDPs and the EU TYNDP 2016, the NRAs proposed changes in the NDP or in the EU TYNDP 2016 in about 20 instances. Most of these proposals refer to update or correction of data (e.g. commissioning date, classification of the project, clustering of investments).

The Agency reaffirms its recommendation that any substantial differences in project information versus the latest EU TYNDP be detected and explained by the concerned TSOs in their NDPs³².

The Agency also notes that, in some cases, the NRAs reported that the comparison of the project characteristics is not possible due to missing data in the NDP³³.

The Agency's Opinion No 04/2016 already pointed out that the NDPs do not always provide the same set of information and insisted on the need for transparency of their fundamental information (national coding system, cross-referencing with EU TYNDP coding, full information on commissioning dates, project status, increase of transfer capacity and project cost)³⁴. This recommendation is still fully valid, as well as the findings of Opinion No 04/2016 on inputs and methodologies used for the development of the NDPs. Further, the Agency underlines that the NDPs should be publicly available.

More detailed analyses of the differences between the EU TYNDP 2016 and the NDP projects, as well as of the NRAs proposals on how to address these differences, are provided in the Annex to this Opinion.

Done at Ljubljana on 3 April 2017.

For the Agency:



Alberto Pototschnig
Director

³² Agency's Opinion No. 04/2016 on the national ten-year electricity network development plans pursuant to Article 8(11) of Regulation (EC) No 714/2009, p.3.

³³ In some cases the data is generally not provided in the NDP, in other cases it is missing only for certain project(s).

³⁴ Agency's Opinion No. 04/2016 on the national ten-year electricity network development plans pursuant to Article 8(11) of Regulation (EC) No 714/2009, p.3.

ANNEX - Summary of NRA inputs regarding the EU TYNDP 2016 clusters and other relevant national investments

A. Provision of data

In the Agency's Opinion No 01/2017 on the ENTSO-E draft Ten-year Network Development Plan 2016, the storage projects were not considered as part of the EU TYNDP 2016, due to a pending ENTSO-E's CBA guideline to identify specific benefits of storage projects. The Agency also notes that storage projects in general are not included in the NDPs. In line with the above, the Agency deemed appropriate to focus on the transmission projects and did not include storage projects in the overall statistic, but provided a separate overview in Section E.

Out of the 177 transmission clusters appearing in the EU TYNDP 2016, 74 are internal, while 103 are interconnections³⁵: 89 clusters are under 2 jurisdictions, 11 are under 3 jurisdictions, one is under 5 jurisdictions, one (cluster 261) is under 6 jurisdictions and one (cluster 271) involves 10 jurisdictions. On average, one EU TYNDP 2016 cluster belongs to 1.6 jurisdictions, which means that, if all national authorities had reported on all of their national parts³⁶, the Agency should have received 306 reports. Some of the concerned jurisdictions³⁷ are not involved in the Agency's activities and therefore no request was sent to them to assess differences between the EU TYNDP 2016 and the NDPs. Further, the Agency excluded from its assessment 2 EU TYNDP 2016 clusters which are considered by the Agency as not sufficiently concrete to compare with the NDPs³⁸ and 4 clusters which are hosted solely by jurisdictions which are not under the remit of the Agency³⁹. Excluding the above mentioned national parts, the Agency expected in total 266 reports, on 171 EU TYNDP 2016 clusters, from 30 NRAs⁴⁰.

³⁵ For the purpose of this Opinions "interconnections" are those clusters which are hosted by more than one jurisdiction. Further, for the purpose of this Opinion Great Britain, Northern Ireland and Kosovo are all considered as separate jurisdictions.

³⁶ In this Opinion the part of the cluster which belongs to a jurisdiction is called "national part".

³⁷ Albania, Bosnia and Herzegovina, Egypt, FYR of Macedonia, Iceland, Israel, Kosovo, Libya, Montenegro, Serbia, and Tunisia

³⁸ Clusters 271 ("Long term conceptual project "Northern Seas offshore grid infrastructure") and 261 (Long-term conceptual "West-East corridor in North Sea)

³⁹ Clusters 147 ("South Balkan, CSE9"), 227 ("CSE8 Transbalkan Corridor"), 272 ("Network upgrade in Central Serbia from 220 kV to 400 kV voltage level") and 273 ("Closing of 400 kV ring around Belgrade region")

⁴⁰ Data request was made to NRAs of 27 Member States (excluding Malta, as there are no transmission projects), including the Great Britain and Northern Ireland as having – for the purpose of this Opinion and for sake of simplicity - separate NRAs. In addition, data was also requested from the NRAs of Norway and Switzerland.

In total, the Agency received 239 reports, from 27⁴¹ NRAs, which is 90% of the expected reports. The split up of the reports per number of reporting NRAs is provided in Table 1. The 239 national parts cover (at least partially) 161 out of the 171 assessed transmission EU TYNDP 2016 clusters.

Table 1. Number of NRA reports on national parts of clusters received by the Agency:

	NRA report on one national part	NRA reports on 2 national parts	NRA reports on 3 national parts	NRA reports on 5 national parts
Internal cluster	63			
Interconnection hosted by 2 jurisdictions	23	64		
Interconnection hosted by 3 jurisdictions	1	4	5	
Interconnection hosted by 5 jurisdictions	1	0	0	0
Number of reports	88	136 (2x68)	15 (3x5)	0

Further, 4 NRAs reported in total on 7 investments (corresponding to 8 investment parts) which appear on the respective NDP and have a cross-border relevance, but do not appear in the EU TYNDP 2016⁴².

The NRAs were requested to make a comparison of the EU TYNDP 2016 clusters vis-a-vis the investments of their latest NDPs. As shown in Table 2, in 1 jurisdiction the NDP of 2017 was already available, in 18 jurisdictions the NDP of 2016 was used, while in 8 jurisdictions the 2015 NDP was the latest. 6 jurisdictions used the draft NDP for comparison as they provided the most up to date information regarding the clusters, while in 21 jurisdictions the comparison was based on the final NDP. The relevant information about the remaining 3 jurisdictions was not provided.

⁴¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Great Britain (UK), Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and Switzerland.

⁴² One of the investments which appear on the respective NDP and have a cross-border relevance, but do not appear in the EU TYNDP 2016 was reported by both hosting countries Italy and Slovenia.

Table 2. Number of national parts hosted by each jurisdiction and the number of assessed national parts covered by this Opinion

Jurisdiction	Year of the latest NDP	Status	Link to the latest NDP	Number of national parts of EU TYNDP 2016 clusters per jurisdiction	Number of assessed national parts of EU TYNDP 2016 clusters by the NRA
Austria	2016	Final	https://www.econtrol.at/marktteilnehmer/strom/netzentwicklungsplanung/konsultation-2016	6	6
Belgium	2015	Final	http://www.elia.be/en/grid-data/grid-development/investment-plan/federal-development-plan-2015-2025	15	15
Bulgaria	2016	Final	http://www.eso.bg/fileObj.php?oid=113	4	4
Croatia	2016	Final	http://www.hops.hr/wps/wcm/connect/ca314227-dfe3-4d90-9c1d-dc752732f405/HOPS2017_final_Part1.pdf?MOD=AJPERES http://www.hops.hr/wps/wcm/connect/d290443a-a9cb-40e7-87a4-b3fb230c83e4/HOPS2017_final_Part2.pdf?MOD=AJPERES	4	4
Cyprus	2016	Final	NDP is not publicly available (in general)	1	1
Czech Republic	2016	Final	http://www.ceps.cz/CZE/Cinnosti/Technicka-infrastruktura/Documents/Rozvoj%20PS/Plán%20rozvoje%20přenosové%20soustavy%20České%20republiky%202016%20-%20-%202025_final.pdf	4	4
Denmark	2016	Draft	Not publicly available (yet) ⁴³	11	11
Estonia	2015	Final	http://elering.ee/public/Infokeskus/Aruanded/Elering_VKA_2016.pdf	2	2
Finland	Data not provided	Data not provided	Data not provided	4	0
France	2016	Draft	http://www.rte-france.com/fr/article/schema-decennal-de-developpement-de-reseau	28	27 ⁴⁴
Germany	2017	Draft	https://www.netzentwicklungsplan.de/de/netzentwicklungsplaene/netzentwicklungsplaene-	44	42
Great Britain (UK)	2016	Final	http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/Network-Options-Assessment/	29	19

⁴³ Available by March 2017 at the NRA's website: www.energitilsynet.dk

⁴⁴ One cluster is not assessed by the NRA because Project 299 "SACO13" is hosted by Corsica and projects in this area are not part of the NDP.

				http://www2.nationalgrid.com/UK/Industry-information/Future-of-Energy/Electricity-Ten-Year-Statement/		
Greece	2016	Final		http://www.admie.gr/fileadmin/groups/EDAS_DSS/MASM/DPA_2017-2026_Final/DPA_2017-2026.pdf	6	6
Hungary	2015	Final		http://www.mavir.hu/web/mavir/halozattervezes	4	4
Ireland	2016	Draft		Not publicly available (yet)	9	9
Italy	2016	Draft		http://www.autorita.energia.it/it/comunicati/16/160428pds.htm	14	14
Latvia	2016	Final		https://www.sprk.gov.lv/uploads/doc/LemumsN121D18082016Pielikums.pdf	3	3
Lithuania	2016	Final		http://www.regula.lt/Puslapiai/naujienos/2016-metai/apkritis/2016-11-28/komisija-ivertino-lietuvos-elektros-energetikos-sistemas-400-110-kv-tinklu-pletros-plana-2016-2025-metais-.aspx	3	3
Luxembourg	2016	Final		Not publicly available (yet)	1	1
Netherlands	2016	Final		http://www.tennet.eu/fileadmin/user_upload/Company/Publications/Technical_Publications/Dutch/TenneT_KCD_2016_Deel_II_DEF_M.pdf	9	9
Northern Ireland (UK)	Data not provided	Data not provided		Data not provided	4	0
Norway	Data not provided	Data not provided		Data not provided	4	0
Poland	2016	Final		http://www.pse.pl/uploads/kontener/Development_Plan_for_meeting_the_current_and_future_electricity_demand_for_2016-2025.pdf	5	5
Portugal	2015	Draft		http://www.erse.pt/pt/consultaspublicas/historico/Paginas/53_1_PDIRT-E2015.aspx	5	5
Romania	2016	Final		www.transelectrica.ro/web/tel/plan-perspectiva	4	4
Slovak Republic	2015	Final		http://www.sepsas.sk/ProgramRozvoja_en.asp?kod=580	2	2
Slovenia	2015	Final		http://www.eles.si/files/eles/userfiles/vsebinski_dokumenti/Na%C4%8Drtje%20razvoja%20prenosnega%20omre%C5%BEja%20RS%202015-2024.pdf	2	2
Spain	2015	Final		http://www.minetad.gob.es/energia/planificacion/Planificacionelectricidadygasesarrollo2015-2020/Documents/Planificaci%C3%B3n%202015_2020%202016_11_28%20VPublicaci%C3%B3n.pdf	19	19
Sweden	2016	Final		http://www.svk.se/siteassets/om-oss/rapporter/natutvecklingsplan-2016-2025.pdf	7	7

Switzerland	2015	Final	https://www.swissgrid.ch/dam/swissgrid/company/publications/de/sn2025_tech_nischer_bericht_de.pdf	13	11
			Total	266	239

Note: Malta is not part of the assessment as it hosts none of the EU TYNDP 2016 clusters.

B. Presence of EU TYNDP 2016 clusters in the NDPs

As shown in Table 3, there are 150 national parts (63%) out of 239 which are included in the NDP, 11 national parts (4%) which are only partially included in the NDP and 78 parts (33%) which are not included in the NDP. Comparing the presence in the NDPs of the national parts of the same EU TYNDP 2016 clusters, the Agency notes that 82 clusters (51 internal clusters and 31 interconnections⁴⁵), out of the 161 EU TYNDP 2016 clusters on which the Agency received an assessment, are included in the NDPs of all the hosting jurisdictions. In addition, in 7 instances (4 internal clusters and 3 interconnections) the EU TYNDP 2016 cluster appears partially in the relevant NDPs. Further, there are 18 instances⁴⁶ where one NDP includes the relevant national part of the cluster fully or partially, while the other NDP(s) do not. Finally, there are 25 clusters (8 internal and 17 interconnections⁴⁷) which do not appear in any of the NDPs of the hosting jurisdictions. Regarding the remaining interconnection clusters, the Agency received information only on one or some, but not on all national parts. The Agency notes, however, that, in at least additional 17 instances⁴⁸, the cluster does not appear in the NDP of at least one of the relevant jurisdictions⁴⁹.

The absence and presence of all the EU TYNDP 2016 clusters on which a report was submitted is presented in Table 3. In Table 4 the presence or absence of national parts of the same EU TYNDP 2016 interconnection clusters is presented to highlight the magnitude of the match and mismatch among the relevant NDPs.

⁴⁵ 30 between two jurisdictions, and one between 3 jurisdictions.

⁴⁶ 16 interconnections between 2 jurisdictions and 2 interconnections among 3 jurisdictions.

⁴⁷ 16 interconnections between 2 jurisdictions and 1 interconnections among 3 jurisdictions.

⁴⁸ 9 interconnections between 2 jurisdictions and 8 interconnections among 3 jurisdictions.

⁴⁹ In these cases the Agency received no information by the relevant NRA regarding the NDP of the other hosting country or it is hosted by a jurisdiction which was not involved in this activity.

Table 3: Absence and presence of the national parts of the EU TYNDP 2016 clusters in the NDPs

	Fully included in the NDP	Partially included in the NDP	Not included in the NDP	National parts received no information
Internal project	51	4	8	9
Interconnection	99	7	70	18
Total	150	11	78	27

Table 4: Match or mismatch of presence of national parts of the EU TYNDP 2016 interconnection clusters in the NDPs

NDP of hosting jurisdiction	NDP of hosting jurisdiction "A"		
	Fully included ⁵⁰	Partially included ⁵¹	Not included ⁵²
Fully included	31 ⁵³		
Partially included	2 ⁵⁴	1	
Not included	15	3 ⁵⁵	17 ⁵⁶
No information	14 ⁵⁷	0	14 ⁵⁸

⁵⁰ All investments of the cluster are present in the NDP

⁵¹ Some, but not all investments of the cluster are present in the NDP.

⁵² None of the investments of the cluster is present in the NDP

⁵³ Also including an interconnection cluster hosted by 3 jurisdictions and fully included in all 3 NDPs

⁵⁴ Also including an interconnection cluster hosted by 3 jurisdictions and fully included in 2 NDPs and partially included in one NDP.

⁵⁵ Also including an interconnection cluster hosted by 3 jurisdictions and fully included in one NDP, partially in the other NDP and not included in the 3rd NDP.

⁵⁶ Also including an interconnection cluster hosted by 3 jurisdictions and not included in any of the NDPs.

⁵⁷ Also including an interconnector is hosted by 3 jurisdictions and included in one NDP, while the presence or absence in the other NDPs is unknown.

⁵⁸ In 5 cases the interconnector is hosted by 3 jurisdictions and at least in one NDP the respective national part is not included.

Table 5 shows the rate of (fully or partially) absent national parts compared to all the assessed national parts for each jurisdiction. The Agency notes that, in terms of absolute values, the number of absent national parts is the highest in France, Germany and Great-Britain (14, 8 and 8 national parts respectively). However, in relative terms it seems that absence is the most frequent in Greece, Switzerland and the Netherlands (around 80% in all cases compared to their total submissions), if only jurisdictions with at least 4 clusters are considered.

The Agency also notes that 63 of the 89 fully or partially absent national parts (71%) are classified as “future project”, 9 national parts (10%) as “long term project” and 17 national parts (19%) as “mid-term project” (Table 7 and Table 8).

Table 5: Rate of absent national parts of the EU TYNDP 2016 clusters compared to all the assessed national parts (per jurisdiction)

NRA who reported substantial difference	Number of national parts assessed	Number of absent national parts (fully absent)	Number of absent national parts (partially absent)	Total (including fully and partially absent)	Rate of the absent national parts compared to the assessed ones
Croatia	4	3	1	4	100%
Cyprus	1	1	0	1	100%
Slovak Republic	2	1	1	2	100%
Greece	6	4	1	5	83%
Switzerland	11	8	1	9	82%
Netherlands	9	6	1	7	78%
Bulgaria	4	2	1	3	75%
Sweden	7	2	2	4	57%
Denmark	11	6	0	6	55%
France	27	14	0	14	52%
Great Britain	19	8	0	8	42%
Poland	5	1	1	2	40%
Portugal	5	1	1	2	40%
Romania	5	2	0	2	40%

Spain	19	6	1	7	37%
Italy	14	5	0	5	36%
Latvia	3	0	1	1	33%
Czech Republic	4	0	1	1	25%
Germany	43	7	1	8	19%
Austria	6	1	0	1	17%

Note: Jurisdictions for which no absence of EU TYNDP 2016 cluster in the NDP was reported: Belgium, Estonia, Hungary, Ireland, Lithuania, Luxembourg and Slovenia

Reason for absence

As regards the reasons for the full or partial absence of the national parts from the NDPs, Table 6 shows that in 72 instances a single reason was indicated, while in 17 instances multiple reasons were reported. In case the NRAs reported multiple reasons for absence, all reasons are accounted separately in the following statistics.

The most frequent reason for absence appears to be that the commissioning date of the cluster or some of the investments within the cluster are beyond the time span of the NDP⁵⁹. This reason was reported by NRAs on the absence of 36 national parts (either as the single reason for absence or together with other reasons). The second most frequent reason, reported in 27 instances, is that the cluster or part of it is not advanced enough to enter the NDP (e.g. a study has not turned into a project yet). In case of 18 clusters the necessity of the cluster or part of it is not confirmed by the NRA or still under discussion.

Other reasons reported by the NRAs included the following:

⁵⁹ According to Agency's Opinion No. 04/2016 on the national ten-year electricity network development plans pursuant to Article 8(11) of Regulation (EC) No 714/2009, p. 7 "the time horizon of NDPs is 10 years for the large majority of jurisdictions (23 out of 28). Other reported practices include: 20 years in Denmark and Norway, 15 years in Estonia and Hungary, and 6 years in Spain."

- the cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP (12 instances);
- the latest NDP was prepared earlier than the EU TYNDP 2016 (6 instances)
- a mistake (2 instances)
- part of the cluster is cancelled (1 instance)
- administrative reasons (1 instance)
- the cluster was refused by the relevant Ministry (1 instance)
- part of the cluster is commissioned (1 instance)
- operational issues of certain parts of the project are not yet clarified (1 instance)
- the cluster is related to a (hydro-pump) generation project (1 instance)
- uncertainty regarding the technical scope of the project (1 instance)

In 2 instances the reason was not specified.

Table 6: Reasons for absence of transmission investments (i.e. clusters or part of them) in the EU TYNDP 2016 from the NDPs

Reason(s) for absence as reported by NRAs	Internal clusters		Interconnection clusters		Total
	Single reason was provided	Multiple reasons were provided	Single reason was provided	Multiple reasons were provided	
Commissioning date of the cluster or some of the investments within the cluster are beyond the time span of the NDP	4	2	22	8	36
The cluster or part of it is not advanced enough to enter the NDP	2	2	15	8	27
The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	1	2	8	7	18
The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	1	-	7	4	12
The latest NDP was prepared earlier than the EU TYNDP 2016	-	-	4	2	6
Due to other reason	1	-	1	-	2
Due to mistake	-	-	2	-	2

Due to administrative reasons	-	-	-	-	1	1
The cluster was refused by the relevant Ministry	-	-	-	-	1	1
Part of the cluster is commissioned	-	-	-	-	1	1
The cluster of part of it has been cancelled	-	-	-	-	1	1
Operational issues of certain parts of the project are not yet clarified	-	-	-	-	1	1
The cluster is related to a (hydro-pump) generation project	1	-	-	-	-	1
Uncertainty regarding the technical scope of the project	-	-	-	-	1	1

Table 7 and Table 8 provide more details regarding the fully and partially absent clusters and investments.

Table 7: National parts of the clusters which are not included in one or more of the relevant NDPs

Project number in the EU TYNDP 2016	Country code of the relevant NDP	Country code(s) of all the hosting country(ies)	Project name	Classification	Reason for absence	NRA proposal on how to amend the NDP and/or the EU TYNDP
31	CH	IT, CH	Italy-Switzerland	Mid-term Project	The cluster or part of it is not advanced enough to be included in the NDP	
54	SK	HU, SK	New SK-HU intercon. - phase 2	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
121	GB	BE, GB	2nd interconnector Belgium - UK	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	
133	DE	DE	Long term RES-Integration in Germany	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	The cluster should be kept in the EU TYNDP as Future Project with project status "under consideration"

141	HR	HR, HU, SI	Slovenia – Hungary Corridor	Mid-term Project	Not confirmed whether any investment takes place in Croatia ⁶⁰	No adjustment needed
168	NL	NL	Spaak NL	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
173	FR	BE, FR	FR-BE Phase 2 (study): Aubange-Moulaine	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	No adjustment needed
174	IT	CH, IT	Greenconnector	Mid-term project	Practical mistake ⁶¹	The Italian draft NDP 2016 should be amended to include project 174
174	CH	CH, IT	Greenconnector	Mid-term project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	
175	DK	DK	Great Belt II	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
179	DE	DE, DK	DKE – DE (Kontek-2)	Future project	The cluster or part of it is not advanced enough to be included in the NDP	Change the commissioning date to >2030
179	DK	DE, DK	DKE – DE (Kontek-2)	Future project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
189	GB	GB, IE, NI	Irish Scottish Links on Energy Study (ISLES)	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	

⁶⁰ Definition of jurisdiction over approximately 1200 meters of transmission line between the Slovenian and Croatian power system is underway. It is not yet known whether this segment of line will be part of Slovenian or Croatian transmission grid.

For this section of the transmission line of about 1200 meter, Slovenia (ELES) is conducting design and permitting procedures.”

⁶¹ After amendment of the NDP structure, this PCI non-TSO project was left out of the draft NDP 2016 (while it was present in NDP 2015). During the consultation, Terna TSO acknowledged it should have been included.

198	CH	DE, AT, CH	Area of Lake Constance	Long-term Project	The cluster or part of it is not advanced enough to be included in the NDP	
199	CH	FR, CH	Lake Geneva South	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	
210	AT	AT, IT	Wurmlach (AT) - Somplago (IT) Interconnection	Mid-term project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	
210	IT	AT, IT	Wurmlach (AT) - Somplago (IT) Interconnection	Mid-term project	Practical mistake ⁶²	The Italian draft NDP 2016 should be amended to include project 210
214	GB	GB, IS	Interco Iceland-UK	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
216	FR	FR	Massif Central North	Long-term Project	The cluster or part of it is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion since the project is only needed in high RES scenarios	No adjustment needed
219	CY	CY, EL, IL	EuroAsia Interconnector	Mid-term project	Operational issues of certain parts of the project is not yet clarified	No adjustment is needed for the time being
219	EL	CY, EL, IL	EuroAsia Interconnector	Mid-term project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	
229	DE	DE, PL	GerPol Power Bridge II	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
231	CH	DE, CH	Concept Project DE-CH	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	

⁶² Idem.

	DE	DE, DK	Kontek-3	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	Change the commissioning date to >2030
232	DE	DE, DK	Kontek-3	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
233	ES	ES	Spanish Pumping	Future Project	Due to other reason: There are no pumping projects in the Spanish NDP	Should not be considered in the EU TYNDP
234	PL	DK, PL	DKE-PL-1	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP ⁶³ The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	No amendments
234	DK	DK, PL	DKE-PL-1	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
237	DK	DK, NL	COBRA-2	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
237	NL	DK, NL	COBRA-2	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
238	SE	DK, SE	Kontiskan 2	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP ⁶⁴	The Swedish TSO will update its NDP during 2017
238	DK	DK, SE	Kontiskan 2	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
241	HR	BA, HR	Upgrading of existing 220 kV lines between HR and BA to 400 kV lines	Long-term Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed

⁶³ Joint PSE-Energinet.dk screening is ongoing with the aim of assessing the feasibility, challenges and benefits of a possible interconnector.

⁶⁴ Only few elements (control equipment and some other parts) are included in the NDP.

243	HR	HR, RS	New 400 kV interconnection line between Serbia and Croatia	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
245	DE	DE, NL	201 Upgrade Meeden - Diele	Mid-term project	Other reason	Change the classification of the cluster to "future project" and the present status to "under consideration"
245	NL	DE, NL	201 Upgrade Meeden - Diele	Mid-term project	The cluster or part of it was not included because the latest NDP was prepared earlier than the TYNDP 2016	No adjustment needed, but expected to be included in the next NDP
247	FR	FR, GB	AQUIND Interconnector	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	No adjustment needed
249	FR	FR	Façade Atlantique	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion The project is only needed in high RES scenarios. The commissioning date of the cluster or part of it is beyond the time span of the NDP. As a consequence, no specific details (date, capacity, etc) are given in NDP	No adjustment needed
250	IT	CH, IT	Merchant line "Castasegna (CH) - Mese (IT)"	Mid-term project	The cluster or part of it was not included because the latest NDP was prepared earlier than the TYNDP 2016 ⁶⁵	No amendments are proposed by the NRA

⁶⁵ The draft Italian NDP was finalised end of January 2016.

250	CH	CH, IT	Merchant line "Castasegna (CH) - Mese (IT)"	Mid-term project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	No adjustment needed
256	DE	DE, NL	Long-term conceptual interconnector DE-NL	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
256	NL	DE, NL	Long-term conceptual interconnector DE-NL	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
257	ES	ES, PT	Douro Spanish-Portuguese reinforcement	Future Project	The project is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP	Should not be considered in the EU TYNDP
257	PT	ES, PT	Douro Spanish-Portuguese reinforcement	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	
259	RO	HU, RO	HU-RO	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP	
260	GB	GB, NL	New Great Britain - Netherlands Interconnector	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	
260	NL	GB, NL	New Great Britain - Netherlands Interconnector	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
262	NL	BE, NL	Belgium-Netherlands: further evolution	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
263	CH	CH	Swiss Roof II	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	

267	DE	DE, SE	Hansa PowerBridge 2	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	Change the commissioning date to >2030
267	SE	DE, SE	Hansa PowerBridge 2	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	The Swedish TSO will update its NDP during 2017
268	RO	RO, RS	Upgrading existing single 400 kV interconnection line between Romania and Serbia to double 400 kV line	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP	
270	FR	ES, FR	FR-ES project -Aragón-Atlantic Pyrenees	Long-term Project	The cluster or part of it is not advanced enough to be included in the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	No adjustment needed
274	FR	CH, FR	Concept project France-Switzerland 400kV AC	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
274	CH	CH, FR	Concept project France-Switzerland 400kV AC	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	
275	FR	CH, FR	Concept project France-Switzerland HVDC	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
276	FR	ES, FR	FR-ES project -Navarra-Landes	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	No adjustment needed
277	BG	BG, SR	Third interconnector between Bulgaria and Greece	Future Project	The cluster or part of it was not included because the latest NDP was prepared earlier than the EU TYNDP 2016 The commissioning date of the cluster or part of it is beyond the time span of the NDP	
278	FR	ES, FR	Additional project France - Spain	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	No adjustment needed

278	ES	ES, FR	Additional project France - Spain	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed
279	BG	BG, EL	New double 400 kV interconnection line between Bulgaria and Serbia	Future Project	The cluster or part of it was not included because the latest NDP was prepared earlier than the EU TYNDP 2016 The commissioning date of the cluster or part of it is beyond the time span of the NDP	
279	EL	BG, EL	Third interconnector between Bulgaria and Greece	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	
280	FR	BE, FR	FR-BE Phase 3 (study)	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	No adjustment needed
281	FR	ES, FR, GB	ANAI: Abengoa Northern Atlantic Interconnection	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	Should not be considered in the EU TYNDP
281	ES	ES, FR, GB	ANAI: Abengoa Northern Atlantic Interconnection	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	Should not be considered in the EU TYNDP
282	FR	ES, FR, IT	ASEI: Abengoa Southern Europe Interconnection	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	Should not be considered in the EU TYNDP

	ES	ES, FR, IT	ASEI: Abengoa Southern Europe Interconnection	Future Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	Should not be considered in the EU TYNDP
282	IT	ES, FR, IT	ASEI: Abengoa Southern Europe Interconnection	Future Project	The cluster or part of it was not included because the latest NDP was prepared earlier than the EU TYNDP 2016	Project 282 should be deleted from the EU TYNDP 2016
283	IT	IT, TN	TuNur	Future Project	The cluster or part of it was not included because the latest NDP was prepared earlier than the EU TYNDP 2016 ⁶⁶	No amendments are proposed by the NRA
284	EL	EG, EL, LY	LEG1	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	
285	FR	FR, GB	GridLink	Future Project	The cluster or part of it is not advanced enough to be included in the NDP The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	No adjustment needed
287	GB	GB, IE	Greenwire South	Future Project	The cluster or part of it is not included in the latest NDP due to administrative reasons ⁶⁷	
289	GB	GB, IE	MAREX UK-Ireland Intrconnector	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	
292	GB	GB, IE	Greenconnect	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	
293	EL	EL	Southern Aegean Interconnector	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP	

⁶⁶ The draft Italian NDP was finalised end of January 2016 and received AEEGSI evaluation on 4 November 2016 (before the draft EU TYNDP 2016 submission to ACER)

⁶⁷ The NDP is still in the drafting phase.

294	GB	GB, NO	Maali	Future Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	Should not be considered in the EU TYNDP
296	ES	ES, FR, GB	Britib	Future Project	Rejected by the Ministry	Should not be considered in the EU TYNDP
296	FR	ES, FR, GB	Britib	Future Project	The cluster or part of it is a non-TSO project and non-TSO projects are normally not included in the NDP The commissioning date of the cluster or part of it is beyond the time span of the NDP The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	Should not be considered in the EU TYNDP

Table 8. National parts of the clusters which are only partially included in one or more of the relevant NDPs

Project number in the EU TYNDP 2016	TYNDP 2016 Investment Index	Country code of the relevant NDP	Country code(s) of the hosting country(ies) ⁶⁸	Project name	Classification	Reason for absence	NRA proposal on how to amend the NDP and/or the TYNDP
2	8, 478, 481	PT	PT	RES in center of Portugal	Mid-term Project	The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	Investment items will be deleted from NDP according to last draft NDP ⁶⁹
35	315, 316	CZ	CZ	CZ Southwest-east corridor	Long-term Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No amendments are proposed by the NRA

⁶⁸ These are all hosting countries of the investments within the cluster. In parenthesis are those countries which are not hosting the respective investment items in the 2nd column.
⁶⁹ 2015 NDP was not approved but was amended and those investment items are to be deleted.

94	799	PL	(DE), PL	GerPol Improvements	Mid-term project	The cluster or part of it has been commissioned	No amendments are proposed by the NRA
103	441, 442	NL	NL	Reinforcements Ring NL	Long-term Project	The commissioning date of the cluster or part of it is beyond the time span of the NDP	No adjustment needed, but expected to be included in the next NDP
136	619	HR	(BA), HR	CSE1	Mid-term project	Uncertainty regarding the technical scope of the project ⁷⁰	No adjustment needed
142	256	BG	BG, EL	CSE 4 (2nd BG-GR interconnector and South BG corridor)	Mid-term project	The cluster or part of it is not advanced enough to be included in the NDP	
142	256	EL	BG, EL	CSE 4 (2nd BG-GR interconnector and South BG corridor)	Mid-term project	The cluster or part of it is not advanced enough to be included in the NDP	
170	1063, 1064, 1065	LV	(EE), LT, LV	Baltic synchronization	Future Project	The cluster or part of it is not advanced enough to be included in the NDP	No adjustment/action is needed
198	984	DE	(AT, CH), DE	Area of Lake Constance	Long-term Project	The cluster or part of it has been cancelled ⁷¹	Change the present status of investment 984 to “under consideration”
	136					The necessity of the cluster or part of it is not confirmed by the NRA or still under discussion	No amendments are proposed by the NRA
265	1289, 1290	CH	CH	Swiss Ellipse II	Long-term Project	The cluster or part of it is not advanced enough to be included in the NDP	
276	1210	ES	ES, (FR)	FR-ES project - Navarra-Landes	Long-term Project	Due to other reason	This specific investment item should be removed

⁷⁰ A preliminary assessment study is ongoing to have one substation instead of 2.

⁷¹ This project is not part of the Federal Requirements Plan (BBPIG) anymore.

from the EU TYNDP (not the whole project)						

C. Investments in the NDPs which have a cross-border relevance, but do not appear in the EU TYNDP 2016

As shown in Table 9, 7 investments (corresponding to 8 national parts) have been mentioned by NRAs as having a cross-border relevance, but do not appear in the EU TYNDP 2016. 3 of them are hosted by 2 EU Member States, one is a cross-border investment hosted by an EU Member State and an Energy Community Contracting Party and 3 are internal projects. None of these projects have applied for inclusion in the EU TYNDP 2016 according to ENTSO-E's database on the list of projects for assessment (published in November 2015)⁷².

⁷² <https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP%202016/rgips/Project%20list%20TYNDP2016%20assessments.xlsx>

Table 9. Clusters which have cross-border relevance in NDPs and do not appear in the EU TYNDP 2016

Country code	Investment number / reference in the NDP	Substation 1	Substation 2	Investment item description	Status	Commissioning date	Remarks by the NRA
IT	207-P	Udine Ovest (IT)	Redipuglia (IT)	380 kV Udine O. – Udine S. - Redipuglia, one line, three substations and minor interventions	permitting ⁷³	2018	The ENTSO-E TYNDP 2016 should include this project. It should be categorised as mid-term project. Transfer Capacity: 600 MW
IT	208-P	Prati di Vizze (IT)	Steinach (AT)	132/110 kV line, 1 substation and minor interventions	permitting	2019	The EU TYNDP 2016 should include this project. It is acknowledged that 208-P has a voltage below TYNDP thresholds chosen by ENTSO-E, however it has impact on the transfer capacity. (i.e. 100 MW) It should be categorised as mid-term projects.
IT	5-S	Avisé (IT)	Chatillon (IT)	Reconstruction 220 kV line Avisé - Villeneuve - Chatillon close to FR-CH border	Under consideration	Beyond 2025	The EU TYNDP 2016 should include this project. It should be categorised as future project.
IT	605-S	Partanna (IT)	Ciminna (IT)	new 380 kV line and 380 kV upgrade of Partanna substation, in relation to the possible interconnection with Northern Africa	under consideration	Beyond 2025	The EU TYNDP 2016 should include this project. It should be categorised as future project.
IT	205-S	Udine Sud (IT)	Okroglo (SI)	380 kV new interconnection line	under consideration	Beyond 2025	The EU TYNDP 2016 should include this project. It should be categorised as future project.

⁷³ Re-permitting after partial construction and authorisation withdrawal

SI	I-69	Okroglo (SI)	Udine (IT)	2x400kV OHL	Beyond 2025	
SK	2016-14	Varín (SK)	Nošovice (CZ)	It consists of refurbishment of existing 400kV line and will serve as substitution of two 220kV cross-border lines between SK and CZ to be decommissioned between 2022 and 2026.	2025	Transfer capacity of refurbished line will be increased, but cross-border impact is negligible.
RO	F5	Suceava (RO)	Balti (MD)	OHL 400 kV Suceava - Balti	2023	This project appears in the Regional Investment Plan Continental Central East region
						Planned but not yet in permitting
						Data not provided

D. Substantial differences of the investments in the NDPs and in the EU TYNDP 2016

The Agency requested the NRAs to highlight any substantial difference between the EU TYNDP 2016 and the NDPs. The NRAs identified in total 71 substantial differences regarding 40 national parts of clusters. (In 23 cases a single difference was indicated for the cluster or part of it, while in 47 cases multiple differences were reported.) If a data (e.g. cost, transfer capacity) is (in general) not available in the NDP, it is not highlighted in this Opinion as a difference.

As shown in Table 10, the most common substantial difference which was reported is the commissioning date of one or more investments. This difference was reported in the case of 24 national parts⁷⁴. Further, NRAs reported substantial differences in terms of transfer capacity (regarding 13 national parts), clustering (regarding 8 national parts), technical description (regarding 5 national parts), costs (regarding 5 national parts), status (regarding 4 national parts) and classification (regarding 2 national parts) of the clusters and/or part of it. In 13 instances, other substantial differences were reported, most of them (regarding 9 national parts) relate to the classification and/or necessity of the project or part of it.

Based on the differences, the Agency notes that the EU TYNDP 2016 is optimistic in terms of commissioning date, as most of the relevant NDPs included later expected dates of commissioning⁷⁵. Regarding the status of the investments, in all 4 instances the EU TYNDP 2016 included a more advanced stage for the cluster than the respective NDP. For the rest of the differences (transfer capacity, technical description, clustering, and costs) no clear patterns were identified.

The data available in the EU TYNDP 2016 and in the NDPs as well as the detailed reasons for substantial difference are provided in Table 11.

⁷⁴ The commissioning date is provided on investment item level in the EU TYNDP 2016. The 24 clusters correspond to 40 investments of the EU TYNDP 2016 clusters.

⁷⁵ Out of the 40 investments of the EU TYNDP 2016 clusters, 31 (83%) have an earlier expected date of commissioning in the EU TYNDP 2016 compared to the respective NDP.

Table 10: Number of national parts of clusters per reported substantial differences between the EU TYNDP 2016 and the national development plans

	Single difference		Multiple differences		Total
Commissioning date		10	14		24
Transfer capacity		6	7		13
Other substantial difference		5	8		13
Clustering of investments		2	6		8
Costs of the cluster		1	3		4
Technical description		0	5		5
Status		0	4		4
Total		24	47		71

Table 11: Substantial differences between the EU TYNDP 2016 and NDPs in terms of clusters' characteristics

Project number in the EU TYNDP 2016	Reporting NRA	EU TYNDP 2016: Project name ⁷⁶	EU TYNDP 2016 Investment Index	Hosts of the investment	Difference, as reported by NRAs	Data in EU TYNDP 2016	Data in NDP	Recommendations by NRAs
21	FR	Italy - France	All	FR, IT	Transfer capacity	1000 MW (IT-FR) and 1200 (FR-IT)	1200 MW (in both ways)	The NDP will be modified to indicate that 1200 MW refers to the physical capacity of the interconnector, whereas 1000 MW refers to the commercial capacity
26	IT	Austria - Italy	All	AT, IT	Clustering of the investments		Three clusters in the Italian NDP: 100-I 220 kV Nauders - Glorenza, 204-P	Two different cluster (i) Nauders - Glorenza and ii) rest of cluster 26) should be

⁷⁶ In some cases hosting countries are added in parenthesis.

29	IT	Italy - Tunisia	All	IT, IT, TN	Commissioning date	2024	Interconnection IT-AT, 206-P Volpago substation	presented. Nauders - Glorenza should be a mid-term cluster in the EU TYNDP 2016
					Commissioning date	2025		
31	IT	Italy-Switzerland	All	CH, IT	Technical description	New interconnection between Italy and Tunisia - new DC submarine cable	No technical description (e.g. no voltage) in the Italian draft NDP 2016, albeit usually reported for all projects	Cluster 29 should be amended. It should be categorised as "future project" in the EU TYNDP 2016. Status in the EU TYNDP 2016 should be "under consideration"
					Transfer capacity	600MW		
					Commissioning date	2022	No commissioning date in the Italian draft NDP 2016, albeit usually reported for all projects	
					Status	Planning	Under consideration	
					Costs of the cluster	600 ±90 M€	No cost in the Italian draft NDP 2016, albeit usually reported for all projects	
					Other substantial difference	Mid-term project	Under consideration	
Clustering of the investments		Three clusters in the Italian draft NDP 2016: 1-I interconnection, 104-P Cassano - Chiari, 126-P Magenta. No interdependence mentioned.	It should be a long-term cluster in the EU TYNDP 2016					
				Commissioning date	2022			

					Commissioning date	2020	2025	
33	IT	Central Northern Italy	All	IT	Clustering of the investments		In the Italian draft NDP 2016, there are two projects: 302-P Calenzano - Colunga and 432-P removing limitations 220 kV	Amendment: cluster 33 should be classified as long-term project in the EU TYNDP 2016
					Commissioning date	2020		
					Transfer capacity	400MW	600MW	
					Commissioning date	2022	2025	
36	DK	Kriegers Flak CGS (DE, DK)	141	DK, DE	Transfer capacity	Delta GTC (2020): DKE-DE: 400 MW DE-DKE: 150 MW Delta GTC (2030): DKE-DE: 150 MW DE-DKE: 150 MW	Transfer capacity: DKE-DE: 400 MW DE-DKE: 400 MW	
					Transfer capacity	Delta GTC (2020): DKW-DE: 1000 MW DE-DKW: 700 MW Delta GTC (2030): DKW-DE: 700 MW DE-DKW: 1000 MW	Transfer capacity: DKW-DE: 860 MW DE-DKW: 1000 MW	
					Transfer capacity	900 MW	No indication of transfer capacity in NDP	NDP should not only concentrate on costs, but also
					Transfer capacity	900 MW		
39	DK	DKW-DE, step 3	144	DE, DK	Transfer capacity			
					Transfer capacity			
40	LU	Luxembourg-Belgium Interco	All	BE, LU	Transfer capacity			
					Transfer capacity			

47	DE	Austria - Germany	689	DE, AT	Commissioning date	2020	2023	needs to indicate the additional transfer capacity and the corresponding detailed CBA.
					Other substantial difference	Mid-term	The investment is part of the NDP but the necessity is not approved by NRA	
48	SK	New SK-HU intercon. - phase 1	214	HU, SK	Transfer capacity	Delta GTC (2020): HU-SK: 200MW, SK-HU: 1550MW Delta GTC (2030): HU-SK: 950MW, SK-HU: 2400MW	Capacity contribution is different due to different methodology and approaches used for calculation	
					Commissioning date	2019	Commissioning date is 2020 (in line with last agreements between Slovak and Hungarian TSOs)	
					Other substantial difference		The line Gabčíkovo - Veľký Ďur was commissioned in November 2016	
			695		Transfer capacity		Capacity contribution is different due to different methodology and approaches used for calculation	

			695		Commissioning date	2019	Commissioning date is 2020 (in line with last agreements between Slovak and Hungarian TSOs)
48	HU	New SK-HU intercon. - phase 1	214	HU, SK	Commissioning date	2019	Commissioning date is 2020 (in line with last agreements between Slovak and Hungarian TSOs)
			695		Commissioning date	2019	Commissioning date is 2020 (in line with last agreements between Slovak and Hungarian TSOs)
94	DE	GerPol Improvements	139	DE, PL	Clustering of the investments		The investment is clustered with other investments in the NDP (50HzT-003).
			139	DE, PL	Other substantial difference		The investment is also part of the German "Energieleitungsausbaugesetz " (EnLAG) and the segment between Vierraden - Krajnik is already realised.
94	PL	GerPol Improvements	992	DE	Clustering of the investments		The investment is clustered to a different project in NDP (50HzT-P128).
			139	DE, PL	Other substantial difference		Are together as one item. Description II 42 Expansion and upgrade of the 400/220 kV Krajnik substations
127	IT	Central Southern Italy	796	PL	Other substantial difference		Are together as one item. Description II 42 Expansion and upgrade of the 400/220 kV Krajnik substations
			All	IT	Clustering of the investments		4 partly interdependent clusters in the Italian draft
							No amendments

150	IT	Italy-Slovenia	All	IT, SI	Technical description	New HVDC interconnection between Italy and Slovenia	Lack of related info in the Italian draft NDP 2016, albeit this is usually reported	No amendments related to inconsistencies. However, project 150 should be classified as "future project" in the EU TYNDP 2016 as long it is still under consideration on the Slovenian side.			
									Transfer capacity	950MW	Lack of related info in the Italian draft NDP 2016, albeit this is usually reported
									Commissioning date	2022	Lack of related info in the Italian draft NDP 2016, albeit this is usually reported
									Costs of the cluster	870 M€	Lack of related info in the Italian draft NDP 2016, albeit this is usually reported
158	FR	Massif Central South (FR)	All	FR	Technical description	3000MW	Studies are ongoing	No adjustment needed			
									Transfer capacity	2000MW	The NDP will be modified (the correct capacity is 3000 MW)
									Commissioning date	2021	
164	DE	N-S Eastern DE_central section	149 149	DE	Clustering of the investments	2022	In the NDP the line ends in "Sottrum", but it passes "Dollern" on its way				
									Status	Permitting	
									Commissioning date	2022	
									Commissioning date	2025	
170	LT	Baltic synchronisation (in EE, LT, LV)	1010 1011	EE, LV EE, LT	Commissioning date	2025	2024	Substantial differences should be amended by conversation between relevant TSOs and NRAs. Any differences should be discussed to find common targets.			
									Commissioning date	2025	
									Commissioning date	2025	
172	FR	Eieclink (FR-GB)	All	FR, GB	Commissioning date	2018	2019	The EU TYNDP should be modified (the NDP is more up to date)			

183	DK	DKW-DE, Westcoast (DE, DK)	1018	DE, DK	Transfer capacity	Delta GTC (2020): DKW-DE: 500 MW DE-DKW: 500 MW Delta GTC (2030): DKW-DE: 500 MW DE-DKW: 500 MW	Transfer capacity: DKW-DE: 1000 MW DE-DKW: 1000 MW	
192	DE	OWP Northsea TenneT Part 3	659	DE	Commissioning date	2026	2025	
198	DE	Area of Lake Constance (AT, CH, DE)	985	DE	Commissioning date	2019	2020 (2019 the earliest)	
199	FR	Lake Geneva South (CH, FR)	All	CH, FR	Technical description	line between Cornier (FR) and Chavalon (CH)	line between Cornier (FR) and Riddes (CH)	No adjustment needed
					Commissioning date	2026	After 2030	The EU TYNDP should be modified (the NDP is more up to date)
					Other substantial difference		"French NDP states that studies didn't prove sufficient profitability of the project, and are thus suspended. The EU TYNDP states that in-depth feasibility studies are needed".	The EU TYNDP should be modified (the NDP is more up to date)
206	DE		682	DE	Commissioning date	2020	2025	

				682		Other substantial difference	Long-term	The investment is part of the NDP but the necessity is not approved by NRA	Change classification of investment 682 to “future” or if not possible because of the clustering change the present status to “under consideration
				688		Commissioning date	2024	2026 ⁷⁸	
				688		Other substantial difference	Ending point Großgartach	Ending Point Pulverdingen	Change ending point Großgartach to Pulverdingen
				990		Commissioning date	2020	2022 ⁷⁹	
207	DE	Reinforcement Northwestern DE	DE	675		Other substantial difference	Long-term	The investment is part of the NDP but the necessity is not approved by NRA	Change classification of investment 675 to “future” or if not possible because of the clustering change the present status to “under
225	DE	2nd interconnector Belgium - Germany	BE, DE	All		Other substantial difference	Long-term	The investment is new in the NDP. Therefore, the necessity is not approved by NRA yet. The necessity will be examined during the ongoing NDP process.	No amendments
228	FR	Muhlbach – Eichstetten (DE, FR)	DE, FR	All		Transfer capacity	300 MW	150 MW to 300 MW	The EU TYNDP should be modified (the NDP is more up to date)
230	PL	GerPol Power Bridge I (PL)	PL	355		Commissioning date	2021	2022	The reason for difference is submitting project information in different periods of time.
				1035		Commissioning date	2020	2021	
				1232		Commissioning date	2020	2022	The reason for difference is submitting project information in different periods of time.

⁷⁸ In the NDP the commissioning date is also 2024, based on recent national monitoring the expected commissioning date is 2026.

⁷⁹ In the NDP the commissioning date is also 2020, based on recent national monitoring the expected commissioning date is 2022.

231	DE	DE	Concept Project DE-CH	1282	CH, DE	Other substantial difference		The investment is new in the NDP. Therefore, the necessity is not approved by NRA yet. The necessity will be examined during the ongoing NDP process.	No amendments
240	DE	DE	380-kV-grid enhancement between Area Güstrow/Bentwisch and Wolmirstedt (DE)	1242	DE	Other substantial difference	Mid-term	The investment is new in the NDP. Therefore, the necessity is not approved by NRA yet. The necessity will be examined during the ongoing NDP process.	Change the classification of investment 1242 to “future” or if not possible because of the clustering change the present status to “under consideration”.
242	DE	DE	Offshore Wind Baltic Sea (I) (DE)	194	DE	Clustering of the investments		EU TYNDP investment 194 is a roundup of NDP investments	No amendments
244	DE	DE	Vigy – Uchtelfangan area (DE, FR)	1245	DE, FR	Other substantial difference		The investment is new in the NDP. Therefore, the necessity is not approved by NRA yet. The necessity will be examined during the ongoing NDP process.	Change the classification of investment 1245 to “future” or if not possible because of the clustering change the present status to “under consideration”.
248	DE	DE	Offshore Wind Baltic Sea (II) (DE)	1248	DE	Clustering of the investments		TYNDP investment 1248 is a roundup of NDP investments.	No need for amendments.
253	FR	FR	Upstream reinforcement in France to increase FR-CH capacity	All	FR	Commissioning date	2020	After 2030	The EU TYNDP should be modified (the NDP is more up to date)
						Other substantial difference		French NDP states that studies didn't prove sufficient profitability of the project, and are thus suspended. The EU TYNDP states a commissioning date of 2020	The TYNDP should be modified (the NDP is more up to date)

258	DE	Westcoast Line (DE)	667	DE	Commissioning date	2018	2019 ⁸⁰	
299	IT	SACOI3 (FR, IT)	All	FR, IT	Technical description	New HVDC line between Italy mainland, Corsica and Sardinia replacing the existing link SACOI2	No information in the Italian draft NDP 2016 (the project is under consideration)	Amend the EU TYNDP 2016 to classify the project 299 as "future project" and to indicate status "under consideration"
					Transfer capacity	400 MW	No information in the Italian draft NDP 2016 (the project is under consideration)	
					Commissioning date	2023	No information in the Italian draft NDP 2016 (the project is under consideration)	
					Status	Design	Under consideration	
					Costs of the cluster	700 ±50 (M€)	No information in the Italian draft NDP 2016 (the project is under consideration)	

Section E: Storage projects

The Agency received an assessment on 7 storage projects from two Member States: 6 from Spain and 1 from Italy (promoted by the Italian TSO). With regard to the EU TYNDP 2016 storage projects in Spain (project number 1011, 1012, 1017, 1018, 1019, 1020 of the TYNDP 2016) the Agency notes that the storage projects in general are not part of the Spanish NDP and the NRA proposed not to consider them in the EU TYNDP 2016. In Italy, the EU TYNDP 2016 storage project (project number 1008) is considered in the NDP and the NRA's position on the project is that it should be only "under consideration" both in the Italian NDP and in the EU TYNDP 2016.

⁸⁰ In the NDP the commissioning date is also 2018, based on recent national monitoring the expected commissioning date is 2019.