

**OPINION No 18/2019  
OF THE EUROPEAN UNION AGENCY  
FOR THE COOPERATION OF ENERGY REGULATORS**

**of 25 September 2019**

**ON THE DRAFT REGIONAL LISTS OF  
PROPOSED ELECTRICITY PROJECTS OF COMMON INTEREST 2019**

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009<sup>1</sup>, and, in particular, Annex III.2(12) thereto,

Having regard to the favourable opinion of the Board of Regulators of 24 September 2019, delivered pursuant to Article 22(5)(a) of 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 Regulators (ACER)<sup>2</sup>,

Whereas:

**1. INTRODUCTION**

- (1) According to Article 3 of Regulation (EU) No 347/2013, a Union list of Projects of Common Interest ('PCIs')<sup>3</sup> shall be established every two years, on the basis of the regional lists adopted by the decision-making bodies of the Regional Groups as set out in Annex III.1 to the same Regulation.

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<sup>1</sup> OJ L 115, 25.4.2013, p.39.

<sup>2</sup> OJ L 158, 14.6.2019, p. 22–53.

<sup>3</sup> In this Opinion, the term "proposed PCIs" indicates projects, which are included in the document of the draft regional lists submitted to ACER, either in section 1.1 "Draft electricity regional lists" or section 2.1. "Projects still under analysis and consideration for possible inclusion in the regional lists" of that document, and the term "candidate projects" indicates projects for which an application for selection was submitted.

- (2) The draft regional lists of proposed projects falling under the categories set out in Annex II.1 and 2 to Regulation (EU) No 347/2013 drawn up by the Regional Groups (RGs) shall be submitted to ACER six months before the adoption date of the Union list. The draft list shall be accompanied by the opinions of Member States to whose territory a proposed project does not relate, but on which the proposed project may have a potential net positive impact or a potential significant effect, which were presented to a RG specifying its concerns.
- (3) According to Annex III.2.7 to Regulation (EU) No 347/2013, the National Regulatory Authorities (NRAs), and if necessary ACER, shall check the consistent application of the criteria and cost-benefit analysis (CBA) methodology and evaluate the cross-border relevance of the PCIs. They shall present their assessment to the Group.
- (4) The draft regional lists and the accompanying opinions shall be assessed by ACER within three months of the date of receipt. ACER shall provide an opinion on the draft regional lists, in particular on the consistent application of the criteria and the cost-benefit analysis across regions. The opinion of ACER shall be adopted in accordance with the procedure referred to in Article 22(5) of Regulation (EU) No 2019/942.
- (5) ACER, striving to coordinate NRA inputs in view of the requirement provided in Annex III.2.7 to Regulation (EU) No 347/2013, developed a questionnaire. With the help of the questionnaire, NRAs provided structured assessments of the candidate projects (the statistics of these assessments are presented in Annex III to this Opinion). The assessments were presented to the RGs on 11 and 12 April 2019 as an input to the evaluation of the candidate projects. These individual or joint NRA assessments were also considered as an input for preparing this Opinion.
- (6) The European Commission presented in the RG meetings held on 28 and 29 May 2019 the ranking and scoring of the candidate projects proposed for inclusion in the draft lists of PCIs, to be submitted to the Decision Making Bodies.
- (7) The technical meeting of the Decision Making Bodies pursued the goal of approving the inclusion of particular candidate projects in the draft PCI list. On 5 July 2019, the Decision Making Bodies decided which projects shall be included in the draft lists.
- (8) On 12 July 2019, the European Commission submitted to ACER for its opinion the draft regional lists of proposed PCIs (cf. Annex IV to this Opinion) falling under the categories set out in Annex II.1 to Regulation (EU) No 347/2013 regarding electricity transmission, storage and smart grids. The document contains the draft lists of electricity projects per priority corridor (NSOG, NSI West, NSI East and BEMIP) and Smart Grids thematic area, as well as lists of “Projects still under analysis and consideration for possible inclusion in the regional lists”, and of “projects, which did not prove that their overall benefits outweigh costs”.
- (9) The draft list submitted to ACER marks the objections of some Member States voiced during the meetings over certain candidate projects as “technical opinions” and “reservations”. The document provides information about comments made by certain Member States regarding candidate projects, as well as, in some instances,

information about adjustments made to the assessments of the projects, in particular to the calculations of the indicated costs and benefits. No substantiated reasons as to why Member States did not approve a given project were attached to the document.

## **2. ASSESSMENT OF THE DOCUMENT**

### **2.1. Assessment of the process and the methodology used for drafting the draft PCI lists**

#### **2.1.1. The organisation of the PCI selection process**

(10) ACER welcomes the improvements introduced in the PCI selection process compared to the previous selection rounds:

- The organisation of the PCI Cooperation Platform was significantly improved. The meetings were held regularly, they were better prepared, and there was substantial discussion on all topics relevant to the PCI selection, and especially the ones deriving from the Ten Year Network Development Plan (TYNDP) 2018 (with the exception of the incorporation of PCI monitoring results and of the PCI selection methodology).
- The submission process of the PCI candidates was better organised and coordinated, and the applied submission rules did not allow the submission of parts of the TYNDP projects (with the exception of two projects), resulting into higher consistency of the data that were assessed within the TYNDP and the PCI processes.
- The process of assessing benefits additional or alternative to the CBA ones was incorporated in the TYNDP 2018 process, and was not part of the PCI selection. This allowed setting rules for data submission (included in the format of guidelines issued by the European Network of Transmission System Operators for Electricity (ENTSO-E), which were previously consulted with ACER), more time for promoters to submit their studies and calculations, and facilitation of scrutiny of the submitted data by the NRAs and, in some cases, the discussion of divergent views.
- The needs identification discussion was less burdensome for the involved stakeholders, although there was still a lack of technical analysis in the TYNDP 2018.
- NRAs were allowed adequate time to prepare their coordinated assessment of the projects (30 November 2018 to 20 February 2019), although the time window was given at a time when the TYNDP content and data were not finalised yet. Also, the NRAs' assessment was the starting point of the RG discussions in the "regional format", respecting the provision of Annex III.2.11 to Regulation (EU) No 347/2013 (see Annex I to this Opinion for a detailed list of meetings).

- More time was made available for the discussion of the candidate projects, including especially their costs and benefits due to the new time planning. This improvement was achieved without the need of additional meetings and extra resources. On the contrary, 6 RG meetings were organised, one less than in the 2017 PCI selection process

(11) Nevertheless, despite the improvements highlighted above, ACER is of the view that additional efficiencies could be achieved and offers the following considerations and recommendations, which are relevant further to improve the process of the PCI selection:

- Despite the improved organisation of the PCI Cooperation Platform, important elements of the process, i.e. how the PCI monitoring results would be incorporated in the selection process and the selection methodology itself, were not adequately discussed. This hindered the further improvement of the selection process quality and transparency.
- The discussion of infrastructure needs in the RGs, although less burdensome this time, should be further shortened, also by directly using future technical TYNDP inputs.
- The timing of the TYNDP process was not well aligned with the PCI selection, as at the time of the submission of candidates projects (in November 2018) and of the provision of NRAs' assessment (February 2019), the TYNDP was not finalised yet (i.e. important features of the projects and some CBA calculations changed afterwards) and not even ACER's Opinion No 11/2019 on the draft TYNDP 2018 was released. Better alignment would allow better assessment of projects by NRAs and by the other RG members. Therefore, ACER recommends that the key information of candidate projects (especially their costs and benefits) that impact the project assessment be finalised before the project assessment starts, and be subject to the PCI public consultation. This means that the ENTSO-E TYNDP, which provides the necessary data for the project assessment, should incorporate ACER's comments and be finalised before the project assessment starts.
- The selection methodology circulated to the RGs for consultation lacked important aspects (e.g. how non-monetised benefits would be considered, the pass thresholds for a candidate project to be eligible as a proposed PCI, the normalisation scale of monetised benefits, the impact of PCI monitoring results on its assessment). These aspects (except for the last one, which was never discussed) were presented only during the last RG meeting, not providing any opportunity for the RG members to offer their views, which could substantially improve the selection methodology. Therefore, ACER recommends that the discussion of the selection methodology start before the PCI needs assessment, taking into account the TYNDP identification of needs and the ACER PCI monitoring report, and that a clear and well-documented description of the PCI selection methodology, including all important information, be provided to the RGs for consultation, allowing proper time (e.g. one month) for substantial discussion and for comments to be evaluated and, when useful, incorporated.

After the consultation, the final methodology (including all necessary elements for the calculations to be replicated by interested parties) should be made publicly available.

- The specific rules applied for the calculation of the Net Present Values (NPVs) of the candidate projects were not disclosed, despite ACER's specific request, impeding the replication of the calculations by interested stakeholders, which is an important element of transparency. Therefore, ACER recommends that the details of the NPV calculation, i.e. details of the CBA rules implementation, the specific indicators to be used and their sources, be finalised before the project assessment starts.
- The specific values used for the calculation of the monetised benefits of the projects, which were the basis of their ranking, were provided neither to the RGs nor to ACER, despite the requests by many RG members, including ACER. Given that the TYNDP 2018 data was still under processing during the RG discussion, and that some additional elements, which were taken into account in the assessment, are not published and their values are unknown (like the additional SEW benefits), the non-release of the project specific calculations constitutes a significant reduction in the transparency and integrity of the assessment process. Therefore, ACER recommends that the RGs publish the specific rules applied and the cost and benefit values used for the calculation of the NPVs of the candidate projects, before the meeting of the Decision Making Bodies of the RGs, which will adopt the final regional lists for 2019 PCIs.
- The criteria used for the preparation of the draft lists are not clear in the document submitted to ACER. More specifically, in the case of two projects, which are included in the draft lists, no assessment result nor a ranking was provided to the RGs, and it remains unknown whether these projects meet the threshold set by the selection methodology. The reasons for their inclusion in the draft list (despite the absence of assessment or ranking) is in one case absent and in the other case unclear. Furthermore, for three projects, which are included in the draft lists, but did not pass the set threshold of 10 points (according to the ranking presented in the last RG meeting), the reason for their inclusion was presented in the form of a short comment without providing the necessary information to justify such an inclusion. For 7 projects, which, in the RG presentations, appeared not to meet the general criteria and for one project for which no progress was reported, there is no reference in the draft lists document (nor in the section "Projects not included in the draft regional lists"), creating uncertainty regarding the decision on their inclusion in the draft lists. Therefore, ACER recommends that the RGs provide to all their members, before the technical session of the Decision Making Bodies, the proposed draft regional lists, details of how the assessment was carried out and the justification for the inclusion / exclusion of candidate projects. Furthermore, the Decision Making Bodies should disclose (starting from the ongoing PCI selection process) detailed information to all the members of the respective RGs on how the assessment of the candidate projects was carried out, including the details of complementary evaluation (if any) carried out on top of the assessment carried out in the RGs.

- The Member States' reservations indicated in the draft lists are not clear and documented. Therefore, the requirement of Article 3(3) and Annex III.2.10 to Regulation 347/2013, according to which in case of non-approval of a candidate project by a Member State substantiated reasons should be presented to the RGs is not met.
- Last, the introduction of a category of "Projects still under analysis and consideration for possible inclusion in the regional lists" introduces some ambiguity on the place of these candidate projects in the draft list of proposed PCIs, and this practice should be avoided in the future.

### 2.1.2. Identification of infrastructure needs and related preparatory activities

- (12) The approach followed by the RGs regarding the identification of infrastructure needs and the list of regional needs per corridor is presented in the European Commission document "Identification of system needs for the TEN-E priority corridors, PCI 2018-2019 exercise"<sup>4</sup>.
- (13) The introduction of the infrastructure needs identification was acknowledged by ACER's Opinion No 14/2017 on the draft PCI lists 2017<sup>5</sup> as a potentially considerable improvement in the selection process, provided that the appropriate technical analysis be included in the subsequent TYNDPs. Despite the fact that ACER raised awareness of the importance of this analysis early *enough within the Cooperation Platform* framework, the needs identification<sup>6</sup> performed by ENTSO-E did not meet this objective.
- (14) As elaborated in ACER's Opinion No 11/2019 on the draft TYNDP 2018, the TYNDP 2018 did not provide a sufficient level of technical analysis on the infrastructure needs. ENTSO-E performed a needs analysis only for the year 2040, and not for the time horizons studied for the purpose of the CBA analysis, i.e. 2025 and 2030. Furthermore, no quantification of the infrastructure needs (by clearly indicating the target capacities for each boundary) was presented.
- (15) Due to the lack of a solid technical basis and analysis in the TYNDP 2018, the infrastructure needs identification in the PCI selection process was based on drivers built on available data. The chosen drivers led to the identification of a need for all three policy objectives (market integration, security of supply, sustainability) and for all corridors (with the exception of the BEMIP corridor, for which no "Sustainability [RES curtailment]" need was identified).

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<sup>4</sup> [https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/3063b7ec-e511-4af4-a964-7b4f7aef939?p=1&n=10&sort=modified\\_DESC](https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/3063b7ec-e511-4af4-a964-7b4f7aef939?p=1&n=10&sort=modified_DESC)

<sup>5</sup> [https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Opinions/Opinions/ACER%20Opinion%2014-2017.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER%20Opinion%2014-2017.pdf)

<sup>6</sup> ENTSO-E report "European Power System 2040 - Completing the map: The Ten Year Network Development Plan 2018 System Needs Analysis".

- (16) This lack of a solid technical basis eventually weakened the relevance of the needs identification to verify the criterion defined by Article 4(1)(a) of Regulation (EU) No 347/2013<sup>7</sup>.
- (17) The above-mentioned drivers were amended with three additional ones, “SoS [internal bottlenecks / loop flows]”, “ending electricity isolation”, and “Baltic Synchronization”, which were suggested by individual members of the RGs, and, despite the fact that they were not based on technical data or grounding, they were accepted by the RGs.
- (18) ACER notes that some of the drivers considered were overlapping and therefore redundant:
- the “Sustainability [RES curtailment]” driver is covered by the “Market integration [Price difference]” driver;
  - the “SoS [internal bottlenecks / loop flows]” and the “ending electricity isolation” drivers are already to a very large extent covered by the “Market integration [Price difference]” driver;
  - the “SoS [generation portfolio]” and the “SoS [Ramps]-improve system flexibility and stability” drivers seem to cover the same impacts of change of the generation mix due to the decarbonisation of the electrical system.
- (19) ACER reiterates its support to the identification of infrastructure needs in the coming PCI selection rounds as a first step of the process, but only subject to significant improvement of the needs assessment methodology to be used.
- (20) ACER reiterates its view that future needs identification should be based on a sufficient level of technical analysis in the future TYNDPs with an appropriate time horizon (i.e. about 10 years ahead).
- (21) More specifically, the future TYNDPs should provide calculated target capacities at each boundary, at relevant (for the PCI assessment) study years, based on a clearly defined reference network and on transparent calculations. Also, a consistent explanation of the contribution of each project to these target capacities should be included in the TYNDP.
- (22) Since the process of identifying the infrastructure needs did not include any assessment of potentially more cost-effective alternatives to infrastructure development, ACER recommends that such an assessment be added to this process as a final step.

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<sup>7</sup> While the European Commission’s 12 July letter to ACER did not provide any explanation on the reasons for excluding some candidate projects from the draft regional lists, ACER understands that such a criterion was not used in practice, making the needs identification a burden rather than a value for the 2019 electricity PCI process.

2.1.3. The selection methodology for transmission candidate projects

- (23) The selection methodology applied by the four electricity RGs is presented in Annex II to this Opinion.
- (24) ACER welcomes the reduction of the non-monetised part of the benefits considered in the selection methodology, rendering more robust outcomes. Also, the absence of the criterion “Contribution to addressing loop-flows” in the non-monetised benefits is positively noted and represents an improvement compared to the 2017 PCI selection.
- (25) ACER welcomes the consistency achieved between the projects assessed within the PCI selection process and the projects assessed in the TYNDP 2018 (with the exception of two candidate projects). Due to this increased consistency, there was no need to invent and implement rules for breaking down the benefits (calculated at a project level in the TYNDP 2018) to an investment item level. This development places more responsibility on ENTSO-E for the careful application of rules for the clustering of investments to be applied in the future TYNDPs.
- (26) ACER also positively notes that new benefit categories and improved alternative calculations were taken into account in the assessment, contributing to a more complete analysis, especially regarding security of supply.
- (27) In addition, it is positively noted that the RGs criticised some assumptions for the base-case transfer capacities in the TYNDP 2018 (“reference grid”), acknowledging, for the first time, the importance and impact of a proper definition of the reference grid on the CBA outcomes and on the PCI selection.
- (28) However, the following shortcomings were identified:
- In ACER’s view, the multi-criteria analysis approach used for the ranking of the projects should have been avoided, as the expansion of the spectrum of benefits in this selection round could have allowed for a simple and easily understandable, purely CBA –based approach. The ranking should have then been based on the monetised benefits, which would have considerably increased the credibility of the PCI selection process.
  - Some inconsistencies were noted as a result of the process of accepting additional or alternative project-specific calculations conducted by promoters in the TYNDP 2018. Although there was scrutiny by the NRAs, different approaches created some inconsistency in the comparability of the outcomes. A better (more consistent) implementation is needed and expected in future TYNDPs.
  - Regarding the calculation of costs and monetised benefits, ACER is unable to verify whether the CBA rules (i.e. use of benefit results of two study years with suitable interpolation and discounting) were consistently applied, given the lack of visibility regarding the calculations of the project benefits, as elaborated in recital (11) of this Opinion. A CBA calculation template should be made available to RG members and published, for a better transparency of the PCI selection process.

- Regarding the approach of the “enhanced SEW” calculation, the following considerations are noted:
- Although it is acknowledged in the “Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise” that the TYNDP reference grid may be inflated, i.e. it may include too uncertain projects, the “enhanced SEW” calculation was only applied to the candidate projects that were included in the TYNDP (former) reference grid. This selective application has two negative effects: a) it results into the same increase of the market integration benefit for the certain projects, which should have been evaluated under a Take Out One at a Time (TOOT) approach and for the uncertain projects, which should not have been included in the reference grid, but rather should have been evaluated under a Put IN one at a Time (PINT) approach, and b) other (uncertain) projects, which were left out of the reference grid and were evaluated under a PINT approach starting from a “higher” baseline, did not receive the same treatment. Therefore, the SEW enhancement calculations should have been at least limited to the projects which are “certain” to be implemented, and thus should have been part of a properly defined reference grid.
- According to the “Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise”, the “enhanced SEW” calculation considered the difference between the SEW value with the 2020 reference grid and the SEW value with the 2027 grid. However, the “2020 reference grid” was not communicated or discussed in the RGs, and therefore it is unclear which projects/capacities are included in it.
- Although the problem of the “inflated” reference grid was also noted by ACER in its Opinion No 11/2019 on the draft TYNDP 2018, as a result of too lax criteria considered by ENTSO-E for its construction and some implementation mistakes, the current proposal to consider the 2020 grid (if it means the “current” grid) would tend to underestimate the reference grid by ignoring projects that are currently under way and are certain to be constructed in the coming years. Therefore, the fair approach would be also to account for the capacities of all projects which are realistically expected to be commissioned in the coming years.
- The application of the “enhanced” SEW approach only to the three borders, which are indicated “for instance”, i.e. the boundary between the UK and the Continent and Nordic countries, Iberian Peninsula boundary, and the Northern Italian border, without proper justification, raises questions about the equal treatment of all candidate projects.
- Regarding the benefit “SoS- Baltic State Synchronisation”, it is unclear whether it was considered only for project 170 or also for other projects connecting Lithuania, Latvia and Estonia (i.e. projects 62 and 124).
- Regarding the scenarios used, according to the “Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise”, results from ENTSO-E’s “Distributed Generation” scenario of TYNDP 2018 for the year 2030 were only used in the assessment. The European Commission stated in that document that “the choice of the Distributed Generation scenario is the

result of the European Commission check on the alignment of the TYNDP 2018 scenarios with the latest European Union targets and scenarios [in particular the RES penetration, CO<sub>2</sub> mitigation and gas demand]”. Although ACER sees merit in the alignment with the European Union targets, it has to be highlighted that the consideration of one single scenario may result in biased results by missing in the assessment other possible futures, both in terms of infrastructure needs and assessments of individual projects. In addition, using only one scenario for the year 2030 limits the analysis regarding the uncertainties of results in the longer term.

- Regarding the non-monetised benefits considered in the assessment, a high degree of double counting is noted. More specifically, the “Interconnection Target” seems, to a large extent, accounted for through the assessment of project benefits. It also includes the prerequisite of a positive CBA. Therefore, this indicator can only display a positive score for candidate PCIs with a positive CBA, where its contribution is not needed for passing a benefit vs. cost threshold. Considering this criterion to assess the value of projects, which do not show a positive CBA, creates a risk of fostering inefficient and inadequate projects, without gain of welfare for the society. In addition, this criterion should account only for benefits not already accounted for in the monetised part. Also, regarding the criterion “total physical isolation”, it is noted that the corresponding benefits of ending total physical isolation are, to a large extent, accounted for through the criteria pertaining to Socio-Economic Welfare and Security of Supply benefits<sup>8</sup>. ACER, thus, sees no need for such explicit extra criteria in the technical assessment of PCIs, unless these criteria are clearly defined as including benefits not already assessed in the TYNDP.
- Although some improvement is noted in the balance between monetised and non-monetised criteria, the adopted methodology facilitated the inclusion in the draft lists of candidate projects whose monetised benefits accounted for only 50% of their total costs (i.e. in case a project scored the maximum of the 5 points that can be collected for the non-monetised benefits). This raises doubts on the actual socio-economic viability of candidate projects with low monetised benefits and on whether they deserve to be included in the PCI list.
- Regarding the capital expenditure (CAPEX) taken into account in the assessment, it is mentioned in the “Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise” that standard costs are provided only for under consideration projects, and based on ACER’s cost unit report. However, according to the CBA methodology, standard cost may also apply for the “planned but not yet in permitting” projects, and may not apply in case more accurate data is available to the promoters taking into account the

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<sup>8</sup> Acknowledging that further improvements of ENTSO-E’s CBA methodology and its implementation in the TYNDP would cover further actual benefits of the interconnectors.

project specificities. Therefore, there may be inconsistencies in how the CAPEX taken into account for less mature projects was estimated by promoters.

- Although it was mentioned in the cross RG meeting of 4 October 2018 that information from the monitoring of the 3rd PCI list would be factored into the PCI selection process, and despite the specific proposals provided by ACER within the Cooperation Platform framework, ACER is not aware of a systematic checking of ACER's monitoring results. "Principles on monitoring" were included in the "Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise"; however, these principles were not further specified into a consistent check-list or action plan, but were only implemented on an ad-hoc basis, and, in some cases, the scrutiny was based only on oral clarification provided by promoters during the RG meetings, Also, although, according to the principles, "the lack of proper justification may have a negative impact on the assessment of the candidate projects", there was no consistent evidence of which were the projects scrutinised, the justification provided by promoters or other stakeholders, whether this was accepted and the reasoning, and finally the "negative impact" the rejection of the justification had on the assessment of the projects. This sporadic implementation of the above-mentioned principles allowed projects that show no or remarkably slow progress over the last years to be proposed again in the draft regional lists without a proper scrutiny. More specifically:
  - 9 projects included in the draft lists are still at a non-advanced status (one still under consideration , and 8 in "planned, but not yet in permitting" status), being at the same status since they were first included in the PCI lists in 2015;
  - 11 projects included in the draft lists (including the category "Projects still under analysis and consideration for possible inclusion in the regional lists") are rescheduled according to ACER's last PCI monitoring report, among which 4 projects for two consecutive years, two for three years, and one for four consecutive years.
  - The application of the same requirements for advanced and non-advanced projects (e.g. conceptual projects) continues to be inappropriate, as non-advanced projects, in general, cannot reliably provide the same level of details regarding costs and benefits.

(29) In ACER's view, significant improvements in the selection methodology could still be achieved and should be pursued in the future. In this respect, ACER formulates the following recommendations:

- The selection methodology should be based on (further expanded) proven monetised benefits, rather than non-technical criteria.
- The future TYNDPs should better fit the purpose of the PCI selection, by using a robust reference grid for conducting the necessary studies, and by providing a sufficient level of information on the candidate projects and especially on the project benefits according to ACER's past recommendations.

- The RGs should use results of project assessments from contrasted TYNDP scenarios in the long term, thus accounting for the uncertainties of project benefits. A broader cooperation with policymakers (European Commission, Member States, as well as NRAs and ACER) should be pursued early in the process for defining the scenarios, ideally when scenarios for the TYNDP are in consultation, or, as a second- best option, at least when the TYNDP results are in consultation.
- A simplified and standardised methodology for non-advanced projects (indicated as such in the TYNDP) should be introduced. A clear distinction between advanced and non-advanced projects can provide greater consistency of the ranking exercise.

2.1.4. The selection methodology for storage projects

- (30) The selection methodology applied by the four electricity RGs is presented in Annex II to this Opinion.
- (31) Following the observation that the benefits of storage projects were not fully captured by the TYNDP 2018, the European Commission commissioned a study to complement the results of the TYNDP project-specific CBA with a view to capture all relevant benefits of storage projects. Therefore, the selection methodology for the storage projects proposed by the European Commission implemented the recommendations of the above study, especially regarding the benefits to be assessed and their values.
- (32) The overall approach (i.e. the multi-criteria analysis, and the structure of the methodology) is the same as the one applied for the transmission projects. One new element was introduced to extend the economic lifetime for hydro-pump storage projects to 50 years and of Compressed Air Energy Storage (CAES) projects to 35 years. ACER is not in favour of the extension of the applied lifetime for storage projects, for the same reasons that it disagrees to longer lifetime period for transmission projects, i.e.:
- In order to have a reasonable visibility of the benefits: a long economic lifetime of 50 years would mean considering benefits for time horizons for which no plausible assumptions can be made (i.e. for the year 2075 or 2080, which would be the case when the commissioning date of a project is 2025 or 2030, respectively). This is confirmed by the fact that ENTSO-E is reluctant to construct scenarios pertaining to such long horizons.
  - Given the uncertainty of the future, a balanced approach must be taken, because some considered benefits may not materialise in reality. Therefore, there has to be a balance between the non-materialised benefits considered and the non-considered benefits of far future. With too long an economic lifetime this balance would be lost.
- (33) In addition, ACER notes that different considered lifetime of storage projects creates risks to trigger requests for an extension of the considered lifetime also for

transmission projects for consistency reasons, undermining the plausibility of the transmission CBA outcomes.

- (34) ACER reaffirms its recommendations provided in ACER's Opinion No 05/2017 on the Draft ENTSO-E Guideline for CBA of Grid Development Projects regarding the improvement of the CBA methodology for storage projects, and that a more concrete, quantified and possibly monetised approach be applied in the future TYNDPs, especially regarding the calculation of the benefits related to flexibility and ancillary services. Also, in the future TYNDPs, ENTSO-E should provide more transparency on the modelling of storage projects, and the presentation *of their simulation input and output data*.

#### 2.1.5. The assessment methodology for smart grid projects

- (35) A draft report on "Establishment of the fourth list of Union Projects of Common Interest - Evaluation of candidate Projects of Common Interest in the area of smart grids deployment" was prepared by the European Commission Joint Research Centre (JRC) and shared for NRA comments in the period 6 to 14 June 2019.
- (36) The synchronisation with the electricity and gas PCI selection process was improved compared to previous selection rounds, and the four meetings of the Thematic Group for smart grids were organised between 4 October 2018 and 28 June 2019 (see Annex I for details).
- (37) Despite the above-mentioned improvement, the following shortcomings were identified:
- Despite promoters' application deadline of 7 March 2019, the concerned NRAs received the JRC report only in June 2019, allowing just one week for the NRAs' assessment.
  - Furthermore, the promoters applications made available to ACER and the NRAs did not include all the information that were necessary for a full assessment of the candidate projects.
  - The approach based on the Key Performance Indicator (KPI) introduced since 2010 with the ERGEG "Position Paper on Smart Grids" and updated in the assessment framework 2019 continued to have a prominent role in the supporting assessment provided by the JRC to the Thematic Group. Such reliance on KPIs should now be replaced by the use of reliable CBA, which should be the main basis for the assessment of smart grid projects.
  - Especially, details on costs and monetised benefits were not presented to the Thematic Group, neither to the public.
  - Two NRAs indicated that they were not able to assess the inclusion of the projects in the PCI lists, due to the lack of updated information on the projects or their consequential inability to assess the key parameters of the projects, including the CBA. A more detailed CBA would enable the regulatory scrutiny of the candidate projects. As a result, the discussion on the projects was limited and does not fully

correspond to the requirement of the Thematic Group project assessment, as stated in the Annex III.2.11 to Regulation (EU) No 347/2013.

(38) In ACER's view, significant improvements in the smart grids process and assessment methodology could still be achieved and should be pursued in the future. In this respect, ACER formulates the following recommendations:

- The future smart grids PCI selection process should be further simplified by focusing on CBA and by limiting the relevance of any KPI-based approach.
- The smart grids Thematic Group should place the NRAs' scrutiny of smart-grid projects as a starting point of its assessment, provide enough time and facilitate the provision of all relevant CBA data to make such NRAs' scrutiny possible.

## **2.2. Assessment of the proposed PCIs in the draft Regional lists**

(39) On 12 July 2019, the document called "Draft Regional PCI lists for electricity and gas projects & smart grids thematic area" was submitted to ACER, including a category of projects titled "Projects still under analysis and consideration for possible inclusion in the regional lists". Although it is still to be decided by the respective Decision Making Bodies whether the projects of the latter category will be included in the final regional PCI lists, ACER herein provides its opinion also for these projects.

(40) Regarding the consistency of the PCI selection across regions, ACER notes that the same terms of reference for RGs and selection methodology were applied for the evaluation of the three specific criteria of Article 4(2) of Regulation (EU) No 347/2013 across all regions, and that the benefit data used in this assessment was based on the TYNDP data, except for storage and smart grids projects. Therefore, a degree of consistency was safeguarded throughout the process and across all regions.

(41) However, due to the fact that additional or alternative benefits to the ones calculated according to the CBA guidelines (incorporated in the TYNDP 2018) were based on the studies and calculations provided by the promoters, and despite the scrutiny of the concerned NRAs, some inconsistency was inevitable due to the different sources and assumptions for calculating benefits followed by the promoters.

- (42) The following table summarises some statistics on the assessment of the candidate projects.

	Candidate projects	European Commission Presentations to the RGs			Statistics on the documents “Draft Regional PCI lists for electricity and gas projects & smart grids thematic area”		
		“Not in line with general criteria”	“No progress reported”	Ranked projects	Included in the draft lists <sup>35</sup>	“Did not prove Benefits higher than Costs”	
					Trans.	Stor.	
NSOG	23	2	1	20	15	4	2
NSI West	23	0	1	22	14	8	-
NSI East	26	6	0	20	15+2 <sup>9</sup>	2	2
BEMIP	8	0	0	8	6	2	-
Total	80	8	2	70	52	16	4

- (43) Out of the projects found as “not in line with the general criteria”, one was included in the draft lists (project 29 - Italy-Tunisia interconnector), while the others are not mentioned in the document, therefore the reason of their exclusion was only mentioned in the respective European Commission’s presentations at the RG meetings of 28-29 May. Similarly, out of the two projects with “no progress reported”, one was included in the draft lists (Projects 1002 - iLand), while the other one (project 31 - Interconnection Airolo (CH)- Baggio (IT)) was not mentioned.
- (44) In Annex IV, NRAs’ views on the projects included in the draft lists of proposed PCIs are presented, building on the joint assessments of candidate projects by NRAs, the statistics of which are presented in Annex III to this Opinion. It is noted that NRAs submitted an assessment for 70 out of 80 candidate projects, i.e. for all transmission candidate projects (except for project 124 SE-LT “NordBalt phase 2”) and for 10 out of the 19 candidate storage projects.
- (45) Reference in Annex IV to this Opinion is made only to the projects included in the Section 1.1 “draft regional lists”, which NRAs indicated that they either were not able to assess, were opposed to, or had divergent views upon, and for those projects included in the category “Projects still under analysis and consideration for possible inclusion in the regional lists”, for which an assessment was submitted by the concerned NRAs. No reference is made to projects not included in the lists, for which NRAs agree to their non-inclusion. It is noted that proposed projects for which there is no reference in this Opinion are supported by the involved NRAs,

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<sup>9</sup> Two projects in the NSI East RG were included in the category “Projects still under analysis and consideration for possible inclusion in the regional lists.”

HAS ADOPTED THIS OPINION:

1. ACER's opinion on the projects of the draft regional lists is provided in section 2.2. of this Opinion.
2. ACER is not able to confirm the consistent application of the criteria of Regulation (EU) No 347/2013 and of the cost-benefit analysis to all the candidate projects due to:
  - (a) the non-disclosure to the RGs of the specific rules applied for the calculation of the NPVs of the candidate projects, nor of the specific values used for the calculation of the NPVs of the projects (especially regarding the costs, the losses, and the missing benefits considered);
  - (b) the non-disclosure to the RGs of the values of the extra benefit which was taken into account for the calculation of the "enhanced" SEW indicator;
  - (c) the fact that the assessment results were not provided to the RGs for some of the projects included in the draft lists;
  - (d) the inclusion, without proper justification, in the draft PCI list, of some candidate projects that did not pass the assessment threshold, according to the methodology decided by the RGs;
  - (e) the ambiguity on the role of two candidate projects due to their inclusion in the category "Projects still under analysis and consideration for possible inclusion in the regional lists" or the lack of reference to eight other candidate projects in the document containing the draft lists.
3. ACER underlines that the RGs should work on improving the transparency of the process and the methodologies used in the ongoing and future PCI selection processes taking into account ACER's recommendations included in this Opinion.

This Opinion is addressed to the European Commission.

Done at Ljubljana on 25 September 2019.

**- SIGNED -**

*For the Agency*  
*Director ad interim*  
Alberto POTOTSCHNIG

Annexes:

Annex I – The process and the main activities for establishing the draft lists of proposed PCIs

Annex II – Description of the methodology applied for establishing the draft lists of PCIs and ACER specific remarks

Annex III - Statistics on NRAs' assessment of candidate projects

Annex IV - NRAs' assessment of proposed PCIs

Annex V - Draft regional lists of proposed PCIs

## Annex I - The process and the main activities for establishing the draft lists of proposed PCIs

The milestones of the PCI process in the framework of the RGs are indicated in the table below.

Date / Event	Main activities
3 October 2018	Electricity PCI cross-Regional Group meeting (transmission and storage): <ul style="list-style-type: none"> <li>- Overview of project of common interest legal framework by the EC</li> <li>- Presentation of PCI 2018 – 2019 process by the EC</li> <li>- Presentation of ACER’s 2018 monitoring outcomes and of the principles for monitoring inclusion in the current PCI process</li> <li>- Presentation on TYNDP 2018 process scenarios and European needs identified by ENTSO-E</li> <li>- Presentation of roles and responsibilities of the stakeholders by the EC</li> </ul>
4 October 2018	Smart grids thematic meeting: <ul style="list-style-type: none"> <li>- identification of the PCI projects</li> <li>- discussions on updated assessment framework and lessons learnt on the assessment framework from the past smart grid selection process</li> <li>- presentation of EU funding instruments (H2020, CEF) by the EC</li> </ul>
15 October 2018	Opening of the applications <a href="#">call for the fourth PCI list for electricity projects</a> (transmission and storage)
15 November 2018	Closure of the applications
22 November 2018	Publication of a consultation on the projects

27 and 28 November 2018	<p>Electricity PCI Regional Group meetings:</p> <ul style="list-style-type: none"> <li>- general update on the process for the identification of the fourth PCI list</li> <li>- introduction of identification of system needs per region – introduction by the EC</li> <li>- introduction by ENTSO-E on the needs per country sheets</li> <li>- Member states short presentations on their specific country needs and discussion with the RG</li> <li>- Presentation of the methodology for the regional needs identification:</li> <li>- Discussion with the RG</li> </ul>
30 November 2018	<p>Start of NRA assessments of the consistent application of the criteria/CBA methodology and the evaluation of the cross-border relevance of the candidate projects</p>
14 December 2018	<p>Smart grids thematic meeting:</p> <ul style="list-style-type: none"> <li>- presentation, discussion and adoption of the assessment framework and the selection process</li> <li>- Presentation “Smart grids and innovations in transmission grid development” by ENTSO-E</li> <li>- Presentation “Decentralised flexibility – impacts on the electricity system” by EDP Distribuiceo</li> <li>- Delivery of practical information on the application process</li> </ul>
19 December 2018	<p>Opening of the applications for the fourth PCI list for smart grids projects</p>
21 and 22 January 2019	<p>Electricity PCI Regional Group meetings:</p> <ul style="list-style-type: none"> <li>- Member States’ short presentations on their specific country needs</li> <li>- Identification of system needs per region –Methodology presentation</li> <li>- Discussion on the methodology and on setting significant thresholds for the evaluation criteria</li> </ul>
20 February 2019	<p>Deadline for submission of NRAs assessments on electricity candidate projects.</p>
28 February 2019	<p>End of the public consultation on the electricity candidate projects</p>
5 and 6 March 2019	<p>Electricity PCI RG meetings:</p> <ul style="list-style-type: none"> <li>- Short presentation of final methodology for identification of system needs per region</li> <li>- Regional needs identification and validation</li> </ul>

	<ul style="list-style-type: none"> <li>- Communication of first insight in the PCI assessment methodology</li> </ul>
7 March 2019	Closure of the call of applications for smart grid projects
27 March 2019	<p>Smart grids thematic meeting:</p> <ul style="list-style-type: none"> <li>- Presentation of submitted projects by project promoters</li> <li>- Presentation of assessment procedures</li> </ul>
18 March 2019	Publication of a public consultation on smart grid projects
11 and 12 April	<p>Electricity PCI RG meetings:</p> <ul style="list-style-type: none"> <li>- Presentation of the general principles of the PCI methodology</li> <li>- Presentation of results of the NRAs assessments of the projects</li> <li>- Presentations of projects by promoters</li> <li>- Comments by NRAs and the ministries</li> </ul>
28 and 29 May	<p>Electricity Cross-RG meeting:</p> <ul style="list-style-type: none"> <li>- Presentation of the PCI assessment methodology</li> </ul> <p>Electricity PCI RG meetings :</p> <ul style="list-style-type: none"> <li>- Presentation of the outcomes of the methodology applied to each candidate project and the ranking of candidate projects</li> </ul>
28 June 2019	<p>Smart grids thematic meeting:</p> <ul style="list-style-type: none"> <li>• JRC Assessment of the candidate smart grids projects</li> <li>• Additional information / update from project promoters</li> <li>• NRAs consultation</li> <li>• The results of the public consultation</li> <li>• Assessment of the smart grids candidate projects by the smart grids thematic group</li> </ul>
5 July	Technical Decision Making Body meeting, to draw up the draft regional lists
12 July 2019	Draft regional lists submitted to ACER

*Table 1: Main activities for transmission, storage and smart grids projects carried out in the framework of the Regional Groups*

## **Annex II - Description of the methodology applied for establishing the draft lists of PCIs and ACER specific remarks**

The main elements of the methodology applied for the assessment of the candidate projects according to the “Methodology for assessing the transmission and storage candidate PCI projects - PCI 2018-2019 exercise” are presented in this section, alongside with the unclear or not clarified elements.

### A.2.1 An overview of the assessment methodology applied

The first step of the assessment by the RGs was checking whether candidate projects meet the technical criteria of Annex II.1 of Regulation 347/2013 depending on their category, based on the information available in the TYNDP project sheets.

Then, the RGs checked whether candidate projects meet the criteria of article 4.1 (a) of Regulation 347/2013 regarding the necessity of the project and article 4.1 (c), regarding its cross-border relevance. The assessment was based on the information available in the TYNDP project sheets, promoters’ justification in the PCI process, and the NRAs’ assessment for the cross-border relevance.

Regarding the criterion of article 4.1 (b) of Regulation 347/2013, i.e. the overall potential benefits of the project outweighs its costs, a multi-criteria approach was applied for the assessment of the projects in order to account for both monetised and non-monetised benefits. The steps for examining this criterion are the following:

### A.2.1 Handling of monetised benefits and costs

Regarding the computation of the present value of costs and benefits the following rules were applied: a discount rate of 4% was used, a zero residual value and an economic lifetime of 25 years for the transmission projects, of 50 years for hydro-pump storage projects and of 35 years for CAES projects. Due to the non-release of sample computations or the specific calculations for each project, the following elements of the methodology are unclear:

- How was the interpolation rule stipulated by the CBA methodology applied to produce a single benefit value, given that for many projects the calculation of benefits was performed at two time horizons in the TYNDP (year 2025 and 2030)?;
- What was the starting year assumed for the benefits (e.g. the year of commissioning or another starting year)?

### A.2.1.1 Handling of monetised benefits

The steps followed for the calculation of the monetised benefits are the following:

- The Present Value of the benefits of the projects according to the “Distributed Generation” scenario of TYNDP 2018 was calculated.
- The Present Value of the project costs was calculated.
- The Benefit / Cost ratio was constructed, and normalised according to the scale of Table 2. A different scale was used depending on whether the benefit is higher or lower than the total costs of a project. A project is assigned the middle of the scale points (10 points) when project benefits equal project costs.

Benefit/cost	Normalised value
$B/C < 0,2$	1
$0,2 < B/C < 0,3$	2
$0,3 < B/C < 0,4$	3
$0,4 < B/C < 0,5$	4
$0,5 < B/C < 0,6$	5
$0,6 < B/C < 0,7$	6
$0,7 < B/C < 0,8$	7
$0,8 < B/C < 0,9$	8
$0,9 < B/C < 1$	9
$B/C = 1$	10
$1 < B/C < 2$	11
$2 < B/C < 3$	12
$3 < B/C < 4$	13
$4 < B/C < 5$	14
$5 < B/C < 6$	15
$6 < B/C < 7$	16
$7 < B/C < 8$	17
$8 < B/C < 9$	18
$9 < B/C < 10$	19
$B/C > 10$	20

*Table 2: Scale for normalising Benefit/Cost ratio*

The monetised benefits considered for the transmission projects are the following:

- **Socio-economic welfare:** indicator B1 of the TYNDP 2018 was used, and for the projects included in the reference-grid of three boundaries (i.e. between UK and continent and Nordic countries, Iberian Peninsula boundary, and the northern Italian border), these values were topped up with the values of the “enhanced SEW” calculation, which is the difference between the SEW value with the 2020

reference grid and the SEW value with 2027 grid. It is not clear which values were used for which projects regarding the “enhanced SEW” calculation.

- The monetised **value for losses**: the value is deducted from the benefits value in case the project increases the losses of the grid or added in case the project decreases the losses of the grid. Since the losses calculation in the TYNDP 2018 was amended during the PCI selection process, it is not clear which values were used for the NPV calculations.
- **Security of supply- adequacy**: the values of indicator B6 of the TYNDP 2018 were used, or the alternative calculation for this indicator from the section “Declared values of CBA indicators” of the TYNDP 2018 project sheets. It is not clear which values were used in the calculations.
- **Security of supply - Reductions of costs for ancillary services**: the values of the indicator “Reductions of costs for ancillary services” from the section “Missing benefits” of the TYNDP 2018 project sheets were used.
- **Security of supply - Reduction of necessary reserve or re-dispatch power plan**: the values of the indicator “Reduction of necessary reserve or re-dispatch power plan” from the section “Missing benefits” of the TYNDP 2018 project sheets were used.
- **Security of supply - Baltic States synchronization**: the values of the indicator “Synchronisation with Continental Europe (for Baltic States)” from the section “Missing benefits” of the TYNDP 2018 project sheets were used for the projects contributing towards the synchronous operation of the Baltic system with the continental European network. It is not clear for which projects this benefit was calculated.
- **Sustainability - Reduction of non-CO<sub>2</sub> emissions**: the values of the indicator “Reduction of emissions (non-CO<sub>2</sub>)” from the section “Missing benefits” of the TYNDP 2018 project sheets were used.

The benefits considered for the storage projects are all monetised and are the following:

- **Socio-economic welfare**: calculated as for transmission projects, but additionally, the SEW figure was topped up in line with the additional information available by promoters, in case this information was well justified. No information was provided to the RGs on the specific projects where adjustment was made and the specific adjustment figures.
- **Variation in grid losses**: calculated as for transmission projects
- **Security of supply - adequacy to meet demand**: calculated as for transmission projects.
- **Security of supply - ancillary service**: the default value is the one computed by ENTSO-E. However, if the promoter delivered more detailed value and properly justified, the promoter’s value was considered in this exercise. No information

was provided to the RGs on the specific projects where promoters' values were accepted, neither on the specific figures considered.

- In addition, **three benefits**, which have not been quantified or monetized consistently by ENTSO-E TYNDP 2018 or by promoters were estimated for all relevant projects, based on benchmarking with other projects and public literature. The three benefits considered are the following:
  - Additional impact of avoided CO2 emissions
  - Reduction of non-CO2 emissions
  - Reduction of costs for ancillary services (Reduced cost of reserve capacity, Reduced cost of frequency regulation)

No information was provided to the RGs on the specific values considered for each project for each benefit, and the specific calculations conducted.

#### A.2.1.2. Handling of project cost

- The Capital Expenditure (CAPEX) values, as reported in the TYNDP 2018 project sheets, were used. Given that the project specific calculations were not released to the RGs, the consistent implementation of the above rules cannot be confirmed by ACER. Also, it is unclear what is the year assumed for the CAPEX to materialise, especially in the cases of projects with multiple investment items commissioned at different years.
- The lifecycle cost of each project was calculated based on the annual operational expenditure (OPEX) as reported by the project promoter in the TYNDP 2018. Given that the project specific calculations were not released to the RGs, the consistent implementation of the above rule cannot be confirmed by ACER. Also, it is unclear what is the year assumed for OPEX to commence, especially in the cases of projects with multiple investment items commissioned at different years.
- In case of a multi-usage application of a storage project beyond the energy system, a correction on the declared CAPEX and OPEX values was applied. Given that the project specific calculations were not released to the RGs, the implementation of the above rule cannot be assessed by ACER.

#### A.2.2 Handling of non-monetised benefits (only for transmission projects)

The non-monetised benefits considered for the transmission projects are the following:

- **Interconnection target thresholds:** The 3 ratios<sup>10</sup> mentioned in the report of the Commission Expert Group on electricity interconnection targets were calculated for each MS. For each ratio that does not meet the set target thresholds for one of the interconnected countries, 1 point is assigned to the projects between this country and another MSs or EEA country (i.e. max 3 points).
- **SoS – system flexibility:** This non-monetised benefit was considered only for projects for which no system flexibility missing benefit was included in the TYNDP 2018 (and therefore considered as a monetised benefit). The sum of the B7 indicator values (ramping requirement calculated per country) for all countries directly connected to the project is divided by the maximum value of this indicator among all the candidate projects (i.e. max 1 point).
- **SoS- system resilience:** The indicator B8 of the TYNDP 2018 was used. The ratio of the number of “+” that the project is assigned over 5 (which is the max, numbers of “+” of all projects) is calculated (i.e. max 1 point).
- **Total physical isolation:** 3 points were assigned only to the projects connecting Cyprus.

### A.2.3 Ranking of projects

After the calculation of the total benefits and costs, the subsequent steps of the assessment methodology per priority corridor were the following:

- The final score of a project was calculated as the sum of all the points for the monetised and non-monetised benefits of the project.
- In order for a transmission project to be accepted in the list, a threshold of 10 points was set in all RGs.
- Storage projects were ranked on the basis of their monetised benefit/cost ratio, therefore the rule this ratio should be higher than 1 was applied.

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<sup>10</sup> a) difference of marginal prices at the borders for the year 2020 >2€/MWh, b) nominal transmission capacity /2030 peak load<30%, and c) nominal transmission capacity /2030 RES installed <30%.

### Annex III - Statistics on NRAs' assessment of candidate projects

The NRAs under the coordination of ACER provided their assessment and views on the following topics:

- Criteria set out in *art. 4.1.c of Reg. (EU) 347/2013* (cross border relevance).
- Contribution of the projects to the specific criteria set out in *art. 4.2.a of Reg. (EU) 347/2013* (market integration, sustainability, security of supply).
- Identification of inconsistencies regarding the provided cost data (CAPEX, OPEX).
- Identification of inconsistencies regarding the available benefits (SEW, Security of Supply SOS, indicator B4, losses, additional benefits indicated by promoters).
- Identification of inconsistencies regarding commissioning dates.
- Do benefits outweigh costs?

NRAs submitted in total 75 checklists regarding 70 out of 80 candidate projects, i.e. for all transmission candidates (except for project 124 “NordBalt phase 2” SE-LT) and for 10 out of the 19 candidate storage projects.

In the following table, some statistics of the NRAs submissions per corridor are provided:

	Candidate projects	Projects assessed by NRAs (*)	Assessment in coordination with other EU-NRAs
NSOG	23	22	12 (**)
NSI West	23	17	10
NSI East	26	25	8
BEMIP	8	6	3
<b>Total</b>	<b>80</b>	<b>70</b>	<b>33</b>

Table 3: NRAs assessments by corridor

(\*) in 3 cases the assessment referred to a part of the candidate project, and in 5 cases (for 2 projects in NSI West corridor, and 1 in the other corridors) double assessments were provided by different NRAs

(\*\*) 2 projects in the NSOG corridor (110 and 190) were assessed in cooperation with a non-EU NRA, i.e. the Norwegian NRA

18 assessed projects are not included in the NDPs, 10 are only partly included, and 5 are included as “under consideration”.

In 2 cases, i.e. for project 28 and (partly) 296, the NRAs objected to the inclusion of the project in the final TYNDP 2018 (which was pending at the time of the NRAs’ assessment).

For 14 projects NRAs indicated that they are not able to assess if the project meet one of the conditions of Art. 4.1.(c) (i.e. regarding cross-border relevance). In 4 additional cases the NRA have divergent views (because of the Brexit uncertainties).

For 15 projects NRAs indicated that they were not able to assess whether the project contributes significantly to at least one of the specific criteria of Art. 4.2.(a), and in 4 cases there were divergent views.

The statistics regarding the identification of inconsistencies to the data and calculations included in the TYNDP 2018 regarding the projects’ CAPEX and OPEX, the benefit calculations and the “missing/alternative benefits” are presented in figure 1 below.

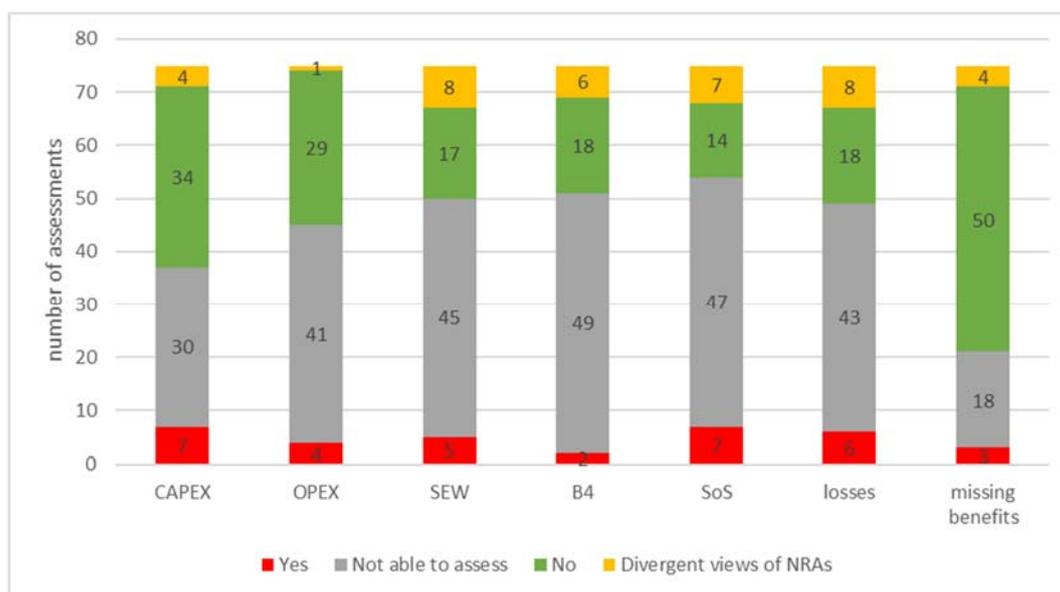


Figure 1: NRAs assessments regarding inconsistencies to the data

(\*) The figures are based on the assessments received (i.e. 75), and not on the assessed projects (i.e. 70).

Although the inconsistencies identified pertain to a small number of projects, which should be further scrutinised by the RGs, the striking fact is that for most of the benefit categories the NRAs stated that they were not able to assess almost half the projects. This should lead to significant improvements in the methodologies used by ENTSO-E and their implementation, and more transparency to the overall process.

The statistics regarding the assessment of plausibility of the commissioning dates provided by the PCI promoters are presented in table 4 below.

<b>No, there is no inconsistency</b>	<b>34</b>
<b>Yes, there is inconsistency</b>	<b>8</b>
<b>Not able to assess (e.g. the project is not mature enough)</b>	<b>24</b>
<b>Divergent views of the NRAs</b>	<b>4</b>
<b>Total</b>	<b>70</b>

*Table 4: NRAs assessments of inconsistencies to the commissioning dates of the candidate projects indicated in the draft TYNDP 2018*

Regarding the issue of whether “overall benefits outweigh costs” the replies received are presented in the following table:

<b>Yes</b>	<b>24</b>
<b>No</b>	<b>3 (*)</b>
<b>Not able to assess</b>	<b>35</b>
<b>Divergent views of the NRAs</b>	<b>8</b>
<b>Total</b>	<b>70</b>

*Table 5: Are benefits higher than costs?*

(\*) The three projects deemed by the respective NRAs to have costs higher than benefits are projects 270 (Aragón-Atlantic Pyrenees), project 276 (Navarra-Landes) and project 28 (Italy-Montenegro).

Finally, regarding the question “Do NRA objects to the inclusion of the project in the final PCI Regional list?” the replies received are presented in the following table.

<b>No</b>	<b>53</b>
<b>Yes</b>	<b>3 (*)</b>
<b>Not able to assess</b>	<b>3</b>
<b>Divergent views of the NRAs</b>	<b>11</b>
<b>Total</b>	<b>70</b>

*Table 6: Do NRAs object to the inclusion of the project in the final PCI Regional list?*

(\*) The 3 projects for which NRAs object to the inclusion in the regional PCI list are storage projects 1026 (Hydro pumped storage Riedl) and 1002 (iLand) and interconnection project 28 (Italy-Montenegro).

## **Annex IV - NRAs' assessment of proposed PCIs**

In this annex reference is made only to the projects included in the Section 1.1 “draft regional lists”, which NRAs indicated that they either were not able to assess, were opposed to, or had divergent views upon, and for those projects included in the category “Projects still under analysis and consideration for possible inclusion in the regional lists”, for which an assessment was submitted by the concerned NRAs. No reference is made to projects not included in the lists, for which NRAs agree to their non-inclusion. It is noted that proposed projects for which there is no reference in this Opinion are supported by the involved NRAs.

### A.4.1. Opinion on the draft regional list – NSOG Regional Group

A.4.1.1 With respect to the candidate project 1002 “iLand”, the Belgium NRA, CREG, objects to its inclusion in the PCI list due to concerns about its techno-economic viability, as the information provided in the draft TYNDP 2018 and by the promoter was not sufficient to come to another conclusion.

A.4.1.2 With respect to the candidate project 153, “FAB link”, there were divergent views between the involved NRAs.

The French NRA, CRE, noted inconsistencies regarding the commissioning date of the project (2024 according to CRE’s latest information, compared to 2022 stated in the TYNDP 2018) and its costs and benefits indicated in the TYNDP 2018. Moreover, CRE made reference to a study as of 17 July 2019, carried out by its consultant, Artelys<sup>11</sup>, on the determination of a target electricity interconnection capacity between France and the United Kingdom. This study concludes that the benefits provided by the interconnections projects currently under study are not sufficient to justify new investments beyond the projects already under construction (i.e. ElecLink and IFA2), even though the potential negative consequences of Brexit on the value of the interconnectors were not considered in this study. Based on the above mentioned outcomes, CRE opposed to the inclusion of the project 153 in the PCI list.

The British NRA, Ofgem, on the other hand, has no objection to the inclusion of this project in the PCI list as this project was awarded a cap and floor regime in principle in Great Britain (GB) following Ofgem’s Initial Project Assessment (IPA) in July 2015. The IPA assessed the needs case for the project alongside other potential GB interconnector projects in the cap

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<https://www.cre.fr/en/Documents/Deliberations/Communication/Estimation-of-the-optimal-electricity-interconnection-capacity-and-the-new-interconnection-projects-with-the-United-Kingdom>

and floor window 1 application round (IFA2, Viking Link, Greenlink, North Sea Link); it demonstrated GB consumer welfare of £3425 million and total GB welfare of £1535 million.

A.4.1.3 With respect to the candidate project 247, “Aquind”, there were divergent views between the involved NRAs.

CRE noted inconsistencies regarding the commissioning date of the project (2023 according to CRE’s latest information, compared to 2022 stated in the TYNDP 2018) and its costs and benefits indicated in the TYNDP 2018. Moreover, CRE made reference to a study as of 17 July 2019, carried out by Artelys on the assessment of the determination of a target electricity interconnection capacity between France and the United Kingdom. This study concludes that the benefits provided by the projects of interconnections currently under study are not sufficient to justify new investments beyond the projects already under construction (ElecLink and IFA2), even though the potential negative consequences of Brexit on the value of the interconnectors were not considered in this study. Based on the above mentioned outcomes, CRE opposes to the inclusion of the project 247 in the PCI list.

Ofgem, on the other hand, has no objection to the inclusion of this project in the PCI list based on Ofgem’s initial analysis and assessment of Aquind’s exemption application submitted in May 2017, according to which the benefits of the project are proven.

A.4.1.4 With respect to the candidate project 285, “Gridlink”, there were divergent views between the involved NRAs.

CRE noted inconsistencies regarding the commissioning date of the project (2024 according to CRE’s latest information, compared to 2022 stated in the TYNDP 2018) and its costs and benefits indicated in the TYNDP 2018.

Moreover, CRE made reference to a study as of 17 July 2019, carried out by Artelys on the determination of a target electricity interconnection capacity between France and the United Kingdom. This study concludes that the benefits provided by the projects of interconnections currently under study are not sufficient to justify new investments beyond the projects already under construction (ElecLink and IFA2), even though the potential negative consequences of Brexit on the value of the interconnectors were not considered in this study. Based on the above mentioned outcomes, CRE opposes to the inclusion of the project 285 in the PCI list.

Ofgem, on the other hand, has no objection to the inclusion of this project in the PCI list as this project, under Ofgem’s Initial Project Assessment (performed in June 2017 alongside other potential GB interconnector projects in the cap and floor window 2 application round, i.e. NeuConnect, NorthConnect, and Aquind), demonstrated GB consumer welfare of £2984 million.

A.4.1.5 With respect to the candidate project 309 “NeuConnect”, there were divergent views between the involved NRAs.

The German NRA, BNetzA, stated that the project was introduced in the latest draft TYNDP and the draft German National Development Plan 2019-2030 (NDP) for the first time. The NDP is currently under consultation and the final NDP is expected by end of 2019. Although the preliminary assessment for the project NeuConnect is positive, the decision is subject to potential additional information received during the consultation process. Since a final decision will not be available in time to decide on the inclusion in the upcoming fourth PCI list, BNetzA objects to its inclusion. In case the project proves viable during the ongoing NDP assessment process, BNetzA will not object to the inclusion of the project into future PCI-Lists.

Ofgem, on the other hand, has no objection to the inclusion of this project in the PCI list due to the fact that, under Ofgem’s Initial Project Assessment (performed in June 2017 alongside other potential GB interconnector projects, i.e. Gridlink, NorthConnect, Aquind), demonstrated GB consumer welfare of £2197 million.

A.4.1.6 Regarding the candidate project 335 “North Sea Wind Power Hub (NSWPH)”, BNetzA objects to the inclusion of the project in the fourth PCI list expressing the following concerns.

The project NSWPH was introduced within the latest draft TYNDP for the first time, but it has not been proposed for consideration as part of the ongoing process to establish the German NDP. Thus, the project could not be assessed in all relevant details at this stage. BNetzA is neither able to approve the necessity and effectiveness of the project, nor to identify the undoubtedly arising consequences for the national transmission network. Furthermore, BNetzA considers the lack of available sites to develop the required offshore grid corridors to connect the project with the national grid, a likely scenario.

BNetzA also noted that once the project is approved as PCI, it would have to be incorporated into the German NDP and granted high priority (following EU Regulation 347/2013, Article 3 (6)). The German NDP process, however, is binding and projects included in the NDP will have to be developed. This has consequences for all stakeholders and, as part of the NDP process, as well as subsequent permitting processes, projects face in-depth discussion with the public. At this stage, given the lack of data (see below), BNetzA would be unable to guide that discussion process – unintended consequences are possible, potentially blocking the project from any realization in the future.

Furthermore, BNetzA noted that the project lacks legal, as well as techno-economic, maturity for two reasons each. First, there is no European legislation in place, which ensures effective operation of the project. Second, as “offshore hybrid asset”, the project would require an exemption from Article 14 of the European Electricity Market Directive. From a techno-economic standpoint, the proposed use of 640kV HVDC subsea cables, which are yet to be developed, is seen critical by BNetzA as there is no evidence for a reliable cost

estimation. Also, the projects' time horizon beyond 2035 elevates risks related to infrastructure lock-in and stranded investment.

Additionally, the data presented in the Project Sheet is not based on any grid analysis, and as they are hypothetically calculated for 2030 (while the project will not be commissioned before 2035), the data cannot be considered for any purpose in the PCI selection. Considering this, and the fact that the costs of developing the artificial island are not accounted for, the consistent application of the CBA cannot be ensured. As a result, the PCI ranking could be distorted.

A.4.1.7 With respect to the candidate project 349, Marex Organic Power Interconnector, Ofgem was unable to assess the project due to very limited regulatory engagement with the project promoter prior to the beginning of the 2019 PCI selection process, which did not allow an independent analysis on this project and is therefore unable to comment on its benefits and costs.

#### A.4.2. Opinion on the draft regional list – NSI West Regional Group

A.4.2.1 Regarding the candidate project 1026 (hydro-pump storage Riedl), there were divergent views between the involved NRAs.

BNetzA is of the opinion that storage projects are assessed, planned, financed, built and operated within a competitive market environment. Therefore, it is outside the scope of the regulators' tasks to assess such infrastructure, which is built under competitive market circumstances.

Nevertheless, according to BNetzA, the project promoter has not provided credible evidence of how this specific project will contribute to the development of a least-cost electricity system in the future. Furthermore, BNetzA believes that the project is not subject to the provisions of Chapter III of the Regulation (EU) No 347/2013. Since, according to the available information, the project has submitted an application file before 16 November 2013. As such, a PCI status would not accelerate the permission granting process for the project. For the reasons above, BNetzA objects to the inclusion of this project in the fourth PCI list.

On the other hand, according to the Austrian NRA, Regulation (EU) 347/2013 (annex II) clearly states the possibility for electricity storage projects to apply for and receive PCI status. Furthermore, the assessment of the candidate project shows significant benefits to society compared to its costs (which will be financed under competitive environment). The candidate project was included in the second PCI list, with unchanged project properties, but slow progress in the permit granting process since then, and its inclusion in the fourth PCI list would ensure its timely implementation.

Also, the project offers more options in the balancing of the German-Austrian border region and contributes to the European market integration, sustainability and security of supply, as pump storage capacities clearly help to balance the electricity system (in a market-based manner) in a time when the energy system is in a transition to a renewable resources based system with intermittent generation. Finally, E-Control notes that no substantiated reasons were presented by any Member State according to Article 3 (a) of Regulation (EU) 347/2013.

Therefore, E-Control strongly recommends the inclusion of the candidate project 1026 in the fourth PCI list.

A.4.2.2 With respect to the candidate project 270 Aragón-Atlantic Pyrenees, there were divergent views between the involved NRAs.

CRE objects to its inclusion in the PCI lists, as according to CRE analysis the CBA of the project is negative and as it is not certain that the project meets the criteria of contributing to market integration, sustainability or security of supply, due to its lack of maturity. CRE also noted that the project CBA appears to be negative even when taking into account the monetised security of supply benefit (which was assessed on the basis of discrepant scenarios than the ones used for the assessment of the SEW) and the additional benefits. CRE also expressed strong concerns on the additional benefits proposed by the project promoter. In addition, according to the information provided by project promoters to the Regional Group, the commissioning date of 2027 (indicated in the TYNDP 2018) cannot be met.

On the other hand, according to the Spanish NRA, CNMC, the project should be included in the PCI lists, because of the positive result of the CBA calculated for the indicators included on CBA 2.0 methodology plus the calculated additional benefits (“missing benefits” and “declared values”).

A.4.2.3 With respect to the candidate project 276 Navarra Landes, there were divergent views between the involved NRAs.

CRE objects to its inclusion in the PCI lists, as according to CRE analysis the CBA of the project is negative and as it is not certain that the project meets the criteria of contributing to market integration, sustainability or security of supply, due to its lack of maturity. CRE also has strong reservations with regard to the robustness of the monetisation of the security of supply and the declared values of the missing benefits. In addition, according to the information provided by project promoters to the Regional Group, the commissioning date of 2027 cannot be met.

On the other hand, according to CNMC, the project should be included in the PCI lists, because of the positive result of the CBA calculated for the indicators included on CBA 2.0

methodology plus the calculated additional benefits (“missing benefits” and “declared values”).

A.4.2.4 With respect to the candidate project 296 “Britib”, one involved NRA objects to the project and another one was unable to assess it.

In particular, CRE objects to its inclusion in the PCI lists, as according to CRE’s analysis the CBA of the project is negative and as it is not certain that the project meets the criteria of contributing to market integration, sustainability or security of supply, due to its lack of maturity. In addition, CRE has strong reservations regarding the robustness of the proposed values for the missing benefits. CRE also identified potential inconsistencies in the CAPEX and OPEX presented by the project promoter, and noted that the commissioning date of 2024 seems too optimistic.

Ofgem has had very limited regulatory engagement with the project promoter and has not performed any independent analysis on this project. Ofgem is therefore unable to comment on its benefits and costs.

#### A.4.3 Opinion on the draft regional list – NSI East Regional Group

A.4.3.1 With respect to the candidate project 320 (Slovenia-Hungary/Croatia interconnection), which is included in the category “Projects still under analysis and consideration for possible inclusion in the regional lists”, the Slovenian NRA, AGEN-RS, considers that Project 320 will bring significant benefits to the region and EU goals, by enabling market integration in the region and by increasing the transmission network reliability and security of supply. Project 320 will also, according to AGEN-RS, facilitate the sharing and exchange of reserves, market-based procurement, and increase the competition for reserve sharing. Furthermore, project 320 is maximizing the impact of mid- and long-term strategic investments of the Slovenian TSO (replacement of the 220 kV internal grid to 400 kV, and further establishment of a new HVDC link between Slovenia and Italy) enabling the significant increase of power transits in the direction East-West. AGEN-RS also noted that project 320 received CEF grant for construction works in May 2019, and that it is related to two other important projects, partially financed by the EU: SINCRO.GRID project (PCI) and FutureFlow project.

Although AGEN-RS expressed concerns regarding the calculation of the cost-benefit ratio of the project, because of the problem with the losses monetisation mentioned by ENTSO-E in the TYNDP 2018 project sheets, AGEN-RS is of the view that additional benefits calculated by an independent institution (Energy Institute Hrvoje Požar, Zagreb, Croatia), based on ENTSO-E methodology and ACER recommendations, should be considered. According to the outcomes of this independent analysis, in all of the analysed scenarios, discounted project benefits significantly exceed discounted project costs. In general, according to AGEN-RS, the project 320 shows unquestionable economic viability concerning all individual influential factors, except for the Distributed Generation scenario,

which shows only moderate economic viability in case of substantial increase in the distributed generation in Slovenia and other countries in the region.

Based on the above arguments, AGEN-RS suggests the inclusion of the project in the fourth PCI list to enable its fast-track implementation.

#### A.4.3.2 Regarding the candidate project 29 (Italy-Tunisia interconnector)

The Italian NRA, ARERA was not able to assess the project as the project benefits as calculated in the ENTSO-E TYNDP 2018 could not be deemed as reliable. ARERA believes that further studies are needed to evaluate the project properly, for each country affected. ARERA did not object to the inclusion of the project in the PCI list, as long as this is for the purpose of further studies.

#### A.4.3.3 Regarding the candidate project 150 (“Italy – Slovenia HVDC interconnection)

ARERA and AGEN-RS do not have strong views regarding the inclusion in the PCI list due to inadequate TYNDP outputs and the uncertainties on the expected project features.

A.4.3.4 Regarding the candidate project 47 (Westtirol (AT) – Vöhringen (DE)), E-Control confirmed that only the Austrian section of the project (i.e. Investment 219 Westtirol (AT) – Zell-Ziller(AT)) applied for PCI. As for the TYNDP 2020 project inclusion, E-Control suggested dividing the investments of this project. E-Control strongly supports the inclusion of this investment in the fourth PCI list.

A.4.3.5 Regarding the candidate project 325 (AT, SI, IT - South-East Alps Project), which is included in the category “Projects still under analysis and consideration for possible inclusion in the regional lists”, E-Control confirmed that only the Austrian section of the project (i.e. investment 1636 Lienz (AT) – Obersielach (AT)) applied for PCI. E-Control strongly supported the inclusion of this investment in the fourth PCI list, as this investment is a pre-requisite for any further interconnection and RES integration in that area and has significant impact not only to strengthen bi-directional north-south but also to East-West interaction within the closed Austrian 380-kV ring and surrounding Member States. E-Control furthermore pointed out that losing the PCI status, this project currently holds, could lead to serious consequences regarding the national permit granting process.

#### A.4.4 Opinion on the draft regional list – BEMIP Regional Group

No views, within the spirit of recital 45 of this Opinion, were expressed on this corridor projects.

#### A.4.5 Opinion on the draft list of proposed smart grid PCIs

ACER received filled-in checklists from all NRAs of the countries hosting the candidate projects. In 5 cases<sup>12</sup>, the NRAs supported the inclusion of the candidate projects in the final PCI lists, while in the other 2 instances<sup>13</sup> they were not able to assess the candidate project.

A.4.5.1 Regarding candidate project Smart Border Initiative, CRE and BNetzA were not able to assess the inclusion of the project to the PCI list, due to lack of updated information on the project, as a feasibility study is ongoing (and the results are expected in end 2019). Also, CRE and BNetzA noted the lack of information on the costs and benefits of the project.

A.4.5.2 Regarding candidate project Data Bridge, CRE was not able to assess the inclusion of the project to the PCI list, due to the important uncertainties arising from the project specificities and the early stage of the project. CRE, also, noted that the CBA results can strongly vary depending on the benefits that are taken into account. CRE considers that the inclusion of benefits has to be duly justified to ensure the robustness of the CBA.

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<sup>12</sup> For projects: SINCRO.GRID (Slovenia and Croatia), Danube InGrid (Slovakia, Hungary), Crossborder flexibility project (Finland, Estonia), Data Bridge (Estonia, Latvia, Lithuania, Denmark, France), ACON Smart Grids (Czech Republic and Slovak Republic).

<sup>13</sup> For projects: Data Bridge (Estonia, Latvia, Lithuania, Denmark, France), Smart Border Initiative (Germany and France).

## Annex V - Draft regional lists of proposed PCIs

### 1. Draft electricity regional lists and draft thematic area smart grids list

#### 1.1 NSOG electricity - transmission

Project name	Comments
North Sea Wind Power Hub	Germany expressed its reservation on the project on its territory.
2nd interconnector Belgium – UK [currently known as "Nautilus"]	
Interconnection between Revsing (DK) and Bicker Fen (UK) [currently known as "Viking Link"]	
New Great Britain - Netherlands interconnection	
Interconnection between Peterhead (UK) and Simadalen (NO) [currently known as "NorthConnect"]	
Ireland – United Kingdom interconnection between Wexford (IE) and Pembroke, Wales (UK) [currently known as "Greenlink"]	
France – Ireland interconnection between La Martyre (FR) and Knockraha (IE) [currently known as "Celtic Interconnector"]	
Interconnection between Le Havre (FR) and Lovedean (UK) [currently known as "AQUIND"]	France expressed its reservation on the project on its territory.
France-Aldemey-Britain [currently known as "FAB Link"]	
Interconnection between the vicinity of Dunkerque (FR) and the vicinity of Kingsnorth (UK) [currently known as "Gridlink"]	
UK-Germany interconnection [currently known as "NeuConnect"]	Germany expressed its reservation on the project on its territory.
France – United Kingdom interconnection between Coquelles (FR) and Folkestone (UK) [currently known as "ElecLink" project]	
Interconnection between Blythe (UK) and Kvilldal (NO) [currently known as "North Sea Link"]	
DKW-DE, Westcoast	This project is an essential remaining element of a PCI cluster comprising of two investments: the interconnector and the internal line in DE [which was recently commissioned] – issue of complementarity.
Cluster Germany – Norway [currently known as "NordLink"]	The value for losses in TYNDP 2018 was corrected. Cost-benefit ratio was recalculated and the project proved to pass the threshold for inclusion.

1.2 NSOG electricity - storage

<b>Project Name</b>	<b>Comments</b>
iLand	
Cruachan II	
CAES Zuidwending, NL	
CARES	The value for operational expenditure (OPEX) in TYNDP 2018 was corrected. Cost-benefit ratio was recalculated and the project proved to pass the inclusion threshold.

### 1.3 NSI West electricity - transmission

Project name	Comments
Portugal – Spain interconnexion	
RES in north of Portugal	
Interconnection between mainland Italy - Corsica (FR) and Sardinia (IT) [currently known as "SACOI 3"]	
Interconnection between Aquitaine (FR) and the Basque country (ES) [currently known as "Biscay Gulf"]	
North South Interconnector (IE – Northern Ireland)	
RIDP I (IE – Northern Ireland)	
MAREX Organic Power Interconnector (IE – UK)	Ireland and UK expressed their reservation on the project on their territory.
Interconnection between Navarra (ES) and Landes (FR) [currently known as Pyreanean crossing 1]	
Internal lines at the Belgian north border [currently known as "BRABO II + III"]	
Interconnection between Aragón (ES) and Atlantic Pyrenees (FR) [currently known as Pyreanean crossing 2]	
Internal line in DE to increase capacity at Western borders [currently known as "Ultranet"]	
Internal line between in DE to increase capacity at Northern and Southern borders [currently known as "Suedlink"]	
Interconnection between CH and IT [currently known as "Greenconnector"]	
ES – FR – UK interconnection [currently known as "Britib"]	Spain, France and UK expressed their reservation on the project on their territory.

#### 1.4 NSI West electricity - storage

Project name	Comments
P-PHES-CUA (ES)	
Pumped Hydroelectric Energy Storage Navaleo (ES)	
MAREX Organic Power Energy Storage (IE)	Ireland expressed its reservation on the project on its territory. UK supported the reservation of Ireland.
PHES Monte-Negre, Zaragoza (ES)	Spain expressed its scrutiny reserve on the project on its territory.
Girones & Raimats (ES)	Spain expressed its scrutiny reserve on the project on its territory.
Silvermines Hydroelectric Power Station (IE)	
Hydro Pump Storage Riedl (DE)	Germany expressed its reservation on the project on its territory.
Kaunertal Storage Project (AT)	

### 1.5 NSI East electricity - transmission

Project name	Comments
Bulgaria-Greece 2 <sup>nd</sup> interconnector and related overhead lines in Bulgaria	
Internal reinforcements in Poland [part of the cluster currently known as "GerPol Power Bridge"]	
Austria-Germany Interconnection between St. Peter (AT) and Isar (DE)	
Austria-Italy Interconnection between Wurmlach (AT) and Somplago (IT)	
New Slovakia-Hungary interconnector	
Romania internal lines and interconnection Romania-Serbia [currently known as "Mid Continental East Corridor"]	
Cluster of internal lines in Czechia ("Northwest-South corridor")	
Cluster Bulgaria – Romania capacity increase [currently known as "Black Sea Corridor"]	
SuedOst Link (Internal HVDC line in Germany between Wolmirstedt and Bavaria to increase internal North-South transmission capacity)	
Italy-Slovenia HVDC Interconnection between	
Westtirol (AT) – Vöhringen (DE) (to be renamed Internal line between Westtirol and Zell-Ziller (AT))	Only the Austrian section of the project is a PCI candidate. Germany expressed its reservation on the section of the project on its territory.
Internal line in Austria between St. Peter and Tauern	
EuroAsia interconnector (subsea HVDC link connecting Greece, Cyprus and Israel)	Greece expressed its reservation on the section of the project on its territory.
Cluster of internal lines in Czechia ("Southwest-east corridor")	
IT-TU interconnector	The technical eligibility criteria [500 MW increase between two MSs] was confirmed by ENTSO-E based on a dedicated study. The Cost-benefit ratio passes the inclusion threshold.

### 1.6 NSI East electricity - storage

Project Name	Comments
Hydro-pumped storage in Bulgaria - Yadenitsa	
HPS Amfilochia	

### 1.7 BEMIP electricity - transmission

Project name	Comments
Cluster Finland – Sweden [currently known as "Third interconnection Finland – Sweden"]	
Internal line between Stanisławów and Ostrołęka (PL)	
Cluster Estonia – Latvia between Kilingi Nõmme and Riga [currently known as "Third interconnection"]	
Internal line between Keminmaa and Pyhänselkä (FI)	
Integration and synchronisation of the Baltic States' electricity system with the European networks	
Internal line between Ekhyddan and Nybro/Hemsjö (SE)	This project is an essential remaining element of a PCI cluster comprising of three investments: the interconnector [which is commissioned] and the internal lines in Sweden/Latvia – issue of complementarity.

### 1.8 BEMIP electricity - storage

Project name	Comments
Hydro-pumped storage in Estonia	
Capacity increase of hydro-pumped electricity storage in Lithuania – Kruonis (LT)	The value of the benefits for the project was recalculated considering the missing benefit: support to Baltic synchronization. The updated Cost-benefit ratio passes the inclusion threshold.

1.9 Draft thematic area smart grids list

<b>Project Name</b>	<b>Comments</b>
Sincro.Grid (SL, HR)	
ACON (CZ, SK)	
Danube InGrid (SK, HU)	
Data Bridge (FI, EE, LV, LT, DK, FR)	
Smart Border Initiative (DE, FR)	
Cross-border Flexibility project (FI, EE)	

## 2. Electricity projects not included in the draft regional lists

### 2.1 Projects still under analysis and consideration for possible inclusion in the regional lists

Project name	Comments
South-East Alps Project (consisting of new interconnections between Austria and Italy, Austria and Slovenia and related internal line in Austria) [NSI EAST RG]	<p>Cost-benefit ratio not sufficient: currently analysing missing benefits submitted by the project promoters recently.</p> <p>Only the AT section (line Lienz - Obersielach) was submitted as PCI candidate. Italy and Slovenia expressed reservation about the projects on their territory.</p> <p>AT expressed its support for the project.</p>
Interconnection between Slovenia, Hungary and Croatia [NSI EAST RG]	<p>Cost-benefit ratio not sufficient: currently analysing missing benefits submitted by the project promoters recently.</p> <p>Croatia, Slovenia and Hungary expressed their support for the project.</p>

### 2.2 Projects, which did not prove that their overall benefits outweigh costs

Project name	Comments
<i>Coire Glas [NSOG RG]</i>	<i>Cost-benefit ratio not sufficient</i>
<i>Cheshire Gas CAES [NSOG RG]</i>	<i>The value for operational expenditure (OPEX) in TYNDP 2018 has been corrected. Cost-benefit ratio has been recalculated but remains insufficient.</i>
<i>4th Czechia-Slovakia interconnector [NSI EAST RG]</i>	<i>Cost-benefit ratio not sufficient</i>
<i>PSPP Kozjak [NSI EAST RG]</i>	<i>Cost-benefit ratio not sufficient</i>