

ACER

Consolidated report on the progress of electricity and gas Projects of Common Interest

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PLEASE CONTACT ELE-PCI-MONITORING@ACER.EUROPA.EU AND/OR
GASPCIMONITOR@ACER.EUROPA.EU REGARDING THIS DOCUMENT FOR ANY COMMENTS
OR QUESTIONS YOU MIGHT HAVE.

Trg Republike 3
1000 Ljubljana
Slovenia

Contents

Executive summary.....	3
1. Introduction.....	8
2. Overview of PCIs and data submission.....	8
2.1 Overview of PCIs	8
2.2 Technical modifications	10
2.3 Completeness and quality of data	11
3. Inclusion in the network development plans.....	12
4. PCI Status and progress	13
4.1 Evolution of the status and works.....	13
4.2 Delays and rescheduling	15
4.3 Reasons for delays and rescheduling.....	19
4.4 Expected duration of implementation.....	20
5. Cost developments.....	21
6. Regulatory treatment.....	24
Annex 1: Electricity PCIs.....	26
Annex 2: Gas PCIs.....	27

Executive summary

Background and content of the consolidated report

- (1) Energy networks form the backbone of European energy systems today and are expected to play a key role in the transition to carbon-neutral energy systems in the future as well as to ensure Europe's security of supply. Projects of Common Interest ('PCIs') are key cross-border electricity and gas infrastructure projects enhancing the links between the energy systems of EU Member States and help the EU to achieve its energy policy and climate objectives. Over the past years several PCIs have been implemented contributing to these goals.
- (2) The current PCI list includes 72 electricity and 20 gas PCIs¹. More than half of the electricity PCIs are internal transmission projects, suggesting that the existing barriers to cross-border trade currently lay to a greater extent in internal bottlenecks within the Member States and to a lesser extent in the lack of sufficient interconnection capacities compared to the past. There are 12 new projects on the 5th PCI list compared to the 4th PCI list (11 electricity² and 1 gas project³), almost half of the new projects are electricity storage and smart grid projects, signalling their increasing importance.
- (3) Pursuant to Article 5 of Regulation (EU) No 347/2013, project promoters shall submit an annual report for each PCI falling under the categories set out in Annex II. 1 and 2 to the relevant Competent Authorities and to ACER. Within three months of the receipt of the annual reports, ACER shall submit to the Regional Groups a consolidated report for the electricity and gas PCIs, evaluating the progress achieved.
- (4) This Report provides a review of the progress of the electricity and gas PCIs achieved from 1 February 2021 to 31 January 2022. The report also provides selected findings covering a longer time horizon (e.g. where applicable, since their inclusion in the first PCI list).
- (5) While the consolidated report provides an overview of the progress, or lack thereof, of the implementation of PCIs, it does not analyse the possibilities to speed-up the implementation; for that, a more robust data collection and in-depth analysis would be needed.
- (6) The main findings and observations regarding the PCIs' progress are summarised below.

Implementation status and progress

- (7) With respect to the implementation status of the PCI projects, ACER observes that almost 70% of the PCIs are in permitting, under construction, or commissioned, while slightly more than 30% of the PCIs are planned, but not yet in permitting or still under consideration⁴. The advancement of the PCIs demonstrates a similar general pattern in both sectors, except with respect to the share of projects at the stage of under consideration, which is still significantly higher for gas projects (25%) compared to electricity projects (12%). The gap between the two sectors has been gradually closing over the last years, mainly due to received planning approvals for gas projects in previous years and non-inclusion of 4 less advanced gas PCIs on the current 5th PCI list.
- (8) Overall, ACER confirms a positive trend in the advancement of electricity and gas PCIs observed in recent years. During the current reporting period, 16 electricity and 5 gas PCIs (i.e. about 25% of all PCIs) advanced their status. However, when comparing the status of the projects as reported

¹ OJ L 109, 8.4.2022, p.14.

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R0564&from=EN>

² PCIs 1.21, 2.28.5, 2.31.1, 2.31.2, 2.31.3, 2.32, 3.28, 4.11, 10.10, 10.11, 10.12

³ PCI 6.20.7

⁴ ACER considers that the status of the least developed element of a given PCI is representative for the overall status of the project. The information about the status of the projects is therefore rather conservative, as some of the investment items included in a given PCI may be at a more advanced implementation stage than other investment items belonging to the same project.

in 2022 to the one reported in 2015, ACER notes that 8 electricity⁵ and 2 gas PCIs⁶ did not manage to advance their status at all over a 7 years period, with some of them are in the permitting phase, while the others are less advanced.

- (9) ACER notes that for 4 electricity⁷ and for none of the gas PCIs no works or activities were reported to have been carried out during this reporting period. For the 4 concerned electricity PCIs, no works or other activities were carried out for a third year in a row.
- (10) Over the reporting period, the implementation of more than half of the PCIs progressed in a timely way (according to schedule or ahead of it). The remaining PCIs were either rescheduled by the project promoters or experienced delays due to external reasons.
- (11) The 5th PCI list includes 2 electricity PCIs⁸ which were reported to be commissioned or constructed before the adoption of the list. Around 40% of the PCIs are expected to be commissioned within 3 years and 70% within the next 5 years. Based on the previous trends the actual number of commissioned PCIs is likely to be lower, as commissioning dates keep shifting to a later date for about 40% of the PCIs each year.

Reasons for delayed implementation and for rescheduling

- (12) Almost every third electricity and every fifth gas PCI encountered delays compared to last year's schedule, which is a pattern similar to the one observed in the previous reporting period. The reasons for delays vary among the projects. The most frequently mentioned "main" reason for delays for electricity PCIs is again, as in earlier monitoring rounds, related to permit granting, whereas in gas there are various reasons reported for delays.
- (13) ACER finds that the share of rescheduled PCIs still remains relative low for electricity PCIs⁹ (13% in 2022, 8% in 2021 and 5% in 2020), while the share of rescheduled gas PCIs¹⁰ is much higher (i.e. 35%), which is even higher share as in 2021, being at 25%. This trend indicates that the gas PCIs' implementation plans could have been too optimistic.
- (14) For the rescheduled electricity PCIs, the project promoters reported various reasons: the scope of the project has changed, the rescheduling was caused by priority given to other transmission investment, or the commissioning date has been shifted because the project was in an initial stage and therefore the previous implementation plan was preliminary. For most of the rescheduled gas PCIs, again the project promoters reported demand-side and supply-side uncertainties or lack of market interest as a main reason for rescheduling.
- (15) Promoters of gas PCIs should take due note of the sea change that EU gas sector is facing, in particular the fact that the economic recovery plans will provide better implementation chances to projects which are sustainable, future-proof and, last but not least, "shovel-ready". Project promoters should expect that regulators and other decision-makers may wish to insist upon meeting certain preconditions in terms of project maturity and proper risk mitigation, including long-term climate goals compliance, in order to seriously consider giving a green light to implementing a given project.

Project costs and benefits

- (16) The investment costs of all PCIs of the 5th PCI list, as reported by the promoters, amount to €73.9 billion and electricity projects account for almost 80% of it. More than half of the PCIs reported changes in the expected investment cost compared to the previous year. The reasons for changes in cost vary significantly across the PCIs, including changes in the project's technical

⁵ PCIs 2.9, 2.10, 2.14, 2.16.1, 2.18, 3.11.1, 3.11.4, 3.22.4

⁶ PCIs 6.20.3, 7.3.1

⁷ PCIs, 2.16.1, 2.27.1, 2.27.2, 4.8.7. PCI 3.11.2 is already commissioned and PCI 3.22.1 has already finished constructions works some years ago, therefore they are not accounted for this list.

⁸ PCIs 3.11.2, 3.22.1.33.1

⁹ PCIs 1.6, 2.27.1, 2.27.2, 2.31.1, 2.31.2, 2.31.3, 4.8.2, 4.8.3, 10.7

¹⁰ PCIs 6.2.13, 6.2.2, 6.23, 6.24.4, 6.26.1, 7.3.4, 7.5

characteristics, changes in the prices of raw materials and/or equipment, extra costs due to safety, environmental or legal requirements imposed during the permit granting process, and also increased accuracy of cost estimations.

- (17) While for electricity PCIs the ENTSO-E's TYNDP provides monetised values for some benefit indicators, including the Social-Economic Welfare increase and the impacts due to the variation of losses, for most gas PCIs project promoters still find it difficult to quantify in monetary terms and report the expected benefits of their projects. ACER reaffirms its view that the absence of a clear indication of the benefits of PCIs makes the concerned undertakings open to critique, more difficult to handle in permitting and from a regulatory point of view and generally less likely to be supported by the public, the financial community, and the regulators.

Exemptions, incentives and cross-border cost allocation

- (18) ACER notes that no exemption request from third party access or other relevant rules of the regulated regime and no application for project-specific risk-related incentives was submitted for any PCI of the 5th PCI list and only few project promoters have indicated that they plan to use them in the future.
- (19) Investment requests, including requests for cross-border cost allocation ('CBCA'), have been widely used by the project promoters and submitted for over 40% of the eligible current PCIs in both sectors¹¹. One of them (for a gas PCI) was submitted to the concerned NRAs and resulted in a CBCA decisions during the reporting period.

Consistency of network development plans

- (20) ACER reiterates its invitation extended to the relevant authorities and TSOs to ensure that PCIs become an integral part of the relevant NDPs, as appropriate, and recalls its previous recommendation that the scope of the National Network Developments Plans ('NDPs') should allow the inclusion of third party projects. In this regard, project promoters should provide the necessary information to the TSO(s) in charge of developing the relevant NDP(s), as well as to the relevant NRA(s). NDPs should include information on PCIs "under consideration", and clearly flag them as such.
- (21) ACER notes that 2 electricity transmission interconnection PCIs have been already approved as a planned project only in one of the NDPs, while they are still under consideration in the other NDP¹². In ACER's view, the actual implementation of transmission projects strongly relies on the NDPs. If a project is already planned in one of the hosting countries, while it is still under consideration in another country, doubts arise about the feasibility or the consistent implementation of the concerned project.

Transparency

- (22) In order to ensure transparency, publication of fundamental project information on PCIs in ACER's consolidated report on PCI monitoring (including commissioning date, capacity increase, project status, and project cost) should be mandatory.

Enhanced scrutiny of individual projects

- (23) During its monitoring ACER identified a number of delayed or rescheduled projects which appear to face some particular problems which are significantly hindering their progress and/or advancement for several years. In ACER's view such projects require more in-depth analysis.. Depending of the outcome of the assessment, targeted actions may be required by the relevant parties (e.g. TSOs, energy regulators, Member States, competent authorities or European

¹¹ For more information on investment requests and CBCA decisions, please refer to the latest ACER report on CBCA decision: https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/2020-09_4th-A_CER-CBCA-report.pdf and the latest update of the list of CBCA decisions: https://extranet.acer.europa.eu/Official_documents/Acts_of_the_Agency/Documents/2021116-Overview%20of%20CBCA%20decisions.pdf

¹² PCIs 2.27.1, 2.27.2

Commission) to facilitate the implementation of those projects which are clearly able to respond to a priority at European level. In this regard, ACER recommends the Regional Groups to carry out additional scrutiny – including requirement of justification of the lack of progress and/or reassessment of the respective need, costs and benefits, where applicable - of projects which belong to one of the following categories:

- a) Projects which did not carry out any works or activity during the last reporting period, in particular those which are “frozen” for multiple years:
 - i. PCI 2.16.1: “Internal line between Pedralva and Sobrado (PT), formerly designated Pedralva and Alfena (PT)”¹³;
 - ii. PCI 2.27.1: “Interconnection between Aragón (ES) and Atlantic Pyrenees (FR)”¹⁴;
 - iii. PCI 2.27.2: “Interconnection between Navarra (ES) and Landes (FR)”¹⁵;
 - iv. PCI 4.8.7: “Internal line between Paide and Sindi (Estonia)”¹⁶;
- b) Projects which have been rescheduled by the project promoters and postponed their commissioning date by at least 2 years compared to the planning at their application for the latest PCI list¹⁷;
 - i. 2.31.2 – “Internal lines between Heide/West to Polsum to increase capacity from Northern Germany to the Ruhr-Area”¹⁸;
 - ii. 2.31.3 – “Internal lines between Wilhelmshaven to Uentrop to increase capacity from Northern Germany to the Ruhr-Area”¹⁹;
 - iii. PCI 6.2.13 “Development and enhancement of transmission capacity of Slovakia – Hungary interconnection”;
 - iv. PCI 6.20.3 “South Kavala UGS facility and metering and regulating station”;
 - v. PCI 6.24.4 “ROHU(AT)/BRUA – 2nd phase”;

¹³ The project has been included in the PCI list since 2013, without any significant progress reported.

¹⁴ The project has not performed recent activities and been rescheduled (from March to September 2030) due to the ongoing activities of the related Biscay Gulf project. However, according to the information given by the promoters to the ES NRA, “the promoters are carrying out updated economic assessment and network strategy, including the latest National Development Plans, TYNDP2022 scenarios and network models. This work started in March 2021 and is currently ongoing with its finalisation expected in June 2022. In addition, detailed field studies will be carried out for concluding feasibility and cost estimations once the authorizations for the Biscay Gulf project are granted (expected in 2023)”.

¹⁵ The project has not performed recent activities and been rescheduled (from September 2029 to December 2030) due to the ongoing activities of the related Biscay Gulf project. However, according to the information given by the promoters to the ES NRA, “the promoters are carrying out updated economic assessment and network strategy, including the latest National Development Plans, TYNDP2022 scenarios and network models. This work started in March 2021 and is currently ongoing with its finalisation expected in June 2022. In addition, detailed field studies will be carried out for concluding feasibility and cost estimations once the authorizations for the Biscay Gulf project are granted (expected in 2023)”.

¹⁶ The project as part of the Baltic synchronisation project with Continental Europe has been previously cancelled. The project promoter reported that it had recognised the need of reconstruction of current PCI as related to offshore grid development and offshore wind integration. No implementation plan for the project has been provided.

¹⁷ For the PCIs which submitted a monitoring report in 2021, the expected commissioning date as of 21 January 2021 has been considered. For the “new” PCIs the information available in the ENTSO-E TYNDP 2020 has been accounted for.

¹⁸ The commissioning date has been shifted from 2030 to 2032 due the expansion of the project’s scope by addition of empty tube/cable tube.

¹⁹ Idem.

- vi. PCI 6.26.1 “Cluster Croatia - Slovenia - Austria at Rogatec”;
 - vii. PCI 7.3.1 “EastMed Pipeline with metering and regulating station at Megalopoli”²⁰;
 - viii. PCI 7.3.3 “Poseidon Pipeline”²¹;
 - ix. PCI 7.3.4 “Reinforcement of internal transmission capacities in Italy”²²;
- c) Projects for which the project promoters repeatedly failed to achieve progress from the status of “under consideration” or “planned, but not yet in permitting” to a more advanced status since their inclusion in the first PCI list (in 2013).
- i. PCIs 2.9 “Internal line between Osterath and Philippsburg (DE) to increase capacity at western borders [currently known as “Ultranet”]”;
 - ii. PCI 2.10 “Internal line between Brunsbüttel/Wilster and Großgartach/ Bergrheinfeld-West (DE) to increase capacity at northern and southern borders [currently known as “Suedlink”]”;
 - iii. PCI 2.16.1 “Internal line between Pedralva and Sobrado (PT), formerly designated Pedralva and Alfena (PT)”;
 - iv. PCI 3.22.4 “Internal line between Arad and Timisoara/Sacalaz (RO)”;
 - v. PCI 6.20.3 “South Kavala UGS facility and metering and regulating station”;
 - vi. PCI 7.3.1 “EastMed Pipeline with metering and regulating station at Megalopoli”.
- (24) Additionally, ACER recommends the Regional Groups to evaluate the reasons for different treatment across borders, if a transmission interconnection PCI, already planned in one Member State, while it is only “under consideration” in the other Member State and address such inconsistency:
- a) PCI 2.27.1: “Interconnection between Aragón (ES) and Atlantic Pyrenees (FR)”²³;
 - b) PCI 2.27.2: “Interconnection between Navarra (ES) and Landes (FR)”²⁴.
- (25) Finally, ACER recommends the Regional Groups to assess the following PCIs with major technical modification and/or repurposing, changes that may significantly impact project costs and benefits, to confirm whether the PCIs still meet the legal criteria for PCIs set by the TEN-E Regulation:
- a) PCI 1.19 “North Sea Wind Power Hub” – One or more hubs in the North Sea with interconnectors to bordering North Sea Counties (Denmark, Germany, Netherlands)²⁵;
 - b) PCI 4.8.7 “Internal line between Paide and Sindi (Estonia)”²⁶.

²⁰ PCI 7.3.1 is put on this list, even though project promoter claims being on time with the project, but the commissioning date is postponed significantly since 2019

²¹ PCI 7.3.3 is put on this list, even though project promoter claims every year being on time with the project, but the commissioning date has been postponed three years in a row.

²² Italian NRA (ARERA) considers that this project could be needed in case new transport capacity is built to increase gas import sources from the South Gas Corridor.

²³ Included in the Spanish NDP as a “planned” project, while still “under consideration” in the French NDP.

²⁴ Idem.

²⁵ The project design has developed into a larger capacity and more hubs than previously planned.

²⁶ The project is planned to be reconstructed as related to offshore grid development and offshore wind integration and moved from the Baltic synchronisation project under a new project EE-LV 4th offshore/hybrid interconnection with a different technical solution.

1. Introduction

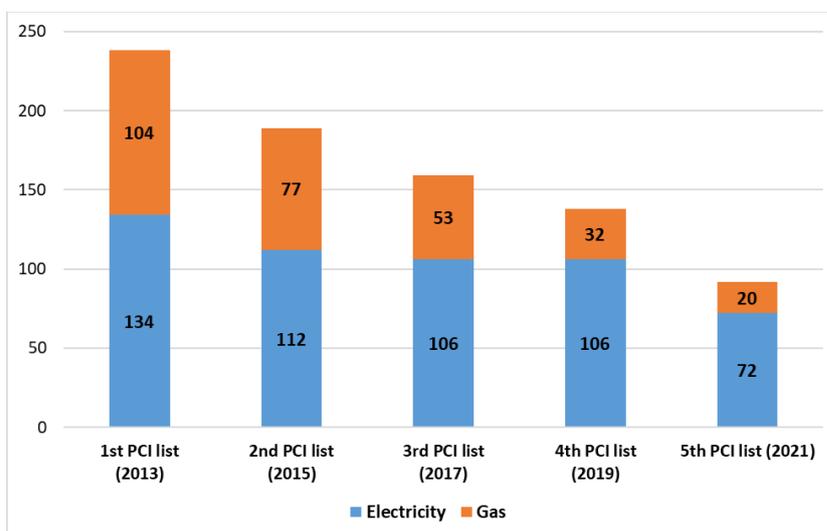
- (26) Article 5 of Regulation (EU) No 347/2013 requires ACER to monitor and evaluate the progress achieved in implementing gas and electricity projects of common interest ('PCIs'). ACER carries out this monitoring annually on the basis of annual reports submitted by the project promoters and additional inputs received from the national regulatory authorities ('NRAs').
- (27) This Report highlights the results of the eight annual monitoring by ACER of the progress in PCI implementation²⁷. The report provides ACER's general findings on the gas and electricity PCIs included in the fifth Union list of PCIs²⁸ (the '5th PCI list') and on their progress during the reporting period from 1 February 2021 until 31 January 2022. The report also provides selected findings covering a longer time horizon (e.g. where applicable, since their inclusion in the 1st PCI list).
- (28) For more information regarding each of the reviewed PCIs, please refer to the Annex 1 (for electricity PCIs) and Annex 2 (for gas PCIs) to this Report²⁹.

2. Overview of PCIs and data submission

2.1 Overview of PCIs

- (29) The 5th PCI list includes 92 PCIs (72 electricity and 20 gas), which confirms the decreasing trend in the overall number of PCIs as well as in the share of gas PCIs observed already in the past.

Figure 1: Number of electricity and gas PCIs in each PCI list



- (30) The vast majority of the PCs (61 electricity and 19 gas) of the 5th PCI list were already present in the 4th PCI list³⁰, either with the same or slightly different technical scope, and almost half of them

²⁷ For ACER findings on the progress of PCIs in previous years and related recommendations please refer to ACER consolidated reports on PCI monitoring (2015-2021). Link to ACER report in 2015 is available: [here](#), in 2016 is available: [here](#); Link to ACER report in 2017 is available: [here](#); Link to ACER report in 2018 is available: [here](#); Link to ACER report in 2019 is available: [here](#); Link to ACER report in 2020 is available: [here](#); Link to ACER report in 2021 is available: [here](#)

²⁸ Commission Delegated Regulation (EU) 2022/564 of 19 November 2021 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council as regards the Union list of projects of common interest. OJ L 109, 8.4.2022, p. 14.

²⁹ Link to [Annex 1](#), link to [Annex 2](#)

(28 electricity and 14 gas PCIs)³¹ were already included in the 1st PCI list adopted in 2013, while there are 11 new electricity PCIs and 1 new gas PCI on the 5th PCI list.

(31) ACER also notes a PCI has changed its PCI code on the 5th list compared to the 4th PCI list³².

Electricity

(32) The electricity PCIs are mainly transmission projects (59 projects): about one third of them are interconnection projects (21) and about two third of them (38) are internal projects. In addition, there are 8 electricity storage and 5 smart grid projects. The high share of internal projects may indicate that the existing barriers for the cross-border trade currently lay to a greater extent in internal bottlenecks within the Member States and to a lesser extent in the lack of sufficient interconnection capacities compared to the past.

(33) There are 61 electricity PCIs which were already included in the 4th PCI list and 45 electricity projects which were delisted from the PCI list, most of them have been reported as commissioned or they were (not-yet-commissioned) projects between UK and other EU Member States³³.

(34) Out of the 11 electricity PCIs which appear as “new” on the 5th list, almost half of them are either storage projects (2 PCIs) or smart grid projects (3 PCIs), which may be a sign of their increasing importance³⁴. Out of the 6 new transmission projects 3 are interconnections and 3 are internal.

(35)

(36) Figure 2 shows the geographical distribution of the electricity transmission and storage PCIs. Most PCIs (36%) are located in the BEMIP priority corridor, followed by NSI West and NSI East corridors still with still relatively high shares (i.e. 31% and 28% respectively), while only a small share of the projects (i.e. 4%) is located in the NSOG corridor.

(37) Compared to the previous PCI list, ACER notes a significant drop in the share of projects in the NSOG priority corridor from 18% to 4%, which is mainly caused by the delisting of several interconnection projects between UK and the EU Member States. In parallel, the share of the NSI West corridor projects relatively increased (from 19% to 31%) partially due to the fact that almost half of the new projects (5 PCIs) locate in the this priority corridor, while only one new PCI was added to each of the other priority corridors.

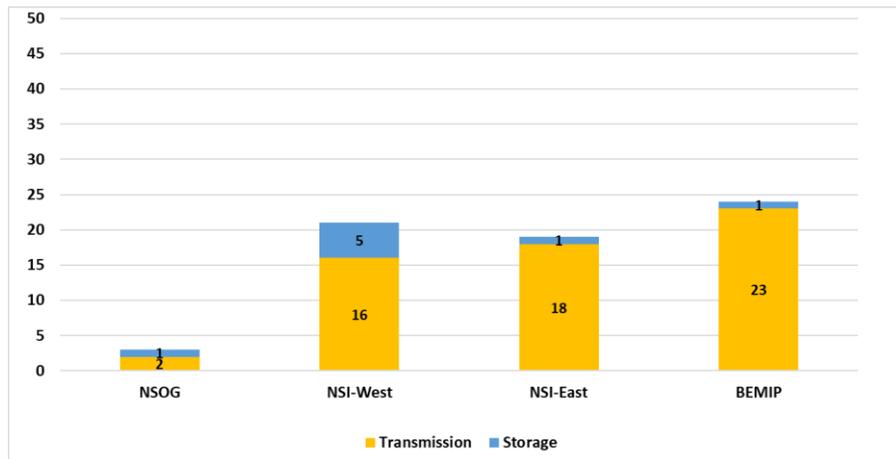
³¹ Three PCIs had different PCI number or slightly different scope: 6.26.1, 7.3.3, 7.5

³² PCI 3.27 has become integral part of PCI 2.33, as such the project became part of the NSI West priority corridor instead of the NSI East priority corridor.

³³ 30 out of the 45 delisted PCIs of the 4th list submitted a report to ACER in 2022: 14 projects have been reported as commissioned and additional 13 were UK-EU Member States projects which have not yet been commissioned.

³⁴ In the 2013 list: 9 out of 91, (10%), in the 2015 list: 11 out of 112 (10%), in the 2017 list: 19 out of 110 (17%), in the 2019 list: 20 out of 106 (18%), in the 2021 list: 13 out of 72 (18%).

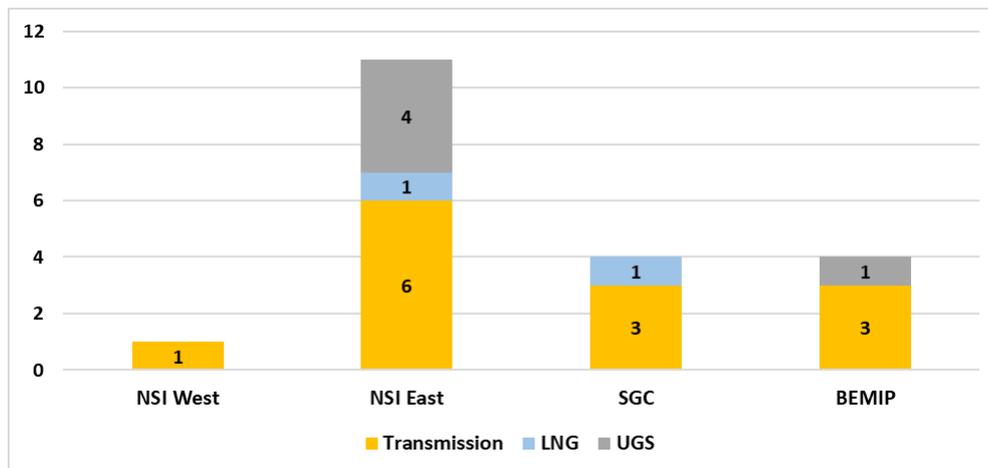
Figure 2: Number of electricity PCIs per priority corridor



Gas

- (38) The gas PCIs include 13 transmission pipelines, 2 liquefied natural gas ('LNG') terminals and 5 underground gas storage ('UGS') projects. As shown in Figure 3, out of a total 20 gas PCIs, 11 (55%) projects are located in the NSI East priority corridor, including 4 out of the 5 UGS projects (80%). The geographic distribution of the projects may be in response to the greater need for market integration and improving security of gas supply in NSI East (and, to a lesser extent, in SGC and BEMIP) compared to NSI West.

Figure 3: Number of gas PCIs per priority corridor



2.2 Technical modifications

- (39) Technical modifications compared to last year's project features were reported for 6 projects (4 electricity PCI³⁵ and 2 gas PCIs³⁶).
- (40) For the electricity PCIs the following technical modifications were observed: for one PCI³⁷ a change of connection point, for another PCI a slight route update³⁸, while 2 PCIs are concerned by more significant changes which impact their overall project design: i.e. in one instance an offshore grid

³⁵ PCIs 1.19, 4.8.7, 3.10.2, 4.10.1

³⁶ PCIs 6.24.4, 6.8.1

³⁷ PCI 3.10.2

³⁸ PCI 4.10.1

project for RES integration³⁹ decided to develop larger capacity and more hubs compared to previous design, in the other instance the project⁴⁰ has been repurposed (from Baltic synchronisation to offshore wind integration) and requires a different technical solution (i.e. a new substation will be constructed and instead of a single line, 2 lines will be developed).

- (41) The technical modifications for the gas PCIs involve changes due to a need of a new pipeline and relocation of compressor station, following developments of the capacity configurations.
- (42) ACER notes that substantial technical changes may affect the costs and/or benefits of the PCIs. ACER invites the Regional Groups to consider whether the respective costs and benefits take into account the new technical characteristics of the projects.

2.3 Completeness and quality of data

- (43) Promoters submitted their annual PCI progress reports to ACER for all electricity and gas PCIs of the 5th PCI list for the 2022 PCI monitoring exercise via ACER's electricity and gas information support system ("AEGIS")⁴¹.
- (44) ACER assessed the completeness and consistency of the received information, consulted the NRAs regarding the quality and completeness of the project data (for projects located within the domain of the relevant NRA), and requested several clarifications from the promoters regarding missing, incomplete or inconsistent data. The information type of electricity and gas projects may occasionally differ, primarily due to the specific features of the two sectors as well as the varying data availability.
- (45) In general, ACER welcomes the increasing availability and improved consistency of project information from each monitoring activity to the next, which may be a sign of more robust PCI candidates and greater engagement by the project promoters, supported by the experience gained during previous reporting. However, ACER underlines the recurrent lack of data on the monetised expected benefits for gas PCIs, which prevents reporting on meaningful insights regarding the benefits that each gas PCI would bring. For electricity transmission and storage projects, ENTSO-E's TYNDP already provides monetised values for several benefit indicators, including the Social-Economic Welfare increase and the impacts due to the variation of losses⁴², which can be used for monitoring purposes⁴³.
- (46) Regarding confidentiality claims submitted by some project promoters, ACER reiterates its view⁴⁴ that fundamental PCIs' information (including commissioning date, capacity increase, project status and project cost) should be publicly available for each PCI in order to increase transparency.

³⁹ PCI 1.19: The project design has developed into a larger capacity and more hubs. The project submission to the TYNDP 2022 has changed from the submission to the TYNDP 2020. Instead of one 12GW hub, the project now consists of three hubs with interconnectors between the hubs. It is expected that this will impact the overall cost and benefit analysis.

⁴⁰ PCI 4.8.7: The project promoter reported the need of reconstruction of current PCI as related to offshore grid development and offshore wind integration and that the project should be moved from the Baltic synchronisation project under a new project EE-LV 4th offshore/hybrid interconnection. The new project will be defined in the TYNDP 2022. As new substation is constructed on the Paide Sindi line (Sopi 330 substation), the new investments in the TYNDP 2022 are Paide-Sopi and Sopi-Sindi 330 kV OHL reconstruction.

⁴¹ The project promoters were requested to review and provide or update information for electricity projects in the "SWITCH" and for gas projects in the "VALVE" applications. For certain information categories, the project templates were pre-filled with data provided in previous infrastructure monitoring activities.

⁴² <https://tyndp2020-project-platform.azurewebsites.net/projectsheets/>

⁴³ For the relevant electricity PCIs, the benefits are available in the ENTSO-E Ten-Year Network Development Plan 2020 and some benefit categories were deeply assessed in the ACER Opinions 03/2021 and 04/2021 on the draft TYNDP 2020.

⁴⁴ ACER's Opinion No 13/2019, p.59.

3. Inclusion in the network development plans

- (47) The vast majority of the projects (72 PCIs) are included or present as an “under consideration” investment in the latest national development plans (NDPs), which means that all investments pertaining to those PCIs are included in the NDP of all the hosting Member States. The remaining 20 PCIs are either not included in the NDP of one or more of the hosting Member States, or not all investment items which pertain to the PCI are included therein, in several instances because the NDP does not include that project category (e.g. electricity storage) or they are not TSO investments.
- (48) ACER reiterates its invitation extended to the relevant authorities and TSOs to ensure that PCIs become an integral part of the relevant NDPs, as appropriate, as well as its recurrent recommendation⁴⁵ that the NDPs’ scope should allow the inclusion of third party projects. Project promoters should provide the necessary information to the TSO(s) in charge of developing the relevant NDP(s) as well as to the relevant NRA(s). Moreover, NDPs should include information on studies related to projects and on projects “under consideration”, and clearly flag them as such.
- (49) In ACER’s view, the actual implementation of the transmission projects strongly relies on them being included in the relevant NDPs. If a project is already a planned project in one of the relevant NDPs, while it is still under consideration in another, the inconsistency raises doubts about the feasibility and the consistent implementation of the concerned project. Therefore, the reason for such a different treatment across borders, i.e. different implementation status in the relevant NDPs, should be addressed and evaluated by the Regional Groups.

Electricity

- (50) ACER notes that out of the 59 transmission projects, 3 PCIs are not included in the relevant NDPs⁴⁶: one of them⁴⁷ is already “in permitting” and was included the 4th PCI list as well. For this project no clear reason was provided for its non-inclusion in the NDP. The other 2 PCIs⁴⁸ are still “under consideration”, the reason for non-inclusion is due to their lack of maturity (i.e. either the project is not advanced enough to be included or the commissioning date is beyond the time span of the NDP).
- (51) Out of the 8 storage projects, 3 PCIs⁴⁹ are fully included in the relevant NDPs, while 5 PCIs⁵⁰ are not included (or included only as a network connection project by a TSO and/or considered within the NDP studies). The reason for non-inclusion in these instances is related to the fact that the relevant NDP does not include storage projects or the promoter is a non-TSO and non-TSO projects are not included in the relevant NDPs.
- (52) The 5 smart grid PCIs are either partially included⁵¹ or not included⁵² because the investments (or some of them) are non-TSO investments, and as such, they are normally non-TSO are not included in the relevant NDPs.
- (53) ACER notes that 2 electricity transmission interconnection PCIs have already been approved as a planned project only in one of the NDPs, while they are still under consideration in the other NDP⁵³.

⁴⁵ ACER’s Opinion No 13/2019, p.58.

⁴⁶ The figure does not include PCI 3.22.1 which has been delisted from the NDP following the end of construction of the project.

⁴⁷ PCI 4.8.4

⁴⁸ PCIs 1.19, 4.11

⁴⁹ PCIs 2.29, 2.30, 3.24

⁵⁰ PCIs 1.21, 2.18, 2.28.2, 2.28.5, 4.6

⁵¹ PCI 10.7, 10.10, 10.12

⁵² PCIs 10.4, 10.11

⁵³ PCIs 2.27.1, 2.27.2

Gas

- (54) Out of 20 gas PCIs, 13 PCIs (65%) are entirely included in the latest NDPs, 6 PCIs⁵⁴ are partially included, and 1 PCI⁵⁵ is not included in the relevant NDPs. The PCI which is not included in any NDP is a transmission pipeline, with a status being under construction. No reasons for non-inclusion of this project in the NDP is provided.

4. PCI Status and progress

4.1 Evolution of the status and works

- (55) ACER differentiates the following project status categories: under consideration, planned but not yet in permitting, permitting, under construction, commissioned, cancelled⁵⁶.
- (56) ACER finds that almost 70% of the current PCIs are already in permitting or in a more advanced stage, while slightly more than 30% of the PCIs are less advanced (i.e. planned, but not yet in permitting or still under consideration)⁵⁷, resulting in an overall slightly more advanced project list compared to previous years (e.g. last year about 1/3 of the PCIs were not yet in permitting).
- (57) As shown in Figure 4 and Figure 5, the advancement of the PCIs demonstrates a similar pattern in both sectors with respect to the shares of more advanced and that of less advanced projects, which are about the same. However, a remarkable difference between the electricity and gas sectors has remained: the share of gas PCIs which are “under consideration” (i.e. 25%) is significantly higher than the share of “under consideration” electricity PCIs (i.e. 12%).
- (58) Overall, ACER observes a positive trend in the advancement of electricity and gas PCIs over recent years, in total 21 PCIs out of 92 (about 25%) advanced their status compared to last year, while 27 (about 20%) out of 138 projects in the 4th list advanced their status the year before.
- (59) ACER notes that for 4 projects (all 4 are electricity PCIs) no works or activities have been carried out during this reporting period⁵⁸.
- (60) The categories of activities reported by the project promoters as having been carried out during the reporting period are listed for each project in the Annexes of this report.

Electricity

- (61) ACER notes that 1 PCI⁵⁹ was commissioned already in 2020, while another PCI⁶⁰ completed the construction works in 2018, but the commercial operation will start only after the completion of a

⁵⁴ PCIs 6.20.3, 6.24.4, 6.27, 6.8.1, 7.1.3, 7.3.3

⁵⁵ PCIs 8.3.1

⁵⁶ Projects under consideration are in the phase of planning studies and consideration for inclusion in the NDPs, regional plans, and the EU TYNDPs. Projects which are planned, but not yet in permitting are those projects which have been included in the NDP(s) and have completed the phase of initial studies (e.g. completed pre-feasibility or feasibility study), but have not applied for permits yet. Projects in permitting are designated as such from the moment when the project promoter(s) apply for the first permit regarding the implementation of the project and the application is admitted as a valid one.

⁵⁷ ACER considers that the status of the least developed element of a given PCI is representative for the overall status of the project. The information about the status of the projects is therefore rather conservative, as some of the investment items included in a given PCI may be at a more advanced implementation stage than other investment items belonging to the same project.

⁵⁸ ACER requested project promoters to list and describe what kind of work or other activities they carried out with regard to their PCIs between 1 February 2021 and 31 January 2022. For more information regarding the activities carried out, please refer to the Annex 1 (for electricity PCIs) and Annex 2 (for gas PCIs) to this Report.

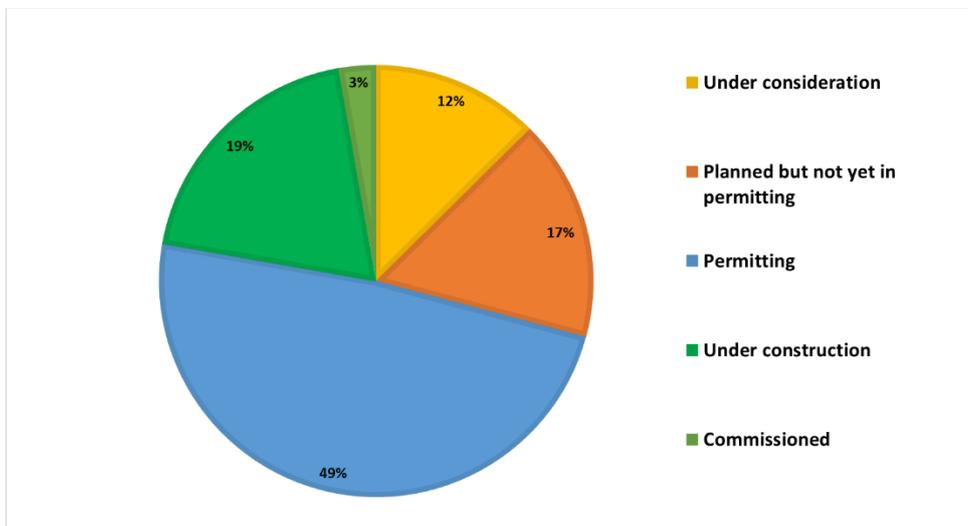
⁵⁹ PCI 3.11.2

⁶⁰ PCI 3.22.1

corresponding substation, which is expected to be in 2025. The benefits for these projects to have been kept on the 5th PCI list is unclear.

- (62) Out of the remaining electricity PCIs, 16 advanced their status either started the permit granting process for each section and element (6 PCIs⁶¹), managed to complete permit granting and entered the construction phase (9 PCIs⁶²) or they have completed the phase of initial studies and got their planning approved (1 PCIs⁶³).
- (63) When comparing the most recently reported project status to the one reported in 2015, ACER notes that 4 electricity PCIs⁶⁴ did not succeed in advancing their status over a 7 year period (since the first ACER monitoring in 2015) from a “planned, but not yet in permitting” status, meaning that at least one section or element of the project is still not yet in permit granting⁶⁵. An additional 4 PCIs⁶⁶ appear to have been stuck at the permitting stage since 2015⁶⁷.
- (64) ACER notes that for 4 projects (all of them are electricity PCIs⁶⁸) no works or activities have been carried out during this reporting period, each of them being “on hold” for the third year in a row.
- (65) The reported reasons for lack of works or activities are in 2 instances difficulties with the implementation of the related project, in one instance the project is rescheduled to a later date and the need for the project is under reassessment and in one instance the project promoter reported that the project is in the planning stage.

Figure 4: Electricity PCIs status



Gas

⁶¹ PCIs 1.6, 4.8.4, 4.8.18, 4.1.19, 4.10.1, 10.7

⁶² PCIs 2.16.3, 3.11.3, 3.14.2, 4.8.1, 4.8.2, 4.8.9, 4.8.14, 4.8.16, 4.8.20

⁶³ PCIs 2.29

⁶⁴ 2.9, 2.10, 2.16.1, 3.22.4

⁶⁵ According to the reported data by project promoters PCIs 2.9 and 2.10 already started permitting. PCI 2.16.1 plan to start in Jun-2024, while the information was not provided for 3.22.4.

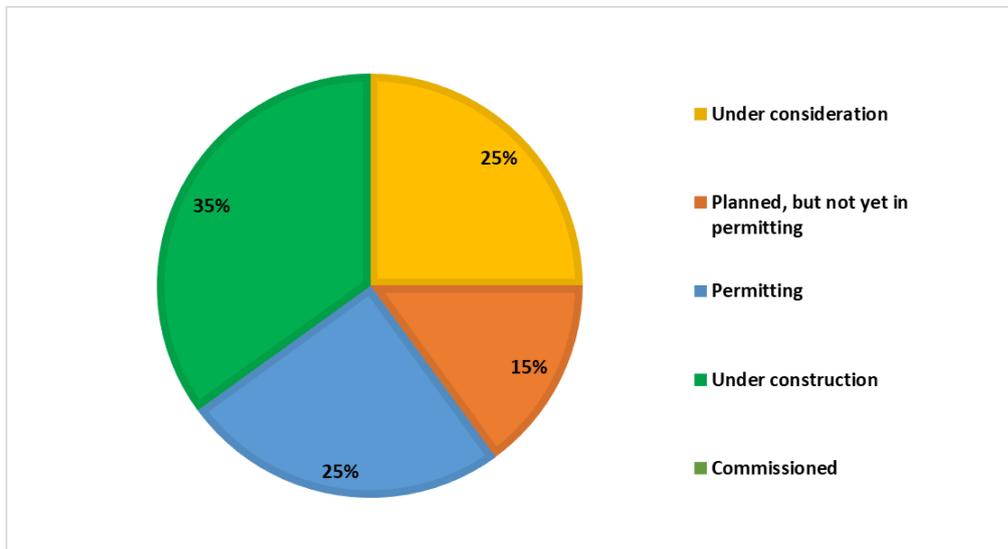
⁶⁶ PCIs 2.14, 2.18, 3.11.1, 3.11.4.

⁶⁷ The actual number of PCIs “in permitting” status since 2015 is in total 8, but the other projects reported to have started or even completed construction works for at least some sections or elements of the project.

⁶⁸ PCIs, 2.16.1, 2.27.1, 2.27.2, 4.8.7. PCI 3.11.2 is already commissioned and PCI 3.22.1 has already finished constructions works some years ago, therefore they are not accounted for this list.

- (66) During the reporting period, 5 gas PCIs advanced their status. The 2 PCIs⁶⁹ which advanced their status are now being planned but not yet in permitting and 3 PCIs⁷⁰ are now under construction.
- (67) When comparing the most recently reported status of current gas PCIs to the reported status of gas PCIs in 2015, there are 2 PCIs showing no advancement over a 7 year period, both PCIs still under consideration⁷¹.

Figure 5: Gas PCIs status



4.2 Delays and rescheduling

- (68) ACER recalls that it is important to differentiate between delayed and rescheduled projects when evaluating their progress. A delayed investment is still needed at the expected date, but cannot be delivered on time due to various external factors like permitting, environmental, legislative reasons, etc., while a rescheduled investment is one that is voluntarily postponed by a promoter due to changes of its external driver (e.g. lower demand, less urgent need for the investment due to updated planning data, or assigning priority to other solutions). In short, an occurrence of “rescheduling” is generally caused by overoptimistic project milestones planning by the project promoter.
- (69) The annual progress of the electricity and gas PCIs is shown in Figure 6 and in Figure 9. ACER notes that, similar to previous years, the shares of delayed projects for electricity and gas PCIs are rather alike (31% and 20% respectively). However, the share of rescheduled PCIs remains significantly lower in electricity than in gas (13% vs. 35%).
- (70) Around 40% of the PCIs are expected to be commissioned within 3 years and 70% within the next 5 years. Based on the previous trends (i.e. commissioning dates shifting to a later date for about 40% of the PCIs each year), in ACER’s view the number of actual commissioned PCIs is likely to be lower.

Electricity

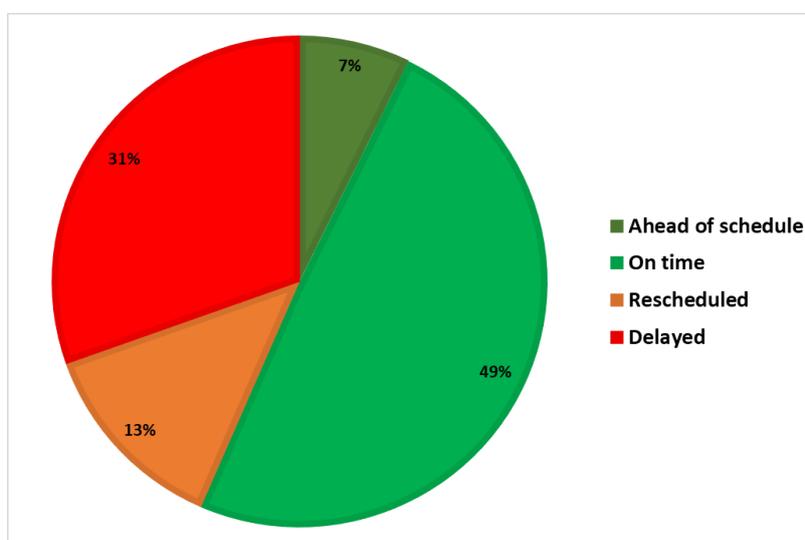
⁶⁹ PCIs 6.26.1, 6.8.1

⁷⁰ PCIs 8.2.1, 8.3.1, 8.3.2

⁷¹ PCI 6.20.3, 7.3.1

- (71) ACER notes that 56% of the electricity PCIs are on time (or ahead of schedule), which is a lower share of the timely projects compared to the share which was observed in 2021 (about 62%) and 2020 (68%) and puts the electricity PCI progress on a negative trend over recent years.
- (72) The share of delayed electricity PCIs remains within the same range as in previous years (i.e. 31% in 2022 compared to 23%-31% in years between 2016-2021). However, there are 7 PCIs⁷² which are already delayed for a second time in a row, which may deserve even closer attention by the respective authorities.
- (73) The share of rescheduled projects has increased compared to previous years' figure (i.e. 13% 2022 vs. 8% in 2021 and 5% in 2020), but still remains relatively low, which was considered before as a sign of rather robust PCI list. However, ACER notes that one PCI⁷³ which has been included in the PCI list since 2013, but has been already been rescheduled multiple times, overall by almost 10 years.
- (74) Out of the 21 delayed PCIs, 16 are transmission and 5 are storage projects. ACER identifies that 12 out of 16 delayed transmission PCIs are internal, constituting around 31% of the total number of internal projects, while the share of delayed interconnection projects is about 20% of all interconnection transmission PCIs⁷⁴. This finding seems to indicate that the probability of project delays do not necessarily show correlation with the number of hosting Member States and the involved Competent Authorities (i.e. one or more).

Figure 6: Annual progress of electricity PCIs



- (75) As shown in Figure 7, the highest share of delayed PCIs is situated in the NSI East priority corridor (i.e. 10 PCIs corresponding to 53% of the PCIs within this priority corridor). In contrast, no PCIs are delayed in the NSOG priority corridor. However, ACER notes that the share of delayed PCIs within the priority corridors significantly differs, but also across different monitoring years. The only clear trend observed is that the BEMIP corridor tends to have the highest share of timely project, although ACER also notes that most of these projects belong to the same PCI cluster.
- (76) Out of the 9 rescheduled PCIs⁷⁵, 8 are transmission and 1 is a smart grid project. The majority of rescheduled PCIs locate in NSI West (5 out of 9), while in the NSI East there are no PCIs rescheduled.

⁷² PCIs 2.17, 2.29, 2.30, 3.1.1, 3.10.1, 3.10.2, 3.14.2

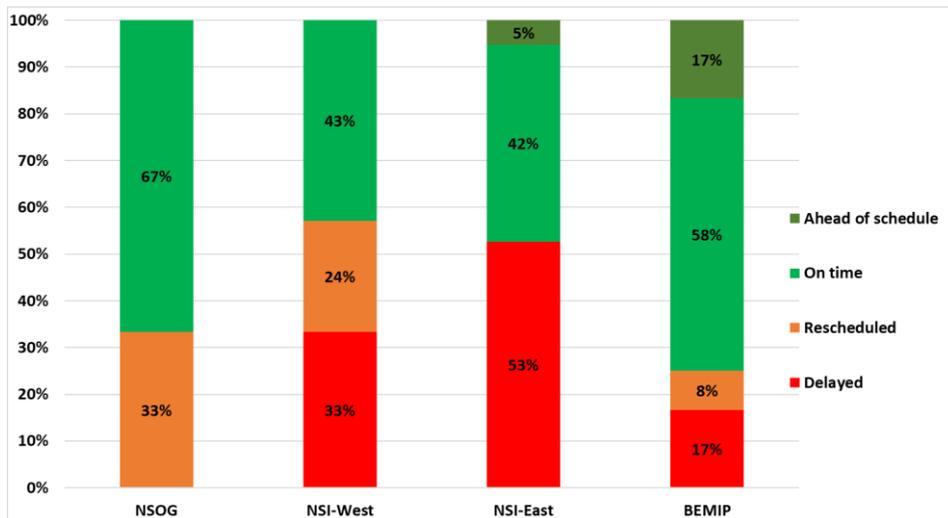
⁷³ PCI 2.16.1

⁷⁴ In 2021 this share was 40% for internal projects and 17% for interconnection projects.

⁷⁵ PCIs 1.6, 2.27.1, 2.27.2, 2.31.1, 2.31.2, 2.31.3, 4.8.2, 4.8.3, 10.7

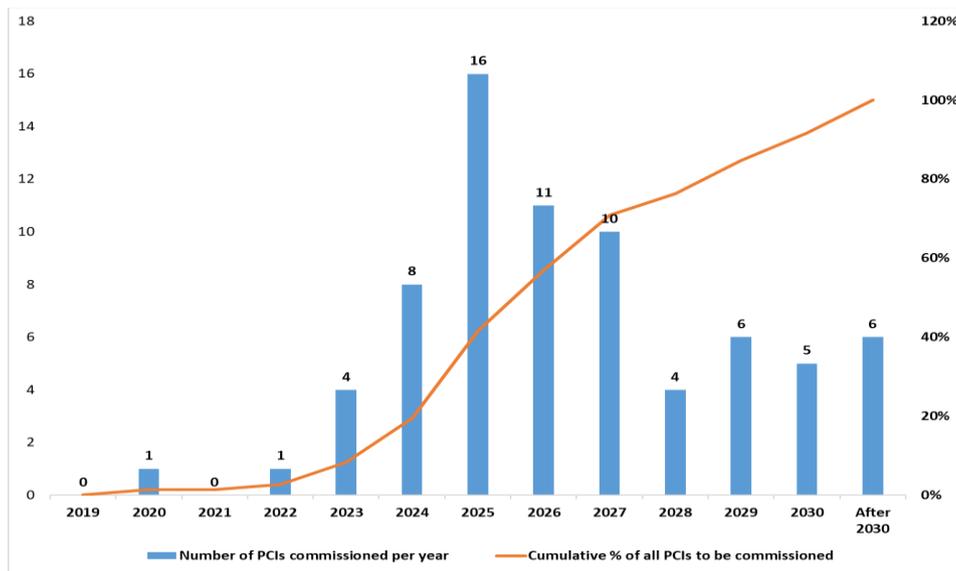
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PROJECTS OF COMMON INTEREST**

Figure 7: Annual progress of electricity PCIs per priority corridor



- (77) The duration of the reported delays compared to last year varies for the electricity projects from 5 months up to 5 years (with an average of 16 months), while the duration of rescheduling vary from 2 months up to 4 years.
- (78) As shown in Figure 8, about 70% of the PCIs are expected to be commissioned within the next 5 years. However, there are several electricity PCIs which will be commissioned only by 2030 or later.

Figure 8: Commissioning date of electricity PCIs

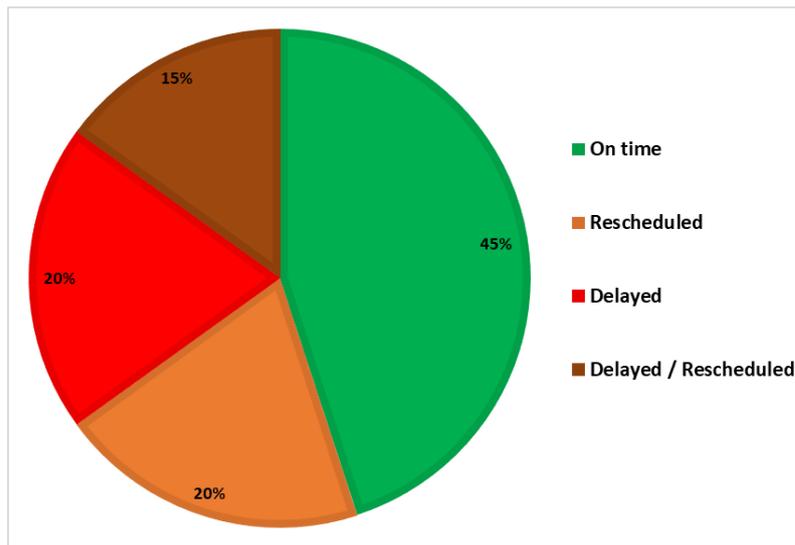


Gas

- (79) As in previous years, none of the PCIs reported an expected commissioning date “ahead of schedule”. The submitted reports also cover individual investment items. Certain investment items of one and the same PCI are reported to be progressing at a different pace, some being “delayed”, while others are “rescheduled”.
- (80) In this reporting period, in total 35% of the gas PCIs were rescheduled and 20% encountered delays.

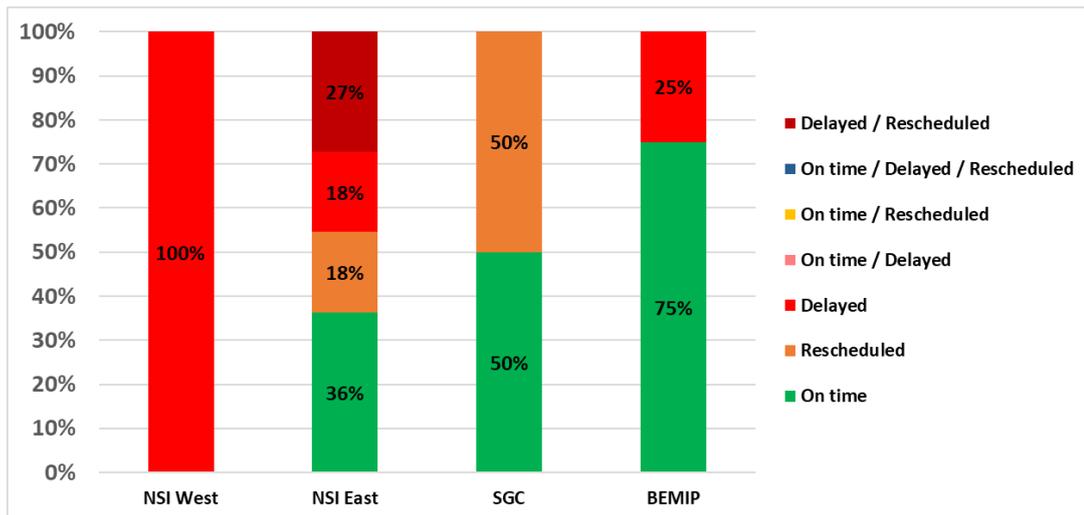
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Figure 9: Annual progress of the gas PCIs



- (81) Out of the 4 delayed PCIs⁷⁶, 3 are transmission pipelines (23% of gas transmission PCIs), and 1 is an UGS project. UGS projects appear to be projects of longer development duration and technically more demanding to implement.
- (82) Out of the 7 rescheduled PCIs⁷⁷, 5 are transmission pipelines, 1 is an LNG terminal and 1 is an UGS project. Most rescheduled PCIs are in the NSI East corridor (5 PCIs, i.e. 45% of the PCIs within this priority corridor), as presented in Figure 10.

Figure 10: Annual progress of the gas PCIs per priority corridor



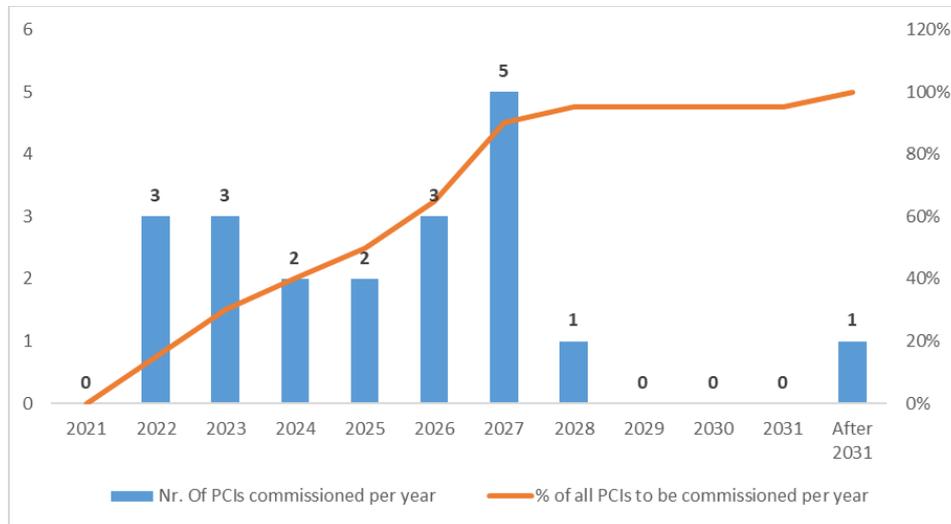
- (83) The duration of the reported delays compared to last year varies for the gas PCIs from 5 months up to 2.7 years (with an average of 20 months), while the duration of rescheduling varies from 7 months up to 6 years (with an average of 30 months).

⁷⁶ PCIs 5.19, 6.20.46.8.3, 8.3.1

⁷⁷ PCIs 6.2.13, 6.20.3, 6.24.4, 6.26.1, 6.8.1, 7.3.4, 7.5

- (84) As shown in the **Error! Reference source not found.**, 10 gas PCIs (50%) are expected to be commissioned by the end of 2025 and 19 gas PCIs (95%) are expected to be commissioned by the end of 2030.
- (85) ACER observes cases where project promoters report for the gas PCIs being on time, even though the date of commissioning is postponed for several reporting periods in a row. ACER calls for consistent reporting on the PCIs' progress.

Figure 11: Commissioning date of gas PCIs



4.3 Reasons for delays and rescheduling

- (86) The most frequently mentioned main reasons for delays are related to permit granting and financing issues. The former reason has been reported more frequently for electricity PCIs, while the latter reason was most often indicated for gas PCIs. The reasons for rescheduling appear to be more diverse across the two sectors, as described below.

Electricity

- (87) The most frequently reported reasons for delays of electricity PCIs, similar to previous years, is permit granting (about 30%). Further, several project promoters reported that they encountered delays due to technological reasons (e.g. re-routing and/or siting or re-siting of facility initiated by the promoter) (about 20%), tendering (about 15%) or financing issues (about 15%). Additionally project promoter(s) reported delays in the procurement process and delays due to lawsuits and court proceedings. Each of these reasons were reported in one or two instances.
- (88) For about third of the rescheduled PCIs, the project promoters reported that the scope of project has changed, and for about another third of them, the rescheduling was caused by complementarity or priority given to other transmission investment. The remaining rescheduled PCIs were either in an initial stage and therefore the previous implementation plan was preliminary and/or they updated their implementation plan in line with the proposals by the candidate contractors during tendering.
- (89) More than third of the project promoters (including those of timely proceeding projects) reported difficulties encountered by their projects, in several instances multiple difficulties. Many of these difficulties affected the permit granting and require additional actions by the Competent Authorities (for about 15% of the electricity PCIs), other difficulties are mainly related to the environmental impact assessment, arising from public opposition or due to appeals/court proceedings (about 10% each).
- (90) As for difficulties with no direct effect on the permit granting procedure, the project promoters indicated unforeseen or unexpected event(s) beyond the control of both the project promoters and

the Competent Authorities (for about 15% of the electricity PCIs), like risks deriving from COVID-19 pandemic situation as well as lack of labour workers and delays in the delivery of goods.

Gas

- (91) Project promoters reported various reasons for delays, such as financing reasons, permit granting, tendering process delays, construction works, national law changes affecting permitting, interdependency with other delayed infrastructure investments, environmental problems and lack of market interest.
- (92) For 7 rescheduled gas PCIs, the project promoters reported as the most common the following reasons: demand-side or supply-side uncertainties and lack of market interest. In two cases the reasons reported were per single PCI, which are changes due to complementarity with other rescheduled infrastructure investments and re-prioritisation of the project's implementation against other investments of the project promoter.
- (93) The project promoters reported that they have faced various difficulties in the permit granting process of their PCIs during the monitoring period. For 3 gas PCIs, it was reported that they encountered difficulties in particular due to environmental impact assessment, in single case due to difficulties related to appeals and/or court proceedings. As for other difficulties, project promoters indicated unforeseen or unexpected events beyond the control of both the project promoter and the Competent Authority (in 3 instances), like risks deriving from COVID-19 pandemic situation, due to difficulties encountered in relation with local public administration regarding the issuance of a Building Permit, a withdrawn permit and awaiting new approval.

4.4 Expected duration of implementation

- (94) For the purpose of this report, the duration of the PCIs' implementation is considered from the date of the request for planning approval by the NRA, the competent Ministry or by another national competent authority as provisioned in the national law of each country.

Electricity

- (95) The average (actual or expected) duration of the electricity transmission PCIs' implementation – i.e. from the planning approval until the commissioning of the project⁷⁸ - is 10 years, similar to the findings of previous years' reports. The shift of commissioning dates due to recent delays and rescheduling did not change the average figure, mainly because some projects have managed to proceed ahead of schedule, while other projects with longer than average implementation dates have been commissioned or delisted from the PCI list. About half of the transmission PCIs have a lower and about half have a longer implementation period than the average, ranging from about 2 to 20 years⁷⁹.
- (96) The average (actual or expected) duration of the permit granting process for transmission PCIs which applied for the first permit after 16 November 2013⁸⁰ is 3.3 years⁸¹ (which is almost the same average value which was registered last year, i.e. 3.2 years). For 21 transmission PCIs, the permitting duration exceeds the 3.5 years permit granting time limit set by the TEN-E Regulation,

⁷⁸ The data was available for 58 transmission PCIs.

⁷⁹ For PCIs 2.14, 2.16.1 the duration of implementation from the start of planning is expected to exceed 20 years.

⁸⁰ According to Regulation (EU) No 347/2013, for these projects Chapter III of the Regulation (Articles 7-10) regarding permit granting and public participation applies and provides a legally binding 3.5 years upper limit with a potential extension of maximum 9 months for the permit granting process.

⁸¹ The data was available for 46 transmission PCIs.

in 15 instances⁸² by more than 9 months⁸³. The overall duration of the permit granting process⁸⁴ for 2 interconnection PCIs lasts more than 9 years⁸⁵.

- (97) The average implementation duration of transmission projects is the shortest in the BEMIP priority corridor (i.e. 7 years), while it varies between 12-13 years for the other priority corridors. However, ACER reminds that share of projects with high volumes, complex technical solutions and/or sensitive locations can differ across the priority corridors and between PCI lists. Further, the statistics account only for PCIs on the 5th PCI list, and they do not take into account the expected or actual duration of former PCIs as well as they do not consider when a project entered the PCI list for the first time. Therefore, this statistic of its own is not conclusive.
- (98) The average implementation duration of storage projects is slightly less than 10 years and for individual storage projects varies between 4 and 13 years. The duration of permit granting for storage PCIs where it started after 16 November 2013⁸⁶ is around 4.5 years, with the values varying between 2.3 and 7 years.
- (99) For smart grid projects, the average implementation duration is about 5.5 years (variation between 4 years and 7 years) and the permit granting duration is around 5.8 years (variation between 4.2 years and 7.6 years)⁸⁷.

Gas

- (100) Information about the expected or the actual duration of project implementation was provided by project promoters as the time from the date of request for the planning approval until commissioning of the project. The average expected duration of the gas PCI implementation is a bit less than 5 years. However, PCIs vary greatly in complexity, as they may involve significantly different investment items and subprojects, which result in longer or shorter durations of the implementation period.
- (101) Project promoters report that the estimated overall duration of the permitting process is about 3.6 years. However, in case of project groups, promoters provided data mostly applicable to each part of the PCI (per investment item). The reported expected duration of the overall permit granting procedure exceeds the permitting duration foreseen in the TEN-E Regulation (3.5 years)⁸⁸ for approximately 35% of projects. As most of the PCIs are located in the NSI East priority corridor, most of the PCIs for which the overall permit granting exceeds 3.5 years are also in this corridor (5 in NSI East and 2 in SGC).

5. Cost developments

- (102) The investment costs for all PCIs, as reported by the promoters, amount to €73.9 billion, and electricity projects account for almost 80% of it. The cost tag is actually even higher, since operation and other capital expenditure during the life cycle of projects also has to be considered. More than a third of the PCIs reported changes in the expected investment cost compared to the previous year. The reasons for changes in cost vary significantly across the PCIs, including change in the

⁸² PCIs 2.4, 2.7, 2.9, 2.10, 2.17, 2.32, 3.1.1, 3.1.2, 3.10.1, 3.10.2, 3.11.1, 3.11.3, 3.11.4, 3.12, 4.8.10

⁸³ In line with Article 10(2) of Regulation (EU) No 347/2013, where the competent authority considers that the permit granting process will not be completed before the set time limits, it may extend the 3.5 year time limit by a maximum of 9 months.

⁸⁴ The start date of the permit granting process is defined by the start of the permit granting for the first section or element, while the end of the permit granting is defined by the end of the permit granting for the last section or element, therefore it is possible that in individual countries the permit granting takes shorter than the indicated period.

⁸⁵ PCIs 2.7, 3.1.1

⁸⁶ The data was available for 5 storage PCIs.

⁸⁷ The data were available for 5 smart grid PCIs regarding the implementation data, and 3 regarding the permit granting duration.

⁸⁸ Idem.

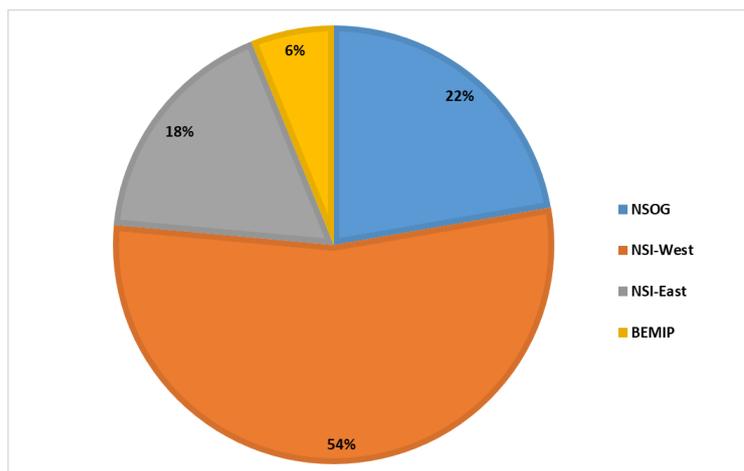
project’s technical characteristics, changes in the prices of raw materials and/or equipment, extra costs due to safety, environmental or legal requirements imposed during the permit granting process as well as other reasons.

- (103) A total amount of €6.5 billion has already been spent (i.e. “incurred”) on the current PCIs, representing a bit less than 10% of the expected overall investment costs of the PCIs.

Electricity

- (104) ACER requested the project promoters to provide the cost values expressed at current (2022) real values. The total initial investment costs (or inception CAPEX)⁸⁹ for the electricity PCIs are about €59 billion, which is about 15% lower compared to last year (i.e. €67 billion). Of this, about €52.8 billion (i.e. 90%) accounts for transmission projects, about €4.4 billion (i.e. 7%) for storage projects and about €1.8 billion (3%) for smart grid projects. Uncertainties about the investment costs (upward or downward expected variations) were reported for more than the half of the PCIs. For most of them the main reason for variation is procurement or construction costs uncertainties or the project is in consideration stage and cost estimates are rather uncertain. The later investment costs (or sustaining CAPEX)⁹⁰ were provided only for very few PCIs, which ACER deemed insufficient in order to conclude on them.
- (105) As shown in Figure 12, most investment costs (about 54%) belong to the NSI West priority corridor, followed by NSOG (about 22%), NSI East (18%) and BEMIP (6%). Compared to the investment costs of the projects on the 4th PCI list, the share of the NSOG corridor has significantly decreased (from 35% in 2021 to 22% in 2022) due to the delisting of several high CAPEX projects of the priority corridor. As pointed out in last year’s consolidated report on PCI monitoring, the apparent asymmetry between the share of PCIs across the priority corridors compared to their share of the investment costs is mainly due to the difference in the project categories and the resulting differences in the average project costs (i.e. while the share of PCIs in NSOG is 4% and in BEMIP is 36%, the projects in NSOG are typically large scale interconnections, while in BEMIP most of them are internal transmission lines).

Figure 12: CAPEX of electricity PCIs per priority corridor



⁸⁹ Initial investment costs include development costs (e.g. studies, rights of way, environmental planning, costs for permits), project management costs, material and assembly cost, including installation and commissioning; other construction costs, including temporary solutions, waste management and environmental costs, dismantling of existing assets.

⁹⁰ Later investment costs include costs for replacement of devices within the project assessment period and dismantling costs at the end of the equipment lifecycle, where relevant. All costs falling outside the assessment period are not considered.

- (106) For 25 PCIs (including 23 transmission, 1 storage PCIs and 1 smart grid), the project promoters reported changes in the investment costs compared to previous year⁹¹. For about 86% of these projects the costs increased, while for 14% the costs decreased. In previous report, the share of price increases and decreases were more balanced (i.e. 60% vs. 40%). However, in light of recent prices increases of raw materials and equipment, these developments were rather expected. The other main reasons for changes in costs across the PCIs include changes in the project's technical characteristics, extra costs due to safety, environmental or legal requirements imposed during permit granting process, exchange rate variation as well as increased accuracy in cost estimations.
- (107) Already incurred⁹² costs until 31 December 2021 are about €4.5 billion (8% of the overall electricity PCI budget). About €5.3 billion (i.e. 9%) were additionally contracted⁹³. The joint share of incurred or additionally contracted investment costs are 18% for transmission projects (with the highest value in the NSI-East priority corridor and the lowest value in NSOG priority corridor)⁹⁴. The joint share of incurred or additionally contracted investment costs is about the same (i.e. 18%) for smart grid projects, while it is 4% for storage projects.
- (108) Comparing to the 31 December 2020 data for the same PCIs, ACER notes that over a one year period about €2.3 billion has been additionally spent or contracted for electricity PCIs.
- (109) The annual operational expenditures⁹⁵ compared to the total inception CAPEX amounts to less than 1% for transmission, almost 2% for storage and 0.5% for smart grids.

Gas

- (110) The CAPEX for 20 gas PCIs is reported at about €14.9 billion, which is 46% less compared to previous year, mostly due to a shorter gas PCI list. The distribution of CAPEX per project type is as follows: 85% in transmission projects, 9% in LNG terminals and 6% in UGS projects. Most investment costs (61%) are still expected to occur in the SGC priority corridor, due to the fact that this corridor hosts the lengthiest transmission pipelines and therefore the most demanding PCIs in terms of investment cost.

⁹¹ In this particular figure, the "PCIs which are "new" on the 5th PCI list, have not been accounted for.

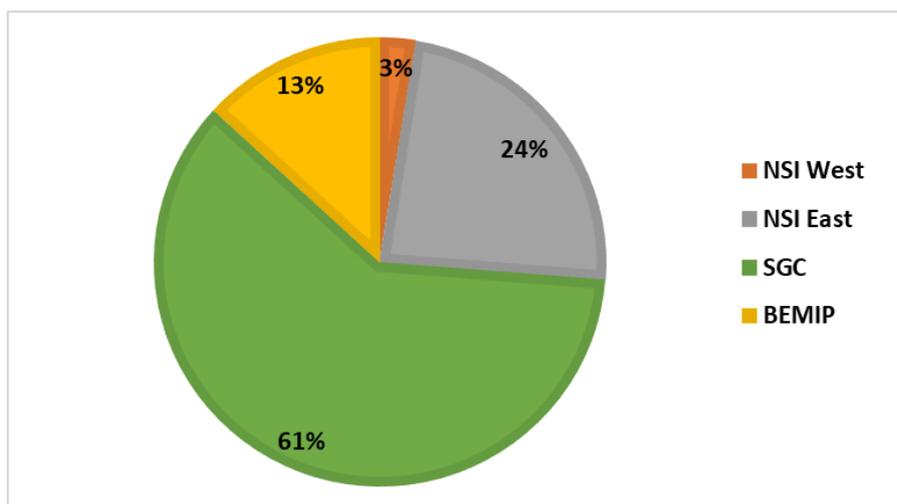
⁹² Incurred investment cost include all costs allocated with the project, for which an invoice (or other accounting document which proves the recognition of the cost) has been issued for the purchase of materials or services.

⁹³ Additional contracted investment cost include all costs to which promoters have committed to (e.g. tender and consequent contracts are signed), excluding the incurred investment cost.

⁹⁴ The share of incurred or additionally contracted investment costs compared to the total investment costs for transmission PCIs is the following per priority corridor: 1% in NSOG, 19% in NSI West, 32% in NSI East and 6% in BEMP.

⁹⁵ Annual operating expenditures include annual maintenance costs and annual operation costs. The value of annual operating expenditures should not take into account system losses or the cost of purchasing energy for storage investments.

Figure 13: CAPEX of gas PCIs per priority corridor



- (111) The project promoters reported changes in the total investment costs for 11 PCIs compared to last year. In 6 instances the costs increased, while in 5 instances the costs decreased. Cost increase was in a range of €5 up to €484 million and cost decrease in a range of €4 up to €526 million. As in the past year, the main reason for changes in costs indicated by the promoters vary across the PCIs, including changes due to an increased accuracy of cost estimations, changes in the prices of labour, raw materials and/or equipment, and changes in the project's technical characteristics.
- (112) Already incurred costs until 31 January 2022 for all gas PCIs are about €2 billion, representing 13.7% of the total gas PCI investment costs.

6. Regulatory treatment

- (113) ACER finds that during the reporting period no exemptions or project-specific risk-related incentives have been requested by the project promoters and only few project promoters have indicated that they plan to use such incentives in the future. An investment request, including a request for CBCA, was submitted for 1 gas PCI and for none of the electricity PCIs over the reporting period
- (114) The above findings confirm ACER's earlier observation that project-specific risk-related incentives pursuant to Article 13 of Regulation (EU) No 347/2013 are hardly used by project promoters. On the other hand, obtaining a decision on an investment request, including a request for CBCA pursuant to Article 12 of Regulation (EU) No 347/2013 is significantly more frequently used (for more than 40% of the eligible PCIs), although the number of such submissions have also reduced over recent years.

Electricity

- (115) Until 31 January 2022, the project promoters submitted investment requests for 24 electricity PCIs⁹⁶. Out of these PCIs, 19⁹⁷ are located in the BEMIP priority corridor and the vast majority of them serving the purpose of the Baltic synchronisation with continental Europe. The remaining PCIs

⁹⁶ In these statistics all investment requests, which have been notified to ACER, are taken into account, including incomplete and/or rejected requests.

⁹⁷ PCIs 4.10.1, 4.10.2 and 17 PCIs within PCI cluster 4.8

for which an investment request was submitted are located in the NSI West (3 PCIs)⁹⁸, the NSOG (1 PCIs)⁹⁹ and NSI East (1 PCIs)¹⁰⁰ priority corridors.

- (116) No project promoter of the current electricity PCIs applied for exemption from third party access or other relevant rules of the regulated regime or for any project specific risk-based incentives.

Gas

- (117) The project promoters submitted in total 9 investment requests for the PCIs on the current 5th PCI list, which represents 45% of the PCI list. Out of these 9 PCIs, 3 are located in the BEMIP¹⁰¹, 1 in NSI West¹⁰², 1 in SGC¹⁰³ and 4 in the NSI East¹⁰⁴ priority corridor. One investment request¹⁰⁵ has been submitted in NSI East during the reporting period and already received a CBCA decision from the competent NRAs.

- (118) During the reporting period, none of the project promoters applied for exemptions or for risk-based incentives, which re-confirms the lack of interest for such regulatory treatment, as already noted by ACER in earlier rounds of monitoring reports. In total, project promoters have requested exemptions for 2 PCIs¹⁰⁶ on the current 5th PCI list (1 in NSI East and 1 in SGC), out of which both PCIs have already been granted an exemption. None of the project promoters from the current 5th PCI list applied for risk-based incentives.

⁹⁸ PCIs 2.33, 2.7, 2.16.3

⁹⁹ PCIs 1.6

¹⁰⁰ PCIs 3.10.2

¹⁰¹ PCIs 8.3, 8.2.1, 8.2.4

¹⁰² PCI 5.19

¹⁰³ PCI 7.5

¹⁰⁴ PCIs 6.8.2, 6.8.3, 6.20.4, 6.20.2

¹⁰⁵ PCI 6.20.2

¹⁰⁶ PCIs 6.8.1, 7.3.3

Annex 1: Electricity PCIs

See separate pdf file distributed together with this Report, which contains a non-confidential version of some project specific information on electricity PCIs.¹⁰⁷ Link to [Annex 1](#).

¹⁰⁷ ACER will treat the confidentiality claims submitted by project promoters applying, by analogy, Article 27 of Decision No 19-2019 of the Administrative Board, laying down the rules of procedure of the Agency, available [here](#).

Annex 2: Gas PCIs

See separate pdf file distributed together with this Report, which contains a non-confidential version of some project specific information on gas PCIs.¹⁰⁸ Link to [Annex 2](#).

¹⁰⁸ ACER will treat the confidentiality claims submitted by project promoters applying, by analogy, Article 27 of Decision No 19-2019 of the Administrative Board, laying down the rules of procedure of ACER, available [here](#).