

**OPINION No 04/2021
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS**

of 3 May 2021

**ON THE ELECTRICITY PROJECTS IN THE DRAFT ENTSO-E TEN-
YEAR NETWORK DEVELOPMENT PLAN 2020**

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators¹, and, in particular, Articles 4(3)(b) and Article 4(5) thereof,

Having regard to Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity, and, in particular, Article 32(2) and Article 48(2) thereof,

Having regard to the outcome of the consultation with the ACER's Electricity Working Group,

Having regard to the favourable opinion of the Board of Regulators of 28 April 2021, delivered pursuant to Article 22(5) of Regulation (EU) 2019/942,

Whereas:

1. INTRODUCTION

- (1) Article 32(2) of Regulation (EU) 2019/943 requires the European Network of Transmission System Operators for Electricity ('ENTSO-E') to submit the draft Union-wide network development plan ('the EU TYNDP') to the European Agency for the Cooperation of Energy Regulators ('the Agency') for its opinion.
- (2) Pursuant to Article 4(3)(b) of Regulation (EU) 2019/942, the Agency may provide an opinion to ENTSO-E, in accordance with the first subparagraph of Article 32(2) of Regulation (EC) 2019/943, on the EU TYNDP, taking into account the objectives of

¹ OJ L158, 14.6.2019, p. 22.

non-discrimination, effective competition and the efficient and secure functioning of the internal markets in electricity and natural gas.

- (3) Pursuant to Article 4(5) of Regulation (EU) No 2019/942, the Agency shall, based on matters of fact, provide a duly reasoned opinion as well as recommendations to ENTSO-E, the European Parliament, the Council and the Commission, where it considers that the draft TYNDP does not contribute to non-discrimination, effective competition and the efficient functioning of the market or a sufficient level of cross-border interconnection open to third-party access, or do not comply with the relevant provisions of Regulation (EU) 2019/943 and Directive (EU) 2019/944.
- (4) The second subparagraph of Article 32(2) of Regulation (EU) 2019/943 requires that the Agency provides, within two months from the day of receipt, a duly reasoned opinion as well as recommendations to ENTSO-E and to the Commission where it considers that the draft TYNDP submitted by ENTSO-E does not contribute to non-discrimination, effective competition, the efficient functioning of the market or a sufficient level of cross-border interconnection open to third-party access.
- (5) Article 48(2) of Regulation (EU) 2019/943 tasks the Agency to assess the consistency of the national ten-year network development plans ('the NDPs') with the EU TYNDP. If the Agency identifies inconsistencies between a NDP and the EU TYNDP, it shall recommend amending the NDP or the EU TYNDP as appropriate. If such NDP is elaborated in accordance with Article 51 of Directive (EU) 2019/944 of the European Parliament and of the Council, the Agency shall recommend that the competent national regulatory authority ('NRA') amend the NDP in accordance with Articles 51(7) and 51(8) of that Directive and inform the Commission thereof.
- (6) The Agency considers as 'national ten-year network development plans' pursuant to Article 48 of Regulation (EU) 2019/943 all relevant network planning instruments, even if they are referred to with a different title (e.g. investment plan) or a different time span.
- (7) This Opinion provides the Agency's assessment on the projects included in the draft EU TYNDP 2020, including an assessment of consistency of the projects in the NDPs of the EU Member States and Norway² with the projects in the draft EU TYNDP 2020.

2. PROCEDURE

- (8) On 15 February 2021, ENTSO-E submitted the draft EU TYNDP 2020 to the Agency.

² As a Member of the European Economic Area

- (9) In parallel³, the Agency invited the NRAs to review projects and corresponding investments in the draft EU TYNDP 2020 which are located on the territory of their country and assess them, including their consistency with projects in NDPs.
- (10) NRAs have provided the Agency with specific information on the national parts⁴ of transmission investments and storage projects in the draft EU TYNDP 2020 and on those investments with cross-border relevance, which appear in their NDPs but not in the draft EU TYNDP 2020.
- (11) The data collection from NRAs was completed on 28 March 2021. By this date, 27 NRAs (including 26 EU Member States and Norway) provided input to the Agency. The list of the participating countries along with the number and share of the reviewed transmission investments and storage projects is presented in Table 6 in Annex I.

3. GENERAL INFORMATION ABOUT THE PROJECTS IN THE DRAFT EU TYNDP 2020

- (12) The draft EU TYNDP 2020 contains a description and assessment of 154 transmission projects, with 321 corresponding investment items, and 26 storage projects. Table 1 presents the numbers of transmission projects and investments as well as of the storage projects in the draft EU TYNDP 2020 and in the three previous EU TYNDPs.

Table 1. Number of transmission and storage projects in the draft EU TYNDP 2020 and in the three previous EU TYNDPs

| | | EU TYNDP 2014 | EU TYNDP 2016 | EU TYNDP 2018 | draft EU TYNDP 2020 |
|---------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------------|
| Transmission | Number of projects | 127 | 168 | 165 | 154 |
| | Number of investments | 371 | 420 | 359 | 321 |
| Storage | Number of projects | | | 20 | 26 |

- (13) The overall investment costs of the transmission and storage projects in the draft EU TYNDP 2020 are presented in Table 2, according to their status provided in the draft EU TYNDP 2020 project sheets.

³ On 10 February 2021, the NRAs were requested to start review the investments included in the already published draft EU TYNDP 2020 project sheets.

⁴ In this Opinion the part of the draft EU TYNDP 2020 investment which belongs to a country is called “national part of an investment”. E.g. if a project or investment 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 consisting of the part of the interconnector located in country B.

- (14) The Agency notes that the number of transmission investments slightly decreased, while the total investment costs remained about the same in comparison with the draft EU TYNDP 2018⁵. The share of investments in different advancement status only slightly changed. About 30% of the investments are under consideration, 25% planned, but not yet in permitting, while 45% are more advanced (i.e. in permitting or already under construction)⁶.

Table 2. Cost of transmission investments and storage projects according to their status

| Investment status | Number of transmission investments | Cost of transmission investments (billion EUR) | Number of storage projects | Cost of storage projects (billion EUR) |
|------------------------------------|------------------------------------|--|----------------------------|--|
| Under consideration | 95 | 55.54 | 11 | 4.93 |
| Planned, but not yet in permitting | 82 | 22.29 | 3 | 1.67 |
| In permitting | 82 | 43.51 | 12 | 10.88 |
| Under construction | 61 | 15.02 | 0 | 0 |
| Total | 320⁷ | 136.36 | 26 | 17.48 |

4. ASSESSMENT OF THE PROJECTS IN THE NDPS AND THE EU TYNDP

4.1. Investments in the EU TYNDP 2020 which are not included in the respective NDP(s)

- (15) Pursuant to Article 30(1)(b) and 48(1)(a) of Regulation (EU) 2019/943, ENTSO-E shall develop an EU TYNDP which is built on the NDPs.
- (16) The Agency welcomes that the draft EU TYNDP 2020 provides, for each project, the list of the NDPs which include the respective project, but regrets that the projects in the draft EU TYNDP 2020, which are not included in any NDP and the reason for their non-inclusion, are not clearly flagged.

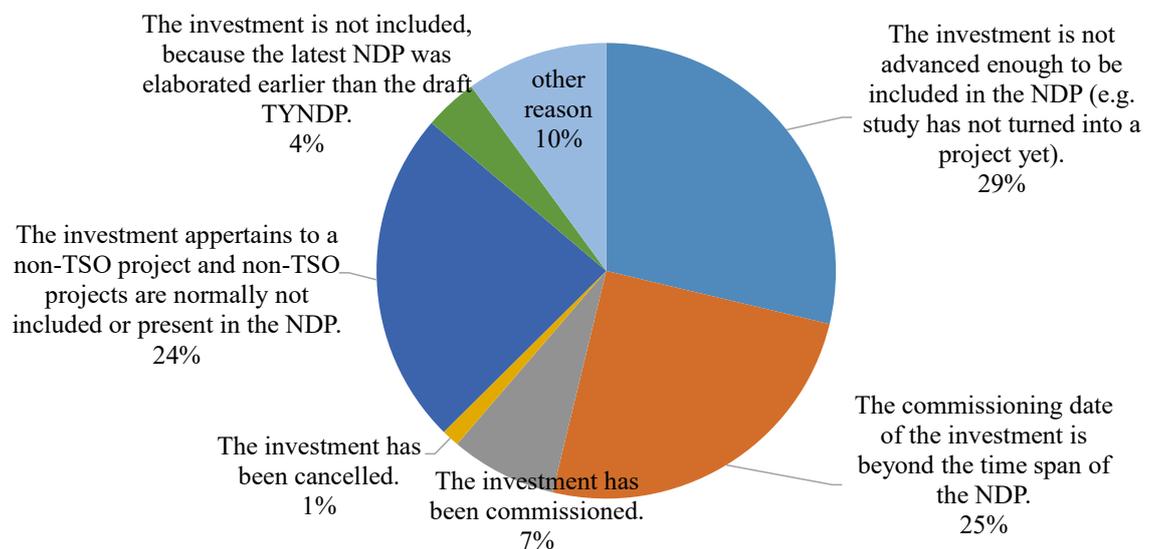
⁵ Total transmission investment cost of 136.441 million EUR is reported in the Agency's Opinion No 11/2019, excluding the costs of 9 investments for which the values were not provided in the draft EU TYNDP 2018.

⁶ Compared to the TYNDP 2018, the share of the investments that are "under construction" and "under consideration" increased by 4% and 6%, while the percentage of those "in permitting" decreased by 9%. The share of investment with the advancement status "planned, but not yet in permitting" only changed for 1%.

⁷ Investment 1565 ('*Reconstruction of 330 kV OHL LE-Vilnius*') of project 170 ('*Reconstruction of 330 kV OHL LE-Vilnius from single-circuit into double-circuit*') is not included in the table, because it is already commissioned. Its cost reported in the draft EU TYNDP 2020 is 0.02 billion EUR.

- (17) Out of the 355 national parts of transmission investments, the NRAs confirmed that 275 national parts (or 77%) are included in the relevant NDPs and 80 national parts (or 23%) are not included in the relevant NDPs.
- (18) Figure 1 presents the summary of the reasons why some draft EU TYNDP 2020 transmission investments are absent from the relevant NDPs. The most common reasons for a draft EU TYNDP 2020 transmission investment's absence in the NDP are the same as in EU TYNDP 2018, namely the investment is insufficiently advanced for entering the NDP or the commissioning date of the investment is beyond the NDP's time span. In 19 instances the investment is not included in a relevant NDP because it corresponds to a third-party project and in that specific country third-party projects are generally not included in the NDP.

Figure 1: Reasons for the EU TYNDP 2020 transmission investments' absence in the NDPs



- (19) Out of the 22 assessed storage projects, approximately third of them are included in the relevant NDPs. The remaining storage projects are not included in the NDPs due to general non-inclusion of the storage projects in the NDPs of the concerned countries.
- (20) Transmission investments or storage projects excluded from the relevant NDPs are listed in Table 7 and Table 8 in Annex I, according to the reasons for their absence.
- (21) In the Agency's view the actual implementation of the EU TYNDP transmission projects strongly relies on the NDPs. Non-inclusion of a transmission project (or part of it) in the NDP due to other reasons than the commissioning of a project, cancellation of a project, time difference in the elaboration of the plans or the limited scope of the NDP (e.g. when it does not include third-party projects) raises doubts about the credibility and feasibility of the implementation of the concerned projects and therefore the reason for non-inclusion in the NDP is an important information regarding the TYNDP transmission projects.

- (22) The Agency recommends ENTSO-E that in those instances where a transmission project (or part of it) is not included in the NDP of a hosting Member State, this feature should clearly be flagged and the reason for such absence should be provided in the EU TYNDP.
- (23) The Agency reiterates its view that the NDPs' scope should be expanded to allow the inclusion of third-party projects, where it is not yet the case⁸.

4.2. Investments with cross-border relevance not included in the draft EU TYNDP 2020

- (24) NRAs reported on the following 5 projects, which have cross-border relevance and are included in an NDP as a planned or more advanced investment, but do not appear in the draft EU TYNDP 2020:
- a. Italian-Swiss interconnection "*Italy - Switzerland S. Giacomo project*" (planned, but not yet in permitting);
 - b. Italian-Austrian interconnection '*Dobbiaco (IT) – Austria (AT)*'⁹ (planned, but not yet in permitting);
 - c. Italian internal project '*Volpago substation*' (planned, but not yet in permitting);
 - d. Italian-French interconnection '*HVDC Italy France*' (under construction);
 - e. Romanian internal project '*OHL 400 kV s. c. Oradea Sud-Nadab*' (commissioned);
- (25) Additionally NRAs flagged the following under consideration projects, which have cross-border relevance, while they do not appear in the draft EU TYNDP 2020:
- a. Cypriot-Egyptian interconnection '*Euroafrica interconnector*';
 - b. Romanian internal project '*OHL 400 kV s.c. Gadalin-Suceava*';
 - c. Romanian-Moldavian interconnection '*OHL 400 kV s. c. Suceava-Balti*';
 - d. Romanian-Hungarian interconnection '*OHL 400 kV Nadab-Bekescsaba circ.2 and 400 kV Nadab substation works*'
- (26) Additional information about the above projects is provided in Table 9 in Annex I.

⁸ ACER Opinion No 13/3019 (p. 58)

⁹ The Austrian NRA reported that '*Dobbiaco (IT) – Austria (AT)*' is not part of the Austrian NDP, because the distribution system operator is the counterpart.

- (27) Based on the information published on ENTSO-E's website¹⁰, the interconnection project between Cyprus and Egypt "*Euroafrica interconnector*" applied for inclusion in the EU TYNDP 2020 after the submission deadline and was rejected by the ENTSO-E for this reason.
- (28) The Agency notes that under the current EU TYNDP process, the inclusion of cross-border relevant projects in the EU TYNDP solely depends on project promoters' voluntary applications, with a risk to bypass the EU-level scrutiny of a project, if the project promoter does not apply for inclusion in the EU TYNDP.
- (29) In line with its previous recommendation, the Agency stresses that ENTSO-E should include all the planned projects with cross-border relevance from the NDPs in the EU TYNDP¹¹, and that cross-border relevant projects in the NDPs should be flagged explicitly¹².

4.3. Investments of TYNDP 2018 which are not present in the draft TYNDP 2020

- (30) The Agency notes that there are 92 transmission investments which were included in the EU TYNDP 2018, but are neither included in the draft EU TYNDP 2020, nor is their absence explained by ENTSO-E.
- (31) Based on the information provided by the NRAs, the Agency identified that about one third of them are either cancelled or commissioned. They are presented in Table 10 and Table 11, while the remaining investments are listed in Table 12 in Annex I.
- (32) The Agency is of the view that all commissioned and cancelled investments should enter the subsequent EU TYNDP for monitoring purposes (i.e. without a CBA assessment).
- (33) For the remaining investments which are no longer included in the draft EU TYNDP 2020 in comparison to the previous edition, ENTSO-E should provide a valid explanation for their non-inclusion.

4.4. Projects in the draft EU TYNDP 2020 proposed to be excluded

- (34) Based on the information published on ENTSO-E's website¹³, the project "*Online Grid Controller PSKW-Rio*" applied for inclusion in the EU TYNDP 2020 after the submission deadline and was rejected by the ENTSO-E for this reason. However, the

¹⁰

https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP2020/201102_TYNDP2020_Portfolio_updated.xlsx

¹¹ See also ACER Opinion No 01/2017 (p.5)

¹² See also ACER Opinion No 13/3019 (p. 58)

¹³

https://www.entsoe.eu/Documents/TYNDP%20documents/TYNDP2020/201102_TYNDP2020_Portfolio_updated.xlsx

project appears to be finally included in the draft EU TYNDP 2020 despite its initial rejection and without a reasoning provided by ENTSO-E.

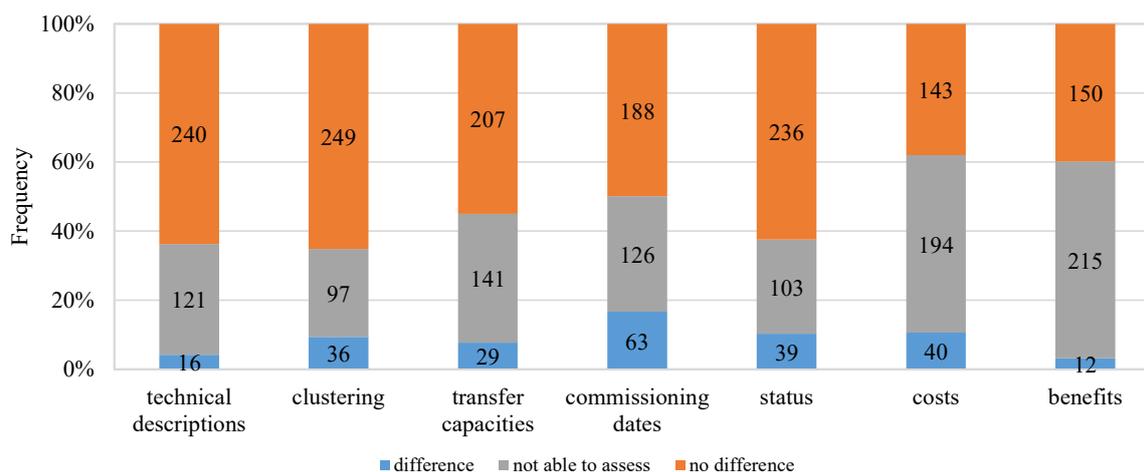
- (35) The lack of such a reasoning behind ENTSO-E's decision to finally include this project in the draft TYNDP 2020 reduces the transparency of the process and hinders the Agency's evaluation of whether the 'TYNDP Inclusion Guidelines' have been consistently applied by ENTSO-E.
- (36) Further the Agency notes that based on the information provided by NRAs' the following projects do not seem to meet the required administrative or technical criteria set by the 'TYNDP Inclusion Guidelines', while they are included in the draft TYNDP 2020:
- a. Based on the information provided by the Danish NRA 1051 '*Aminth Energy ltd*' in the draft EU TYNDP 2020 does not meet any additional administrative criteria set by the 'TYNDP inclusion guidelines'.
 - b. Based on the information provided by the French NRA storage project 1042 '*Distributed network of Hydrogen storage and production by electrolysis with re-electrification through a fleet of FCEVs*' in the draft EU TYNDP 2020 does not meet the technical criteria set by the 'TYNDP inclusion guidelines', in particular criterion related to 'Voltage Level'. Regarding the voltage level, the NRA concluded based on the data provided on the production units' capacity that connection to HTB 1 network will be required, accommodating a voltage between 63 kV and 90 kV which is under the threshold of 110 kV. Additionally, regarding 'Capacity & Generation' criteria, the data provided in the draft EU TYNDP 2020 does not allow to conclude the threshold will be reached.
 - c. Based on the information provided by the French and the Spanish NRAs project 296 '*Britib*' in the draft EU TYNDP 2020 does not meet any additional administrative criteria set by the 'TYNDP Inclusion Guidelines'.
- (37) As pointed out in its Opinion 03/2021, the Agency considers that the 'TYNDP Inclusion Guidelines' can serve the objectives of transparency and non-discrimination and eventually improve the quality and credibility of the TYNDP, if they are duly and consistently applied by ENTSO-E.
- (38) Therefore ACER recommends to remove the above listed projects from the TYNDP 2020, if they do not meet the criteria set by the TYNDP Inclusion Guidelines.

4.5. Project differences in the draft EU TYNDP 2020 and in NDPs

- (39) NRAs carried out an assessment of the draft TYNDP 2020 projects, including the identification of potential inconsistencies between the draft EU TYNDP and the NDPs. The identified differences between the EU TYNDP data and the NRAs' information for transmission investments and storage projects are presented in Table 13 and Table 14 in Annex I.

- (40) Figure 2 presents the summary of the identified differences. Similar to the findings with respect to the previous EU TYNDPs¹⁴, most of the identified differences are related to the commissioning date or costs, followed by the status, clustering, transfer capacities, technical descriptions and benefits.

Figure 2: Summary of the identified differences



- (41) The Agency notes that the NRAs reported differences for approximately 9 % and no differences for approximately 53 % of the data assessed in this Opinion. For the remaining share of the data, the NRAs are not able to assess the consistency between the draft EU TYNDP 2020 and the respective NDP.
- (42) At least one substantial difference in the data has been identified for 114 (or 30 %) of national parts of transmission investments and storage projects from the draft EU TYNDP 2020.
- (43) The Agency acknowledges that the NDPs and the EU TYNDP may temporarily be misaligned due to different schedules for the elaboration of the plans and other reasons (e.g. changes in market fundamentals), which, to some extent, can explain the identified differences and does not necessarily constitute an inconsistency between the plans.
- (44) For most investments with identified differences in the commissioning date, NRAs assessed the commissioning date reported in the draft EU TYNDP was an earlier date compared to commissioning date according to the NRAs' information. In addition, for approximately two third of the investments with different advancement status, NRAs identified the status provided in the draft EU TYNDP was more advanced compared to the status known to the NRA. Particular concerns are raised with regard to

¹⁴ In the Agency's Opinion No 13/2019, p. 54, the three most frequently reported differences are the commissioning date, status and transfer capacity increase.

investment 1503 (*'Second HVDC Module IT-ME'*) for which the draft EU TYNDP provides status “under construction” instead of “under consideration” as reported by the Italian NRA. This overestimation led to an inclusion of a non-mature investment in the TYNDP reference grid, which is a starting point for the identification of system study needs and the CBA analysis.

- (45) The Agency concludes that draft EU TYNDP 2020 tends to be too ambitious in terms of the expected commissioning date and the advancement status and reaffirms its recommendation that overly optimistic projections indicated by the project promoters should be avoided by ENTSO-E by defining certain 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’, future EU TYNDPs should provide the project promoter’s estimate together with the estimation of ENTSO-E based on the reference timeline. In case of differences, the project promoters should provide an explanation.
- (46) The Agency recommends ENTSO-E to consider the identified differences by NRAs and update the draft EU TYNDP 2020 by taking into account the information and comments provided by NRAs in Annex I, as appropriate.

5. PRACTICAL PROBLEMS IN THE DRAFT EU TYNDP 2020

5.1. Numbering of projects and investments

- (47) Based on the information provided by NRAs, the Agency identified that there are at least 11 transmission investments in the draft EU TYNDP 2020 which were given different investment numbers in comparison to EU TYNDP 2018. These investments are listed in Table 15 in Annex I.
- (48) Additionally, the Agency identified that in four instances in the draft EU TYNDP 2020, the same project number was assigned to two different projects. These projects are listed in Table 16 in Annex I.
- (49) The Agency is of the view that applying non-unique project identification numbers (even if one of them is a transmission and the other one is a storage project) or not consistently applying the investment codes across the EU TYNDPs, negatively impacts the EU TYNDP transparency and adds substantial complexities to the EU TYNDP-related processes (e.g. monitoring, project consistency assessment, project data comparison for specific purposes).
- (50) The Agency recommends ENTSO-E to apply a unique coding for investments and projects in the EU TYNDP, which is consistently applied across the TYNDPs. **Error! Reference source not found.**

- (51) The Agency notes that the draft EU TYNDP 2020 project sheets available online at ENTSO-E’s website¹⁵ and in .pdf format only provide investment numbers under the project costs section, which is located at the end of the third online form and at the end of the pdf project sheet. In the Agency’s view the investment numbers in the EU TYNDP project sheets should be displayed in a more prominent way.

5.2. Clustering of investments

- (52) The classification of the transmission projects according to the number of investment items included in each project in the draft EU TYNDP 2020 is presented in Table 3. The numbers of transmission investments and projects in the last four TYNDPs are provided in Table 4.

Table 3: Classification of transmission projects in the draft EU TYNDP 2020

| | Number of transmission projects in the draft EU TYNDP 2020 |
|---|---|
| Project consisting of 1 investment | 98 |
| Project consisting of 2 investments | 21 |
| Project consisting of 3 investments | 13 |
| Project consisting of 4 investments | 10 |
| Project consisting of 5 investments | 4 |
| Project consisting of 6 investments | 2 |
| Project consisting of 7 investments | 3 |
| Project consisting of 9 investments | 1 |
| Project consisting of 15 investments | 1 |
| Project consisting of 25 investments | 1 |

Table 4: Number of transmission investments and projects in the last four EU TYNDPs

| | EU TYNDP 2014 | EU TYNDP 2016 | EU TYNDP 2018 | draft EU TYNDP 2020 |
|--|----------------------|----------------------|----------------------|----------------------------|
| Number of transmission projects | 127 | 168 | 165 | 154 |
| Number of investment items | 371 | 420 | 359 | 321 |
| The average number of investments per project | 2.9 | 2.5 | 2.2 | 2.1 |

- (53) The Agency notes that the average number of investments per project decreased in each EU TYNDP, which is considered a positive sign of increased efforts to avoid over clustering of investments.
- (54) The criteria for clustering investments are provided in the ‘CBA 3.0 Guideline’ and in the ‘TYNDP 2020 CBA Implementation Guideline’. According to these criteria,

¹⁵ <https://tyndp2020-project-platform.azurewebsites.net/projectsheets>

only investments that strongly rely on each other can be clustered together and the clustered investments can be maximum one level of maturity (status) apart from each other. In addition, investments can only be clustered together if an investment contributes to the realisation of the full potential of the main investment. If investments are clustered, the necessity for clustering must also be demonstrated.

- (55) The Agency notes that projects 170 (*‘Baltic States Synchronization with Continental Europe’*) and 252 (*‘Internal Belgian Backbone Center-East: HTLS upgrade Massenhoven-VanEyck-Gramme-Courcelles-Bruegel-Mercator’*) contain investments that are three and two levels of maturity apart, respectively, and should not, according to the above criteria, be clustered under the same project in the draft EU TYNDP 2020.
- (56) As presented in Table 5, the Agency identified in the draft EU TYNDP 2020 17 projects for which the necessity for clustering is not provided. In addition, for two projects the reasons provided for investment clustering do not sufficiently demonstrate the necessity.

Table 5: Projects with clustering issues in the draft EU TYNDP 2020

| Clustering issue | Country / countries | Project number | Project name |
|---------------------------------------|--------------------------|----------------|--|
| Necessity for clustering not provided | Albania, North Macedonia | 350 | South Balkan Corridor |
| | Belgium | 252 | Internal Belgian Backbone Center-East: HTLS upgrade Massenhoven-VanEyck-Gramme-Courcelles-Bruegel-Mercator |
| | Belgium | 297 | BRABO II + III |
| | Bulgaria, Greece | 142 | CSE4 |
| | Croatia | 1056 | Croatian south connection |
| | Cyprus, Greece, Israel | 219 | EuroAsia Interconnector |
| | Finland | 1046 | N-S Finland P1 stage 3 |
| | France | 253 | Upstream reinforcement in France to increase FR-CH capacity |
| | France, Spain | 270 | FR-ES project -Aragón-Atlantic Pyrenees |
| | France, Spain | 276 | FR-ES project -Navarra-Landes |
| | Germany | 1034 | HVDC corridor from Northern Germany to Western Germany |
| | Germany | 1043 | Wahle-Mecklar |
| | Great Britain, Ireland | 82 | RIDP I |
| | Italy | 1059 | Southern Italy |
| | Lithuania | 1042 | Offshore wind integration |
| | Netherlands | 103 | Reinforcements Ring NL phase I |
| | Spain | 379 | Uprate Gatica lines |

| | | | |
|--|-----------------------------------|--------------------|--|
| Necessity for clustering is not sufficiently demonstrated | Switzerland | 265 ¹⁶ | Tessin |
| | Bulgaria, Greece, North Macedonia | 1077 ¹⁷ | Crete-North Greece-North Macedonia-Bulgaria Interconnector |

(57) The Agency recommends ENTSO-E to revise the clustering of the investments identified in this section. Investments in the EU TYNDP 2020 should be clustered in line with the ‘CBA 3.0 Guideline’ and the ‘TYNDP 2020 CBA Implementation Guideline’.

5.3. Investment costs

(58) The Agency welcomes that the investment and the annual operating costs are provided for all transmission investments and for all storage projects in the draft EU TYNDP 2020.

(59) However, the cost uncertainty remains unreported for 15 % of the transmission investments and for 15 % of the storage projects.

(60) The ‘CBA 3.0 Guideline’ stipulate that for mature investments, the costs should be reported together with a clearly explained uncertainty range¹⁸. For non-mature investments, this principle should also be applied in case detailed project cost information is available¹⁹. The list of the projects for which uncertainty range is not provided, is included in Table 17 in Annex I, together with the respective advancement status. The Agency notes that 26 (or 50 %) out of the 52 transmission investments and storage projects that have no uncertainty range provided are mature²⁰, which means they do not meet the requirements from the ‘CBA 3.0 Guideline’.

(61) The Agency recommends ENTSO-E to further improve the cost information by including the cost uncertainty ranges at least for the mature projects in the EU TYNDP 2020.

(62) Regarding the reported investment cost (CAPEX), according to the ‘CBA 3.0 Guideline’²¹, it should be comprised of two parts: “*inception CAPEX*”, indicator C1a,

¹⁶ The reason for investment clustering provided in the draft EU TYNDP 2020: “Infrastructure located in canton Tessin”

¹⁷ The reason for investment clustering provided in the draft EU TYNDP 2020: “This is both a national and a cross-border project. One investment feeds the other.”

¹⁸ ‘CBA 3.0 Guideline’, p. 93

¹⁹ ‘CBA 3.0 Guideline’, p. 93

²⁰ transmission investments and storage projects with status “in permitting” or “under construction”

²¹ ‘CBA 3.0 Guideline’ p. 94

which is “*the capital cost incurred at inception of the project*”, and “*sustaining CAPEX*”, indicator C1b, which the “*the capital expenditure incurred during the assessment period that is necessary to ensure that the functionality of the original assets realised by the inception CAPEX is maintained*”. Currently, only an overall number is provided for the CAPEX of each investment item of a project. Given that the two categories of costs are incurred at different points in time, affecting the overall cost estimate of the project, they should be reported as distinct figures.

- (63) The project standard costs, presented in ‘TYNDP 2020 CBA Implementation Guideline’²², which are used for reporting CAPEX of less mature projects, are indicated to be based on the ACER Unit Investment Cost report 2015²³. However, the data of this report is around 7 years old (mostly covering investments until 2013) and could result in an underestimation of the projects’ total cost and to distorted studies’ results both for the needs identification exercise as well as for these projects benefits.
- (64) The Agency notes the draft EU TYNDP 2020 provides no information indicating for which projects or investments the standard costs were actually used. In addition, the applicability of the referred ACER Unit Investment Cost report is limited, as it does not provide standard costs for all asset types²⁴ and for investment types other than new investments (e.g. replacements, upgrades, reinforcements).
- (65) The Agency recommends ENTSO-E to further improve the transparency of the draft EU TYNDP 2020 project sheets by including information for each transmission investment or storage project on how the costs were determined, i.e. by using standard costs or detailed cost information. In both cases, information on how the cost data was derived should also be provided.

5.4. Cost-benefit analysis

- (66) For some projects in the draft EU TYNDP 2020, the section with CBA results indicates that some projects promoters were given an option to opt out of the CBA assessment for their project²⁵.
- (67) The Agency is of the view that CBA should be performed for all projects in the EU TYNDP²⁶ to meet its objective of ensuring greater transparency regarding the entire electricity transmission network in the Union.

²² ‘TYNDP 2020 CBA Implementation Guideline’ Annex I.C

²³ https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/UIC_Report_-_Electricity_infrastructure.pdf

²⁴ Examples of the asset types not included in the ACER UIC report: reactive compensation devices, phase-shifting transformers, offshore substations, AC 330 kV and 275 kV overhead lines

²⁵ “This project chose not to request a cost-benefit analysis in the TYNDP 2020. The possibility to opt out of the CBA was offered to projects under construction or to very long-term project commissioning after 2035.”

²⁶ Except for commissioned or cancelled projects which should be included only for monitoring purposes.

5.5. Insufficient technical description of investments

- (68) The Agency's review of the investments in the draft EU TYNDP 2020 revealed that there are 10 transmission investments which, in the Agency's view, do not provide a sufficient level of technical information to allow their proper assessment. They are listed in Table 18 in Annex I, together with the Agency's explanation for insufficient concreteness.
- (69) The Agency is of the view that for the sake of transparency and robustness of the EU TYNDP, a sufficient level of technical information should be provided for every investment in the EU TYNDP. It recommends ENTSO-E to improve the clarity of the insufficiently concrete investments by providing additional information and technical descriptions in the EU TYNDP 2020.

5.6. Discrepancies among project sheet formats

- (70) The Agency notes the draft EU TYNDP 2020 project sheets are available in three formats, i.e. in excel format, in pdf format and online²⁷. Excel and pdf formats can be downloaded from the online sheets.
- (71) The Agency's comparison of the information and data provided in different formats identified that a different extent of information is provided in the different formats. In particular, while the project sheets in pdf provide the same amount of information as the online sheets, the following information is not provided in the excel sheets: reason for clustering, indication of the main and the supporting investments, information on project inclusion in the reference grid, project promoter, information on whether the project is new or an existing infrastructure is to be updated, links to the respective NDPs, specification of borders for the transfer capacity increase, project level benefits and information on which projects were not subject to a CBA in the EU TYNDP 2020.
- (72) The Agency invites ENTSO-E to improve the excel project sheets by providing the full extent of information included in the pdf format and online project sheets.
- (73) In its review of project sheets, the Agency also identified issues regarding data consistency. In particular, the values of the transfer capacity increase in the excel format often differ from the same values provided in the two remaining formats, which raises doubts regarding data credibility.
- (74) The Agency invites ENTSO-E to ensure that the consistency of the EU TYNDP data is provided across different formats of the EU TYNDP 2020.

²⁷ <https://tyndp2020-project-platform.azurewebsites.net/projectsheets/>

5.7. Additional shortcomings in the draft EU TYNDP 2020 data

- (75) The Agency notes that there are numerous investments in the draft EU TYNDP 2020 that are reported as “new investments” under “progress of the investment since TYNDP 2018”, although they already appeared in the TYNDP 2018. Reversely, several investment numbers that did not appear in the TYNDP 2018 are not labelled as “new investments” in the TYNDP 2020. In addition, for 10 investments, no information about the progress is reported.
- (76) The Agency’s review of the draft EU TYNDP 2020 projects revealed additional project-specific inconsistencies:
- a. Projects 229 (*‘GerPol Power Bridge II’*) and 350 (*‘South Balkan Corridor’*) in the draft EU TYNDP 2020 are reported as both cross-border and internal.
 - b. Project 379 (*‘Uprate Gatica-Guenes’*) is included in the reference grid, although its advancement status is “under consideration”, which means it does not meet criteria for the project inclusion in the reference grid set by the ‘CBA 3.0 Guideline’²⁸.
 - c. Project 170 (*‘Baltic States Synchronization with Continental Europe’*) includes 10 transmission investments where the element type is not provided.
 - d. The addressed infrastructure needs are not reported for 32 projects in the draft EU TYNDP 2020.
 - e. Different capacity values are provided for the same element in the investment description of transmission investment 373 (*‘Ostroleka-Stanislawow’*) and in the description of a corresponding project 123 (*‘LitPol Link Stage 2’*)²⁹.
 - f. The information on the transfer capacity increase provided in project sheets for projects 323 (*‘Dekani (SI) - Zaule (IT) interconnection’*) and 324 (*‘Redipuglia (IT) - Vrtojba (SI) interconnection’*) is conflicting and the actual capacity increases are not made clear.
- (77) The Agency recommends ENTSO-E to review the information regarding the investment progress since the EU TYNDP 2018 in the draft EU TYNDP 2020 and adjust where necessary, in order to be consistent. In addition, the Agency invites

²⁸ According to the ‘CBA 3.0 Guideline’ (p. 14), projects “under consideration” cannot be included in the reference grid. The Spanish NRA was not able to assess whether the status provided in the draft EU TYNDP is consistent with the information in the NDP, as no information on the status is provided in the respective NDP.

²⁹ capacity provided by the project description: 2x1870 MVA, capacity provided by the investment description: 2x2450 MVA

ENTSO-E to review and eliminate all project-specific inconsistencies reported in this section.

HAS ADOPTED THIS OPINION:

1. The Agency finds that the draft EU TYNDP 2020 assessments and the projects included in it generally contribute to the objectives of non-discrimination, effective competition, and secure functioning of the internal electricity market referred to in Article 32(2) of Regulation No 2019/943.
2. However, as pointed out in ACER Opinion 03/2021, the Agency considers that the draft TYNDP 2020 does not sufficiently contribute to the efficient functioning of the market due to a number of shortcomings and addresses a number of recommendations to ENTSO-E, as regards the finalisation and adoption of the TYNDP 2020.
3. Further, in line with Article 48(2) of Regulation (EU) 2019/943 the Agency identified a number of inconsistencies between a NDP and the draft EU TYNDP 2020 as provided in the recitals of this Opinion, and recommends ENTSO-E to further enhance the consistency between the NDPs and the EU TYNDP by implementing the following measures:
 - a. ENTSO-E should further increase its efforts to include all the planned projects with cross-border relevance from the NDPs in the EU TYNDP.
 - b. ENTSO-E should ensure that investments included in the EU TYNDP and not included in the NDP of a hosting Member State are clearly flagged in the EU TYNDP and the reason for such absence should also be provided.
 - c. All the commissioned and cancelled investments included in a previous EU TYNDP should enter the subsequent EU TYNDP for monitoring purposes (i.e. without a CBA) and each EU TYNDP should provide a list of investments which are no longer included in the EU TYNDP in comparison to the previous edition, together with an explanation for their non-inclusion.
 - d. ENTSO-E should ensure that the information on investments' status and commissioning date are sufficiently credible. Overly optimistic projections should be avoided by defining certain 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', future EU TYNDPs should provide the project promoter's estimate together with the estimation of ENTSO-E based on the reference timeline. In case of differences, the project promoters should provide an explanation.
 - e. ENTSO-E should ensure that all investments and projects in the EU TYNDP 2020 respect the criteria for clustering, laid down in the 'CBA 3.0 Guideline' and in the 'TYNDP 2020 CBA Implementation Guideline'. ENTSO-E should revise the clustering and demonstrate the necessity for clustering with regard to the draft EU TYNDP 2020 projects identified in section 5.2 of this Opinion.

- f. ENTSO-E should perform a CBA for all projects in the EU TYNDP³⁰.
 - g. The Agency invites ENTSO-E to further improve the costs-related information in the EU TYNDP by:
 - including the cost uncertainty ranges at least for mature projects;
 - reporting inception and sustaining CAPEX separately;
 - including information on how the costs were determined for each transmission investment or storage project (i.e. by using standard costs or detailed cost information and how the cost data was derived).
 - h. ENTSO-E should consider the differences between the NDPs and the draft EU TYNDP 2020 identified by NRAs and update the draft EU TYNDP 2020 by taking into account the information and comments provided by NRAs in Table 13 and Table 14 in Annex I, as appropriate. ENTSO-E should also review and eliminate the project-specific inconsistencies in the draft EU TYNDP 2020 reported in section 5.7 of this Opinion.
 - i. ENTSO-E should improve transparency and robustness of the EU TYNDP by ensuring sufficient level of technical information is provided for each investment, including those draft EU TYNDP 2020 investments which are listed in Table 18 of Annex I of this Opinion
 - j. ENTSO-E should ensure the consistency of the EU TYNDP data across different formats of the EU TYNDP. It should also improve the excel project sheets by ensuring they provide the full extent of information as do the pdf format and online project sheets.
 - k. ENTSO-E should apply a unique coding for investments and projects in the EU TYNDP and more prominently display investment numbers in the EU TYNDP pdf format and online project sheets.
 - l. ENTSO-E should, for the purpose of consistency with the previous EU TYNDP, review the information in the draft EU TYNDP 2020 regarding the investment progress since the EU TYNDP 2018 and adjust it where necessary.
4. In order to increase the robustness, credibility and transparency of the NDPs, the Agency recommends that the parties responsible for their development, review and adoption take into account the following measures and pursue their implementation to the extent it is in their powers:
- a. The NDPs' scope should be expanded to allow the inclusion of third-party projects, where it is not yet the case.

³⁰ Except for commissioned or cancelled projects which should be included in the EU TYNDP only for monitoring purposes.

- b. Cross-border relevant projects in the NDPs should be flagged explicitly.
 - c. The differences between the NDPs and the draft EU TYNDP 2020 identified by NRAs should be considered and the NDPs should be updated by taking into account the information and comments provided by NRAs in Table 13 and Table 14 in Annex I, as appropriate.
5. This Opinion is addressed to ENTSO-E, the European Parliament, the Council and the Commission.

Done at Ljubljana, on 3 May 2021.

- SIGNED -

*For the Agency
The Director*

C. ZINGLERSEN

Annexes: Annex I

ANNEX I

Table 6: Number and share of the reviewed national parts of transmission investments and storage projects

| Country | Number of relevant national parts of transmission investments and storage projects ³¹ | Number of reviewed national parts of transmission investments and storage projects | Share of reviewed national parts of transmission investments and storage projects |
|----------------|--|--|---|
| Austria | 15 | 15 | 100 % |
| Belgium | 23 | 23 | 100 % |
| Bulgaria | 9 | 0 | 0 % |
| Croatia | 15 | 15 | 100 % |
| Cyprus | 2 | 2 ³² | 100 % |
| Czech Republic | 7 | 7 | 100 % |
| Denmark | 15 | 15 | 100 % |
| Estonia | 14 | 14 | 100 % |
| Finland | 9 | 9 | 100 % |
| France | 21 | 21 | 100 % |
| Germany | 50 | 50 | 100 % |
| Greece | 22 | 22 | 100 % |
| Hungary | 7 | 7 | 100 % |

³¹ The number of national parts of investments is higher than the number of the draft EU TYNDP 2020 investments as in case of interconnections, more than one national part was reviewed.

³² The amount does not include an additional project with cross-border relevance which is not included in the draft EU TYNDP 2020, but is included in the Cypriot NDP.

| | | | |
|--------------|-----------------|------------------|----------------|
| Ireland | 21 | 21 | 100 % |
| Italy | 22 | 22 ³³ | 100 % |
| Latvia | 10 | 10 | 100 % |
| Lithuania | 17 | 17 | 100 % |
| Luxembourg | 3 | 3 | 100 % |
| Malta | 0 ³⁴ | not applicable | not applicable |
| Netherlands | 23 | 23 | 100 % |
| Norway | 3 | 3 | 100 % |
| Poland | 17 | 17 | 100 % |
| Portugal | 8 | 8 | 100 % |
| Romania | 10 | 10 ³⁵ | 100 % |
| Slovakia | 5 | 5 | 100 % |
| Slovenia | 5 | 5 | 100 % |
| Spain | 24 | 24 | 100 % |
| Sweden | 9 | 9 | 100 % |
| Total | 386 | 377 | 98 % |

³³ The amount does not include four additional projects with cross-border relevance, which are not included in the draft EU TYNDP 2020, but are included in the Italian NDP.

³⁴ None of the EU TYNDP 2020 projects is located in Malta and the NRA did not identify any cross-border relevant project.

³⁵ The amount does not include four additional projects with cross-border relevance which are not included in the draft EU TYNDP 2020, but are included in the Romanian NDP.

Table 7: List of storage projects in the draft EU TYNDP 2020 that are not present in the respective NDPs

| Reason for absence in the NDP | Country | Storage project number | Storage project name | NRA comment |
|---|-------------|------------------------|---|--|
| The investment appertains to a non-TSO project or a storage project and non-TSO or storage projects are normally not included or present NDP. | Estonia | 1004 | Estonian PHES (pumped-hydro energy storage) | |
| | France | 1042 | Distributed network of Hydrogen storage and production by electrolysis with re-electrification through a fleet of FCEVs | The French NRA reported that: <ul style="list-style-type: none"> - the data provided did not allow to conclude the project meets technical criteria set by the ‘TYNDP inclusion guidelines’, - none of the hypothesis used to compute CAPEX and OPEX were communicated, - ENTSO-E stated the use of a non-adapted methodology and acknowledged widely overestimated costs and grossly overestimated benefits. |
| | Germany | 1026 | Hydro pumped storage Riedl | The NRA was not able to assess and verify the stated appropriateness of the project to meet any infrastructure needs. |
| | | 1046 | Online Grid Controller “PSKW-Rio” | The NRA was not able to assess and verify the stated appropriateness of the project to meet any infrastructure needs. |
| | Greece | 1035 | Ptolemaida Battery Energy Storage System | Third party projects in the EU TYNDP with no PCI label are currently not included in the NDP, but the NRA proposes there is least their reference in the NDP (i.e. without the NRA approval). This project has been assessed and received a generation license by the NRA. |
| | Netherlands | 1013 | CAES Zuidwending, NL | |
| | | 1038 | CAES Zuidwending Extension | |
| | Slovakia | 1037 | ELSEA - European Large Scale Energy Accumulation | |
| | Spain | 1011 | Reversible pumped-storage hydroelectric exploitation “Mont-Negre” power 3.300 MW Zaragoza, Spain | The NRA reported that significant delays in the processing are putting commissioning dates at risk |

| | | | | |
|--|--|------|--|--|
| | | 1012 | Purifying -Pumped Hydroelectric Energy Storage (P-PHES Navaleo) | |
| | | 1019 | Hydro-pumped electricity storage GIRONÉS & RAÏMATS | The NRA reported that significant delays in the processing are putting commissioning dates at risk |
| | | 1027 | P-PHES CUA | |
| | | 1036 | SR Mar de Aragón | The NRA reported that significant delays in the processing are putting commissioning dates at risk |
| | | 1039 | Reversible Hydraulic Power Plant "Los Guajares" | |
| | | 1041 | Purifying-Pumped Hydroelectric Energy Storage "Velilla del Río Carrión" (P-PHES VELILLA) | |

Table 8: List of transmission investment in the draft EU TYNDP 2020 that are not present in the respective NDPs

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|---|---------|---|-------------------------------------|--|
| The investment is not included, because the latest NDP was elaborated earlier than the draft EU TYNDP 2020. | Belgium | 1706 | Converter Stations & Subsea Cabling | |
| | Finland | 1730 | Reactive compensation | The NRA proposes to include in the NDP. |
| | Sweden | 1262 | Hansa PowerBridge II | The NRA proposes to include in the NDP. |
| The investment is not advanced enough to be included in the NDP (e.g. study has not turned | Croatia | 1532 | New OHL 400 kV Banja Luka - Lika | |
| | | 1718 | SS 400 kV ZONE 5 | |
| | France | 1437 | Britib | The project promoter did not contact the NRA. Based on the information available to the French NRA, the project does not meet any of the additional administrative criteria set by the 'TYNDP inclusion guidelines'. |

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|-------------------------------|----------|---|---|---|
| into a project yet). | Ireland | 1638 | Mares Cable 1: Cross Irish Sea Interconnector Cable | |
| | | 1639 | Enabling Works 1: Bellacorick-Oldstreet 2 x 245kV OHL | |
| | | 1640 | Mares Cable 2: Cross Ireland Interconnector Cable | |
| | | 1641 | Mares Converter Station 3 | |
| | | 1642 | Mares Converter Station 2 | |
| | | 1647 | MAREX Wind infeed cable 1 | |
| | | 1648 | MAREX Wind Infeed cable 2 | |
| | | 1649 | MAREX Wind Infeed cable 3 | |
| | | 1650 | MAREX Wind Infeed Cable 4 | |
| | | 1651 | Enabling Works 2: Glinsk Bellacorick Replacement 10 x 245kV bay substitution | |
| | | 1653 | Enabling Works 4: EIRGRID 2 x 245kV Connection bays at Maynooth and associated works | |
| | | 1654 | Enabling Works 5: EIRGRID 2 x 245kV Connection bays at Oldstreet and associated works | |
| | | 1655 | Enabling Works 6: 2 x 245/400 transformer at EIRGRID 220/400kV Substation Oldstreet | |
| | | 1750 | Sea-Socket | |
| | 896 | Omagh South to South Donegal | | |
| | Latvia | 1740 | LaSGo Link - Gotland to Latvia | The project will be included in the NDP as soon as it is specified. |
| | Slovakia | 1498 | New CZ-SK 400 kV interconnector | NRA supposes the investment will be included in the future NDP. |
| | | 1499 | New 400 kV substation Ladce | NRA supposes the investment will be included in the future NDP. |
| Slovenia | 1483 | Upgrade Obersielach (AT) - Podlog (SI) | | |

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|---|---------------------------------|---|---|---|
| The investment has been commissioned. | Spain | 1235 | Conceptual project | |
| | Germany | 1246 | Upgrade Meeden - Diele | |
| | | 141 | Kriegers Flak CGS | |
| | | 142 | Norway - Germany HVDC | |
| | | 144 | Audorf - Kassoe | |
| | | 146 | ALEGrO | |
| Latvia | 1062 | Riga CHP2 - Riga HPP | | |
| The investment has been cancelled. | Sweden | 1241 | Fenno-Skan 1 renewal | |
| The investment appertains to a non-TSO project and non-TSO projects are normally not included or present NDP. | Austria | 1380 | Wurmlach (AT) - Somplago (IT) interconnection | This project is a merchant line and is mentioned in the Austrian NDP as a grid connection project. |
| | | 1556 | Prati (IT) – Steinach (AT) | This project is to be planned, commissioned and operated by the distribution system operator and is not part of the Austrian NDP. |
| | Greece | 1431 | Southern Aegean Interconnector | Third party projects in the EU TYNDP with no PCI label are currently not included in the NDP, but the NRA proposes there is at least their reference in the NDP (i.e. without the NRA approval), for the sake of consistency to the EU TYNDP. |
| | | 1432 | Southern Aegean Interconnector | |
| | | 1433 | Southern Aegean Interconnector | |
| | | 1434 | Southern Aegean Interconnector | |
| | | 1435 | Southern Aegean Interconnector | |
| | | 1436 | Southern Aegean Interconnector | |
| | | 1619 | LEG1 | |
| | | 1682 | Wadi El Natroon - Acharnes HVDC | |
| | | 1704 | Southern Aegean Interconnector | |
| | | 1709 | Greece Africa Power Interconnector | |
| | | 1745 | Libya Greece | |
| | | 1746 | Crete-Northern Greece | |
| 1747 | Northern Greece-North Macedonia | | | |
| 1749 | Greece Albania | | | |

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|--|----------------|---|--|--|
| | Sweden | 1740 | LaSGo Link - Gotland to Latvia | |
| | | 1741 | LaSGo Link - Sweden to Gotland | |
| | Netherlands | 1628 | NeuConnect Interconnector | The project NeuConnect is not part of the infrastructure planning by TenneT TSO B.V. |
| The commissioning date of the investment is beyond the time span of the NDP. | Croatia | 1269 | New 400 kV overhead line Sombor (RS) - Ernestinovo (HR) | |
| | | 1276 | Upgrading of existing 220 kV line between SS Dakovo (HR) and TPP Tuzla (BA) to 400 kV line | |
| | | 1277 | Upgrading of existing 220 kV line between SS Dakovo (HR) and Gradacac (BA) to 400 kV line | |
| | | 1278 | Upgrading existing 220 kV SS Dakovo to 400 kV | |
| | | 1279 | New double 400 kV line between SS Dakovo and location Razbojiste | |
| | Czech Republic | 1498 | New CZ-SK 400 kV interconnector | |
| | Hungary | 1742 | 400 kV OHL SS Subotica 3 – SS Sándorfalva | As the commissioning date of the investment is beyond the time span of the NDP, no NRA decision is needed at the moment. The NRA is initiating a consultation with the TSO about this project plan. |
| | Netherlands | 1255 | Interconnector GB-NL | |
| | | 1504 | Power Link Island | |
| | | 1505 | Interconnection DKw to Power Link Island | |
| | | 1506 | Interconnection NL Maasvlakte to Power Link Island | |
| 1507 | | Interconnection NL Eemshaven to Power Link Island | | |
| | | | | The German NRA reported that the investment is included in the DE NDP due to its PCI status, but was not able to assess and verify the stated appropriateness of the project to meet any infrastructure needs. |

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|--|-------------|---|---|--|
| | | 1508 | Interconnection DE (area of Brunsbüttel) to Power Link Island | |
| | | 1509 | Interconnection DE (area of Oldenburg) to Power Link Island | |
| | | 1511 | Interconnection DE (area of Krümmel) to Power Link Island | |
| | | 1541 | Zwolle-Hengelo-Doetinchem-Dodewaard | |
| | | 1691 | Emden-Eemshaven | |
| | | 1561 | BE-NL interconnector: upgrade VanEyck-Maasbracht | |
| | Poland | 1236 | DKE-PL-1 | |
| | | 1674 | Zielona Góra - Eisenhuettenstadt | |
| Investment has not been proposed in the latest NDP | Germany | 1016 | DKE-DE (Kontek 2) | Project has not been submitted in the NDP by the project promoter(s), therefore the needs could not be assessed. |
| | | 1707 | Converter stations and Subsea Cabling | |
| | | 1722 | HVDC Line C3 | |
| | | 1726 | HVDC Line DE-CH | |
| | | 650 | BE-LUX-DE Long-Term perspective | |
| Other reason | Netherlands | 1257 | Belgium-Netherlands: Zandvliet-Rilland | The project was on hold, it is rescheduled and will be included in the next NDP. |
| | Spain | 1437 | Britib | The Spanish NRA has not received updated information about this project. |

| Reason for absence in the NDP | Country | Number of investment or storage project | Transmission investment name | NRA comment |
|-------------------------------|---------|---|------------------------------|---|
| | France | 1458 | SACO13 | The investment is not included in the NDP due to its location. The part of project located in France is in Corsica, which is not presented in the NDP. Insular systems are also not under the jurisdiction of the national TSO, as they are managed by EDF SEI (a dedicated company). |

Table 9: List of cross-border relevant transmission investments that are not included in the draft EU TYNDP 2020

| Reporting NRA's country | NDP project code or other reference | Investment name | Substation 1 | Substation 2 | Status | Expected commissioning date | Additional information provided by NRAs |
|-------------------------|-------------------------------------|--|------------------------|----------------------------|--|-----------------------------|---|
| Cyprus | 3.1.2 | Euroafrica Interconnector | Kofinou substation -CY | Egypt | preliminary indicative assessment has been carried out by CERA | 2025 | Project was submitted for inclusion in the draft EU TYNDP 2020 after the deadline. |
| Italy | 1-I | Italy - Switzerland S. Giacomo project | to be defined (IT) | to be defined (CH) | Planned, but not yet permitting | to be defined | The project is under revision. |
| Italy | 252-P | Dobbiaco (IT) - Austria (AT) | Dobbiaco (IT) | Sillian (AT) or Lienz (AT) | Planned, but not yet permitting | 2030 | The Austrian NRA reported this project is not in the Austrian NDP, because the distribution system operator is the counterpart. |
| Italy | 206-P | Volpago substation | Volpago (IT) | - | Planned, but not yet permitting | 2027 | |

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|----------------------|-----------------|-----------------|---|------|--|
| | Pioissasco (IT) | Grand'Ile (FR) | Under construction | 2021 | |
| .c. ava | Gadalin (RO) | Suceava (RO) | Under consideration | 2028 | The investment is also included in the Regional Investment Plan Continental South East and Regional Investment Plan Continental Central East region. |
| .c. | Suceava (RO) | Balti (MD) | Under Consideration | 2029 | The investment is also included in the Regional Investment Plan Continental South East and Regional Investment Plan Continental Central East region. |
| .c. | Oradea (RO) | Nadab (RO) | The investment was commissioned in 2020 | 2021 | |
| rc.2 nadab rks | Nadab (RO) | Bekescsaba (HU) | Under consideration | 2027 | The Romanian NRA reported that there is no agreement yet between the Romanian and Hungarian TSO, when the agreement is reached, the investment should be included in the Regional Investment Plan or the EU TYNDP. |

Table 10: List of cancelled transmission investments which were present in the EU TYNDP 2018, but are not included in the draft EU TYNDP 2020

| Country 1 | Country 2 | Project number ^{Error!} Bookmark not defined. | Investment number ³⁶ | Project name | Investment name |
|-----------|---------------|---|---------------------------------|--|---|
| Austria | Italy | 325 ³⁷ | 1631 | AT, SI, IT - South-East Alps Project | Lienz - Italy (AT - IT) |
| Germany | - | 192 | 659 | OWP Northsea TenneT Part 3 | SylWin2 |
| Lithuania | - | 170 | 1567 | Baltics synchro with CE | Reinforcements of 110 kV lines near LT-BY border |
| | - | 170 | 1569 | Baltics synchro with CE | Rerouting of existing HVDC converter in Alytus |
| | - | 170 | 1570 | Baltics synchro with CE | Construction of new HVDC converter in Bitenai |
| Norway | Great Britain | 294 | 1356 | Maali | Maali |
| Poland | - | 94 | 796 | GerPol Improvements | Krajnik |
| Slovenia | - | 318 | 1614 | Upgrade of 220 kV line Podlog-Cirkovce to 400 kV | Upgrade of 220 kV line Podlog-Cirkovce to 400 kV |
| | - | 317 | 1615 | Upgrade of 220 kV line Podlog-Bericevo to 400 kV | Upgrade of internal 220 kV line Podlog-Bericevo to 400 kV |
| | - | 316 | 1617 | Upgrade of 220 kV line Bericevo-Divaca to 400 kV | Upgrade of 220 kV line Divaca-Bericevo to 400 kV |

³⁶ From the EU TYNDP 2018

³⁷ The Austrian NRA reported the project had been cancelled due to existence of project 375 ('Lienz (AT) – Veneto region (IT) 220 kV') in the EU TYNDP 2020.

Table 11: List of commissioned transmission investments which were present in the EU TYNDP 2018, but are not included in the draft EU TYNDP 2020

| Country 1 | Country 2 | Project number ^{Err} or! Bookmark not defined. | Investment number ³⁸ | Project name | Investment name |
|----------------|---------------|---|---------------------------------|---|---|
| Belgium | Great Britain | 74 | 443 | Thames Estuary Cluster (NEMO-Link) | NEMO |
| | - | 236 | 608 | Internal Belgian Backbone West: HTLS upgrade Horta-Mercator | HTLS upgrade Horta-Mercator |
| | - | 75 | 752 | Modular Offshore Grid (MOG) | Modular Offshore Grid |
| Czech Republic | - | 200 | 312 | CZ Northwest-South corridor | R Mirovka |
| | - | 200 | 314 | CZ Northwest-South corridor | Mirkovka-V413 |
| Denmark | Netherlands | 71 | 427 | COBRA cable | COBRA Cable |
| France | Great Britain | 25 | 62 | IFA 2 | IFA 2 |
| Germany | - | 251 | 147 | Audorf-Dollern | Dollern - Hamburg/Nord |
| | - | 251 | 148 | Audorf-Dollern | Audorf - Hamburg/Nord |
| | - | 242 | 194 | Offshore Wind Baltic Sea (I) | Offshore Connection Cluster 1 |
| | - | 191 | 656 | OWP TenneT Northsea Part 2 | BorWin3 |
| | - | 248 | 1248 ³⁹ | Offshore Wind Baltic Sea (II) | AC Offshore Connection Cluster 1, 2, 4 |
| | - | 191 | 1513 | OWP TenneT Northsea Part 2 | DolWin3 |
| | Netherlands | 113 | 145 | Doetinchem - Niederrhein | Doetinchem-Niederrhein |
| | Poland | 94 | 139 | GerPol Improvements | Krajnik-Vierraden |
| Great Britain | - | 74 | 449 | Thames Estuary Cluster (NEMO-Link) | Richborough - Canterbury |
| Italy | Montenegro | 28 | 70 | Italy-Montenegro | First HVDC Module IT-ME |
| Latvia | - | 124 | 385 | NordBalt phase 2 | Grobina (LV) - Imanta (LV) |
| Lithuania | - | 170 | 1564 | Baltics synchro with CE | New 110 kV OHL Pagegiai-Bitenai near LT-RU border |

³⁸ From the EU TYNDP 2018

³⁹ The German NRA explained most of this investment had been commissioned or was close to commissioning.

| Country 1 | Country 2 | Project number ^{Err} or! Bookmark not defined. | Investment number ³⁸ | Project name | Investment name |
|-------------|-----------|---|---------------------------------|---------------------------------------|----------------------------|
| Netherlands | - | 103 | 1560 | Reinforcements Ring NL phase I | Randstad380 noordring |
| Poland | - | 94 | 1492 | GerPol Improvements | PST in Mikulowa |
| Spain | - | 269 | 1228 | Uprate the western 220kV Sevilla Ring | Uprate D.Rodrigo-Aljarafe |
| | - | 269 | 1229 | Uprate the western 220kV Sevilla Ring | Uprate Aljarafe-Santiponce |

Table 12: List of the investments and storage projects that were present in the EU TYNDP 2018, but are not present in the draft EU TYNDP 2020

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|-----------|-------------|------------------------------|---------------------------------|--|---|---|
| France | Italy | 21 | 55 | Italy-France | Savoie - Piémont | |
| Germany | Netherlands | 256 | 1252 | Study to upgrade interconnection DE-NL | Long term upgrade interconnection DE-NL | Dutch NRA: This concerned a study and has been finished. The time horizon for realizing of this project lies beyond the time horizon of the TYNDP. German NRA: There is no similar investment in the NDP and the investment has a study character and long term horizon. |
| Germany | Netherlands | 256 | 1529 | Study to upgrade interconnection DE-NL | Upgrade interconnection DE-NL | Dutch NRA: This concerned a study and has been finished. The time horizon for realizing of this project lies beyond the time horizon of the TYNDP. |

⁴⁰ From the EU TYNDP 2018

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|----------------|-------------|------------------------------|---------------------------------|---|------------------------------|--|
| | | | | | | German NRA: There is no similar investment in the NDP and the investment has a study character and long term horizon. |
| Germany | Poland | 229 | 1275 | GerPol Power Bridge II | Gubin - Eisenhuettenstadt | German NRA: The German part of the investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Italy | Switzerland | 31 | 642 | Italy-Switzerland | San Giacomo Project | |
| Czech Republic | - | 200 | 306 | CZ Northwest-South corridor | R Vitkov | |
| Czech Republic | - | 35 | 311 | CZ Southwest-east corridor | R Kocin | |
| Denmark | - | 175 | 1000 | Great Belt II | Great Belt II | |
| Germany | - | 164 | 149 | N-S Eastern DE_central section | Dollern - Stade | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 208 | 150 | N-S Western DE_section North 1 | Conneforde-Wilhelmshaven | |
| Germany | - | 164 | 157 | N-S Eastern DE_central section | Wahle - Mecklar | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 134 | 176 | North-South Corridor in Western Germany (section South) | Daxlanden-Eichstetten | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 135 | 179 | N-S Western DE_parallel lines | Rommerskirchen - Weißenthurm | Half of the project is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment in the NDP. The other half is still in the NDP. |

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|-----------|-----------|------------------------------|---------------------------------|---|---------------------------|--|
| Germany | - | 135 | 188 | N-S Western DE_parallel lines | Kruckel - Dauersberg | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 381 | 211 | OWP Northsea Part 4 | DoIWin 4 (NOR-3-2) | |
| Germany | - | 207 | 676 | Reinforcement Northwestern DE | Dollern - Elsfleth/West | |
| Germany | - | 164 | 677 | N-S Eastern DE_central section | Dollern - Landesbergen | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 134 | 680 | North-South Corridor in Western Germany (section South) | Urberach - Daxlanden | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 206 | 682 | Reinforcement Southern Germany | Großgartach - Endersbach | |
| Germany | - | 164 | 685 | N-S Eastern DE_central section | Mecklar - Grafenrheinfeld | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 206 | 687 | Reinforcement Southern Germany | Redwitz - Schwandorf | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 206 | 688 | Reinforcement Southern Germany | Raitersaich-Altheim | |
| Germany | - | 209 | 935 | Reinforcement Northeastern DE | Kreis Segeberg - Siems | |
| Germany | - | 207 | 940 | Reinforcement Northwestern DE | Emden - Halbmond | |

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|-----------|-----------|------------------------------|---------------------------------|--|------------------------------------|--|
| Germany | - | 191 | 952 | OWP TenneT Northsea Part 2 | Cluster DolWin 5 (NOR 1-1) | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 191 | 953 | OWP TenneT Northsea Part 2 | Cluster DolWin6 | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 192 | 954 | OWP Northsea TenneT Part 3 | Cluster BorWin 5 (NOR-7-1) | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 206 | 990 | Reinforcement Southern Germany | Grafenrheinfeld - Großgartach | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. In the NDP, it is split in 2 partial projects. |
| Germany | - | 240 | 1460 | 380-kV-grid enhancement between Area Güstrow and Wolmirstedt | AC Enhancement Güstrow-Wolmirstedt | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 321 | 1475 | Herbertingen - Tiengen | Herbertingen - Tiengen | |
| Germany | - | 322 | 1477 | Wullenstetten - Border Area (DE-AT) | Herbertingen - Neuravensburg | Half of the project is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment in the NDP. The other half is still in the NDP. |
| Germany | - | 381 | 1485 | OWP Northsea Part 4 | BorWin6 (NOR-7-2) | |
| Germany | - | 337 | 1510 | Conneforde-Merzen | Cloppenburg East - Merzen | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |
| Germany | - | 337 | 1512 | Conneforde-Merzen | Conneforde - Cloppenburg | The investment is included in the reference grid in the NDP due to its advanced status and is therefore not subject of assessment. |

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|---------------|-----------|------------------------------|---------------------------------|--|--|---|
| Germany | - | 248 | 1613 | Offshore Wind Baltic Sea (II) | DC Offshore Connection Cluster 1, 2, 4 | |
| Germany | - | 248 | 1627 | Offshore Wind Baltic Sea (II) | Offshore Connection Cluster 6 | |
| Great Britain | - | 74 | 449 | Thames Estuary Cluster (NEMO-Link) | Richborough - Canterbury | |
| Great Britain | - | 74 | 450 | Thames Estuary Cluster (NEMO-Link) | SELL - DUNG Reconductoring | |
| Great Britain | - | 77 | 452 | Anglo-Scottish -1 | Western HVDC Link | |
| Great Britain | - | 351 | 1547 | Eastern HVDC Link | Eastern HVDC Link | |
| Macedonia | - | 350 | 1624 | South Balkan Corridor | 400 kV SS Kumanovo | |
| Netherlands | - | 345 | 1542 | Northern East-West connection NL | Northern East-West connection NL | The foreseen commissioning date is beyond the EU TYNDP time horizon. |
| Netherlands | - | 347 | 1545 | Maasvlakte – Noord Brabant connection NL | Maasvlakte – Noord Brabant connection | The foreseen commissioning date is beyond the EU TYNDP time horizon. |
| Netherlands | - | 346 | 1543 | ZuidWest380 NL | ZuidWest380 West | One part of the investment got commissioned, another one has a different investment number. |
| Poland | - | 229 | 1273 | GerPol Power Bridge II | Zielona Góra-Gubin | |
| Poland | - | 229 | 1274 | GerPol Power Bridge II | Gubin | |
| Portugal | - | 1 | 941 | RES in north of Portugal | Switching station Fridão | |

| Country 1 | Country 2 | Project number ⁴⁰ | Investment number ⁴⁰ | Project name | Investment name | Additional information provided by the NRA on the investment |
|-------------|-----------|------------------------------|---------------------------------|--|---------------------------------|---|
| Spain | - | 194 | 561 | Cartuja | New substation Cartuja | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance |
| Spain | - | 193 | 927 | Godolleta-Morella/La Plana | La Plana/Morella-Godolleta | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance, but as Regional significance. |
| Spain | - | 194 | 929 | Cartuja | Cartuja-Arcos 400 kV | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance. |
| Spain | - | 13 | 31 | Baza project | Axis Caparacena-Baza-La Ribina | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance. |
| Spain | - | 203 | 538 | Morella-La Plana (previously Aragón-Castellon) | Morella-La Plana | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance. |
| Spain | - | 13 | 569 | Baza project | New substation Baza | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance |
| Spain | - | 13 | 570 | Baza project | New substation La Ribina | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance |
| Spain | - | 255 | 1251 | Connection Navarra-Basque Country | New line 400 kV Muruarte-Ichaso | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance, but as Regional significance. |
| Spain | - | 255 | 1455 | Connection Navarra-Basque Country | New line 400 kV Castejon-Ichaso | According to the Regional Investment Plan, this investment is not included in the TYNDP 2020 as of European significance, but as Regional significance. |
| Switzerland | - | 266 | 1285 | Swiss Ellipse I | Magadino | |
| Switzerland | - | 266 | 1261 | Swiss Ellipse I | Bickigen - Chippis - Chamoson | |

Table 13: List of identified differences for transmission investments in the draft EU TYNDP 2020 and in the NDPs^{41, 42}

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|----------------------|--|---------------------|
| 1008 | Study Lonny-Achene-Gramme | Belgium | Status | The investment in PSTs in Lonny have status Planned, but not yet in permitting. | Update of the TYNDP |
| | | | Commissioning dates | The investment in PSTs in Lonny have commissioning date 2025. | Update of the TYNDP |
| | | | Clustering | In the FDP, there are two projects linked to Lonny-Achène-Gramme, the installation of a PST with commissioning date 2025 (status: planned) and the study on additional reinforcements by 2030 (status: under consideration). | Update of the TYNDP |
| | | France | Benefits | The results seem to show different values for the SEW in 2030, although both the NDP and the EU TYNDP indicate positive value for the project. | |
| 1035 | Baczyna | Poland | Commissioning dates | The contract with the contractor has been terminated. The preparation for new tender is underway and the commissioning date should be known after an agreement with the new contractor. | |
| | | | Costs | Slight discrepancies appear generally due to the fact that the data for the EU TYNDP and NDP was collected in different periods. | |
| 1041 | Rem. lim. in Central Italy | Italy | Clustering | In the draft NDP 2020, the investment "removal of limitations in Central Italy" (code 432-P) is composed by several smaller investments and is not clustered | Update of the TYNDP |

⁴¹ Some cases of methodological discrepancies between the EU TYNDP and the NDP arose, e.g. benefits are not assessed against the same reference network or scenarios or the scope of benefits differs as some of the benefits not being retained at national level by the NRA due to concerns on their level of robustness.

⁴² Additionally, the Agency notes that for transmission investments 1526 ('400 kV OHL Lastva-Pljevlja') and 605 ('BRAVO II: Lillo 380') the data might be outdated, as commissioning year 2019 and status "under construction" are provided at the same time in the draft EU TYNDP 2020.

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--------------------------------|----------------|----------------------|---|----------------------|
| | | | | jointly with the Calenzano - Colunga project (302-P). Calenzano - Colunga affects the cross-zonal capacity between Italy North and Italy Center North, while the other investment affects the cross-zonal capacity between Italy Center North and Italy Center South. | |
| | | | Costs | CAPEX in the Italian draft NDP 2020 is slightly different (265 million EUR vs. 259 million EUR for the entire cluster 33 in the draft TYNDP 2020). | |
| | | | Transfer capacities | The transfer capacity increase is 400 MW at the Italy North - Italy Center North border and also 150 – 300 MW at the Italy Center North - Italy Center South. The latter seems not clearly reported in the draft TYNDP 2020. | Update of the TYNDP |
| 1050 | Van Eyck-Gramme: HTLS upgrade | Belgium | Status | The status of this investment should be the same as of the other investments of project 252 (Internal Belgian Backbone Center-East), namely ‘In planning but not permitting’ instead of ‘Under Consideration’. | Update of the TYNDP |
| 1205 | HU-RO | Romania | Costs | This inconsistency will be addressed in the next edition of National Development Plan. | Update of the NDP |
| 1206 | HVDC Pamplona area - Cantegrit | France | Clustering | In the NDP, investments 1206, 1207, 1208, and 1210 are clustered under one single entity Navarra-Landes (project 276 in the TYNDP). This entity and another entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), are referred to as “the Transpyreneans” in the NDP. | |
| | | | Commissioning dates | As the project is too uncertain, the commissioning date is not foreseen before 2035 in the NDP. | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the costs of the project don’t seem to have been updated since the previous TYNDP and do not account for internal network reinforcements. | Update of both plans |
| | | | Status | Under consideration | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|-----------------------|---|--|
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: "project in the phase of studies, the technical data are estimated and pending to be defined" | The NRA will recommend to include updated and detailed information of this project in the new NDP 2021-2026. |
| 1207 | Upgrade Cantegrit-Saucats | France | Clustering | In the NDP, investments 1206, 1207, 1208, and 1210 are clustered under one single entity Navarra-Landes (project 276 in the TYNDP). This entity and another entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), are referred to as "the Transpyreneans" in the NDP. | |
| | | | Commissioning dates | As the project is too uncertain, the commissioning date is not foreseen before 2035 in the NDP. | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the costs of the project don't seem to have been updated and to account for internal network reinforcements. | Update of both plans |
| | | | Status | Under consideration | Update of the TYNDP |
| 1208 | Upgrade Cantegrit-Marsillon | France | Clustering | In the NDP, investments 1206, 1207, 1208, and 1210 are clustered under one single entity Navarra-Landes (project 276 in the TYNDP). This entity and another entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), are referred to as "the Transpyreneans" in the NDP. | |
| | | | Commissioning dates | As the project is too uncertain, the commissioning date is not foreseen before 2035 in the NDP. | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the costs of the project don't seem to have been updated and to account for internal network reinforcements. | Update of both plans |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|-------------------------------|----------------|-----------------------|---|--|
| | | | Status | Under consideration | Update of the TYNDP |
| 1210 | New substation Pamplona area | France | Clustering | In the NDP, investments 1206, 1207, 1208, and 1210 are clustered under one single entity Navarra-Landes (project 276 in the TYNDP). This entity and another entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), are referred to as “the Transpyreneans” in the NDP. | |
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: "project in the phase of studies, the technical data are estimated and pending to be defined" | The NRA will recommend to include updated and detailed information of this project in the new NDP 2021-2026. |
| 1211 | HVDC Aragon region -Marsillon | France | Clustering | In the NDP, investments 1211, 1212, 1214 and 1215 are clustered under one single entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), This entity and another entity Navarra-Landes (project 276 in the TYNDP), are referred to as “the Transpyreneans”. | |
| | | | Commissioning dates | As the project is too uncertain, the commissioning date is not foreseen before 2035 in the NDP. | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the costs of the project don't seem to have been updated since the previous TYNDP and to account for internal network reinforcements. | Update of both plans |
| | | | Status | Under consideration | Update of the TYNDP |
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: "project in the phase of studies, the technical data are estimated and pending to be defined" | The NRA will recommend to include updated and detailed information of this project in the new |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------------|----------------|-----------------------|---|--|
| | | | | | NDP 2021-2026. |
| 1212 | New axis Ejea-Aragon region 400 kV | France | Clustering | In the NDP, investments 1211, 1212, 1214 and 1215 are clustered under one single entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), This entity and another entity Navarra-Landes (project 276 in the TYNDP), are referred to as “the Transpyreneans”. | |
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: "project in the phase of studies, the technical data are estimated and pending to be defined" | The NRA will recommend to include updated and detailed information of this project in the new NDP 2021-2026. |
| 1214 | Ejea de los Caballeros substation | France | Clustering | In the NDP, investments 1211, 1212, 1214 and 1215 are clustered under one single entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), This entity and another entity Navarra-Landes (project 276 in the TYNDP), are referred to as “the Transpyreneans”. | |
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: "project in the phase of studies, the technical data are estimated and pending to be defined" | The NRA will recommend to include updated and detailed information of this project in the new NDP 2021-2026. |
| 1215 | Aragon region substation | France | Clustering | In the NDP, investments 1211, 1212, 1214 and 1215 are clustered under one single entity Aragón-Atlantic Pyrenees (project 270 in the TYNDP), This entity and another entity Navarra-Landes (project 276 in the TYNDP), are referred to as “the Transpyreneans”. | |
| | | Spain | Technical description | The current NDP was approved in 2015 and the data for this project was very preliminary at this stage: | The NRA will recommend to include |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|----------------------|---|--|
| | | | | "project in the phase of studies, the technical data are estimated and pending to be defined" | updated and detailed information of this project in the new NDP 2021-2026. |
| 1224 | Uprate of Creys-St Vulbas | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Clustering | The project as presented in the NDP includes two PST in Cornier and Foretaille as well as the reinforcement in St-Vulbas-Crey, whereas in the TYNDP the PST of Cornier and the upstream reinforcement in St-Vulbas-Crey are presented in two different investment and the other PST of Foretaille is not presented. | |
| | | | Transfer capacities | 1500 MW | Update of the TYNDP |
| 1225 | PST in Cornier | France | Benefits | In the current state, the overall results of the whole cluster of investment seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Clustering | The project as presented in the NDP includes two PST in Cornier and Foretaille as well as the reinforcement in St-Vulbas-Crey, whereas in the TYNDP the PST of Cornier and the upstream reinforcement in St-Vulbas-Crey are presented in two different investment and the other PST of Foretaille is not presented. | |
| | | | Transfer capacities | 1500 MW | Update of the TYNDP |
| 1231 | Muhlbach Eichstetten | France | Transfer capacities | In the NDP, the transfer capacity increases of Vigy-Uchtelfangen and Mulbach-Eichstetten are aggregated and represent together 1800 MW, it would however be useful if a more detailed information project by project could be provided by the TSOs. | Update of both plans |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---------------------------------|----------------|----------------------|---|----------------------|
| 1232 | Baczyna-Plewiska | Poland | Commissioning dates | The schedule of implementing the Baczyna-Plewiska line has been synchronized with the schedule for implementation of the Krajnik-Baczyna line. The construction of the investment will be completed in 2022, but the commissioning is scheduled until 2024. | Update of the TYNDP |
| | | | Costs | The investment costs in the NDP (about 71 million EUR) are lower than the investment costs in the TYNDP due to the fact that the data for NDP was collected later. | |
| 1241 | Fenno-Skan 1 renewal | Sweden | Status | Cancelled | Update of the TYNDP |
| 1245 | Vigy - Uchtelfangen (or beyond) | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Clustering | The clustering of the project differs in the TYNDP and in the NDP, as the project is presented as a whole in the latter. | |
| | | | Transfer capacities | In the NDP, the transfer capacity increases of Vigy-Uchtelfangen and Mulbach-Eichstetten are aggregated and represent together + 1800 MW, it would however be useful if a more detailed information project by project could be provided by the TSOs. | Update of both plans |
| 1270 | Baczyna-Zielona Góra | Poland | Clustering | In NDP the investment is present together with 1271 and 1673 as one project. | |
| | | | Commissioning dates | Commissioning date in NDP is 2030. Investments are included in the current NDP, as their implementation is dictated by the needs of the national power system. The date indicated in the TYNDP refers to the considered implementation of a new cross-border interconnection, which is indicative also takes into account the need to expand the national power system. | Update of the TYNDP |
| | | | Costs | The estimated costs in the NDP are lower than in the EU TYNDP. The project is still under consideration. | |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|----------------------|--|---------------------|
| 1271 | Zielona Góra - Plewiska | Poland | Clustering | In the NDP, the investment is present together with investments 1270 and 1673 as one project. | |
| | | | Commissioning dates | Commissioning date in NDP is 2030. Investments are included in the current NDP, as their implementation is dictated by the needs of the national power system. The date indicated in the TYNDP refers to the considered implementation of a new cross-border interconnection, which is indicative and also takes into account the need to expand the national power system. | Update of the TYNDP |
| | | | Costs | The estimated costs in the NDP are lower than in the EU TYNDP. The project is still under consideration. | |
| 1272 | Zielona Góra | Poland | Commissioning dates | Commissioning date in NDP is 2030. Investments are included in the current NDP, as their implementation is dictated by the needs of the national power system. The date indicated in the TYNDP refers to the considered implementation of a new cross-border interconnection, which is indicative and also takes into account the need to expand the national power system. | Update of the TYNDP |
| | | | Costs | The estimated costs in the NDP are lower than in the EU TYNDP. The project is still under consideration. | |
| 1281 | Aubange-Moulaine: PSTs | France | Transfer capacities | 500 MW | Update of the TYNDP |
| 1378 | TuNur DC | Italy | Clustering | When providing inputs to the Italian NDP 2018, the promoter gave a different breakdown of investments, splitting the Tunisian HVDC converter station, the Tunisian DC overhead line, the HVDC submarine cable and the Italian HVDC convert station. Given the technical features and the routing of the project, it would be more appropriate to separate two TYNDP investment items inside TYNDP cluster 283, one for the DC overhead line in Tunisia and one for the DC submarine cable. | Update of the TYNDP |
| 1380 | | Austria | Commissioning dates | 2026 | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|--|----------------------|
| | Wurmlach (AT) - Somplago (IT) interconnection | | Costs | According to the exemption request provided to the AT and IT NRAs, the cost data is different to the TYNDP assumptions. | Update of the TYNDP |
| | | | Transfer capacities | The TSOs performed a study using the current CACM methodology, results (summer/winter and base/peak): AT→IT (88 - 135 MW); IT→AT (between 83 - 155 MW). | Update of the TYNDP |
| | | Italy | Commissioning dates | The 2023 commissioning date appears to be optimistic, as the project is still in the permitting phase. 2026 would be more aligned with the permitting delays. | Update of the TYNDP |
| | | | Costs | The project fiche in the Italian draft NDP 2020 indicates a CAPEX around 100 million EUR and the project promoter should be requested to provide an updated CAPEX figure for the final TYNDP 2020, taking into account this figure. | Update of the TYNDP |
| | | | Transfer capacities | The transfer capacity ranges from 95 to 135 MW (cf. ARERA-E-Control joint opinion attached to ARERA's decision 37/2021). The draft TYNDP 2020 should be updated accordingly. | Update of the TYNDP |
| 1381 | AQUIND Interconnector | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Commissioning dates | not expected before 2025 | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the NRA has different information on the cost data than the information provided in TYNDP or NDP. The costs should be updated and made consistent to the latest estimation done by the project promoters. | Update of both plans |
| | | | Transfer capacities | 2000 | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|---|----------------------|
| 1383 | GridLink | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Commissioning dates | not expected before 2025 | Update of the TYNDP |
| | | | Costs | Although it is difficult to compare with data available at national level, the costs of the project should be updated to fit with the latest estimation of the project promoters. | Update of both plans |
| | | | Transfer capacities | 1400 MW | Update of the TYNDP |
| 1384 | Merchant line "Castasegna (CH) - Mese (IT)" | Italy | Status | Under consideration | Update of the TYNDP |
| 1385 | Greenlink | Ireland | Costs | Project/Investment costs are not provided in Ireland's national NDP. In August 2020, the project developer provided the NRA with projected CAPEX and OPEX of 426.8 million and 13.42 million EUR (annual), respectively. | Update of the TYNDP |
| | | | Status | In permitting | Update of the TYNDP |
| 1458 | SACO13 | Italy | Benefits | While the draft Italian NDP 2020 only assesses benefits in the Italian territory, a difference in some benefit calculations is evident: the security of supply benefit is about 15 million EUR/year both in NT2025 and in NT2030. Additionally, the most relevant benefit according to the Italian draft NDP (the reduction of costs in the balancing services market) is absent in the draft TYNDP 2020 due to limitations of the TYNDP CBA methodology. | |
| | | | Transfer Capacities | The transfer capacity increase between Italy Sardinia and Italy Centre-North is correctly reported (400 MW). However, the transfer capacity increase between Italy and Corse (+100 MW) is not reported in the draft TYNDP 2020 and should be included. It should also be | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--|----------------|----------------------|---|--|
| | | | | clarified whether the calculation of project benefit accounted for the impacts of this capacity increase or not. | |
| 1473 | Isar/Altheim/Ottenhofen - St. Peter | Germany | Commissioning dates | Commissioning date in the latest NDP is 2023 | |
| 1476 | Wullenstetten - Border Area (DE-AT) | Germany | Clustering | The project has been clustered in 2 parts, AMP-P52 M95: Punkt Wullenstetten - Punkt Niederwangen (in Germany, status is already in permitting, commissioning date 2023) and P52 M94b: Punkt Neuravensburg - Bundesgrenze (AT) (last 7 km, which is still planned but not in permitting and has a commissioning date of 2030 in the current NDP) | Update of the TYNDP |
| 1478 | Dekani (SI) - Zaule (IT) interconnection | Italy | Commissioning dates | The draft NDP 2020 (based on information collected in late 2019) indicates a commissioning date in 2022 | It would be good to clarify whether the commissioning date 2025 stated in the draft TYNDP 2020 is the most updated estimate. |
| | | | Transfer capacities | The project sheet indicates that the project promoter challenges a TSO estimation because it was not carried out for the "National Trends 2025" scenario, as it would be expected in the frame of the TYNDP. The NTC of the Dekani-Zaule project should be clarified in the TYNDP 2020. It is expected that it refers to the TYNDP scenarios. | Update of the TYNDP |
| 1482 | Redipuglia (IT) - Vrtojba (SI) Interconnection | Italy | Commissioning dates | The draft NDP 2020 (based on information provided by the promoter in late 2019) indicates a commissioning date in 2022. The draft TYNDP 2020 says 2023. | It would be good to clarify whether the commissioning date 2025 stated in the draft TYNDP 2020 is the most updated estimate. |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|----------------------|---|---------------------|
| | | | Status | Under construction | Update of the TYNDP |
| | | | Transfer capacities | The project sheet indicates that the project promoter challenges a TSO estimation because it was not carried out for the "National Trends 2025" scenario, as it would be expected in the frame of the TYNDP. The NTC of the Redipuglia-Vrtojba project should be clarified in the TYNDP 2020. It is expected that it refers to the TYNDP scenarios. | Update of the TYNDP |
| 1500 | 1. SK-HU interconnection | Slovakia | Commissioning dates | Commissioning date in the latest NDP is 2021. ⁴³ | Update of the TYNDP |
| 1501 | 2. SK-HU interconnection | Slovakia | Commissioning dates | Commissioning date in the latest NDP is 2021. ⁴⁴ | Update of the TYNDP |
| 1503 | Second HVDC Module IT-ME | Italy | Clustering | The project 401-P in the Italian draft NDP 2020 includes local reinforcements of the 132 kV and 150 kV grids near Villanova. | |
| | | | Commissioning dates | According to the NRA opinion on the draft NDP 2018 and the Ministry decree approving the NDP 2018, the second phase of Italy-Montenegro project should not be commissioned before 2028, while the commissioning date is 2026 in the draft TYNDP 2020. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 151 | Ganderkesee - Wehrendorf | Germany | Clustering | 2 Projects: AMP-001, Wehrendorf - St. Hülfe (under construction, commissioning 2021) and TTG-009, Ganderkesee - St. Hülfe, (under construction, commissioning 2023) | |

⁴³ The Hungarian NRA reported the investment '1. SK-HU interconnection' was commissioned and put into operation on 5 April 2021.

⁴⁴ The Hungarian NRA reported the investment '2. SK-HU interconnection' was commissioned and put into operation on 5 April 2021.

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--|----------------|----------------------|--|----------------------|
| 1514 | Power flow control between Vigy and Ensdorf | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Clustering | The clustering of the project differs in the TYNDP and in the NDP, as the project is presented as a whole in the latter. | |
| | | | Transfer capacities | In the NDP, the transfer capacity increases of Vigy-Uchtelfangen and Mulbach-Eichstetten are aggregated and represent together + 1800 MW, it would however be useful if a more detailed information project by project could be provided by the TSOs. | Update of both plans |
| 1521 | New HVDC line between Villanova and Fano existing 400 kV substations | Italy | Clustering | The Italian draft NDP 2020 breaks down the project in two HVDC stations, HVDC line and works in Fano substation. However, this is an inconsistency but simply a different approach to display the same investment. | |
| | | | Commissioning dates | The Italian draft NDP 2020 indicated commissioning date 2030. ARERA's opinion 574/2020 on the draft NDP 2020 called for speeding up, as far as possible, the project development and the expected commissioning. TYNDP 2020 should provide more insights on the significantly postponed commissioning date (2027 in TYNDP 2018). The indication of investment being a "new investment" should be amended, as the investment was present in TYNDP 2018. | Update of the TYNDP |
| | | | Costs | CAPEX of investment is 1115 million EUR (both in draft Italian NDP 2020 and in draft TYNDP 2020) OPEX is 0.25%/year in the draft Italian NDP 2020. This would correspond to about 2.8 million EUR/year. OPEX in the draft TYNDP 2020 is stated as 17.81 and the unit (million euro per year or million euro discounted) is not provided. ENTSO-E should request | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---------------------------------|----------------|-----------------------|---|------------------------------------|
| | | | | the promoter and provide in the TYNDP 2020 an updated OPEX figure. Further, ENTSO-E should clarify in the project sheets the measurement unit of OPEX. | |
| | | | Technical description | Investment 1521 links Villanova (IT) - Fano (IT). The former uncertainty about the locations of the HVDC stations was overcome in the Italian draft NDP 2020. TYNDP project sheet 338 (namely its project description box) should clearly indicate Villanova (IT) - Fano (IT). | Update of the TYNDP |
| | | | Transfer capacities | The transfer capacity increase on the section Italy Centre South - Italy Centre North is expected to range 1000-1150 MW in the Italian draft NDP 2020. In addition, according to the draft Italian NDP 2020 the project will also increase capacity Italy Centre North - Italy North by at least 600 MW in each direction. The TYNDP 2020 should be updated to provide more accurate information on the capacity increases on both impacted boundaries. The specific TC values should also be verified. | Update of the TYNDP |
| 1533 | New OHL 400 kV Lika – Melina | Croatia | Costs | The cost in the latest NDP is 63 million EUR and in the EU TYNDP 70 million EUR. Some flexibility should be taken into account due to currency rate. | |
| 1534 | New OHL 400 kV Lika – Konjsko | Croatia | Costs | The cost in the latest NDP is 20.4 million EUR and in the EU TYNDP 24.24 million EUR. Some flexibility should be taken into account due to currency rate. | |
| 1544 | ZuidWest3808 Oost | Netherlands | Commissioning dates | 2029 | Update of the TYNDP |
| 1555 | Lienz (AT) - Veneto region (IT) | Italy | Clustering | The draft Italian NDP 2020 indicates three separate investments: an upgrade of the existing 220 kV line, a new substation in Italy and local works in the Italian 132 kV network. | |
| | | | Commissioning dates | The Italian draft NDP 2020 sets the commissioning date in 2030. | Clarify (and if needed update) the |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|-----------------------|--|--------------------------------------|
| | | | | | commissioning date in the TYNDP 2020 |
| | | | Technical description | The project description in the Italian draft NDP 2020 specifies that a new substation will be built on the Italian side. In addition, works in the Italian 132 kV network are planned. | |
| | | | Transfer capacities | The Italian draft NDP 2020 indicates 520 MW. The difference is relatively small. | |
| 1556 | Prati (IT) – Steinach (AT) | Italy | Clustering | The Italian draft NDP contains a Prati di Vizze (IT) - Steinach (AT) project (code 208-P), which includes the interconnection line (already commissioned), the PST in Brenner substation (2020), Italian internal works regarding a different connection scheme of Marleno hydro power plant (expected by 2023) and internal reinforcements in the 132 kV network by removing limiting network elements (expected by 2023). A proper description of the internal Italian reinforcements needed for the full exploitation of the NTC increase in 2023 should be provided. | Update of the TYNDP |
| | | | Costs | Project 208-P Italian draft NDP 2020 (which includes internal reinforcements in Italy) has a CAPEX of 52 million EUR, referred only to the Italian territory. This share of project costs is already higher than the 40 million EUR CAPEX figure in the draft TYNDP 2020. | Update of the TYNDP |
| | | | Status | Under construction | Update of the TYNDP |
| | | | Technical description | The Italian draft NDP contains a Prati di Vizze (IT) - Steinach (AT) project (code 208-P), which includes the interconnection line (already commissioned), the PST in Brenner substation (2020), Italian internal works regarding a different connection scheme of Marleno hydro power plant (expected by 2023) and internal reinforcements in the 132 kV network by removing limiting network elements (expected by 2023). It | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--------------------------------|----------------|-----------------------|--|---------------------|
| | | | | would be more appropriate if proper description of the internal Italian reinforcements is included in the TYNDP project sheet | |
| 1557 | Italian HVDC tri-terminal link | Italy | Clustering | The updated project 723-P in the Italian draft NDP 2020 includes two separate HVDC links Caracoli (IT) - new substation south of Montecorvino (IT) and Selargius (IT) - Caracoli (IT). The TYNDP 2020 should display two different investment items, one for each HVDC link. | Update of the TYNDP |
| | | | Commissioning dates | The Italian draft NDP 2020 indicates a modular development, with commissioning dates for each of the four poles between 2025 and 2028. The TYNDP 2020 should be updated to provide new commissioning dates. | Update of the TYNDP |
| | | | Costs | The CAPEX (for both HVDC links) is 3700 million EUR. The OPEX is indicated in the Italian draft NDP 2020 as 0.25% / year, which would be about 9 million EUR/year. In the draft TYNDP 2020 the measurement unit of OPEX is not indicated. The TYNDP 2020 must be updated to provide the updated CAPEX and OPEX figure (for each of the two HVDC links). The measurement unit of OPEX should be provided. | Update of the TYNDP |
| | | | Technical description | The Italian draft NDP 2020 does not include a tri-terminal link. The updated project includes two HVDC links Caracoli (IT) - new substation south of Montecorvino (IT) and Selargius (IT) - Caracoli (IT). The TYNDP 2020 should display two different investment items, one for each HVDC link, Caracoli (IT) - new substation south of Montecorvino (IT) and Selargius (IT) - Caracoli (IT). | Update of the TYNDP |
| | | | Transfer capacities | The capacity increase is 1000 MW Italy South - Italy Sicily and 1000 MW Italy Sicily - Italy Sardinia. The TYNDP 2020 should clearly provide the boundaries | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|---|--|
| | | | | where the transfer capacity is increased (instead of an unclear "internal (Italy)). | |
| 1558 | Double 400 kV OHL Cirkovce(SI)-Heviz(HU)/Zerjavinec(HR) | Croatia | Commissioning dates | In the latest NDP, the commissioning date for a small part of this investment (1.3 km on Croatian territory) is set at 2023. In the EU TYNDP, the commissioning date is 2021. According to the information provided by the Hungarian NRA, the expected commissioning date of the investment is 2022, while the final date should be clarified by the main promoters (ELES and MAVIR). | Update of plans, as appropriate, to make them consistent |
| 156 | Niederrhein-Dörpen | Germany | Clustering | 2 Projects: AMP-009 Niederrhein - Punkt Wettringen - Punkt Meppen (in permitting, commissioning 2023) and TTG-007: Dörpen/West - Punkt Meppen (under construction/almost done, commissioning 2022) | |
| | | | Status | In permitting | |
| 1629 | Substation Bofferdange | Luxembourg | Commissioning dates | 2026 is the final year of the CAPEX expenses in NDP, 2025 is foreseen as commissioning date in the EU TYNDP | |
| | | | Costs | 33 million EUR are identified for CAPEX in the NDP, but other surrounding elements may also be included in the EU TYNDP CAPEX estimated at 42 million EUR. | |
| 1630 | AC Overhead Line Aach-Bofferdange | Germany | Commissioning dates | 2027 in the latest NDP | Update of the TYNDP |
| 1638 | Mares Cable 1: Cross Irish Sea Interconnector Cable | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1639 | Enabling Works 1: Bellacorick-Oldstreet 2 x 245kV OHL | Ireland | Commissioning dates | The NRA does not have an opinion on the exact commissioning date, but it feels the commissioning date mentioned by the project promoter (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|---|---------------------|
| 1640 | Mares Cable 2: Cross Ireland Interconnector Cable | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1641 | Mares Converter Station 3 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1642 | Mares Converter Station 2 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1647 | MAREX Wind infeed cable 1 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1648 | MAREX Wind Infeed cable 2 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1649 | MAREX Wind Infeed cable 3 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1650 | MAREX Wind Infeed Cable 4 | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1651 | Enabling Works 2: Glinsk Bellacorick Replacement 10 x | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|--|---------------------|
| | 245kV bay substation | | Status | Under consideration | Update of the TYNDP |
| 1653 | Enabling Works 4: EIRGRID 2 x 245kV Connection bays at Maynooth and associated works | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1654 | Enabling Works 5: EIRGRID 2 x 245kV Connection bays at Oldstreet and associated works | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1655 | Enabling Works 6: 2 x 245/400 transformer at EIRGRID 220/400kV Substation Oldstreet | Ireland | Commissioning dates | In the NRA's view the commissioning date in the TYNDP (i.e. 2025) is too ambitious based on the progress to date. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 1661 | Construction of new 400kV line Dunowo-Zydowo Kierzkowo | Poland | Clustering | 1661 and 1662: together as 1 project in NDP | |
| | | | Costs | The discrepancies are generally due to the fact that the data for the EU TYNDP and NDP was collected in different period. | |
| 1662 | Construction of new 400kV line Pila Krzewina-Zydowo Kierzkowo | Poland | Clustering | Investment 1661 and 1662 are clustered in one project in the NDP. | |
| | | | Costs | The discrepancies are generally due to the fact that the data for the EU TYNDP and NDP was collected in different period. | |
| 1663 | Modernization of 400kV OHL Krajnik-Morzyczyn | Poland | Costs | The slight discrepancies are generally due to the fact that the data for the EU TYNDP and NDP was collected in different period. | |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|---|-----------------------|
| 1664 | Modernization of 400kV OHL Morzyczyn-Dunowo-Slupsk-Zarnowiec | Poland | Costs | Slight discrepancies are generally due to the fact that the data for the EU TYNDP and NDP was collected in different period. | |
| 1665 | Modernization of 400kV OHL Zarnowiec-Gdansk/Gdansk Przyjazn-Gdansk Blonia | Poland | Costs | Slight discrepancies are generally due to the fact that the data for the EU TYNDP and NDP was collected in different period. | |
| 1673 | Zielona Góra - Polkowice | Poland | Clustering | Investment 1673 is present together with 1270 and 1271 in one project in the NDP. | Update of the TYNDP |
| | | | Commissioning dates | Commissioning date in the NDP is 2030. Investments are included in the current NDP, as their implementation is dictated by the needs of the national power system. The date indicated in the TYNDP refers to the considered implementation of a new cross-border interconnection, which is indicative and also takes into account the need to expand the national grid system | |
| | | | Costs | The estimated costs in the NDP are lower than in the EU TYNDP. The project is still under consideration. | |
| 1674 | Zielona Góra - Eisenhuettenstadt | Germany | Status | The German part of the investment is already in permitting. The Polish part of the investment is under consideration. | No change in any plan |
| 1675 | SE North-south Long-term reinforcements | Sweden | Transfer capacities | 2700 MW between SE2 and SE3 according to NDP | Update of the TYNDP |
| 1685 | Dollern - Stade | Germany | Commissioning dates | In the latest NDP the commissioning date is 2020 | |
| 1686 | Wahle - Mecklar | Germany | Commissioning dates | Commissioning date in the latest NDP is 2021, which is inconsistent with the TYNDP but also with the TSOs reporting in our monitoring where its 2024 in both cases. | Update of the NDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|----------------------|--|---|
| 1712 | R Vitkov | Czech Republic | Commissioning dates | 2020 | No change in any plan |
| 1716 | Interconnection between Crete and Peloponnese (Phase I) | Greece | Commissioning dates | Q1 2021 | Update of the TYNDP |
| 1717 | Interconnection between Crete and Attica (Phase II) | Greece | Commissioning dates | Q2 2023 | Update of the TYNDP |
| | | | Status | Under construction | Update of the TYNDP |
| 1719 | SS 400/220 kV ZONE 6 | Croatia | Commissioning dates | In the latest NDP, commissioning date for TS Nova Sela is 2030 and in the EU TYNDP 2035. The final date depends greatly on the financial resources HOPS plans to gather from EU funds and new grid users. | Commissioning date to be made consistent across the plans |
| 1723 | OHL 2x400 kV ZONE 5 - ZONE 6 | Croatia | Commissioning dates | Commissioning date in the latest NDP is 2030 and in the EU TYNDP 2035. This investment greatly depends on HOPS' plan to gather financial resources from EU funds and new grid users. | Commissioning date to be made consistent across the plans |
| 1724 | OHL 2x220 kV ZONE 6 – Plat | Croatia | Commissioning dates | Commissioning date in the latest NDP is 2030 and in the EU TYNDP 2035. HOPS plans to gather financial resources from EU funds and new grid users. | Commissioning date to be made consistent across the plans |
| 1725 | SS 220/110 kV Plat | Croatia | Commissioning dates | Commissioning date in the latest NDP is 2030 and in the EU TYNDP 2035. The final date depends greatly on the financial resources HOPS plans to gather from EU funds and new grid users. | Commissioning date to be made consistent across the plans |
| 1727 | Montecorvino-Avellino and Nord-Ben. in Campania | Italy | Clustering | The investments Montecorvino (IT) - Avellino (IT) and Avellino (IT) - Benevento (IT), investment item 1059.1727 is included in the Italian draft NDP 2020 as part of the project 506-P. This is a separate project from project 509-P regarding Laino (IT) - Altomonte (IT). The reasons for clustering together the two investments should be given in the TYNDP 2020. Based on the draft Italian NDP 2020, it appears that | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--|----------------|----------------------|---|---|
| | | | | they would increase the transfer capacity on the same boundary. | |
| | | | Commissioning dates | The Italian draft NDP 2020 indicates 2027 for the Montecorvino - Avellino line and 2028 for the Avellino - Benevento line. | The TYNDP 2020 should clarify the commissioning date of Montecorvino - Avellino - Benevento investment. |
| | | | Costs | The CAPEX of Italian NDP project 506-P is 212 million euro, but includes 80 million euro of already incurred investments for previous reinforcements. The TYNDP 2020 should provide an updated CAPEX figure referring only to the pending works regarding Montecorvino - Avellino - Benevento investment. | Update of the TYNDP |
| | | | Transfer capacities | The Italian draft NDP 2020 (page 313 of the main NDP document) indicates a combined transfer capacity increase of 900 MW on the boundary Italy South - Italy Calabria. The TYNDP 2020 should clarify the transfer capacity increase provided by the two investments and the boundaries affected. The current description "internal (Italy)" is inappropriate. | Update of the TYNDP |
| 1729 | Reactive compensation | Finland | Commissioning dates | 2022 | Update of the NDP |
| | | | Status | Under consideration | Update of the NDP |
| 256 | New single circuit 400kV OHL Bulgaria-Greece | Greece | Commissioning dates | The commissioning date must be updated to 2022 (instead of 2023) according to the latest preliminary draft NDP for period 2022-2031 and the latest progress report submitted by the Project Promoters. | Update of the TYNDP |
| | | | Costs | According to the latest information assessed by RAE in October 2020 through ACER's SWITCH tool, CAPEX is 66.240 million EUR and OPEX 0.1 million EUR. | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--|----------------|----------------------|--|--|
| | | | Status | The investment is under construction in Bulgaria and in permitting in Greece. | |
| 270 | Upgrade of the existing 220kV double circuit OHL Resita -Timisoara - Sacalaz - Arad to 400kV double circuit line | Romania | Commissioning dates | Commissioning date in the NDP is 2027 and in the EU TYNDP is 2025. | Clarify and if needed update this information in the next EU TYNDP |
| 313 | Kocin-Mirovka | Czech Republic | Commissioning dates | 2027 | Update of the TYNDP |
| 353 | Krajnik-Baczyna | Poland | Commissioning dates | The schedule of implementing the Krajnik-Baczyna line has been synchronized with the schedule for implementation of the line Baczyna-Plewiska. The expected commissioning date is 2022. | Update of the TYNDP |
| | | | Costs | Slight differences appear between TYNDP and NDP. The discrepancies are generally due to the fact that the data for TYNDP and NDP was collected in different periods. The costs in NDP are approximately 37 million EUR (depend on currency exchange rate). | Update of the TYNDP |
| | | | Status | Under construction | Update of the TYNDP |
| 355 | Mikulowa - Swiebodzice | Poland | Costs | Slight discrepancies appear generally due to the fact that the data for TYNDP and NDP was collected in a different period. | |
| 373 | Ostroleka-Stanislawow | Poland | Costs | Slight discrepancies appear generally due to the fact that the data for TYNDP and NDP was collected in a different period. The costs in NDP are approximately 59 million EUR (depend on currency exchange rate). | |
| 38 | HVDC Gatica-Cubnezais | France | Commissioning dates | The NRA was not informed of a formally updated commissioning date, as the project is still under reassessment. | |
| | | | Transfer capacities | 2200 MW | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|--|----------------|-----------------------|---|--|
| | | Spain | Technical description | The current NDP 2015-2020 was approved in 2015 and the data for this project was very preliminary at this stage. A complete definition of the project is not included in this NDP. Updated technical changes due to a landslide/erosion of a very extensive sedimentary layer was detected at the Capbreton Canyon during the geotechnical survey carried out in May 2019. Therefore, new routes are being considered in a consultation process. The latest information for this project is included in the Project Sheet 16 (TYDNP 2020). | Update of the NDP |
| | | | Transfer capacities | ES-FR: 2200 MW and FR-ES: 2200 MW | The NRA will recommend to include updated and detailed information of this project in the new NDP 2021-2026. |
| 396 | 3rd AC Finland-Sweden north | Sweden | Transfer capacities | 800 MW according to NDP | Update of the TYNDP |
| 403 | Reinforcements SE2-SE3 in Sweden | Sweden | Transfer capacities | 800 MW according to NDP | Update of the TYNDP |
| 462 | New 400 kV single circuit OHL Turleenan(NI)-Woodland(IE) | Ireland | Commissioning dates | The NRA, as per the latest information and assumptions made in the project promoter's own publications, believes that commissioning date for this project might be pushed to 2024. | Update of the TYNDP |
| 463 | Srananagh - South Donegal | Ireland | Commissioning dates | The latest NDP claims that the expected commissioning date for this investment is 2027. | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| 496 | Fontefria (ES) - Vila Nova de Famalicão (PT) | Spain | Commissioning dates | The commissioning date in the TYNDP is year 2022 which is different from the one included in the NDP 2015-2020. | The NRA will recommend to include updated and detailed information of this |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|-----------------------|--|-----------------------------------|
| | | | | | project in the new NDP 2021-2026. |
| | | | Technical description | The main difference is the length and the route of the transmission line. The line is between Fontefría and VilaFría in the current NDP 2015-2020. However, the line is between Fontefría and Ponte de Lima in the TYNDP2020. The latest information for this investment is included in the TYNDP 2020. | Update of the NDP |
| 60 | FR-BE I: Avelin/Mastaing-Avelgem-Horta HTLS | France | Benefits | No benefit is calculated in the EU TYNDP. The scenarios of the NDP will be updated. | Update of both plans |
| | | | Status | Under construction | Update of the NDP |
| 934 | Nautilus: 2 nd interco UK-BE | Belgium | Costs | Based on the EU TYNDP, the CAPEX for Nautilus (HVDC BE-UK) would amount to 900 million EUR (with an uncertainty margin of 30%), while in the FDP it was estimated at 1000 million EUR. Based on information from the Belgian TSO, the estimated cost decreased because of a foreseen reduction of the length of the HVDC. Project is still in the preliminary design phase and these figures may change. | Update of the NDP |
| 614 | Reschenpass Interconnector | Italy | Clustering | The project 100-I in the draft Italian NDP 2020 includes the removal of some network limitations in the area near Glorenza. | |
| | | | Commissioning dates | The commissioning date in TYNDP 2020 is 2023, while it is 2022 in the Italian draft NDP 2020. | |
| 616 | Salgareda - Bericevo | Slovenia | Commissioning dates | not expected to be implemented before 2030 | Update of the TYNDP |
| | | | Status | Under consideration | Update of the TYNDP |
| | | Italy | Clustering | The draft Italian NDP 2020 displays separately the investment corresponding to the first phase of the project (PST and removal of network limitations) and the investment corresponding to the HVDC Salgareda - | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|-----------------------|--|---------------------|
| | | | | Bericevo/Divaca. The draft TYNDP 2020 should be updated to provide two separate investments (also in line with the TYNDP project description). | |
| | | | Status | Under consideration | Update of the TYNDP |
| | | | Technical description | Both the draft TYNDP 2020 and the Italian draft NDP 2020 indicate a 2-phase project, with a first phase including the possible installations of PSTs and other works and a second phase where the HVDC Salgareda - Bericevo (or Divaca) would be built. | Update of the TYNDP |
| 635 | Elmed Project | Italy | Benefits | The benefit B2 CO2 variation provides surprising results with a large increase of CO2 emissions inside EU and a slight larger reduction outside. This is probably due to a miscalculation of the effects due to exports from EU to Tunisia. As the effects of greenhouse gas emissions are global effects, the differentiation between impacts inside EU and outside EU is not justifiable. Only the total CO2 variation should be considered. | Update of the TYNDP |
| | | | Clustering | Italian draft NDP 2020 include a separate investment regarding the (short) connection of Partanna converter station to the existing grid (Partanna 220 kV) | |
| | | | Costs | The costs of the Italy - Tunisia HVDC are the full project costs (in EU and outside EU): CAPEX 600 million EUR and OPEX 3 million EUR/year. This is not correct, as long as benefits are presented for EU only, the costs should also be EU-only. The EU costs are 50% of the entire project costs. | Update of the TYNDP |
| 645 | ITA-3 | Italy | Clustering | The investment Laino (IT) - Altomonte (IT), investment item 1059.645 (former 127.645 in TYNDP 2018) is included in the Italian draft NDP 2020 as part of the project 509-P, which includes other investments in North Calabria. This is a separate project from project 506-P Montecorvino - Avellino - Benevento. | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|-------------------------------|----------------|-----------------------|--|----------------------|
| | | | | The reasons for clustering the two investments should be given in the TYNDP 2020. Based on the draft Italian NDP 2020, it appears that they would increase the transfer capacity on the same boundary. | |
| | | | Costs | The CAPEX of Italian NDP project 509-P is 186 million euro, but includes 150 million euro of already incurred investments for previous reinforcements in North Calabria. The TYNDP 2020 should provide an updated CAPEX figure referring only to the pending works regarding North Calabria and Laino - Altomonte investment. | Update of the TYNDP |
| | | | Technical description | The project descriptions indicates "new lines". However, the construction of the second 380 kV line Laino (IT) - Altomonte (IT) will to a large extent reuse existing infrastructures. The project description could be improved. | Update of the TYNDP |
| | | | Transfer capacities | The Italian draft NDP 2020 indicates a combined transfer capacity increase of 900 MW on the boundary Italy South - Italy Calabria (200 MW of them apparently provided by the Laino - Altomonte line). The TYNDP 2020 should clarify the transfer capacity increase provided by the two investments and the boundaries affected. The current description "internal (Italy)" is inappropriate. | Update of the TYNDP |
| 810 | France Ireland Interconnector | France | Benefits | In the current state, the results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Status | In permitting | Update of the NDP |
| | | | Transfer capacities | 700 MW | Update of the TYNDP |
| 86 | 400kV OHL between existing | Italy | Clustering | Investment 96 Deliceto(IT) - Bisaccia(IT) is project 505-P in the Italian draft NDP 2020, while investment | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|---|----------------|-----------------------|---|---|
| | Foggia and Villanova 400kV substations | | | 86 Foggia (IT) - Villanova (IT) is project 402-P in the Italian draft NDP 2020. Two investments (instead of three) should be stated in the clustering information in the draft TYNDP 2020 project sheet of cluster 127, which actually contains two investment items. | |
| | | | Costs | CAPEX is 424 million euro in the Italian draft NDP 2020, vs. 397 million euro in the draft TYNDP 2020. Information should be provided whether the 397 million EUR figure in the draft TYNDP 2020 is more updated/accurate than the 424 million EUR amount in the draft Italian NDP 2020. | Clarify (and if needed update) the TYNDP 2020 |
| | | | Technical description | Investment 127.86 Foggia (IT) - Villanova (IT) is composed by several lines. The Gissi - Villanova part was commissioned in 2016, while the Foggia - Larino - Gissi part is expected to be commissioned in 2024. It should be clarified that the investment item is Foggia (IT) - Gissi (IT). | Update of the TYNDP |
| | | | Transfer capacities | 400 MW Deliceto(IT) - Bisaccia(IT) + 500 MW Foggia (IT) - Villanova (IT). The draft TYNDP 2020 says 1000 MW overall. Explanations should be provided, whether the 1000 MW figure in the draft TYNDP 2020 is more updated/accurate than the 900 MW (400 MW+500 MW) stated in the draft Italian NDP 2020. | Clarify (and if needed update) the TYNDP 2020 |
| 896 | Omagh South to South Donegal | Ireland | Status | Under consideration | Update of the TYNDP |
| 90 | Voltage upgrade of 220 kV OHL Calenzano-Colunga | Italy | Clustering | In the Italian draft NDP 2020, the Calenzano - Colunga project (302-P) is composed by several investments but is not clustered jointly with the investment "removal of limitations in Central Italy" (code 432-P). Calenzano - Colunga affects the cross-zonal capacity between Italy North and Italy Center North, while the other | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------------|----------------|----------------------|--|---|
| | | | | investment affects the cross-zonal capacity between Italy Center North and Italy Center South. | |
| | | | Costs | CAPEX in the Italian draft NDP 2020 is slightly different (265 million EUR vs. 259 million EUR for the entire cluster in the draft TYNDP 2020). | |
| | | | Transfer capacities | The transfer capacity increase is 400 MW at the Italy North - Italy Center North border and also 150 - 300 MW at the Italy Center North - Italy Center South. The latter seems not clearly reported in the draft TYNDP 2020. | Update of the TYNDP |
| 96 | New 400 kV OHL Deliceto - Bisaccia | Italy | Clustering | Investment 96 Deliceto(IT) - Bisaccia(IT) is project 505-P in the Italian draft NDP 2020, while investment 86 Foggia (IT) - Villanova (IT) is project 402-P in the Italian draft NDP 2020. Two investments (instead of three) should be stated in the clustering information in the draft TYNDP 2020 project sheet of cluster 127, which actually contains two investment items. | Update of the TYNDP |
| | | | Costs | CAPEX is 194 million euro in the Italian draft NDP 2020, vs. 190 million euro in the draft TYNDP 2020 | No change in any plan |
| | | | Transfer capacities | 400 MW Deliceto (IT) - Bisaccia(IT) + 500 MW Foggia (IT) - Villanova (IT). The draft TYNDP 2020 says 1000 MW overall. It should be clarified whether the 1000 MW figure in the draft TYNDP 2020 is more updated/accurate than the 900 MW (400 MW+500 MW) stated in the draft Italian NDP 2020. | Clarify (and if needed update) the TYNDP 2020 |
| 987 | France-Alderney-Britain | France | Benefits | The results seem to be different for the SEW in 2030, while both plans use the same methodology to calculate SEW. | Update of both plans |
| | | | Costs | The costs of the project seem to be particularly low in comparison to similar projects. | Update of both plans |
| | | | Transfer capacities | 1400 MW | Update of the TYNDP |

| Investment number | Transmission investment name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|-------------------|------------------------------|----------------|----------------------|------------------------------------|----------------------|
| 995 | Hansa PowerBridge I | Sweden | Status | In permitting | Update of the NDP |
| 997 | 997 Pleinting - St. Peter | Germany | Status | Planned, but not yet in permitting | Update of both plans |

Table 14: List of identified differences for storage projects in the draft EU TYNDP 2020 and in the NDPs

| Project number | Storage project name | Country of NRA | Inconsistent feature | Information provided by the NRA | NRA comment |
|----------------|------------------------------------|----------------|-----------------------|---|---------------------|
| 1006 | HPS AMFILOCHIA | Greece | Technical description | The values for total generating capacity and total pumping capacity of pump storage included in the NDP are derived from obsolete production licenses. These values must be updated according to the amended production licenses issued in 2016 by the NRA. | Update of the NDP |
| 1030 | MARES Organic Power Energy Storage | Ireland | Commissioning dates | The NRA believes that the commissioning date of 2024 as listed in the TYNDP is too ambitious based on the progress to date | Update of the TYNDP |

Table 15: List of the investments which have a different investment or project number in the draft EU TYNDP 2020 than in the EU TYNDP 2018

| Country 1 | Country 2 | Investment number ⁴⁵ | Project number ⁴⁵ | Investment name | Project name | Additional information provided by the NRAs |
|-----------|-------------|---------------------------------|------------------------------|--|--------------------------------------|--|
| Austria | - | 219 | 47 | 219: Westtirol - Zell/Ziller (AT internal) | Westtirol - Vöhringen | Commissioning date and maturity of the project 47 led to re-clustering and the new project number is 1054 (investment 1715). |
| Austria | - | 1636 | 325 | "Lienz - Obersielach (AT Internal, mandatory requirement for NTC increases on AT-IT and AT-SI border)" | AT, SI, IT - South-East Alps Project | Commissioning date and maturity of the project 325 led to re-clustering and the new project number is 1052 (investment 1713). |
| Estonia | - | 1667 | 170 | New voltage control units (such as SVC) in EE | Baltics synchro with CE | Investment 1667 is combined with investment 1571. |
| Finland | - | 801 | 96 | FI5 KI-PS | Keminmaa-Pyhänselkä | Investment received a new investment number 1710 and is now cluster under the project 111 ('3rd AC-line between Finland and Sweden'). |
| Germany | Switzerland | 1457 | 231 | Additional Measures | Concept project Germany-Switzerland | The investment was probably split into new projects '1058 HVDC Interconnector DE-CH; and '263 Lake Constance East' |
| Greece | - | 1410 | 219 | EuroAsia Interconnector | EuroAsia Interconnector | This investment is included in the TYNDP 2020 with the code number 1717 (part of the TYNDP project 1055). After Greek Member State's decision, this investment (interconnection between Crete and Attica) is now implemented as a national project by a subsidiary company |

⁴⁵ From the EU TYNDP 2018

| Country 1 | Country 2 | Investment number ⁴⁵ | Project number ⁴⁵ | Investment name | Project name | Additional information provided by the NRAs |
|-----------|-----------|---------------------------------|------------------------------|---|----------------------------|---|
| | | | | | | of the Greek TSO and not as a PCI project by Euroasia (third party project promoter). For this reason the investment was not included in the 4th PCI list. |
| Latvia | - | 1668 | 170 | New voltage control units (such as SVC) in LV | Baltics synchro with CE | Rephrasing of the investment description to investment 1571 'New Voltage stabiliser units (SVC), Battery Energy Storage System (BESS) control units in Lithuania, Latvia and Estonia' |
| Lithuania | - | 1633 | 170 | Reconstruction of 330 kV OHL Telsiai-Musa | Baltics synchro with CE | In TYNDP2020 this project is moved to new Project ID 1042 'Offshore wind integration'. |
| | | 1635 | 170 | New 330 kV OHL Darbenai-Telsiai | Baltics synchro with CE | Instead of the TYNDP 2018 investment 1635 'Darbėnai-Mūša' and investment 1633 'Telšiai-Mūša', now only investment 1635 'Darbėnai-Mūša' is identified as necessary. Since Darbėnai-Mūša line is not necessary for the synchronization project, but it is necessary for the integration of the offshore wind in the Baltic sea, this project is moved to new Project ID 1042 "Offshore wind integration". |
| | | 1656 | 170 | New 330 kV OHL Panevezys-Musa | Baltics synchro with CE | OHL Panevėžys-Mūša is not necessary for the synchronization project, but it is necessary for integration of the offshore wind in the Baltic sea. This project is moved to new Project ID 1042 'Offshore wind integration'. |
| Norway | - | 406 | 37 | | Norway - Germany, NordLink | The investment was given an investment number 142 in the draft EU TYNDP 2020. |

Table 16: Projects in the draft EU TYNDP 2020 with duplicate numbers

| Project number in the draft EU TYNDP 2020 | Project name |
|---|---|
| 1039 | Reversible Hydraulic Power Plant "Los Guajares" |
| 1039 | SE North-south long-term reinforcements |

| | |
|------|---|
| 1041 | Purifying-Pumped Hydroelectric Energy Storage "Velilla del Río Carrión" (P-PHES VELILLA) |
| 1041 | GREGY Interconnector |
| 1042 | Distributed network of Hydrogen storage and production by electrolysis with re-electrification through a fleet of FCEVs |
| 1042 | Offshore wind integration |
| 1046 | Online Grid Controller "PSKW-Rio" |
| 1046 | N-S Finland P1 stage 3 |

Table 17: List of the transmission investments and storage projects for which the draft EU TYNDP does not provide cost uncertainty range

| Investment number | Project number | Investment name | Project name | Status |
|-------------------|----------------|--|--------------------------------------|-------------------------------------|
| 86 | 127 | New double circuit 400kV OHL Foggia (IT) -Villanova (IT) | Central Southern Italy | In permitting |
| 90 | 33 | Voltage upgrade of Calenzano-Colunga 220kV OHL to 400kV | Central Northern Italy | In permitting |
| 96 | 127 | New single circuit 400kV OHL Beliceto (IT) - Bisaccia (IT) | Central Southern Italy | Under construction |
| 142 | 37 | Norway - Germany HVDC | Norway - Germany, NordLink | Under construction |
| 144 | 39 | Audorf - Kassoe | DKW-DE, step 3 | Under construction |
| 373 | 123 | Ostroleka-Stanislawow | LitPol Link Stage 2 | Under construction |
| 424 | 110 | Norway - Great Britain | Norway-Great Britain, North Sea Link | Under construction |
| 458 | 78 | HINP-SEAB New Double Circuit | South West Cluster | In permitting |
| 462 | 81 | New 400 kV single circuit OHL Turleenan(NI)-Woodland(IE) | North South Interconnector | In permitting |
| 463 | 82 | Srananagh - South Donegal | RIDP I | In planning, but not yet permitting |
| 635 | 29 | Elmed Project | Italy-Tunisia | In permitting |
| 645 | 1059 | ITA-3 | Southern Italy | In permitting |
| 735 | 62 | Harku-Sindi 330kV OHL | Estonia-Latvia 3rd IC | Under construction |
| 896 | 82 | Omagh South to South Donegal | RIDP I | In planning, but not yet permitting |
| 897 | 82 | Omagh South to Turleenan | RIDP I | In planning, but not yet permitting |

| Investment number | Project number | Investment name | Project name | Status |
|-------------------|----------------|--|--|-------------------------------------|
| 998 | 167 | Viking Link DKW-GB | Viking DKW-GB | Under construction |
| 1018 | 183 | DKW-DE, Westcoast | DKW-DE, Westcoast | In permitting |
| 1041 | 33 | Rem. lim. in Central Italy | Central Northern Italy | In planning, but not yet permitting |
| 1205 | 259 | HU-RO | HU-RO | Under consideration |
| 1276 | 241 | Upgrading of existing 220 kV line between SS Dakovo (HR) and TPP Tuzla (BA) to 400 kV line | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1277 | 241 | Upgrading of existing 220 kV line between SS Dakovo (HR) and Gradacac (BA) to 400 kV line | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1278 | 241 | Upgrading existing 220 kV SS Dakovo to 400 kV | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1279 | 241 | New double 400 kV line between SS Dakovo and location Razbojiste | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1383 | 285 | GridLink | GridLink | In planning, but not yet permitting |
| 1407 | 219 | EuroAsia Interconnector | EuroAsia Interconnector | In permitting |
| 1409 | 219 | EuroAsia Interconnector | EuroAsia Interconnector | In permitting |
| 1493 | 94 | PST Vierraden | GerPol Improvements | Under construction |
| 1530 | 241 | Upgrading of existing 220 kV line between SS Gradacac (BA) and TPP Tuzla (BA) to 400 kV line | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1531 | 241 | Upgrading existing 220 kV SS Gradacac (BA) to 400 kV | Upgrading of existing 220 kV lines between HR and BA to 400 kV lines | Under consideration |
| 1532 | 343 | New OHL 400 kV Banja Luka - Lika | CSE1 New | In planning, but not yet permitting |
| 1533 | 343 | New OHL 400 kV Lika – Melina | CSE1 New | In planning, but not yet permitting |
| 1534 | 343 | New OHL 400 kV Lika – Konjsko | CSE1 New | In planning, but not yet permitting |
| 1535 | 343 | New Substation 400/110 kV Lika | CSE1 New | In planning, but not yet permitting |
| 1556 | 336 | Prati (IT) – Steinach (AT) | Prati (IT) – Steinach (AT) | Under construction |

| Investment number | Project number | Investment name | Project name | Status |
|-------------------|----------------|---|--|-------------------------------------|
| 1622 | 350 | 400kV OHL SS Bitola - SS Elbasan | South Balkan Corridor | Under construction |
| 1623 | 350 | 400 kV SS Ohrid | South Balkan Corridor | Under construction |
| 1628 | 309 | NeuConnect Interconnector | NeuConnect | In permitting |
| 1639 | 349 | Enabling Works 1: Bellacorick-Oldstreet 2 x 245kV OHL | MaresConnect | In planning, but not yet permitting |
| 1641 | 349 | Mares Converter Station 3 | MaresConnect | In planning, but not yet permitting |
| 1642 | 349 | Mares Converter Station 2 | MaresConnect | In planning, but not yet permitting |
| 1646 | 349 | Mares Converter Station 1 | MaresConnect | In planning, but not yet permitting |
| 1654 | 349 | Enabling Works 5: EIRGRID 2 x 245kV Connection bays at Oldstreet and associated works | MaresConnect | In planning, but not yet permitting |
| 1698 | 342 | New 400 kV SY Pozega | Central Balkan Corridor | In planning, but not yet permitting |
| 1699 | 342 | New OHL SS Jagodina 4 - SY Drmno | Central Balkan Corridor | In planning, but not yet permitting |
| 1721 | 265 | Magadino | Tessin | In planning, but not yet permitting |
| 1723 | 1056 | OHL 2x400 kV ZONE 5 - ZONE 6 | Croatian south connection | Under consideration |
| 1727 | 1059 | Montecorvino-Avellino and Nord-Ben. in Campania | Southern Italy | In permitting |
| - | 1003 | - | Hydro-pumped storage in Bulgaria - Yadenitsa | In permitting |
| - | 1012 | - | Purifying -Pumped Hydroelectric Energy Storage (P-PHES Navaleo) | In permitting |
| - | 1027 | - | P-PHES CUA | In permitting |
| - | 1036 | - | SR Mar de Aragón ⁴⁶ | Under consideration |

⁴⁶ For storage project 1036 ('SR Mar de Aragón'), only qualitative information is provided "Medium-High" and the Agency does not consider its cost uncertainty range.

| Investment number | Project number | Investment name | Project name | Status |
|-------------------|----------------|-----------------|--|---------------|
| - | 1041 | - | Purifying-Pumped Hydroelectric Energy Storage "Velilla del Río Carrión" (P-PHES VELILLA) | In permitting |

Table 18: Investments with insufficient technical description

| Project number | Investment number | Investment Name | Project Name | ACER comment |
|----------------|-------------------|--|---|---|
| 219 | 1407 | EuroAsia Interconnector | EuroAsia Interconnector | Investments 1409 and 1407 that belong under project have same descriptions and the difference between them is not made clear. |
| 219 | 1409 | EuroAsia Interconnector | EuroAsia Interconnector | Investments 1409 and 1407 that belong under the same project have same descriptions and the difference between them is not made clear. |
| 40 | 650 | BE-LUX-DE Long-Term perspective | Belgium-Luxembourg-Germany: long-term perspective | Investment is not concrete enough, as its technical solution is yet unknown. |
| 280 | 1008 | Study Lonny-Achene-Gramme | FR-BE: study Lonny-Achene-Gramme | The description does not provide information on how line capacity will be upgraded. In addition, it is not yet clear whether both PST will be installed and line capacity upgraded. |
| 225 | 1107 | 2nd interconnector between Belgium and Germany | 2nd interconnector Belgium - Germany | This investment only envisions possibility of an interconnector and timing, location, route and capacity are all yet unknown. |
| 170 | 1118 | Further infrastructure aspects related to the implementation of the synchronisation of the Baltic States' system with the continental European network | Baltic States Synchronization with Continental Europe | No technical information are provided. |
| 120 | 1625 | MOG II: connection of up to 2 GW additional offshore wind Belgium | MOG II: connection of up to 2 GW additional offshore wind Belgium | The investment is not concrete as it provides no information about the cable location and the number of the offshore platforms is still questionable. |
| 124 | 733 | Ekhyddan-Nybro-Hemsjo | NordBalt phase 2 | The descriptions do not provide information about the internal reinforcements. |
| 265 | 1290 | Magadino - Ulrichen | Tessin | According to the investment description, it includes replacement and extension of several lines, but no additional information is |

| Project number | Investment number | Investment Name | Project Name | ACER comment |
|----------------|-------------------|--|---|--|
| | | | | provided regarding the lines (number, voltage level,...) and it is not clear which parts will be replaced and how extended. |
| 170 | 1571 | New Voltage stabiliser units (SVC), Battery Energy Storage System (BESS) control units in Lithuania, Latvia and Estonia. | Baltic States Synchronization with Continental Europe | According to the description, the investment is a subject of yet unknown studies and no concrete technical information is provided in addition to the information that additional compensation devices or battery energy storage units might have to be installed. |