

OPINION No 10/2023
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS

of 3 October 2023

on the draft regional lists of
proposed Electricity Projects of Common Interest and
Projects of Mutual Interest 2023

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 on establishing a European Union Agency for the Cooperation of Energy Regulators¹ (ACER) and, in particular, Article 11(c) thereto,

Having regard to Regulation (EU) 2022/869 of the European Parliament and of the Council of 30 May 2022 on guidelines for trans-European energy infrastructure, amending Regulations (EC) No 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944, and repealing Regulation (EU) No 347/2013² and, in particular, Annex III.2(14) thereto,

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

Having regard to the favourable opinion of the Board of Regulators of 28 September 2023, delivered pursuant to Article 22(5)(a) of Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019,

Whereas:

¹ OJ L 158, 14.6.2019, p. 22

² OJ L 152, 3.6.2022, p. 45

1. INTRODUCTION

- (1) According to Article 3 of Regulation (EU) 2022/869 (the ‘TEN-E Regulation’), a Union list of Projects of Common Interest (‘PCIs’) and Projects of Mutual Interest (‘PMIs’)³ 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.
- (2) The draft regional lists of proposed projects falling under the competence of National Regulatory Authorities (‘NRAs’) drawn up by the Regional Groups (‘RGs’) shall be submitted to ACER before the adoption date of the Union list. The draft list shall be accompanied by the Opinions of Member States (‘MSs’) 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.2.8 to the TEN-E Regulation, the 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 Regional Groups.
- (4) ACER shall assess the draft regional lists and the accompanying opinions within three months of the date of receipt. ACER shall provide an Opinion on the draft regional lists, and, in particular, on the consistent application of the criteria and the cost-benefit analysis across regions.
- (5) In view of the requirement provided in Annex III.2.8 to the TEN-E Regulation, ACER developed in February 2023 a questionnaire aiming at coordinating the NRAs inputs. Through this questionnaire, NRAs provided structured assessments of the candidate projects on the eligibility criteria, as well as on the cost-benefit analysis of the projects and the elements affecting it (the statistics of these assessments are presented in Annex III to this Opinion).
- (6) On 15 March 2023 the European Scientific Advisory Board on Climate Change (ESABCC) published its recommendations⁴ on a harmonised EU energy system-wide cost–benefit analysis, some of which are relevant to the PCI/PMI process and are considered by ACER. More specifically, ESABCC calls for more transparency in the coordination between ENTSO-E and ENTSO-G, as well as between the European

³ In this Opinion, the term “proposed PCIs/PMIs” indicates projects, which are included in the document of the draft regional PCI/PMI lists submitted to ACER in sections “Electricity and offshore projects” and “Priority Thematic Area Smart electricity grids deployment”, and the term “candidate projects” indicates projects for which an application for selection was submitted, including the projects which were withdrawn from the process by their promoters.

⁴ <https://climate-advisory-board.europa.eu/reports-and-publications/towards-a-decarbonised-and-climate-resilient-eu-energy-infrastructure-recommendations-on-an-energy-system-wide-cost-benefit-analysis/advice-on-a-harmonised-eu.pdf/@@display-file/file>

Commission and ENTSOs, and the highest possible accessibility to the market and network models used by ENTSOs to calculate projects' costs and benefits.

- (7) The NRA assessments were presented to the Regional Groups on 21 April 2023 as an input to the evaluation of the candidate projects. These individual or joint NRA assessments, including their updates where relevant, were also considered as an input for preparing this Opinion.
- (8) The European Commission released to the Regional Group members the final PCI assessment methodology on 8 June 2023, in the document "*Methodology for assessing the electricity and offshore infrastructure candidate PCI and PMI 1st Union PCI-PMI list 2023*" (*The PCI / PMI Selection Methodology*). The methodology, as well as the scores and ranking of the candidate projects proposed for inclusion in the draft regional lists of PCIs and PMIs, to be submitted to the decision-making bodies of the Regional Groups ('Decision-Making Bodies'), were presented in the RG meetings held on 9 June 2023.
- (9) The technical Decision-Making Bodies of the RGs met on 28 June 2023 to decide which projects to include in the draft regional PCI/PMI lists.
- (10) On 12 July 2023, the European Commission submitted to ACER the draft regional lists of proposed PCIs/PMIs (cf. Annex IV to this Opinion) agreed by the technical Decision-Making Bodies of the Regional Groups and requested ACER's opinion on the projects falling under the competence of national regulatory authorities.
- (11) The draft Regional PCI/PMI lists submitted to ACER include reservations on some of the candidate projects stated by Member States during the technical Decision-Making Bodies meeting or, in other cases, the support of Member States where the initial assessment of project was not sufficient.
- (12) ACER herein provides its opinion regarding electricity transmission, offshore, storage⁵ and smart electricity grids project categories set out in Annex II.1 to the TEN-E Regulation, i.e. regarding the NSI West Electricity, NSI East Electricity, BEMIP Electricity, NSOG, BEMIP offshore, South West offshore, South East offshore and Atlantic offshore grids priority corridors and the Smart Electricity Grids thematic area.
- (13) The recent energy crisis emphasised the importance of increased interconnection capacities between Member States not only to meet the continuously more ambitious

⁵ Regarding the consistent application of the criteria and the cost-benefit analysis across regions (requested in Annex III.2.14 of the TEN-E Regulation), ACER notes that according to the TEN-E Regulation ACER is not required to provide an opinion on the storage CBA methodology. Regarding the assessment of electricity storage projects an opinion is provided herein only for projects for which NRAs provided an assessment. As pointed out in Recital (38) of ACER Report on Investment Evaluation, Risk Assessment and Regulatory Incentives for Energy Network Projects (2023) only a few NRAs have any relevant competence on non-TSO electricity storage projects (https://acer.europa.eu/Publications/ACER_Report_Risks_Incentives.pdf).

EU energy and climate objectives, but to also successfully handle other challenges, such as enhancing overall supply security or reducing price volatility, as pointed out in the ACER's assessment of the EU Wholesale Electricity Market Design⁶ as well as ACER's assessment of emergency measures⁷. Indeed, acceleration of key interconnections in the electricity grid is one of the measures proposed by REPowerEU, the European Commission's plan for energy independence from Russia⁸.

2. ASSESSMENT OF THE DOCUMENT

- (14) In this section, ACER presents its remarks on the selection process, the methodologies of the identification of infrastructure needs and the PCI/PMI selection methodology, and finally its remarks on the projects proposed to be included in the PCI/PMI lists.

More specifically, in section 2.1.1 below ACER presents its assessment of the PCI/PMI selection process, in section 2.1.2 its assessment regarding the identification of infrastructure needs conducted within the PCI/PMI selection process, in section 2.1.3 its assessment regarding the selection methodology for the transmission (including offshore) candidate projects and in section 2.1.4 its assessment of the methodology for smart grid projects.

In section 2.2 ACER presents some statistics on the assessment of the specific candidate projects to provide an overview of the outcome of the process, while ACER's remarks on specific projects proposed for inclusion in the PCIs/PMIs lists that need more attention are presented in Annex III.

The ACER remarks in these sections are followed by recommendations regarding the current process and PCI/PMI lists, but also for the improvement of the future PCI/PMI selection processes. Specifically for the identification of infrastructure needs the ACER recommendations for future improvements can be found in Recitals 25 and 26, for the improvement of the PCI/PMI selection methodology in Recital 30, and for the future improvements of the assessment methodology for smart grid projects in Recital 38.

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<https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER%26%23039%3Bs%20Final%20Assessment%20of%20the%20EU%20Wholesale%20Electricity%20Market%20Design.pdf>

⁷ [2023 MMR Emergency Measures.pdf \(europa.eu\)](#)

⁸ Under the 2nd pillar of the plan “*diversification of suppliers for conventional (fossil) fuel imports whilst future-proofing the corresponding infrastructure*”.

2.1. Assessment of the process and the methodology used for drafting the draft Regional PCI and PMI lists

2.1.1. The organisation of the PCI/PMI selection process

- (15) The process followed for the 2023 selection round is similar to the one of the 2021 selection round. ACER positively acknowledges the efforts of the European Commission to identify the ENTSOs scenario which is better aligned with the European Union targets (although more scenarios and additional study horizons should have been used for the projects assessment), ensure the availability of the necessary data in the TYNDP and handle the late finalisation of the TYNDP 2022.
- (16) However, ACER reiterates⁹ the following considerations and recommendations to improve the process of the PCI selection:
- The consultation in the PCI Cooperation Platform¹⁰ ('CP') should be more substantial regarding some important elements of the process, leading to improved quality and transparency of the selection process. In particular, more attention should have been given to the assessment of the significant cross-border impact (i.e. the criterion of Article 4(1)(c)(ii) for candidate PCIs located in one MS and the criterion of Article 4(2)(c) for candidate PMIs), the methodology assessing the infrastructure needs, and the PCI/PMI selection methodology.
 - Although the assessment of the infrastructure needs in the RGs was more efficient compared to the previous selection round, it is still focused on indicators per country and did not make sufficient use of the needs analysis per border, based on the analysis conducted by ENTSO-E in the TYNDP 2022. As a consequence, the approach used for the PCI/PMI lists did not enable a concrete discussion on the infrastructure needs at each border.
 - The delayed completion of the TYNDP 2022 created hurdles in the PCI / PMI selection process. At the time of the submission of candidate projects (by December 15th, 2022) the TYNDP was not yet submitted to ACER for its opinion¹¹, while at the time of the provision of NRAs' assessment (by March 2023) the ACER Opinion on the TYNDP 2022 was not issued yet¹², and the TYNDP 2022 was only finalised in May 2023 when the PCI/PMI selection process was already well advanced. Due to this situation, important features of the projects with an impact on the CBA calculations could have changed in the

⁹ The remarks and recommendations presented in this recital were indicated in the ACER Opinion No 09/2021 and No 18/2019 on the draft regional lists of proposed electricity PCIs 2021 and 2019, respectively.

¹⁰ The Cooperation Platform is an informal, working level team, where representatives from the European Commission, ENTSO-E and the Agency discuss the issues pertaining to the PCI/PMI selection process, aiming at finding solutions for a better PCI selection.

¹¹ The TYNDP package was submitted to ACER for opinion on 31 January 2023.

¹² The ACER Opinions No 3 and No 4 on the TYNDP 2022 were issued on 4 April 2023.

final version of the TYNDP (after NRAs assessed the candidate PCIs) and the assessments might not have been based on the final data. The timely availability of the final TYNDP data would allow a more robust assessment of projects by NRAs and other RG members. Therefore, ACER reiterates its recommendation that key information on candidate projects (especially their costs and benefits) that impacts the project assessment has to be finalised before the project assessment starts and be subject to the PCI/PMI public consultation. This means that the ENTSO-E TYNDP, which provides the necessary data for the project assessment, should take into account the ACER Opinion and be finalised before the project assessment starts, i.e. before the PCI/PMI selection year.

- The way the criterion of Article 4(1)(c) and 4(2)(c) of the TEN- Regulation on candidate projects' significant cross-border impact¹³ was assessed was not presented in written form and was not consulted with the RGs. As a result, ACER cannot confirm the methodology applied by the RGs and its consistent application.
- Some important elements of the selection methodology, such as the consideration of non-monetised benefits, the normalisation scale of monetised benefits and the threshold on the multi-criteria analysis were presented to the RGs late in the process¹⁴, not providing the opportunity for the RG members to prepare in advance and provide their views. Therefore, ACER reiterates its recommendation that the discussion of the methodologies (i.e. the needs assessment methodology and the candidate PCI/PMI selection methodology) should take place at the beginning of the selection process, taking into account the TYNDP identification of needs and the ACER PCI monitoring report results. Also, a clear and well-documented description of the PCI/PMI selection methodology, including all important information, should be provided to the RGs for consultation at the beginning of the process, allowing sufficient time (e.g. one month) for substantial discussion and for comments to be evaluated and, when useful, incorporated. After the consultation, the final methodologies (including all necessary elements for the calculations to be replicated by interested parties) should be made publicly available.
- Considering the timing of the 2023 PCI process, ACER puts forward a new recommendation for future PCI processes that the selection methodology, including its relevant elements and parameters should be made available for comments at least two meetings before the last meeting of the regional groups in their full composition.

¹³ This is the case for candidate PCIs located in one MS, which according to the presentations in the RG meetings on 9 June were found non-eligible based on this criterion, although a transfer capacity increase higher at least 500MW between two MSs is indicated in the TYNDP 2022 (e.g. projects 127 and 338) or candidate PCIs connecting one MS with a third country, for which the transfer capacity increase between two MSs is not indicated in the TYNDP 2022 (e.g. projects 174 and 247). Also, for the candidate PMIs how it was assessed whether projects bring significant benefits at Union level.

¹⁴ The day before the last RG meetings or during these meetings.

- The details of the implementation of the CBA rules for the calculation of the present values of the benefits and costs of the candidate projects were not all disclosed, impeding the replication of the calculations by interested RG members. Therefore, ACER reiterates its recommendation that the full details of the present value calculations, i.e. details of the CBA rules implementation, are finalised and shared with the RGs 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 also not provided to the RGs, impeding the verification of the calculations by interested RG members, and resulting in lack of transparency. Therefore, ACER reiterates its recommendation that the RGs publish the values used for the calculation of the benefits and costs of the candidate projects and the calculation itself, before the meeting of the Decision-Making Bodies of the RGs, which adopt the final regional lists for 2023 PCIs and PMIs.
- In addition, for future PCI processes, ACER recommends that all values used for the calculation of costs, benefits and multi-criteria analysis should be made available at least two meetings before the last meeting of the regional groups in their full composition.
- The reasoning for the inclusion or exclusion of candidate projects from the draft Regional PCI/PMI lists was not explained in the draft PCI/PMI lists submitted to ACER. More specifically, despite the fact that the reason of exclusion was orally presented in the last RGs meetings, it was not provided in the document submitted to ACER for an opinion.
- In addition, one project¹⁵, was presented in the last RGs meeting as not meeting the technical criteria, and therefore without an assessment, is included in the draft Regional PCI/PMI lists. Also, another project¹⁶, presented in the last RGs meeting as not passing the threshold of 10 points set by the RG, is included in the draft Regional PCI/PMI lists, with the remark that “*security of supply/grid stability benefits to be reassessed*”, indicating that the assessment process is still on-going after the submission of the draft Regional PCI/ PMI lists to ACER for its opinion.
- Therefore, ACER recommends that the RGs provide to all their members, before the meeting of the Decision-Making Bodies, details of how the assessment was carried out for all candidate projects. Furthermore, the Decision- Making Bodies should disclose (starting from the ongoing PCI / PMI selection process) detailed information to all the members of the respective RGs on complementary evaluation (if any) carried out on top of the assessment concluded by the RGs.
- In addition, for future PCI processes, ACER recommends that a draft assessment of each candidate PCI’s eligibility and a draft assessment of each candidate PCI

¹⁵ Project 1074, Pannonian Corridor (Interconnector between Subotica (SRB) and Sándorfalva (HU))

¹⁶ Project 1041, Interconnector between Greece and Egypt “GREGY Interconnector”

“scoring” according to the PCI methodology should be made available at least in the meeting before the last meeting of the regional groups in their full composition.

- (17) ACER notes that between 21 December 2022 and 16 March 2023, the European Commission launched a public consultation on the merits of PCI and PMI candidate projects. While a general overview of the comments received was presented by the European Commission, the stakeholders’ responses and how they were handled were not made available to the Regional Groups. ACER notes that the stakeholders’ responses could provide additional aspects with regard to the candidates, which could be relevant for the assessment of the criteria to be fulfilled by the projects. In this regard, ACER recommends the European Commission to publish the consultation responses, while preserving any justified claims of confidential information or business secrets. In addition, ACER invites the Regional Groups to examine relevant concerns that may have been raised by stakeholders within their respective duties in the PCI/PMI selection process.

2.1.2. Identification of infrastructure needs

- (18) 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 documents “*Identification of system needs for the TEN-E priority electricity and offshore grid corridors, 1st Union list of PCIs and PMIs*”¹⁷, and “*2023 Union PCI and PMI list TEN-E Regional Groups needs identification*”, respectively.
- (19) The methodology implemented is similar to the one of the last PCI selection round, as it was based on indicators to approximate specific needs (i.e. market integration, security of supply and sustainability), but it was simplified as only one indicator was used for the Security of Supply instead of two in the previous round.
- (20) Additionally, the implementation of the methodology has improved and the assessment was stricter, as a need was found for 24 MSs regarding market integration policy objective, and for 19 MSs regarding security of supply, while in the last PCI selection round a need was identified for all three policy objectives and for all MSs.
- (21) However, ACER notes that the “Sustainability” indicator is covered by the “transmission capacity increase” indicator, as the calculation of the target capacities by ENTSO-E encompasses also the decarbonisation of the electrical system enabled by the generation mix change.

¹⁷ https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/26c957cc-7122-4c6b-a1a1-300c7caf7dc8?p=1&n=10&sort=modified_DESC

- (22) ACER, in its Opinion No 3/2023 on the methodological aspects of the draft TYNDP 2022, acknowledged further improvement¹⁸ in the identification of system needs analysis for 2022 performed by ENTSO-E¹⁹. In particular, ACER noted that (despite some shortcomings) the specific quantities of the target capacities at each border were provided, and calculations were included for both the 2030 and 2040 study years of the system needs analysis.
- (23) The methodology implemented in the PCI/PMI selection process however did not make sufficient use of the TYNDP 2022 system needs analysis, as only the borders where an infrastructure gap was identified in the TYNDP were taken into consideration and only for one indicator, and not the calculated target capacities. In ACER's view, the target capacities at each border, identified in the TYNDP 2022, constitute a good basis for the needs identification in the PCI/PMI selection process, while the approach taken weakened the relevance of the needs identification to verify the criterion defined by Article 4(1)(a) of the TEN-E Regulation²⁰.
- (24) ACER reiterates its support to the identification of infrastructure needs as a first step of the PCI/PMI selection process, but only subject to significant improvement of the needs assessment methodology to be used.
- (25) More specifically, in ACER's view, the infrastructure needs should be quantified per border (and not per country), based on the target capacities calculated in the TYNDP before the PCI selection, and the discussion should focus on whether the candidate projects meet the specific need for extra capacity per border.
- (26) This approach can be achieved with the following steps:
- For borders where the sum of the candidate projects' Δ NTCs is lower or equal to the target capacity (in MW) identified in the TYNDP, the need should be defined as the target capacity, and in this case all candidate projects would address this need.
 - For borders where the sum of the candidate projects' Δ NTCs is higher than the target capacity (in MW) identified in the TYNDP, it should be discussed whether specific conditions exist that allow the target capacity to be higher on each of these borders than the one identified in the TYNDP. The discussion should reflect, for example, on whether or not a project can prove that it will be

¹⁸ Pages 5 and 6 of the ACER Opinion

https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Opinions/Opinions/ACER_Opinion_03-2023-ENTSO-E_draft_TYNDP_2022.pdf

¹⁹ This analysis was presented in the TYNDP documents "*System Needs Study Implementation Guidelines*" and "*System Needs Study- Opportunities for a more efficient European power system in 2030 and 2040*".

²⁰ Based on the European Commission's presentations to the RGs, it can be concluded that the reasons for excluding some candidate projects from the draft regional lists were either the non-fulfilment of the general criterion of art. 4.1 (b) or of art. 4.1 (c) of the TEN-E Regulation, and not the criterion of article 4.1(a) regarding the need of the project, making the needs identification rather redundant.

constructed at a significantly lower cost than the one considered by ENTSO-E at the specific border, or because there is a Security of Supply (SoS) need. This process would facilitate also the identification of competing projects.

2.1.3. The selection methodology for transmission candidate projects

- (27) In general terms, the selection methodology applied by the electricity RGs is similar to the one of the previous selection round. The selection methodology is presented in Annex I to this Opinion.
- (28) ACER positively notes the following changes introduced in the selection methodology:
- the removal from the assessment of benefits, which were calculated by the promoters themselves and could be calculated only in a limited number of cases (i.e. the indicator B9 “*Security of supply - Reduction of necessary reserve for re-dispatch power plants*”), as the reliance on benefits calculated centrally by ENTSO-E increases the consistency of the assessment. In ACER’s view, such benefits (like the latter, as well as the reduction of costs for ancillary services) reflecting the added welfare of projects to the system real time operation are of increasing importance and could be added in the assessment in the future, but only if the CBA methodology is mature enough to allow their consistent assessment across the whole EU area;
 - the reference to the specific benefit indicators published in the TYNDP that are used in the formulas for the calculation of the monetised and non-monetised benefits, as well as the geographical area that these indicators cover;
 - the reduction of the importance of the non-monetised benefit of “Ending isolation” by reducing the points assigned to it from 5 to 3, resulting in the reduction of the points that a project can collect for the non-monetised benefits;
 - the clarification that the CAPEX of projects with third countries is considered to be half of the total project cost (although considering a specific EU-related cost estimate, where possible, should be a better approach).
- (29) ACER reiterates the following considerations and recommendations, adapted to the adjustments made to the PCI/PMI selection methodology 2023:
- a) In ACER’s view, the multi-criteria analysis approach used for the ranking of the projects, whilst usefully alluding to the multiple benefits such projects can contribute to, risk shielding more political, less easily quantifiable objectives from the assessment of more technical, more easily quantifiable ones. As such, ACER would point to the value in adopting a somewhat different approach, namely one where the spectrum of available monetised benefits lend themselves to an initial, purely CBA – based approach, whereas the final ranking of projects could reflect a number of other drivers and objectives, less amendable to exact quantification (such as, for example, coherence of EU member states, increase of

security of supply, integration in the EU internal energy market etc.), on top of the pure CBA-based results. This would still require the latter drivers and objectives to be clearly defined so as to be amenable to further review and assessment. In ACER's view, this approach of structuring the process would likely raise the credibility of the PCI/PMI selection process by differentiating in a transparent way between more technical, more easily quantifiable aspects and more political, less easily quantifiable aspects of the evaluation.

- b) In ACER's view, the multi-criteria analysis approach used for the ranking of the projects should have been avoided, as the spectrum of available monetised benefits could allow for a simple and easily understandable, purely CBA – based approach as a major step of the PCI selection process.
- c) The final ranking of projects can definitely factor in other drivers, including the fulfilment of wider EU policy objectives (e.g. coherence of EU member states, increase of security of supply, integration of peripheral and poorly connected Member States in the EU internal energy market), on top of the pure CBA-based results, as long as these drivers are clearly defined. In ACER's view, this approach of structuring the process would considerably increase the credibility of the PCI/PMI selection process by differentiating in a transparent way between the technical and the policy-oriented aspects of the evaluation.
- d) Regarding the scenario used, according to the PCI/PMI selection Methodology, the assessment was “*primarily based on benefits estimated under the 2030 Distributed Energy scenario of the TYNDP 2022*”, and “*the choice of the scenario was made considering the consistency of ENTSOs scenarios with the latest Commission scenario used for the Climate Target Plan impact assessment and also the consistency with the gas PCI process*”. However, the single scenario approach is not aligned with the requirements of Annex IV of the TEN-E Regulation²¹. In ACER's view, a scenario in alignment with the European Union targets can be used for the assessment, however, the consideration of one single scenario may result in biased results by missing out on other possible options, both in terms of infrastructure needs and individual projects. In ACER's view, using only the year 2030 limits the analysis by avoiding to examine the uncertainties of projects' benefits in the longer term²².
- e) Regarding the calculation of costs and monetised benefits, ACER notes that the use of benefits for only one time horizon is not aligned with the guidance provided

²¹ According to point (3)(b)(ii) of Annex IV of the TEN-E Regulation, for the evaluation of the market integration, competition and system flexibility “*the impact, for the area of analysis as defined in Annex V, in terms of energy system-wide generation and transmission costs and evolution and convergence of market prices provided by a project under different planning scenarios*” should be considered.

²² For example, transmission project 1052 shows significantly higher benefits in 2040 compared to the benefits of year 2030, but due to using only 2030 benefit results, the project was not able to pass the threshold set by the assessment methodology.

in the approved ENTSO-E 2nd CBA methodology and in the ENTSO-E draft 3rd CBA methodology²³ with regard to the benefits aggregation.

- f) Regarding the calculations of the project benefits, there is a lack of visibility and ACER cannot verify whether the other CBA rules (e.g. suitable interpolation of benefits across time horizons, discounting) were consistently applied. A CBA calculation template could assist in solving this problem and once prepared it should be made available to RG members to increase the transparency of the PCI/PMI selection process.
- g) ACER sees value in considering a broad range of benefits when it comes to assessing interconnectors, including both monetized and additionally non-monetized benefits, avoiding any overlapping in their definition and computation, acknowledging that some of these benefits may be difficult to monetize²⁴. Further improvements to the CBA, either by monetization or quantification, should help ease considering these benefits in a transparent, objective manner²⁵.
- h) In ACER's view, the application of the same requirements for advanced and non-advanced projects (e.g. conceptual projects) continues to have shortcomings, as non-advanced projects, in general, cannot reliably provide the same level of details regarding costs and benefits.
- (30) In ACER's view, significant improvements in the PCI/PMI selection methodology could be achieved and should be pursued in the future. In this respect, ACER recommends the following:
- The selection methodology should take into account both monetized benefits (aiming to further expand them) and other drivers, including the fulfilment of wider EU policy objectives (e.g. coherence of EU member states, increase of security of supply, integration in the EU internal energy market). These drivers need to be clearly defined and transparent, to be perceived as objective and trustworthy.
 - The future TYNDPs should better fit the purpose of the PCI selection, by providing a sufficient level of information on the candidate projects and on the project benefits and in line with ACER's recommendations.
 - The future TYNDPs should include a timestamp identifying when the project cost estimate was executed by the project promoter(s). This additional information would help understanding whether the cost estimate already took

²³ More specifically, with the guidance provided in section 3.2.5 of the ENTSO-E draft 3rd guideline for CBA on the investment value calculation (latest version submitted to EC on 27.10.2022) is available here: https://eepublicdownloads.blob.core.windows.net/public-cdn-container/tyndp-documents/CBA/221019-3rd%20CBA_Guidelines%20.pdf

²⁴ See point c above.

²⁵ The specific data used and the scores calculated for the three sub-indicators per country were not released to the RG members.

into account the recent significant cost increases (in this respect, the ACER 2023 PCI monitoring report observed an overall increase about 10% of the total CAPEX for all PCIs, however nearly half of the PCIs did not amend their cost estimate²⁶).

- The RGs should use the results of project assessments from contrasted TYNDP scenarios in the long term, thus accounting for the uncertainties of project benefits.
- A simplified and standardised methodology for the assessment of the 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 assessment methodology for smart grid projects

- (31) The process followed for the 2023 selection round of SEG projects regarding their submission, public consultation and the NRAs' consultation was identical to the process of the other infrastructure categories, while the process and content of their assessment is described in this section.
- (32) A draft CBA methodology named "*Harmonised system-wide cost-benefit analysis for candidate smart electricity grid projects*"²⁷ ('SEG CBA') was prepared by the European Commission's Joint Research Centre (JRC) and was publicly consulted between 7 October 2022 and 6 January 2023.
- (33) The main findings of the NRAs' assessment of smart grid projects provided to the Smart Electricity Grids Thematic Area are the following:
- Most of the smart grid projects are not included in the national development plans (NDPs)²⁸. Also, none of the candidate projects is part of the latest ENTSO-E's TYNDP 2022. The non-inclusion of smart grids projects in national development plans approved by the relevant authorities, limits the capacity of the NRAs to verify the provided information on their costs and benefits.
 - For five out of the six candidate smart electricity grids projects, NRAs were not able to assess whether their potential overall benefits outweigh their costs. As a result, the discussion on the projects was limited and does not fully correspond to

²⁶ ACER acknowledges that project cost estimates are usually updated by project promoters when the project progresses in its development. Therefore, project promoters may not have available updated cost information when requested to submit their cost inputs to the TYNDP/PCI process.

²⁷ Harmonised system-wide cost-benefit analysis for candidate smart electricity grid projects https://energy.ec.europa.eu/system/files/2023-06/Smart_Electricity_Grids_CBA_methodology_UPDATED.pdf

²⁸ Two smart electricity grids projects included in the draft PCI/PMI lists are not part of any NDP, two are included only in the NDP of some of the countries where the project is located, and only one project is included in the NDPs of all countries where the project is located.

the requirement of the Thematic Group project assessment, as stated in the Annex III.2.13 to the TEN-E Regulation.

- (34) ACER notes that the SEG CBA methodology was finalised²⁹ after its implementation by the project promoters, as the CBA results were already submitted with the candidate PCIs applications in December 2022. This sequence of events raises concerns about the accuracy and consistency of the assessment process. The SEG CBA methodology should have been finalised before it was implemented to ensure that the calculations are aligned across the projects.
- (35) Regarding the implementation of the SEG CBA methodology, the fact that it was implemented by project promoters themselves allowed different approaches on the assumptions considered and the monetisation of the Key Performance Indicators (KPIs), leading to potential inconsistency of the results. For this reason, it is crucial for the Smart Electricity Grids Thematic Area to establish in due time, and before its implementation, clearer guidelines and criteria to ensure a standardized and consistent application of the SEG CBA across projects.
- (36) Regarding the consideration of the project specific SEG CBA results by the Smart Electricity Grids Thematic Area, there is lack of clarity. The assessment of the projects was presented during the meeting of the Smart Electricity Grids Thematic Area of 19 June. For each project, an assessment was presented for each of the five criteria of Article 4(3)(b) of the TEN-E Regulation, i.e. for sustainability, security of supply, market integration, network security/flexibility/quality of supply, and smart sector integration, but only in qualitative terms³⁰ without details on how the SEG CBA results were considered for this assessment. In ACER's view, to ensure the transparency and credibility of the decision-making process, the criteria or the guidelines for assessing the CBA results should be provided to the Thematic Area members before the meeting of the Decision-Making Bodies of the RGs, which adopt the final 2023 PCI/PMI regional lists.
- (37) ACER reiterates its view that the approach based on the use of KPIs in the assessment provided to the Thematic Area should be replaced by the use of a reliable CBA, which should be the main basis for the assessment of smart grid projects.
- (38) In ACER's view, the selection process of smart-grid PCIs could benefit from the following improvements:
- Smart grid project promoters should aim to include relevant smart grid projects into their respective transmission or distribution NDPs to facilitate the exchange

²⁹ Finalised and published in May 2023.

³⁰ The assessment was in the form: "Results are not always clear", "Results are sufficient", "Results are good", "Results are quite good", "Results are very good".

of relevant project-related information already before the PCI/PMI selection process.

- The PCI/PMI selection process should be further simplified by focusing on the CBA and by limiting the relevance of any KPI-based approach.

2.2. Assessment of the proposed projects in the draft Regional PCI/PMI lists

- (39) On 12 July 2023, the document called “*Draft Regional PCI/PMI lists –electricity, offshore, hydrogen and electrolysers, smart electricity grids, smart gas grids and cross-border carbon dioxide networks [version: 11 July 2023, for ACER opinion]*” (‘Draft Regional PCI/PMI lists’) was submitted to ACER.
- (40) Regarding the consistency of the PCI/PMI 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(3) of the TEN-E Regulation across all corridors, and that the benefit data used in this assessment was based on the TYNDP data, except for smart electricity grids projects. Therefore, some degree of consistency was safeguarded throughout the process and across all regions.
- (41) Regarding smart electricity grid projects, however, since benefits were calculated by project promoters, and the concerned NRAs had a limited capacity for scrutiny of the provided information, some inconsistency was inevitable due to the different sources and assumptions used.
- (42) The following tables summarise the main statistics on the assessment of the PCI and PMI electricity and offshore candidate projects, and how the field was eventually narrowed by the selection process so far, based on the information available to ACER.

Table 1: Candidate electricity and offshore PCIs – main statistics on the assessment

	PCI candidate projects	European Commission Presentations to the RGs			Statistics on the document Draft Regional PCI/PMI lists	
		Not in line with general / technical criteria	Ranked projects	Did not pass the assessment threshold	Included in the draft lists	
					Transmission	Storage
BEMIP electricity	7	0	7	0	6	1
NSI East	25	8	17	3	11	3
NSI West	27	3	24	1	12	11

Atlantic offshore grids	2	0	2	0	2	-
BEMIP offshore	4	2	2	0	2	-
NSOG	5	0	5	0	5	-
SE offshore	0	0	0	0	0	-
SW offshore	2	0	2	0	2	-
Total	72 (*)	13	59	4	40	15

(*) One project, namely TYNDP project 1056 (storage), was withdrawn from the process and is not included in the statistics

Table 2: Candidate electricity and offshore PMIs – main statistics on the assessment

	PMI candidate projects	European Commission Presentations to the RGs			Statistics on the document Draft Regional PCI/PMI lists
		Not in line with general / technical criteria	Ranked projects	Did not pass the assessment threshold	Included in the draft lists
BEMIP electricity	0	0	0	0	0
NSI East	7	3	4	2	4 (**)
NSI West	8	3	5	2	3
Atlantic offshore grids	0	0	0	0	0
BEMIP offshore	0	0	0	0	0
NSOG	2	0	2	0	2
SE offshore	0	0	0	0	0
SW offshore	0	0	0	0	0
Total	17 (***)	6	11	4	9 (**)

(**) The Draft Regional PCI/PMI lists include two projects further to the two ones that in the last NSI East RG meeting were assessed and passed the assessment threshold of 10 points: TYNDP project 1074, which was found ineligible, due to missing letter of support from the third country involved (and for this reason was not further assessed), and TYNDP project 1041, which did not pass the assessment threshold of 10 points.

(***) 20 PMI projects submitted a PMI candidacy, out of which three projects were withdrawn from the process, namely TYNDP projects 286, 1040 and 1107 and are not included in the statistics.

- (43) Regarding smart electricity grids projects, there were six candidates, out of which one was found non-eligible for not meeting the general criteria, and the rest were included in the Regional PCI / PMI lists.
- (44) In Annex III, NRAs' views on the projects included in the draft Regional PCI/ PMI lists are presented, building on the joint assessments of candidate projects by NRAs, the statistics of which are presented in Annex II to this Opinion. It is noted that NRAs submitted an assessment for 77 out of 99³¹ candidate projects, i.e. for 56 out of 73

³¹ Including the four projects that were withdrawn from the process by the project promoters.

transmission candidate projects, for 15 out of the 20 candidate storage projects and for all 6 smart grid candidate projects.

- (45) Reference in Annex III to this Opinion is made only to the projects included in the Regional PCI / PMI lists and are under the competency of the NRAs, which NRAs indicated that they either were not able to assess, were opposed to, or had divergent views upon. No reference is made to projects not included in the draft Regional PCI / PMI 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 not objected by the involved NRAs,

HAS ADOPTED THIS OPINION:

1. ACER's Opinion on the projects of the draft Regional PCI/PMI lists is provided in Section 2.2. and Annex III of this Opinion.
2. ACER welcomes the continuous efforts of the European Commission towards further improving the PCI selection process. In particular, the needs assessment was drastically improved compared to the last selection round.
3. ACER is not able to assess the consistent application of the criteria of the TEN-E Regulation and of the cost-benefit analysis to all the candidate projects due to:
 - (i) lack of transparency:
 - (a) on the way the significant cross-border impact (i.e. criterion of Article 4(1)(c)(ii) for candidate PCIs located in one MS and criterion of Article 4(2)(c) for candidate PMIs) was assessed;
 - (b) on the specific rules applied for the calculation of the present values of benefits and costs of candidate projects, as well as of the specific values used for these calculations;
 - (c) on the specific rules applied for the calculation of some of the scores for the non-monetised benefits of the candidate projects, especially regarding the normalisation used for the calculation of the score of the benefit "Sustainability - Reduction of non-CO2 emissions", and the scores calculated for the three sub-indicators per country of the "Improved interconnectivity" benefit;
 - (d) on how the smart electricity grid CBA results were considered for the assessment of smart electricity grids projects.
 - (ii) the inconsistency noted in the assessment methodology due to lack of consideration of multiple planning scenarios.
4. To help tackle the deficiencies listed above and enable ACER to perform its legal duty, the RGs should work on improving the transparency of the process and the methodologies used in the ongoing and future PCI/PMI selection processes taking into account ACER's recommendations included in this Opinion.

This Opinion is addressed to the European Commission.

Done at Ljubljana, on 3 October 2023.

- SIGNED –

For the Agency
The Director
C. ZINGLERSEN

Annexes:

Annex I - Description of the methodology applied for establishing the draft Regional PCI / PMI lists for transmission projects and ACER specific remarks

Annex II - Statistics on NRAs' assessment of candidate projects

Annex III - NRAs' assessment of proposed PCIs/PMIs and smart electricity grid projects

Annex IV - Draft Regional PCI / PMI lists

Annex I - Description of the methodology applied for establishing the draft Regional PCI / PMI lists for transmission projects 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 electricity and offshore infrastructure candidate PCI and PMI 1st Union PCI-PMI list 2023 - FINAL, 9 June 2023”³² (‘PCI / PMI Methodology’) are presented in this section, alongside with the unclear or not clarified elements.

A.1.1 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 the TEN-E Regulation depending on their category, based on the information available in the TYNDP project sheets.

Regarding the candidate PCIs, the RGs then checked whether candidate projects meet the criteria of article 4(1)(a) of the TEN-E Regulation regarding the necessity of the projects and article 4(1)(c), regarding their cross-border relevance.

Regarding the candidate PMIs, the RGs checked whether candidate projects meet the criteria of article 4(2) of the TEN-E Regulation.

The assessment of the criterion of significant cross-border impact of articles 4.1 (c) and 4(2)(c) for candidate PCIs and PMIs respectively, was based (according to the MCI / PMI Methodology) on the information available in the draft TYNDP project sheets, and “*In a few more complex cases, a further check involving the project promoters, ENTSO-E and ACER is done.*” Despite the above reference, ACER was not involved in such assessments, and as mentioned in Section 2 of this Opinion, there is no visibility on how the significant cross-border impact for candidate PCIs located in one MS and for candidate PMIs was performed.

The general criteria 4(2)(d), 4(2)(e), and 4(2)(f) were checked against the information provided by the project promoters or other sources available.

Regarding the criterion of articles 4.1(b) and 4.2(b), 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:

³² <https://circabc.europa.eu/ui/group/3ba59f7e-2e01-46d0-9683-a72b39b6decf/library/3ef7e58d-ffbf-4db4-8409-c69c097ef8eb/details>

A.1.2 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. Due to the non-release of sample computations or the specific calculations for each project, the following elements of the methodology are unclear:

- The formula used for the calculation of the present values (or, alternatively, an inclusive example of the most complex project), to show how the interpolation rule stipulated by the CBA methodology was applied to produce a single benefit value³³.
- The starting year assumed for the benefits (e.g. the year of commissioning or another starting year).
- How the CAPEX is accounted for, and the starting year assumed for the OPEX (e.g. the year following the commissioning or another starting year).
- How the commissioning date of a project is determined, when it includes many investment items with different commissioning dates.
- Which are the monetisation coefficients for benefit B6 (value of lost load) by country

A.1.2.1 Handling of monetised benefits

The steps followed for the calculation of the monetised benefits, according to the PCI / PMCI Methodology, are the following:

- The Present Value of the monetised benefits of the projects according to the “Distributed Energy” scenario of the TYNDP 2022 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 I.1. 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 are higher than 95% of its cost up to equal to its cost.

Benefit/cost	Normalised value
B/C < 0,2	1
0,2 < B/C < 0,3	2
0,3 < B/C < 0,4	3

³³ Even though the calculation of benefits this time was not performed based on the two time horizons for which CBA results are provided in the TYNDP, i.e. for year 2030 and 2040, still how the 2030 results were handled for the years earlier to 2030 is not clear



$0,4 < B/C < 0,5$	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
$0,9 < B/C < 0,95$	9
$0,95 < B/C < 1$	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 I.1: Scale for normalising Benefit/Cost ratio

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

- **Market integration – Socio-economic welfare [SEW]:** The values of indicator B1, weighted average, M €/year for the Distributed Energy scenario 2030, for the EU27 area of the TYNDP 2022 were used.
- **Sustainability - Additional Societal benefit due to CO2 variation:** The values of the indicators B2a $\Delta CO_2_market_SEW$ and B2b $\Delta CO_2_network_SEW$, M€/year, for the Distributed Energy scenario 2030, at a CO2 price 100€/ton, for the EU27 area were used.
- **Security of supply- adequacy (energy not served) [ENS]:** The values of indicator B6 $\Delta SoS_monetised$, weighted average, M€/year, for the Distributed Energy scenario 2030 for the whole study area (as calculations for the EU27 area were not available for his indicator) of the TYNDP 2022 were used.
- **Losses:** The values of indicator B5 $\Delta losses_monetized$, weighted average, M €/year for the Distributed Energy scenario 2030, for the EU27 area of the TYNDP 2022 were used (i.e. 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).

A.1.2.2 Handling of project cost

- The Capital Expenditure (CAPEX) values, as reported in the TYNDP 2022 project sheets, were used. 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 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 2022. 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.

A.1.3 Handling of non-monetised benefits

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

- **Improved interconnectivity:** The 3 ratios³⁴ mentioned in in point 2.4.1 of Section A of Part I of Annex I of the Governance Regulation 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 (i.e. max 3 points).
- **SoS – system stability:** This indicator, B8, is presented in the TYNDP with “0”, “+” or “++”. The points assigned to a project is the percentage of the “+” for system stability indicated for the project in the TYNDP 2022 over the maximum amount of “+” a project can attain, which is 5, multiplied by 2, which is the maximum points that can be given to this indicator.
- **Sustainability - Reduction of non-CO2 emissions:** The values of the gases emissions (i.e for NOx, NH3, SOx, NMVOC, ppms) indicted under indicator B4, weighted average, ton/year, Distributed Energy scenario 2030, EU27 area are normalised. Then the sum of the non-CO2 emissions normalised points is divided by the total amount of points a project can attain, and the outcome is multiplied by 2, which is the maximum points that can be given to this indicator.
- **Ending isolation:** 3 points were assigned to the projects connecting Members States that are not interconnected with the Union’s electricity market .

A.1.4 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.

³⁴ a) difference of marginal prices at the borders >2€/MWh, b) nominal transmission capacity /2030 peak load<30%, and c) nominal transmission capacity /2030 RES installed <30%

- In order for a transmission project to be accepted in the list, a threshold of 10 points was set in all RGs.

Annex II - Statistics on NRAs' assessment of candidate projects

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

- Candidate Projects of Common Interest (PCIs) meeting the general criteria set out in *Art. 4.1.c of Reg. (EU) 2022/869* (cross border relevance).
- Candidate Projects of Mutual Interest (PMIs) meeting the general criteria set out in *Art. 4.2 of Reg. (EU) 2022/869*.
- Contribution of the projects to the specific criteria set out in *art. 4.3.a of Reg. (EU) 2022/869* (market integration, security of supply and sustainability).
- Identification of inconsistencies and disagreements regarding the available benefits, i.e., SEW, B2, B4, SoS (B6, B7 and B8), losses, and B9
 - statement whether possible benefits outweigh costs
- Identification of inconsistencies regarding the provided cost data (CAPEX, OPEX).
- Identification of projects' commissioning date and status' inconsistency

NRAs submitted in total 82 assessments regarding 77³⁵ out of the 99³⁶ candidate projects, i.e. for 56 out of 73 transmission candidates, for 15³⁷ out of 20 candidate storage projects and for all 6 smart grid candidate projects. Out of the 71 transmission and storage candidates, 60 were assessed as PCIs and 11 as PMIs³⁸.

In the following table, some statistics of the NRAs submissions per corridor³⁹ are provided:

³⁵ In case of five candidate projects, i.e. TYNDP projects 187, 313, 335, 1068 and 1106, double assessment was provided by different NRAs.

³⁶ Including the four projects that were withdrawn by the project promoters, namely TYNDP projects 286, 1040, 1056 (storage) and 1107.

³⁷ 12 out of the 15 storage projects assessed are not included in any of the relevant NDPs. For this reason, NRAs were unable to assess certain information for most of the projects, particularly regarding the consistency of cost and benefit calculations.

³⁸ 3 projects, i.e. TYNDP projects 219, 1051 and 1074, were assessed in the February 2023 questionnaire as PCIs by NRAs, but are included as PMIs in the Draft Regional PCI/PMI lists.

³⁹ For 5 projects, i.e. TYNDP projects 107, 1049, 1050, 1051 and 1074, the priority corridor reported by NRAs in the February 2023 questionnaire differs from the priority corridor in the Draft Regional PCI/PMI lists. In the table, the Draft Regional PCI/PMI lists are used as reference for priority corridors.

	Candidate projects	Projects assessed by NRAs	Assessment in coordination with other EU-NRAs	Coordination with non-EU country
Atlantic offshore grids	2	2	0	0
BEMIP electricity	7	7	3	0
BEMIP offshore	4	4	1	0
NSI East	33	25	3	2
NSI West	38	24	5	0
NSOG	7	7	2	2
SE offshore	0	0	0	0
SW offshore	2	2	0	0
Smart Electricity Grids	6	6	6	0
Total	99	77	20	4

Table 2: NRAs assessments by corridor

39 projects are indicated to be included in the current NDPs of all countries where the project is located, while 22⁴⁰ projects are indicated as *not included* in any of the current national NDPs. In 9 cases only some investments are included and/or are only included in some of the hosting MS NDP(s), and 7 projects are included as “under consideration”.

In 3 cases, i.e. for TYNDP projects 200, 293, 1048, the NRA(s) objected to the inclusion of the project in the final TYNDP 2022.

For 2 PCIs, i.e. for TYNDP projects 1042 and 1098, the NRA(s) stated that the projects do not meet any of the general criteria for PCIs set out in Art. 4(1)(c) (i.e. regarding cross-border relevance). For 4 additional PCIs, the NRAs indicated that they are not able to assess if any of the general criteria was met by the projects.

For 3 assessed PMIs, the NRA(s) were not able to assess if the projects meet any of the general criteria for PMIs set out in Art. 4(2).

In 7 cases, i.e. for projects 293, 349, 1048, 1050, 1051, 1082, 1025 (storage), the NRAs were not able to assess whether the project contributes significantly to at least one of the specific criteria for both PCIs and PMIs according to the Art. 4.3(a), and in 5 cases, namely projects 270, 276, 335, 1068 and 1106, the NRAs involved had divergent views. Relevant NRAs were not able to assess the project Gabreta Smart Grids and had divergent views on the project

⁴⁰ 10 out of 15 storage projects and 2 out of 6 smart grid projects are not included in any of the relevant NDPs while further 3 smart grid projects are included in only some of the countries where the project is located

GreenSwitch regarding their contribution to the specific criteria set out in Art.4 .3(b) for smart electricity grid projects.

The statistics regarding the identification of inconsistencies to the data and calculations included in the TYNDP 2022 regarding the projects' CAPEX and OPEX, and the benefit calculations of the different benefit indicators are presented respectively in Figures 1 and 2 below. It must be noted that the six smart grid projects were assessed regarding disagreements on the overall indicated benefits and are, therefore, not included in Figure 2.

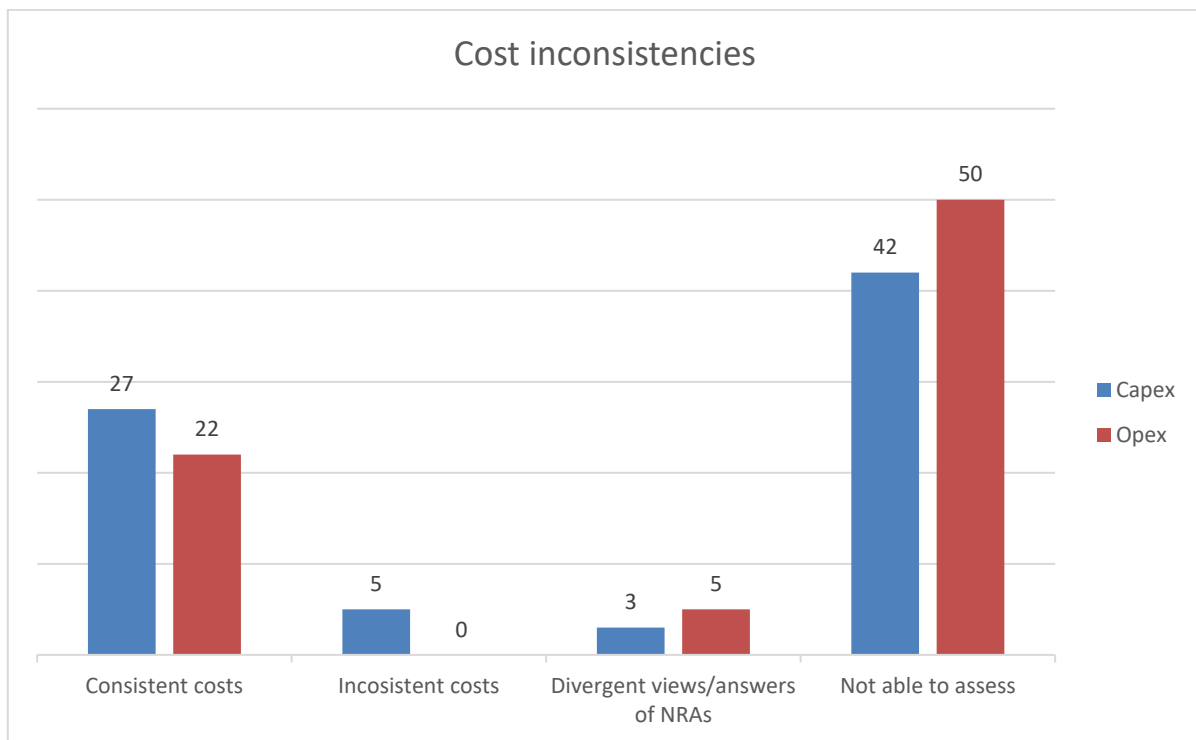


Figure 1: NRAs assessments regarding inconsistencies to the CAPEX and OPEX data

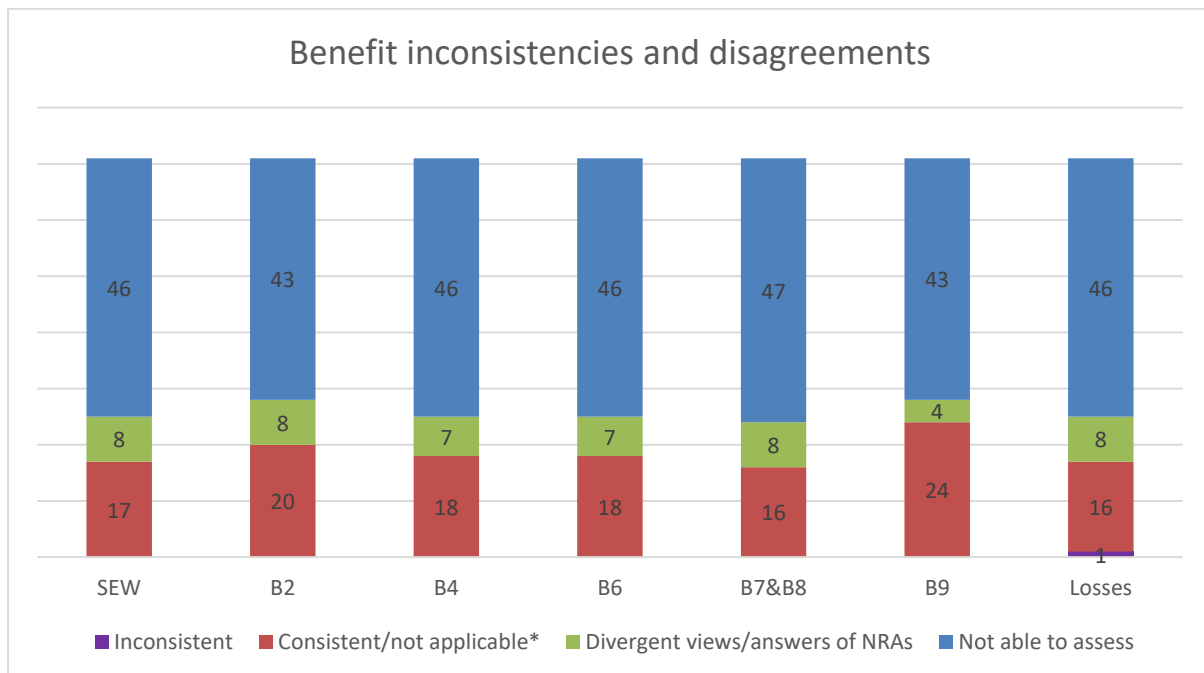


Figure 2: NRAs assessments of transmission and storage projects regarding inconsistencies and disagreements to benefits

(*) The answer «Not applicable» was interchangeable to «No» only in B7&B8 and B9.

Out of the six candidate smart electricity grids projects, NRAs did not have disagreements on the overall indicated benefits in two cases, while four projects were not able to be assessed by NRAs.

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 all the benefit indicators the NRAs stated that they were not able to assess the benefits calculations for more than half of 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. The commissioning dates are compared to the draft TYNDP 2022 for transmission and storage projects and to the current PCI/PMI selection process for smart grid projects.

Consistent commissioning date	42
Inconsistency in commissioning date	10
Divergent views/answers of NRAs	4
Not able to assess	21
Total	77

Table 3: NRAs assessments of inconsistencies to the commissioning dates of the candidate projects indicated in the draft TYNDP 2022

It is noted that in most of the cases where inconsistencies were identified, i.e. in 5 cases, NRAs indicated that project promoters were overly optimistic with the commissioning dates, while only in one case the NRAs indicated that they expect an earlier commissioning date than the TYNDP one. For two projects, the NRA reports an unclear timeline, while for another two projects, the NDP mentions a wider time span of planned phases which, however, corresponds to the commissioning date as indicated in the final TYNDP 2022 for the projects.

The statistics regarding the assessment of the status provided by the PCI promoters for transmission and storage projects are presented in table 5 below.

Consistent status	48
Inconsistency in project status	3
Divergent views/answers of NRAs	4
Not able to assess	16
Total	71

Table 4: NRAs assessments of inconsistencies to the project's status of the candidate projects indicated in the draft TYNDP 2022

The following table presents the assessment of NRAs whether the projects “overall benefits outweigh the costs”:

Benefits outweigh costs	34
Benefits do not outweigh costs	0
Not able to assess	38
Divergent views/answers of NRAs	5 (*)
Total	77

Table 5: Potential overall benefits outweighing costs

(*) Regarding projects 270, 276, 335, 1068 and the project *GreenSwitch* one part of the cooperating NRAs was not able to assess, while the other indicated that the benefits outweigh costs.

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

No objection to the inclusion	67
Objection to the inclusion	5
Divergent views/answers of NRAs	4
Not able to assess	1
Total	77

Table 6: NRAs objection to the inclusion of the project in the final PCI Regional list

The 5 projects for which NRAs object to the inclusion in the Regional PCI/PMI list are the following TYNDP projects: 293, 1048, 1051, 1027 (storage) and 1052 (storage). It is noted that

2 of these projects (i.e. storage projects 1027 and 1052) are included in the draft Regional PCI/PMI lists.

The projects for which NRAs have divergent views are TYNDP projects: 260, 270, 276 and 1068. All of these projects are included in the draft Regional PCI/PMI lists.

TYNDP project 1049 was not able to be assessed by the NRA. This project is included in the draft Regional PCI/PMI lists.

Annex III - NRAs' assessment of proposed PCIs/PMIs and smart electricity grid projects

In this annex reference is made only to the projects, which NRAs indicated that they either were not able to assess, were opposed to, or had divergent views upon. 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 not objected by the involved NRAs.

Different views were expressed for 3 RGs (NSOG Regional Group, NSI West Regional Group, and BEMIP Regional Group) which are presented in the following paragraphs, while for the projects of 4 Regional Groups (NSI East RG, BEMIP Offshore RG, Atlantic Offshore RG and SW Offshore RG) and the Electricity Smart Grids thematic area no views, within the spirit of Recital 45 of this Opinion, were expressed. For the Regional Group SE Offshore there were no candidate projects.

A.3.1. Opinion on the draft regional list – NSOG Regional Group

With respect to the candidate project 260 “Multi-purpose HVDC interconnection between Great Britain and The Netherlands”, there were divergent views between the involved NRAs without further explanations.

The Dutch NRA, ACM, expresses doubts on whether an additional interconnector with the UK will contribute to the energy transition, as for the country that has relatively lower renewable generation and relatively higher prices due to this, it removes the incentive to invest in sustainable generation.

A.3.2. Opinion on the draft regional list – NSI West Regional Group

A.3.2.1. With respect to the candidate project 1027 (storage) “P-PHES CUA”, the Spanish NRA, CNMC, opposes to its inclusion in the PCI list due to the rejection of the project’s grid connection.

A.3.2.2. With respect to the candidate project 1052 (storage) “Purifying -Pumped Hydroelectric Energy Storage (P-PHES BUSEIRO)”, the Spanish NRA, CNMC, opposes to its inclusion in the PCI list because there is no indication that the process for connection to the transmission grid (Narcea 400kV substation) has been initiated.

A.3.2.3. With respect to the candidate project 1049 “Cronos Energy Ltd”, the Belgian NRA, CREG, was not able to assess the inclusion of the project to the PCI list, due to the very early stage of the project.

A.3.2.4. With respect to the candidate project 270 “FR-ES project -Aragón-Atlantic Pyrenees”, there were divergent views between the involved NRAs.

The French NRA, CRE, objects to the inclusion of the project in the final Regional Union list due to its lack of maturity and to the uncertainty on its value in the absence of updated costs.

The Spanish NRA, CNMC, does not object to the inclusion of the project in the final PCI/PMI Regional Union list, because the NPV is positive for the scenarios DE 2030 and DE 2030 (gas sensitivity), taking into account the benefits (calculated in accordance with the 3rd draft CBA methodology) and the costs included in the ENTSO-E TYNDP 2022.

A.3.2.5. With respect to the candidate project 276 “FR-ES project -Navarra-Landes”, there were divergent views between the involved NRAs.

The French NRA, CRE, objects to the inclusion of the project in the final Regional Union list due to its lack of maturity and to the uncertainty on its value in the absence of updated costs.

The Spanish NRA, CNMC, does not object to the inclusion of the project in the final PCI/PMI Regional Union list, because the NPV is positive for the scenarios DE 2030 and DE 2030 (gas sensitivity), taking into account the benefits (calculated in accordance with the 3rd draft CBA methodology) and the costs included in the ENTSO-E TYNDP 2022.

A.3.2.6. With respect to the candidate project 299, while the assessment by CRE indicates a beneficial project, ARERA cannot confirm that SACOI project benefits outweigh costs.

Project 299 has experienced over time a significant increase of the investment costs and is still exposed to CAPEX variations given the ongoing tendering phase. The final CAPEX could nearly double the 900 million EUR estimate, reported in the final version of the TYNDP 2020. In ARERA’s view, this cost update may raise additional concerns on whether the project benefits could exceed project costs and whether the project costs can be deemed as efficiently incurred costs.

A.3.3. Opinion on the draft regional list – BEMIP Regional Group

A.3.3.1 With respect to the candidate project 1068 “LaSGo Link”, there were divergent views between the involved NRAs.

The Swedish NRA, Ei, was not able to assess the inclusion of the project to the PCI list as the project’s grid connection request to the Swedish transmission network has been denied by the Swedish TSO Svenska kraftnät in February 2022. Given the available information and project status, the Swedish NRA has no other assessment than the Swedish TSO.

The Latvian NRA, PUC, on the other hand, does not object to the project's inclusion in the PCI list.

Annex IV - Draft Regional PCI / PMI lists