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CONSOLIDATED REPORT

ON THE PROGRESS OF ELECTRICITY AND GAS PROJECTS OF COMMON INTEREST

Ljubljana

30 June 2016

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1 Summary

1.1 Legal basis and background

Energy infrastructure development is an essential element of the European Union's strategy for completing the internal energy market, integrating renewables and ensuring security of energy supply. In order to facilitate the development of key energy infrastructure, the European Union ("EU") adopted Regulation (EU) No 347/2013 of 17 April 2013 on guidelines for trans-European energy infrastructure[1].

Regulation (EU) No 347/2013 sets out a legislative framework for infrastructure planning and project implementation at EU level. Projects of common interest ("PCIs") are the most important hardware links and provide a significant contribution to the objectives of European energy policy[2]. Within this framework, projects included in the Union list of PCIs benefit from accelerated and streamlined permit granting procedures, an improved regulatory regime and – where appropriate – may obtain financial support under the Connecting Europe Facility ("CEF")[3].

PCIs are selected according to a procedure established by Regulation (EU) No 347/2013 to contribute to the implementation of one of the nine priority infrastructure corridors in the domains of electricity, gas and oil, and to the three Union-wide infrastructure priority areas for electricity highways, smart grids and carbon dioxide transportation networks. The first Union list of PCIs[4] ("2013 PCI list") was adopted by the European Commission in October 2013, followed by the second Union list of PCIs[5] ("2015 PCI list") in November 2015. The latter includes 111 electricity PCIs[6] and 77 gas PCIs[7].

Article 5(4) of Regulation (EU) No 347/2013 stipulates that, for each project falling under the categories set out in Annex II.1 and 2, promoters of gas and electricity PCIs shall submit, by 31 March of each year following the year of the inclusion of a PCI in the Union list, an annual report to the relevant competent authority as referred to in Article 8 of Regulation

[1] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0347&from=en

[2] Cf. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee on the regions and the European Investment Bank, Brussels, 25.2.2015, COM(2015) 80 final, p. 8.

[3] Cf. https://ec.europa.eu/digital-single-market/en/connecting-europe-facility

[4] Commission delegated Regulation (EU) No 1391/2013 of 14 October 2013 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure as regards the Union list of projects of common interest. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:349:0028:0043:EN:PDF

[5] Commission delegated Regulation (EU) No 2016/2013 of 18 November 2016 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council as regards the Union list of projects of common interest. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:JOL_2016_019_R_0001&from=EN

[6] Corresponding to 112 projects.

[7] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:JOL_2016_019_R_0001&from=EN

(EU) No 347/2013 and to the Agency for the Cooperation of Energy Regulators ("the Agency"). The project promoters' reports should contain details of the progress achieved in the development of the project, of any delay compared to the original implementation plan and a revised plan to overcome the delays where relevant.

To reduce the administrative burden, the Agency and the competent authorities entered into administrative arrangements[8] allowing the use of a single online reporting window and consistent reporting forms.

Article 5 of Regulation (EU) No 347/2013 also requires the Agency to monitor the progress achieved in implementing the PCIs, on the basis of annual reports submitted by the project promoters. In 2016, the Agency carried out the annual monitoring of PCIs for the second time, with the objective of providing a comprehensive picture of the developments that have taken place since the inclusion of the projects in the 2015 PCI list. Whenever appropriate, the Agency requested clarifications from the promoters regarding missing, incomplete or inconsistent data. The Agency also provided an opportunity to the national regulatory authorities ("NRAs") to review and comment on the data. Overall, after receiving clarifications from promoters and carrying out a cross-check of the submitted information, its scope and quality were deemed acceptable for the purpose of preparing the consolidated report, with a few exceptions as indicated in the sections on electricity and gas below.

This summary gives an overview of the Agency's main findings and recommendations for the gas and electricity sectors. Separate chapters of the report include in-depth analyses of the gas and electricity projects and more detailed sector-specific findings and recommendations. Minor contextual differences between the electricity and the gas chapters are primarily due to the specific features of the two sectors, which make some issues only applicable to either gas or electricity, as well as to the varying availability of data.

1.2 Main findings

1.2.1 Fulfilment of the reporting obligations and quality of the reports

The Agency positively notes the very high response rate from promoters by the legal deadline for submitting annual progress reports (31 March 2016) . For only one project in electricity and for one in gas, reports were not submitted at all by the promoters, and in just two instances (again one in electricity and one in gas) the reports were submitted with a delay. **The Agency appreciates the timely submission of the reports by the vast majority of the project promoters in pursuit of the fulfilment of their reporting obligations.**

However, the Agency notes that the completeness and the quality of the submitted reports vary widely. **In many reports, essential information is missing or inconsistent.** For example, information about the estimated benefits of the projects was only provided by 10 project promoters of gas PCIs. **The Agency draws project promoters' attention to the fact that the reporting is based on the requirements of Regulation (EU) No 347/2013 and the**

[8] Three competent authorities were not in a position to execute the administrative arrangement and in such cases the concerned project promoters were advised to submit the report both to the Agency and to the relevant competent authorities.

non-provision of accurate, up-to-date and, to the extent possible, complete information may lead to doubts about the relevance of the reported project and the extent to which the project promoters fulfil their reporting obligations.

1.2.2 Consistency of the 2015 PCI list with the TYNDPs and NDPs

From the available information regarding the PCIs on the 2015 list, the Agency concludes that the PCIs are not always included in the National Network Development Plans (NDPs) of the hosting Member States, even though the PCIs are meant to be priority projects at EU level. There are also instances where a PCI is present in the NDP of one or more Member States, but not in the NDPs of all the Member States which are involved in the project. Therefore, some PCIs with clear cross-border dimensions may not be recognised as a national priority in all concerned Member States[9]. **The Agency recommends project promoters, NRAs and competent authorities to ensure that PCIs are properly included in all relevant NDPs with the due level of priority, taking also into account their maturity, and indicating in the NDPs the PCIs which are competing or potentially competing.** The Agency notes that **every effort should be made to achieve an agreement on a project by all parties concerned by that project.**

The Agency performed a consistency check between the 2015 PCI list and the Community-wide Ten-Year Network Development Plans (TYNDPs) of ENTSO-E and ENTSOG. Whereas all gas PCIs are included in the ENTSOG TYNDP 2013, two electricity PCIs (one smart grid and one transmission project) are not included in the ENTSO-E TYNDP 2014 and three (two smart grid and one transmission projects) are not included in the ENTSO-E Regional Investment Plans 2014.

Specifically regarding gas PCIs, the Agency notes that 28% of the gas TYNDP projects have been granted PCI status and therefore assigned a PCI number. Also, the Agency finds that 6 TYNDP project codes are assigned to two or more PCIs and one project (TRA-N-358[10]) appears as an individual PCI on both the 2013 and the 2015 PCI lists, but with different PCI numbers. The Agency understands that some TYNDP projects (e.g., compressor stations) may serve several projects and thus may be associated with several PCIs. However, a clear and unique link between the TYNDP projects and the PCIs must be established. **The Agency recommends that TYNDP projects are generally associated only with the PCI to which they contribute primarily, and not to several PCIs**, in order to make sure that all PCIs are present on the TYNDP list, as well as to avoid any potential ambiguity about the attribution of the costs and benefits to particular projects and Member States.

The Agency also notes that there are numerous instances in which projects present on the 2015 gas PCI list have been rearranged (merged, split, listed with a significantly different scope, regrouped, etc.) compared to the 2013 gas PCI list. Such rearrangement makes the

[9] In one instance, the project was not agreed with the other party concerned by it, a circumstance which prompted an NRA's comment.

[10] Development on the Romanian territory of the National Gas Transmission System on the Bulgaria — Romania — Hungary — Austria Corridor — transmission pipeline Podișor — Horia GMS and 3 new compressor stations (Jupa, Bibești and Podișor) (1st phase).

monitoring of the progress of the rearranged projects difficult over a longer period of time and also raises questions about the consistent presentation of the projects' features on the various PCI lists. Furthermore, the Agency notes that, in one instance, the existence of a project promoter for a gas PCI could not be confirmed at all, a circumstance which may call for a more stringent examination of the PCI candidates during the selection process.

1.2.3 PCI implementation status and progress

Implementation status

Assessed by the stage of the projects' life cycle from a project's inception to its commissioning, about 60% of the electricity PCIs and 50% of the gas PCIs are at a relatively advanced stage, i.e. have at least started the permitting process. Such projects have the potential to contribute to the completion of the internal energy market within a specific timeframe. The other PCIs are still at an initial implementation stage (studies and similar) and their technical parameters, budget and completion date are subject to a higher degree of uncertainty. For most of the PCIs, no change in their implementation status was reported compared to 2015.

The Agency notes **the low number of expected investment requests in 2016 (6 for gas and 6 for electricity).**[11]

Progress of works

Approximately a quarter of the promoters in both gas and electricity either did not provide information about works[12] performed during the reporting period or indicated that works are non-applicable. **The absence of any information about works performed from 31 January 2015 to 31 January 2016 casts a shadow of doubt over the ambitions and the relevance of these projects**.

Expected commissioning dates

In both electricity and gas, most of the promoters report that the commissioning of the projects will occur within the coming 7 years, primarily between 2018 and 2022 for gas and between 2017 and 2023 for electricity. Current expectations are thus for a "project commissioning peak"[13] whereby **a large number of PCIs are planned to become operational within a relatively narrow time window**. In particular, the years 2018-2020 represent the peak years in gas when 46 PCIs are expected to be commissioned, of which 22 in 2020 alone. In electricity, there is a broader distribution of the commissioning target dates, but, generally, the same finding stands, as in total 89 PCIs are expected to be commissioned

[11] Under Article 12 of Regulation (EU) No 347/2013, project promoters submit an investment request as soon as their project reaches sufficient maturity.

[12] "Works" here means *any* kind of activity performed on the project by the project promoter from 31 January 2015 until 31 January 2016.

[13] In gas, the PCIs to be commissioned are "concentrated" on a shorter time period than in electricity. In electricity, there are periods of rather low (5 PCI/year) and rather high (10 PCI/year) number of projects scheduled for commissioning.

by 2023. If these expectations were to materialise, the pace of asset construction and commissioning in the coming 7 years would be of a magnitude which far exceeds the one observed in the EU over the last 10-15 years, which does not seem particularly realistic, even if competing projects[14] present on the PCI list are not taken into consideration.

The Agency also points out that no gas PCI has been commissioned at all in 2015 and the first half of 2016 and that no gas PCI is expected to be commissioned in remaining part of 2016 and in 2017.

Postponing and difficulties

In order to track the progress of the PCIs over a longer time, the Agency examined the progress of the PCIs which are present on both PCI lists (2013 and 2015), and for which all the relevant data is available. **In electricity approximately two-thirds and in gas almost all (except for 5) such PCIs are behind the original schedule of 2012/2013[15]**, being either delayed[16] or rescheduled[17]. This means that fewer of these[15] PCIs are expected to be commissioned in the coming years compared to what was planned when the first PCI list was prepared. A significant number of PCIs were already reported as postponed in the course of 2015 (42% of the electricity PCIs and 54% of the gas PCIs which are present on both the 2013 and the 2015 PCI list), which indicates that progress is not necessarily improving over time. A number of PCIs which entered the PCI list in 2015 have also been postponed in the last 12 months.

Delays are most likely to appear in the "mid-life" years of a project's life cycle, i.e. when the project is beyond initial planning but not yet in contracting for works. **Permit granting issues are cited both by gas and electricity promoters as one of the major causes for projects delays[18].**

The Agency notes that the PCI list encompasses projects of varying maturity, and that less mature projects can often be rescheduled. The Agency is of the view that such rescheduling may not be a problem in itself, as less mature projects can be conditional upon future market or network developments, or on the progress of other projects. The Agency however **recommends assessing the degree of maturity of projects at the stage of the PCI selection**, so that the uncertainties inherent to less mature projects are identified already at that stage, while not necessarily preventing such projects from being included in the PCI list.

[14] Competing projects are projects which address the same infrastructure need and consequently only one of the competing projects would be implemented.

[15] This comparison takes into account **only PCIs included in both 2013 and 2015 PCI lists for which data is available for both time spans** (2012/2013-2016 and 2015-2016).

[16] Delays in project advancement occur as a result of a circumstance external to projects whose timely implementation is still necessary.

[17] Rescheduling occurs when a promoter voluntarily postpones the implementation of the project due to various reasons which make the project's realisation within the originally planned timeframe less necessary.

[18] For sector-specific reasons for delays and duration of delays please refer to the relevant chapters in this report.

Rescheduling occurs mostly in the planning phase and results in an average postponement of project implementation by at least 2 years for gas and 4 years for electricity, compared to the initial schedule. **Rescheduling affects more projects in gas than in electricity** and for both sectors is often explained by **uncertainties in the implementation of another investment or by priority being given by the promoters to such an investment.** To help reduce uncertainties and avoid the resulting rescheduling of projects, **the Agency recommends clearly indicating which PCIs are related to each other (complementary or competing[19] projects). Rescheduling also reflects the fact that not all PCIs will be built.**

Duration of projects and permit granting

The Agency notes that the distribution of expected commissioning dates for the projects which are present on both the 2013 and the 2015 lists is very similar, with the majority of projects expected to come online 3-7 years after the date of the report, i.e. **the horizon of these projects has simply been shifted by a year between 31 January 2015 and 31 January 2016.** Due to the fact that a number of projects are behind the initially planned schedule, the expected commissioning dates have also been impacted.

Regulation (EU) No 347/2013 introduced limits to the maximum duration of the permit granting process. The Agency notes that the benefits of these provisions are not fully taken advantage of yet. However, project promoters report that in certain cases the permitting procedure can be concluded in just a few months, while other promoters (mostly of projects that have been in the permitting process already before the entry into force of Regulation (EU) No 347/2013) report that these stages have lasted or are expected to last for years. **Overall, project promoters of PCIs that entered the permit granting process after November 2013 expect that the duration of the permitting procedure will not exceed the time limit set by Regulation (EU) No 347/2013, i.e. maximum 3.5 years.** The Agency notes that this expectation needs to be supported by the relevant authorities, so that it could be confirmed by the facts in the future.

1.2.4 Costs and benefits

If plans were to go ahead as reported by the promoters, €33 billion in electricity and €50 billion in gas would be invested by 2022, totalling €82 billion of reported capital expenditure (CAPEX) in 2016 values. Obviously, **not all PCIs will be implemented, *inter alia* because some are competing projects,** but still the level of expected CAPEX is very high.

The Agency is of the view that, even when competing projects are taken into consideration, the reported actual levels of project implementation and CAPEX outlays are not consistent with the declared intentions of the project promoters to commission about two-thirds of all gas PCIs in just three years (in 2019, 2020 and 2022) and two-thirds of all electricity PCIs by 2022.

[19] Complementary projects may be "enablers" (one of the projects cannot be executed if the other one is not implemented) or mutually enhancing (each project can be implemented if the other one is not, but if all projects go ahead the resulting net benefits would be higher). Competing projects are mutually exclusive: if one of the projects is implemented, the other one will not be done.

The net present value (NPV) in 2016 of the total life-cycle costs[20] amounts to ~22% of CAPEX of the respective PCIs for electricity. No life-cycle costs were reported for most gas projects.

Regarding **benefits**, 83 PCIs **in electricity** are expected by the project promoters to bring a total of €110.6 billion of benefits. However, the value of these benefits is only indicative due to the use of various assumptions, methodological imperfections, and the presence of competing projects. It is worth noting that, in 17 cases, the reported total benefits do not exceed the investment costs of the projects.

The Agency notes the **unsatisfactory level of reporting of expected benefits of gas projects**, for which data was provided by only 10 project promoters.

1.2.5 Regulatory treatment

The Agency notes that most investment requests under Article 12 of Regulation (EU) No 347/2013 (including cross-border cost allocation, CBCA) so far have been filed for gas PCIs, namely for 16 gas projects on the current PCI list compared to just 5 PCIs in electricity. **Promoters plan to submit an investment request (involving CBCA) in 2016 for only 6 gas PCIs and 6 electricity PCIs.**

Regarding the incentives provided in the Regulation for projects facing higher risks, only 2 electricity and 6 gas PCIs have applied for such incentives, while for roughly half of the PCIs the promoters have not yet decided. The Agency thus notes that there is little evidence to support the view that many PCI promoters would apply for risk-based incentives during the coming two years. The Agency highlights that the specific reasons for the lack of applications for incentives were not explored. If deemed necessary, further examination could be carried out in the future regarding whether PCIs in general do not face higher risks compared to comparable infrastructure projects as the existing regulatory frameworks already provide sufficient measures to address risks and to promote the necessary investments, or whether there are other reasons for the lack of applications for incentives.

The Agency examined the extent to which project promoters have applied for the projects to be exempted from third party access requirements - on certain terms - in cases where the projects face extraordinary conditions. Only 5 electricity and 4 gas PCIs have applied for such an exemption so far. The majority of the other promoters do not plan to apply for an exemption. The Agency is of the view that this particular regulatory tool appears to be actually used only in exceptional cases, in line with its intended role.

1.2.6 Use of financial public support

The instruments of public financial support under Regulation (EU) No 347/2013, namely **CEF grants**[21], seem to be right now a low priority for most promoters, who are either

[20] In the instance, life-cycle costs include the cost of replacement of devices, dismantling, maintenance, and other costs, but excluding CAPEX.

[21] To become eligible for CEF grants for works, project promoters must first obtain a decision on an investment request (including CBCA) under Article 12 of Regulation (EU) No 347/2013. However, all PCIs are eligible to file an application to CEF for grants for studies.

undecided on whether they will apply in the coming two years, or have already decided not to apply at all for such public support instruments[22].

The Agency notes that, based on the intentions reported by the project promoters, the likelihood of many PCIs requesting CEF support for works in 2016 and early 2017 is low.

[22] In the past, many promoters have applied for CEF grants and other public funding support.

2 ELECTRICITY PROJECTS

2.1 Introduction

2.1.1 Fulfilment of the reporting obligations

On 26 February 2016, the Agency invited PCI promoters to submit the respective PCI annual reports through an online survey tool. Pursuant to Article 5(4) of Regulation (EU) No 347/2013, the deadline for filling in and submitting the reports was 31 March 2016.

A total of 110 annual reports were submitted by PCI project promoters to the Agency by the deadline and one report was submitted after the deadline.[23]. The project promoter of one PCI[24] did not submit its report. Of the 111 projects for which a report was submitted, 91 projects were already included in the 2013 PCI list (to be called from here on as "old" PCIs) and submitted an annual report also in 2015. 20 projects were included in the second Union list of PCIs for the first time in 2015 (to be called from here on as "new" PCIs).

2.1.2 Completeness, consistency and adequacy of the submitted data

Completeness of the submitted reports improved compared to 2015, in particular with regard to some significant data, like the estimated CAPEX, the expected commissioning date and the actual/expected date of submission of the permit application.

Despite the above-mentioned improvement, there is still a lot of variation from one project to another, both in the overall data completeness rate and the quality of the data submitted. In order to improve the quality and the consistency of the submitted data, the Agency performed a series of **validity checks**, and in case of inconsistencies, it requested project promoters to provide **clarifications**. For more details on the approach and the clarifications required, please refer to Annex II: Clarification and validation of submitted data.

Key findings

- The Agency positively notes that all but two annual reports were submitted to the Agency by the 31 March 2016 legal deadline set by Regulation (EU) No 347/2013. Out of the two reports which were not submitted within the legal deadline, one was submitted with a delay, while the other one was not submitted at all.
- Completeness of the submitted reports improved compared to 2015, which shows that the monitoring activity is becoming more mature and promoters are more aware of it. However, completeness of the submitted reports varies among projects, and among specific sections of the report, and the submitted data was not always reliable and consistent.
- The Agency notes that missing or non-consistent expected dates of the PCI's implementation stages for some projects cast doubt over the relevance of these projects.

[23] PCI 1.1.2 Internal line between the vicinity of Richborough and Canterbury.

[24] PCI 10.1 North Atlantic Green Zone Project

Key recommendations

- The Agency recommends that the Regional Groups urge project promoters to provide accurate, up-to-date and, to the maximum extent possible, complete information to allow the appropriate monitoring of the projects, and thus the right conclusions to be drawn.
- The Agency recommends project promoters more carefully to draw up an implementation plan for PCIs pursuant to Article 5(1) of Regulation (EU) No 347/2013.
- The integrity and consistency of the data provided by promoters throughout the PCI process, from TYNDP drafting to PCI selection and PCI monitoring, need to be further improved, including further harmonisation of data set and definitions of indicators and parameters.

2.2 Overview of the electricity PCIs

2.2.1 General statistics of the electricity PCIs

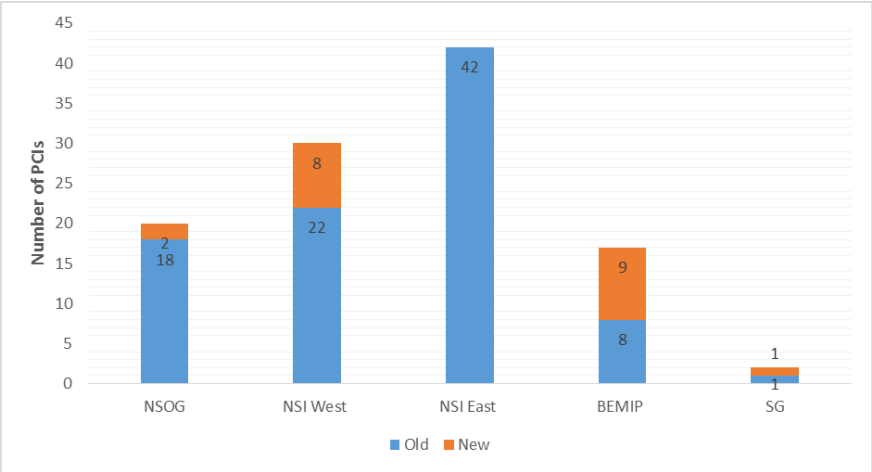
a. Categories of projects

Out of the total 111 electricity PCIs, 110 PCIs (equal to 111 projects) are covered by the report[25]. Out of them, **100 are transmission projects, 2 are smart grid projects and 9 are storage projects.** Out of the transmission projects, 46 are interconnectors and 54 are internal projects.

As Figure 1 below shows, the infrastructure priority corridor "North South electricity interconnections in Central Eastern and South Eastern Europe" (NSI East) has the highest number of projects, followed by "North South electricity interconnections in Western Europe" (NSI West), "Northern Seas offshore grid" (NSOG) and "Baltic Energy Market Interconnection Plan" (BEMIP). Most of the "new" projects, which were added to the 2015 PCI list, belong to BEMIP (9) and NSI West (8).

[25] PCI 1.10 includes two projects with different project promoters, and for both of them an annual report was submitted. Therefore, the monitoring report covers 110 electricity PCIs consisting of 111 projects.

Figure 1: Breakdown of "old" and "new" projects per priority corridor and thematic area

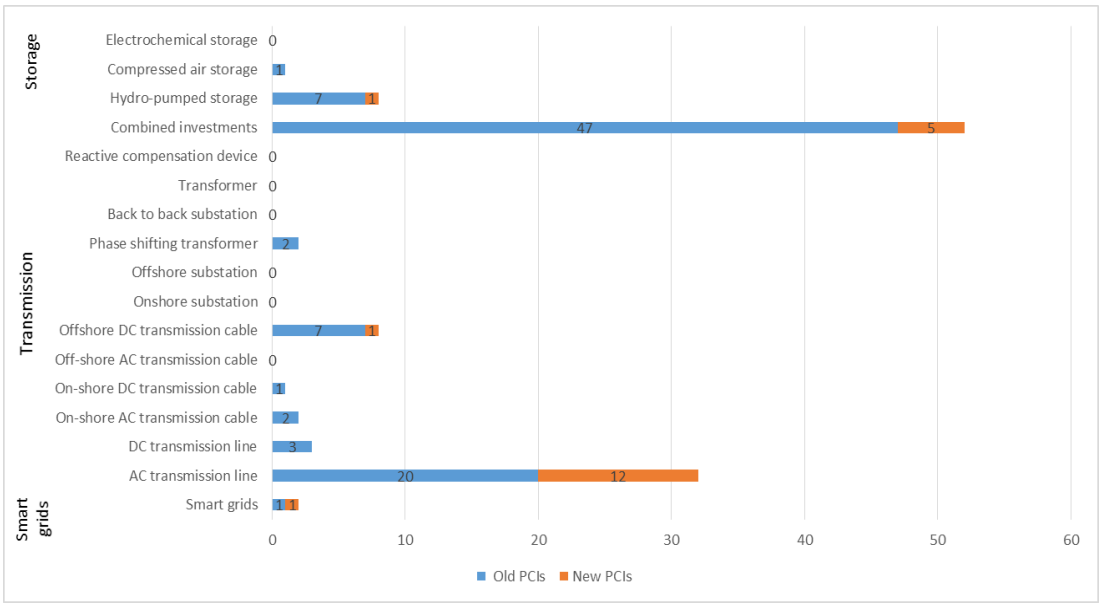


Further to facilitate monitoring and analysis, the promoters of "new" PCIs were asked to identify the technology category which their projects fall into, and the "old" PCI promoters to report any changes to the 2015 report data.

As shown in Figure 2 below, the submitted data reveals that most of the transmission projects fall into the "combined investments" category, i.e. they involve more than one kind of technical elements (52 out of 100 projects). AC transmission lines also represent a significant share, with 32 projects and most of "new" PCIs (12 PCIs or 60% of all 'new' projects).

Of all the storage projects, the vast majority are hydro-pumped storage (8 out of 9 projects).

Figure 2: Number of projects by category for transmission, smart grids, and storage projects

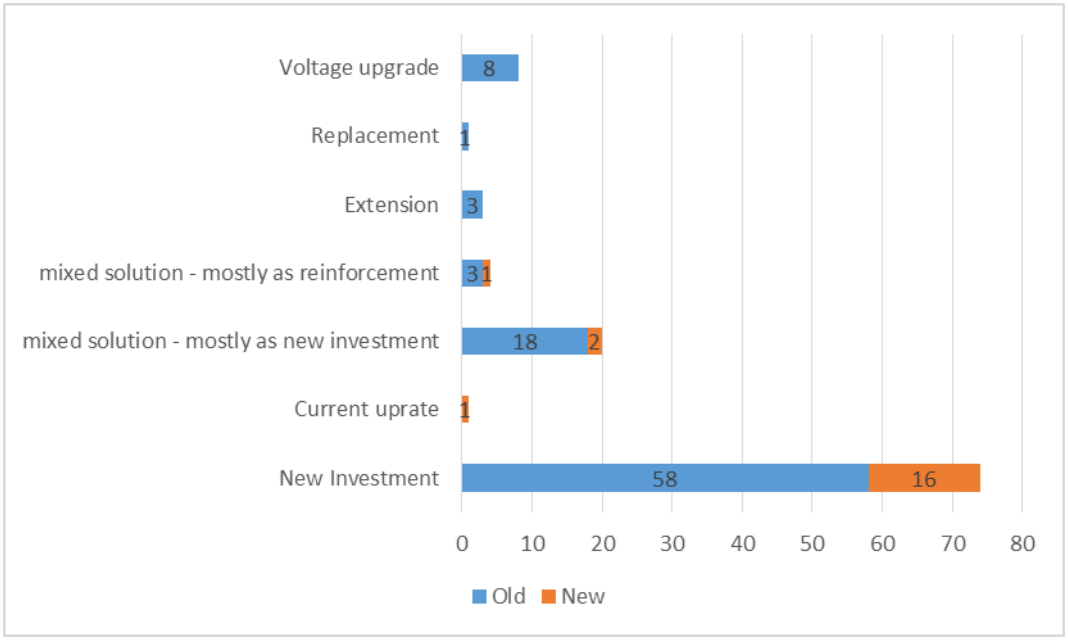


Considering that the "combined investments" category is most frequently a combination of "AC transmission line" with other equipment category[26], Figure 2 above shows that the great majority of projects involve an AC transmission line.

b. Types of projects

Project promoters were also requested to identify whether their project is a new investment or a current uprate, voltage upgrade, extension, replacement or a combination of these. Of all the projects that responded to the questionnaire, **94 (85%) are considered as new investments, while 8 (7%) are voltage upgrades.** All the other project types mentioned above are together represented by less than 8% of the projects. Most of the projects added in the 2015 PCI list belong to the type of "new investments" (16 or 80% of "new" 'projects). The full breakdown is illustrated in Figure 3 below.

Figure 3: Number of "old" and "new" projects by type



c. Alterations in technical characteristics

Based on the project promoters' annual reports, only 20 (18%) projects (all of them transmission projects) experienced alterations of their technical characteristics.

For the projects that reported alterations, most are due to changes in substation characteristics (6 projects), followed by changes in the line length, route or location (3), whilst all the remaining reasons were reported only in one or two cases.

[26] Four "new" PCIs that responded to this question are all "AC transmission line" projects in a combination with one or more of the following equipment categories: DC transmission line, On-shore AC transmission cable, On-shore DC transmission cable, Off-shore DC transmission cable and On-shore substation.

Three "old" PCIs have reported a different category this year; one project has moved from "combined investment" to "AC transmission line", and two are now categorised as "combined investments".

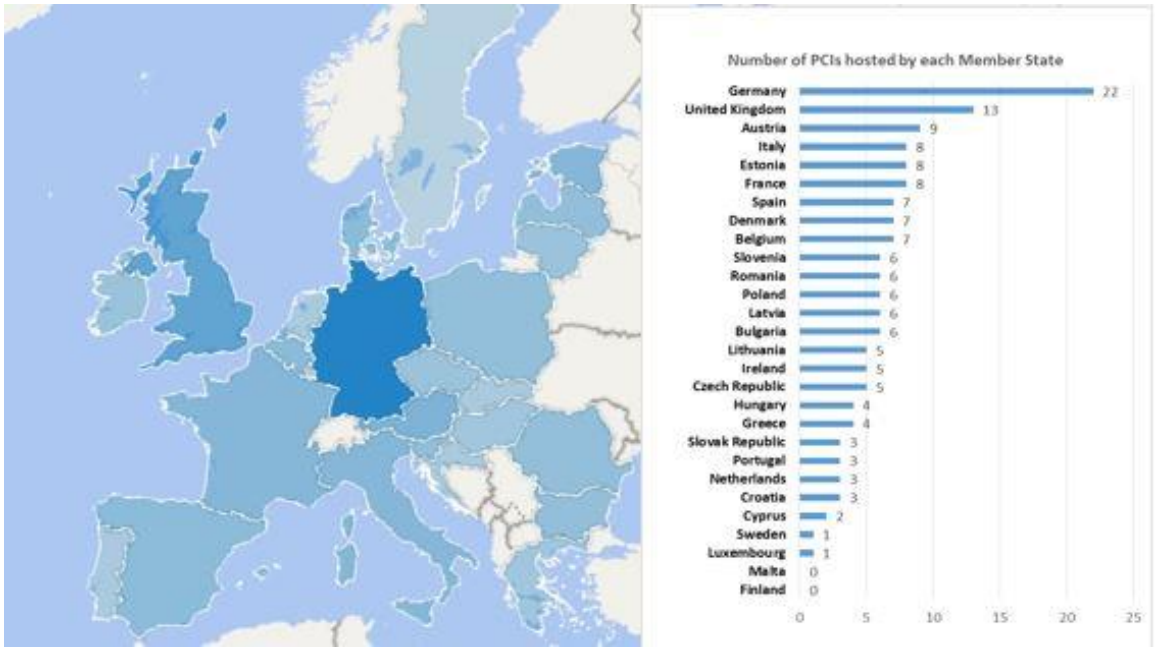
2.2.2 Visualisation of the EU Member States hosting PCIs

The geographical distribution of the 110 evaluated electricity PCIs per hosting EU Member States is presented in Figure 4. The respective figures for each Member State also include those PCIs which cross their water (i.e. by an underwater cable). All Member States, with the exception of Finland and Malta, host at least one PCI on their territory. Beyond EU Member States, also Iceland, Israel, Montenegro, Norway, Serbia and Switzerland were reported as hosting some PCIs[27].

Among transmission projects, Germany hosts the highest number of PCIs (21 transmission PCIs, including 12 interconnectors and 9 internal lines), followed by the United Kingdom (11 transmission PCIs, including 10 interconnectors and one internal line). France and Italy each hosts 8 transmission PCIs and they are all interconnectors. The remaining Member States host 7 or less transmission PCIs.

Out of the 9 storage PCIs, three are located in Austria, while one storage PCI is planned in each of Bulgaria, Estonia, Germany, Greece, Lithuania and the United Kingdom. One of the two smart grid projects is in Ireland and the United Kingdom/Northern Ireland, the other is located in Slovenia and Croatia.

Figure 4: Number of PCIs per hosting Member State



[27] Norway and Switzerland host 2 PCIs, while the rest of the listed non-EU Member State countries host one PCI each, all of them are interconnectors.

2.2.3 Presence of the PCIs in the TYNDP, RIPs and NDPs

All but one transmission project are included in the ENTSO-E TYNDP 2014 and in the Regional Investment Plans 2014 (RIPs 2014)[28].

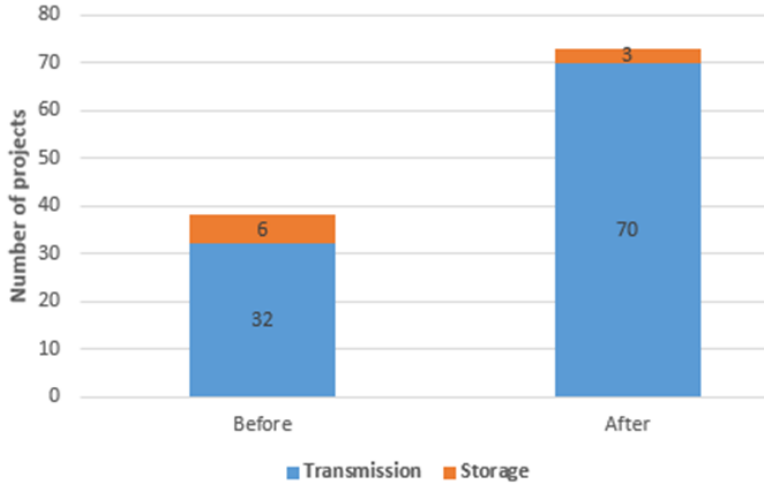
Regarding the inclusion in the NDPs, project promoters annual reports indicates that **14 (13%) out of 111 projects do not appear in any NDP**. Out of those 14 projects, 11 are "old" (6 transmission, 4 storage and 1 smart grid) and 3 are "new" projects (2 transmission and 1 smart grid).

A total of **29 of those PCIs hosted by more than one country were reported as being included in only one MS's NDP**. For further detail, please refer to Annex III: PCIs not included in the ENTSO-E TYNDP 2014, Regional Investment Plans, and National Network Development Plans – electricity.

2.2.4 Start of the permitting – status under Regulation (EU) No 347/2013

Regulation (EU) No 347/2013 intends to facilitate the timely implementation of PCIs, among others, with the use of a streamlined and improved permit granting process, which is applicable to those PCIs for which a project promoter submitted an application pursuant to Article 10(1) after 16 November 2013. For PCIs which submitted the application before this date the provisions of Chapter III ("Permit Granting and Public Participation") shall not apply. The numbers of PCIs for which applications were submitted before and after 16 November 2013 are shown in Figure 5. Two thirds of all projects (73 PCIs) have submitted or intend to submit an application for permit granting after 16 November 2013 or intend to submit an application in the future, including almost all new projects (18 PCIs). Only two "new" projects (one storage and one transmission) submitted an application before that date.

Figure 5: Number of transmission and storage projects depending whether they submitted or expect to submit an application before or after 16 November 2013



[28] The transmission project not included is PCI 2.27: Capacity increase between Spain and France (generic project) in NSI West.

2.2.5 Expected increase of interconnection transfer capacity

None of the "old" transmission PCIs reported a change in the expected cross-border grid transfer capability (GTC)[29] on any of the borders since 31 January 2015. Out of the 18 "new" transmission PCIs, 14 (78%) reported an increase in the expected GTC at least at one border. Of those, 10 are internal lines or groups of internal lines, 3 are interconnectors and one indicates a generic capacity increase between two Member States (France and Spain).

Twelve projects regarding internal lines (9 "old" and 3 "new" projects) reported an expected cross-border capacity increase lower than 500MW[30]. However, when comparing the reported cross-border capacity increase of the other PCIs with the TYNDP 2014 data, it turns out that, in a number of cases, the reported cross-border capacity increase did not refer to a single PCI, but to a cluster of investment items of the TYNDP 2014, in which the PCI was included. Since, in many cases, the grouping of investment items in the 2015 PCI list is different from the one in the TYNDP 2014, and there is no clear methodology provided in the TYNDP 2014 to calculate the contribution of an investment item to the GTC increase of a cluster, no conclusion can be drawn on the total number of internal projects which do not meet the PCI criteria of 500MW minimum GTC increase as required by Regulation (EU) No 347/2013.

The expected increase in cross-border GTC for transmission projects, per project and border as provided by the project promoters, is presented in Annex IV: Expected increase of cross-border GTC – electricity.

2.2.6 Overview of the financial public support to the projects

This section provides an overview of the project promoters' applications or their intention to apply for financial support and information on funds already granted to the projects. The statistics in this section cover 108 projects which replied to the relevant questions.

As shown in Figure 6, 35 (32%) out of 108 projects applied for the Connecting Europe Facility (CEF) funds in the past.

Regarding future application, the majority of the projects do not intend to apply for CEF, neither in 2016 nor in 2017, as shown in Figure 7 below. 15% of the project promoters responded that they intend to apply for CEF grants in 2016 and 10% in 2017. In each of these years, only 6 projects (5%) expressed intention to apply for grants for both works and studies or works only.

A large share of the respondents (32% and 62% respectively for 2016 and 2017) replied that no decision is made yet on whether they will apply for the CEF funds.

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[29] In this report, the term "grid transfer capability" (GTC) is aligned with the definition in ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects (5 February 2015), but pertains only to cross-border GTC increase.

[30] Pursuant to Article 4(1) of Regulation (EU) No 347/2013, an electricity transmission PCI which is located on the territory of one Member State is considered to have a significant cross-border impact, if it increases the grid transfer capacity, or the capacity available for commercial flows at the border of that Member State with one or several other Member States, or at any other relevant cross-section of the same transmission corridor by at least 500 MW compared to the situation without commissioning of this PCI.

Figure 6: Applications to Connecting Europe Facility

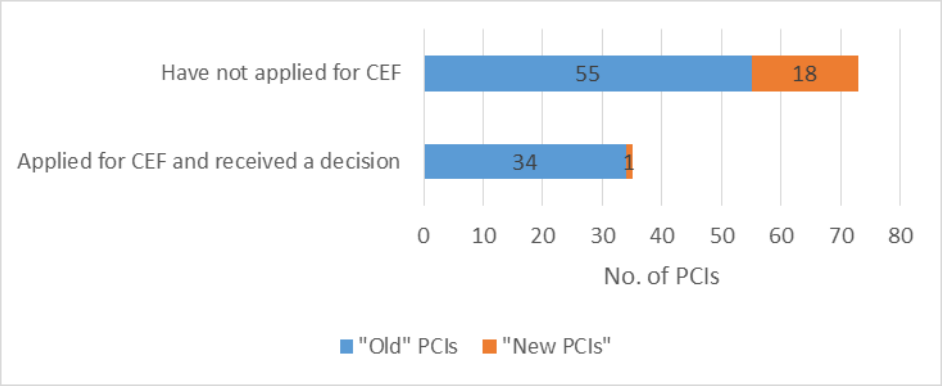
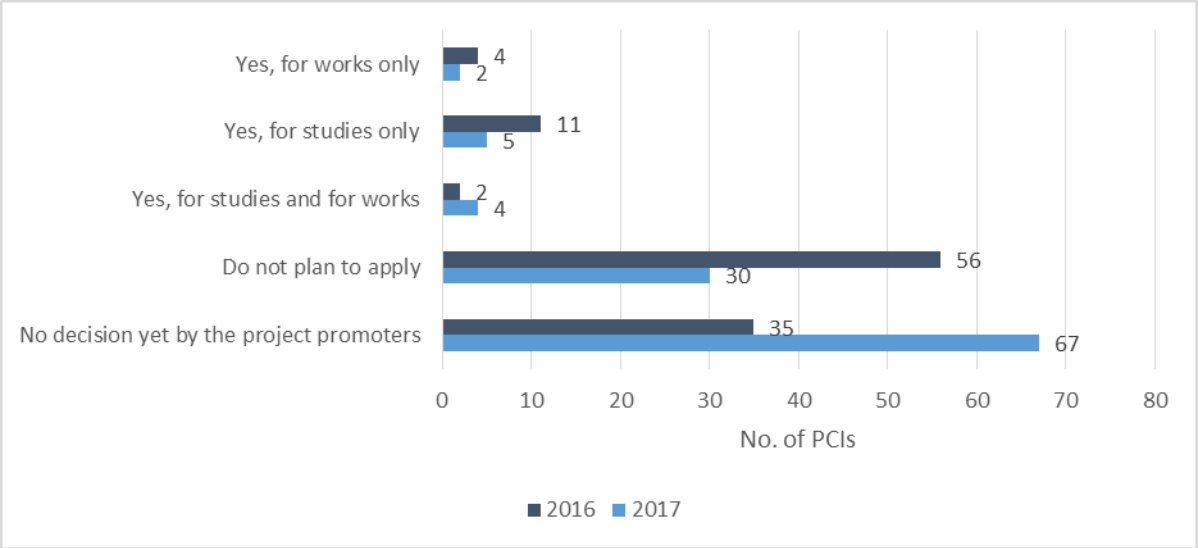


Figure 7: Intentions to apply for CEF support in 2016 and 2017



Regarding financial support from funding programmes other than CEF at European, regional or national level, most PCIs (75%) responded that they did not receive any support for any part or section of the PCI, and 22 PCIs reported that they received funds that amount to €419 million in total. For details on the funds received from each programme, please refer to Annex V: Further data analysis.

Key findings

- The monitoring activity covers 111 projects (equal to 110 PCIs) - 81 of them were already included in the first list of PCIs, and 20 were included for the first time in the second Union list of PCIs.
- 100 projects are transmission projects, 2 are smart grids projects and 9 are storage projects. Of the transmission projects, 46 are interconnectors and 54 are internal projects and the vast majority of them are considered as new investments.
- NSI East priority corridor has the largest number of projects, followed by NSI West, NSOG and BEMIP. However, most of the 'new' projects, which were added to the Union list of PCIs in 2015, belong to BEMIP and NSI West.
- 1 transmission project is neither included in the ENTSO-E TYNDP 2014 nor in the Regional Investment Plans 2014, and 43 projects are not included in the NDPs of one or more hosting Member States.
- 12 internal transmission projects reported an expected increase of cross-border GTC lower than 500MW, and, for this reason, these projects seem not to meet the criteria to be granted a PCI status. Furthermore, many projects reported an expected increase of cross-border GTC values not for the single PCI, but for a cluster of projects included in the TYNDP 2014.
- Most promoters are undecided as to whether to apply for public financial support (in 2016 and 2017), and most of those who have made a decision, do not plan to apply.

Key recommendations

- The Agency recommends that project promoters, NRAs and competent authorities ensure that PCIs are properly included in all relevant NDPs with a due level of priority. The Agency also notes that the PCI list contains competing, potentially competing, complementary as well as generic projects the implementation of which has not been confirmed yet. The Agency proposes that this issue be adequately considered.
- The Agency recommends that clusters of investment items in the future TYNDPs and Union list of PCIs are aligned as much as possible, and that appropriate rules for "de-clustering" GTC and benefit contributions of complementary projects are in place, so that project promoters provide the expected increase of cross-border GTC and benefits at a project level and not for the whole TYNDP cluster.

2.3 PCI implementation status and progress

2.3.1 Current implementation status

In order to identify and assess the projects' progress, promoters were required to indicate in which of the following status categories their respective PCIs belong:

- under consideration

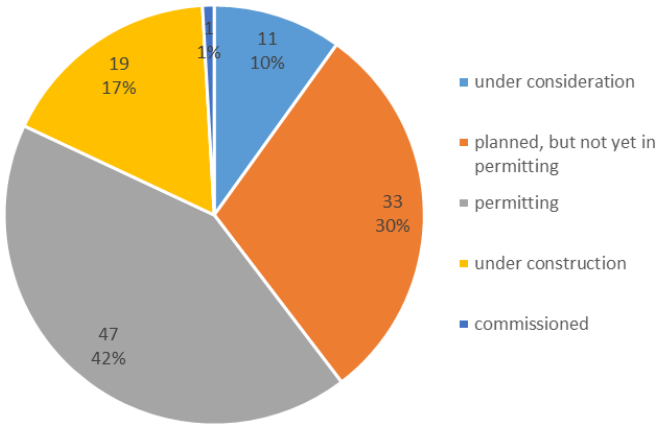
- planned, but not yet in permitting
- permitting
- under construction
- commissioned
- cancelled

The above classification is not fully in line with the status categories used by ENTSO-E for the TYNDP 2014, but ensures a clear distinction between projects which have already reached the permitting phase and those which have not yet done it. This distinction is essential for stakeholders to draw the correct conclusions on any delay regarding the progress of the projects. In order to make the status phases comparable for the "new" PCIs, the Agency considers the TYNDP 2014 status "design & permitting" as "permitting", and "planned" as "planned but not yet in permitting."

a. Overview

An overview of the implementation status as of 31 January 2016 for all PCIs is presented in Figure 8. One PCI has been commissioned since 31 January 2015 and no cancellation has been reported within this one-year period. 60% of the projects are beyond the planning phase (most of them are in "permitting"), while 30% of the projects are in the "planned, but not yet in permitting" phase and 10% are "under consideration".

Figure 8: Current implementation status for all PCIs



The implementation status overview per category and by "old" and "new" projects is shown, respectively, in Figure 9 and Figure 10 below. Figure 9 shows that almost half of the "old" projects are in the "permitting" stage (48%). As regards the "new" PCIs, 40% are in the

"planned but not yet permitting" stage, while 30% are "under consideration". An equal number of projects is "under construction" or in "permitting" (15% each).

Figure 9: Current implementation status by category for "old" and "new" PCIs

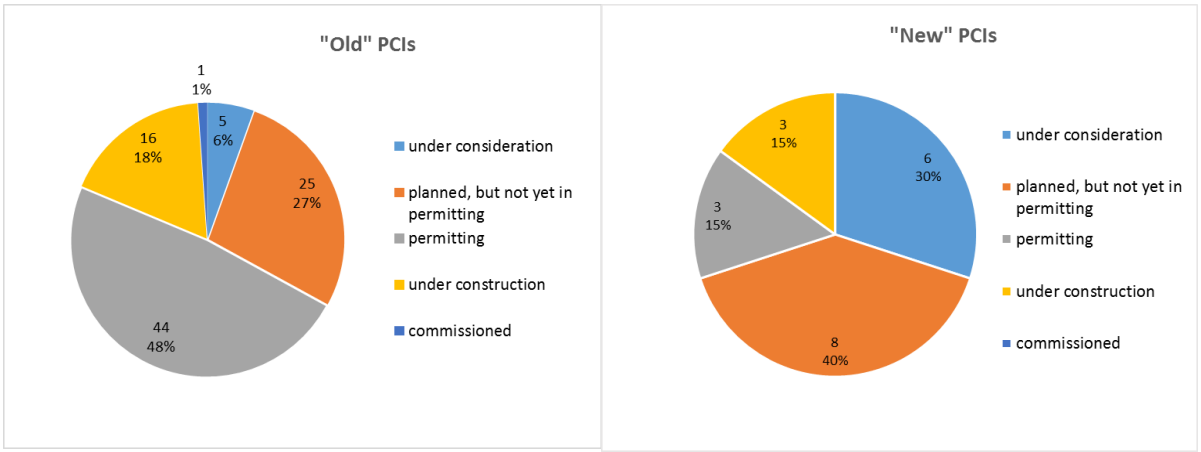
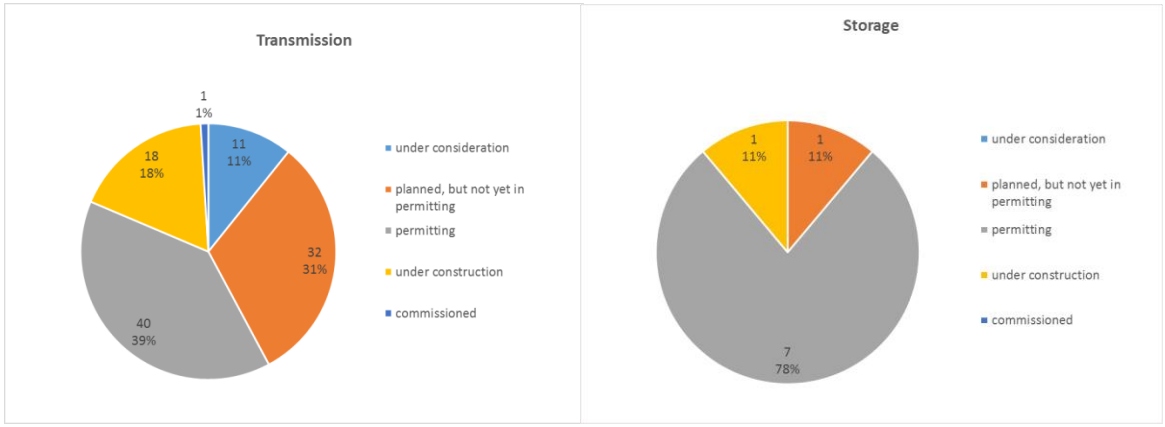


Figure 10 depicts the implementation status overview of the transmission and storage projects, regardless of when they were awarded the PCI status for the first time. It can be seen that for transmission PCIs, most projects are in the "permitting" (39%) or "planned but not yet in permitting" (31%) stage and less projects are "under construction" (18%) and "under consideration" (11%). The vast majority of storage PCIs is in the "permitting" phase (78%), whilst "planned, but not yet in permitting" and "under construction" are equally represented (11% each).

Figure 10: Current implementation status by category for transmission and storage PCIs

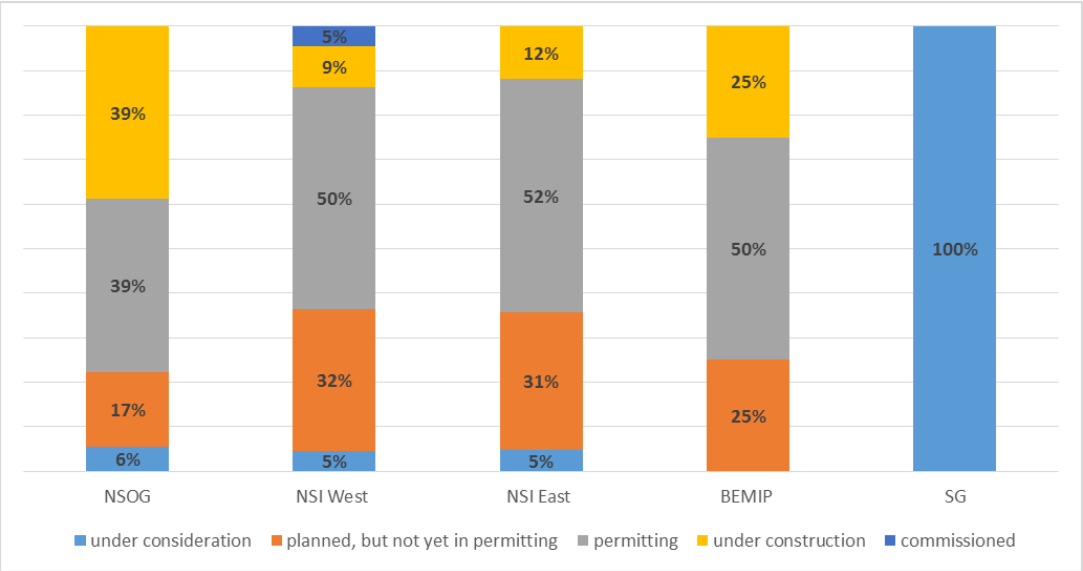


b. Current implementation status per priority corridor

Figure 11 below compares the implementation status of projects belonging to different priority corridors. It shows that the NSOG corridor is the most advanced, with 39% of PCIs being "under construction", whilst the NSI WEST and NSI East corridors seems to be the less advanced with 36-37% of the PCIs being in "under consideration" or "planned, but not yet in

permitting" stages. Both smart grid projects are reported as "under consideration".

Figure 11: Breakdown of the implementation status of the reported PCIs by priority corridor and thematic area



However, the current implementation status of a project does not fully reflect its implementation progress, as the initial status of the project (i.e. when the project was labelled as PCI) is not captured. This issue, as well as the progress since the last PCI monitoring report, is further analysed below.

2.3.2 Development of the PCIs implementation status

In this section, current implementation status of projects is compared to the project status in 2015 (for "old" PCIs, the status indicated in 2015 annual report is considered, while for "new" PCIs the status indicated in TYNDP 2014 is used)[31]. Figure 12 shows the implementation status progress during the last year (i.e. January 2015 - January 2016). The Figure depicts that:

- Of the PCIs that were under consideration a year ago (19 projects), slightly less than half have remained in that status (47%), whilst the same amount of projects (47%) have progressed to the next phase, i.e. "planned but not yet in permitting", and one project has progressed by two phases, i.e. to "permitting".
- Of the PCIs that were "planned but not yet in permitting" (32 projects), 22 projects (69%) have not changed status, whilst 8 (25%) have progressed to the "permitting"

[31] In the case of 3 new PCIs, the status in the ENTSO-E TYNDP was not available. More specifically, 2 PCIs are not part of the ENTSO-E TYNDP 2014, and in one case the PCI is a storage project and the status data is not provided in the TYNDP 2014 for storage projects. Therefore, the sample of projects for this section is 108.

phase and one to the "under construction" phase. In one case, the project promoters reported backward progress (regression) comparing to last year's data.

- Of the PCIs that were in the "permitting" stage before (46 projects), 38 (83%) have remained in that phase and 7 (15%) have progressed to construction. For the remaining one project, regression was reported.
- PCIs that were "under construction" before (11 projects) have remained under that status except one PCI which has been commissioned.

In the two cases for which the project promoters reported backward progress comparing to last year's data, a detailed review of the respective reports found that no actual change of status took place[32].

Figure 12: Implementation status progress through main stages 2015-2016

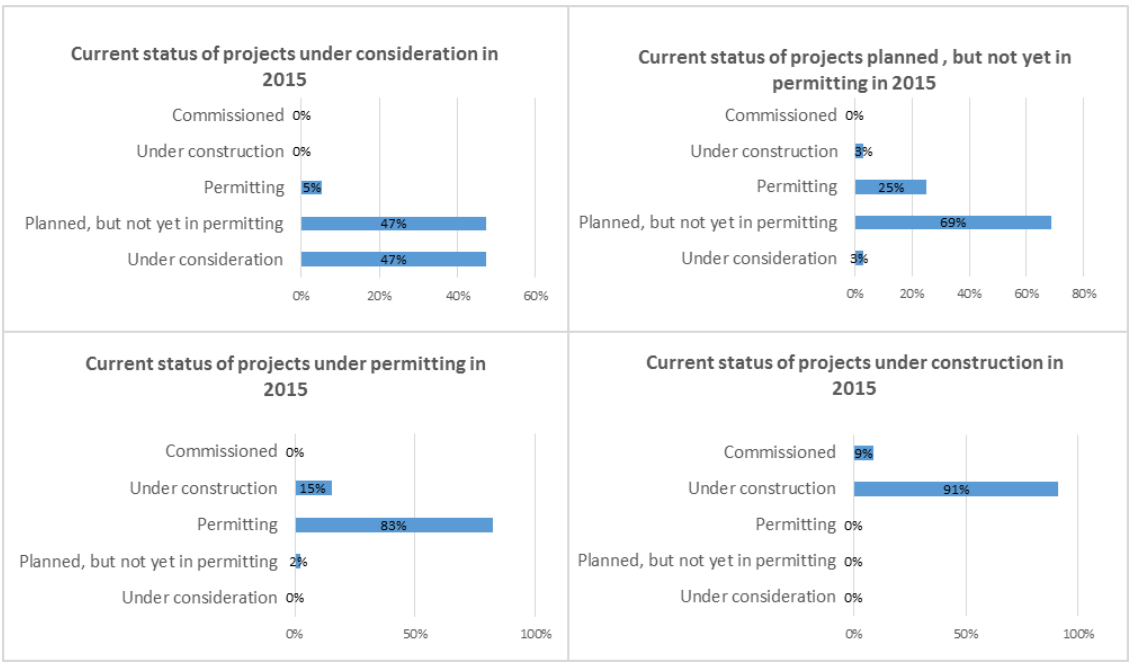
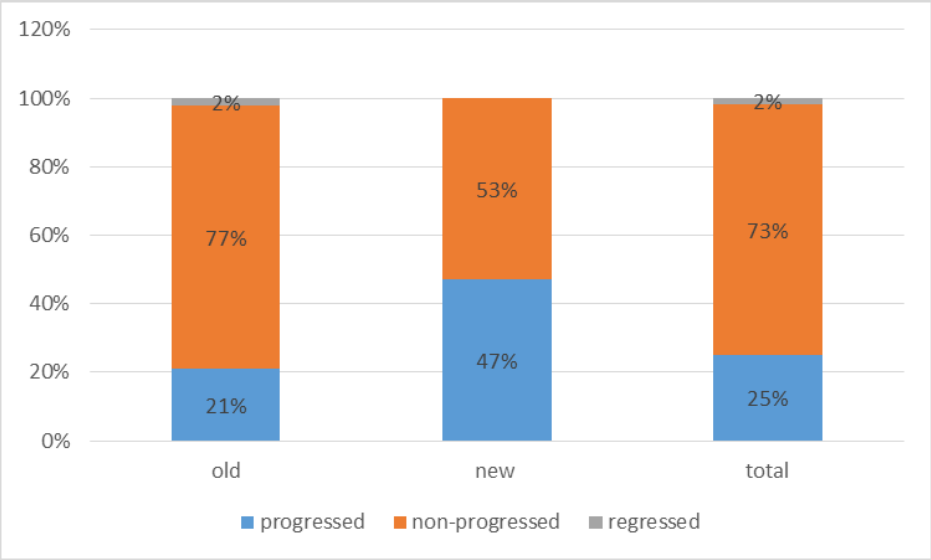


Figure 13 below shows the percentage of projects that have remained the same, progressed or regressed for all PCIs and separately for "old" and "new" PCIs. Overall, it can be concluded that a large majority of PCIs (79, i.e. 73%) have remained under the same progress status, whilst only 25% have progressed to the next phase. This holds true for the "old" PCIs – 77% of "old" PCIs have retained the same status, while only 21% have seen progress in their

[32] In these two cases, the project promoters reported less advanced status of the project in 2016 compared to 2015, which would constitute a regression of the project status (in one instance the PCI was reported to be in "planned, but not yet in permitting phase" in 2015 and "under consideration" phase in 2016, and in the other instance, the PCI was reported to be in "planned, but not yet in permitting" phase in 2016 and in "permitting" phase in 2015). Based on a detailed review of the respective reports, it seems that in both cases - in contrast to this year's status – the indicated past year status is inconsistent with the indicated implementation plan, suggesting that last year erroneous status data was provided and there is no actual backward progress of any PCIs.

status. Regarding "new" PCIs, almost half of the PCIs have progressed (47%), while the other half retained the same status (53%).

Figure 13: Project status progress through main stages 2015-2016



2.3.3 Progress of works

In order to better understand the annual progress of projects, project promoters were requested to report the works performed between January 2015 and January 2016. However, it seems that, in many cases, project promoters reported the overall works performed since the start of the projects' implementation[33]. For 26 projects (23%), the responsive project promoters did not report any works performed.

Regarding projects "under consideration", only 4 out of the 11 reported works, and, in most of the cases, the preparation of a study was indicated.

For projects which are in the "planned, but not yet in permitting" phase, 29 out of the 33 projects reported on the works performed. The works which were most frequently reported are the technical feasibility studies, followed by socio-economic feasibility studies, environmental studies, identification of sites and alternative solutions and spatial planning. Some project promoters also reported negotiations with landowners, public consultations and preparation of permitting files. In a few cases, detailed technical design and tendering have been also carried out.

Among the projects which are in the "permitting" phase and reported works performed (38 out of 47), the most frequently reported works are preparation of permitting files as well as negotiations with landowners and land acquisition. Further, identification of alternative

[33] In many cases, all major works (from studies until construction) were reported to be carried out in the last year, while the total duration of the projects' implementation is in those cases several years.

technical solutions and preparation of studies were reported in a number of cases. Comparing to projects in the "planned, but not yet in permitting" phase, there is a higher number of works in detailed technical design and tendering. In addition, in a few cases, preparatory works for construction or construction works were reported as well[34].

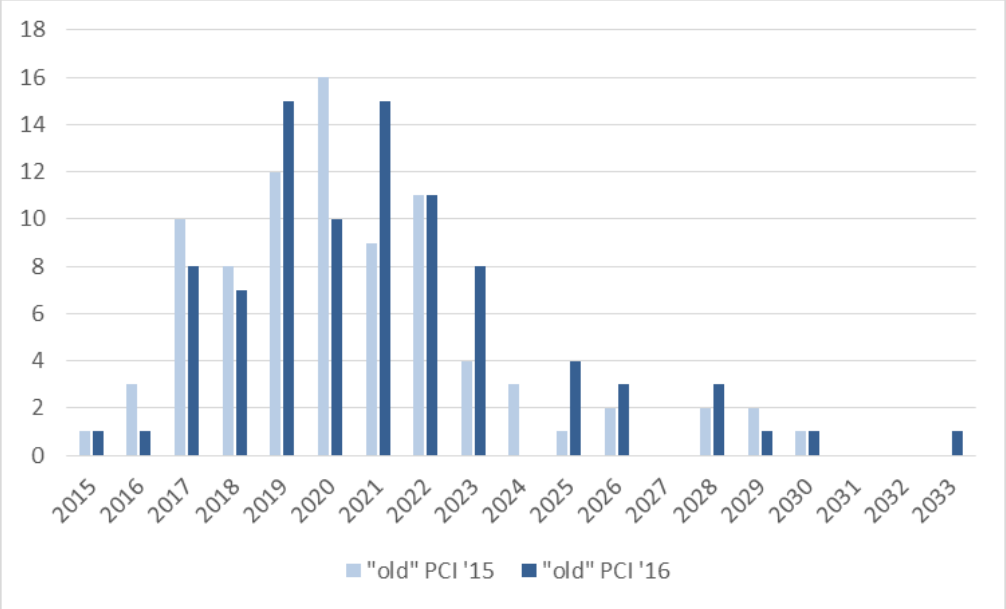
For projects "under construction", 13 out of the 19 projects reported on the works performed. The reported works pertain to various categories of activities, from studies to construction.

One project was commissioned during the past year.

2.3.4 Expected commissioning dates

Regarding "old" PCIs, the number of projects that are expected[35] to be commissioned per each year is illustrated in Figure 14. A peak of 15 projects to be commissioned is planned for 2019 and 2021, while the last project to be commissioned is planned for 2033. 37% of projects[36] have a different commissioning date than the one reported in 2015.

Figure 14: Number of "old" PCIs to be commissioned per year (estimated in 2015 and 2016)



Regarding "new" PCIs, the number of projects that are expected to be commissioned per each year is illustrated in Figure 15. The most frequent year of commissioning is 2023 (with 5 projects), while the last project to be commissioned is planned for 2027.

[34] For PCIs which include several sections, the implementation status of the least advanced section was requested to be reported. This explains why construction works were carried out on projects which were reported as not being "under construction".

[35] For the year of 2015, the indicated commissioning date is an actual date.

[36] This percentage is based on 84 projects for which commissioning dates were reported for both 2015 and 2016.

Figure 15: Number of "new" PCIs to be commissioned per year (estimated in 2016)

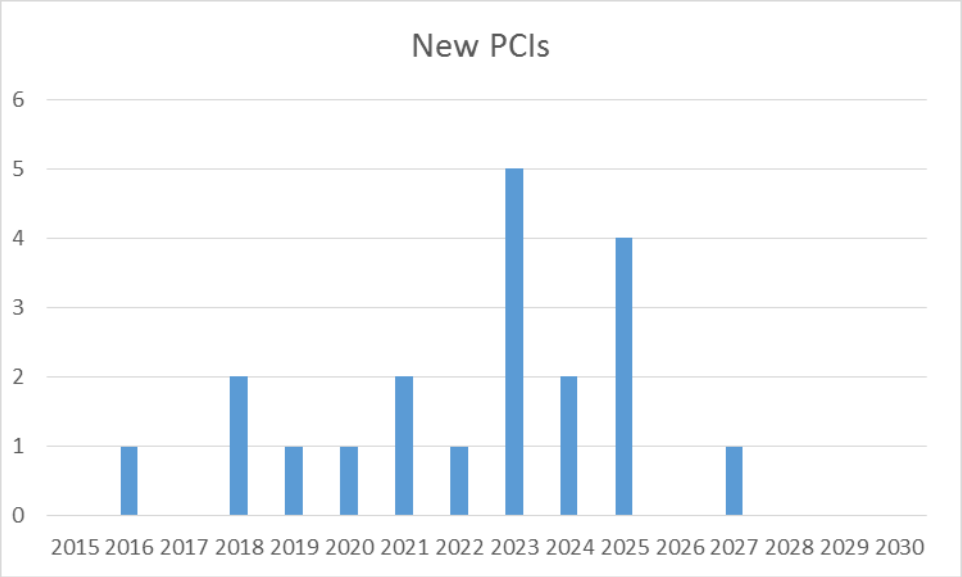
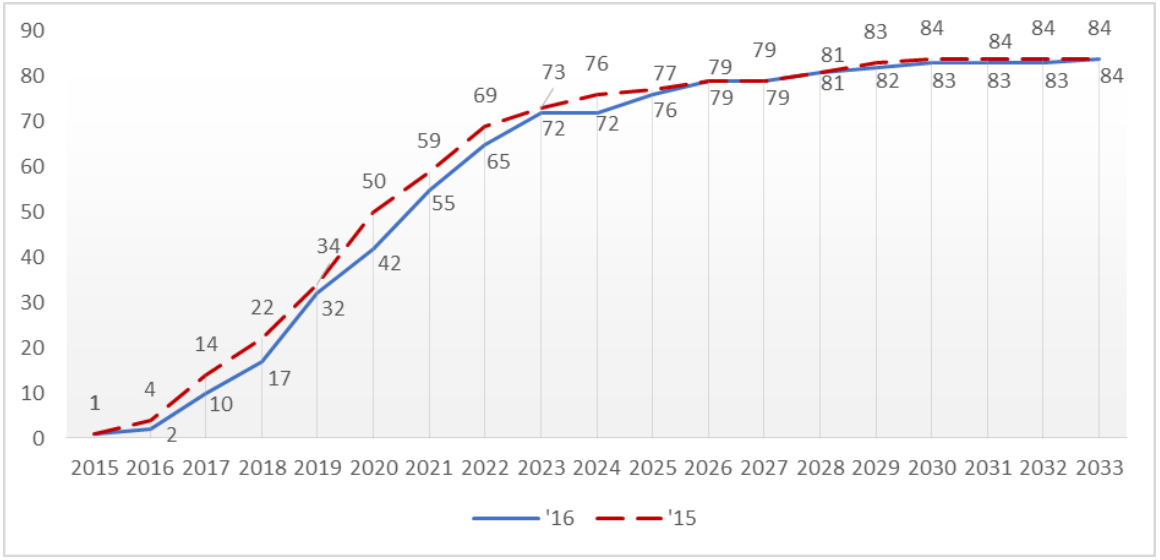


Figure 16 illustrates that commissioning tends to be postponed: for any given year until 2026, the number of projects to be commissioned according to the 2016 data are less than the number calculated according to the data provided in 2015. For example, 50 projects were expected to be commissioned by the year 2020 according to 2015 data, while currently only 42 projects are expected to be commissioned by the same year. It is noteworthy mentioning that out of the 31 projects which reported a different commissioning date in 2016 compared to 2015, 29 projects reported a later date, while only 2 an earlier one.

Figure 16: Cumulative number of projects to be commissioned per year

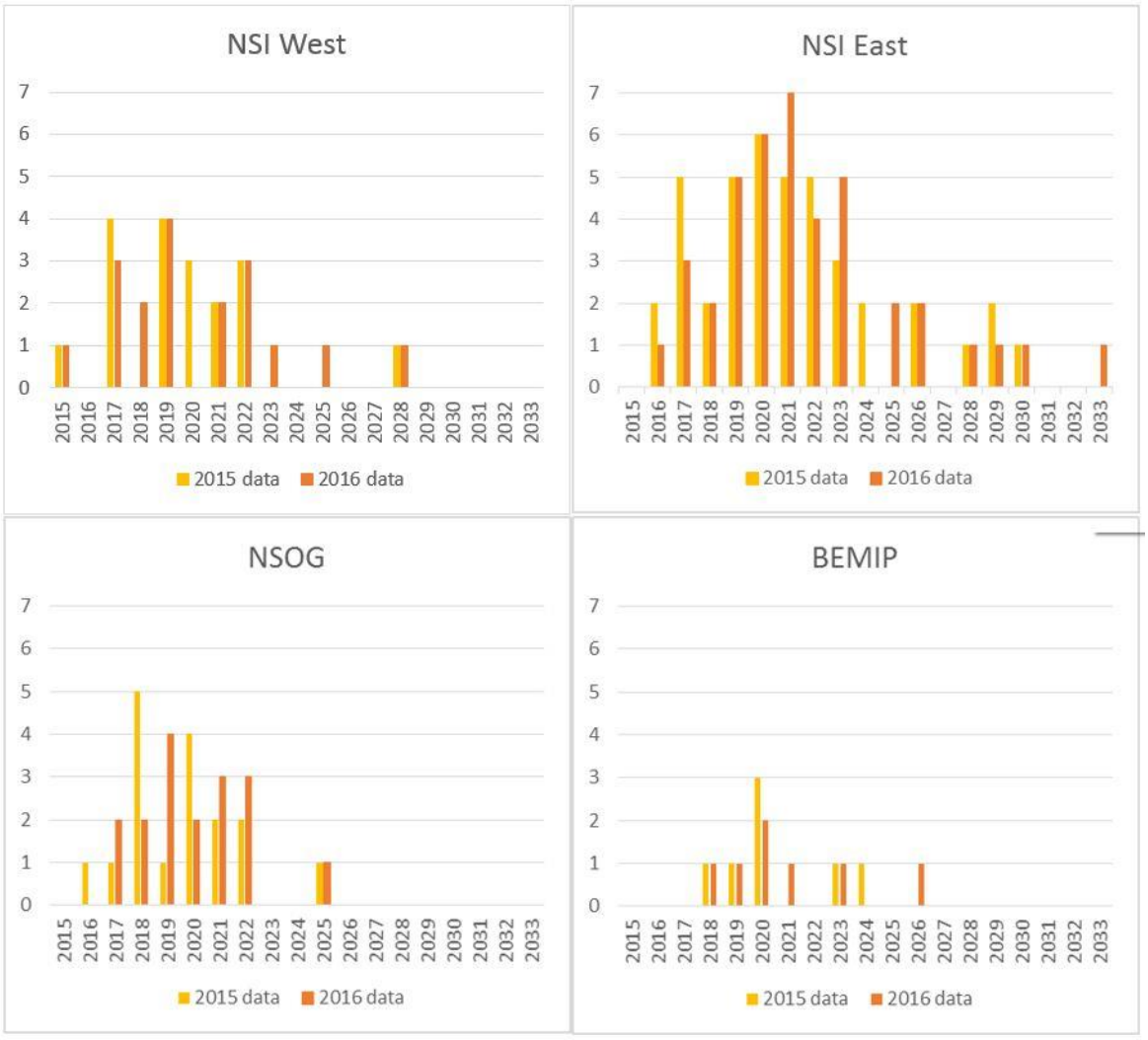


(*) Only 84 projects for which both 2015 and 2016 expected commissioning dates were available were taken into consideration

For 2 projects, the project promoters did not report a commissioning date (see Annex VII: PCI specific information – electricity for the full list). This lack of date may be a signal of strong uncertainty on the projects. It should be carefully considered on a case-by-case basis whether such projects should remain in the PCI list.

Figure 17 shows the number of projects expected to be commissioned per year, as of 2016 compared to 2015, in the 4 corridors for "old" PCIs only.

Figure 17: Expected number of projects to be commissioned by year and priority corridor in 2016 and in 2015 for "old" transmission PCIs



(*) *83 projects which correspond to the 4 priority corridors, and for which expected commissioning dates were reported for both 2015 and 2016 are taken into consideration.*

2.3.5 Implementation of the PCIs' schedules

In this section, the progress of the projects is analysed compared to last year. For "old" PCIs, current progress (i.e. as of 31 January 2016) is compared to the planning as of 31 January 2015, while for "new" PCIs, the current progress is compared to the planning indicated in ENTSO-E TYNDP 2014 (i.e. as of December 2014). As the reference points in both cases are very close, this comparison is referred as "time progress 2015-2016" for the sake of simplicity.

In order to provide an overall picture of the progress of the projects, in some instances the report includes a comparison of the current project schedule and the schedule of summer 2012, but this is possible only for the "old" PCIs[37]. Therefore attention must be drawn to the fact that a different sample is used for the "*time* progress 2015-2016" comparison (the total of projects which submitted an annual report, i.e. 111), and for the comparison to 2012 (data available only for "old" projects, i.e. 91 projects).

The analysis of progress is carried out per project category, status, corridor and type.

A project can be behind its previous schedule due to either delay or rescheduling. For the purpose of the PCI monitoring report, the Agency considers an investment "rescheduled" if it is voluntarily postponed by a promoter as a result of changes like lower demand, less urgent need for an investment due to updated planning data or priority to other transmission solutions, while an investment is "delayed" if it is still needed at the expected date, but cannot be delivered on time due to various external factors like permitting, environmental, legislative reasons, etc.[38].

The Agency noted that in some cases the reasons for delay or rescheduling reported by the project promoters seem to be inconsistent with the reported progress of the project (e.g. the reason provided for delay indicates that the project is rather rescheduled than delayed or vice versa)[39].

a. Time progress statistics

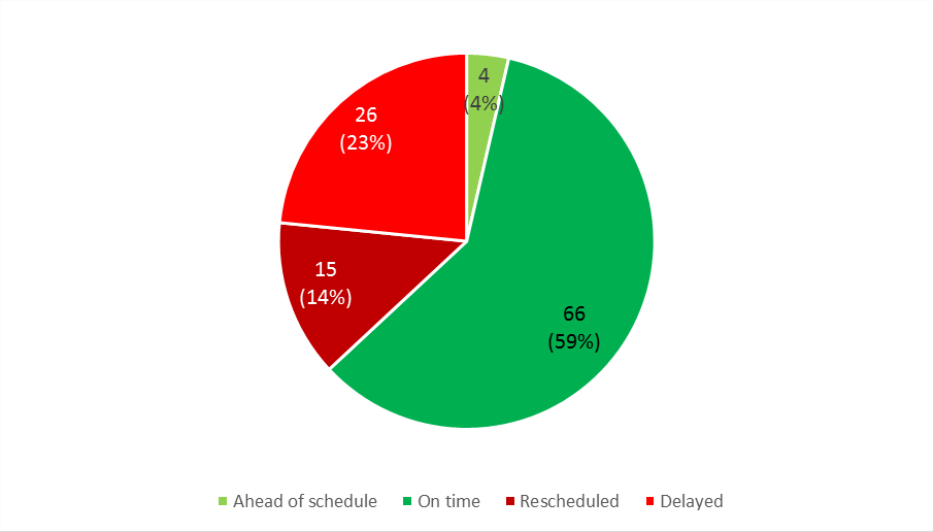
Figure 18 shows that although 63% of the projects managed to keep their 2015 schedule of implementation (59% are on time, and 4% even estimate their commissioning to take place sooner than last year's planning, 23% of the projects are delayed and 14% are rescheduled.

[37] In the 2015 PCI monitoring report, the time progress of the projects was analysed in comparison to the reported expected schedule of implementation as of the summer of 2012.

[38] Cf. Section 5 of the Agency's Opinion No 16/2014.

[39] For the purposes of this report, these projects were re-classified from delayed to rescheduled or from rescheduled to delayed.

Figure 18: PCI time progress 2015-2016



Comparing the progress of "old" and "new" PCIs, as in Figure 19, it is noted that the share of projects which are delayed is about 16 percentage points higher and the share of projects which are rescheduled is 10 percentage points higher for the "old" PCIs than for the "new" ones. Although one could expect that the PCIs which received the PCI label earlier would progress better than the PCIs which received the label later, this is not confirmed by the data provided by the project promoters.

Figure 19: PCI time progress 2015-2016: comparison of "new" and "old" PCIs

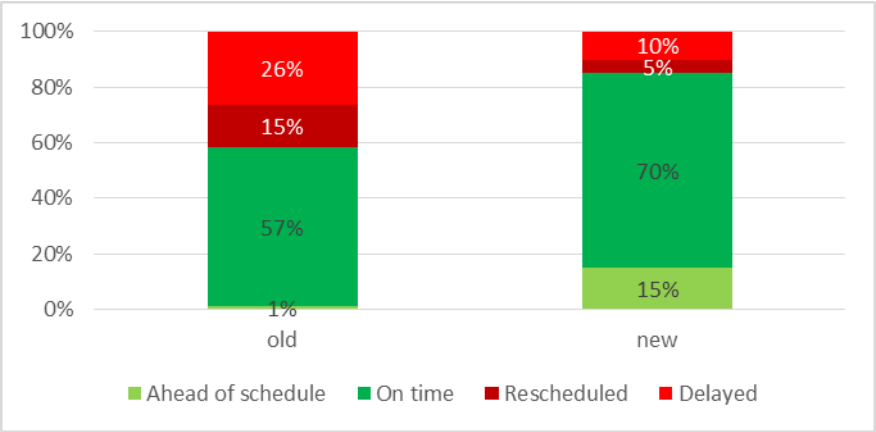


Figure 20 depicts the overall progress of the "old" PCIs compared to the planning of the summer 2012. The statistics show that 44% of the projects encountered delay, 21% are rescheduled, and only 35% are on time or ahead of schedule compared to the summer 2012 planning, which is significantly lower than the share of on-time PCIs in 2015.

Figure 20: PCI progress compared to planning as of summer 2012

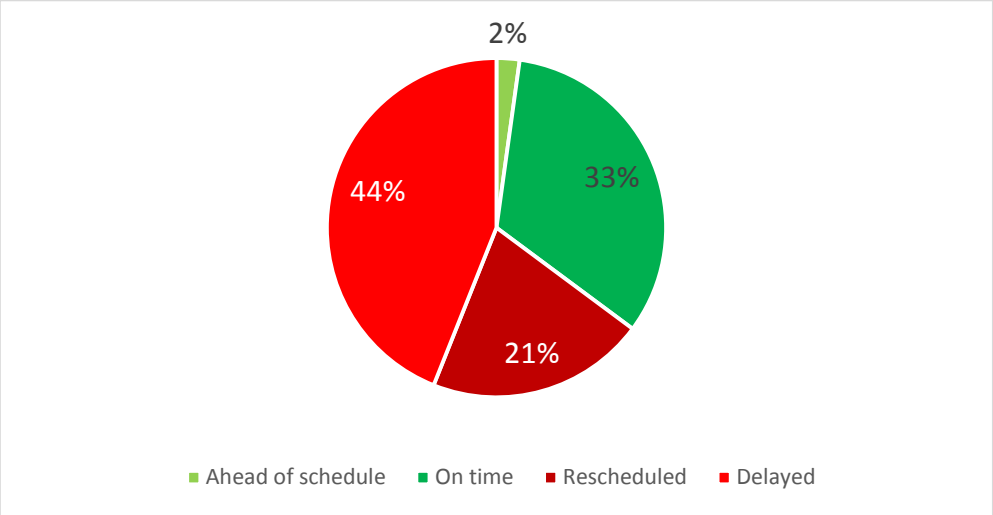
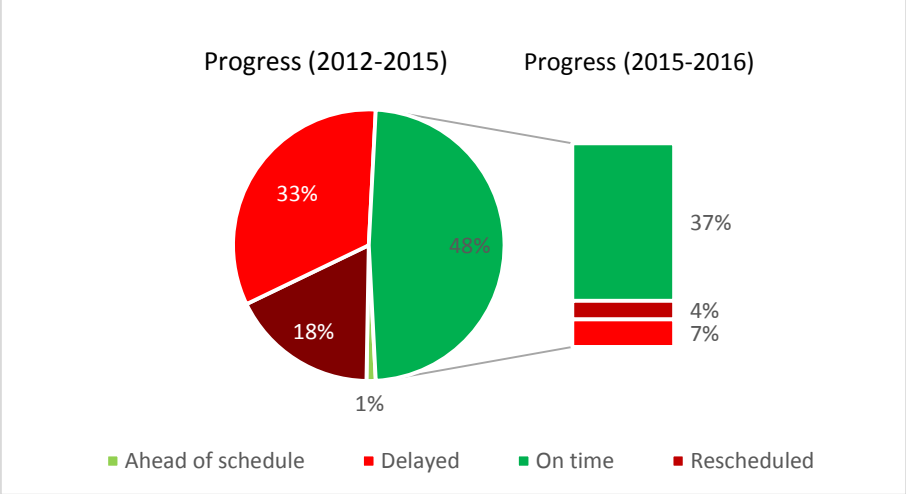


Figure 21 further depicts the progress of "old" PCIs in two phases: from 2012 to 2015 and from 2015 to 2016 (only for the on-time PCIs in 2015) and shows the increase of number of delayed and rescheduled projects over time compared to the initial timing.

Figure 21: Comparison of progress of "old" PCIs 2012-2015 and 2015-2016



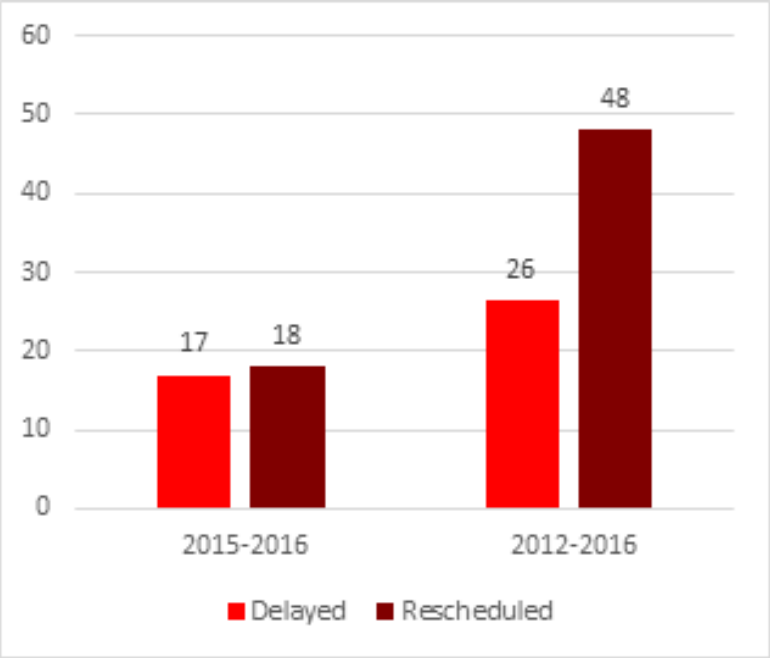
b. Duration of delay and rescheduling

As shown in Figure 22[40], the average duration of delay of projects from 2015 to 2016 is 17 months, and rises up to 26 months if compared to 2012.

The average duration of rescheduling is close to the average duration of delay in the 2015 - 2016 comparison, but with reference to the 2012 planning it increases to 4 years.

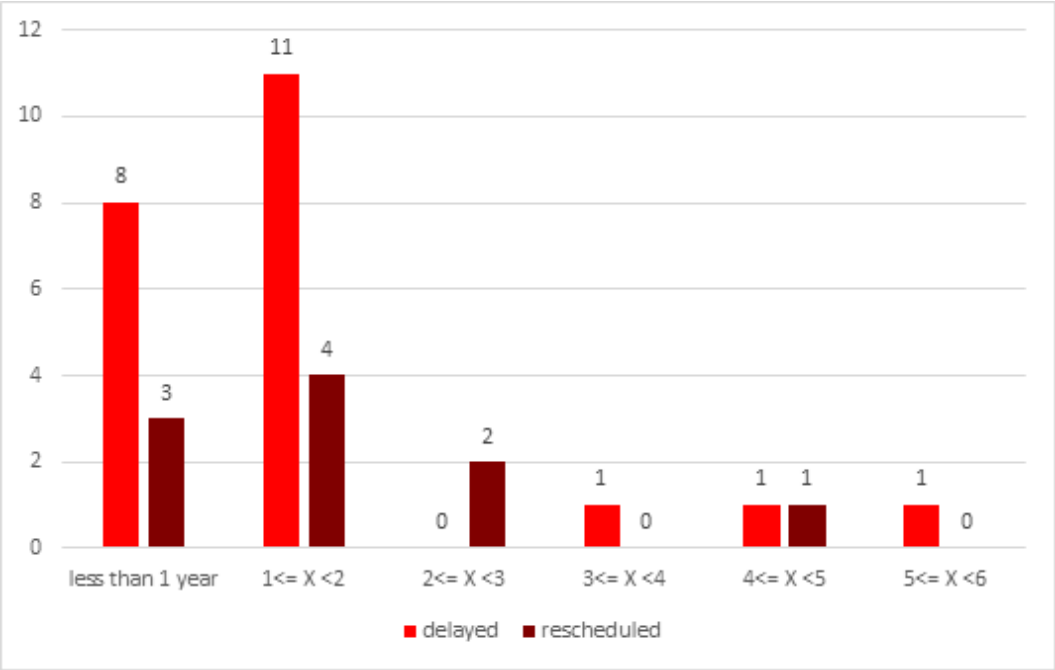
From Figure 23 it can be concluded that half of the delayed projects and 40% of the rescheduled are behind their last year's schedule by more than one year, but less than 2.

Figure 22: Average duration of delay and rescheduling in months (2015-2016 and 2012-2016)



[40] Due to limited data availability, the sample of the projects taken into account for the calculation of duration of delay and rescheduling is smaller, covering 21 delayed and 10 rescheduled projects.

Figure 23: Number of projects delayed or rescheduled (per duration in months, 2015-2016)



c. Projects ahead of schedule and on time

Out of 111 projects, 4 (4%) are ahead of schedule and 66 (59%) are on time compared to their 2015 schedule.

Regarding the trends in the different priority corridors, Figure 24 and Figure 25 show that, similarly to what emerged from the Agency's monitoring last year, projects in BEMIP and NSOG corridors seem to be mostly progressing in line with their previous schedule, as 82% and 75% of the projects, respectively, are on time or ahead of schedule. The NSI East and NSI West corridors are lagging behind as, respectively, 59% and 50% of their projects are progressing in line with their previous schedule or ahead of it. Regarding smart grid projects, one is on time and one is rescheduled.

When examining the performance of different project categories, it can be concluded, as shown in Figure 26, that transmission projects are performing better, as over the last year around 66% of them remained on track or went ahead of schedule, compared to less than 25% of storage projects which remained on track, without any project moving faster than schedule (although the small sample of the storage projects, i.e. 9 projects, must be noted).

Figure 24: PCI progress 2015-2016 by corridor (number of projects)

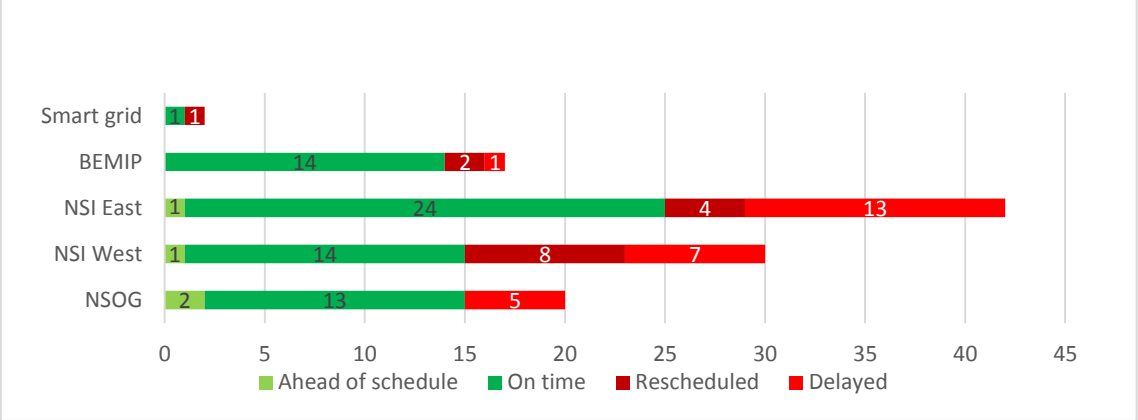


Figure 25: PCI progress 2015-2016 by corridor (%)

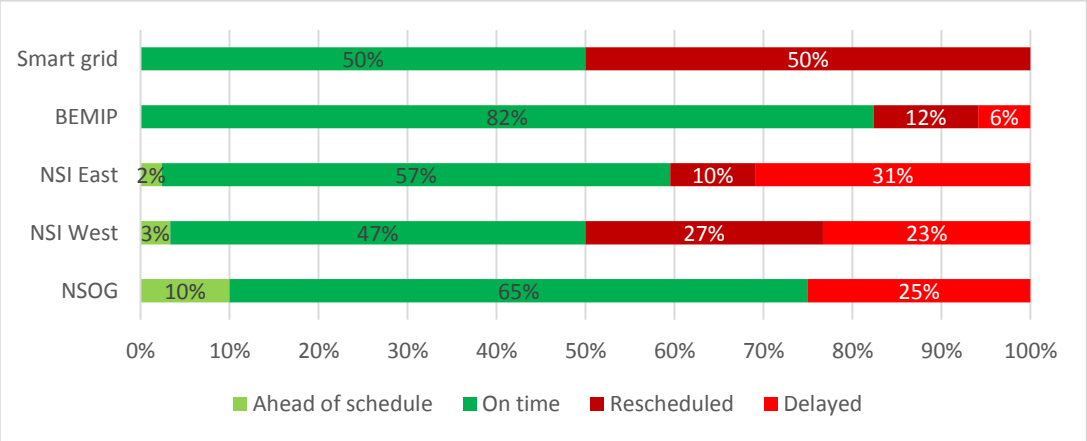
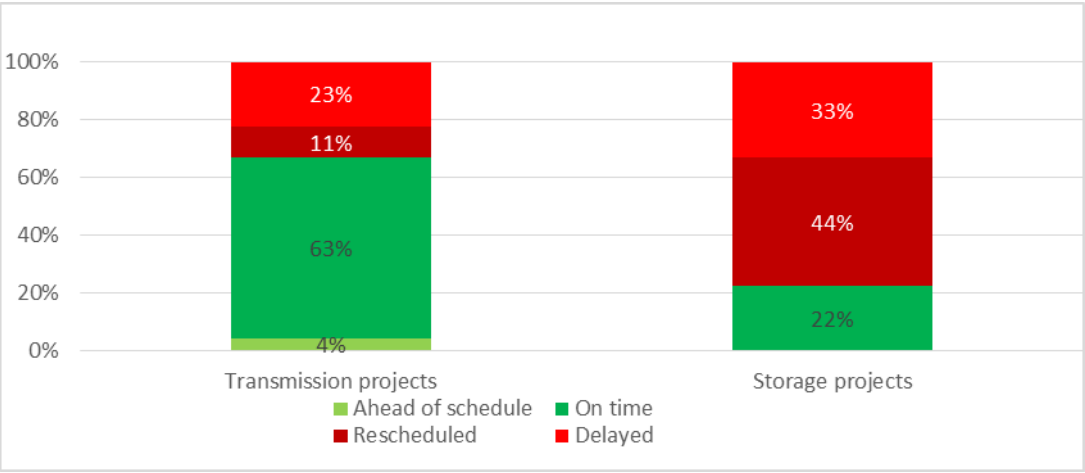


Figure 26: PCI time progress 2015-2016 by infrastructure category (%)



An analysis by implementation status is presented in Figures 27, 28 and 29. Regarding the progress between 2015 and 2016, Figure 27 shows that the projects in the "under consideration" and "under construction" phases kept to their schedule more than projects in the other two phases (82% and 68% respectively are ahead of schedule or on time), while projects in permitting tend to be more delayed than projects in any other phase (32%).

However, if a longer period is taken into account, i.e. a comparison of the projects' progress to the initial planning of 2012, as shown on Figures 28, it can be concluded that in all phases the number of projects which keep to schedule drops significantly, with the worst record coming from projects in the "permitting" and "under consideration" phase.

Figure 27: PCI time progress 2015-2016 by implementation status [%]

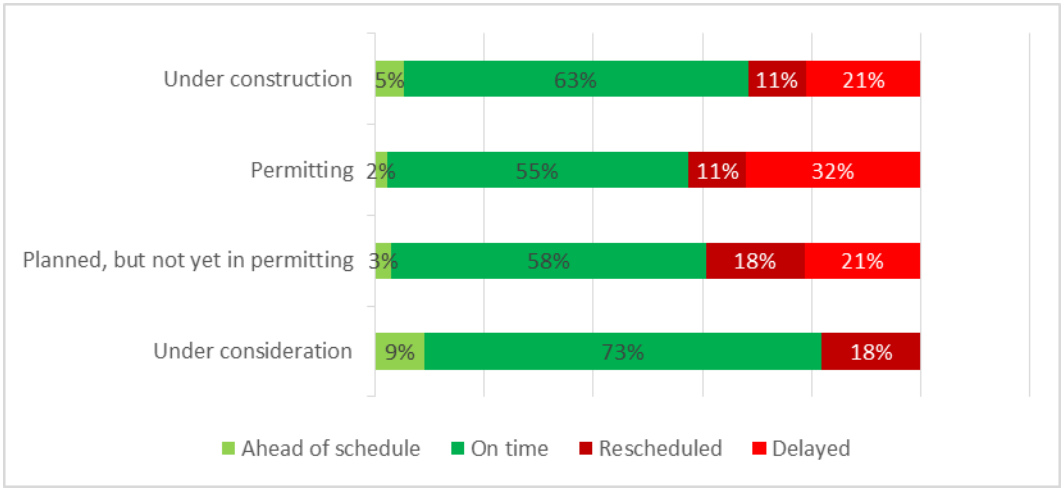


Figure 28: PCI time progress compared to the initial planning of 2012 by implementation status (%)

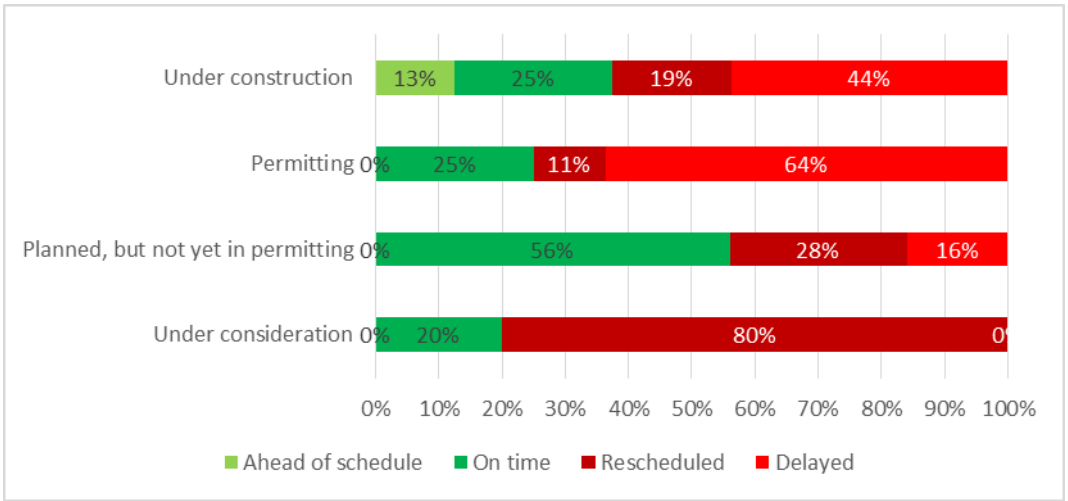
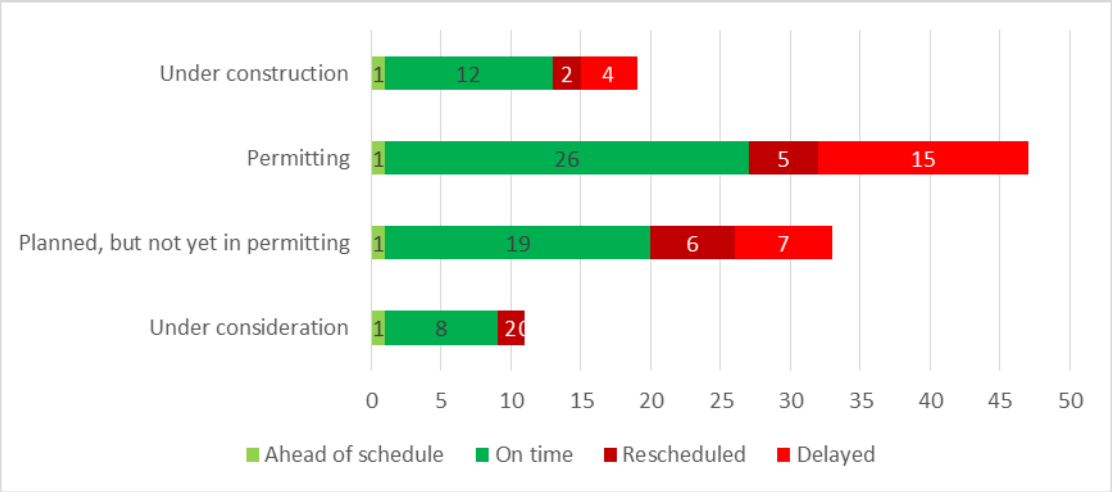


Figure 29: PCI time progress 2015-2016 by implementation status [number of projects]



d. Delayed projects

As shown in Figure 18 and Figure 26, in total 26 projects are delayed, out of which 23 are transmission and 3 are storage projects.

Regarding the trends in the different priority corridors, Figure 24 and Figure 25 show that, while the percentage of delayed projects is similar in the NSOG, NSI West and NSI East corridors (within a range between 23% and 31%), BEMIP corridor seems to be performing better, as only one project is delayed.

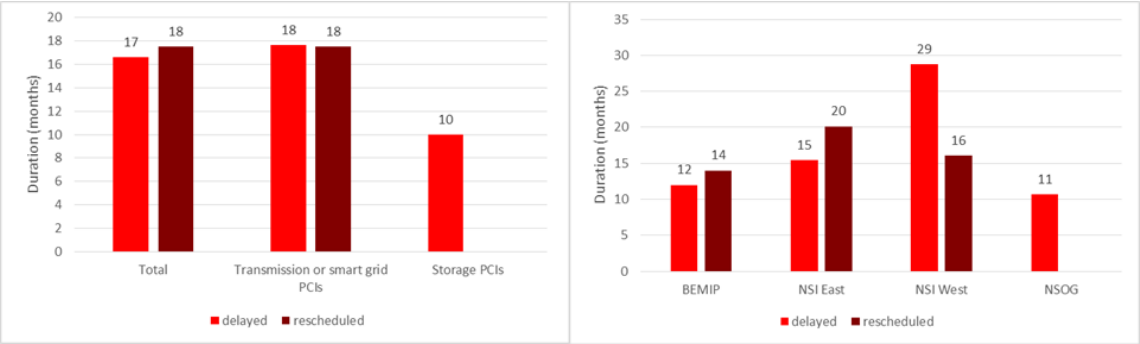
It can be concluded from Figure 26 that transmission projects are performing better, as within last year 23% of them are delayed, compared to 33% of storage projects (although the small sample of the storage projects, i.e. 9 projects, must be noted). Out of the 2 smart grids projects, none of them is delayed.

Examining the progress in relation to the implementation status of the projects, Figure 27 shows that projects in the permitting phase are the most frequently delayed compared to projects in other phases (32% compared to 0%, 21% and 21% respectively for "under consideration", "planned, but not into permitting", and "under construction" phases). Therefore, similarly to the finding of the Agency's past year monitoring report, the Agency notes that when projects enter into the permitting status they are more likely to report delays.

Figure 30 shows that the average delay is 17 months for all projects for which data was available (19 transmission and 3 storage projects). The Figure provides some more details regarding the duration of delays: the average duration of delays is 18 months for the

transmission projects and 10 months for the storage projects. The longest average delay (29 months) is noted in the NSI West corridor, the shortest in the NSOG corridor (11 months)[41].

Figure 30: Average duration of delay and rescheduling (2015-2016) in months (per category of investment and per priority corridor)



e. Rescheduled projects

As shown on Figure 18 and Figure 26, in total 15 projects (i.e. 14%) are rescheduled, 10 of which are transmission projects, 1 smart grid, and 4 storage projects.

Regarding the trends in the different priority corridors, Figure 24 and Figure 25 show that the NSI West corridor has the highest share of rescheduled projects (27%) followed by BEMIP (12%) and NSI East (10%), which equal to, respectively, 8, 2 and 4 projects. No rescheduled project was reported in the NSOG corridor.

Examining the progress in relation with the implementation status of the projects, Figure 27 shows that projects which have not started permitting yet (i.e. "under consideration" or in "planned, but not yet in permitting" phases) show a higher frequency of rescheduling than more advanced projects (18% of the projects which are in the "under consideration" or "planned, but not yet in permitting", compared to 11% for projects in the "permitting" phase and 11% for projects in the "under construction" phase).

Figure 30 shows that the average duration of rescheduling is 18 months (for transmission and smart grid projects)[42]. The average duration of rescheduling ranges from zero months in the NSOG corridor (no rescheduled project was reported in this corridor) to 20 months in the NSI East corridor[43].

[41] The value for the BEMIP corridor refers to only one delayed project.

[42] Data is available for 10 transmission projects. For storage projects, it iss not possible to calculate this figure due to lack of adequate data (i.e., no commissioning data was provided last year and it was not available from TYNDP 2014 either).

[43] The value for the BEMIP corridor refers to only one rescheduled project.

2.3.6 Rescheduling, delays and difficulties encountered by the project promoters

In the previous section, the time progress of the projects was analysed from various perspectives. Further to providing the time progress statistics, identifying and keeping track of the reasons of delays and rescheduling is another important goal of this report, as the Agency aspires to provide policy makers and involved authorities with the necessary information they would need to make the appropriate policy decisions to address the identified problems. In addition to delays and rescheduling, projects were also reported to have encountered difficulties. For the purpose of the monitoring report, the Agency considered as a project encountering difficulties, a project for which an external factor resulted in no more than six months postponement in the PCIs implementation without causing a significant update in estimated costs or benefits.

The following paragraphs analyse in more detail the reasons of delays, rescheduling and difficulties occurred in the past year.

2.3.6.1 Reasons for delays

In case a PCI was stated as "delayed", project promoters were asked to report the most important reasons for delay and other reasons for delay if applicable. The main reason for delay[44] was indicated for 24 out of the 26 delayed projects. As depicted in Figure 31, the most frequent main reason for delay over the past year was permit granting (38%). Project promoters were requested to analyse further the permit granting problems, and Figure 32 shows the breakdown of the various permit granting reasons responsible for the delays: 4 projects are mainly delayed due to environmental issues[45], 3 projects are delayed due to national law changes affecting permitting, including complexities with the implementation of Regulation (EU) No 347/2013, 1 indicated the delayed preparation of the necessary application files by the project promoter, and 2 indicated "other permit granting reasons". The latter category includes delays due to obtaining additional/other permits which were not expected in the previous planning or re-submission of the request for permits due to refusal of the previous request.

Figure 31 also shows that 3 projects are delayed due to correlation with other investments and 3 projects are delayed due to tendering. Other reasons such as cross-border coordination, national law changes impacting the technical solution of the project, risks related to the national regulatory framework or financing reasons, were mentioned only in one or two instances. In one case, the specific reason for delay is not provided as it is claimed that it refers to "commercially sensitive information". The Agency considers that the reasoning for

[44] In one instance, a project promoter reported as a reason for delay the rearrangement of the project schedule due to underestimation of construction duration. The Agency re-classified this project as "rescheduled" as the reason indicated is not beyond the control of the project promoter. In two other instances a delay due to the current market conditions was reported, which was also considered a reason for rescheduling and not for delay.

[45] Environmental problems also include problems with cultural heritage authorities or any other authority that is involved in the environmental procedure.

claiming confidentiality should have been thoroughly justified by the promoter, and further clarification should be required by the relevant Regional Group[46].

Figure 31: Main reasons for delay

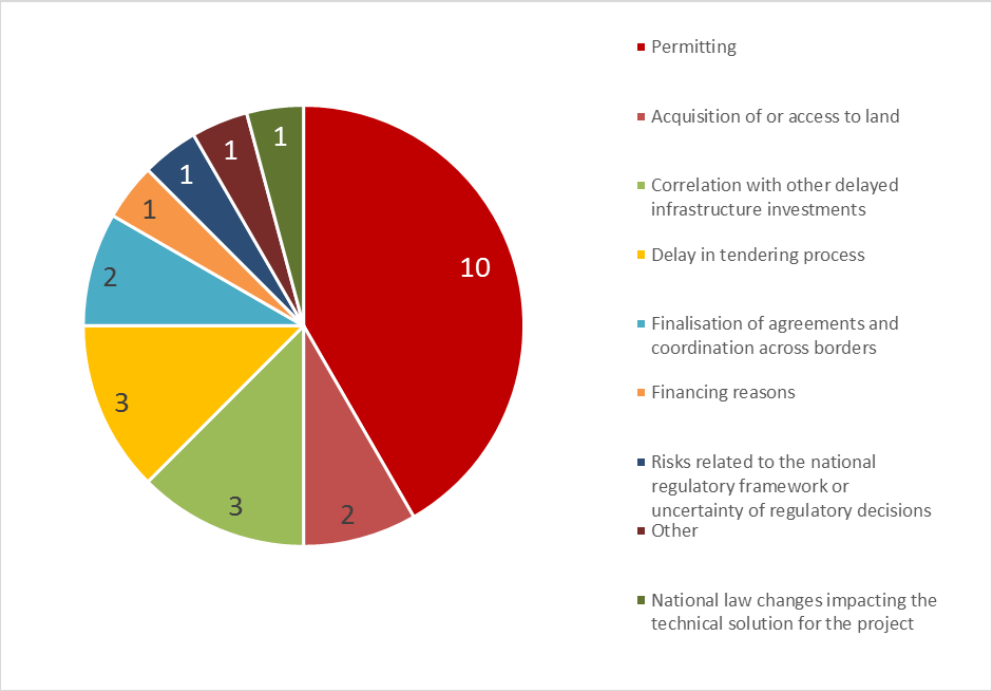
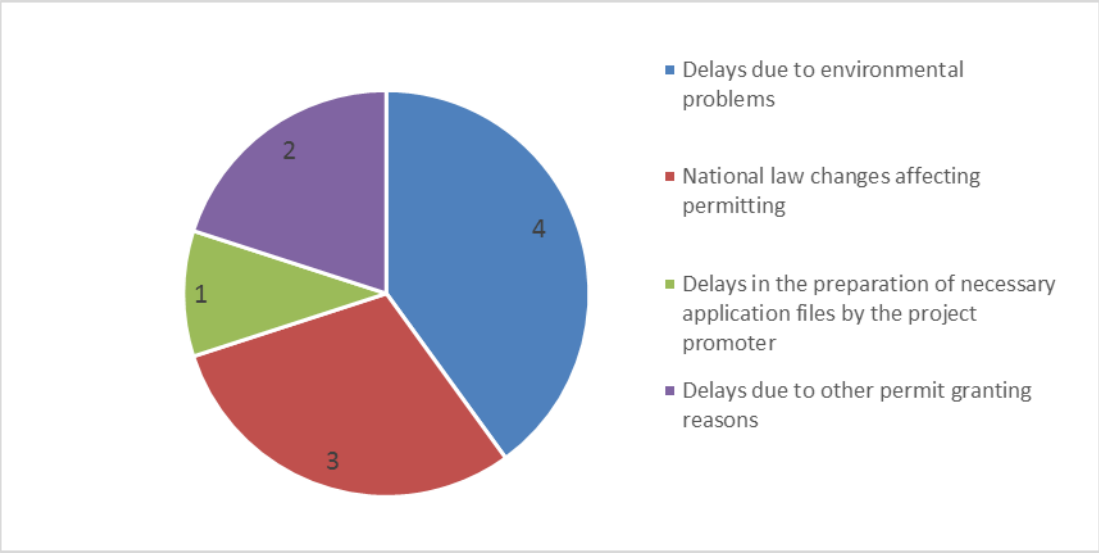


Figure 32: Break-up of the permitting reasons reported as main reason of delay



[46] For more details, please refer to Annex VII: PCI specific information – electricity.

a. Main reasons for delays by priority corridor

Regarding the differentiation of reasons for delay per priority corridor, one can conclude that **permitting is the most frequent reason for delays in all corridors.** There is no single permit granting reason which appears in all regional groups, but delays due to environmental permitting are the most frequent one (4 replies), of which 3 cases from the same corridor (i.e. NSI-East). This is in line with last-year report's findings. Otherwise, there seems to be a large dispersion of reasons among the priority corridors without any prevailing pattern, so one cannot conclude that a certain problem in permitting is more typical in one priority corridor than in the others. Delay due to financing was reported only once and only in the NSOG corridor, and the reason "delays related to finalising agreements and coordination across borders" was mentioned twice, but in NSI-East only.

Similarly, no prevailing reasons were identified when looking separately into storage and transmission projects, as various reasons were reported. As for the last year, while environmental problems are a relatively frequent reason for delays among the transmission projects, this reason for delays was not reported for any storage PCI.

An analysis of the main reasons of delays by priority corridor and by infrastructure category is included in Annex V: Further data analysis.

b. Additional reasons for delays

For 12 projects, the project promoters provided additional reasons for delays (in some cases more than one additional reason). The most common additional reasons for delay are related to permitting. In one case the additional reason is related to the regulatory framework, in one case to technological reasons, and to the acquisition of land. Annex V: Further data analysis presents the additional reasons of delays by priority corridor.

2.3.6.2 Reasons for rescheduling

All 15 rescheduled projects reported the main reason for rescheduling[47]. The frequency of occurrence of the main reasons for rescheduling is presented in Figure 33. The most frequent main reason, which was reported for one third of the rescheduled projects, is priority being given to other transmission investments (5 PCIs)[48]. Based on the available data, the Agency considers that 4 PCIs are rescheduled due to a better estimation of the project planning and commissioning date. Beyond these, in two cases the reason for rescheduling is changes in market conditions. Changes in overall planning data[49] and changes in the generation side (in

[47] In one instance, the project promoter reported that recent national law changes affected the permitting and thus the project had to be rescheduled. The Agency re-classified this project as delayed since the reason was beyond the control of the project promoter and it has not changed the need for the project at the expected date.

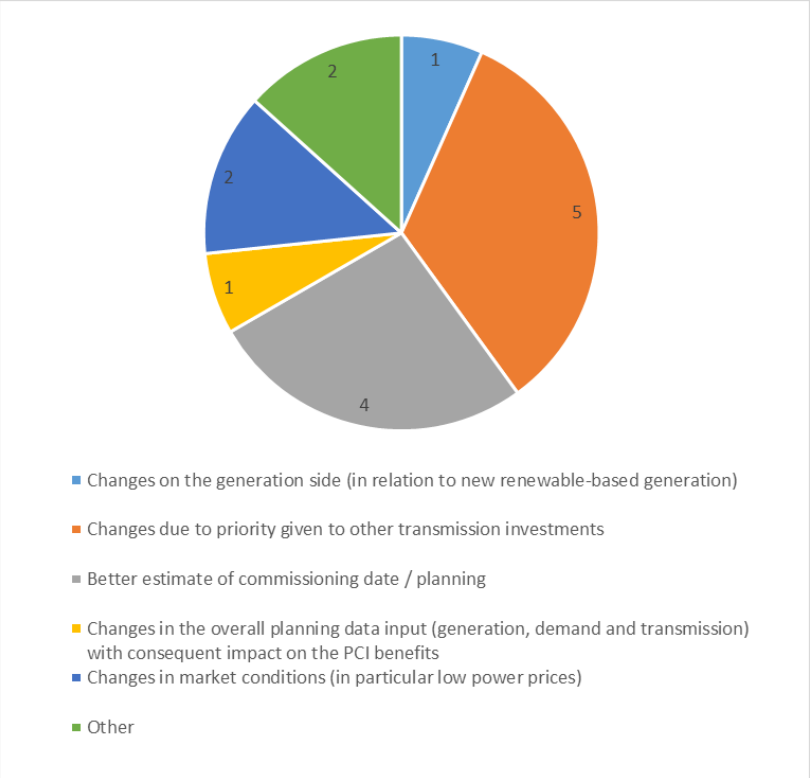
[48] Within this category one project, which reported that its schedule will be adapted depending on the delays of other more mature projects, is included.

[49] The term "change in overall planning data" pertains to changes of the overall data taken into account while considering a project, which is not driven by a change of a single planning data, e.g. generation.

relation to new renewable-based generation) led to rescheduling of the project in one instance.

Other reasons for rescheduling reported by the project promoters are related to the sustainability of the project and results of environmental and engineering studies.

Figure 33: Main reasons for rescheduling of transmission and storage PCIs



Due to the small sample of the rescheduled investment, there is no meaningful result of the comparison per priority corridor (more analysis can be found in Annex V: Further data analysis). Similarly, since there are only 4 storage projects, no different patterns between storage and transmission projects can be identified (more analysis can be found in Annex V: Further data analysis).

2.3.6.3 Difficulties regarding progress of projects

In total, there are 30 projects (26 transmission and 4 storage) which were indicated by promoters to be facing difficulties[50]. 9 of these are delayed and 2 rescheduled (in most of the cases these difficulties seem to be strongly related to the reason for the delay or rescheduling). Although faced with difficulties, 18 projects remained on time and 1 even

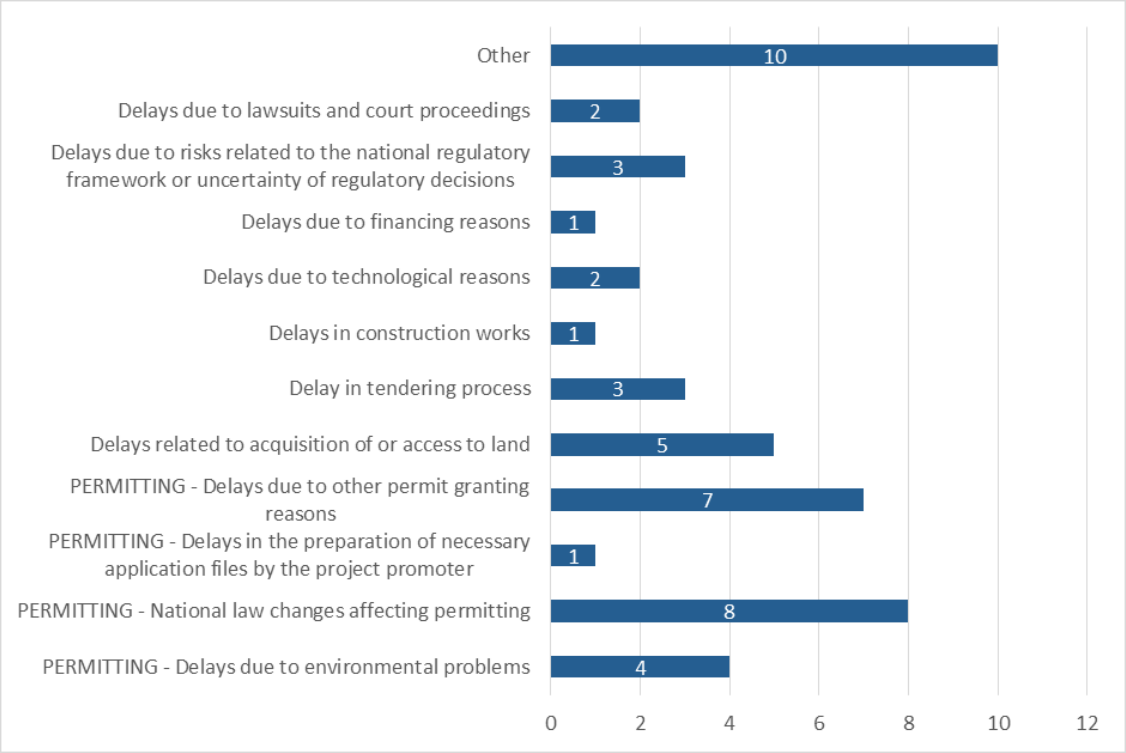
[50] I.e., problems that resulted in project postponement of less than six months without causing a significant revision of the estimated costs or benefits.

moved ahead of schedule.

The most frequent difficulties are related to permitting, in particular regarding national law changes (8 projects). The second most frequently reported difficulty is related to the acquisition of land (5 projects). The full list of the 47 reported difficulties is presented in Figure 34.

No remarkable difference is identified among the priority corridors. Comparing to the Agency's 2015 PCI monitoring report one can note that significantly more projects are reported to have encountered difficulties[51].

Figure 34: Difficulties indicated by the project promoters per number of occurrence



2.3.6.4 Measures and recommendations to solve delays and difficulties

For 17 of the delayed projects, it was reported that measures had been taken by either the project promoters or by other parties (e.g. NRAs, competent authorities, ministries) to solve delays and difficulties. For 13 of the "on-time projects with difficulties" there were already measures taken by the project promoters or by other parties to overcome these difficulties. The project promoter also took measures for the project "ahead of schedule" which indicated difficulty.

[51] During the 2015 PCI monitoring activity, 8 electricity projects were indicated by the project promoters to be facing difficulties.

A list of the measures taken or proposed by category of reason for delay / difficulty reported by the project promoters can be found in Annex VI: Measures taken or proposed to solve delays and difficulties.

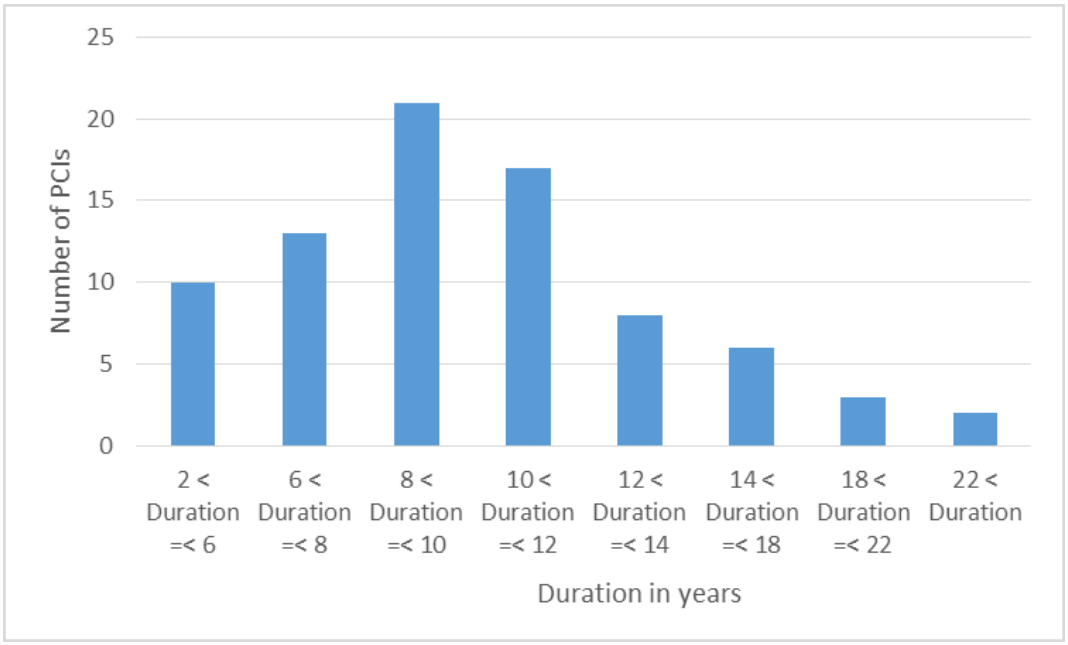
2.3.7 Duration of implementation

2.3.7.1 Overall duration of all PCIs

For the purpose of this report, the overall duration of an electricity PCI is considered to be the time period starting from the date of request for the planning approval[52] up to the commissioning date.

Based on the 2016 data available for both "old" and "new" PCIs, 80 projects provided the required date for the computation of the overall duration. The average duration is around 10 years, as shown in Figure 35.

Figure 35: Distribution of the overall duration of implementation of PCIs



2.3.7.2 Overall duration of "old" PCIs - comparison 2015-2016

In 2016, only 70 projects[53] out of the 91 "old" ones reported the required dates for the computation of the overall duration. Based on this sample, the minimum duration is

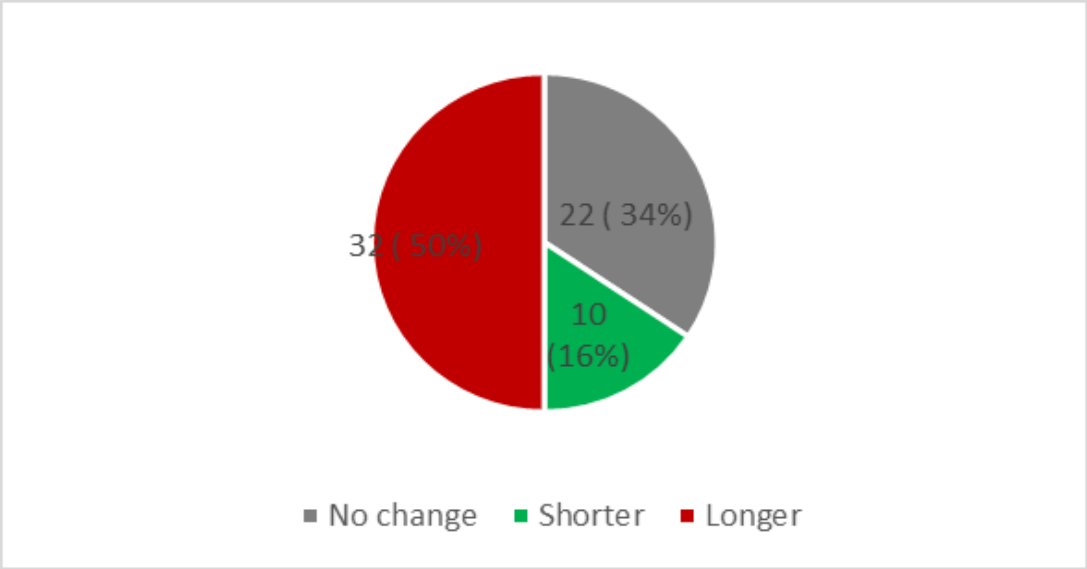
[52] Planning approval is the approval (at the level of national development planning) by the NRA or by the competent Ministry or national competent authority, as provisioned in the national law of each country.

[53] For 10 of these projects, a date of a request for the planning approval was reported later than the indicated start date of the permit granting process. For these projects, the start date of the permit granting process was used for the calculation of their duration.

approximately 2.8 years, the longest duration is almost 25 years, while **the average duration is 10 years**.

Figure 36 presents the results of the comparison of the overall duration of implementation[54]. Only for 34% of the projects the expected overall duration has not changed over the last year, while half of them seem now to expect, on average, a 1.5-year longer duration, and 16% expect a shorter period, by 1 year on average.

Figure 36: Comparison of duration of implementation of "old" PCIs - 2016 vs 2015



2.3.7.3 Expected permit granting duration

This section explores whether the provisions of Regulation (EU) No 347/2013 regarding permit granting have had an impact on promoters' expectations on permit granting duration.

For projects where the permit granting process as defined in Regulation (EU) No 347/2013 is applicable (i.e. which did not submit an application file before 16 November 2013), from now on called "post-2013 PCIs", the permit granting duration is counted from the date of acceptance (acknowledgment) of the last notification by the Competent Authority up to the date of the comprehensive decision taken by the Competent Authority. Article 10(1) of Regulation (EU) No 347/2013 stipulates that this duration should be limited to 3.5 years, and can be extended, on a case by case basis, by a maximum of nine months.

For the rest of the projects (i.e. those which submitted an application file before 16 November 2013), from now on called "pre-2013 PCIs", the duration of permit granting is calculated

[54] For comparisons with the 2015 data, a sample of 64 projects, for which relevant dates were available, was used. For the projects where a date of request later than the start date of the permit granting process was reported, the same approach was followed like with the 2016 sample, i.e. to use the start date of the permit granting process in these cases.

from the (estimated) date of submission of the first application for permits until the date when the last permit was obtained or is expected pursuant to the national rules applicable.

The permit granting duration was calculated for the projects where relevant data was available, i.e. 96 out of the 111 projects. Out of these projects, 58 had already started the permit granting procedure before 31/01/2016 and 12 of them have already obtained all permits by that date. Out of these projects, 35 are "pre-2013 PCIs" and 61 "post-2013 PCIs". From the calculation of the expected durations of the permit granting process, it can be noted that some "post-2013 PCIs" provided data that lead to a very short duration for the permit granting process: for 7 PCIs (one of which is a storage project, and the rest are transmission projects) the duration of permit granting process was one year or less, including 2 transmission PCIs for which it was just 3 months. In contrast, only for 1 transmission "pre-2013 PCIs", for which the permit granting was completed before 31/01/2016, the computation indicated a permit granting duration shorter than a year.

At the same time, it is interesting to note that, although the permit granting process should not be expected to be longer than 3.5 years for "post-2013 PCIs", for 7 projects a longer expected duration, which goes up to 5 years, was calculated based on the reported dates.

The Agency also noted that, in some cases, the project promoters consider the preparation of the environmental reports as not being part of the permit granting process, which seems to be conflicting with Article 10(1) (a) of Regulation (EU) No 347/2013.

Overall, the average expected duration is **3.5 years**, with a higher expected average duration for "pre-2013 PCIs" (**5.5 years)** than for "post-2013 PCIs" (**2.3 years**).

2.3.7.4 Correlation of permit granting duration with the various permitting schemes foreseen in Article 8(3) of Regulation (EU) No 347/2013

In this section an attempt to correlate permit granting duration with the permit granting schemes foreseen in Article 8(3) of Regulation (EU) No 347/2013 is made. Based on the data included in the European Commission study "Analysis of the manuals of procedures for the permit granting process applicable to projects of common interest prepared under Art.9 Regulation No 347/2013" and further information provided by some Competent Authorities, the various schemes (integrated, coordinated or collaborative) were associated to the PCIs depending on their hosting Member States. For the purpose of the analysis, when a PCI is hosted in Member States which apply different schemes, it is considered as a project exposed to a multi-scheme permit granting process, whatever the combination of schemes.

The sample used was the same one used for the analysis of the permit granting duration, i.e. 96 projects. The results of this analysis are presented in the Table 1 below.

Table 1: Expected duration of permit granting depending on the different permit granting schemes

Scheme	Number of PCIs	Average expected duration of permit granting (years)
Integrated	4	3.8
Coordinated	24	2.8
Collaborative	47	3.6
Multiple schemes	21	3.7

As the table shows, the "coordinated" scheme looks to be more favourable in terms of expected permit granting duration compared to the "collaborative" one, while the sample of PCIs for which an integrated permitting scheme is applicable is too small to provide robust indications. However, given the particularities of the application of the permitting schemes in the various Member States, more in-depth analysis, as well as further observations in the coming years are needed to allow for conclusions.

Key findings

- About 60% of the projects are at a relatively advanced implementation stage (one project is already commissioned, 19 are under construction, 47 are under permitting). The other projects are still in a less advanced stage (33 of them are planned but not in permitting, and 11 are still under consideration).
- For most of the PCIs, no change in their implementation status was reported compared to the 2015. Further, approximately a quarter of the promoters did not provide information about works performed during the reporting period.
- Regarding "old" PCIs, further delays of commissioning dates were accumulated during 2015, resulting in 44% of the projects included in the 2013 PCI list being delayed and 21% of them being rescheduled.
- Comparing to the implementation plan provided in the 2015 annual report, 4% of the projects are ahead of schedule, 59% of the projects are on time, 23% are delayed and 14% are rescheduled.
- 2 project reports did not include a commissioning date, which is a clear improvement compared to the number of projects (15) which did not report any commissioning date last year. In the Agency's view, the non-provision of the commissioning date may be a signal of uncertainty on these projects which raise doubts on the relevance of the granted PCI status.
- It is confirmed by this year's analysis that projects are most often delayed when they are in the permitting phase.
- The most frequent reason for rescheduling is, once again, prioritisation of other

transmission investments.

- In general, projects in the NSOG and BEMIP priority corridors seem to be mostly progressing in line with their previous schedule compared to the projects in the NSI West and NSI East priority corridors.
- For 35 projects, Chapter III of Regulation (EU) No 347/2013 does not apply. The average expected duration of permit granting for these PCIs is 5.5 years, more than the double of the average expected duration of permit granting where Chapter III of Regulation (EU) No 347/2013 applies, which is 2.3 years.

Key recommendations

- Noting that projects which are still at an early implementation stage are subject to a higher degree of uncertainty and their design is not yet finalised, a distinction in the reporting obligations of PCIs based on their implementation stage (more detailed analysis for more mature projects) would facilitate the overall monitoring activity and more accurate conclusions.
- The Agency calls for a more harmonised categorisation and definition of project implementation stages, starting from the TYNDP and throughout the PCI process to facilitate clarity and comparability of project-specific information.
- The Agency reaffirms the need that project promoters clearly report any delay and indicate any difficulty they encounter to the Regional Groups and the European Commission, and if useful, seek for regional or EU-level support to solve the situations responsible for delays and difficulties.
- For the permit granting process, the Agency recalls the need for relevant authorities to stay within the legally set 3.5 years' timeframe[55]. Furthermore, the Commission and the Competent Authorities should explore the various factors that have an impact on the permit granting duration, and especially the environmental permitting aspects.

2.4 Progress of costs and benefits

The Agency's questionnaire included a request for information on costs and benefits of each project. Promoters were required, in line with the ENTSO-E CBA methodology, to use the following parameters:

- 25 years of operation;
- 4% discount rate (real);
- No residual value;
- All costs and benefits discounted to the present and expressed in 2016 values.

[55] The Agency also notes that the extension of the time limit by a maximum of nine months is possible in certain cases pursuant to Article 10(2) of Regulation (EU) No 347/2013.

2.4.1 Investment costs

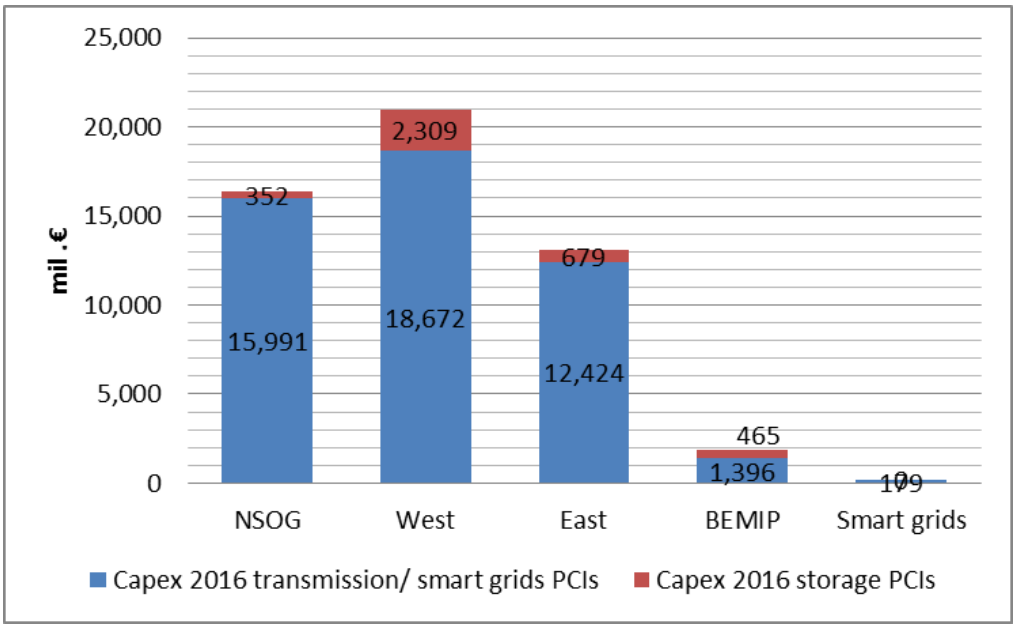
For the purpose of this report, investment costs are defined in line with the Agency's Recommendation 05/2015[56] and they usually cover items related to the development, construction and commissioning of projects.

CAPEX was reported for all projects except for one. The cost data of another project was not taken into account in the analysis, as it referred to only a part of the project. As a result, the investment cost data sample contains 109 projects.

The Agency requested information about the expected investment cost of each project ("best estimate"), as well as about the actual and contracted investment costs, and the expected variations of this cost. While acknowledging that the definition of an "expected best estimate value" is not straightforward, the received data indicate that the total expected investment cost of the 109 analysed projects is **€52.5 billion (€48.5 billion** for transmission projects, **€3.8 billion** for storage projects, and **€179 million** for smart grid projects).

The total investment costs of the projects are presented, per priority corridor or thematic area, in Figure 37.

Figure 37: Total investment costs per priority corridor and thematic area (smart grids)



Comparing the priority corridors, it must be noted that the highest percentage of CAPEX is related to the NSI West priority corridor, accounting for 40% of the total expected investment

[56] Cf. the Agency's Recommendation 05/2015 of 18 December 2015 on good practices for the treatment of the investment requests, including cross border cost allocation requests, for electricity and gas projects of common interest. Section 2.4, p.10:

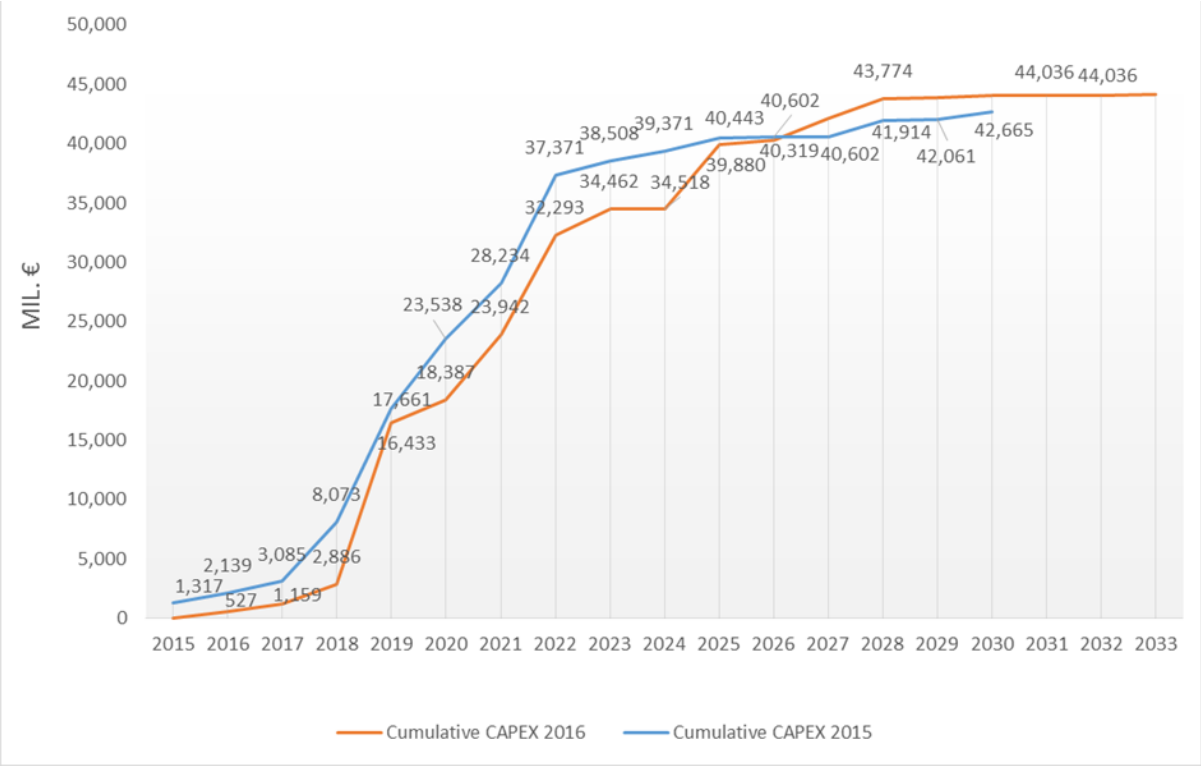
http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Recommendations/ACER%20Recommendation%2005-2015.pdf

cost, while the CAPEX related to the BEMIP priority corridor accounts for only 4% of the total CAPEX.

Figure 38 below illustrates the yearly cumulative CAPEX needs, making the simplifying assumption that the CAPEX of each project will be spent in the year of commissioning[57]. For comparison reasons, the CAPEX needs for 2015[58] are depicted in the same figure as well.

According to the 2016 data, if all projects were commissioned by the reported expected years, **CAPEX needs would be around €6 billion per year between 2018 and 2022.** By 2022, it would amount to a cumulated CAPEX of **€32.9 billion** (or 73% of the total expected cost of all projects). However, this is lower if compared to the needs for the same time period according to the 2015 report, when the CAPEX needs amounted to around **€7 billion per year**.

Figure 38: Cumulative CAPEX needs: comparison of 2015 and 2016



(*) The cumulative CAPEX needs are not depicted for the years 2015, 2027, 2029, 2030, and 2033, as only one project is expected to be commissioned in each of the said years according to the 2016 data.

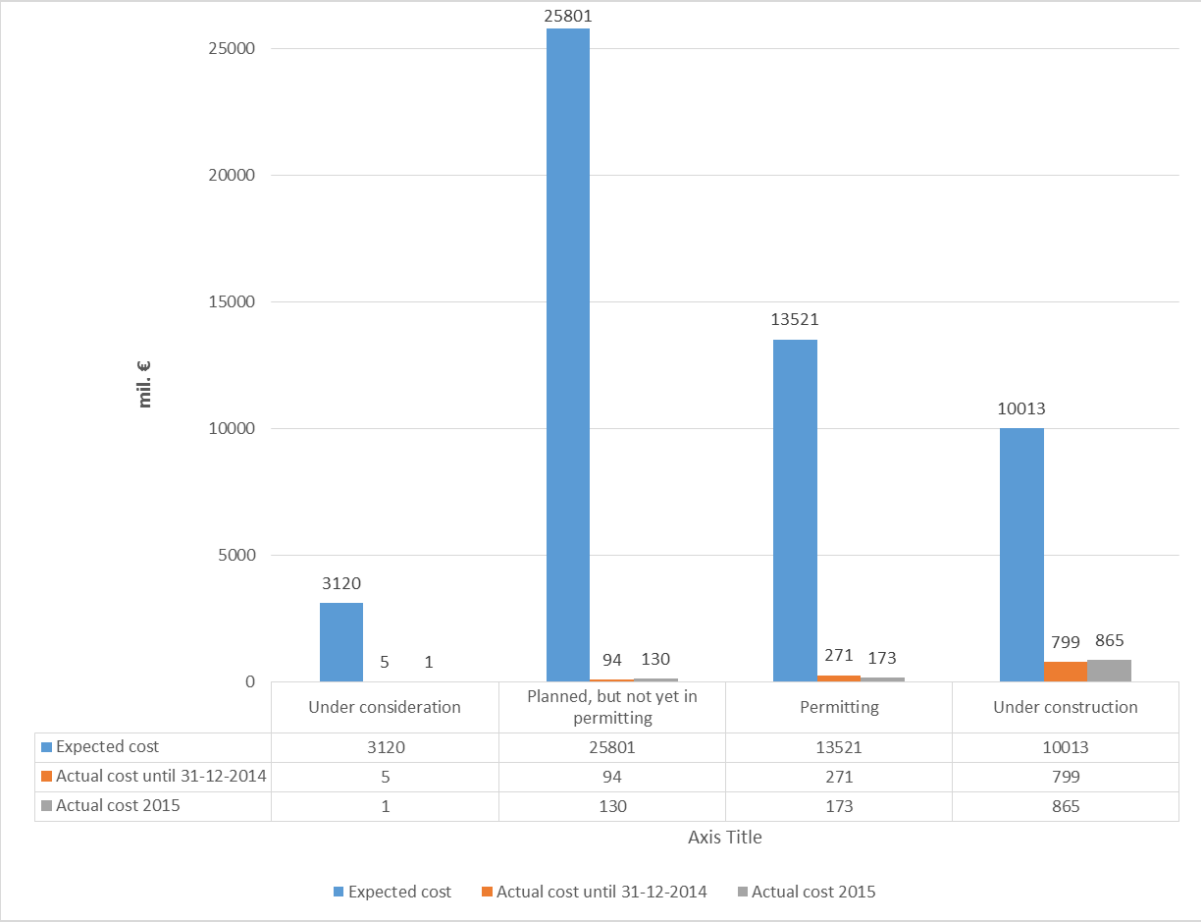
57 The 2016 data is based on a sample of 109 PCIs (89 "old" PCIs and 20 new) which provided dates of commissioning.

58 The 2015 data is based on a sample of 113 PCIs which provided dates of commissioning last year.

As noted in Figure 38, in any given year until 2026, the cumulative CAPEX needs seem to be lower compared to those of the 2015 report. After 2026 the trend seems to be reversed. A reason for this is the postponement of the commissioning dates of many projects, as discussed in more detail in Section 2.3.4.

Figure 39 below depicts the expected and actual CAPEX with regard to the implementation status of the projects. In all implementation statuses (except for "Commissioned"), the capital already spent is very low compared to the overall expected investment costs.

Figure 39: Correlation of expected and actual CAPEX with PCI implementation status



Also, one can note that the expected investment costs of projects in a less advanced stage (i.e. "under consideration" and "planned, but not yet in permitting") account for more than half (55%) of the overall expected investment cost of €52.4 billion.

A positive sign that can be concluded from Figure 39 is that, in the past year, the overall pace of implementation seems to have accelerated, as the amount of capital spent in 2015 by the projects which are under construction (€856 million) is higher than the volume spent in all previous years (€799 million).

2.4.1.1 Investment cost progress

In this section, the reported investment cost progress is examined by comparing the 2016 data with previous snapshots, for which data is available (i.e. the 2015 monitoring report data for "old" PCIs and the data which was submitted during the 2015 PCI selection process for "new" PCIs).

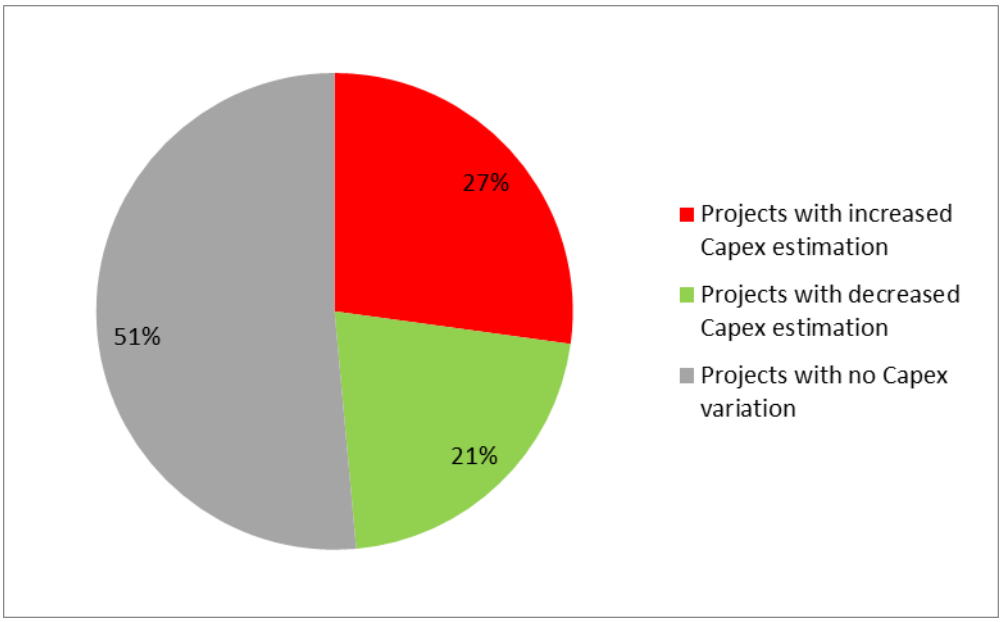
a. Comparison of overall 2015-2016 expected CAPEX

Comparing the projects for which data was available both for 2015 and 2016[59], the **expected CAPEX** has increased by 11% (from €44.2 billion in 2015 to €49 billion in 2016).

b. Number of projects with increased CAPEX estimation compared to 2015 planning

Figure 40 features the percentage of projects that reported increased, decreased or no CAPEX variation compared to 2015.

Figure 40: Comparison of CAPEX 2016 vs 2015



As suggested in Figure 40, within the timespan of one year, only 51% of the projects had no change in their CAPEX estimation, while 27% of them reported an increased CAPEX estimation, resulting, as mentioned above, in an 11% increase of the total expected CAPEX.

It must be noted that projects were considered to have a CAPEX change only in case they reported differences with respect to the 2015 estimation of at least 5%. This was deemed necessary because of some difficulties in the application of the CBA methodology regarding the discounting of 2015 values to 2016. More specifically, it was noticed that, in some cases,

[59] For 2016, the CAPEX of one PCI (€133 million) was deducted, as it was not reported for the 2015 report.

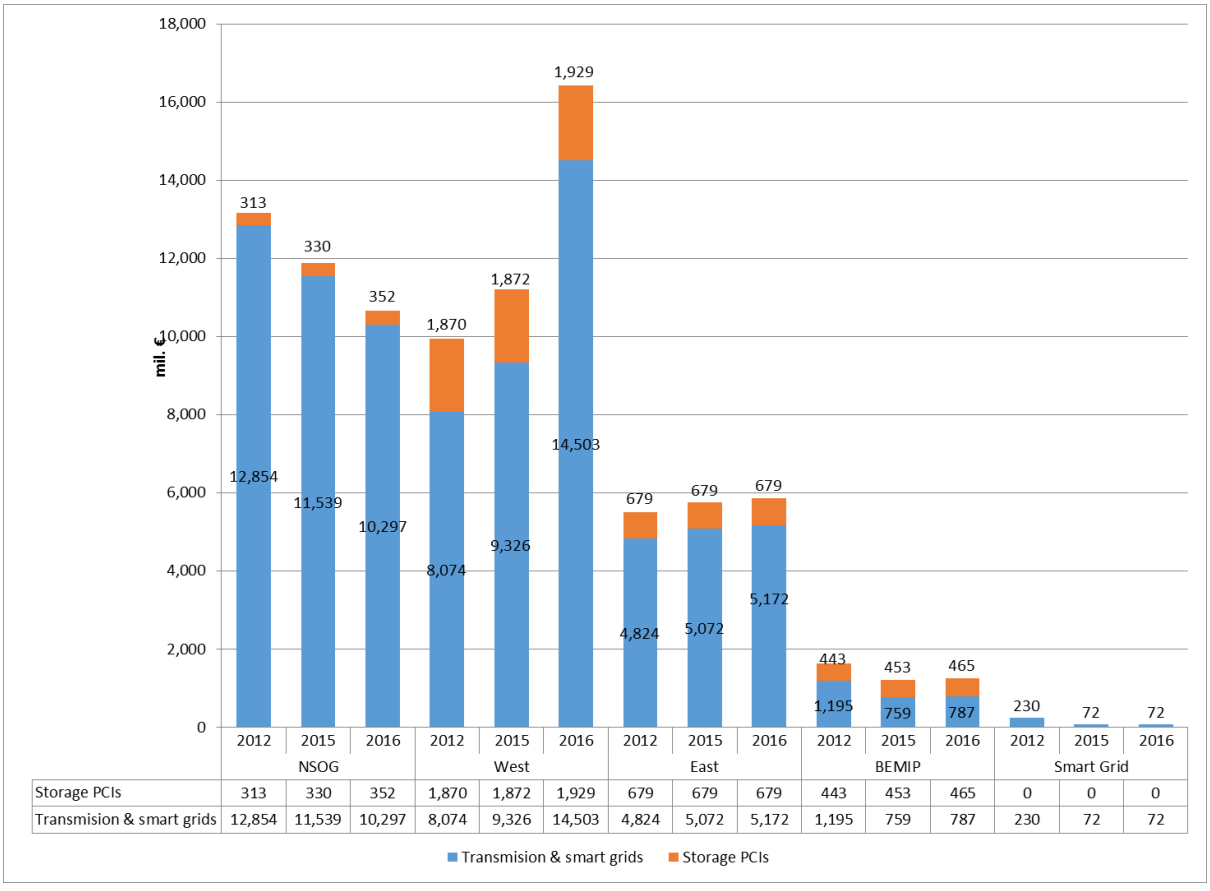
promoters reported nominal values instead of real ones, and, in other cases, they applied other discounting rates than the 4% rate used in the ENTSO-E CBA methodology. Therefore, without the application of this tolerance band, the above graph would depict the effect of the application of the discounting methodology and not the trend of CAPEX estimation.

c. CAPEX progress per priority corridor / smart grids

Because 2012 data is available only for "old PCIs", two separate analyses have been carried out, one for "old" and one for "new" PCIs. For "old PCIs" the estimated CAPEX is compared over the years of 2012, 2015 and 2016, while for "new PCIs" the comparison is limited to years 2015 and 2016. Only projects for which data is available for all compared years were taken into account, i.e. 66 "old" PCIs and 15 "new" PCIs.

Figure 41 features a comparison of the reported estimated investment costs in the years 2012, 2015 and 2016 for "old" PCIs. The total estimated investment costs for these projects remained actually the same until 2015 (**€30.5 billion** in 2012, **€30.1 billion** in 2015), but increased to **€34.2 billion** in 2016.

Figure 41: Progress of expected CAPEX of "old" PCIs - 2016 vs 2015 and 2012



	2012	2015	2016	2012	2015	2016	2012	2015	2016	2012	2015	2016	2012	2015	2016
	NSOG			West			East			BEMIP			Smart Grid		
Storage PCIs	313	330	352	1,870	1,872	1,929	679	679	679	443	453	465	0	0	0
Transmision & smart grids	12,854	11,539	10,297	8,074	9,326	14,503	4,824	5,072	5,172	1,195	759	787	230	72	72

Regarding the trend of CAPEX estimation in the various priority corridors, a steady decrease is noted in the NSOG corridor over the years. The decrease in 2016 is the effect of a drastic

reduction of the scope of a single project by €1.7 billion, while, on the other hand, the remaining PCIs in this corridor reported a €0.5 billion increase in CAPEX estimations.

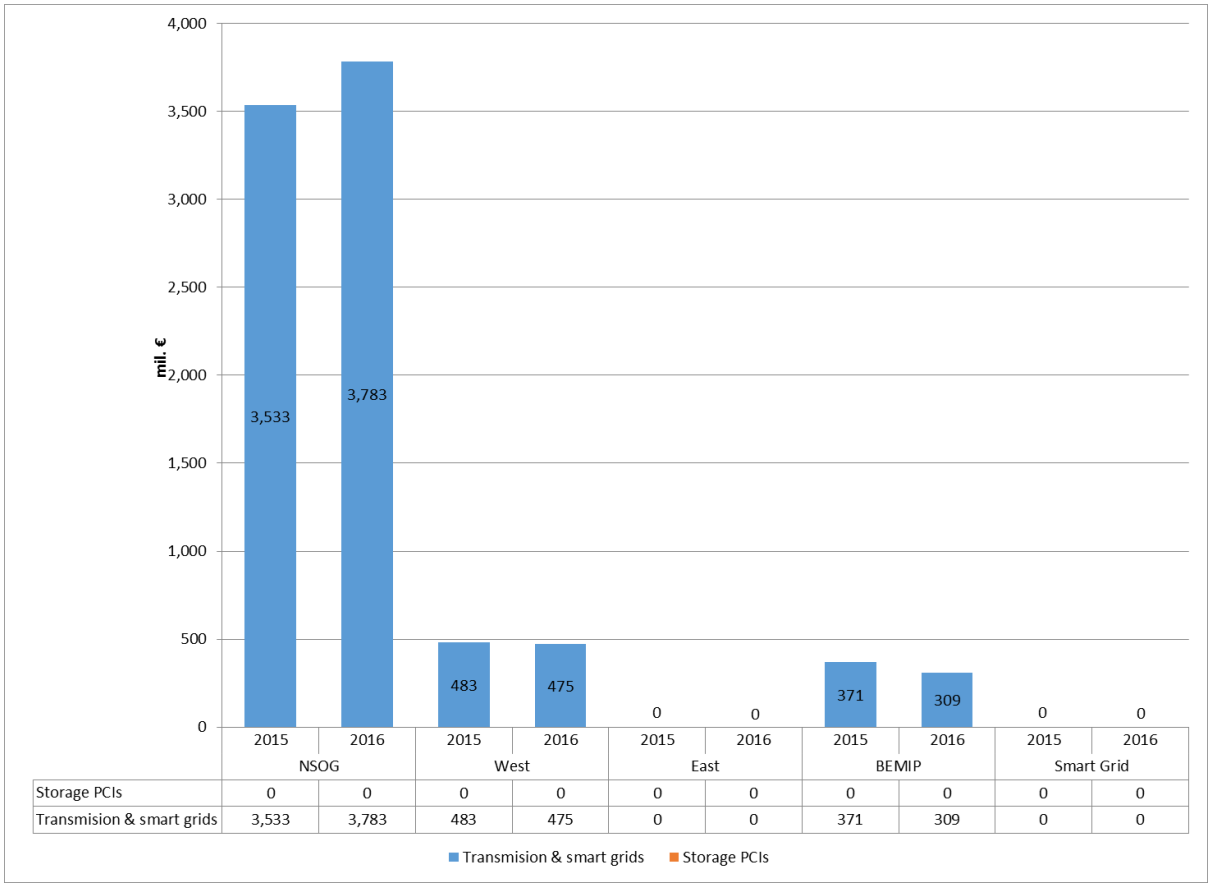
The 46% increase in estimated CAPEX (from **€11.2 billion** in 2015 to **€16.4 billion** in 2016) in the NSI West priority corridor is due to the increase of CAPEX estimate of a single project by **€5.4 billion**. Excluding the impact of this single project, the NSI West corridor experienced a slight decrease of 2.7% in the estimated CAPEX.

As for the rest of the priority corridors, small variations compared to the 2015 data are noticed: an increase of 1.7% for the East corridor and 3% for the BEMIP corridor.

Lastly, in the case of Smart Grids, no variation in CAPEX estimation has been reported since 2015.

Figure 42 features a comparison of the reported estimated CAPEX values for the "new" PCIs. Significant variations occurred both in the NSOG priority corridor (i.e. a 6.6% increase), as well as in the BEMIP corridor (i.e. a 16.7% decrease). However, for the projects in the NSI West corridor only a slight variation was identified (i.e. a 1.6% decrease). No CAPEX data was made available in 2015 for the new storage and the smart grid project. Therefore, these projects could not be included in the comparison.

Figure 42: Progress of expected CAPEX of "new" PCIs - 2016 vs 2015



	NSOG 2015	NSOG 2016	West 2015	West 2016	East 2015	East 2016	BEMIP 2015	BEMIP 2016	Smart Grid 2015	Smart Grid 2016
Storage PCIs	0	0	0	0	0	0	0	0	0	0
Transmision & smart grids	3,533	3,783	483	475	0	0	371	309	0	0

d. CAPEX progress per type of project

An analysis of the CAPEX estimation in 2016 for the five major investment categories (i.e. Combined investments, AC transmission line, Offshore DC transmission cable, Compressed air storage and On-shore DC transmission cable) was performed, and no remarkable change was noted compared to 2015 data. For further details, please refer to Annex V: Further data analysis.

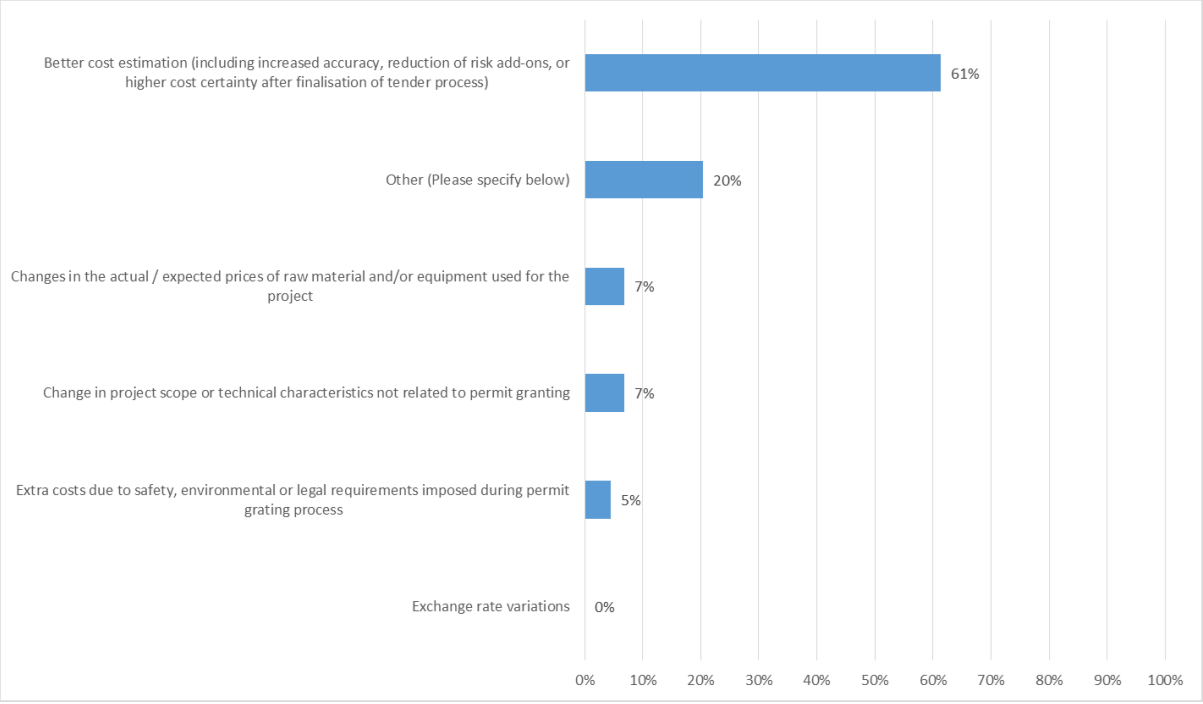
e. Correlation of the evolution of CAPEX with time progress

A correlation of the evolution of the estimated CAPEX figures with the progress of the project (i.e. ahead of schedule, on time, delayed, and rescheduled) between 2015 and 2016 was examined and no remarkable relation was noted. For further details, please refer to Annex V: Further data analysis.

f. Reasons for differences

Promoters were required to provide the reasons for any difference in CAPEX expectations from 2015 to 2016. 44 out of 47 PCIs which reported a different CAPEX expectation provided reasons for differences. Figure 43 summarises these replies.

Figure 43: Reasons for difference in investment cost expectations 2015-2016



For 61% of all projects reporting differences, the main invoked reason was the better estimation of costs since 2015. As regards the breakdown of reasons falling under the 20% 'Other' category, the majority of changes are due to corrections of CAPEX estimations, and a few to uncertainty reduction, postponement of construction and legislative changes.

2.4.1.2 Investment cost variations

When reporting expected downward/upward variation of CAPEX, project promoters were asked to compute the corresponding values taking into account that the presence of risks, contingencies and uncertainties may lead to a cost range. Also, for the computation of the expected downward/upward variation, project promoters were suggested to use the following formulas:

$$Upward\ variation = \frac{Upper\ value\ of\ cost\ range - cost\ estimate}{cost\ estimate}$$

$$Downward\ variation = \frac{cost\ estimate - lower\ value\ of\ cost\ range}{cost\ estimate}$$

Table 2 features the range of aggregate estimated CAPEX if the variances reported by promoters materialise at the same time (only projects that reported non-zero variation are included in these calculations).

Table 2: 2016 CAPEX variation

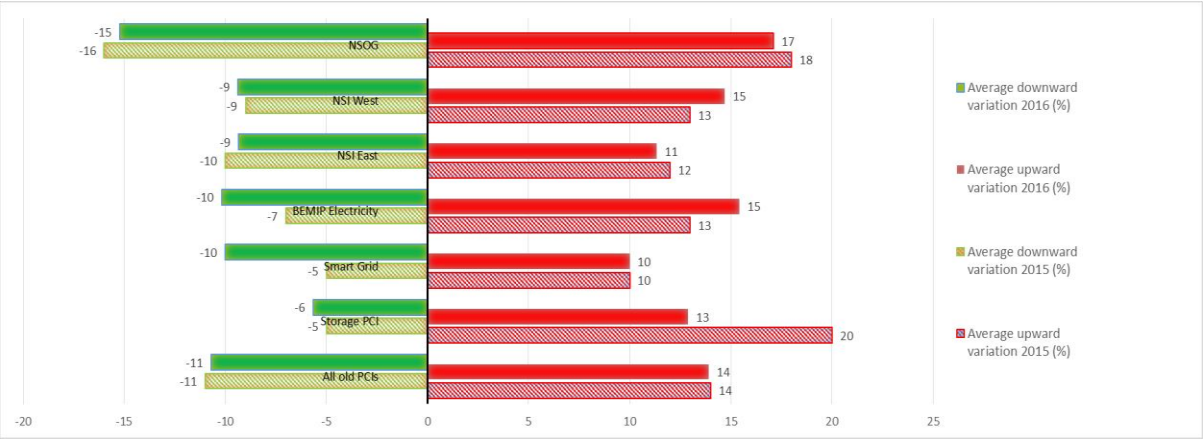
	CAPEX (€ million)	CAPEX variation (%)
Aggregate CAPEX 2016 for projects which reported variation	43,735	-
Lower value of aggregate CAPEX estimation	37,431	-14%
Higher value of aggregate CAPEX estimation	50,492	+15%

For comparison purposes, it is noted that in 2015 the reported variation ranged from -12% to +15%.

a. **Investment cost variation per priority corridor**

Figure 44 presents the CAPEX variation per regional group for "old" PCIs. The figures are calculated as an average of the reported variances in 2015 and 2016, (i.e. the sample of projects for the calculation is not the same).

Figure 44: Comparison of CAPEX variation of "old" PCIs per corridor and category 2015-2016



It is noteworthy mentioning a reduction by 7 percentage points (from 13% to 20%) in the upward variation of storage projects and a 5 percentage points increase (from -5% to -10%) of the downward variation for smart grids. As for the other priority corridors, no remarkable change is noticed.

b. **Investment cost variation per implementation status**

The correlation between the current implementation status of projects (i.e. under construction, permitting, planned, but not yet in permitting, under consideration) and CAPEX variation was analysed, but no significant correlation could be traced from this comparison (for details, please refer to Annex V: Further data analysis).

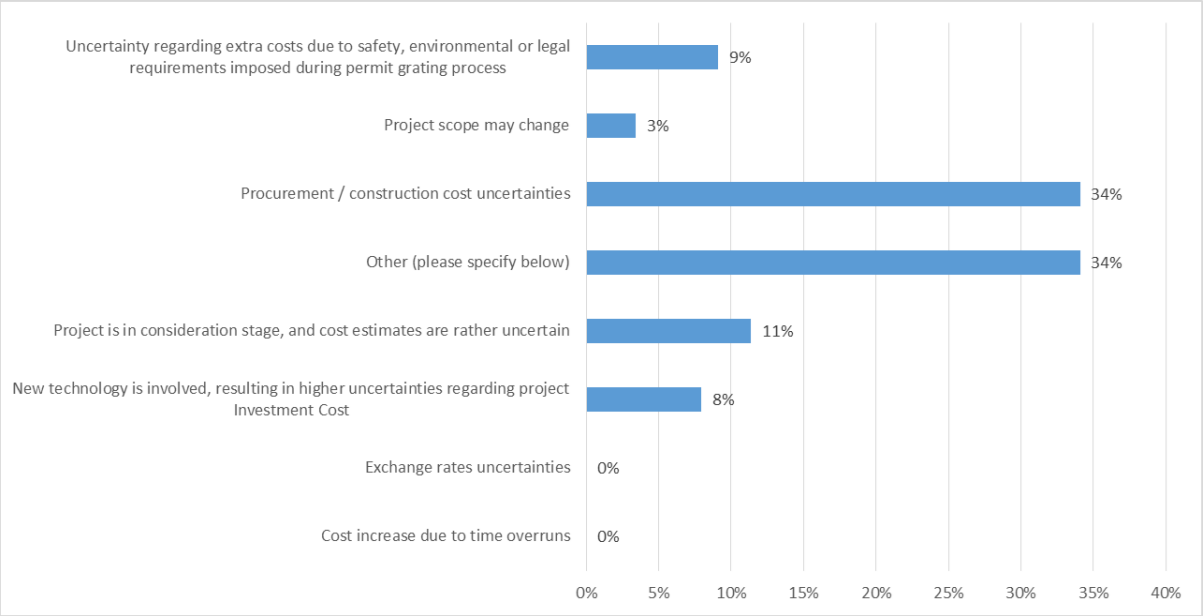
c. **Reasons for investment cost variations**

The findings from 88 PCIs, which reported reasons for the variation in CAPEX estimation, are illustrated in Figure 45. "Procurement / construction cost uncertainties", as well as "Other" reasons are the most frequent reasons for cost variations, mentioned by 68% of the respondents.

Out of the 29 projects which selected the "other" option, 21 replies provide reasons related to "uncertainty of costs due to low maturity of projects", 5 mentioned "Changes in the actual / expected prices of raw material and/or equipment used for the project" together with some extra reasons (e.g., route changing and changes of costs pertaining to that), and the rest mentioned various specific reasons.

Also, 11% of the respondents reported to be in the "under consideration" stage and have rather uncertain cost estimates and 9% indicated "uncertainty regarding extra costs due to safety, environmental or legal requirements imposed during permit grating process".

Figure 45: Reasons for variation of CAPEX



2.4.2 Life-cycle costs

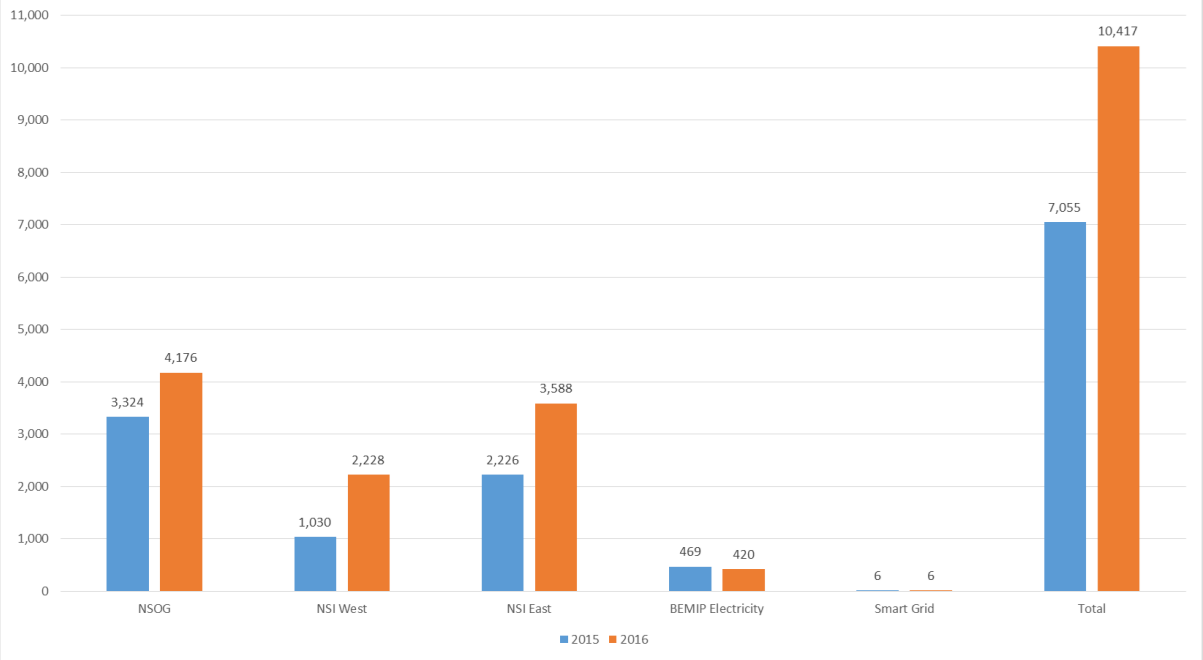
a. Total expected life-cycle costs

For the purpose of this Report, currently expected life-cycle costs" includes costs of replacement of devices, dismantling, maintenance and other life-cycle costs and it does not include investment costs".

Figure 46 presents the aggregate life-cycle costs per priority corridor and smart grid, and for comparison purpose, the 2015 data is also included in the graph[60].

[60] Please note that the samples are different for the 2015 and 2016, as for 2015 last year's values were used, which refer to different projects and number of projects.

Figure 46: Expected life cycle costs 2015-2016 (mil €)



Except for projects in the BEMIP corridor, which reported a 10% decrease in expected life-cycle costs compared to the 2015 data, projects in the remaining corridors reported significant increases (i.e. 26% in NSOG, 61% in NSI East and 116% in NSI West). All the mentioned variations lead to a 48% increase in the aggregate values of expected life-cycle costs compared to the 2015 Report.

In the 2015 Report, the Agency suggested that life-cycle costs should be properly taken into account for the cost-benefit analysis for infrastructure development. This recommendation is confirmed and reinforced by the 2016 data, according to which the **net present value (NPV) of life-cycle costs, which are mostly related to operational expenditures, represents 22% of the NPV of capital expenditures of the corresponding projects** (the same figure in 2015 was 18%)**.**

b. Average expected variation and reasons for variation

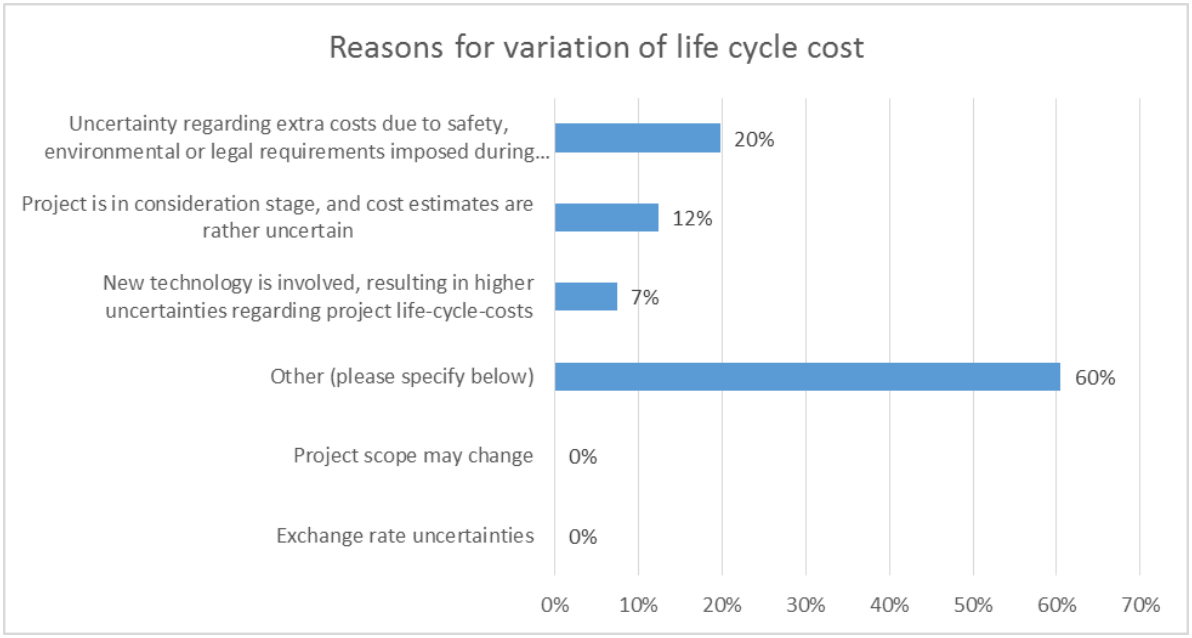
In filling in the questionnaire, project promoters were requested to provide the expected upward and downward variation of life-cycle costs. According to the data received[61], the average downward variation is 10% and the average upward variation 13%.

Figure 47 illustrates the reasons indicated by promoters for life-cycle cost variation. As noted in Figure 47, the majority of promoters (60%) indicated an "other" reason than the ones

[61] The figures are calculated as an average of the reported variations.

provided by the Agency in the questionnaire. The bulk of the answers falling in this category referred to high uncertainties accompanying new technologies or long-term predictions. Many promoters also mentioned evolving methodologies for OPEX calculation, thus resulting in different reported values.

Figure 47: Reasons for variation of life-cycle costs



2.4.3 Expected benefits

In the Agency's questionnaire, promoters were asked to report the estimation of the expected benefits of their projects. Promoters were free to use any study available to them for the calculation of the benefits (TYNDP or other studies). However, they were asked to use the discounting parameters (i.e. 25 years of operation, 4% discount rate, and no residual value) and other rules provided by the ENTSO-E CBA methodology for the yearly calculation of benefits and their subsequent NPV in 2016.

The Agency considers that benefit results significantly depend on the input scenarios and assumptions used for their calculations. Therefore, there is considerable uncertainty of the benefits indicated by the promoters. Furthermore, competing projects are not excluded from the aggregate value of benefits for the purpose of this Report.

2.4.3.1 Expected benefits and correlation to expected CAPEX

A total of **€110.6 billion of benefits** were reported for 83 projects, for which the total estimated **CAPEX is €46.3 billion**. This total benefits figure includes only the reported SEW benefit, the Security of Supply benefit and the benefit of variation of losses; the reported category "other benefits", amounting to approximately €3 billion, was not taken into account as in many cases benefits not related to electricity consumers or benefits already included in the other categories of benefits were reported in this category.

The corresponding **SEW benefit** of the above projects amounts to a total of **€112.5 billion**.

The difference between the total benefits and SEW values is the effect of the variation of losses benefit, which is **negative €2.4 billion** and the Security of Supply benefit, which is **positive €0.5 billion**.

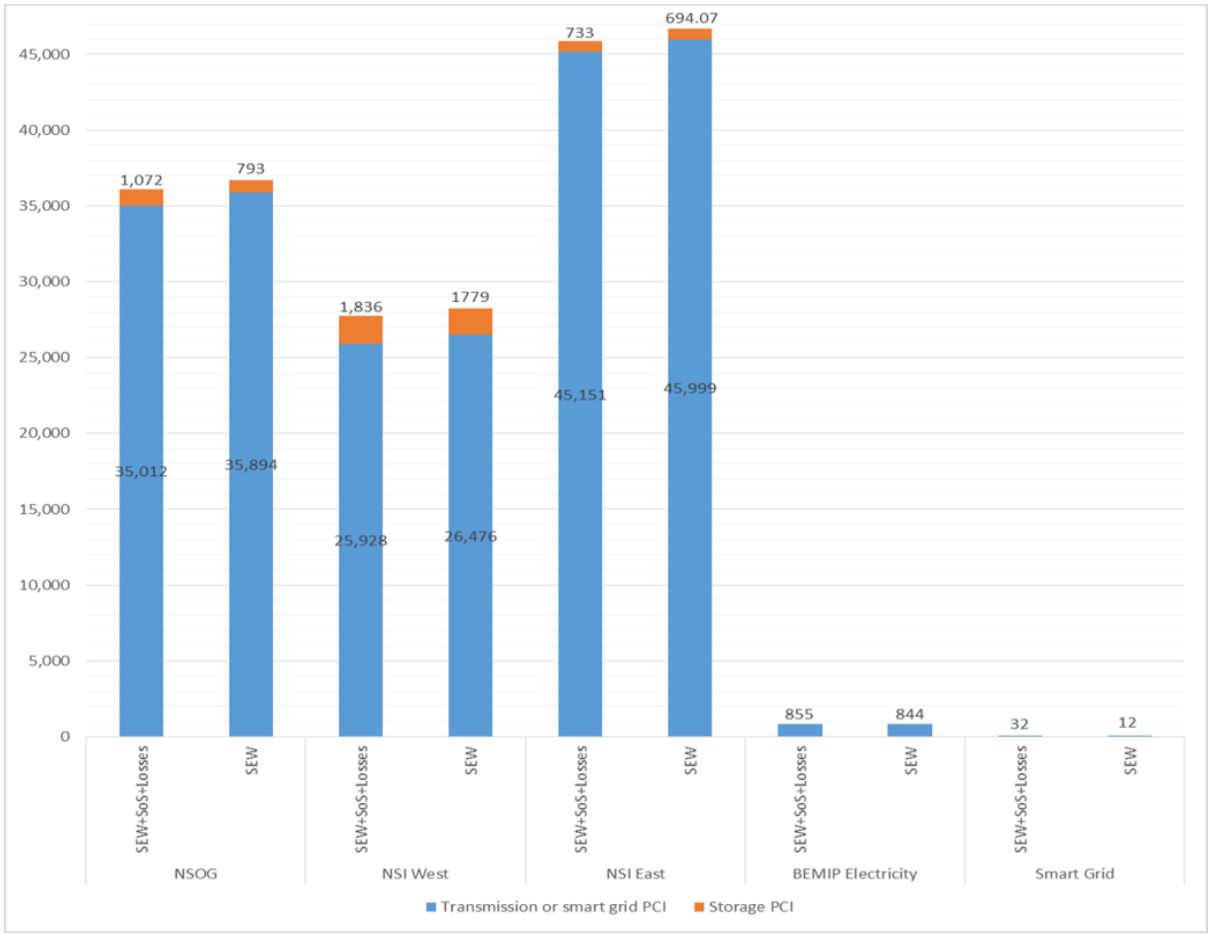
In 17 **cases** out of the 83 projects, **the reported total benefits do not even outweigh the investment costs**.

2.4.3.2 Expected benefits by category of benefit, priority corridor, and implementation status

a. Benefits per corridor

The sum of benefits (SEW+SoS+Losses) is depicted on the left-hand bar in each priority corridor in Figure 48, and is compared to the socio-economic welfare (SEW), which is represented on the right-hand bar in the respective corridor of Figure 48.

Figure 48: Expected benefits by category of benefit and priority corridor / thematic area



In the case of the NSOG, NSI West and NSI East priority corridors, the sum of benefits is slightly lower (by 1.6% - 1.7%) than the respective SEW benefit of the corridor. The

difference between the two values is the effect of the variation of losses benefit (see Figure 49) and Security of Supply benefit (see Figure 50).

Figure 49 illustrates the breakdown of the **negative €2.4 billion** contribution of losses by priority corridor and thematic area. As it can easily be noticed, a negative losses balance is reported for the NSOG, NSI West and NSI East priority corridors. The negative values account for roughly €3.2 billion, while the positive values for **€0.8 billion**.

Figure 49: Variation of losses benefit per corridor / thematic area

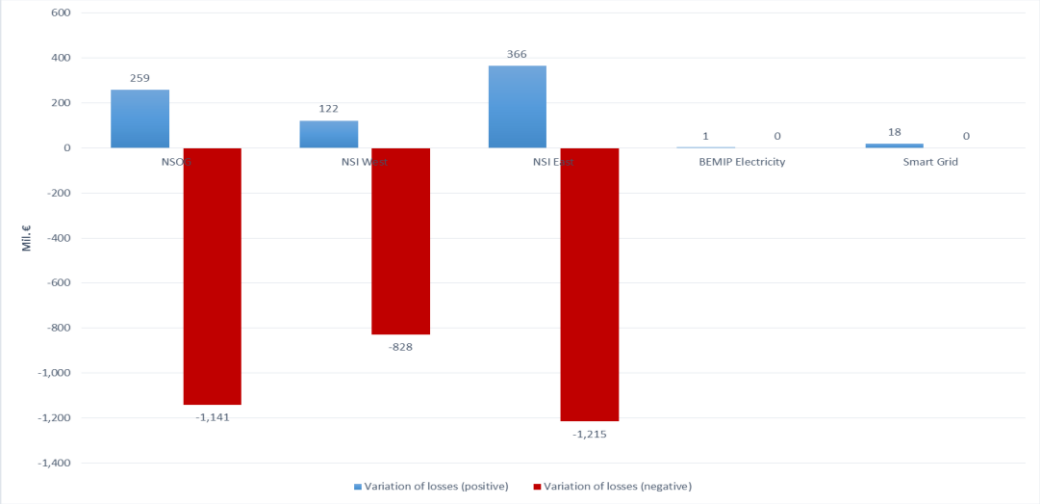
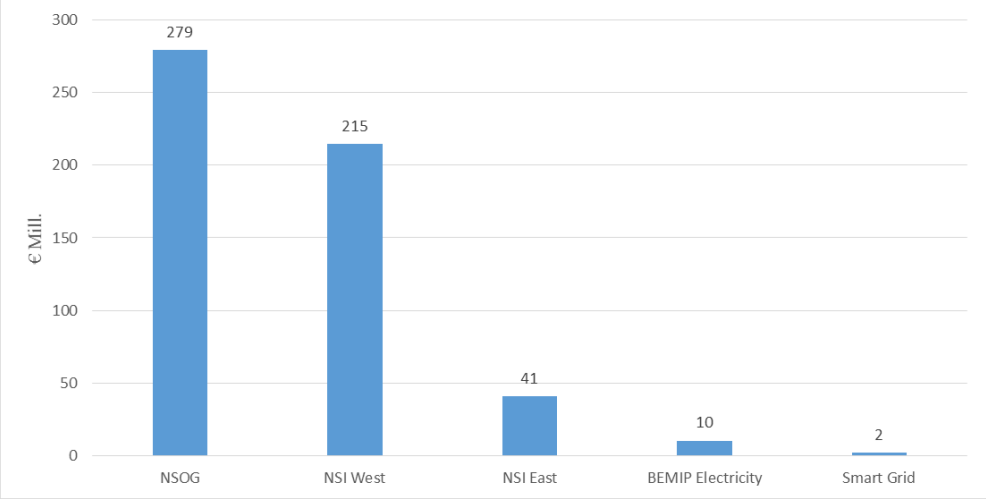


Figure 50 presents the security of supply benefit per priority corridor. By comparing Figure 50 and Figure 48, security of supply benefits appear to be just a small part of the total benefits, and is mainly reported for the NSOG and NSI West corridors. However, this may be due to lack of monetisation of security of supply benefits for certain projects.

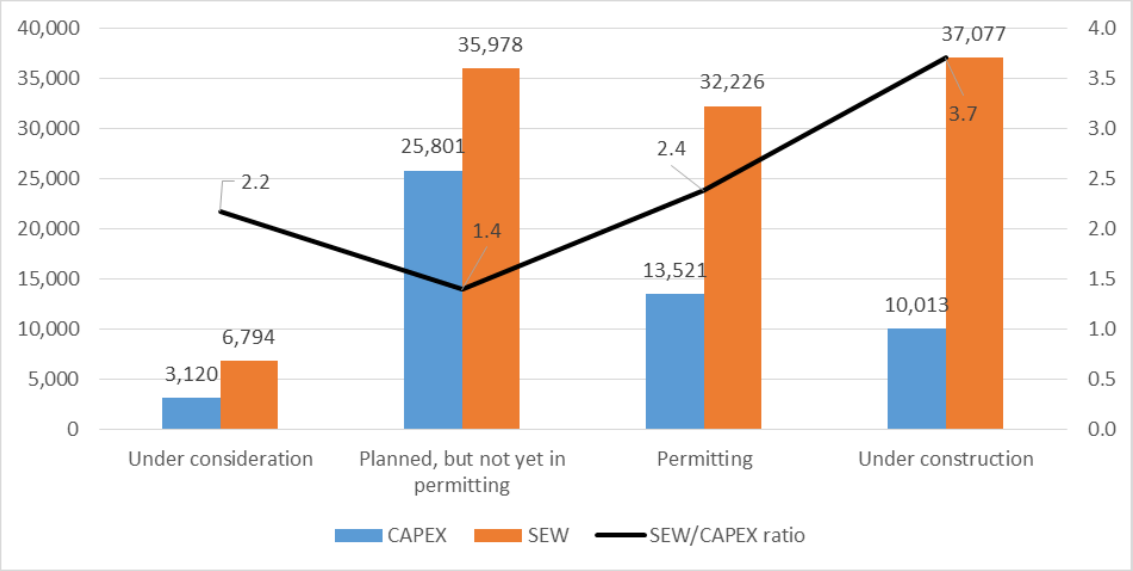
Figure 50: Security of Supply benefit per priority corridor / thematic area



b. Correlation of SEW and CAPEX with implementation status

Figure 51 explores the correlation between the ratio of SEW over CAPEX and the PCI implementation stages. As projects mature from the "planned, but not yet in permitting" phase, the ratio of SEW to CAPEX gradually increases.

Figure 51: Correlation of SEW / CAPEX ratio with implementation status



2.4.3.3 Progress of benefits compared to 2015

a. SEW in 2015 and 2016

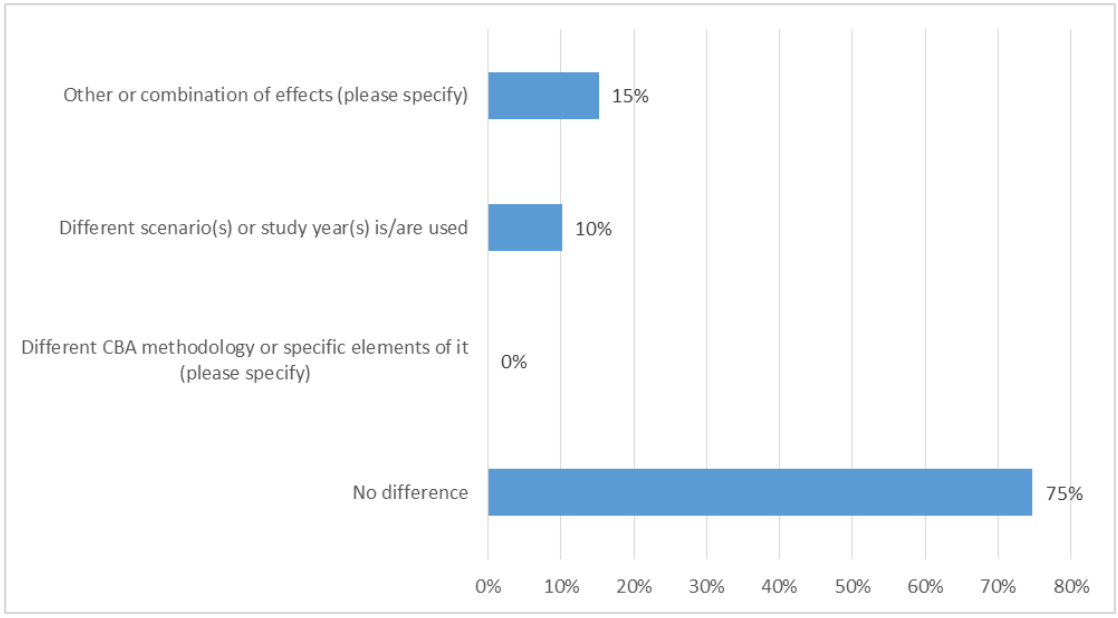
The comparison of total benefits between 2015 and 2016 is not possible due to the quality of the 2015 data for Security of Supply and variation of losses benefits.

Regarding the SEW, the aggregate reported figure for 2016 increased to €112.5 billion, as compared to €105.6 billion reported in 2015, despite the fact that the number of projects for which a SEW is reported was decreased from 95 projects in 2015 to 83 projects in 2016.

b. Reasons for difference in expected benefits 2015-2016

Figure 52 illustrates the grounds for difference in the 2016 expected benefits of the PCIs compared to the values provided by the project promoters for the 2015 Report. The majority (75%) reported no difference, 10% reported that the reason for the difference is the use of different scenarios or study years, and 15% of the respondents (i.e. 11 replies) selected 'Other or combination of effect' as a reason for difference. Correction of calculations was the most frequent reason as it was reported in 4 cases. Change of vision, change of project scope, and postponement of commissioning date were also mentioned as reasons for reported difference.

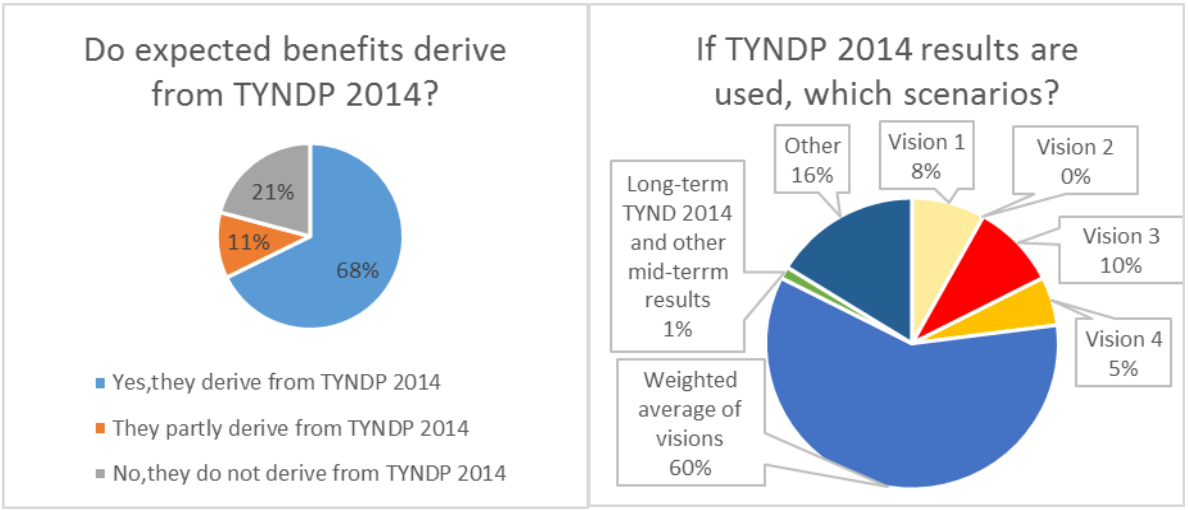
Figure 52: Reasons for difference in expected benefits 2015-2016



2.4.3.4 Sources for the calculation of benefits

In the following Figure, the source of benefit calculation is depicted. Data was provided for 96 PCIs. For 68% of the PCIs (65 cases), the benefits derive from the TYNDP 2014, and for an extra 11% (11 cases), they partly derive from it, while for 21% (20 cases) the calculations are based on different scenarios and studies.

Figure 53: Sources for the calculation of benefits



The main reasons given by promoters for partly using TYNDP 2014 scenarios are the need to use an extra scenario for the mid-term time horizon, taking into account national policies and the need for calculation of the project-specific benefits and not those of the overall cluster of projects included in the TYNDP.

Regarding the studies on which promoters based their benefits calculations, out of the 19 replies that were provided, 5 corresponded to storage projects (2 did not carry out any benefit calculations and 3 performed their own studies), 1 to smart grids (which reported that it used the JRC proposed guidelines) and the rest to transmission projects. For the transmission projects, 3 stated that the calculation is based on TYNDP-2012 studies, 3 on TYNDP-2016 studies, 4 that they used their own or combined studies, and 3 that did not perform any benefit calculation. Regarding the planning horizon, most stated that the calculation covered 2030, and some also 2020 or close-by year.

2.4.3.5 Variation of benefits

In relation to the expected variation of benefits, the average value of the project variations reported by project promoters were calculated to be **-45% for downward variation** and **+51% for upward variation**.

The high variations reported may be attributed to the high degree of uncertainty involved in the calculation of benefits.

Key findings

- The net present value of the aggregate expected investment cost of the projects, which reported values, is €52.5 billion.
- If all projects were commissioned on-time, investment would be around €6 billion per year in the period 2018 to 2022. Cumulatively, €32.9 billion of CAPEX would be injected by 2022.
- The net present value of the total life-cycle costs of the projects, which reported this information, amounts to €10.4 billion. By taking into account the same pool of projects, it can be noted that the net present value of the total life-cycle costs correspond to 22% of the net present value of the investment costs.
- A total of €110.6 billion of benefits were reported, more than the double of the investment costs of the corresponding projects. However, high reported variations for benefits (-45% downward and +51% upward) emphasise the high degree of uncertainty involved in the calculation of benefits. Also, in 17 cases, the reported total benefits do not even outweigh investment costs of these projects.

Key recommendations

- Further improvements in the cost information reporting is needed. All projects in more advanced implementation stage should be able to provide the requested cost information.
- Since life-cycle costs are a significant part of the total project cost, it is recommended that they be duly taken into account during the PCI selection process.
- PCI criterion of Regulation (EU) No 347/2013 that benefits should outweigh costs should

be more thoroughly assessed and evaluated during the PCI selection process.

- The availability of accurate and up-to-date information about the project specific benefits is a precondition for promoters to apply for the PCI status as well as to submit cross-border cost allocation requests and when applying for CEF grants for works. Therefore, further cooperation among relevant stakeholders should be pursued to facilitate ENTSO-E's work on further monetisation of benefits.
- A methodology to allocate benefits at a project level should be proposed by ENTSO-E and implemented during the PCI selection process.

2.5 Regulatory treatment

Regulation (EU) No 347/2013 introduced improved regulatory tools, namely the coordinated decisions on the investment requests and specific incentives in case of higher risks, to facilitate the implementation of the PCIs. This chapter gives an overview of the past and expected future use of these improved regulatory tools as well as of the use of exemptions. These tools are applicable only for transmission projects, therefore the assessment of this chapter excludes storage and smart grid PCIs, thus covering in total 100 transmission projects.

2.5.1 Investment requests and decisions

Regulation (EU) No 347/2013 aims to facilitate PCI implementation by envisaging decisions by NRAs or by the Agency on the allocation of the costs of such projects across borders if project promoters submit an investment request including a request for cross-border cost allocation.

Out of the 100 projects, 5 projects submitted an investment request by 31 January 2015. For 4 of them the relevant NRA(s) already issued decision(s), and the decision on one project was still pending. In 2016, the project promoters consider to submit an investment requests for 6 additional projects. For the rest of the projects, the project promoters either do not plan to submit an investment request in 2016 (62) or they have not decided yet (26).

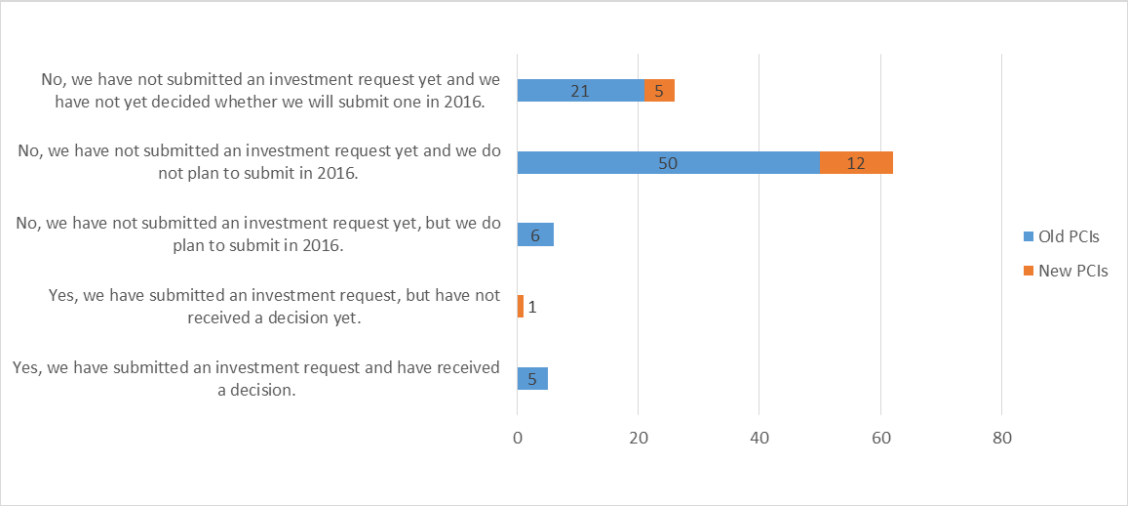
The low rate of submitted investment requests could be explained to some extent by the legal requirement that a project has to reach a sufficient level of maturity before the project promoter(s) can submit an investment request. Pursuant to the Agency's Recommendation[62], a sufficiently mature project needs to meet a number of criteria related to sufficient certainty about project costs and benefits, project status at the time of the application, and expected commissioning date, which significantly reduce the number of projects which are "eligible"

[62] Cf. the Agency's Recommendation No 05/2015 of 18 December 2015 on good practices for the treatment of investment requests, including cross-border cost allocation requests, for electricity and gas projects of common interest, pp. 3-4:

http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Recommendations/ACER%20Recommendation%2005-2015.pdf

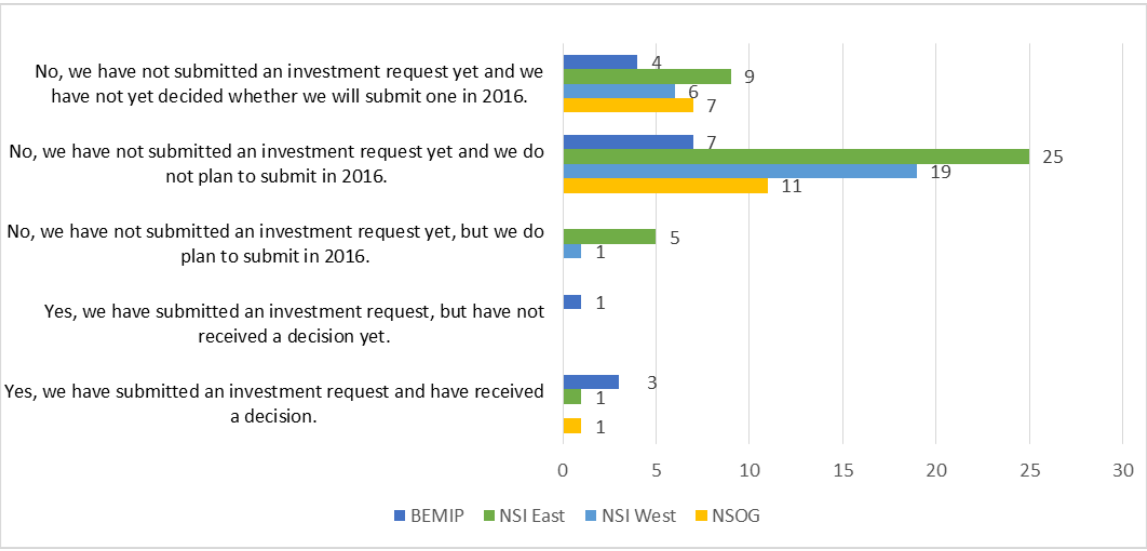
for the investment request. For example, if only the projects which are at least in permitting status are considered, the maximum sample of transmission projects is reduced by 40%.

Figure 54: Submission of investment requests



Considering the small number of projects which submitted an investment request or plan to submit one in 2016, there are serious limitations in drawing conclusions on different patterns at a regional level. Nonetheless, it is remarkable, as shown on Figure 55, that 4 out of the 5 submitted investment requests are in the BEMIP priority corridor and 5 out of the 6 planned investment requests in 2016 are in the NSI East priority corridor.

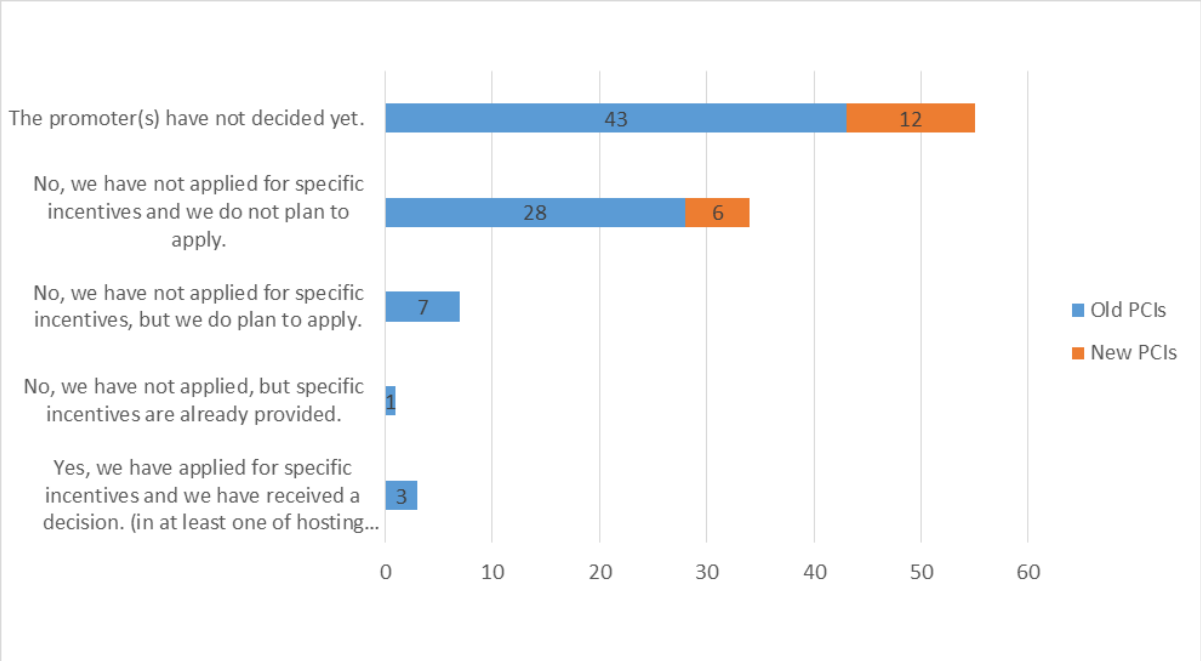
Figure 55: Investment requests by priority corridor



2.5.2 Risks and incentives

As a further regulatory tool, pursuant to Article 13(5) of Regulation (EU) No 347/2013, Member States and NRAs are required to provide appropriate incentives for PCIs deemed to incur higher risks as compared to the risks normally incurred by a comparable infrastructure project. As depicted in Figure 56, there are only three PCIs for which project promoters applied and were granted specific incentives[63]. In the case of 7 projects, the project promoters have not applied for specific incentives yet, but plan to do so. With regard to the very low number of applications and plans to apply for specific incentives, while no investigation on the underlying reasons have been carried out, it seems that PCIs in general do not face higher risks compared to comparable infrastructure projects or that the existing regulatory frameworks already provide sufficient measures to tackle risks and therefore, already incentivise the necessary investments.

Figure 56: Applications for specific incentives

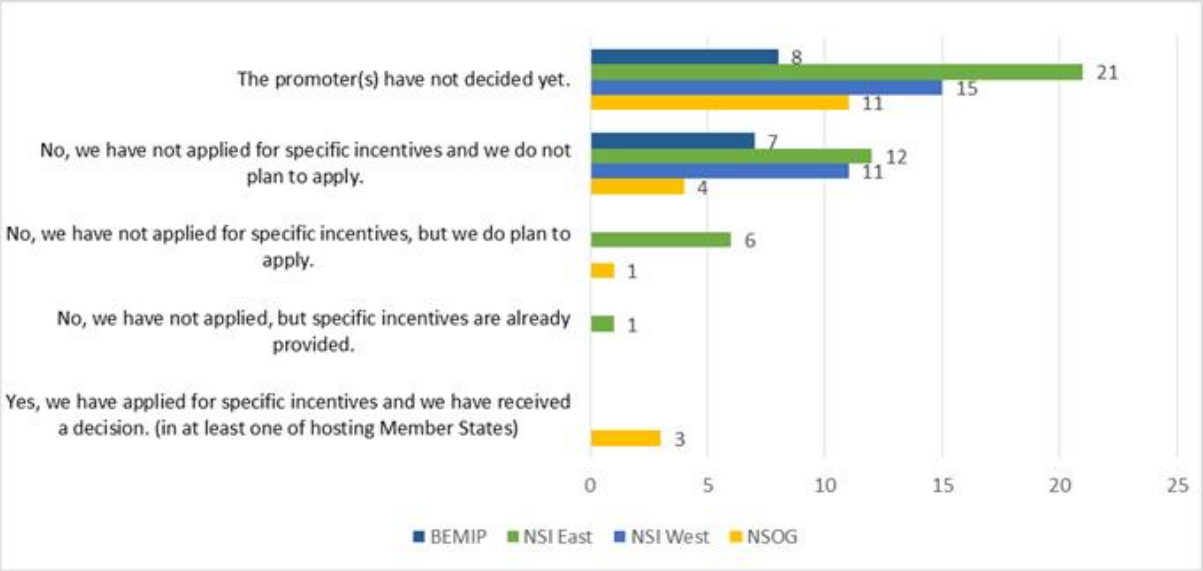


Looking at the breakdown by priority corridors one can note from Figure 57 that all past or planned applications for specific incentives are concentrated in the NSOG and NSI East priority corridors. The 3 projects whose project promoters applied for specific incentives are

[63] In one case, the incentive was regarding efficiency of the investment and a later than normal incorporation in the international benchmark. In the other two cases the project promoters applied for a cap and floor regulatory treatment

located in the NSOG priority corridor, while 6 out of the 7 projects whose project promoters already plan to apply for specific incentives are in the NSI East priority corridor.

Figure 57: Specific incentives by priority corridor



2.5.3 Exemptions

The last regulatory tool to be assessed is the exemption of projects from Article 16(6) of Regulation (EC) No 714/2009, from Article 32 and Article 37(6) and (10) of Directive 2009/72/EC pursuant to Article 17 of Regulation (EC) No 714/2009, or under Article 7 of Regulation (EC) No 1228/2003, which are basically exemptions related to third party access if some extraordinary conditions are met by the project.

As shown in Figure 58, there are 4 cases where the project promoters applied for exemptions, and, in one case, the project received an exemption[64], while in 3 cases the decision of the relevant authority is still pending. 5 projects foresee the application for exemption[65] in the future, and for 5 additional cases the project promoters have not decided yet. The project promoters of the vast majority of the relevant projects (84%) do not plan to apply for exemptions.

The granted exemption is for a project in the NSOG priority corridor, the other 3 submitted applications are in the NSI East and NSI West corridors, 2 and 1 projects respectively.

Based on the above, it seems that exemptions are used only in exceptional cases, thus in line with the intention of the lawmakers.

[64] In one case, the exemption under Article 17 of Regulation (EC) No 714/2009 was granted by a joint decision of the relevant NRAs.

[65] The respective project promoters did not provide any indication of the specific exemptions they are planning to apply for.

Figure 58: Applications for exemption

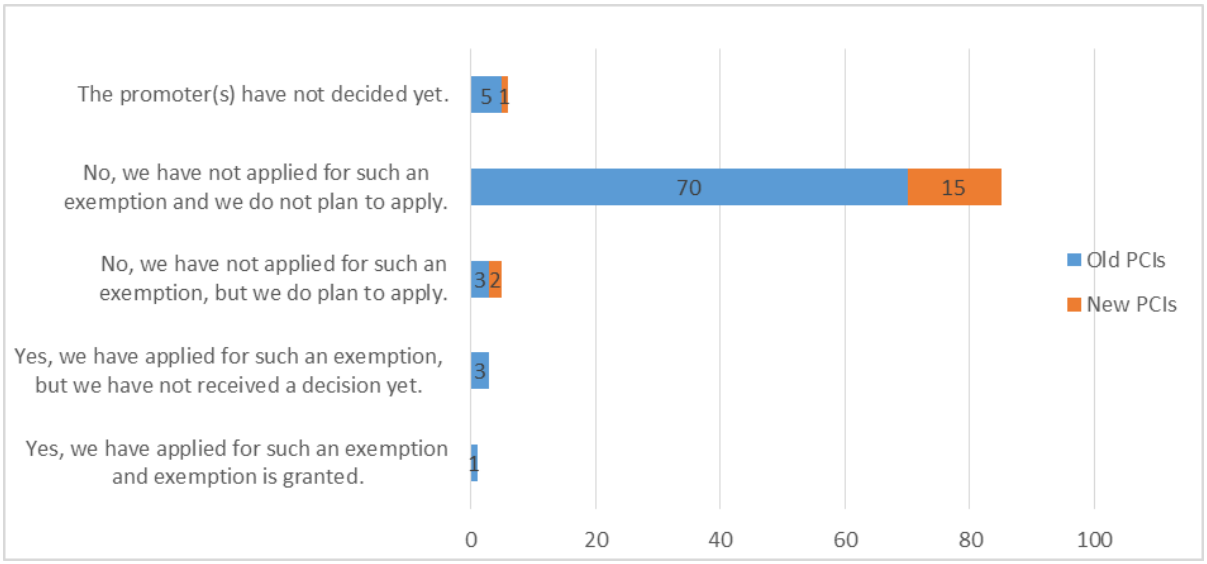
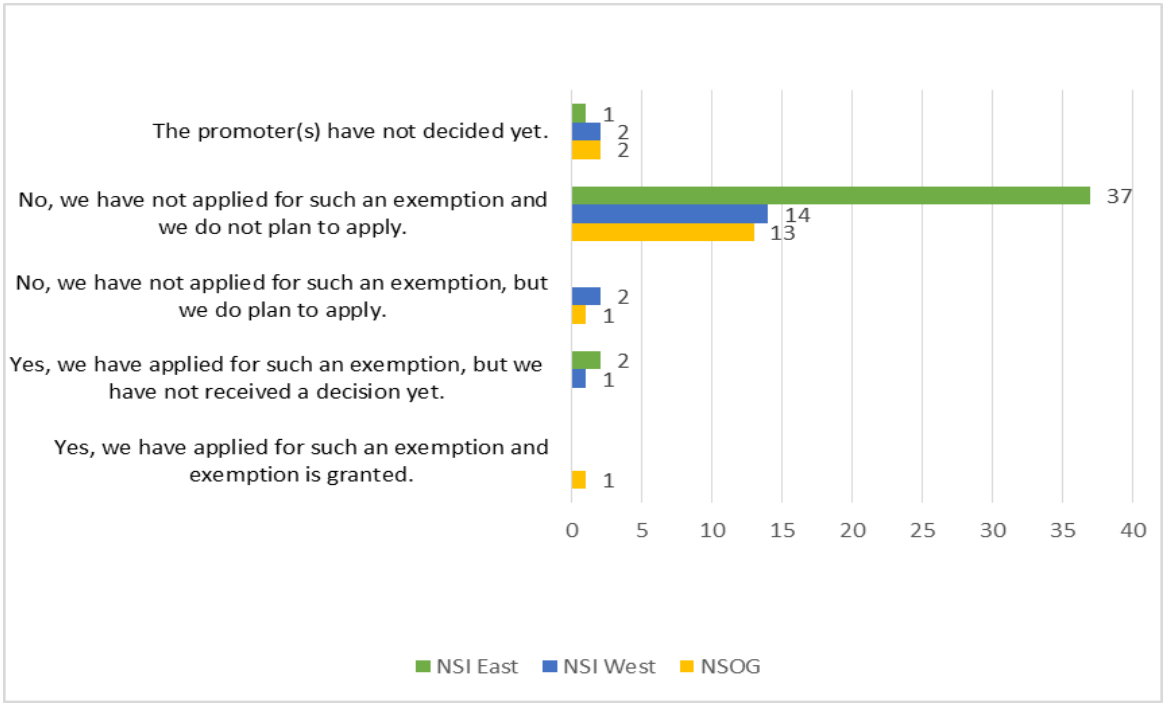


Figure 59: Applications for exemption by priority corridor



As a general remark regarding the projects benefitting from improved regulatory tools, the latter tend to be more advanced and more technologically complex (most of them are combined investments and offshore DC transmission cables).

Key findings

Exemptions and the improved regulatory tools of Regulation (EU) No 347/2013 (incentives, investment requests including requests for cross border cost allocation) have not been widely used by project promoters (5 of the transmission projects submitted an investment request, 5 applied for exemptions and 2 for specific incentives) and project promoters have shown a limited interest to use them in the future.

3 GAS PROJECTS

3.1 Introduction

3.1.1 Fulfilment of the reporting obligations

By the legal deadline of 31 March 2016, the Agency received reports for all but one of the PCIs[66]. For a PCI, part of the report was submitted after the deadline due to technical difficulties. The Agency recalls that promoters are obliged to submit an annual report of their PCI each year following the year of inclusion of the project in the PCI list and the failure to submit such an annual report represents a breach of Regulation (EU) No 347/2013. The PCI status of projects which are not compliant with the Regulation should be reconsidered and the necessary steps could be taken by the Regional Groups and the European Commission to revoke the status if necessary.

3.1.2 Completeness, consistency and adequacy of the submitted data

After the receipt of the reports, the Agency carried out a validity check of the received data in order to assess their completeness and consistency. The Agency notes that the **information related to project identification, technical parameters and expected costs is provided at an adequate level. However,** the Agency **identified a significant number of cases in which sections of the reporting template were not completed**[67]. Most of the missing or incomplete information is related to the level of and changes to the benefits of the project (for 80% of the PCIs), the life cycle costs (for 55% of the PCIs), the description of the works performed between January 2015 and January 2016 (for 25% of the PCIs), and the implementation schedules at project level[68] (for ~20% of the PCIs no date for the permitting procedure and for ~15% of the PCIs no date for the commissioning was provided).

In some instances, promoters did not provide the information without specifying whether it is not available[69] or non-applicable. Consequently, it is not always possible to make a clear distinction between information which was not available to the promoter and information which was available, but not provided in the report. In several cases involving missing data

[66] For PCI no. 6.8.3 *"Interconnection of the Northern ring of the Bulgarian gas transmission system with Podisor - Horia pipeline and expansion of capacity on Hurezani-Horia-Csanadpalota section"*, no project promoter contact was indicated to the Agency. In the absence of a report by 31 March 2016, the Agency informed the European Commission and proposed the removal of this project from the PCI list.

[67] The Agency recalls that the exact elements of the promoters' PCI reports are not explicitly described in Article 5 of Regulation (EU) No 347/2013. Both in 2015 and in 2016 the Agency compiled reporting forms, which were consulted with Competent Authorities, national regulatory authorities and project promoters and were used to collect the information. Because of the technical limitations of the reporting tool, the Agency was not in the position to make all the elements of the reporting form obligatory for promoters to fill in, even though the full scope of requested data is necessary for the Agency to be able to carry out is functions in monitoring the progress of PCIs.

[68] Even though project promoters are obliged to draw up an implementation plan for PCIs pursuant to Article 5(1) of Regulation (EU) No 347/2013.

[69] For projects which are beyond the planning stage, the information is generally more comprehensive compared to the information for projects in the early stages of their planning. Some project promoters indicated that even basic information, such as the planned commissioning date, is not known to them at the time of the reporting.

and apparent data inconsistencies, the Agency sought clarifications from the project promoters[70].

The Agency is of the view that the non-provision of important information regarding the implementation plan of a project, including *inter alia* its schedule, without providing a proper justification, should be interpreted as an indication that the project is not sufficiently mature, and also raises doubts about the project's compliance with Article 5(1) of Regulation (EU) No 347/2013.

The Agency reiterates its position expressed in the 2015 PCI monitoring Report[71], inviting project promoters to carefully consider the obligation to draw up an implementation plan for the PCI and the importance of including the relevant information in their future reports. The Agency notes that the absence of such information in the promoter's annual report leads to **doubts about the fulfilment of the promoter's legal reporting obligation and the soundness of the promoted project.**

Some PCIs include several "phases" (e.g. different sections of a pipeline being built after each other or stages of instalment of compressor stations at the same interconnection point) which are developed in parallel to each other. These phases are on different implementation levels, they foresee a different commissioning date and may be on time or delayed independently from each other. The Agency points out that since the information must be reported for the PCI as a whole, the information on phased projects may be distorted in the reports.

Key findings

- The Agency draws the attention of project promoters to the importance of accurately reporting, to the Agency and to the relevant Competent Authorities, *all* information which is available to the promoters in order to comply with the requirements of Article 5(1) of Regulation (EU) No 347/2013.
- In particular, the Agency notes that project promoters are obliged to draw up an **implementation plan** for PCIs pursuant to Article 5(1) of Regulation (EU) No 347/2013, and that failure to report the project schedule to the Agency and the relevant Competent Authorities indicates the absence of an implementation plan (schedule for the project) or inaccurate reporting by the project promoters. The Agency is of the view that project promoters who apparently did not comply with Article 5(1) of Regulation (EU) No 347/2013 should draw up an implementation plan without delay and report it to the Agency and the relevant Competent Authorities.
- The continuous failure of a project promoter to provide the necessary information to the

[70] For further information on the clarifications sought by the Agency, please consult Annex II: Clarification and validation of submitted data.

[71] Cf. http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/Consolidated%20report%20on%20the%20progress%20of%20electricity%20and%20gas%20Projects%20of%20Common%20Interest.pdf

Agency and to the Competent Authorities to monitor the progress of the respective PCI, should be taken into account in the assessment of the candidate projects in the upcoming rounds of PCI selection. **If a project promoter is considered not to have fulfilled its obligations under Regulation (EU) No 347/2013, its project should not be placed on the PCI list.**

3.2 Overview of the gas PCIs

3.2.1 Projects on the 2015 PCI list and changes compared to the 2013 PCI list

The 2015 PCI list includes 77 projects in gas, which is a 25% reduction in the number of projects compared to the PCI list of 2013. Transmission continues to dominate the PCI list with 64 projects, while liquefied natural gas (LNG) facilities account for 7 projects and underground gas storage (UGS) facilities are present with 6 projects. The number of LNG projects is halved compared to the 2013 PCI list. Transmission projects are also fewer (~20% less than in 2013). The number of UGS projects remained similar (currently 6 PCIs *vs*. 7 PCIs on the previous list).

The two main reasons for a project not retaining its PCI status on the 2015 PCI list were that the promoter either did not apply for a PCI status (12 projects), or applied but the project was not selected (11 projects). In a few other instances, the project was about to be commissioned during the PCI selection process for the 2015 PCI list, i.e. was in the construction phase in 2015, thus making it non-eligible to become a PCI (5 projects). In 2 cases, the project was cancelled.

A comparison between the PCI lists of 2013 and 2015 indicates that two-thirds (~63%) of the projects on the current PCI list appear on both lists with virtually the same scope, i.e. with a similar route (for pipelines) and technical parameters[72]. These projects provide an adequate sample to carry out an analysis of the projects' progress since 2013. These PCIs represent the sample used in the parts of the analysis which deal with the PCIs' progress between 2013 and 2015.

Table 3: Number of PCIs present on both the 2013 and 2015 PCI lists with the same scope ("old" PCIs)

	NSI West	NSI East	Southern Gas Corridor	BEMIP
Transmission	11	14	8	5
LNG	1	2	-	4
UGS	1	2	-	1

[72] These projects are called "old" PCIs in the report.

The remaining projects on the 2015 PCI list (about 37%) are either new PCIs (23 PCIs) or projects which were present on the first PCI list but have been substantially reorganised. Such reorganisations include the splitting of a PCI into two or more projects or merging with other projects, as well as altering the project's scope to an extent which makes the comparison to the project's status of 2013 largely meaningless (5 PCIs).

The Agency notes that one project – "Gas compressor station at Kipi" – appears in three instances on the 2015 PCI list with two different versions of projects characteristics (capacity, total investment cost, etc.). The Agency treats each PCI individually and accordingly **all three instances of this PCI are taken into account separately in the statistics of this report**[73].

The Agency highlights that including the same project on the PCI list multiple times with the same or different project features can lead to serious distortions in the statistics and analyses of the annual reports submitted by project promoters. **The Agency strongly recommends that on the future PCI lists each project be listed only once**. If it is necessary to include a project in several clusters, it should bear a PCI number only in one cluster and should be indicated by reference but without a PCI number in other clusters.

For PCI no. 7.1.1[74], three separate reports for the project's sections (TCP, SCP-X and TANAP) were submitted to the Agency and included as individual projects in the present report. **The graphs and the tables in the report reflect the total number of individual submissions (i.e., 78 reports) to the Agency**. PCI no. 7.1.1 appears in the statistics as covered by three reports, unless otherwise indicated.

3.2.2 General statistics of the gas PCIs

The shares of the four gas priority corridors among the PCIs remained very similar to the previous PCI list. Slightly more than half of the PCIs are located in the priority corridor of the North-South Gas Interconnections in Central Eastern and South Eastern Europe ("NSI East"), followed by the PCIs in the North-South Gas Interconnections in Western Europe ("NSI West"). A minor difference compared to the previous PCI list is that currently the Southern Gas Corridor and the related projects ("SGC") represent the third most populous priority corridor[75] and the Baltic Energy Market Interconnection Plan ("BEMIP") contains currently the fewest projects[76].

[73] For certain aspects in the statistical analyses this may lead to *triple counting* the project's characteristics, even *though every effort has been made to avoid such duplication*.

[74] PCI 7.1.1 Gas pipeline to the EU from Turkmenistan and Azerbaijan, via Georgia and Turkey, [currently known as the combination of "Trans-Caspian Gas Pipeline" (TCP), "Expansion of the South-Caucasus Pipeline" (SCP-(F)X) and "Trans Anatolian Natural Gas Pipeline" (TANAP)].

[75] SGC contained the lowest number of projects on the 2013 PCI list.

[76] BEMIP was the third most populous priority corridor out of four on the 2013 PCI list.

Figure 60: Number of PCIs reported for the 2013 and the 2015 PCI list

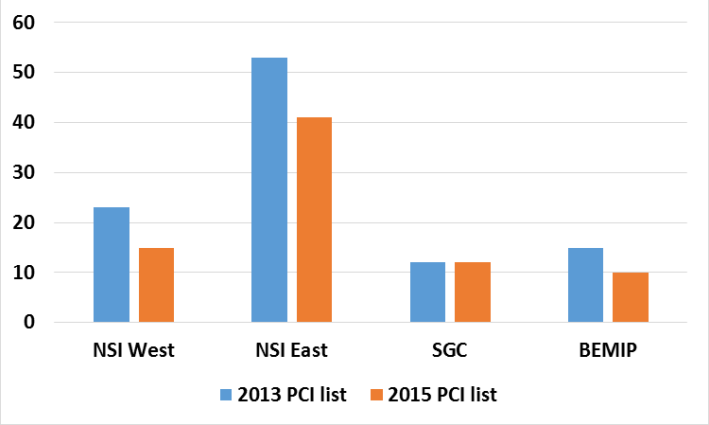
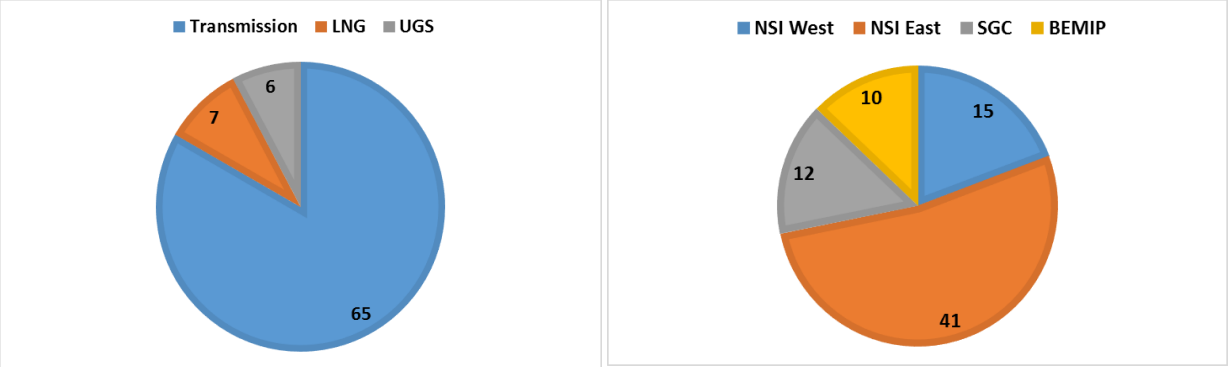
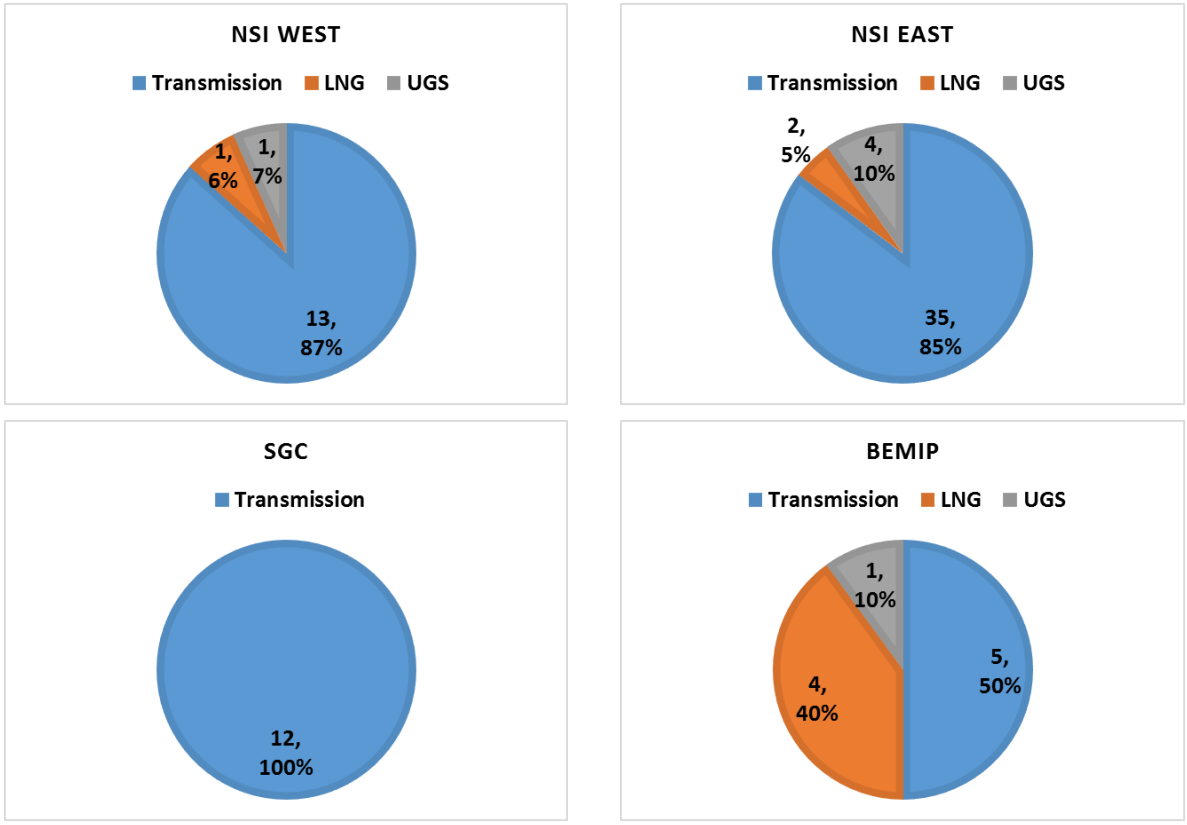


Figure 61: Number of reported PCIs by type and by priority corridor on the 2015 PCI list



Due to the fact that **the priority corridor "NSI East" and the category "transmission" include a significantly higher number of projects in comparison to other corridors and types of infrastructure, the characteristics of NSI East and the transmission category are likely to heavily impact the pattern of the expected development of priority gas infrastructure at European level.** For a thorough analysis and in order to highlight differences between corridors and types of infrastructure, the Agency examined the reports in three ways: 1. on an aggregate level; 2. with a breakdown per priority corridor and; 3. with a breakdown per PCI category (infrastructure type).

Figure 62: Share and number of the types of PCIs in the priority corridors



The aggregated CAPEX of all projects on the 2015 PCI list, as reported by the promoters, amounts to **€54 billion.** The total CAPEX figure reported for 2015 is similar to the one reported for the first PCI list, where the total reported CAPEX was €57 billion. This aggregate figure aims to give a flavour of the magnitude of the financial needs of the priority projects, however it does not mean that all these resources are actually needed: several projects may serve the same or similar infrastructure needs and a number of such competing PCIs are not expected to be all commissioned, thus resulting in a lower demand for CAPEX.

There was no total investment cost reported for 3 transmission and 2 UGS projects. Detailed information about costs is available in Chapter 3.4.1 below.

A considerable number of gas PCIs experienced changes in the major technical parameters of the PCIs since January 2015[77] Projects evolve over time, and occasionally major technical parameters change compared to the point in time when an application was submitted for the project to be granted – or to retain - the status of a PCI. The instances in

[77] Until the time of reporting, i.e. 31 January 2016.

which the changes are the result of *an administrative action, such as the merging or restructuring of PCIs already included on the list, are not considered as technical changes.*

Major technical changes have occurred in the case of approximately **25% of the PCIs** since 31 January 2015 in all three categories[78] of gas PCIs. The technical changes typically involve modifying the basic project features, such as the length of the pipeline and the compressor power for transmission projects, the send-out and storage capacity for LNG projects, and the working volume for UGS projects. The reasons for the changes include increased certainty of market demand and/or technical requirements. In a few cases, parts of the PCI have been already completed or were not selected to become a PCI and this resulted in the PCI's technical characteristics being changed compared to its previous features.

Regarding transmission projects, technical changes took place predominantly in projects in the NSI East and the Southern Gas Corridor, in an equal share. In the case of LNG projects, the changes occurred in projects in the BEMIP and NSI East corridors, whereas a storage project subject to technical changes is located in the NSI West corridor.

The majority (~75%) of PCIs for which major technical changes were reported are in the permitting stage, whereas those which are in planning, but not yet in permitting represent the remaining projects which experienced changes. This pattern is similar to the findings of the Agency's 2015 report on PCI progress, in which a comparison was made against 2013, i.e. the date when the projects first applied for the PCI list. **A possible explanation for this "higher maturity, more technical change" phenomenon is that, by the time a project reaches a more advanced stage, either external circumstances** (for example supply-demand balance, available technology, general parameters of the infrastructure system in which the project is to be built, etc.) **change, or the project planning becomes more accurate and thus requires project refining**, or a combination of the above.

3.2.3 Visualization of the countries hosting and impacted by PCIs

The geographical distribution of the projects is represented in Figure 63[79]. All Member States, with the exception of Belgium, Luxembourg and the Netherlands, host at least one PCI[80] on their territory. **Greece hosts the highest number of PCIs (14 projects)**, followed by Romania (9 projects), and Bulgaria, Hungary, and Poland with 8 projects each. Denmark, Finland, Malta, Portugal and Sweden each host 1 project on their territories[81].

The majority of projects are located in Central and South East Europe. France and Italy also host a considerable number of projects.

[78] Major technical changes have affected 16 transmission, 3 LNG and 1 UGS projects.

[79] The project promoters were invited to indicate the hosting countries and the countries which are impacted by the specific project. Apart from EU Member States, promoters could indicate as hosts Energy Community Contracting Parties and other non-EU countries.

[80] Transmission, LNG or UGS.

[81] The number of hosted PCIs does not reflect the potential investment needs in that Member State because of the varying size, capacity and technical characteristics of the PCIs.

The high number of PCIs located in Central and South East Europe could be explained by the lack of adequate infrastructure, inadequate security of gas supply, still nascent market integration, and by the fact that the region is hosting the Southern Gas Corridor projects.

In Italy, the projects concern connections to the South and to the East, which would bring new gas to the Italian market and reverse flows in the northern direction. In France, the majority of the projects involve upgrades of the internal system needed to enable better gas flows along the north-south axis.

By project type, transmission projects are more evenly distributed across the EU, whereas LNG and UGS projects are more concentrated in the Baltic and South-East European regions.

As regards the **breakdown by corridor**, 8 of the 12 Member States in the **NSI West**[82] host a PCI. In this corridor, France has the highest number of PCIs. The majority of projects in this corridor are related to transmission, accompanied by an LNG project in Ireland and a UGS project in the United Kingdom.

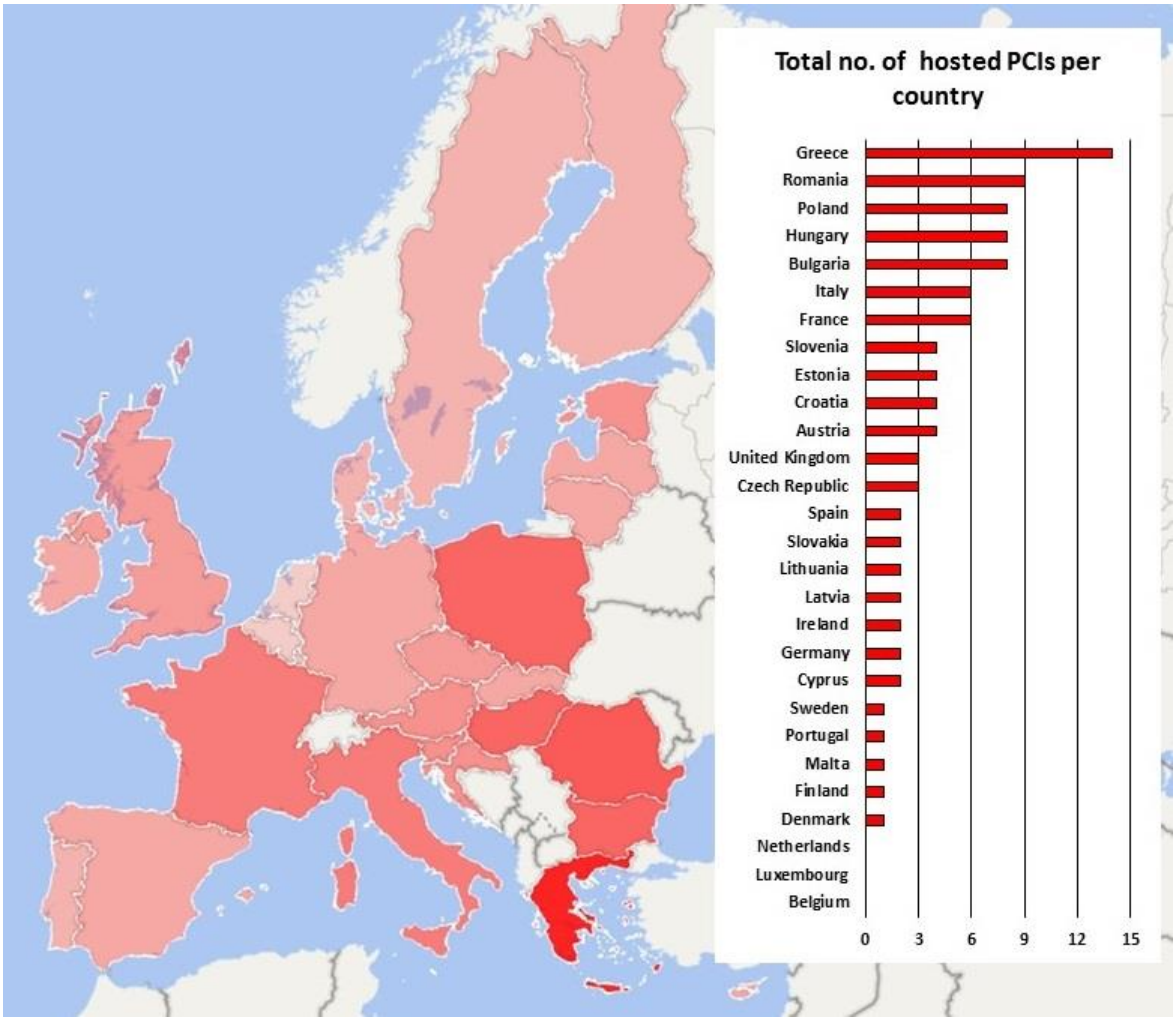
Almost every (12 out of 13) Member State in the **NSI East** corridor[83] hosts at least one PCI[84]. Hungary and Romania, hosting 8 projects each, have the most PCIs in this corridor, followed by Bulgaria with 7 PCIs. The majority of PCIs in this corridor are transmission projects (35 PCIs in total). Furthermore, the corridor includes 2 LNG projects (1 in Croatia and 1 in Greece) and 4 UGS projects (3 in Romania and 1 in Bulgaria).

[82] Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Spain, the United Kingdom

[83] Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Germany, Greece, Hungary, Italy, Poland, Romania, Slovakia, Slovenia

[84] Cyprus is the only country in this case that does not have a single project present in this specific corridor.

Figure 63: Number of PCIs hosted by Member States[85]



The smallest share of countries hosting at least one PCI is in the **Southern Gas Corridor**[86], even though the scope of NSI East and the Southern Gas Corridor is almost identical. Only 5 out of 14 Member States have a project belonging to this specific corridor. Greece, hosting 10 projects, is by far the country with the highest number of PCIs in this corridor. The geographical location of Greece serves as an entry point for many PCIs that are planned to connect the Caspian region with the rest of the European Union.

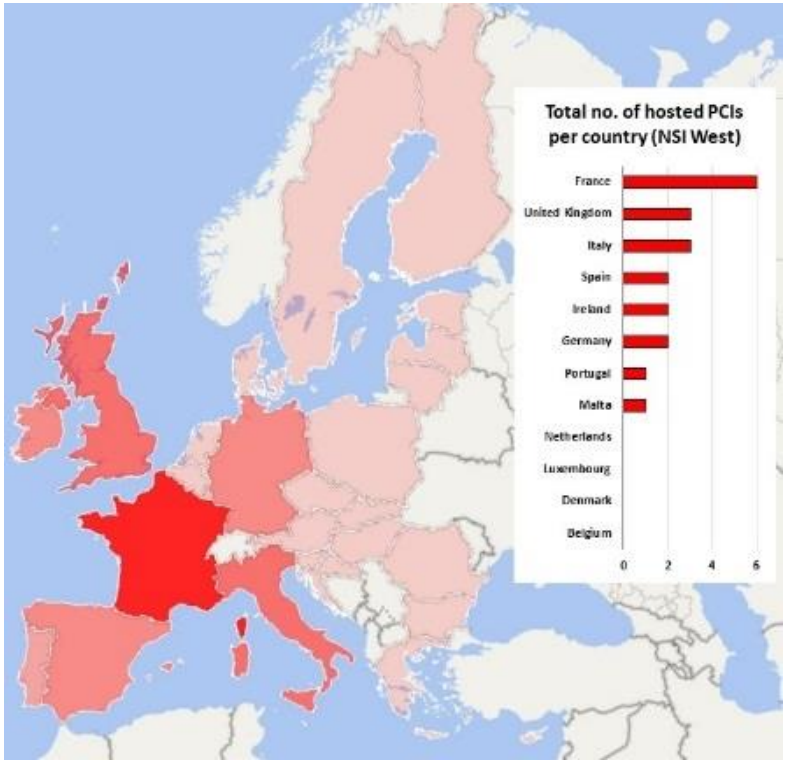
The **BEMIP** region includes 8 Member States, out of which 7 host one or more PCIs, in this corridor. The share of LNG projects in the BEMIP region is much higher than in other corridors.

[85] Darker red colour reflects a higher number of gas PCIs hosted in the respective Member State.

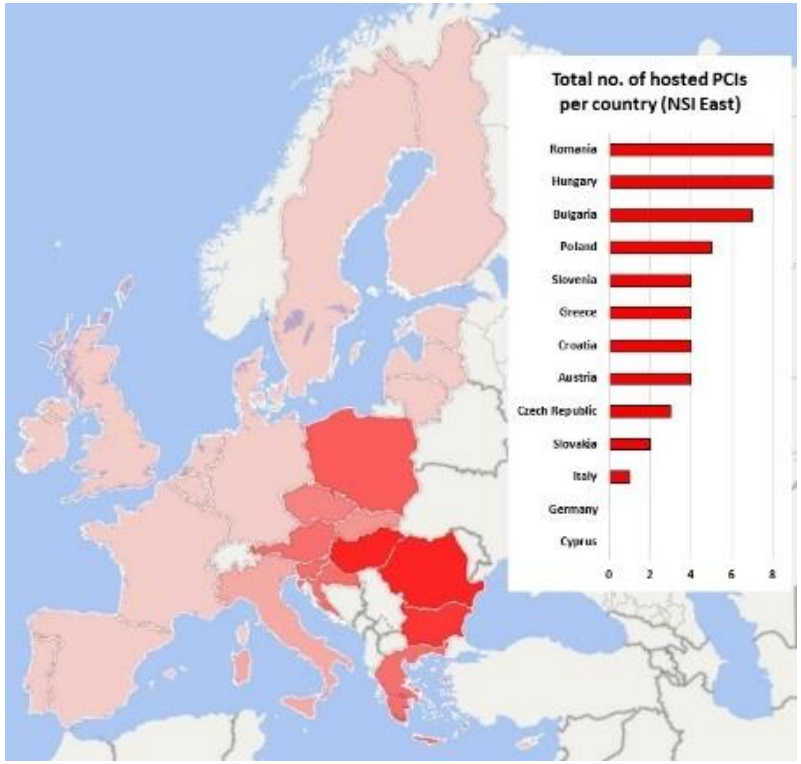
[86] Austria, Bulgaria, Croatia, Czech Republic, Cyprus, France, Germany, Hungary, Greece, Italy, Poland, Romania, Slovakia, Slovenia

Figure 64: Member States hosting PCIs by priority corridor

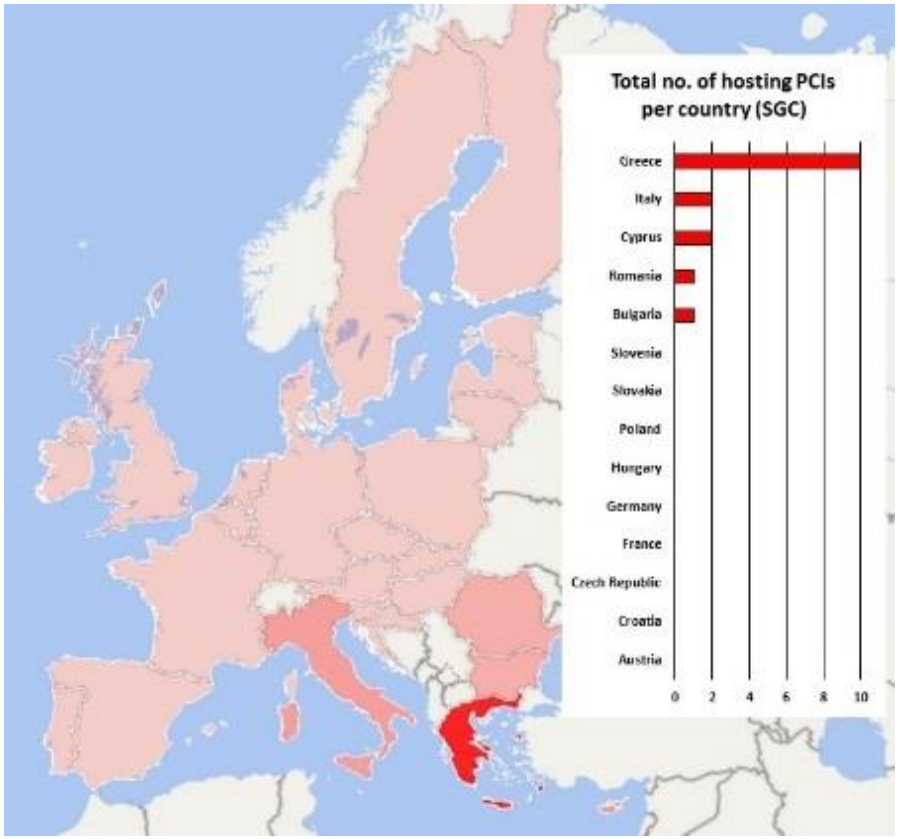
NSI West



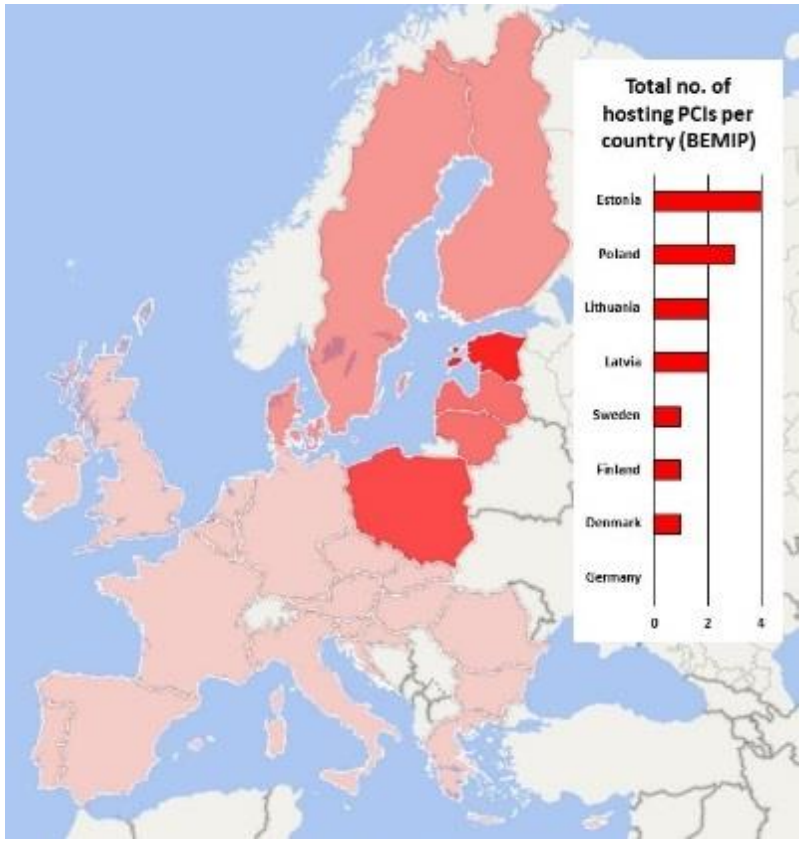
NSI East



SGC


Total no. of hosting PCIs per country (SGC)
Greece
Italy
Cyprus
Romania
Bulgaria
Slovenia
Slovakia
Poland
Hungary
Germany
France
Czech Republic
Croatia
Austria
0
2
4
6
8
10

BEMIP


Total no. of hosting PCIs per country (BEMIP)
Estonia
Poland
Lithuania
Latvia
Sweden
Finland
Denmark
Germany
0
2
4

The promoters indicate in their reports how the PCIs may significantly impact Member States other than the hosting countries[87]. The Agency highlights that the following information is based on the promoters' reports, and that the information **has not been confirmed by the NRAs[88] or the Competent Authorities of the respective Member States.** The information in this section serves solely to illustrate the perceptions of the project promoters and **cannot be used for drawing conclusions regarding the confirmed impact area of the PCIs or any issues pertaining to currently reviewed or upcoming investment requests.**

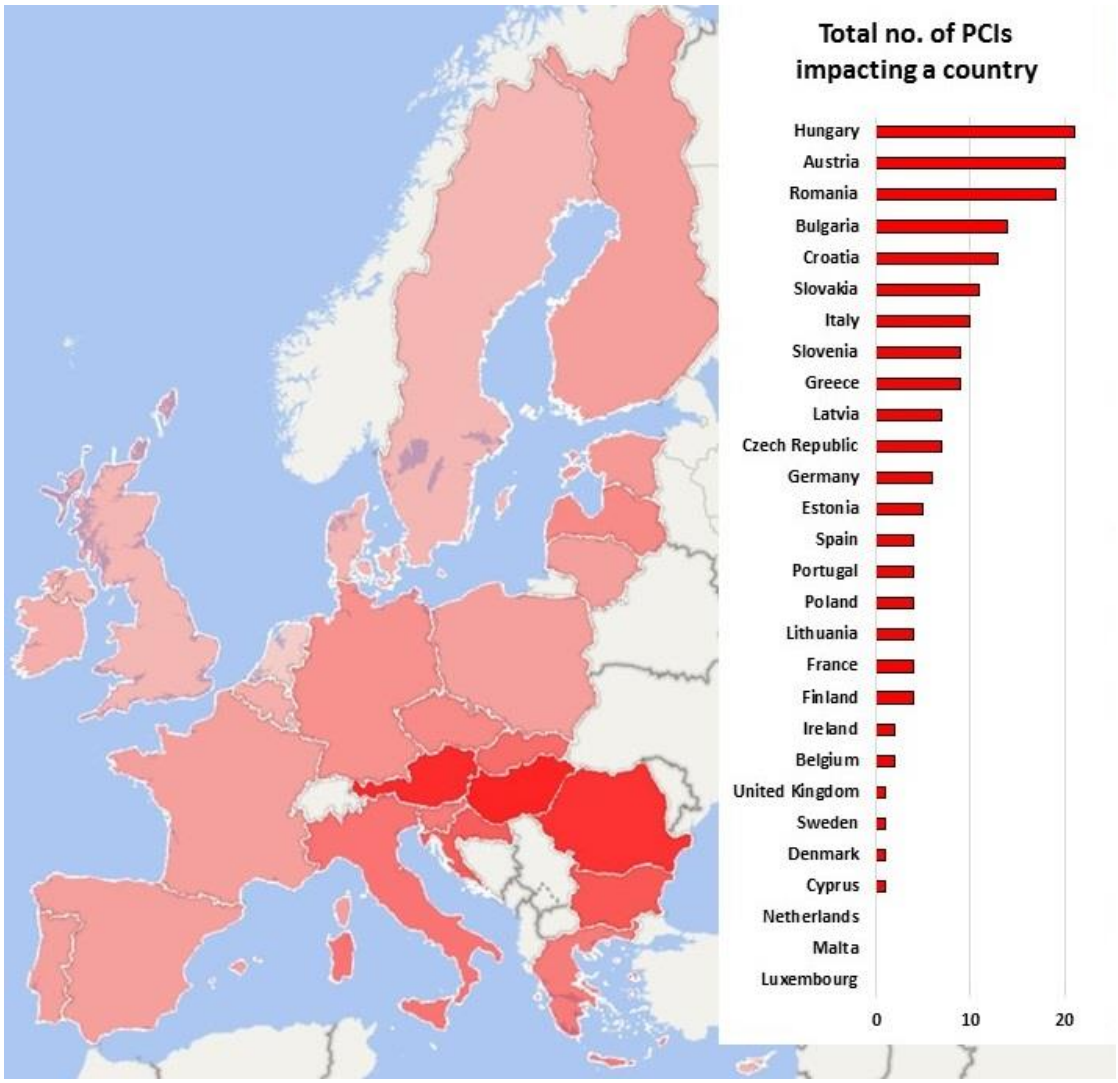
Figure 65 shows that **almost every Member State is reported by the promoters to be significantly impacted by at least one project hosted in another country**. The only exceptions in this regard are Luxembourg, Malta and the Netherlands, which were not reported to be impacted by any project hosted outside their borders.

By comparing Figure 63 and Figure 65, it is clear that Hungary, Romania, Bulgaria, Greece and Italy not only host a high number of projects, but may also be highly affected by PCIs hosted in other Member States. On the other hand, some Member States such as Slovakia, Austria, Finland and Portugal may be impacted by significantly more projects than they are hosting themselves. In the case of some Member States the number of PCIs hosted by them is higher than the number of PCIs, which may impact them and hosted outside their borders. These are Malta, UK, Poland, Cyprus, France and Greece.

[87] Each PCI is considered to impact its hosting country. In the analysis related to the possible impacts of the PCIs, the Agency focused on the projects which may impact a country but are hosted in another country(ies). In this way, the potential cross-border impact can be better described.

[88] One NRA indicated that the reported list of impacted countries **in some cases is not supported by the modelling results of ENTSOG used in the PCI selection in 2015**.

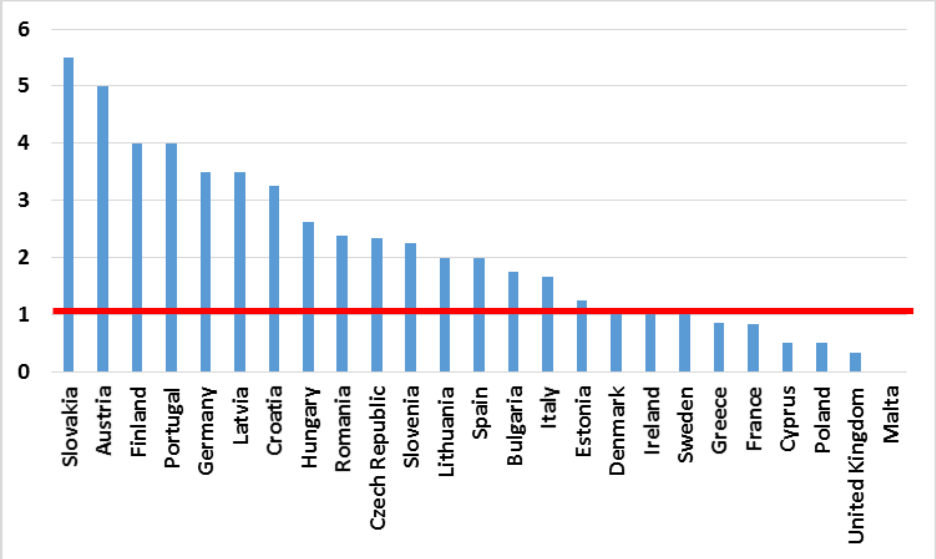
Figure 65: Member States significantly impacted by PCIs, which are hosted in other Member States



On the basis of the promoters' reports, **16 Member States may be impacted by more PCIs than they are hosting themselves[89]. This indicates the potential cross-border impact of projects and the importance of regional cooperation between NRAs, TSOs, Member States, and EU institutions**. However, the potential cross-border impact as illustrated has to be considered in the light of the fact that the PCI list includes clusters of interdependent, competing or potentially competing PCIs. According to the definition of clusters in the PCI list, **not all PCIs have to be implemented**. In case of competing or potentially competing clusters, it is left to the market to determine which PCIs should be built.

[89] Please see Figure 66 for reference.

Figure 66: Ratio of the PCIs significantly impacting and hosted by Member States[90]



In Central and South-East Europe, the majority of countries are impacted by PCIs of all project types – transmission, LNG, UGS.

In a number of instances, **Member States that do not belong to the respective corridor may nevertheless be significantly impacted by projects located in the corridor**. In **BEMIP**, 2 PCIs are reported to impact Member States outside this corridor, namely Croatia, the Czech Republic, Hungary and Slovakia. In **NSI East**, 1 PCI is reported to impact Lithuania, which is not in this corridor. In **NSI West,** 1 PCI is reported to impact Austria, Croatia, Czech Republic, Hungary and Slovenia, which are not part of this corridor. In the **SGC**, 1 PCI is reported to impact Lithuania, which is not in this corridor.

PCIs with such a "cross-corridor impact" are located in Member States which are on the border of different priority corridors and are members of more than one corridor. In the presented few cases, the project is reported to impact several of the corridors to which the Member State belongs. However, **not all Member States and NRAs have been informed that their country is considered by the promoter to be significantly impacted, although the promoters are required to do so during the PCI selection**[91]. In order to ensure that there is a common understanding on the benefits of a PCI, the Agency emphasizes that **promoters should inform all the relevant Member States and NRAs in case the PCI is deemed to significantly impact several countries,** and that they should do so at the earliest

[90] The number of PCIs reportedly impacting (but not hosted by) a Member State divided by the number of PCIs hosted by that Member State. E.g., a Member State with a ratio of 4 means that the state may be impacted by 4 times the number of projects it hosts, according to the information reported by promoters, which **at this time is not confirmed**. Countries below the red line are those which host more PCIs than the number of other PCIs that may impact them. Countries above the red line mark those Member States which may be impacted by more PCIs (hosted by other Member States) than the number of PCIs they host themselves.

[91] Cf. Annex III, 2. Point (9) of Regulation (EU) No 347/2013.

stage of the project's implementation, and **in any case no later than the time of the submission of an investment request**.

Given the fact that many of the transmission PCIs span across several countries, some of the Energy Community Contracting Parties (Albania, FYROM, Serbia and Ukraine) host one or more PCIs, as seen in Figure 67. Since some of the projects have a significant impact on the neighbouring countries, 7 of the Energy Community Contracting Parties and 2 other non-EU countries[92] are impacted by at least one PCI.

The same holds true the other way around: PCIs that are hosted also by the Energy Community Contracting Parties or other non-EU countries impact some EU Member States. This is especially true for large-scale projects that connect East and West and span across several countries. In some cases, a project hosted by a non-EU country can have an impact on more than 10 Member States.

Several projects covered by this report stand out in terms of size, number of hosting and impacted countries, as well as technical characteristics. Out of all the PCIs, there are only 2 projects that have more than 2 hosting countries – one[93] has 3 and the other one[94] has 4 hosting countries. While PCIs having more than one hosting country are relatively common (68%) with transmission projects, there are no such instances among LNG and UGS projects[95].

At the same time, **there are projects that significantly impact 10 to 20 different countries according to the promoters' reports**. One such case is the **Trans-Caspian Gas Pipeline (TCP), which impacts 12 EU Member States**, **4 Energy Community Contacting Parties and 2 other non-EU countries**. Consequently, the impact of these PCIs is present across several or even all priority corridors[96]. An analysis of the promoters' reports shows that there are **3 transmission projects[97] that are reported to impact countries in all four corridors**. The main factor for the impact of these projects is the strategic importance and location. **All of the three above mentioned transmission projects function as an entry points for gas coming from the East (especially the Caspian region) to Europe. However, in the case of competing or potentially competing clusters, the scope of impacted countries is expected to be very similar for all projects in these clusters. This can explain the very high number of PCIs reported to be significantly impacting a country[98].**

[92] Switzerland and Norway are reported to be significantly impacted by 3 and 2 PCIs respectively.

[93] PCI no. 6.25.2

[94] PCI no. 6.25.1

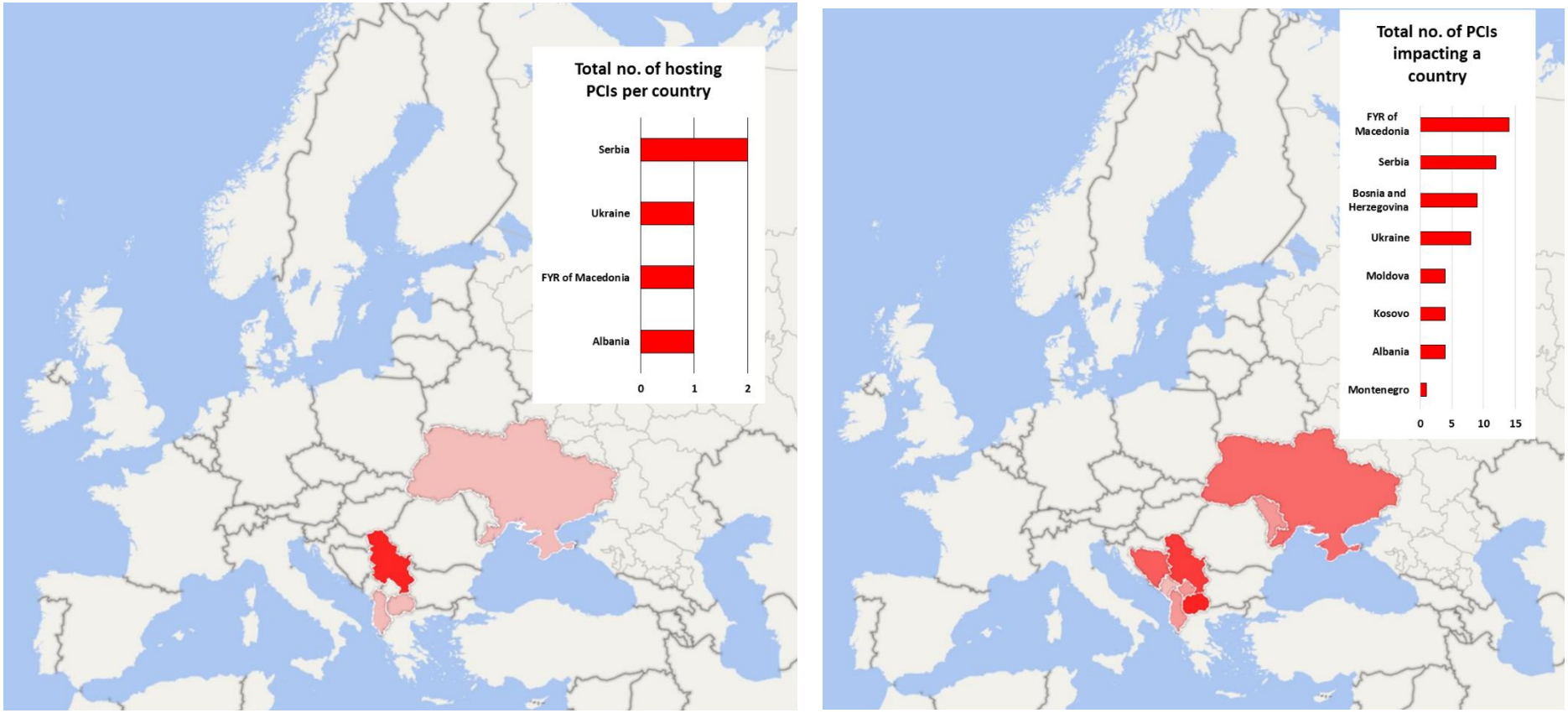
[95] While it is natural for LNG and UGS projects to be located in only one Member State, it may be the case that the connecting pipelines leading to/from the facility are linked to the transmission system of another member State.

[96] North-South Interconnections West, North-South Interconnections East, Southern Gas Corridor and BEMIP

[97] PCIs no. 5.20, 7.1.1 and 7.3.1

[98] Such a potential distortion in the current picture of impacted countries is not ruled out, since no separate analysis can be made to assess the individual impact of competing projects.

Figure 67: Energy Community Contracting Parties hosting (left) and significantly impacted (right) by PCIs



3.2.4 Presence of the PCIs in the TYNDP and in the NDPs

Approximately 66% of the transmission projects are included in the National Network Development Plan (NDP) of a single Member State, about 20% are listed in the NDP of two Member States and 2% appear in the NDPs of three Member States. Furthermore, there are eight transmission projects (12%) where the presence of the PCI in an NDP is either unknown or indicated as "non-applicable[99]" by the project promoter. As for LNG approximately 40% of projects and for UGS approximately 30% of the PCIs, are included in the NDP of a Member State. For the remaining projects in each of these categories (16 PCIs in total), the project promoters did not provide any information. The countries with the most PCIs included in their NDPs are Greece, Hungary, Poland and France, and those with the least are Belgium, Luxembourg, the Netherlands, Sweden and Latvia[100].

The Agency notes that NDPs typically include the national sections of cross-border gas transmission projects and, as a rule, do not address the cross-border aspects or effects of LNG or UGS projects. For this reason, the listing of a PCI with significant cross-border aspects in the NDPs of fewer Member States compared to the number of Member States which would be impacted by the PCI should not be interpreted *a priori* as inconsistent.

However, in the case of 15 PCIs, the project is not present in the NDP of *any of its hosting countries*[101] and 7 PCIs are present in *only one of the several hosting countries*. The Agency notes that a PCI should at least be present in the NDP of the Member States in which it is hosted in compliance with Article 3(6) of Regulation (EU) No 347/2013[102], and that, given the importance of the PCIs, NDPs should regularly and timely be updated in line with the most recent information about the progress of the PCIs. **The Agency recommends that NRAs and the Competent Authority review the NDPs and make sure that the NDPs include the relevant PCIs in a way which is consistent with the most recent PCI list,** considering also adequately the fact that **the PCI list contains competing, potentially competing, and generic projects whose implementation has not been confirmed yet.**

The Agency also notes that NDPs are not necessarily prepared and adopted at the same time as the PCI list, and, as projects progress, differences could appear between the information provided in the NDPs, the data submitted when the project was a candidate for a PCI, and the

[99] Non-applicability may occur, for example, in Member States which do not have a NDP or, as the case of Benelux, do not host a PCI.

[100] Belgium, Luxembourg and the Netherlands do not host any of the PCI projects.

[101] In 2 cases there are two hosting Member States and in 13 cases there is one single hosting Member State.

[102] Article 3(6) of Reg. 347/2013: Projects of common interest included on the Union list pursuant to paragraph 4 of this Article shall become an integral part of the relevant regional investment plans under Article 12 of Regulations (EC) No 714/2009 and (EC) No 715/2009 and of the relevant national 10-year network development plans under Article 22 of Directives 2009/72/EC and 2009/73/EC and other national infrastructure plans concerned, as appropriate. Those projects shall be conferred the highest possible priority within each of those plans.

data at the time when the progress report for the project was submitted to the Agency and the relevant Competent Authorities. **It is important that a continuous alignment mechanism is introduced between the PCI list and the NDPs already at the stage of PCI selection in the Regional Groups, so that the consistency of the plans could be ensured.**

A comparison of the projects included in the **PCI list and TYNDP 2015**[103] shows that, out of 279 projects included in the TYNDP, 78 (28%) have an assigned PCI number on the 2015 PCI list. A slightly larger share of the transmission projects included in the TYNDP became PCIs (approximately 33%) than LNG projects (18%) or UGS projects (14%).

The Agency notes that there are instances which show a **lack of consistency in the definition of what is a project** and what is the interplay between PCIs and TYNDP projects[104].

The Agency is of the view that including a single TYNDP project in several PCIs with different PCI codes in the PCI list may lead to double counting, lack of clarity about the way the project's economic and technical characteristics are accounted for (including capacity, the expected costs and benefits, and other major features of the project), and other inconsistencies. Possible inconsistencies of a similar nature could be present in those cases in which several variations of one project – or parts of it – appear in the TYNDP under different individual TYNDP codes.

The Agency recommends that consistency is pursued to the maximum extent possible between the identity and the scope of the projects in the TYNDP and the PCI list, and, should changes be necessary, a justification and a clear definition of the scope and the impact of the restructured project is provided by the relevant project promoters in comparison with its previous characteristics. The Agency considers that the identification and the characterisation of the projects should be provided in a way which ensures that there is no overlap and no potential ambiguity related to the identity, the scope, the costs and the benefits of the projects.

[103] The TYNDP provides a view of the pan-European gas infrastructure, future investments and the general dynamics of the European gas market. The TYNDP 2015 includes the data from the main report and the later added addendum.

[104] The Agency notes that in 6 cases the same TYNDP code is assigned to two or more PCIs, all of which are transmission projects. Out of these 6 TYNDP codes, five appear twice on the PCI list and one appears three times. The former PCI no. 7.1.5 (Gas Pipeline from Bulgaria to Austria via Romania and Hungary) is indicated as "No longer considered a PCI" on the 2015 PCI list. However, the TYNDP project – TRA-N-358, which constituted PCI no. 7.1.5 - in fact does appear in the 2015 PCI list as PCI no. 6.24.2 (Development on the Romanian territory of the National Gas Transmission System on the Bulgaria — Romania — Hungary — Austria Corridor — transmission pipeline Podișor — Horia GMS and 3 new compressor stations (Jupa, Bibești and Podișor) (1st phase)). This example shows that either the TYNDP code does not always cover the same project during the various PCI selection procedures, or that the same project may qualify as a (new) PCI, even if its previous "instance" cannot keep its PCI status on the new PCI list.

3.2.5 Start of the permitting – status under Regulation (EU) No 347/2013

Permitting is considered on the basis of the information provided by project promoters[105] (date of permitting request submission) for this stage of the project's implementation.

Among the promoters who provided feedback regarding permitting, a greater number of promoters of transmission and UGS projects report that the permit granting rules of Regulation (EU) No 347/2013 are applicable to their PCIs, compared to those who are exempt from these rules. In LNG, the permit granting rules of the Regulation are not applicable to the majority of projects because the promoters of these PCIs submitted their permit granting requests before 16 November 2013[106].

Table 4: Permitting status

	No. of PCIs for which the permitting file was submitted before 16 November 2013[107]	No. of PCIs for which the permitting file was submitted after 16 November 2013[108]	No information provided by promoters
Transmission	15	31	19
LNG	5	1	1
UGS	2	3	1

3.2.6 Competing and interdependent projects

Apart from the projects listed individually, the 2015 PCI list contains groups of projects or clusters, the definition of which is formulated in the Commission delegated Regulation establishing the 2015 PCI list[109].

A **cluster of interdependent PCIs** includes PCIs which are all needed to address the same bottleneck across country borders and which provide synergies if implemented together. In

[105] The promoters could indicate whether they filed an application for permit granting before or after 16 November 2013. By comparing this information with the dates provided regarding permitting, the Agency found that in 6 cases the promoter claimed to have submitted a permitting file after 16 November 2013, but in fact it was submitted before that date, and in 1 case *vice versa*.

[106] Pursuant to Article 19 of Regulation (EU) No 347/2013, the provisions of Chapter III of the Regulation (including the rules related to transparency and public participation and permit granting in particular the maximum length of the permitting process) are not applicable to the PCIs for which the promoter submitted an application file for permit granting before 16 November 2013.

[107] The figures include also the PCIs (2 in transmission and 1 in LNG) for which the promoter provided only the starting date of the permitting process.

[108] Idem.

[109] Cf. Annex VII.A (1) of the Commission Delegated Regulation (EU) 2016/89 of 18 November 2015 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council as regards the Union list of projects of common interest.

this case, all the PCIs have to be implemented to realise the EU-wide benefits. 13 such clusters contain 42 projects (55% of PCIs) on the 2015 PCI list.

A **cluster of potentially competing PCIs** reflects an uncertainty around the extent of the bottleneck across country borders. In this case, not all the PCIs included in the cluster have to be implemented. It is left to the market to determine whether one, several or all PCIs are to be implemented, subject to the necessary planning, permit and regulatory approvals. The need for such PCIs shall be reassessed in a subsequent PCI identification process, including with regard to the capacity needs. In 2 such clusters, 10 PCIs (13% of PCIs) are included.

In a **cluster of competing PCIs,** the projects address the same bottleneck. However, the extent of the bottleneck is more certain than in the case of a cluster of potentially competing PCIs, and therefore not all PCIs have to be implemented. It is left to the market to determine which PCIs are to be implemented, subject to the necessary planning, permit and regulatory approvals. *Where necessary, the need for such PCIs shall be reassessed in a subsequent PCI identification process*. There are 2 such clusters containing 7 PCIs. Since each of the clusters include 1 non-competing PCI and in addition a group of competing PCIs, actually 3 and 2 PCIs are competing in each cluster respectively.

The reported data indicate that ~75% of all PCIs have a link at least with one other PCI, being either interdependent or competing.

Table 5 illustrates how the clusters of the two types of competing PCIs evolved from the 2013 PCI list to the 2015 one. In 3 out of 5 clusters[110], the nature of the competition changed: the number of competing PCIs goes down if some of the previously competing projects are abandoned, or they do not apply for a PCI status, or if they are not included on the new PCI list[111].

[110] Disregarding those 2 cases where the PCI is/was present only on one list and not on the other.

[111] One example is PCI No. 6.9. The re-defining of inter-project relationships and the removal of previously competing projects led to changes of PCI No. 6.20. Regarding PCI No. 7.3, the unique PCI code remained the same but the name of one of the projects changed, resulting in the re-classification of the two projects as interdependent.

Table 5: Clusters of potentially competing and competing PCIs on the 2013 and the 2015 PCI lists

Priority corridor	PCI number	Type of the competing cluster on the 2013 PCI list	Type of the competing cluster on the 2015 PCI list	Remarks
NSI West	5.17	Potentially competing PCIs	-	The cluster is no longer on the PCI list
NSI East	6.9	Competing PCIs	Interdependent PCIs	One competing PCI was removed from the 2015 PCI list
NSI East	6.20	Potentially competing PCIs	Competing PCIs	2 PCIs were removed and only 1 PCI from the previous potentially competing projects remained, accompanied by 3 competing PCIs (one of them is a potentially competing project)
SGC	7.1	Potentially competing PCIs	Potentially competing PCIs	2 new PCIs were added, 1 PCI was removed
SGC	7.3	Potentially competing PICs	Interdependent PCIs	PCIs remain the same on both lists
BEMIP	8.1	Competing PCIs	Competing PCIs	Two competing PCIs were removed from the 2015 PCI list
PCIs which were newly added to the 2015 PCI list				
NSI East	6.25	-	Potentially competing PCIs	

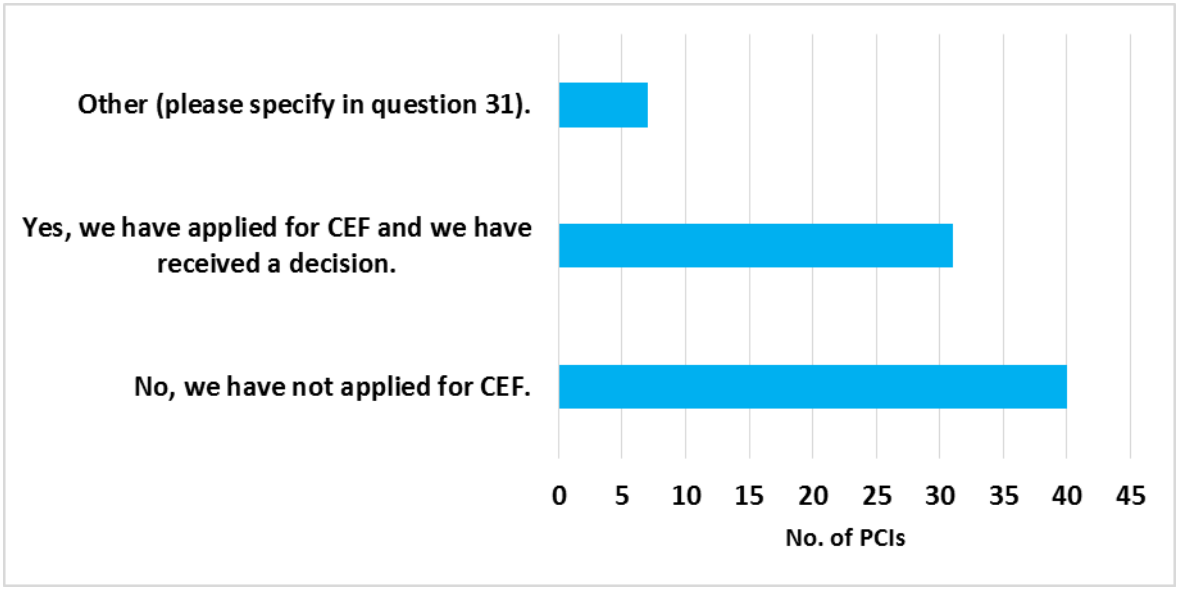
The Agency recalls the importance of properly defining the interdependent, potentially competing, and competing projects, since these attributes are vital for the NRAs and the Agency when assessing the consistent application of the criteria and the cost-benefit analysis across regions and the justification and the merits of future investment requests.

The reorganization of PCIs in the various clusters (changing the number of projects, establishing competition among projects within the cluster, etc.) indicates that the projects may be distinctly considered in the light of serving specific needs. **The Agency is of the view that great attention should be paid in the future to the competing or interdependent nature of PCIs from the point of view of their usefulness in terms of contributing to resolving an infrastructure need.**

3.2.7 Overview of the financial public support to the projects

As shown in Figure 68, a little less than half of the current PCIs have already applied for support by the Connecting Europe Facility (CEF) and have received a decision[112].

Figure 68: Applications to the Connecting Europe Facility



Regarding **future intentions**, Figure 69 and Figure 70 show that most promoters (55% as regards 2016, and 70% as regards in 2017) are undecided as to whether they would apply for support from CEF in the coming two years.

Among those who reported a planned decision, a larger share[113] indicated that they do not plan to apply for support from CEF either in 2016 or in 2017[114].

[112] Including both the projects that received support and those which did not.

[113] 27% vs. 20% regarding the plans to apply for CEF funding in 2016 and 17% vs. 15% as regards the plans to apply for CEF funds in 2017.

[114] These statements of the promoters are **without prejudice to the submission of an actual application in the upcoming CEF calls for proposals. The reports only reflect the promoters' plans regarding the potential use of CEF funds at the moment when the reports were submitted**.

Figure 69: Intention to apply for CEF support in 2016

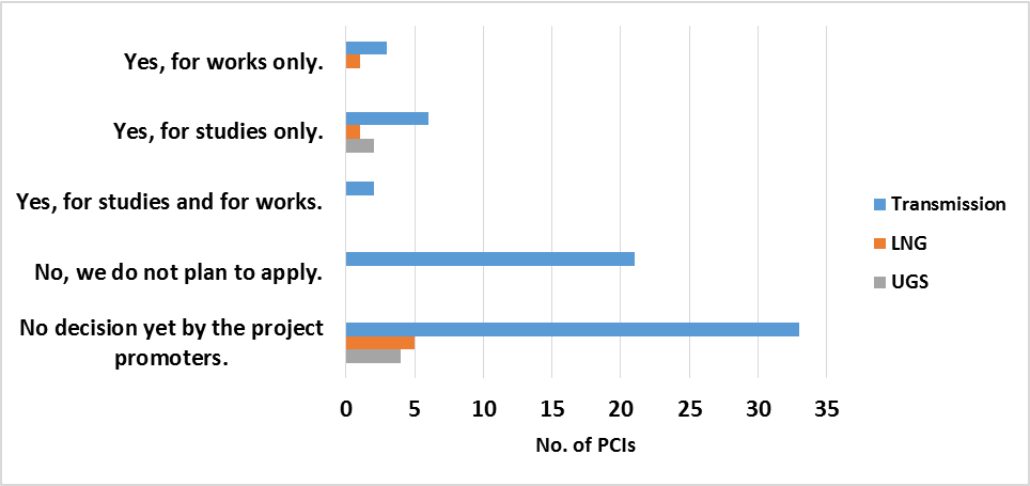
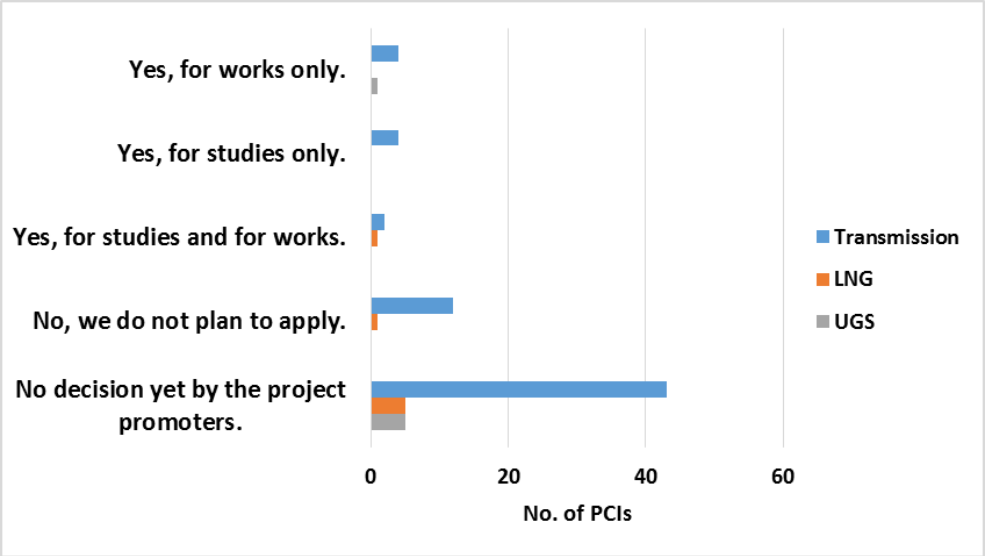


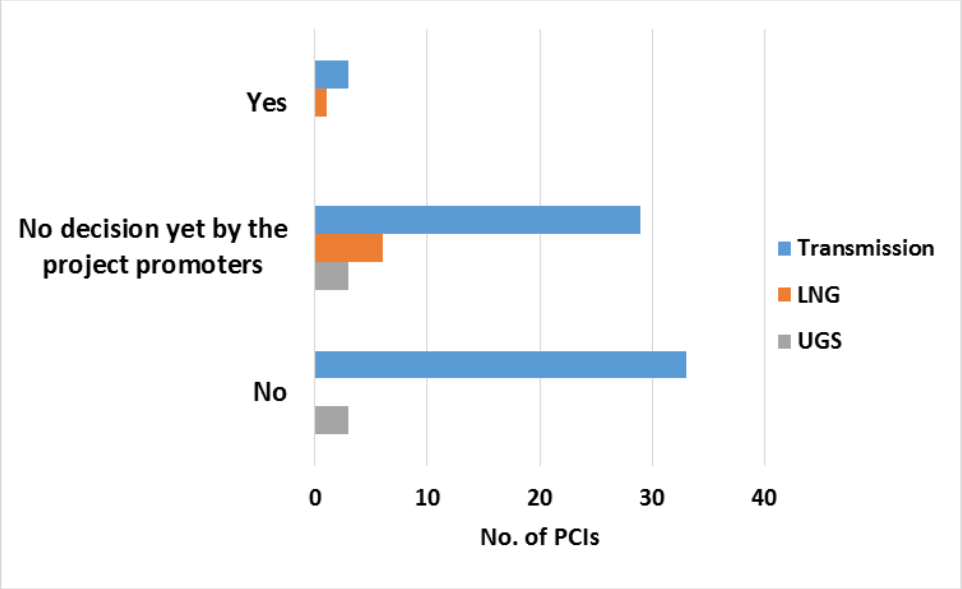
Figure 70: Intention to apply for CEF support in 2017



Concerning the **participation in funding programmes other than CEF**, almost half of the promoters of transmission and UGS projects are undecided, while the other half do not plan to apply for other funding programmes. The majority of LNG project promoters have not made a decision yet.

PCI promoters were also asked **whether they have received financial support from funding programmes other than CEF**. The most successful in this respect are the LNG and the transmission projects, where almost one in every four promoters reported to have received some kind of financial support other than from CEF. Meanwhile, not a single UGS project was reported to have received any kind of additional funding apart from CEF.

Figure 71: Intention to apply in 2016 for any funding programmes other than CEF



Key findings

- There is a high degree of continuity between the 2013 and the 2015 PCI lists. Almost two-thirds of the current PCIs were present with their current scope on the 2013 PCI list.
- Transmission projects and projects in NSI East continue to dominate the PCI list in terms of numbers, while the focus of the PCI list appears to **shift away from LNG and UGS** projects.
- **Just five Member States (Greece, Romania, Bulgaria, Hungary and Poland) account for the hosting of 47 PCIs (60% of the total) and are all located in EU's South-Southeast region[115].** On the other hand, **Member States which are reported by promoters to be significantly impacted by the largest number of PCIs hosted by other Member States are mostly located in Central Europe** (Hungary – by 21 projects, Austria – by 20) **and EU's South-Southeast region** (Romania – by 19 projects, Bulgaria – by 14, Croatia – by 13, Greece – by 12). The Agency highlights that **the perception and reports of promoters concerning the scope of significantly impacted countries do not always match the view of the NRAs of the relevant countries. The Agency invites promoters to base their information regarding significantly impacted countries on concrete analyses and inform the NRAs of *all***

[115] The references to regions in this bullet point are to geographical regions.

relevant impacted countries.

- Furthermore, the information reported by promoters must also be interpreted taking into account that **competing and potentially competing projects** exist, which are likely to impact a similar scope of countries. Nevertheless, **the locational and impact characteristics of the reported PCIs clearly call for enhanced regional cooperation in Central and Southeast Europe. The Agency notes that the already established CESEC[116] platform is welcome also from this point of view.**
- Due to the very large number of PCIs – including interdependent and competing projects – and impacted countries in this region, **the Agency recommends greater attention in the upcoming PCI selection process to clearly define the most important needs that would be addressed by the PCIs in Central and Southeast Europe**, as well as in all priority corridors, since it is unlikely that such a high number of PCIs would be implemented.
- **The Agency recommends that consistency is pursued to the maximum extent possible between the identity and the scope of the projects in the TYNDP and in the PCI list. In case changes are necessary, promoters should provide a justification and a clear definition of the scope and the impact of the restructured project, in a way which ensures that there is no overlap and no potential ambiguity related to other projects.**
- The reorganisation of certain PCIs, the reported major technical changes and the occasionally observed lack of consistency between the TYNDP and the PCI lists **may lead to PCIs whose main characteristics are substantially different in the TYNDP from those which were assessed and taken into account during the PCI selection process.** A streamlined collection of information in the various PCI-related procedures would enable the Agency, the European Commission and ENTSOG to track the development of project features and flag in case the changes fundamentally alter the project compared to its original form when it entered the PCI list.
- In spite of the legal obligation, **22 PCIs are not present in the NDP of some or all of the hosting Member State(s)**. While acknowledging the difference in the nature, the scope and the timing of the adoption of the NDPs, **the Agency encourages both project promoters and the authorities responsible for the NDPs to provide maximum synchronisation between the NDPs and the PCI list, in pursuit of better consistency.**
- Most promoters are undecided whether to apply for public support in 2016 and 2017, and most of those who have made a decision, do not plan to apply. While this shows the apparent absence of a massive and determined rush for public support, the Agency notes that it does not have information on the reasons for this prevailing attitude.

[116] The Central and South Eastern Europe Gas Connectivity (CESEC) is a regional initiative of the European Commission to boost security of energy supply and create a connected and competitive energy market in the region.

3.3 PCI implementation status and progress

3.3.1 Current implementation status[117]

The findings in this section provide an overview of the main statistical details of the 2015 PCI list and of the changes in the composition of the PCI list between 2013 and 2015. The findings **should not necessarily serve to draw conclusions on the progress of *individual* projects,** in particular because the scope of the projects on the two lists (2013 and 2015) is not identical.

Not a single PCI has been commissioned since 31 January 2015[118], and no cancellation has been reported either over this period of time. As of 31 January 2016, **just over half (52%) of the projects are beyond the planning stage[119], almost all of them currently going through permitting.** The remainder (48%) are either planned but not yet in permitting, or are under consideration. This breakdown is almost identical to the implementation status of the projects on the 2013 PCI list, which indicates that the composition of the two lists is similar.

Transmission projects, which constitute the majority of PCIs, are split 50-50 between stages that are beyond planning (permitting and construction) and earlier project stages (planned but not yet in permitting or under consideration only).

Almost all the **LNG** PCIs are in the permitting phase, with only one of them being planned but not yet in permitting stage.

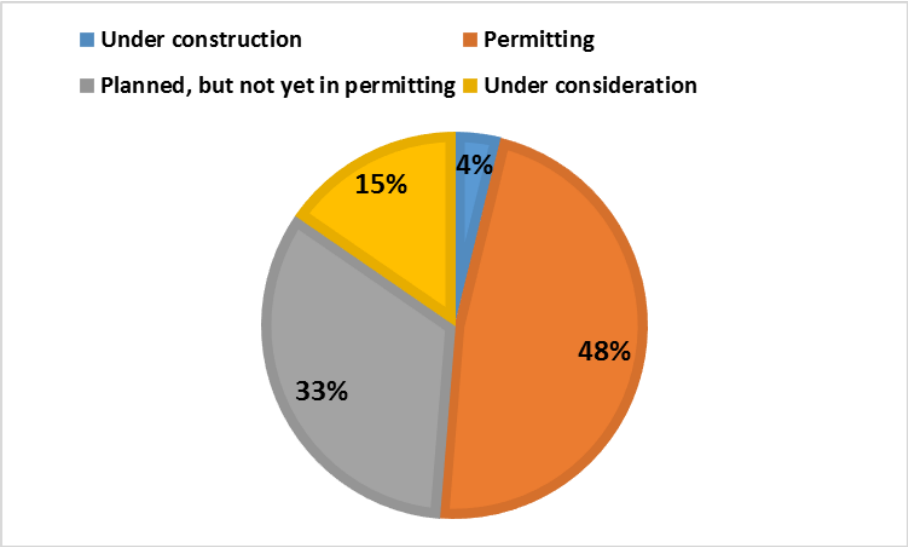
The **UGS** projects are predominantly (~66%) in the early phases of planning or consideration and a smaller share of them (34%) have already reached the permitting stage.

[117] In order to classify the PCIs based on their current status, promoters reported by choosing one of the pre-defined categories as follows: 1. Commissioned; 2. Cancelled; 3. Under construction; 4. Permitting; 5. Planned but not yet in permitting; 6. Under consideration. Being "commissioned" or "cancelled" means that the PCI has completed its final stage. A PCI's progress across the other stages – in their order – demonstrates the advancing maturity level of the project. In the Agency's view, a key moment in considering whether a project is sufficiently mature, is the time when the promoter files an investment request. Pursuant to section 1.2 of the Agency's Recommendation no 5/2015 regarding good practices for the treatment of investment requests including cross-border cost allocation (CBCA) requests**, a "sufficiently mature" project is a project exhibiting: (1) sufficient certainty and thus strong confidence about the expected costs and benefits assessed by the cost-benefit analysis, and (2) good knowledge about the factors affecting expected costs and benefits and their ranges**. In addition, permitting procedures need to have started in all hosting countries and commissioning should be achieved indicatively within 60 months from the date of the submission of the investment request.

[118] Until the time of reporting, i.e. 31 January 2016.

[119] The projects beyond the planning stage are those either in the permitting phase or under construction.

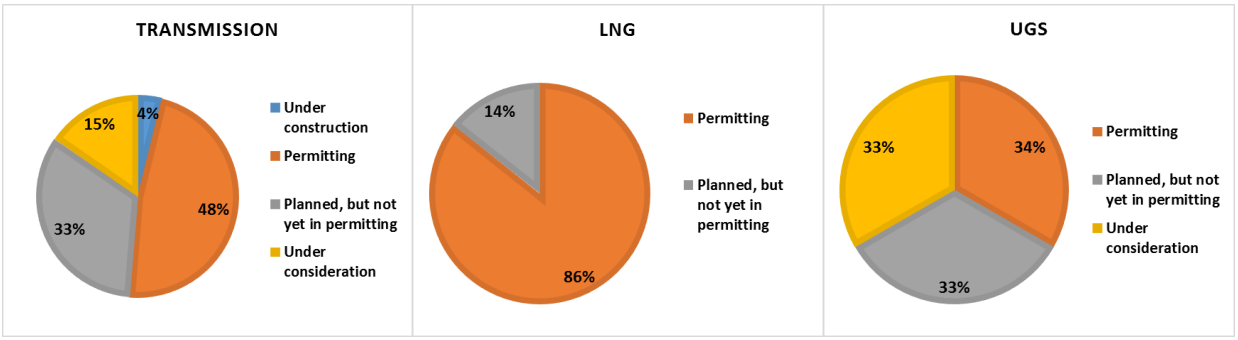
Figure 72: Share of PCIs by implementation status



The PCIs on the 2013 and the 2015 lists share the same overall characteristics, with one exception: the LNG projects on the 2015 PCI list are generally more advanced – they are almost all in the permitting phase – than those on the 2013 PCI list. The reason for this is that none of the LNG projects which were in the stage "under consideration" on the 2013 PCI list could retain their PCI status in 2015.

Currently only 3 PCIs – all transmission projects – are under construction. A transmission PCI and an LNG PCI are expected to be commissioned in 2018, while a UGS project is planned to be commissioned in 2021. The Agency notes that the low number of projects under construction on 31 January 2016, as well as their implementation schedules, indicate that, in line with the reports of project promoters, **no gas PCIs are expected to be commissioned in 2016 or 2017.**

Figure 73: Share of the PCIs by implementation status and by type



The breakdown **by priority corridor** and a brief comparison with the 2013 PCI list illustrate the *overall situation* in each region, i.e. the project-wise composition of the corridor, but do not reveal the individual project progress.

In the NSI East and BEMIP corridors, PCIs in permitting or under construction stages currently outweigh those which are under consideration or planned. In the NSI East corridor, there is no major change compared to the 2013 list, however in BEMIP a larger share of projects on the current list are in a more advanced stage (permitting) than at the time of the previous report.

In NSI West, the share of the PCIs which are planned but not yet in permitting visibly increased in comparison to the 2013 list. This increase was coupled with a lower number of PCIs which are now in permitting or are being constructed. Compared to 2013, there are no new PCIs added to the NSI West corridor on the 2015 PCI list. The majority the projects in this corridor which did not retain their PCI status were earlier either in the permitting stage or under construction, which explains the rise in the share of the PCIs which are now in the less advanced stages (under consideration or in planning) in the NSI West corridor.

In the Southern Gas Corridor, projects under consideration or being planned continue to dominate, while the share of the projects in permitting is lower than at the time of the previous report. **The Agency recalls that the monitoring of this corridor requires a specific approach, since several of its projects are not located in the European Union[120] and thus the related activities, such as permit granting procedures, may not take place pursuant to the provisions of Regulation (EU) No 347/2013.**

Figure 74 illustrates the progress of the PCIs by priority corridor.

[120] However, these projects can have a significant beneficial impact on the diversification of sources and thus on the security of gas supply to the European Union.

Figure 74: Share of the PCIs of the 2013 (left) and the 2015 (right) PCI lists by implementation status and by priority corridor

Figure 74 above highlights the differences only in the composition of the two PCIs lists. A more in-depth examination shows **how the status of the 49 "old" PCIs, which first became a PCI in 2013 and has kept their status since then, changed over the last year.**

The **majority of these "old" PCIs (41 out of 49 projects) have not changed their implementation status** since January 2015. Only 6 managed to **progress** – into the permitting phase – in 2015. For 2 PCIs **reverse development**[121], i.e. a less advanced status than in the previous year, was reported.

Most of those PCIs who **did not change their implementation status** are in the permitting stage (21 PCIs) or are planned but not yet in permitting (15 PCIs). 3 PCIs remained under consideration and 2 PCIs remained under construction since January 2015. At least half of all these PCIs are not expected to change in their implementation status until 2017[122].

Those 3 PCIs, which were on both PCI lists and are still under consideration (5.1.1, 5.1.2 and the TCP of 7.1.1) – virtually has not shown any sign of development since 2013 (as there is no less advanced stage than under consideration).

The Agency highlights that the current status of PCIs does not reflect the value of the projects in terms of net benefits which they may bring or the urgency of the concerned projects, but rather gives an idea about their potential implementation timeline. Similarly to the 2013 PCI list, **half of the projects on the 2015 PCI list are in a less advanced, planning stage,** and are more suitable to fulfil a longer-term need**.** The other **half are beyond the planning phase and could be more realistically relied upon for increasing cross-border capacity in the not so distant future.**

3.3.2 Progress of works

Project promoters were invited to indicate the types of works which were carried out between 31 January 2015 and 31 January 2016. Promoters were invited to select from a list of pre-defined options the types of activities performed between January 2015 and January 2016. Promoters could select more than one activity, therefore the sum of the replies does not correspond to the total number of PCIs. The promoters' responses and the number of PCIs where the specific activity was reported are indicated in Table 6 below.

Activities related to permitting, contracting and other documents were reported by the highest number of PCIs (33), which roughly corresponds to the number of PCIs in the permitting stage, i.e. PCIs which have already applied for a permit. Studies have been executed by the promoters of a similar number of PCIs (30)[123] and this split correlates well with the fact that approximately half of the PCIs are less advanced (under consideration or in planning) and the other half are in the more advanced stage (in permitting or under construction).

[121] For 1 PCI, this inconsistency derives from the fact that the original PCI was merged with other PCIs, which were less advanced and therefore this less advanced status had to be indicated by the project promoter.

[122] 13 PCIs, which are in permitting now, are planned to enter construction after 2017. 6 PCIs, which are currently planned but not yet in permitting are expected to enter the permitting phase in 2017. 2 PCIs, which are currently under consideration are reported to enter the planning stage only after 2018. In 7 cases promoters did not provide information on the date of the relevant implementation phase.

[123] Please note that the numbers in Table 6 cannot be added up because promoters could select more than one answer. The numbers show how frequently the specific activity was selected by promoters to describe the types of works done in 2015.

Only 3 PCIs are reported be in the phase of construction works, but such an activity is indicated in 8 cases. In some instances, auxiliary facilities, infrastructure, or – in the case of a phased project – various phases of the project may already be under construction, even though the overall project – or some of its sections – is still in the permitting process[124]. The reporting of "commissioning" among the works performed for some projects is apparently for a similar reason, even though **there are no PCIs which have been commissioned until the end of the reporting period (31 March 2016) and no project indicates expected commissioning in 2016 or in 2017**.

Table 6: Activities carried out by project promoters in 2015

Project implementation activity type	No. of instances
Preparation of permitting files, contracts and other documents	33
STUDY: technical feasibility	30
STUDY: environmental	27
Identification of alternative solutions / site identification	27
STUDY: spatial planning	21
STUDY: socio-economic feasibility	21
Public consultation	17
Negotiations with landowners and land acquisition	17
Detailed technical design	15
Market test	13
Tendering	9
Construction	8
Preparatory works for construction (e.g. land preparation)	6
Commissioning	2
Other (please specify)	1

[124] For those PCIs which include several sections, the implementation status of the *least advanced* section was requested to be indicated in the reporting form. In another part of the reporting form (implementation schedule), for those activities which cover a time period (e.g. construction), the starting date refers to the date when the earliest/section element entered in that implementation stage, and the ending date refers to the time when the last section/element finished that implementation stage.

For 17[125] transmission PCIs (mostly in the NSI East corridor), an LNG project in the NSI West corridor and 2 UGS projects in the NSI East corridor, **no activities were reported at all** to have taken place **in the last 12 months or the information was marked as "non-applicable"**. In roughly half of the cases for which no activities were reported to have been carried out, the apparent lack of any activity may be explained by the fact that the project is rescheduled or delayed. In the other half however, the project is reported to be "on time" and it is not clear how keeping up to schedule has been achieved without performing any work on the project. All these PCIs, which are reported to be "on time" and which have not indicated any works (activities) performed between January 2015 and January 2016 are on the PCI list for the first time in 2015.

3.3.3 Expected commissioning dates

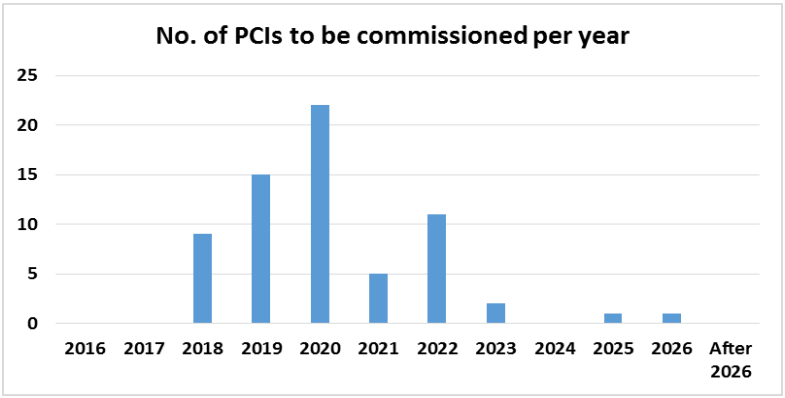
The pattern in the expected number of PCIs to be commissioned per year shows strong similarities with that of the PCI list of 2013, but with a one-year shift until approximately 2020 and virtually no change after 2022. The Agency notes that the postponement of the expected date of commissioning, coupled with the fact that no PCI has been commissioned between 31 January 2015 and 31 January 2016, **indicates a slow rate of actual project implementation, which project promoters apparently do not expect to accelerate significantly as they postpone projects by a year over the next 5-6 years, i.e. adjust their planning in line with the postponements they face.**

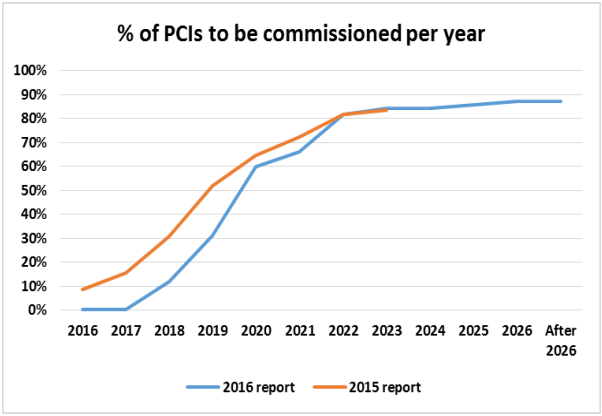
The highest numbers of commissioned projects are concentrated in the years N+2, N+3 and N+4[126] in an increasing trend, followed by a sharp drop. Only a few PCIs are expected to be commissioned after 2022.

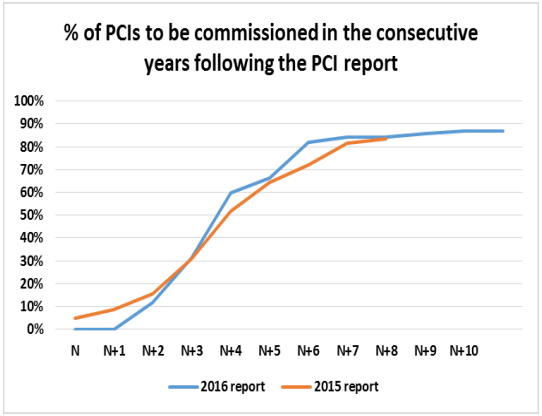
[125] Including one PCI which was reported to have been suspended by the NRA and another PCI for which the promoter informed the Agency that the project is at a very initial phase therefore the promoter cannot submit detailed implementation plan.

[126] Counted from the reporting year.

Figure 75: Planned commissioning dates of PCIs





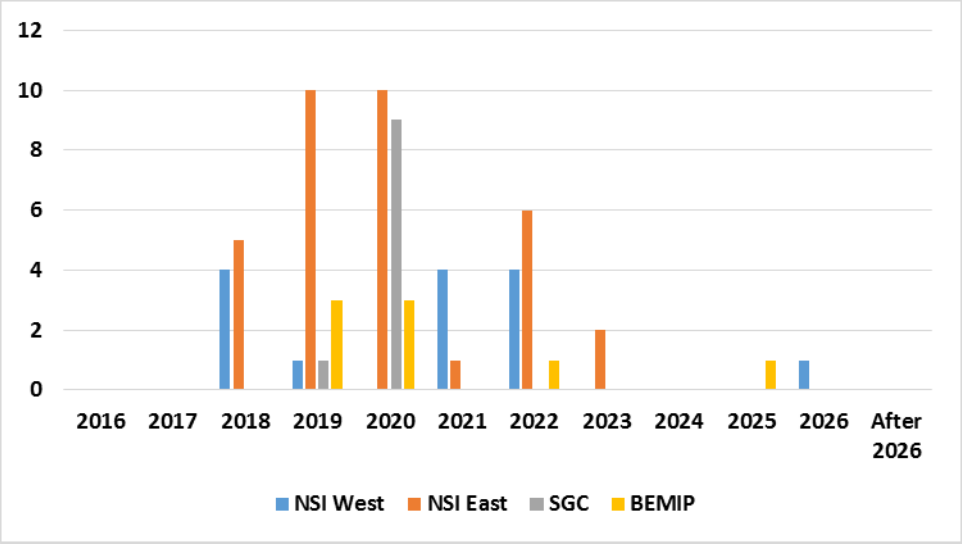


To cross-check the substance of these expectations, the Agency examined the current implementation status of the PCIs scheduled for commissioning during the "peak period" of 2018-2022. The majority of projects which are reported to come online between 2018 and 2020 are in the permitting stage, albeit with a decreasing share for projects expected to be commissioned in later years in this period. The split of those PCIs which are to be commissioned in 2021 and are in permitting, and those which are in a less advanced stage – i.e. either under consideration or planned but not yet in permitting – is roughly equal. Regarding the PCIs which are planned to come online after 2022, the share of the projects in a less advanced status significantly outweighs those in permitting.

The Agency notes that promoters expect permitting to take not more than the maximum length of the permitting procedures – 3.5 years – set out in Article 10 of the Regulation (EU) No 347/2013. Further details on the expected length of permit granting procedures are available in Section 3.3.6.

From Figure 76 it is visible that in NSI East and BEMIP commissioning peaks in 2019 and 2020. For NSI West, 2018, 2021 and 2022 are the years when most projects are planned to come online. In the Southern Gas Corridor the current plans foresee almost all projects to be commissioned in 2020.

Figure 76: No. of PCIs to be commissioned per year and per priority corridor



The Agency notes that the **current expectations about the commissioning timing are very similar in pattern to those described in the 2015 PCI monitoring report.** The Agency notes that to be able to reach such ambitious commissioning objectives, in addition to ensuring implementation without any postponement from the promoters' side, **it is vital that the permitting procedures do not exceed the maximum length of 3.5 years as stipulated in Regulation (EU) No 347/2013.**

Given the fact the approximately half of the PCIs have been subject to delay or rescheduling in 2015, **the expectations regarding commissioning dates appear overly optimistic**. For instance, in order to keep to the commissioning deadlines foreseen in the coming 4 years, when the bulk of PCIs is expected to come online, the construction of the indicated number of PCIs must start in the following years:

- 10 PCIs in 2016,
- 13 PCIs in 2017,
- 7 PCIs in 2018 and
- 6 PCIs in 2019.

The construction of these projects, including potentially competing and competing clusters, would entail a capital investment of €35 billion until 2020[127], with €15 billion and €16 billion in 2019 and 2020 respectively. These figures are somewhat lower than the ones foreseen by promoters one year ago[128], but still are significantly above the typical levels in the recent

[127] For reference, please see Figure 84.

[128] In comparison, the 2015 PCI monitoring report found that for the year 2019 alone investment of €23 billion was expected by promoters.

years, which may be partly due to the fact that potentially competing and competing projects are considered here, whereas in reality only some of the competing projects will go ahead. If such an enhanced rate of project implementation does materialise, it would put a considerable peak demand on the services and the material supply chains needed for the works associated with the investment.

For illustration, the CAPEX of the projects on the 2013 PCI list, which were constructed and/or commissioned in 2015 amounts to ~€1.5 billion. A similar level of investment costs was reported by promoters to have been incurred in 2015 for the current PCIs.

The Agency notes that the financial resources needed for the implementation of these projects are substantial and far exceed the ones currently available from CEF funds, and that accordingly project promoters, NRAs and Competent Authorities should continue to first focus on national and regional frameworks which could be conductive to raising from investors the funds needed for the implementation of the PCIs.

Table 7 illustrates the expected commissioning dates of the "old" PCIs. This analysis does not differentiate the reason for any postponement of these projects (rescheduled or delayed). It is visible that **14 "old" PCIs have been repeatedly postponed since the launch of the 2013 PCI list until January 2016**. The average duration of postponement for these projects has been shorter in the recent period[129]; however it is still extended beyond the January 2015 planning schedule by more than 1 year on average.

13 PCIs managed to consolidate the initial postponement and did not accumulate any additional backlog in 2015.

On the contrary, 6 PCIs were on schedule between 2013 and 2015, but they fell behind the original plans in 2015.

Only a small minority of the PCIs (5 in total) managed to stick to their original commissioning target date as defined in 2013.

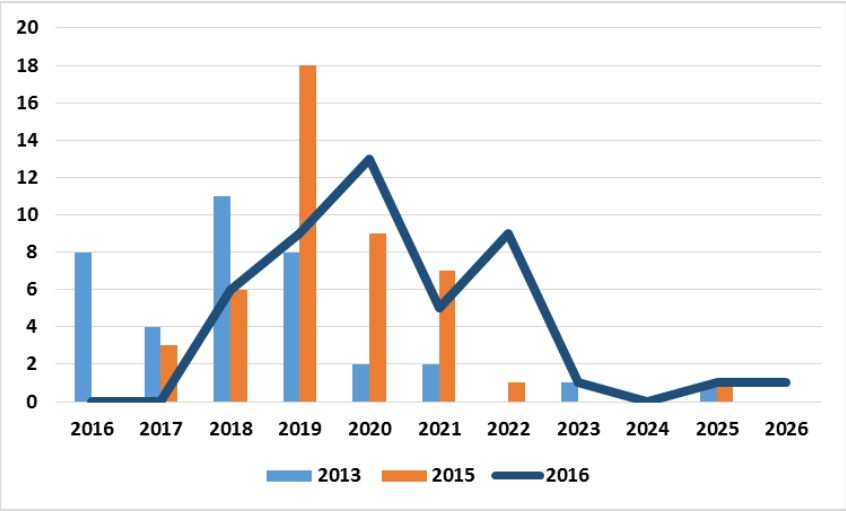
[129] For the PCIs which were postponed in both periods, the average length of postponement is 29 months between 2013 and 2015, and 19 months between 2015 and 2016.

Table 7: Number of postponed "old" PCIs which are present on both PCI lists[130]

	Number of PCIs	Average length of postponement (months)
PCIs postponed in 2013-2015	13	30
PCIs postponed in 2015-2016	6	23
PCIs postponed in 2013-2015-2016	14	29 (2013-2015) 19 (2015-2016)
PCIs keeping the original commissioning date	5	*n.a.*

Regarding the "old" PCIs, Figure 77 shows that the peak in the number of commissioned projects has visibly shifted, reflecting the reported expectations for the commissioning in 2013, 2015 and 2016. The shift indicates a moving commissioning target date which may be the result of the dependence of many PCIs on gas market and transmission network developments. In future monitoring, the Agency is considering to also request project promoters to indicate, for projects for which a final investment decision (FID) has not yet been taken, the expected duration (years) between the moment when a FID would be taken and the commissioning date of the PCI.

Figure 77: Number of "old" PCIs to be commissioned per year as reported in 2013, 2015 and 2016



[130] Only those PCIs are included in the table, for which the Agency received the commissioning dates for 2013, 2015 and 2016.

3.3.4 Implementation of the PCIs' schedules

One of the basic indicators for a PCI's progress is whether its implementation is on track, matching the planned timeline. Promoters were invited to select from a set of pre-defined options to indicate whether their project is on time or not. The Agency collected information on the projects' progress achieved both in 2015 and overall since the projects' inception (compared to the project's initial schedule when it first applied to become a PCI).

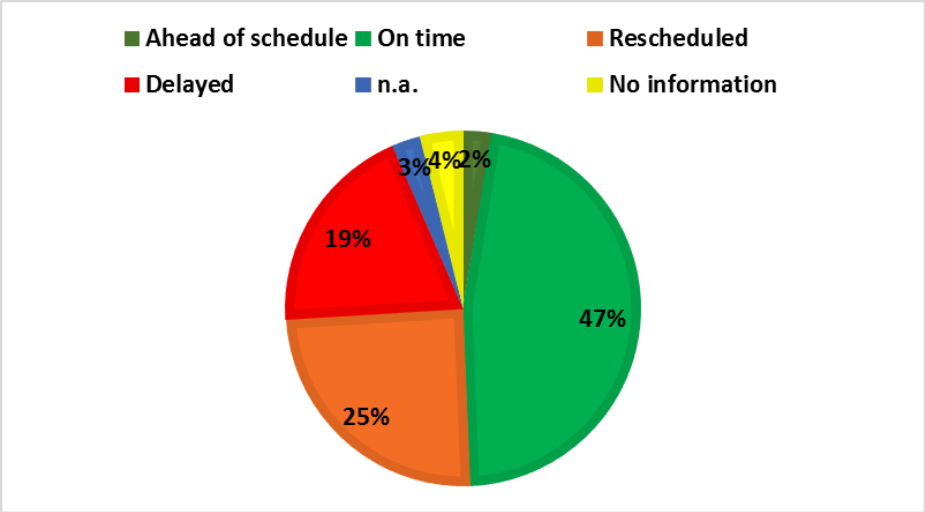
The answers which were available for promoters are as follows:

- Ahead of schedule
- On time
- Rescheduled[131]
- Delayed[132].

3.3.4.1 Current implementation compared to the planning of January 2015

Developments in the implementation of the current PCIs in 2015 shows a pattern which is very similar to the one reported by promoters for 2014. **Approximately half of the projects are on track and half are behind schedule compared to the planning of January 2015.**

Figure 78: Timeliness of all PCIs in 2015



[131] The term "rescheduled" corresponds to an investment which is voluntarily postponed by a promoter due to changes of its external driver (e.g. lower demand, less urgent need for an investment due to updated planning data or priority to other transmission solutions, cf. Section 5 of the Agency's Opinion no. 16/2014).

[132] The term "delayed" corresponds to an investment which is still needed at the expected date, but cannot be delivered on time due to various external factors like permitting, environmental, legislative reasons, etc. (cf. Section 5 of ACER's Opinion no. 16/2014).

Figure 79 shows the situation in the various priority corridors. Since the scope of projects is not the same in the individual priority corridors, comparison with the reports of the 2013 PCI list is not practical.

Figure 79: Timeliness of all PCIs in 2015 in the priority corridors

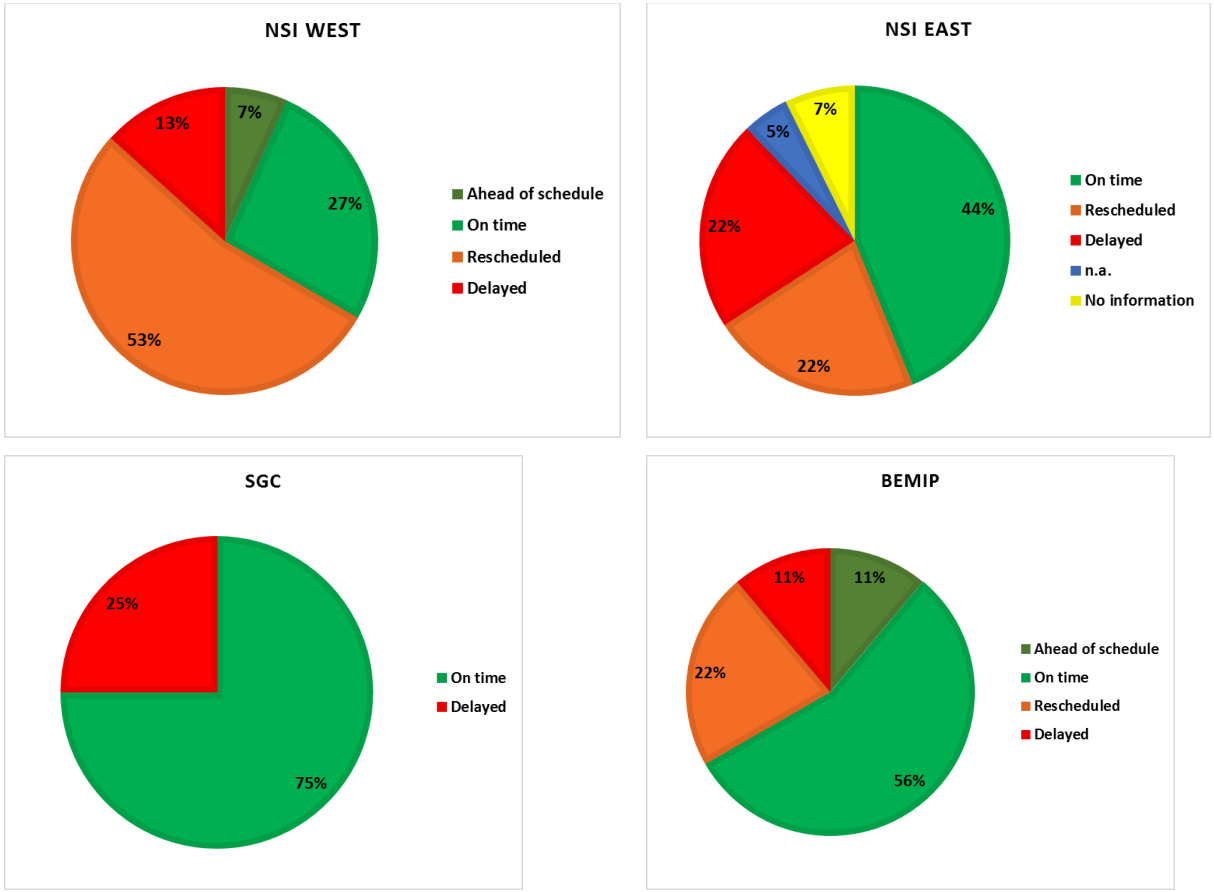
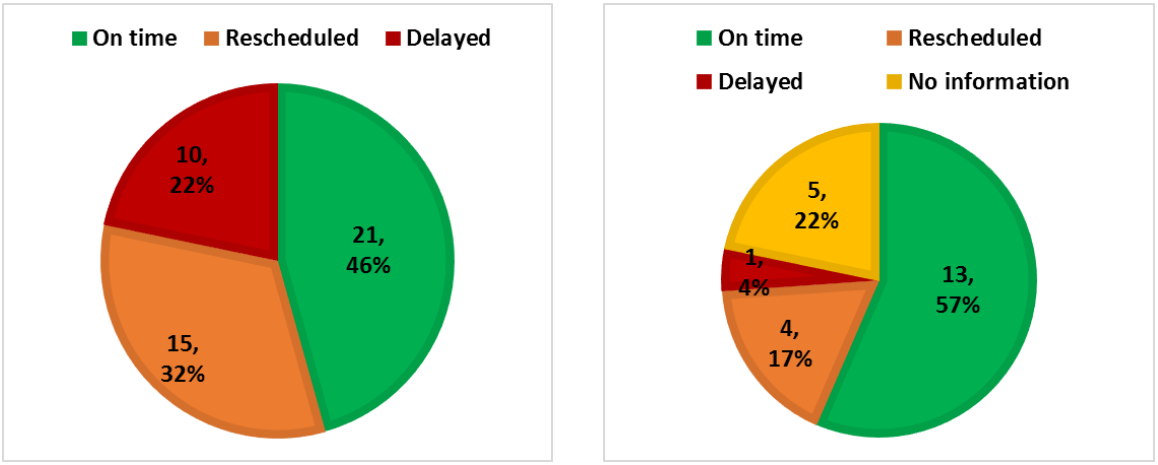


Figure 80 shows that the PCIs which entered the PCI list for the first time in 2015 ("new" PCIs) are reported to be "on time" during the last year to a slightly larger extent than the "old" PCIs. Since the share of the "new" PCIs for which no information has been reported is considerable, the Agency is not in the position to draw conclusions regarding any correlation between the various PCIs ("new" *vs*. "old" PCIs) and the timeliness of their implementation during last year.

Figure 80: Timeliness of "old" PCIs (left) and the "new" PCIs (right) in 2015[133]



3.3.4.2 Changes in the timeliness of "old" PCIs between 2013 and 2015 and between 2015 and 2016

Table 8 illustrates how the "old" PCIs progressed between 2013, 2015 and 2016. Only PCIs for which promoters provided a commissioning year in all the three years are considered (39 out of the 49 "old" PCIs). It is a positive sign that 13 PCIs managed to compensate for earlier postponements, i.e. did not fall further behind or even shortened the originally planned schedule. It is also visible that roughly the same number of PCIs are being continuously rescheduled or delayed. **Overall, in 2016 there is a larger number of "old" PCIs on time than in 2015.**

The delays may indicate a persisting external condition that prevents the project from progressing. However, a PCI which has been continuously rescheduled by its promoter(s) since 2013 may indicate that this project is not a priority for the promoter and there is no visible need for this PCI.

[133] Please note that Figure 80 was produced on the basis of the time status reported by promoters. In other sections of the analysis e.g. Table 8, the Agency took into account only the PCIs for which a commissioning year was reported (less than the number of those where the time status was reported.) This is the reason for the minor inconsistencies in the figures.

Table 8: Comparison of the time status of "old" PCIs in January 2015 and January 2016

Status on January 2016 / Status on January 2015	Ahead of the schedule	On time	Rescheduled	Delayed
On time	0	5	3	4
Rescheduled	2[134]	8	7	0
Delayed	0	3	1	6

3.3.4.3 Timeliness of the PCI and relation to its implementation status

The Agency examined the relation between a PCI's implementation status and the information on whether it is on track compared to the original planning (cf. Figure 81).

Most of the projects which are **under construction** are progressing well, even though a number of them are facing delays[135].

For projects which are undergoing **permitting,** the share of those which are either rescheduled or delayed is marginally higher than those which are on time.

PCIs that are **planned but are not yet in the permitting stage** are most often rescheduled by the promoters and are generally to a lesser extent on time. Delays occur at a substantially lower rate in this implementation status than in other stages of a project's life cycle.

Projects which are **under consideration** are reported most often to be on time, and less so to be delayed or rescheduled.

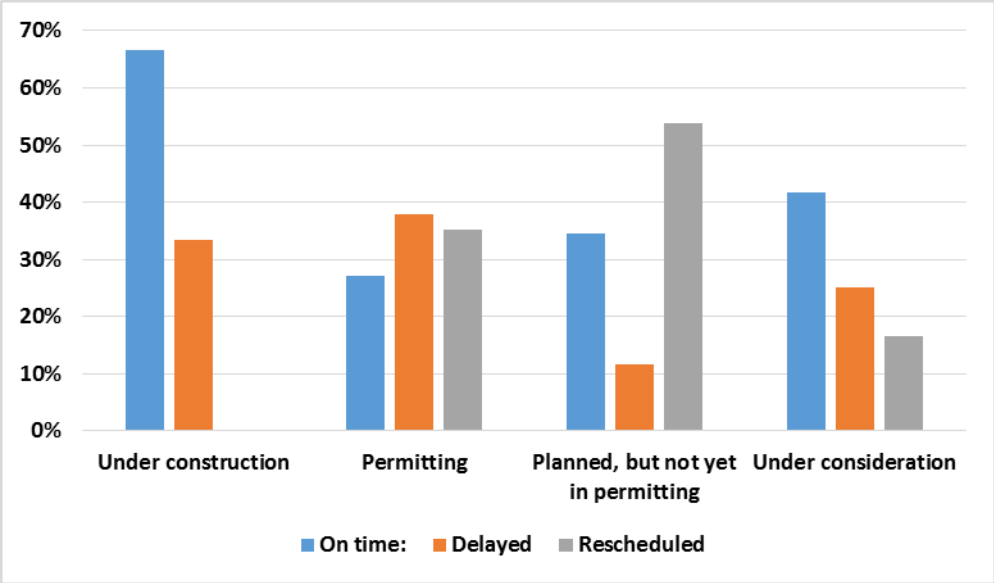
Overall, it appears that when a project is either in a very advanced (i.e., construction) stage or a in a very initial (i.e., under consideration) stage, the likelihood of the project being on time is higher. Between the early and the very advanced stages of a project's life cycle, i.e., when the project is in mostly in planning and permitting, the share of the PCIs which are behind schedule significantly outweighs the share of the PCIs which are on time. The Agency notes that it is precisely during these "midlife years" of a project when the promoters are actively pursuing final project definition in terms of technology and variants, permitting, and other work leading to entering into binding contracts with third parties about the future utilisation of the infrastructure and contracts for works. **The Agency is of the view that greater attention by project promoters to the elaboration of a definitive risk and business framework for the PCIs during their "midlife years" would help alleviate the pressures**

[134] 2 PCIs were rescheduled between 2013 and 2015, however, they managed to shorten the expected period until commissioning between 2015 and 2016, and this is the reason why they currently appear "ahead of schedule".

[135] For more information on the delays, please see Chapter 3.3.5 "Rescheduling, delays and difficulties encountered by the project promoters."

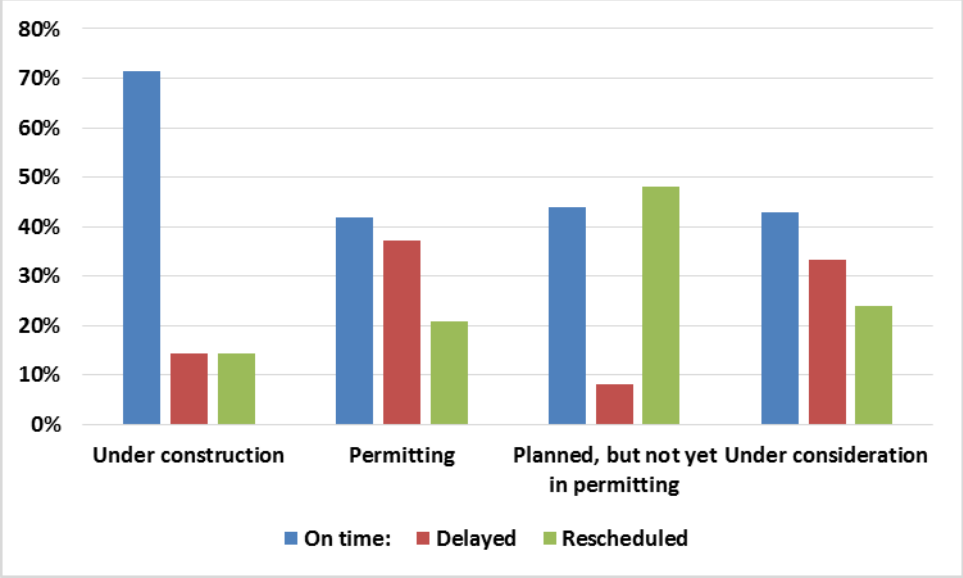
for postponing and rescheduling, which are evidently most prominent at these stages of the projects' life cycle.

Figure 81: Breakdown of PCIs per implementation status (100%) and timing



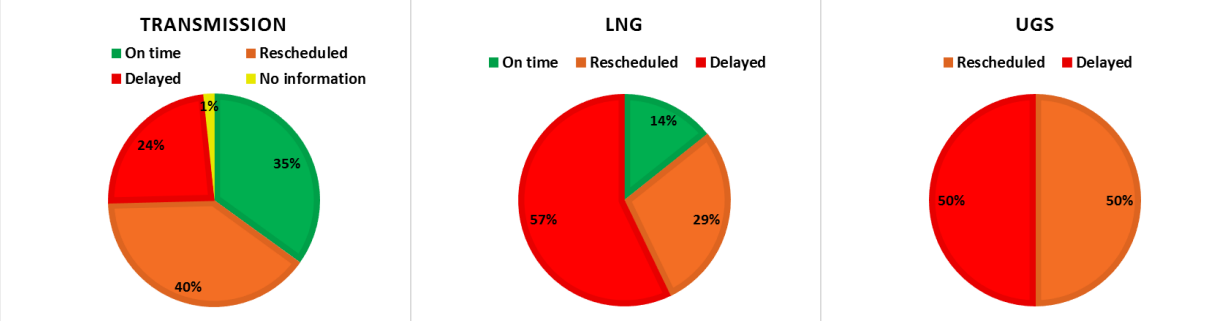
The pattern of the time progress in the various implementation status groups is very similar to that of the projects on the 2013 PCI list.

Figure 82: Breakdown of PCIs of the 2013 PCI list per implementation status (100%) and timing – data for the year 2014



The analysis **by project category** shows that the number of projects which are on time or postponed (delayed and rescheduled) is balanced in the case of transmission projects. However the majority of both LNG and UGS projects are facing either delays or are rescheduled.

Figure 83: Timeliness of PCIs per project type



3.3.5 Rescheduling, delays and difficulties encountered by the project promoters

When examining the average length of rescheduling, delays and difficulties, the Agency used 31 January 2015 as the reference point.

3.3.5.1 Rescheduling

Since 31 January 2015, promoters have decided to reschedule the implementation of a quarter (25%) of the PCIs[136].

In most of the cases[137], the projects were rescheduled **because of a cancellation, rescheduling or uncertainty about the implementation of another complementary (dependent or enabler[138]) project**. For example, the biggest postponement impact was related to the decision for the rescheduling of an upstream project, which triggered the rescheduling of 7 other PCIs.

In other instances, the uncertainties associated with a project for an LNG terminal led to the rescheduling of a transmission project, and vice versa.

Lack of market interest and the **need for a better certainty on the technical aspects** were also mentioned as reasons for rescheduling in two cases.

[136] 19 projects out of the 77 PCIs were rescheduled.

[137] In the case of 12 out of the 19 rescheduled projects.

[138] An "enabler project" is a project which is (a) needed for the implementation of another project or projects for technical reasons [the "dependent project(s)"], and (b) does not lead to negative net benefits of the projects combined. Enabler and dependent projects are generally expected to be commissioned concurrently or within a short time span from each other's commissioning. Enabler projects may be implemented on their own regardless of the dependent projects. If this is not the case, then it is better to label both (or all if there are more than two) as "twinned projects" (mutually enabling, mutually dependent projects).

In comparison to the reasons for rescheduling which were reported by project promoters in 2015, the postponements related to other (complementary) projects stands out in 2016. Conversely, some other reasons, such as uncertainties and changes in the supply and/or demand side which were mentioned frequently in 2015, do not appear at all in the 2016 reports of the project promoters.

Transmission projects were rescheduled by 27 months[139] on average, which is slightly more compared with the 2015 PCI monitoring report. In **LNG**, only one of the two rescheduled projects indicated the duration of the postponement (12 months), whereas for **UGS** projects no rescheduling was indicated. Similarly to the 2015 PCI monitoring, most of the rescheduled projects are planned but not yet in permitting[140], followed closely by those which are in the permitting stage[141]. One rescheduled PCI is in the consideration stage.

3.3.5.2 Delays and difficulties[142]

During 2015, almost one out of five PCIs suffered a delay[143]. The majority of the delayed projects – similarly to the annual report of 2015 – are in the permitting stage[144]. They are followed by those which are planned but not yet in permitting[145] and by those which are under consideration[146]. There is one PCI which is delayed in its construction phase.

3 projects suffered a short delay which could be considered as "experiencing difficulties"; these PCIs are analysed together with those which are delayed.

In 3 cases, the main reason for the delay was the presence of **challenges in obtaining the necessary permits and/or licenses[147]**.

In another 3 cases, the **prolongation of the tendering process** delayed the project.

For the remaining PCIs, the individual reasons for delays were given as:

- Technological reasons, amendment of the development plan;

[139] 12 months being the shortest and 39 months being the longest rescheduling time.

[140] 10 out of the 19 rescheduled PCIs

[141] 8 out of the 19 rescheduled PCIs

[142] A PCI is considered to be delayed in case a postponement of at least six months has taken place, and the PCI is not rescheduled (i.e., it is not voluntarily postponed by a transmission system operator due to changes of its external drivers). A PCI is considered to be experiencing difficulties in case a postponement of less than six months, without causing a significant update in estimated costs or benefits, has taken place.

[143] Notably 15 out of the 77 PCIs were delayed.

[144] 9 PCIs out of the 15 delayed

[145] 3 PCIs out of the 15 delayed

[146] 2 PCIs out of the 15 delayed

[147] In the questionnaire, project promoters were invited to choose from a set of pre-defined answers the main and the additional reasons for the delay. In those cases where the pre-defined choices would not reflect reality, promoters could indicate "other" and give an explanation.

- Delays related to the acquisition of land;
- Difficulties in project financing due to low oil prices;
- Lack of ability to submit a proposal for support from the Connecting Europe Facility;
- Changes in the tariff methodology.

In comparison with the PCI monitoring report of 2015, the only consistently appearing issue that causes delays of projects is related to challenges in obtaining the necessary permits and licenses.

Other types of difficulties leading to delays which project promoters experienced in 2015, related *inter alia* to financing (the lack of financial resources), to the Environmental Impact Assessment, to market related issues (e.g. no market interest in capacity, no clarity on future gas or capacity market demand), and to challenges because of the development of other (complementary or competing projects), were not indicated by the project promoters in 2016.

Overall, **project promoters only indicated specific reasons for the delays for 13 PCIs.** Because of the small sample of delayed projects for which a specific cause of delay was indicated and the lack of a clearly visible dominant reason, **the Agency is not in a position to draw conclusions regarding the reasons for the delays which gas PCIs are facing in 2016**.

The average length of the delays reported in transmission is 12 months[148]. For underground gas storage projects an average of 18 months[149] and for LNG projects an average of 38 months[150] delay were reported. In comparison to the PCI monitoring report of 2015, the average length of delay for transmission and underground gas storage projects decreased. For LNG projects though, the average length of delay became longer than in the preceding monitoring period[151].

3.3.6 Duration of implementation

3.3.6.1 Overall duration of PCIs

Promoters were requested to indicate the dates for the major milestones of the project's development in their report. When examining the duration of the PCI's implementation, the Agency – similarly to its 2015 monitoring of the PCIs' progress – took into account the **time elapsed between the end of the market test and the expected commissioning date of the PCI**. Approximately half of the promoters provided the information for both of these milestones in their reports, and the findings below are based on this information.

[148] 1 month being the shortest and 39 months being the longest delay.

[149] 12 months being the shortest and 24 months being the longest delay.

[150] 18 months being the shortest and 62 months being the longest delay.

[151] In the 2015 PCI monitoring report, the average delay was 24 months in transmission, 29 months in LNG, and 23 months in UGS.

In **transmission**, the average duration of a PCI's life cycle from inception to commissioning is expected to be 54 months, which is almost identical to the expectations of promoters of the projects on the 2013 PCI list. For **LNG** projects, the average duration is expected to be 78 months and for **UGS** projects 103 months. For both of these latter categories, the expected length of project implementation is longer than for the 2013 PCI list. In particular, the duration of LNG projects on the 2015 PCI list is expected to be 45% longer than of those on the previous PCI list. This is linked to the fact that 5 out 7 LNG PCIs are either delayed or rescheduled.

3.3.6.2 Overall duration of "old" PCIs

The Agency carried out an analysis for the "old" PCIs similar to the one in section 3.3.6.1– i.e., it looked at the reported duration between the end of the market test and the planned commissioning date. The expected duration reported for "old" **transmission** projects in 2015 and in 2016 is 56-57 months, which is slightly higher than the aggregated average indicated in section 3.3.6.1.

In the case of **LNG and UGS** PCIs the information presented in section 3.3.6.1 applies to "old" PCIs because there are no "new" LNG projects and the two new UGS PCIs did not provide the information regarding the implementation schedule.

3.3.6.3 Expected permit granting duration

Regarding the expected starting and ending dates of the permit granting procedure, 70% of promoters provided information. Table 9 shows the main elements of promoters' reports.

For most PCIs, the permit granting request was submitted after 16 November 2013. It is visible that **the expected or actual length of the permitting process is reported to be shorter for projects to which the maximum length of permitting (3.5 years) applies.** Furthermore, a smaller share of the promoters of such projects reported permitting time overruns (compared to the legal deadline) and the average length of the overruns is also shorter compared to the PCIs for which the relevant provisions (limiting the maximum duration of permitting) of Regulation (EU) No 347/2013 are not applicable.

Table 9: Actual and expected length of the permit granting procedures for PCIs

	Transmission	LNG	UGS	Total
No. of PCIs where the permitting file was submitted before 16 November 2013	14[152]	5	2	***21***
Average length of the permit granting procedure (months)	82	47	53	*n.a.*
No. of promoters who reported a permitting procedure longer than 3.5 years (42 months)	12	3	2	17
Average overrun of the permitting procedure compared to the 3.5 years (months)	49	24	11	*n.a.*
No. of PCIs where the permitting file was submitted after 16 November 2013	30[153]	0[154]	3	***33***
Average length of the permit granting procedure (months)	16	*n.a.*	32	*n.a.*
No. of promoters who reported a permitting procedure longer than 3.5 years (42 months)	5	*n.a.*	1	6
Average overrun of the permitting procedure compared to the 3.5 years (months)	9	*n.a.*	39[155]	*n.a.*

As the permitting procedure was reported to have been concluded for only 7 PCIs, these figures should be considered as the expectations of the promoters rather than a reflection of the actual implementation of Regulation (EU) No 347/2013. **The Agency notes that NRAs and Competent Authorities should abide by the legal requirements of Regulation (EU) No 347/2013 regarding the maximum allowable duration of the permitting procedures.**

For PCIs which consist of several elements or sections, the Agency asked promoters to indicate the starting date for permitting of the earliest element/section and the ending date for the last element/section. For instance, if the permitting procedure starts with a time difference of 1 year on the two sides of the border for a cross-border interconnection, the overall length of permit granting – if the longest legally possible time is used – will actually be 4.5 years. For this reason, the Agency is not in the position to determine whether the duration of the permitting procedures related to a cross-border project in excess of 3.5 years actually represents a breach of Article 10 of Regulation (EU) No 347/2013 or is the result of different

[152] Two promoters of transmission projects and 1 promoter of an LNG project did not indicate the ending date of the permitting procedure, therefore these projects were not taken into account in the statistics in this section.

[153] Idem.

[154] Idem.

[155] Based on the report of 1 promoter.

starting dates for the permitting procedure. **The Agency is of the view that project promoters should strive to file for permitting in all concerned Member States at approximately the same time, if they wish to keep the duration of the overall permitting for the entire project within the 3.5 year limit foreseen by Regulation (EU) No 347/2013.**

Key findings

- For roughly 25% of the PCIs, promoters did not report any activity carried out in the last year. Without prejudice to projects on which no activity was carried out because external circumstances blocked their progress, **the Agency highlights that the absence of any development activity for a PCI in two consecutive years (i.e., during the validity of the PCI list) should serve as an important consideration in the upcoming PCI selection procedures, and that such a project should not be considered for retaining its PCI status.**
- The commissioning dates show a strong correlation to the values reported in 2015, with a one-year shift to a later date. The **commissioning dates are being pushed into the future by a year every year and the rate of project implementation is slow.** In the light of the numbers of rescheduled and delayed projects, **the commissioning dates indicated by many promoters appear overly optimistic.**
- **During the last 12 months, approximately half of the PCIs have fallen behind schedule either by being delayed or rescheduled** and this lag happened mostly in the middle period of the project's implementation, i.e. mostly during planning and permitting but after inception studies and before construction.
- **A large share of LNG PCIs and all UGS PCIs are postponed**.
- The most frequently reported reason for rescheduling is linked to the uncertain or postponed implementation of another project, to which the PCI is complementary.
- Compared to the 2015 annual report, the reported reasons for delays are diverse and no strong correlation between delays and any particular reason can be drawn in 2016. The only recurring reason are the challenges in obtaining the necessary permits and licences, but fewer project promoters mention this reason in 2016 compared to 2015.

3.4 Progress of costs and benefits

3.4.1 Investment costs

According to the project promoters' plans, in case all the projects (including competing projects) are to be commissioned in the reported years, **CAPEX outlays[156] will be highly concentrated in 2019-2020 (€15 and €16 billion respectively), with** CAPEX during these two years together **amounting to €31 billion,** or around 60% of the total expected cost of the projects[157]. There are two other years, 2018 and 2022, when a significant amount of capital, €3.5 billion and €6 billion respectively, is planned to be mobilized by promoters.

Figure 84 illustrates projected CAPEX levels (annual and cumulative). The data used in this section covers only the PCIs for which a commissioning date was provided, i.e. the projects which indicated a CAPEX value but did not provide a commissioning date are excluded[158] – there are 11 such PCIs in total.

The reported CAPEX data indicates that the share of the NSI East projects increased from 22% to 31% in the total investment costs compared to the 2013 PCI list[159]. The CAPEX of the PCIs in **the Southern Gas Corridor continues to account for almost half of the total investments** expected for the period of 2016-2026, even though only a relatively low number of PCIs (15%) is located in this Corridor. The explanation is in the **considerable size and complexity of the SGC projects**, as the corridor was designed to be one of the major alternative routes for gas supply to Europe. It must be noted, though, that this priority axis contains competing projects, not all of which are going to be implemented.

[156] Capital expenditure outlays (investment costs) include cost items which will be considered in the regulatory asset base in line with the legislative and regulatory framework applicable in the relevant Member State(s).

[157] When calculating the CAPEX outlays, the Agency made the conservative assumption that 100% of the indicated CAPEX is realized in the year of the commissioning of the project. In reality, most of the CAPEX may be mobilized in the tendering and construction period, i.e. within a much earlier timeframe. **Please note that not all PCIs will be implemented, as the PCI list contains competing projects.**

[158] The total reported CAPEX of these 11 PCIs is ~€8.5 billion, out of which €6.5 billion is associated with 2 projects. The promoters did not provide the date of commissioning in the report, however, this information is available in the ENTSOG Ten-Year Network Development Plan 2015. According to that information, both projects are planned to be commissioned after 2020, the first one covering €4.5 billion and the second one covering €2 billion.

[159] Even though total investment cost data for 5 PCIs in the NSI East corridor was not provided by the promoters.

Figure 84: Total investment costs of PCIs

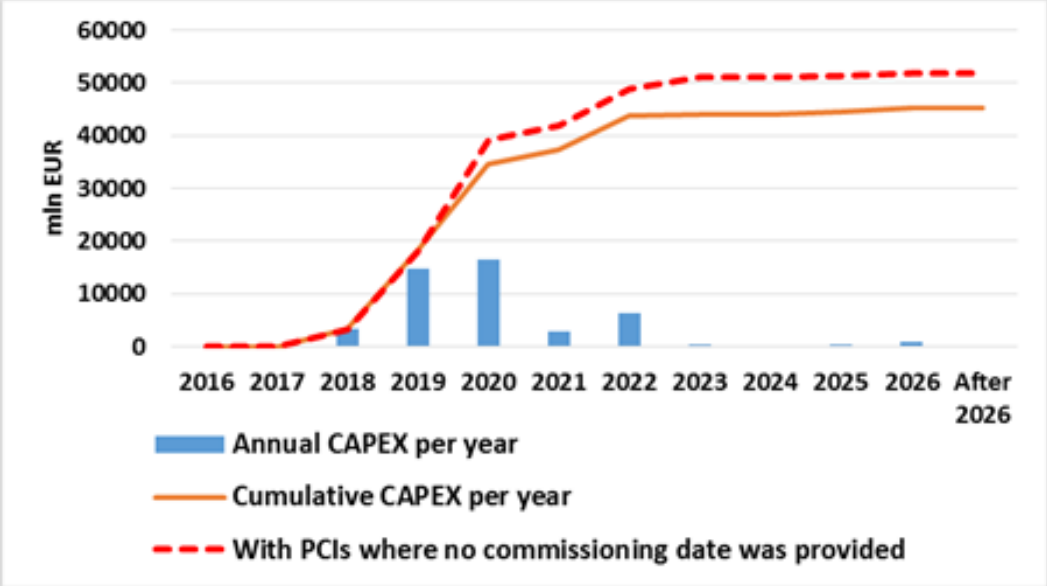


Figure 85: Total investment costs per priority corridor per year

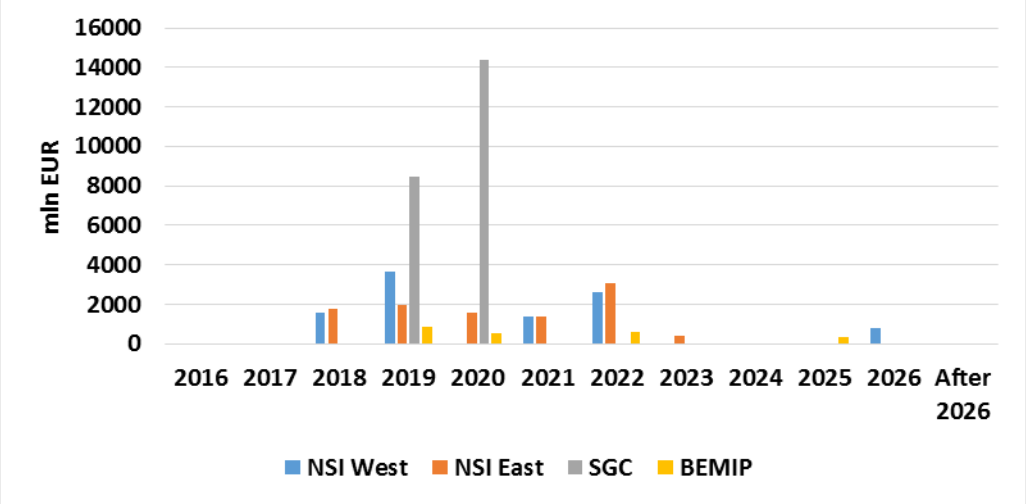
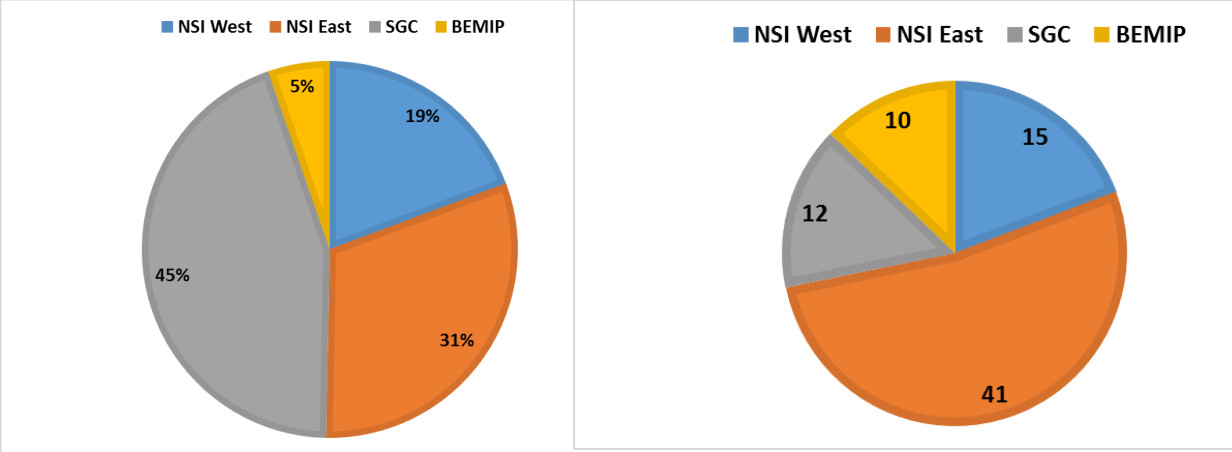


Figure 86: Share of priority corridors in the total CAPEX (%) and the number of PCIs in the priority corridors

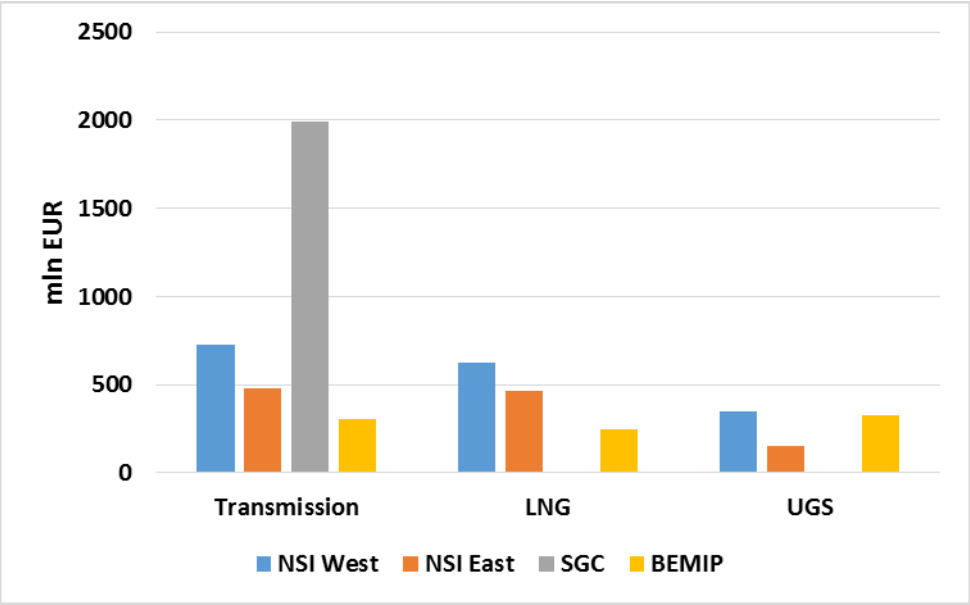


The Agency notes that CAPEX in the **NSI East projects**, which account for approximately half of the PCIs, is expected to represent **31% of the total PCI investment cost**. A possible explanation may be the fact that most of these projects are for new interconnectors or capacity expansions of existing transmission infrastructure, but their length is relatively limited compared to that of SGC transmission projects.

The **BEMIP** projects, which represent about 13% of the PCIs, account for only 5% of the expected CAPEX. The **NSI West** projects (19% of PCIs) account for 19% of the total expected CAPEX.

Figure 87 illustrates the average expected CAPEX per PCI by corridor and type of infrastructure and Figure 88 provides information about the total expected CAPEX annual outlays by corridor.

Figure 87: Average CAPEX by category and by priority corridor



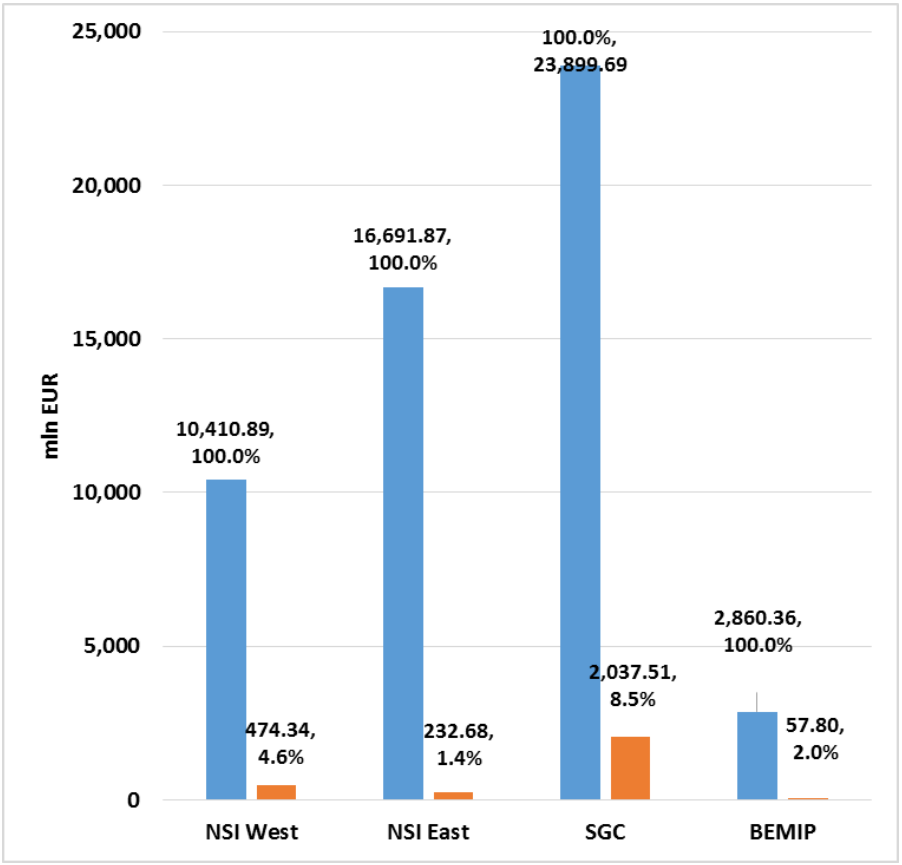
Since the majority of projects on the PCI list passed the "under consideration" stage 2 years ago, **the Agency deemed it useful to provide an overview of how much capital has been already invested in these projects in the last years**[160]. Promoters were invited to provide figures on the CAPEX they already incurred in the years from the start of the project until December 2014 and during 2015.

The share of the CAPEX invested until December 2015 varies both by priority corridors and by different stages of the projects' advancement (i.e., before or after the permitting stage). The highest level of investment that has already taken place compared to the overall estimated CAPEX is in the Southern Gas Corridor, followed by the NSI West, where 8.5% and 4.6% of the total investment costs have already been incurred, respectively. Promoters in the BEMIP and the NSI East corridors have so far spent just 2% and 1.4% of the total investment cost, respectively, for their projects.

Overall, only 5.2% of the estimated CAPEX of all PCIs has been incurred by 31 December 2015. Out of all actually incurred CAPEX on all PCIs, 72.7% has been spent in SGC, primarily on only 2 PCIs.

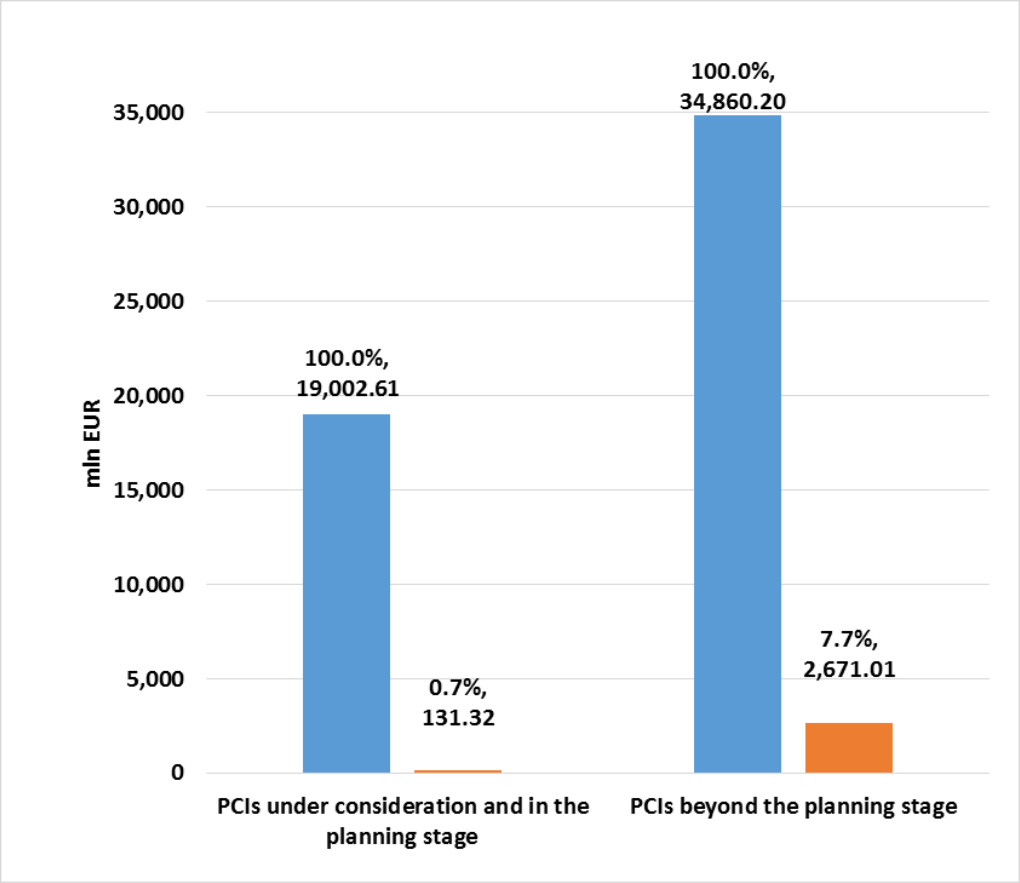
[160] The term "investment" is considered in a general meaning and covers all expenses which are associated with the preparation/implementation of the project and which have been paid by the promoter.

Figure 88: Total CAPEX and CAPEX invested until December 2015 by priority corridors



By carrying out an analysis splitting the projects into two categories according to their implementation status, it is clear that **the level of financial commitment from promoters significantly increases once the project reaches and goes beyond the permitting stage, even though this commitment still remains low compared to the overall CAPEX**.

Figure 89: Total CAPEX and CAPEX invested until December 2015



The Agency asked promoters to provide information on whether their **expectations of the total CAPEX** changed between 2015 and 2016[161].

About 44% of the promoters indicated no difference[162] in the estimated CAPEX value since 2015 and 27% selected a reason for the difference. The remaining promoters did not provide information.

The reasons for changes in the assessed total investment costs most typically include[163]:

- changes in the project's scope or technical characteristics; and

[161] For those PCIs which were on the 2013 PCI list, the reference date in 2015 was the 2015 PCI monitoring report. For those projects which did not have the PCI label in 2015, the reference date for 2015 was the information submitted for the project-specific CBA in the 2015 PCI selection process.

[162] In 3 out of 34 cases, the promoter indicated no difference in the CAPEX value, even though – compared to the information received by the Agency in 2015 – the figures indicated in 2016 are half of those reported in 2015.

[163] Promoters could select the reasons from a pre-defined list or could select "other" and provide a textual description.

- better cost estimation (including increased accuracy, reduction of risk-related mark-up charges, and higher cost certainty after the finalisation of a tender process).

Other reasons, such as changes in the prices of materials, changes in the methodology of calculating CAPEX and change in the project's schedule – including the introduction of phased implementation of the project – were also reported.

Some promoters indicated that the CAPEX figure for the project is still unknown since the project is still at a very early stage, while others did not indicate any cost figure and gave no explanation for not providing the information either. Table 10 indicates the number of PCIs where either no CAPEX changes or a specific reason for such changes was reported.

Table 10: Changes in the expected level of CAPEX

	Transmission	LNG	UGS	Total
No difference in CAPEX compared to 2015	30	2	2	***34***
Changes in the project scope or technical characteristics	10	1	0	***11***
Better cost estimation	8	1	0	***9***
Changes in the actual/expected prices of material and/or equipment used for the project	1	0	0	***1***
Other	10	2	0	***12***
No information / n.a. (*indicated by the promoter*)	7	1	3	***11***

The **expected variations in the estimated investment costs** were reported at 16.5% for downward variations and at 20.5% for upward variations for gas transmission projects and 10% both for downward and upward variations for LNG and underground gas storage projects[164].

In the case of transmission projects[165], the downward variations do not correlate significantly with the projects' implementation status. However for the PCIs beyond the planning stage – i.e. either in permitting or under construction – the average upward variation of CAPEX is

[164] The shown percentage figures of the variations equal to the average of the figures reported by project promoters separately for upward and for downward variation.

[165] For LNG projects, there is no difference in expected variations depending on the implementation status and in the case of underground gas storage, only one promoter provided a figure which makes the analysis not feasible.

almost 10% points lower[166] than in the case of the PCIs which are still in the "under consideration" or "planning" phases.

The Agency received responses for a little more than half of the PCIs regarding the **reasons for indicating a certain cost range for CAPEX**.

The main indicated driver behind the reported variations (ranges) in CAPEX according to the promoters is the **uncertainty about the procurement and/or construction costs**. Also, several promoters reported that the early stage of implementation of the project makes the cost estimates rather uncertain.

Table 11 indicates the number of PCIs for which a certain reason for the CAPEX revision was reported.

Table 11: Drivers of indicated CAPEX variations (ranges) for CAPEX estimates

	Transmission	LNG	UGS	Total
Procurement / construction cost uncertainties	23	3	0	***26***
Project is at an early stage of implementation and cost estimates are uncertain	12	1	0	***13***
Other	1	0	0	***1***
No information	29	2	3	***34***
Project scope may change	0	1	0	***1***
Uncertainty regarding extra costs due to safety, environmental or legal requirements imposed during the permit grating process	0	0	1	***1***

3.4.2 Life-cycle costs

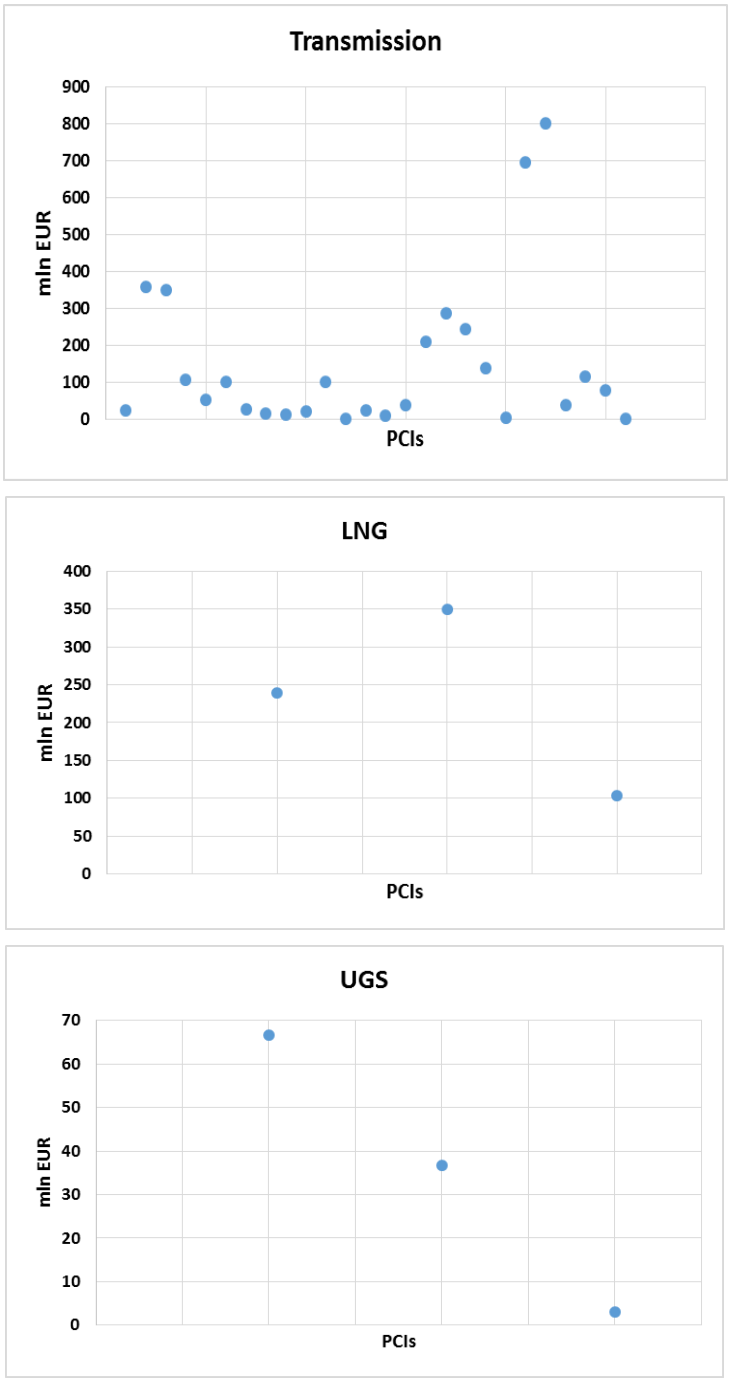
For the first time in 2016, the Agency collected information from the promoters of gas PCIs regarding life-cycle costs, in pursuit of a better overview of the total costs of the PCIs.

Since there is no earlier reference point regarding life-cycle costs of PCIs and the information provided by project promoters covers a little less than half of the PCIs, the Agency limits its analysis to presenting the basic information as reported by promoters.

The graphs in Figure 90 show the level of life-cycle costs as indicated for individual PCIs.

[166] The average upward variation is 25% for PCIs, which are under consideration or still in the planning phase, while the average upward variation for those projects, which are in permitting or under construction is 15%.

Figure 90: Indicated life-cycle costs by category



3.4.3 Expected benefits

For the majority of PCIs[167], promoters did not provide any information about the benefits as requested by the Agency[168]. Complete information was provided in just 10 cases, which does not allow the Agency to carry out a substantial analysis of expected PCI benefits.

Promoters pointed to two main concerns which prevented them from providing the requested information about expected benefits:

- Some of the benefits are not monetised in ENTSOG's cost-benefit analysis (CBA) methodology, but addressed via a qualitative analysis, therefore no monetary values are available.
- ENTSOG's project-specific CBA is performed on a cluster level, which does not correspond to the level and granularity of the PCI list and the annual monitoring of the PCI progress by the Agency, which are at individual project level.

Some promoters indicated that the CBA is going to be performed later and the assessment of benefits may become available at that time.

These results of the monitoring carried out by the Agency demonstrate that promoters are not in the position to provide clear and easily understandable quantified data about the benefits of their projects. In the absence of such information, the Agency is unable to monitor the development of the benefits and thus the potential changes in the overall cost-benefit ratio of the PCIs during the monitoring period.

Key findings

- The indicated total CAPEX of PCIs on the 2015 PCI list amounts to **€54 billion. More than half of this investment is expected to be realised in 2019 and 2020 (€15 billion and €16 billion respectively), which is significantly higher than the level of actual investments in PCIs (€1.5 billion in 2015).**
- **The Agency strongly recommends to project promoters the timely implementation of a CBA methodology and analyses which clearly allow the monetisation, to the degree possible, of all benefits of a PCI at individual project level, in line with the requirements of Regulation (EU) No 347/2013 and consistently with the maturity level of the project.**
- The Agency notes that **the current ENTSOG CBA methodology should be updated**

[167] 59 out of 77 projects

[168] In order to be able to identify the level of benefits for each relevant Member State, the Agency requested promoters to provide the information on monetized benefits broken down by category (market integration, security of supply, competition, sustainability) and per Member State.

and improved to allow for a comprehensive monetisation, to the degree possible, of all benefits that a PCI at individual project level is expected to deliver, in line with the requirements of Regulation (EU) No. 347/2013.

- The Agency is of the view that **the absence of reasonably accurate, up-to-date and reliable information about the potential benefits of a project makes the NRAs' evaluations and decisions on investment requests pursuant to Article 12 of Regulation (EU) No 347/2013 more difficult.**

3.5 Regulatory treatment

3.5.1 Investment requests and decisions

Project promoters submitted 6 investment requests to the NRAs for 7 PCIs[169] in 2015. In four cases (covering 5 PCIs), the NRAs agreed and issued a decision, while in one case the promoter withdrew the investment request before the expiry of the deadline for NRAs to issue a decision. In another case, the NRAs did not reach an agreement and the investment request was transferred to the Agency. The Agency did not decide on the investment request because the promoter withdrew the request shortly after its transfer to the Agency.

The promoters informed the Agency both about past investment requests and about their intentions to file such requests in 2016. The **promoters reported that in 2013-2016, investment requests were submitted for 16 projects on the current PCI list, and that they also received a decision for all of these requests** (cf. below).

Promoters are planning to submit an investment request in 2016 for only a few (6) PCIs and are still undecided on whether to submit an investment request in 2016 for a third of the PCIs (26).

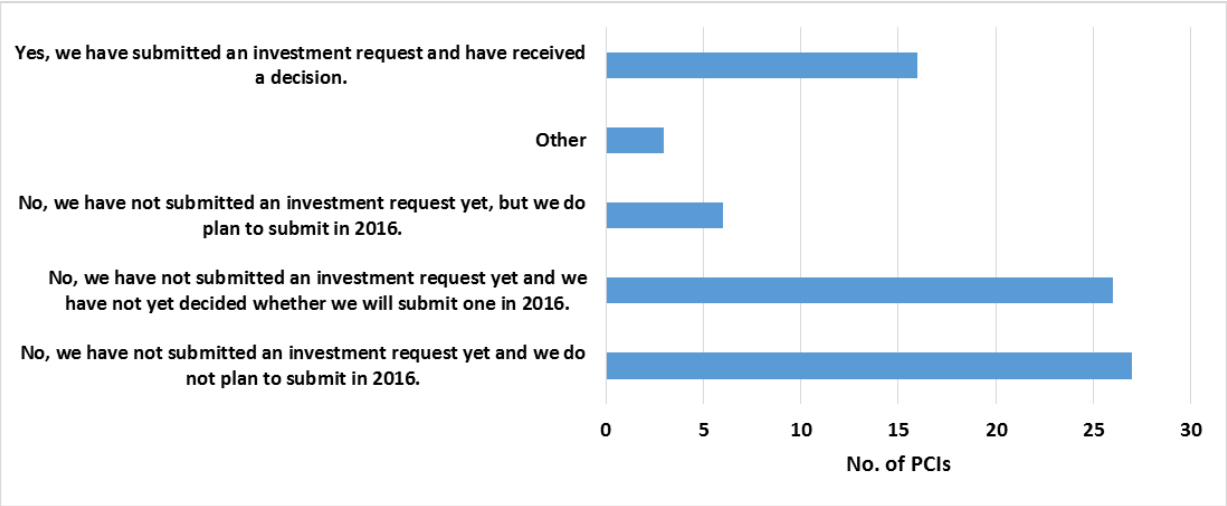
For another third of the PCIs (27), promoters do not plan to submit an investment request in 2016.

[169] Former PCIs no. 6.13 and 6.14 were broken down into four PCIs on the 2015 list (*see in the first row in Table 12*) but one single investment request was filed for all of them.

Table 12: Investment requests and CBCA decisions in 2015

PCI number	PCI name	Investment request notified to the Agency	CBCA decision by NRAs	Current status
6.24.1 (*formerly PCI no. 6.14*) **6.24.4** **6.24.5** **6.24.6** **(*formerly PCI no. 6.13*)**	Romanian-Hungarian reverse flow: Hungarian section 1st stage CS at Csanádpalota (1st phase) Városföld-Ercsi– Győr pipeline (capacity 4.4 bcm/a) (HU) Ercsi-Százhalombatta pipeline (capacity 4.4 bcm/a) (HU) Városföld compressor station (capacity 4.4 bcm/a) (HU)	05/2015	10/2015 (HU & RO)	-
8.1.1	Interconnector between Finland and Estonia "Balticconnector"	06/2015	10/2015 (EE & FI)	The project promoter submitted a new investment request in 04/2016, and the NRAs replaced their previous decisions with new ones in 04/2016.
8.1.2.2	Paldiski LNG (EE)	06/2015	No NRA decision – case was taken over by ACER in 11/2015	The promoter withdrew the investment request in 01/2016, the case was closed.
8.2.2	Enhancement of Estonia-Latvia interconnection	06/2015	10/2015 (EE & FI)	The project promoter submitted a new investment request in 04/2016, and the NRAs replaced their previous decisions with new ones in 04/2016.
6.26.1	Interconnection Croatia — Slovenia (Lučko — Zabok — Rogatec)	05/2015	No NRA decision – the promoter withdrew the investment request in 12/2015	-
8.6	Gothenburg LNG terminal in Sweden	-	01/2015 (SE)	-

Figure 91: Submissions of investment requests



The significant reorganisation (merging, regrouping) of PCIs on the 2015 list compared to the 2013 PCI list poses difficulties for the analysis and handling of the investment requests by the NRAs and the Agency.

According to the Agency's records, between 2013 and 2016 promoters submitted 15 investment requests, all of which are related only to PCIs on the *current* PCI list, and received a decision for 11 of them, including 10 decisions by NRAs and one decision by the Agency.

By unique PCI code, the submitted 15 investment requests covered 36 PCIs according to the 2013 PCI list, but they only cover 23 PCIs according to the unique PCI codes used in the 2015 PCI list. By the same token, the 11 investment requests for which a decision was taken by either NRAs or the Agency cover 31 PCIs on the 2013 list but just 18 PCIs on the 2015 list. Since NRA decisions on investment requests do not necessarily use the PCI code of a single project, in certain cases **projects which are added or merged into a PCI which already uses an assigned unique project code and has received a decision on an investment request,** may claim to have also received a decision from the NRAs under Article 12 of Regulation (EU) No. 347/2013, thus **potentially becoming eligible for CEF funding as well, without actually filing an investment request and receiving a decision**.

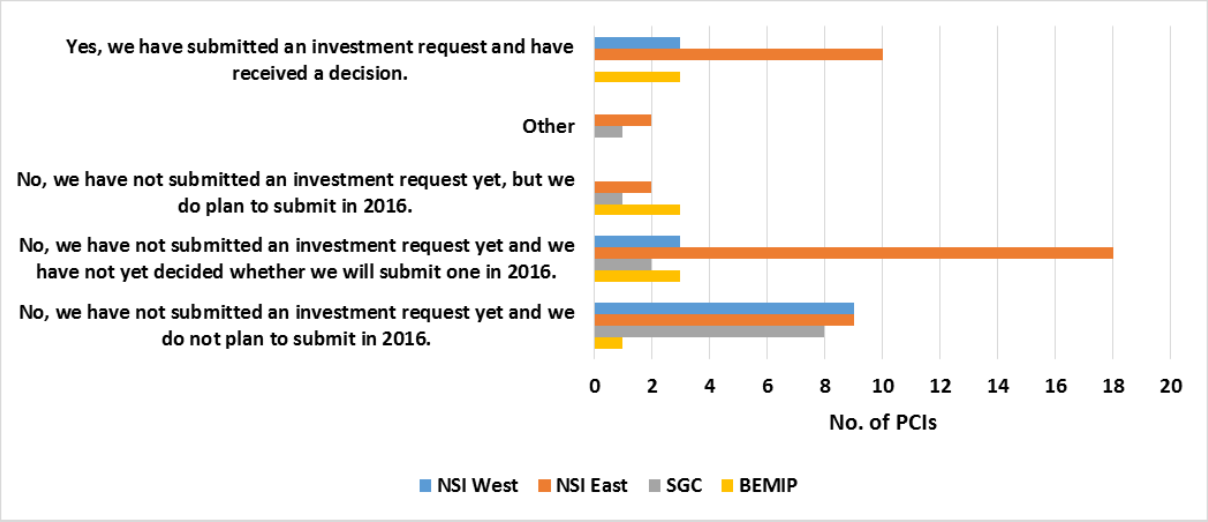
The Agency is of the view that, in cases of mergers of projects or other actions whereby a PCI which has been assigned a unique code on the PCI list is restructured, the Decision Making Body and the Commission, based on the opinion of the relevant NRA(s), should clearly state in the PCI list whether the resulting PCI is a new one or an amendment of an existing PCI, and in case of an amendment of an existing one, whether the already taken decision on the investment request (if any) is valid "as is" or a new investment request must be submitted.

The Agency is of the view that the merger or significant change of the scope of projects for which a decision on an investment request has already been issued should be avoided, also since such practices may lead to uneven playing field for project promoters.

Decisions on investment requests covered the most PCIs (10) in the NSI East region, followed by the NSI West and BEMIP (involving 3 PCIs in each corridor). There has been no decision – and no application – for investment requests in the Southern Gas Corridor.

In the NSI East and the BEMIP corridors, the share of promoters who have not decided whether to submit an investment request in 2016 is higher than those who do not plan to submit an investment request during the year. For that reason, NRAs may count on incoming submissions of investment requests with a higher certainty in these two corridors; on the contrary, in the NSI West and the Southern Gas Corridor promoters appear more determined not to file an investment request in 2016.

Figure 92: Investment requests by priority corridor



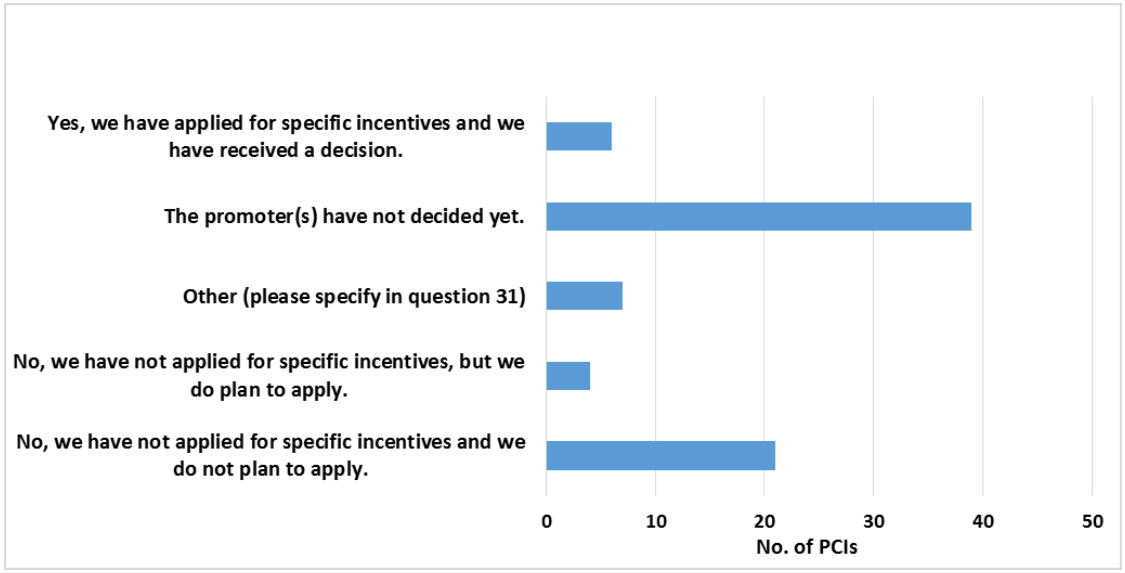
3.5.2 Risks and incentives

According to Article 13(1) of Regulation (EU) No 347/2013, where a project promoter incurs higher risks for the development, construction, operation or maintenance of a project of common interest in the field of gas, compared to the risks normally incurred by a comparable infrastructure project, Member States and NRAs shall ensure that appropriate incentives are granted to that project if it fulfils certain conditions.

Promoters' reports show that **specific incentives have been granted only for a few (6) PCIs**, and for a similarly low number of PCIs the promoters foresee filing an application for incentives.

In the case of roughly half of the PCIs (39), promoters have not decided yet whether to file for an incentive or not, and for a quarter of the PCIs (20) promoters do not plan to apply for incentives.

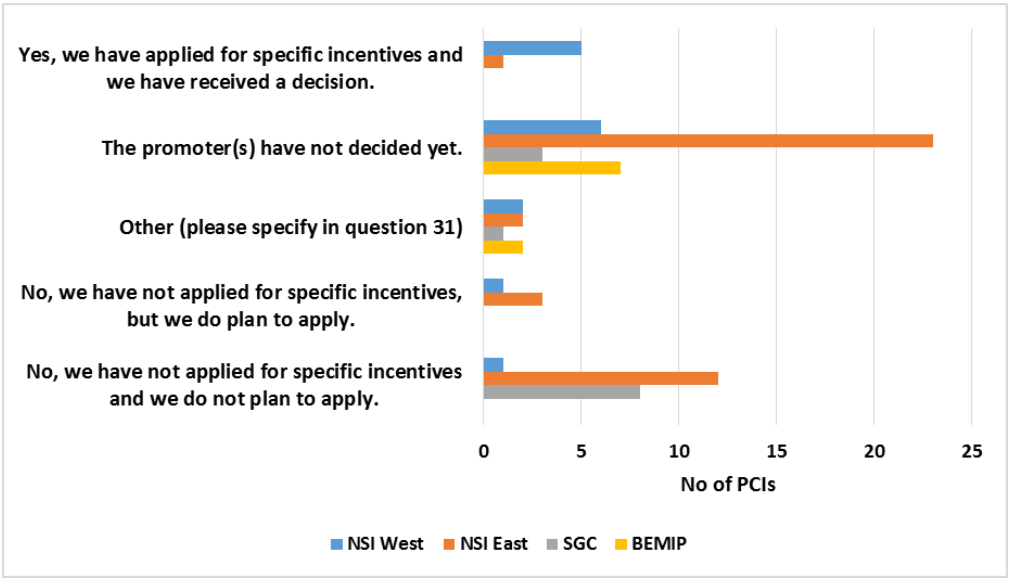
Figure 93: Applications for specific incentives



With one exception, all decisions on incentives were taken in the NSI West corridor.

Regarding the future intentions, only in the Southern Gas Corridor the majority of promoters appear certain that they will *not* apply for any incentives. In the other three corridors, the promoters remain undecided for the majority of the projects on whether to apply for incentives.

Figure 94: Applications for specific incentives by priority corridors



The Agency highlights that there were no in-depth questions in the reporting form to explore the reasons for the lack of applications for incentives. The Agency is therefore not in a position to determine the underlying motives for the lack of interest. However, in the future further examinations may reveal whether PCIs in general do not face higher risks compared to comparable infrastructure projects or the existing regulatory frameworks already provide sufficient measures to tackle risks and incentivise the necessary investments, or whether there are other reasons for the low number of applications.

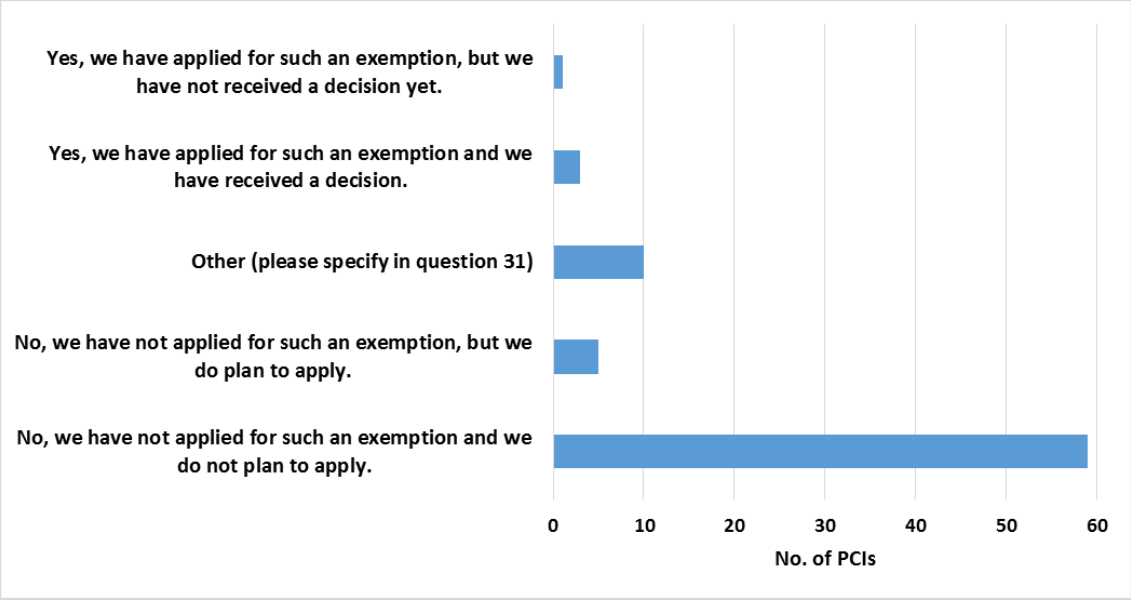
3.5.3 Exemptions

Promoters may apply for an exemption from the third-party access rules or certain tariff-related obligations, in line with the Third Package[170]. However, in case such an exemption is granted, the project is no longer eligible for receiving either a cross-border cost allocation decision (and thus potentially also Union financial assistance from the Connecting Europe Facility in the form of grants for works) or specific incentives.

For the majority of projects (59), promoters do not plan to apply for an exemption. Similarly to the case of incentives, only a few PCIs (4) have already applied for an exemption and only a few (5) are planning to submit an application for exemption in the future. Promoters of some projects (6) are still undecided on whether to apply for an exemption or not.

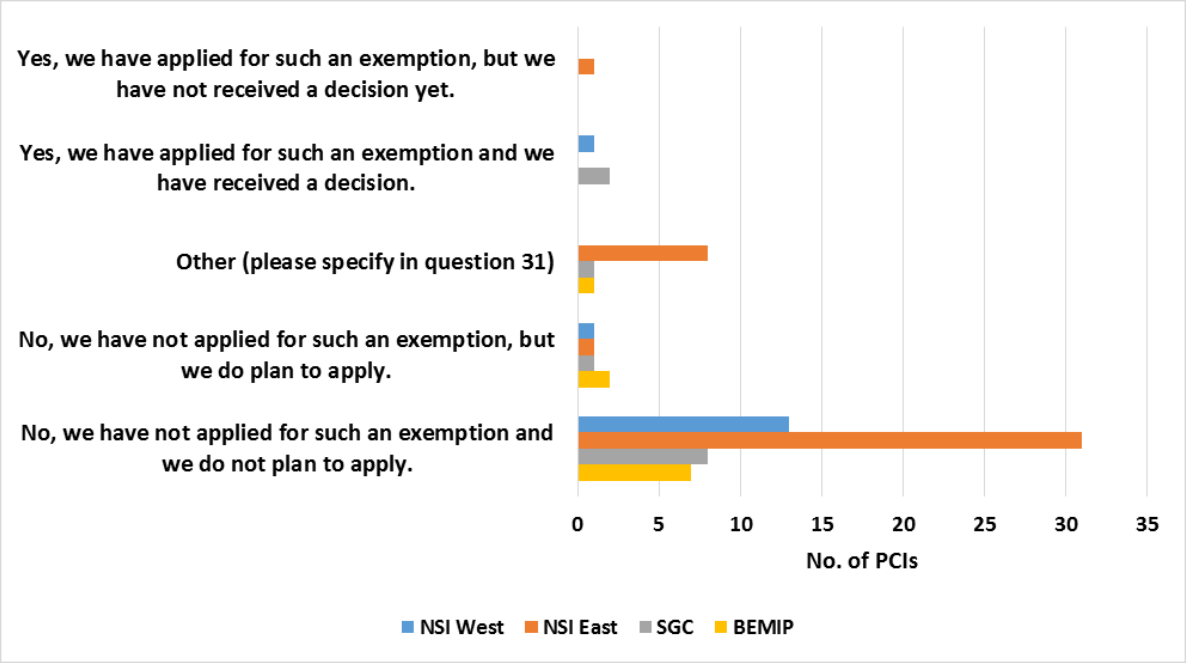
Further information regarding exemptions per priority corridor is available in Figure 96.

Figure 95: Applications for exemptions



[170] Exemption from Articles 32, 33, 34 and Article 41(6), (8) and (10) of Directive 2009/73/EC pursuant to Article 36 of Directive 2009/73/EC as referred to in Article 12(9) and Article 13(1) of Regulation (EU) No 347/2013.

Figure 96: Applications for exemptions by priority corridor



Key findings

- **For only a handful of projects (6 in total) promoters intend to submit an investment request in 2016**, while the majority either does not plan a submission or has not decided yet (the latter two categories include 27 and 26 PCIs respectively).
- Regarding the option for applying for **incentives** under Article 13 of Regulation (EU), No 347/2013, most project promoters (40) appear undecided, 20 have decided not to apply for incentives, and 4 have decided to apply for incentives.
- The vast majority of project promoters (59 out of 78) do not intend to apply for an **exemption** from the obligations under the Third Package, and only 5 promoters plan to definitely request this option in the future.
- **The Agency is of the view that the fact that most project promoters appear undecided on whether to apply for incentives and the small number of promoters who have decided to apply for incentives indicate that the provision of incentives is not a major driver of the projects.** The Agency highlights that there were no in-depth questions in the reporting form to explore the reasons for the lack of applications for incentives. In the future further examinations may reveal whether PCIs in general do not face higher risks compared to comparable infrastructure projects or the existing regulatory frameworks already provide sufficient measures to tackle risks and incentivise the necessary investments, or whether there are other reasons for the low number of applications.
- **There are instances of PCIs which applied for an exemption but were later grouped**

with another PCI for which the promoter plans to apply for CEF grants for works. The Agency is of the view that clear guidance should be provided by the Commission regarding the eligibility of such restructured projects for CEF grants for works.

4 ANNEXES

4.1 Annex I: Preparatory activities by the Agency

1. Cooperation with the NRAs

The Agency within its respective working groups (Electricity Working Group and Gas Working Group) and task forces (Infrastructure Task Force and Gas Infrastructure Task Force) ensured the close cooperation of the Agency's Staff with the representatives of the NRAs in drafting the questionnaire forms used by project promoters to fulfil their reporting obligation.

The NRAs were also requested to check and assess the data of the reports deemed relevant to their countries and highlight inconsistencies between the provided data and the information already known to the NRAs.

Electricity:

The Agency received comments and corrections for 9 projects in total with regard to cost and benefits data, and time progress of the projects (e.g. implementation plan dates - including commissioning dates, CAPEX data, and calculation of benefits).

Gas:

Overall 6 NRAs responded to the Agency's call for comments, 2 of them confirming the data in the promoters' reports. 4 NRAs provided comments, along the following lines:

- the NRAs (if they are not the Competent Authority) are not always in the position to confirm or verify the information related to permitting;
- impacted countries were not always identified in full by project promoters;
- in one instance the NRA found that the cost figures for the non-PCI part may also have been included by the promoter;
- the indicated life-cycle costs and the variations in CAPEX were flagged in few cases but NRAs were not in the position to fully confirm any inconsistency;
- information related to the project implementation stages was confirmed or updated by the NRA, but in some instances the NRAs indicated the lack of updated information.

2. Cooperation with the Competent Authorities

Competent Authorities[171] along with the Agency are the recipients of the PCI reports submitted by project promoters regarding the progress and – where relevant – delays in the implementation of PCIs. In 2016 the Agency continued the cooperation with Competent Authorities, providing them the data received from project promoters. In order to cover the reporting needs of Competent Authorities, the Agency consulted the PCI reporting forms

[171] As defined in Article 8 of Regulation (EU) No 347/2013.

with the authorities. In order to improve the efficiency of the information sharing process a new framework was developed and implemented.

Built on the lessons learnt from the 2015 monitoring exercise, the Agency proposed a more robust framework, in the form of a Memorandum of Understanding (MoU), regarding the general principles of information exchange between the Agency and the Competent Authorities. The purpose of the proposed MoU was to enable Competent Authorities to have access to the necessary data with the minimum administrative burden possible, and at the same time enable PCI to fulfil their reporting obligation with a single report, thus saving valuable resources.

The MoU was consulted with all Competent Authorities and was finally signed by the competent authorities of 25 Member States, i.e. Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK. For the remaining three Competent Authorities, i.e. of Germany, France, and the Netherlands, which decided not to join the Memorandum, promoters had to submit a report further to the one submitted to the Agency.

Following the signature of the MoU, the annual reports were submitted by promoters until 31 March 2016. The Agency forwarded the PCI monitoring reports of those promoters who requested to use the "single reporting window" to the Competent Authorities, on 4 April containing the gas and on 6 April the electricity projects.

3. Consultation and co-operation with project promoters

For a number of project promoters 2016 was the second time when they submitted an annual report on the progress of their PCIs. In line with its practice from 2015, the Agency consulted the reporting forms not only with NRAs and CAs but also with the promoters before the launch of the reporting exercise and provided clarifications to the questions raised. The received questions and comments were used to improve the reporting forms. In addition, the Agency prepared a Q&A document to provide additional information to promoters, which was accessible in the online reporting form.

Throughout the reporting period, the Agency continued to provide technical support to project promoters, mostly on technical issues related to the filling-in of the reporting form.

The Agency used "ACER EU Survey tool"[172] for opening the reporting window, posting the reporting forms, and collecting the necessary information from project promoters in a harmonized and structured way. The reporting tool was automatically closed upon the expiration of the reporting deadline, i.e. by 00:00 hrs on 1 April 2015.

[172] http://surveys.acer.europa.eu/eusurvey/

4.2 Annex II: Clarification and validation of submitted data

Gas PCIs:

The Agency carried out a consistency check of the received report in order to identify incomplete and incoherent data. In total, 45 project promoters were contacted (33 for transmission PCIs, 7 for LNG PCIs, 5 for UGS PCIs) and 78 requests for clarification were made during the process (65 for transmission PCIs, 7 for LNG PCIs and 6 for UGS PCIs). The data validity check identified several inconsistencies in the submitted reports. The Agency identified 11 PCIs in gas (10 transmission, 1 LNG) where the current project implementation schedule, as compared to the schedule in the 2015 PCI monitoring report, does not correspond to the data in the implementation table. Specifically, 9 PCIs (all in transmission) were identified as being marked "on time", while the dates in the implementation table show postponement. Furthermore, in one instance, the project was identified as being delayed, even though the dates suggested to be ahead of schedule. In one case, the reason for the discrepancy in PCI progress interpretation was in the merging of several PCIs listed in the 2013 PCI list into a single one in this year's report. Therefore, the project data from this year's report is not comparable to last year's report. Similarly, 8 PCIs (all in transmission) claimed to be at a certain level of implementation status, however the dates provided for the specific implementation stages proved otherwise.

Moreover, 4 PCI promoters reported several dates related to multiple project stages (3 in transmission and 1 UGS). In these cases, the Agency took into consideration the date related to the first stage of the project for a start date and the date related to the last stage of the project for the end date.

Additionally, in numerous instances the dates of project timelines as reported were incomplete, multiple or provided in an ambiguous format. In such cases, the dates were converted to a suitable format and corrected when necessary. With PCIs where a quarter of a year is reported (Q1 2015), the midpoint of the quarter has been taken.

In the following cases of data inconsistency, clarifications were sought from project promoters:

- Inconsistencies or divergent information provided in various sections of report;
- Providing text information (e.g. "completed" "finished" "started" "in progress") instead of a date;
- Required data missing from the report;
- Typos and other obvious mistakes.

In absolute terms, most of the clarifications requested by the Agency from the project promoters concern the dates in various stages of implementation of the PCIs.

In certain cases the promoters reported that the date of a certain implementation stage e.g. commissioning or permitting, is not known by them because the project is still less advanced.

In other cases, promoters failed to provide a date for an activity which already took place (e.g. the project is in permitting but there is no date provided when the planning stage took place).

For clarity regarding cases where information was not available to project promoters and cases where the information was available, but the relevant sections of the report form were left blank, project promoters were invited to specify when information is not available to them (n.a.).

Where relevant, additional timeline-related information was requested from project promoters only for the following stages of projects, which were considered to be fundamental for the purposes of the Agency's Consolidated Reports:

- Market test status (carried out or not, results available or not)
- Public consultation of Article 9(4) of Regulation (EU) No 347/2013 (carried out or not, results available or not)
- Permitting status – pre-application procedure
- Permitting status – EIA request and approval
- Permitting status – statutory procedure
- Final Investment Decision (taken or not)
- Tendering (used or not, completed or not)
- Construction (completed or not)
- Commissioning (completed or not)

In spite of the several useful addition and clarification sent by promoters, the Agency faced difficulties in many other cases, where the promoters did not provide any explanation for the inconsistent information which they had provided earlier.

Electricity PCIs:

In order to improve the accuracy and quality of the data reported by the project promoters in their annual reports, before starting the data processing and analysis, the Agency proceeded to a validation check of the submitted data. The validation check consisted of the following actions:

- Various logical and arithmetic comparisons were performed amongst the 2016 submitted data in order to increase their internal consistency.
- The submitted data was cross-checked for consistency against the latest available data in other documents, e.g. regarding the "old" PCIs, against the promoters' 2015 annual reports, and regarding "new" PCIs either against the data provided within the 2015 PCI selection procedure or the ENTSO-E TYNDP 2014 (hereinafter TYNDP) data.

Numerous cases of inconsistencies were identified during the check, and as a result approximately 300 clarification requests were sent to project promoters. More specific information on the checks performed are described in the following paragraphs.

For PCI identification, public support and technical information in the questionnaire that promoters had to fill in, the following checks were performed:

- consistency checks of PCI number, name, investment category with Commission Delegated Regulation (EU) 2016/89 (for both "old" and "new" PCIs);
- consistency checks of reported changes (or "no change") regarding PCI promoters(s), hosting countries, TYNDP cluster number/investment number(s) or PCI website, information on inclusion in NNDPs compared to the 2015 report ("old" and "new" PCIs);
- consistency checks of whether the aggregate amount of financial support received from funding programmes did not exceed the expected total investment cost of the PCI;
- reported changes (or "no change") in the technical solution (e.g. AC transmission line, combined investments etc.) or in the type (e.g. new investment, replacement, etc.) and regarding the technical features of the PCIs was compared against the data reported in the 2015 report (for "old" PCIs);
- comparison of reported cross-border grid transfer capability to data of 2015 report (for "old" PCIs).

For actual and expected costs and expected benefits, the following checks were performed:

- check of units of provided values for costs and benefits (i.e. values should be in € million);
- arithmetic check of whether the currently expected total investment costs in 2016 value was higher than both: (i) the sum of the actual investment cost for the PCI (from the project beginning until 31st December 2014 in 2016 value) plus the actual investment cost for the PCI (between 1st January 2015 and 31st December 2015 in 2016 value) and (ii) the contracted investment cost for the PCI (until 31st December 2015 in 2016 value);
- where promoters reported no difference in the 2016 expected total investment cost compared to the value indicated in the 2015 report (for "old" PCIs) or in the 2015 PCI selection file (for "new" PCIs), a request for clarification was sent where a difference between the two values higher than plus or minus 5% was identified;
- the currently expected life cycle cost was checked to be lower than the currently expected total investment cost, whereas the expected upward and downward variations in expected total investment costs, life cycle costs and total benefits were checked to be expressed in percentages;
- where variations in either total investment costs or life cycle costs were reported as due to the early phase of the project (i.e. 'Project is in consideration stage, and cost estimates are rather uncertain'), the answer was checked for consistency with the current status of the project (only for "new" PCIs);
- where the values for the expected benefits were reported not to have been derived from the TYNDP benefit analysis, the respective replies regarding the studies conducted for the calculation of the benefits and the reasons for the indicated variations were checked for adequacy;

- if no difference in the expected benefits of the PCI compared to the values provided for the 2015 report was reported, the figures provided in 2016 for the socio-economic welfare, enhancement of security of supply and expected benefit due to variation of losses were compared against the 2015 ones.

The status of PCIs was assessed based on the answers to the questions on current status and implementation plan of the questionnaire. To this end, the following checks were performed:

- in order to evaluate whether the current implementation plan of the "old" PCI is consistent with the data provided in 2015, the start and the end dates reported for each stage of implementation plan were checked against the 2015 data. If more optimistic dates were traced, a case by case examination was conducted and clarifications were requested when deemed necessary. Regarding the "new" PCIs, their current status was checked against the data in the TYNDP;
- for PCIs (both "old" and "new") to which Chapter III of Reg. (EU) No 347/2013 applies it was checked whether the start dates of both the permit granting process and of the pre-application procedure (i.e. date of acceptance of the project promoter's notification by the competent authority) coincided. The same goes for the end dates of both the permit granting process and of the statutory permit granting procedure (i.e. date of comprehensive decision). Whenever the dates did not coincide, further qualitative analysis was done, and clarifications were required when deemed necessary;
- furthermore, the start date of the permit granting process was checked to either coincide or to predate the start date of the Environmental Impact Assessment (hereinafter EIA) request. On the other hand, the end date of the permit granting process was checked to either coincide or follow the date of approval of the EIA;
- lastly, the end date of the permit granting process was checked either to correspond or to backdate the start of the construction of the project, whereas the end date of the construction of the project was checked to be followed by the date of commissioning.

Finally, the questionnaire assessed the time progress of PCIs. The following checks were performed:

- the current progress status of the "old" PCIs (e.g. on time, delayed, rescheduled) was firstly compared to the project's schedule/implementation plan indicated at the time when the promoters first applied for PCI status (hereinafter 'initial planning'). If a project was reported to be ahead of schedule, then the commissioning date reported in 2016 was checked to predate the commissioning date in the initial planning. If a project was reported to be on time, then the commissioning date reported in 2016 was checked to match the commissioning date in the initial planning. Lastly, if a project was reported to be delayed or rescheduled, then the 2016 commissioning date was checked to be reported farther in the future than the commissioning date in the initial planning;
- secondly, the current progress status of the "old" PCIs was compared to the project's schedule/implementation plan indicated in the 2015 report. If a project was reported ahead of schedule, then the 2016 commissioning date was checked to predate the commissioning date reported in the 2015 report. If a project was reported on time, the commissioning dates reported in both 2015 and 2016 were checked to coincide.

However, if the projects was reported delayed or rescheduled, then the 2016 commissioning date was checked to be reported farther in the future compared to the 2015 report. For "new" PCIs, the same checks were done but compared to the TYNDP data;

- a final logical check relates to the connection between current implementation status of the PCI (e.g. under consideration, commissioned etc.) and the works (e.g. study: spatial planning, public consultation, tendering etc.) performed since January 2015.

4.3 Annex III: PCIs not included in the ENTSO-E TYNDP 2014, Regional Investment Plans, and National Network Development Plans – electricity

In the following table "X" sign is marked in case a PCI is not reported as included in ETNSO-Es TYNDP 2014, in the Regional Investment Plans of 2014**,** in any of the NDPs or is included in only one Member State's NDP.

PCI Code	PCIs NOT included ENTSO-E TYNDP 2014	PCIs NOT included in Regional Investment Plans	PCIs NOT included in any National Network Developments Plan	PCIs partially included in National Network Development Plans
Transmission				
1.1.2			X[173]	
1.3.2				X
1.4.2				X
1.4.3				X
1.7.3			X	
1.9.1				X
1.9.2			X	
1.10 B				X[174]
1.13			X	
1.14			X[175]	
2.1				X
2.11.2				X
2.13.2				X[176]

[173] Although there is reference to the year of the NDP, no specific code or other data is provided.

[174] The country for which the project is not included in the NDP is a non-EU country.

[175] No data was reported by the project promoter.

[176] It is not included in NDP of Northern Ireland (UK).

PCI Code	PCIs NOT included ENTSO-E TYNDP 2014	PCIs NOT included in Regional Investment Plans	PCIs NOT included in any National Network Developments Plan	PCIs partially included in National Network Development Plans
2.14				X[177]
2.15.1				X
2.16.1				X
2.2.2				X
2.2.3				X
2.27	X	X		
2.8				X
2.9				X
3.1.2				X
3.11.2				
3.11.5				
3.12				
3.14.3				
3.19.1				
3.2.2				
3.22.1				X
3.22.4				X
3.4			X	
3.8.5				X
3.9.1				X
3.9.2				X

[177] No data was reported for a non-EU hosting country.

PCI Code	PCIs NOT included ENTSO-E TYNDP 2014	PCIs NOT included in Regional Investment Plans	PCIs NOT included in any National Network Developments Plan	PCIs partially included in National Network Development Plans
3.9.3				X
3.9.4				X
3.10.1			X	
3.10.2			X	
3.18.1				X[178]
3.19.1				X[179]
3.22.1				X[180]
4.2.3			X[181]	
4.4.2				X
Storage				
1.12			X	
2.18				X
3.23			X	
3.24			X	
4.7			X	
Smart Grids				
10.2		X		X
10.3	X	X	X[182]	

[178] Not included in NDP of SK.

[179] The country for which the project is not included in the NDP is a non-EU country.

[180] The country for which the project is not included in the NDP is a non-EU country.

[181] N/A was provided by the project promoter.

[182] No data reported by the project promoter.

4.4 Annex IV: Expected increase of cross-border GTC – electricity

In this Annex, based on the information provided by the project promoters, an analysis on the expected increase in cross-border grid transfer capability per project, per border and direction is presented.

PCI number	Impacted Border		XB GTC expected increase (MW)	
	Direction 1	Direction 2	Direction 1	Direction 2
1.1.1	UK-BE		1000	
1.1.2[183]		BE-UK		1000
1.3.1	DK-DE	DE-DK	500	500
1.3.2	DE-DK	DK-DE	500	500
1.4.1	DK(West)-DE	DE-DK(West)	720	1000
1.4.2	DE-DK	DK-DE	720	720
1.4.3	DE- DK	DK-DE	720	720
1.5	DK-NL	NL-DK	700	700
1.6	IE-FR	FR-IE	700	700
1.7.1	FR-UK	UK-FR	1400	1400
1.7.2	FR-UK		1000	
1.7.3	FR-UK	UK-FR	1000	1000
1.8	NO-DE	DE-NO	1400	1400
1.9.1	GB- IE		=<3000	
1.9.2	UK-IE		500	
1.10	NO-UK		1400	
1.10.B	NO-UK		1400	
1.13	Iceland - UK		1000	
1.14			1400	
2.1.	AT-DE		470	470

[183] Itself this investment does not provide an increase of XB GTC. It has to be considered together with project 1.1.1 Nemo connection representing a GB to BE subsea interconnector.

PCI number	Impacted Border		XB GTC expected increase (MW)	
	Direction 1	Direction 2	Direction 1	Direction 2
2.2.1.	DE-BE	BE-DE	1000	1000
2.2.2.	DE-BE	BE-DE	1000	1000
2.2.3	DE-BE	BE-DE	1000	1000
2.3.2	LU-BE		300	
2.5.1	FR-IT[184]		1200	
2.7.	ES-FR	FR-ES	2500	2200
2.8.	ES-FR	FR-ES	500-900	100-500
2.9.	DE-NL, DE-CH		500-600	
2.10	DE-DK/NO		1800	
2.11.2	DE-AT-CH		400-2000	400-2000
2.11.3	DE-AT		2000	
2.12	DE-NL	NL-DE	1400	1400
2.13.1	IE-UK NI	UK NI-IE	600	580
2.13.2	IE-NI		570	
2.14.	IT-CH	CH-IT	1000	1000
2.15.1	CH-IT[185]		1000	
2.16.1	PT-ES maximum	PT-ES average	1800	500
2.16.3[186]	PT-ES		No GTC value reported	
2.17	PT-ES	ES-PT	400	1000
2.23	NL-BE	BE-NL	1000	1000
2.24	BE - FR - GB - NL		1500	
2.25.1	ES - FR	east-west	100-900[187]	1900-2600

[184] The project promoter reported that this project is increasing the XB GTC at the Northern border of Italy with all its neighbours with the main impact on the FR border.

[185] The project promoter reported that this project is increasing the XB GTC at the Northern border of Italy with all its neighbours with the main impact on the CH border.

[186] The project promoter reported that the GTC published for the cluster in the TYNDP2014 refers to internal GTC. In the report also the GTC contribution from each investment for the total GTC of the cluster was published.

PCI number	Impacted Border		XB GTC expected increase (MW)	
	Direction 1	Direction 2	Direction 1	Direction 2
2.25.2	ES - FR	east-west	100-900	1900-2600
2.26	north -south	south-north	670-850	1400-1500
2.27	FR-ES	ES-FR	No GTC value reported	
3.1.1	DE-AT	AT-DE	2320	2320
3.1.2.	AT-DE		1740	1740
3.2.1	AT-IT[188]		800	
3.2.2.	AT-IT		320	
3.4	IT-AT	AT-IT	200	275
3.7.1.	BG-GR		648	
3.7.2	BG-GR		648	
3.7.3	BG-GR		648	
3.7.4.	BG-GR		648	
3.8.1	BG-RO		165	
3.8.4	RO-BG		808	
3.8.5	RO-BG		560	
3.9.1	SI-HU		1085	
3.9.2.	HU-SI(IT)		800	
3.9.3.	HU-SI(IT)		800	
3.9.4.	HU-SI(IT)		800	
3.10.1	IL-CY	CY-IL	2000	2000
3.10.2	GR(CR)-CY	CY-GR(CR)	2000	2000
3.10.3	CR-GR	GR-CR	2000	2000
3.11.1	DE-CZ		500	
3.11.2	DE-CZ		500	

[187]The project promoter reported that the GTC value provided refers to the cluster (i.e. project no. 203 of TYNDP 2014)

[188] The project promoter reported that this project is increasing the XB GTC at the Northern border of Italy with all its neighbours with the main impact on the AT border.

PCI number	Impacted Border		XB GTC expected increase (MW)	
	Direction 1	Direction 2	Direction 1	Direction 2
3.11.3	DE-CZ		500	
3.11.4	DE-CZ		500	
3.11.5	DE-CZ		100	
3.12	DE/CZ, DE/PL - DE/AT		600-650	
3.13.	DE-CZ		550	
3.14.1	PL-DE/CZ/SK		800	
3.14.2	PL-DE/CZ/SK		400	
3.14.3	PL-DE/CZ/SK		400	
3.15.1.	PL-DE/CZ/SK		0-1500	
3.15.2.	PL- DE/CZ/SK		0-1500	
3.16.1	SK-HU		1000	
3.17	SK-HU		800	
3.18.1	SK-HU		550	
3.19.1	IT-ME[189]		1000-1200	
3.21	SI-IT		800	
3.22.1	RO-RS		350	
3.22.2	RO-RS		287	
3.22.3	RO-RS		180	
3.22.4	RO-RS		180	
4.1	DK-DE	DE-DK	400	400
4.2.1.	LV-EE		600	
4.2.2.	EE-LV		600	
4.2.3.	LV-EE		250[190]	
4.4.1	Baltic-Nordic		700	

[189] The project promoter reported that this project is increasing the XB GTC between Italy and the Balkan area, and with the European Southern East area, especially Romania and Bulgaria.

[190] The project promoter reported that the PCI is necessary for full operation capacity of Estonia-Latvia third electricity interconnection, as well as for the Cluster Baltic Corridor.

PCI number	Impacted Border		XB GTC expected increase (MW)	
	Direction 1	Direction 2	Direction 1	Direction 2
4.4.2	LT-SE		700	
4.5.2	LT-PL		500	
4.5.5.	LT-PL		300	
4.8.1	EE-LV		600[191]	
4.8.2	No impacted border or GTC value reported			
4.8.3	LV-EE		600[192]	
4.8.4	No impacted border or GTC value reported			
4.8.5.	LT-PL		600[193]	
4.8.6.	LT-PL		150[194]	
4.9.	No impacted border or GTC value reported			

[191]The project promoter reported that the project is the part of cluster "Baltic corridor" and the Baltic corridor cluster will increase GTC in Baltic by 600 MW.

[192] The project promoter reported that the project is the part of cluster "Baltic corridor" and the Baltic corridor cluster will provide GTC increase by 600MW in Baltic States

[193] In contrast to the project promoters' annual report, the PL NRA indicated that the achievement of any GTC increase by the 4.8.5 (TYNDP 2014: 170.1034) at the LT-PL border in its current configuration, is not possible.

[194] In contrast to the project promoters' annual report, the PL NRA indicated that the achievement of any GTC increase by the PCI 4.8.6 (TYNDP 2014: 170.380) at the LT-PL border in its current configuration, is not possible.

4.5 Annex V: Further data analysis

1. Financial support: Funds received by PCIs

The following table lists the programmes and total funds received by 22 PCIs.

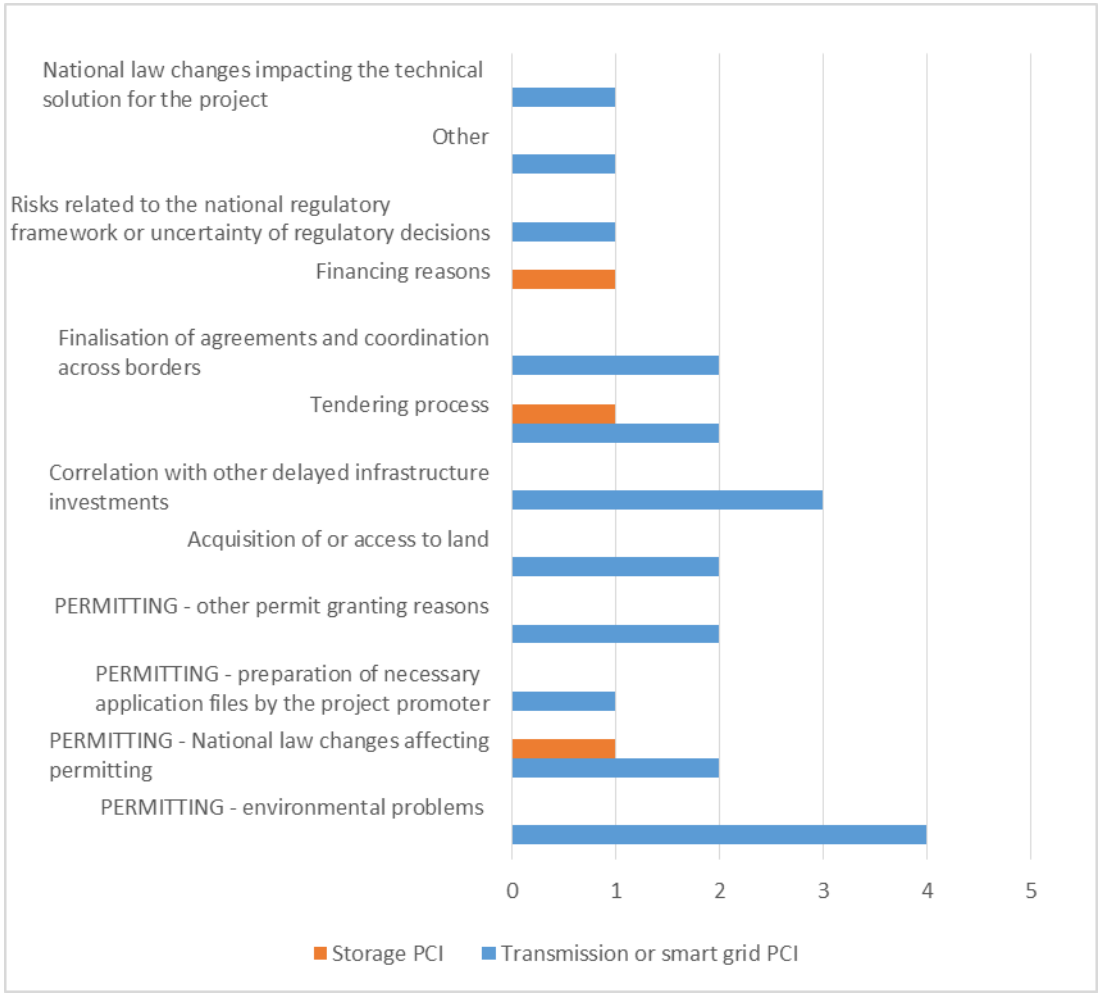
Financial support received by programme

Programme	Total funds received (€M)
European Energy Programme for Recovery (EEPR)	336.5
TEN-E programme	4.3
EIB (loans, financial instruments, etc.)	34.7
European Fund for Strategic Investments (EFSI)	-
Structural funds	28.3
National funds	-
TOTAL	**419**

2. Main reasons of delays and rescheduling by infrastructure category and by regional groups

In the following Figure, the main reasons for delays per infrastructure category are presented. Permitting reason due to environmental problems (4 projects), and correlation due to other delayed infrastructure investment (3 projects) are the most frequent reasons for delay for transmission projects, while the rest of the reasons are reported in one or two cases. For storage projects, 3 projects reported a reason for delay.

Figure 97: Main reasons of delays per infrastructure category



In the following Figures, the main reasons for delays and the additional reasons for delays per priority corridor are presented. No prevailing trend can be noticed per priority corridor.

Figure 98: Main reason for delay per priority corridor

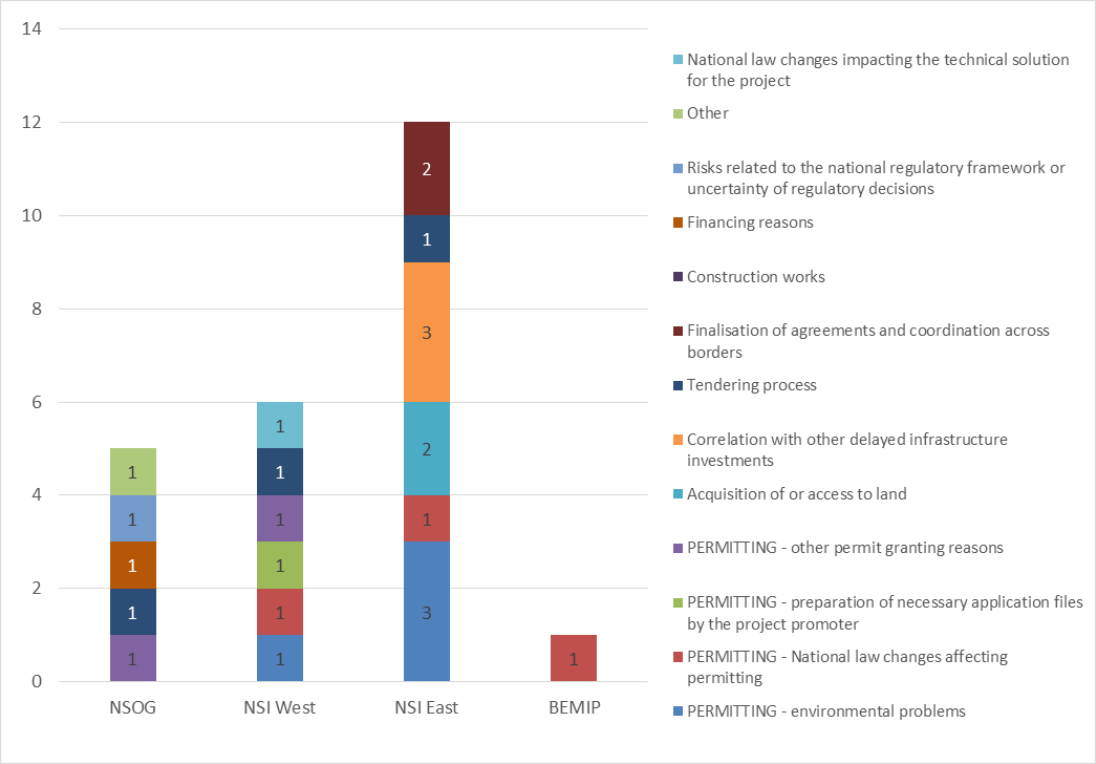
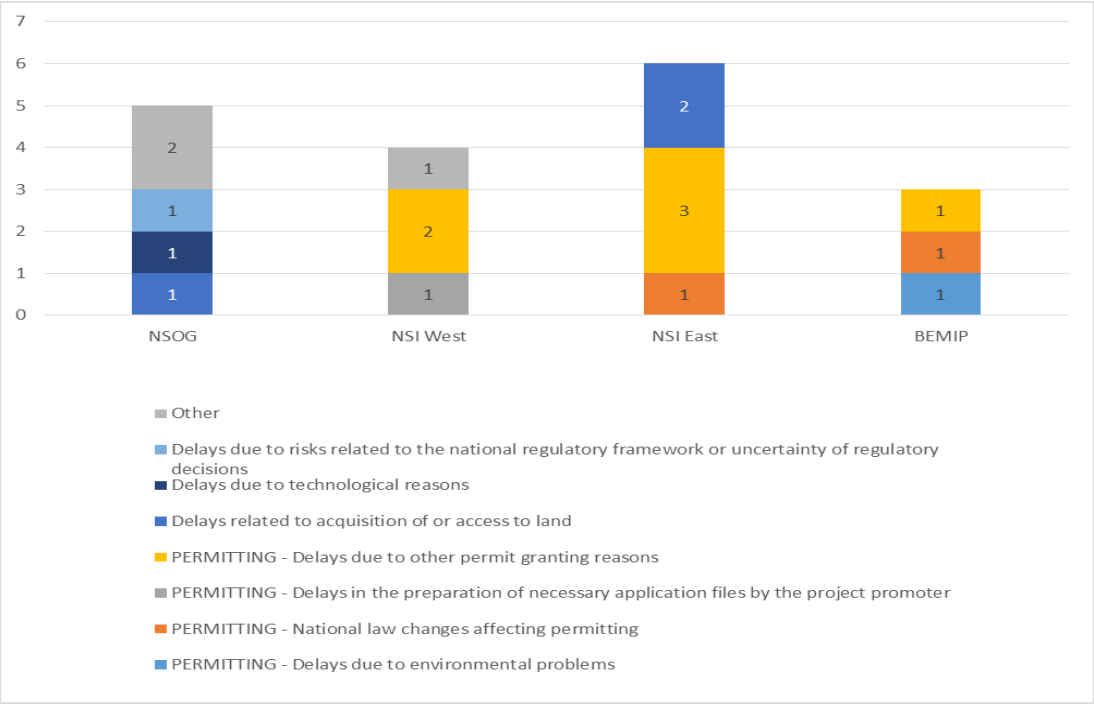
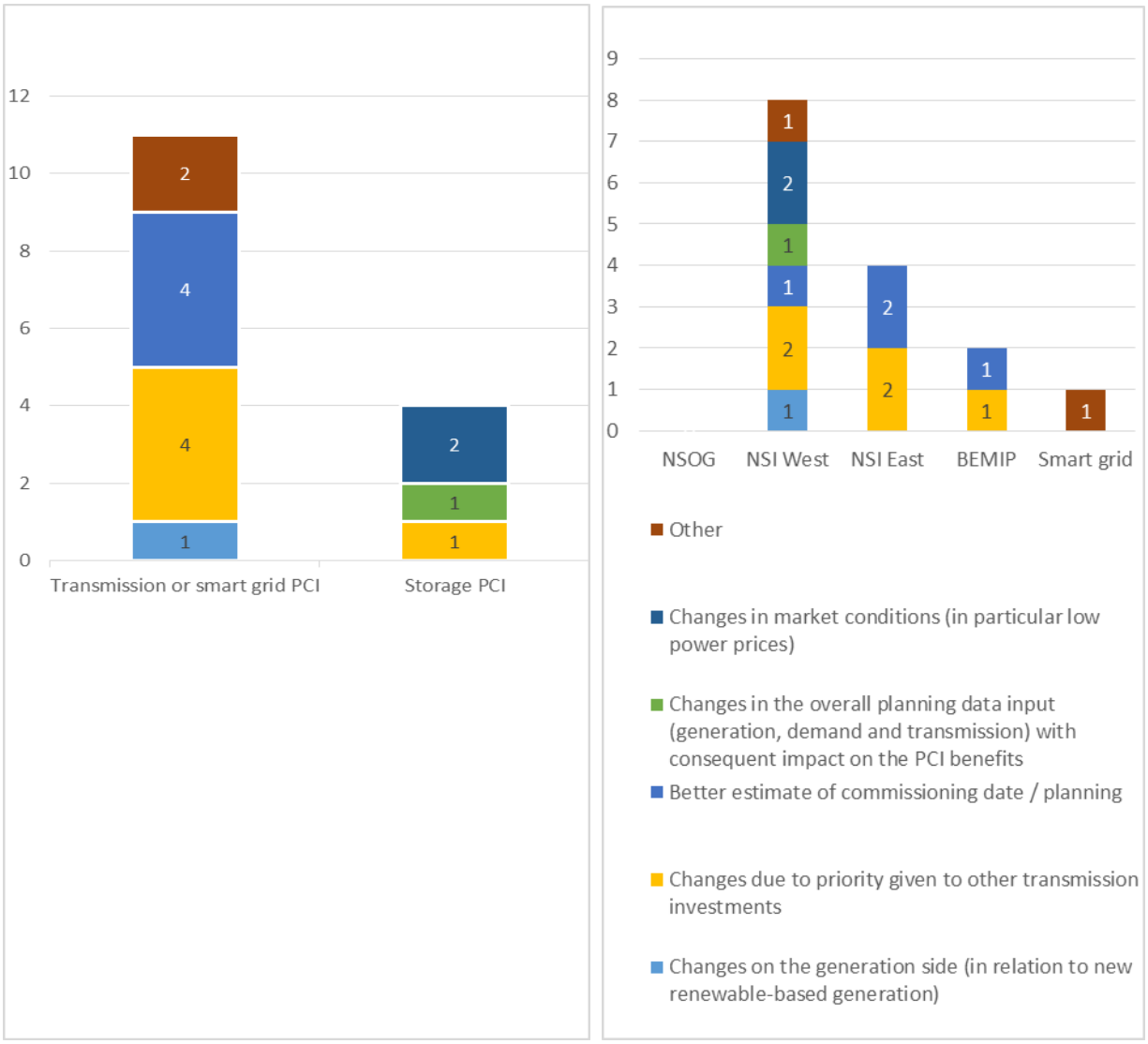


Figure 99: Additional reasons for delays per priority corridor



In the following Figure, the main reasons for rescheduling per priority corridor and infrastructure category are presented. Changes due to priority given to other transmission investment (5 projects) and better estimate of commissioning date (4 projects) are reported in 3 out of 4 priority corridors.

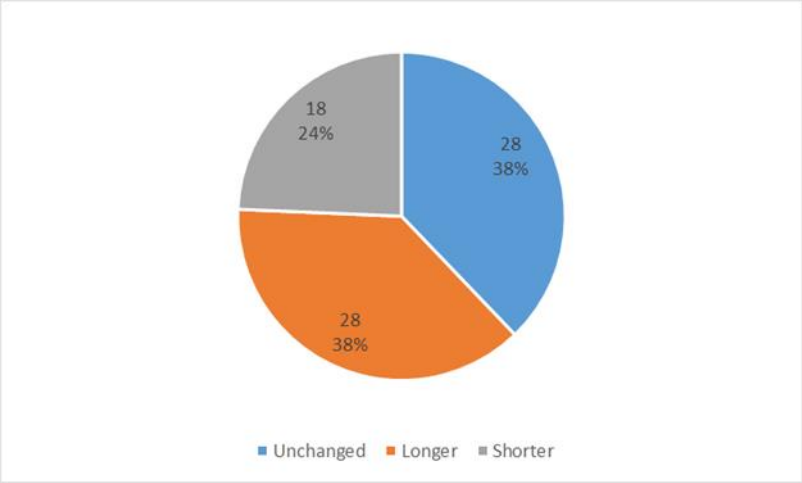
Figure 100: Main reasons for rescheduling per priority corridor and infrastructure category



3. Permit granting duration: comparison 2015-2016

The Figure below shows the outcome of the evolution of the expected permit granting duration between 2015 and 2016. The analysis was based on a sample of 74 projects, which reported reliable start and end dates in 2015 and 2016. More than a third (38%) had no change in the duration compared to 2015, more than a third (38%) had a longer duration, while 24% had a shorter permit granting duration.

Figure 101: Comparison of duration of permit granting implementation of "old" PCIs - 2016 vs 2015

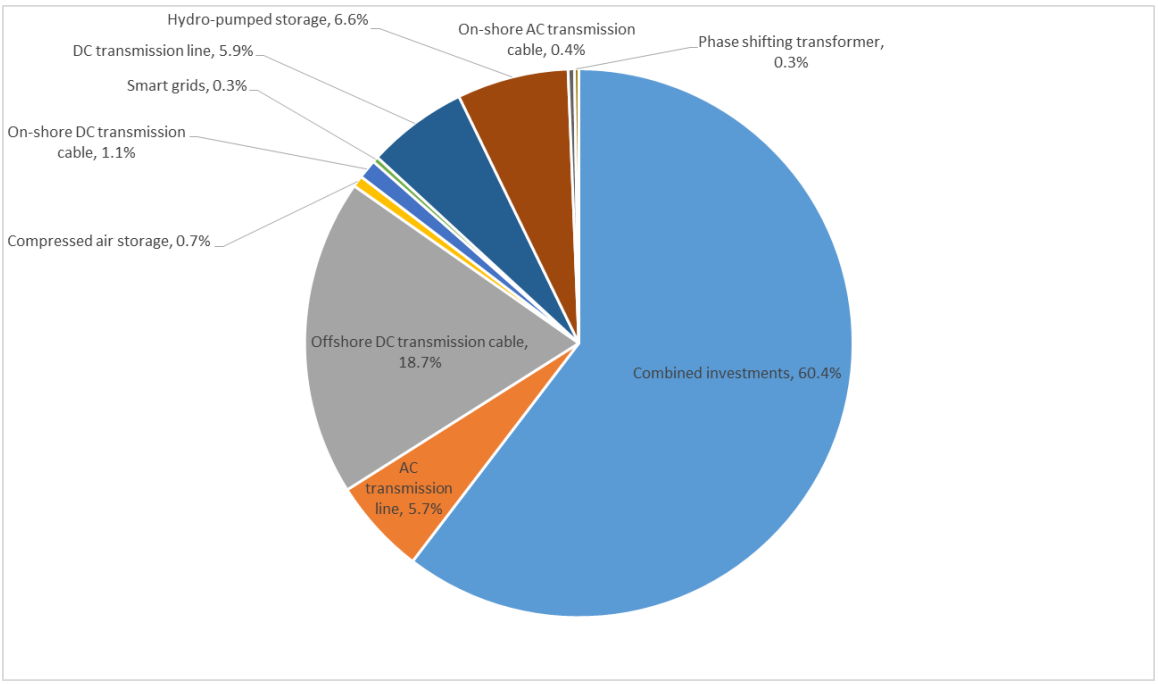


For projects with a longer expected duration in 2016, the prolongation is on average ~1.7 years, while for projects with a shorter expected duration, the change is on average ~ 1 year.

4. CAPEX progress per type of project

In the Figure below, an analysis of the CAPEX estimation 2016 for the five major investment categories (i.e. combined investments, AC transmission line, offshore DC transmission cable, compressed air storage and on-shore DC transmission cable) is presented.

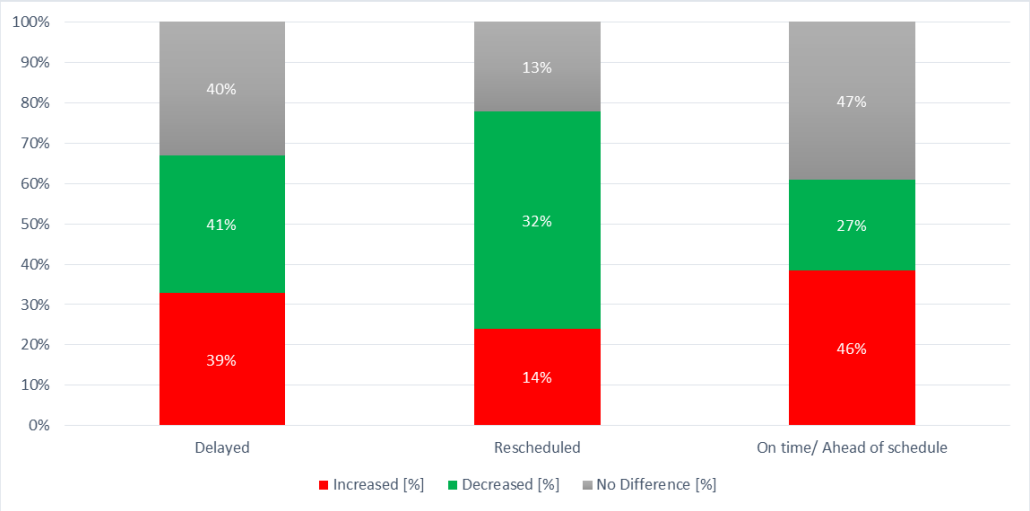
Figure 102: CAPEX per PCI category



5. Correlation of the CAPEX progress with progress status

The following Figure features the percentage of projects that reported increased, decreased or no CAPEX variation compared to 2015 per progress status.

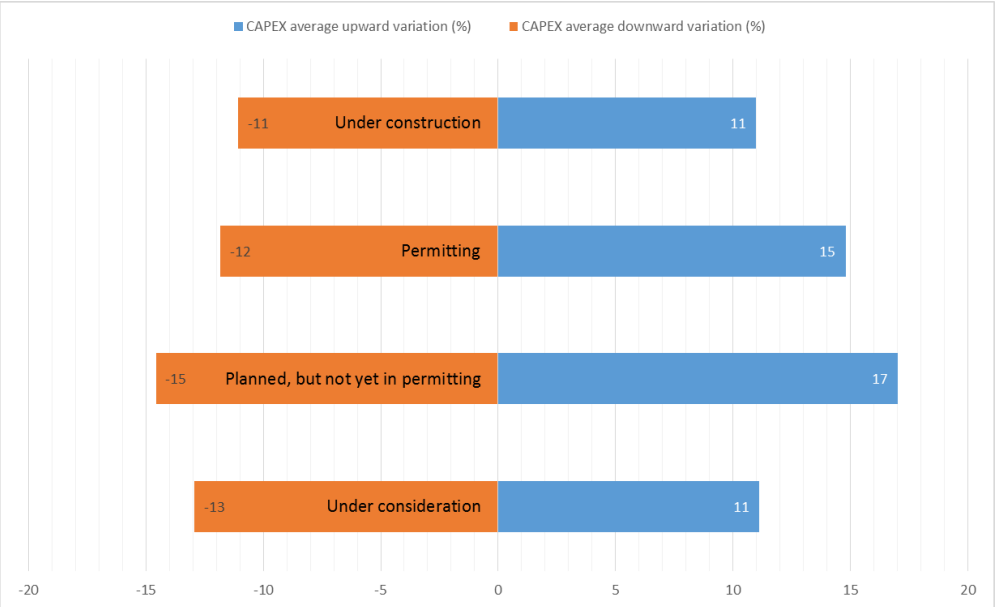
Figure 103: CAPEX / progress status correlation



6. Investment cost variation per implementation status

In the following Figure, the correlation between the current implementation status of projects and CAPEX variation is featured.

Figure 104: CAPEX variation / maturity correlation



4.6 Annex VI: Measures taken or proposed to solve delays and difficulties

In this Annex, the measures already taken and the measures proposed by promoters to be taken per reason of delay / difficulty are presented.

1. Permitting

1.1. National law changes affecting permitting

Measures taken

- communication and meetings with the competent authorities, ministries involved, local municipalities and land-owners
- communications and lobbying activities, both within the hosting country and other countries in order to resolve legal barriers, highlight importance and receive support

Measures proposed by the project promoters:

- relevant legislative change by Government
- continuation of the communication by project promoters

1.2. Delays and difficulties due to environmental problems

Measures taken:

- creation of public awareness and direct involvement of the local citizens and stakeholders and lobbying by project promoters
- coordinated field studies by project promoters
- additional studies submitted by project promoters to the Competent Authorities
- tender by Government for project manager position

Measures proposed by the project promoters:

- competent Authorities to assist the promoters in enhancing local public acceptance
- devoting national importance status for the project

1.3. Delays and difficulties due to other permit granting reasons

Measures taken:

- pre-application engagement ensuring that authorities are supportive
- alignment with permit granting authorities.
- after refusal of the permit, different alternatives have been studied

Measures proposed by the project promoters:

- stronger commitment by competent authorities to reassure compliance with the deadlines

1.4. Delays related to acquisition of or access to land;

Measures taken

- negotiations with local municipalities and land-owners
- conclusion a lease being secured for a converter site
- legal steps to gain access to the specific plots.

2. Delays and difficulties due to financing reasons:

Measures taken

- Engaging closely with EIB and other financing institutions.

Measures proposed by the project promoters:

- Grants for works to be provided to the project

3. Delays due to risks related to the national regulatory framework or uncertainty of regulatory decisions

Measures taken

- close engagement with the NRA to clarify system services reward and where possible to assist adherence to the timeline for system services auction process
- proactive engagement with regulators to ensure that the project can keep schedule.
- providing quarterly updates to the NRA.
- multilateral meetings, involving both project partners and regulators to ensure that risks arising from split regulation are mitigated.

4. Difficulties related to tendering

Measures taken

- implementation of an innovative tendering strategy kept more technical options open (i.e. allowing both XLPE and MI cable) to maximise the supplier market
- studies regarding route alternatives and technical methods for the cable route
- technical advice to authorities

Measures proposed by the project promoters:

- faster documentation acceptance by competent authorities.

5. Difficulties in construction works

Measures proposed by the project promoters:

- special requirements in the agreement regarding time limits

6. Delay related to finalisation of agreements and coordination across borders (for transmission and smart grids PCIs)

Measures taken:

- despite the pending approval of the Contract for Construction, the project promoters started the implementation of the pre-construction phase to avoid any further delay and to be able to meet the commissioning date.

7. Delay due to national law change affecting technical solution:

Measures taken:

- revision of planning and alignment of the project's technical scope with the new regulatory requirements.

8. Difficulty related to a line which is a prerequisite to operate with full capacity of the project

Measures taken:

- it is planned to realize a temporary solution for operation of the project without the commissioning of the concerned line

9. Difficulty in execution of the site investigation works due to the mountainous terrain and the lack of access in certain areas.

Measures taken:

- the project promoter has mobilized extra personnel and equipment.

10. Measures proposed which are relevant for various reasons for delays and difficulties:

- better planning by project promoters
- monitoring and political engagement on these processes, namely through the PCI monitoring report tool, and corresponding strong actions with the responsible authorities
- meeting between the concerned Member States and the European Commission

4.7 Annex VII: PCI specific information – electricity

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
1.1.1.	Interconnection between Zeebrugge (BE) and the vicinity of Richborough (UK) - NEMO project	Nemo Link Limited Elia System Operator NV/SA	Before Nov 16th 2013	Under construction	2019	On time	
1.1.2	Internal line between the vicinity of Richborough and Canterbury (UK)	National Grid Electricity Transmission	After Nov 16th 2013	Permitting	2018	On time	
1.3.1	Interconnection between Endrup (DK) and Niebüll (DE)	TenneT TSO GmbH, Energinet.dk	After Nov 16th 2013	Planned, but not yet in permitting	2022	On time	
1.3.2	Internal line between Brunsbüttel and Niebüll (DE)	TenneT TSO GmbH	Before Nov 16th 2013	Under construction	2018	On time	
1.4.1	Interconnection between Kassø (DK) and Audorf (DE)	TenneT TSO GmbH; Energinet.dk	After Nov 16th 2013	Permitting	2020	On time	
1.4.2	Internal line between Audorf and Hamburg/Nord (DE)	TenneT TSO GmbH	Before Nov 16th 2013	Under construction	2017	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
1.4.3	Internal line between Hamburg/Nord and Dollern (DE)	TenneT TSO GmbH	Before Nov 16th 2013	Under construction	2017	Delayed	PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application files).
1.5	Denmark — Netherlands interconnection between Endrup (DK) and Eemshaven (NL) [currently known as "COBRAcable"]	TenneT TSO B.V, Energinet.dk	Before Nov 16th 2013	Under construction	2019	On time	
1.6	France — Ireland interconnection between La Martyre (FR) and Great Island or Knockraha (IE) [currently known as "Celtic Interconnector"]	EirGrid plc (IE) and Réseau de transport d'électricité (FR)	After Nov 16th 2013	Planned, but not yet in permitting	2025	On time	
1.7.1	France — United Kingdom interconnection between Cotentin (FR) and the vicinity of Exeter (UK) [currently known as "FAB"	FAB Link Limited and Reseau de Transport d'Electricite (RTE)	After Nov 16th 2013	Permitting	2021	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	project]						
1.7.2	"France — United Kingdom interconnection between Tourbe (FR) and Chilling (UK) [currently known as ""IFA2"" project]"	Réseau de Transport d'Electricité (RTE) National Grid Interconnector Holdings Limited	After Nov 16th 2013	Permitting	2020	On time	
1.7.3	France - United Kingdom interconnection between Coquelles (FR) and Folkestone (UK) [currently known as the "ElecLink" project]	ElecLink Limited	After Nov 16th 2013	Permitting	2019	Delayed	The reason claimed by the project promoter to be commercially sensitive information
1.8	Germany — Norway interconnection between Wilster (DE) and Tonstad (NO) [currently known as "NordLink"]	TenneT TSO GmbH; Statnett SF; KfW Kreditanstalt für Wiederaufbau	Before Nov 16th 2013	Under construction	2019	On time	
1.9.1	Greenlink	Element Power Ireland Ltd; Greenwire Ltd	After Nov 16th 2013	Planned, but not yet in permitting	2022	Delayed	Delays due to risks related to the national regulatory framework or uncertainty of regulatory

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
							decisions[195]
1.9.2	Ireland — United Kingdom interconnection between Coolkeeragh — Coleraine hubs (IE) and Hunterston station, Islay, Argyll and Location C Offshore Wind Farms (UK) [currently known as "ISLES"	Department of Communications, Energy & Natural Resources (Ireland); Scottish Government (UK); Department of Enterprise, Trade & Investment, Northern Ireland (UK)	After Nov 16th 2013	Under consideration	n/a	On time	
1.10	Norway - United Kingdom Interconnection	Statnett SF National Grid Interconnector Holdings Limited	Before Nov 16th 2013	Under construction	2021	Delayed	Delay in tendering process
1.10.B.	Norway — United Kingdom interconnection (NorthConnect)	NorthConnect KS	Before Nov 16th 2013	Permitting	2022	On time	
1.12	Compressed air energy storage in United	Gaelectric Energy	After Nov	Permitting	2021	Delayed	Delays due to financing reasons

[195] Agency's classification based on the project promoters description i.e. "*Uncertainty of process and timescales by Irish NRA has resulted in project promoters delaying the seabed survey from 2016 to 2017"*

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	Kingdom - Larne	Storage Ltd	16th 2013				
1.13	Interconnection between Iceland and United Kingdom [currently known as "Ice Link"]	Landsnet, Landsvirkjun and National Grid Interconnector Holdings Ltd.	After Nov 16th 2013	Under consideration	2027	Ahead of schedule	
1.14	Interconnection between Revsing (DK) and Bicker Fen (UK) [currently known as "Viking Link"]	National Grid Interconnector Holdings Ltd. www.nationalgrid.com Energinet.dk www.energinet.dk	After Nov 16th 2013	Planned, but not yet in permitting	2022	Ahead of schedule	
2.1.	Austria internal line between Westtirol and Zell-Ziller (AT) to increase capacity at the Austrian/German border	Austrian Power Grid AG	After Nov 16th 2013	Planned, but not yet in permitting	2023	Rescheduled	Changes due to priority given to other transmission investments[196]
2.2.1	Interconnection between Lixhe (BE)	Amprion GmbH Elia System Operator NV/SA	After Nov 16th 2013	Planned, but not yet in permitting	2019	On time	

[196] Agency's classification based on the project promoters' description i.e. "*Project is currently under consideration. Therefore the time schedule gets adapted in dependency of other more mature projects (and their delays).*"

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	and Oberzier (DE)						
2.2.2	Internal line between Lixhe and Herderen (BE)	Elia System Operator SA/NV	After Nov 16th 2013	Under construction	2017	On time	
2.2.3	New substation in Zutendaal (BE)	Elia System Operator SA/NV	Before Nov 16th 2013	Commissioned	2015	On time	
2.3.2	Cluster Belgium — Luxembourg capacity increase at the Belgian/Luxembourgian border, including the following PCI: Interconnection between Aubange (BE) and Bascharage/Schifflange (LU)	Creos Luxembourg S.A.; Elia System Operator	After Nov 16th 2013	Under consideration	2022	Rescheduled	Changes due to priority given to other transmission investments
2.5.1	Interconnection between Grande Ile (FR) and Piossasco (IT) [currently known as Savoie - Piemont	Terna - Rete Elettrica Nazionale SpA, and RTE - Réseau de Transport d'Electricité	Before Nov 16th 2013	Under construction	2019	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	project]						
2.7	France-Spain interconnection between Aquitaine (FR) and the Basque country (ES) [currently known as "Biscay Gulf" project]	Réseau de Transport d'Electricité and Red Eléctrica de España SAU	After Nov 16th 2013	Planned, but not yet in permitting	2025	Rescheduled[197]	Better estimate of commissioning date / planning[198]
2.8	Coordinated installation and operation of a PST in Arkale (ES)	Red Eléctrica de España SAU	After Nov 16th 2013	Permitting	2017	Delayed	Delay in tendering process
2.9	Germany internal line between Osterath and Philippsburg (DE) to increase capacity at Western borders	Amprion GmbH (DE), TransnetBW GmbH (DE)	After Nov 16th 2013	Planned, but not yet in permitting	2019	On time	

[197] The project promoter reported "delayed" progress. However, based on the project promoter's description of the reason *"Lead time for submarine cable manufacturing start and works duration were underestimated"* the Agency re-classified the project as "re-scheduled."

[198] Agency's classification based on the project promoters' description of the reason, i.e. *"Lead time for submarine cable manufacturing start and works duration were underestimated"*

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
2.10	Germany internal line between Brunsbüttel-Großgartach and Wilster-Grafenrheinfeld (DE) to increase capacity at Northern and Southern borders	TenneT TSO GmbH (DE), TransnetBW GmbH (DE)	After Nov 16th 2013	Planned, but not yet in permitting	Erased by ACER	Delayed	National law changes impacting the technical solution for the project[199]
2.11.2	Internal line in the region of point Rommelsbach to Herbertingen (DE)	Amprion GmbH	After Nov 16th 2013	Permitting	2018	On time	
2.11.3	Internal line point Wullenstetten to point Niederwangen (DE) and internal line Neuravensburg to the	Amprion GmbH, TransnetBW GmbH	After Nov 16th 2013	Planned, but not yet in permitting	2023	Delayed[200]	PERMITTING - National law changes affecting permitting, including complexities with the implementation of the new legislation implementing

[199] Agency's classification based on the project promoters' description i.e. *"Due to the German law amendments in December 2015 for new DC projects underground cabling has to be preferred. Therefore the planning had to be restarted and delays are expected in realizing this PCI. The previous planning has to be revised and aligned with the permit granting authority during the federal planning."*

[200] The project promoter reported "rescheduled" progress. However, based on the project promoter's description of the reason, the Agency re-classified the project as "delayed"

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	border area DE-AT						Regulation (EU) 347/2013 for permitting[201].
2.12	PCI Germany – Netherlands interconnection between Niederrhein (DE) and Doetinchem (NL)	Amprion GmbH; TenneT TSO B.V.	Before Nov 16th 2013	Permitting	2017	Delayed	No data provided.
2.13.1	Ireland-United Kingdom Interconnection between Woodland (IE) and Turleenan (UK – Northern Ireland)	In Ireland (IE): EirGrid plc, The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4 In UK - Northern Ireland: SONI Ltd, 12 Manse Road, Belfast, Co. Antrim, BT6 9RT	Before Nov 16th 2013	Permitting	2019	On time	

[201] Agency's classification based on the project promoters' description i.e. *"For the investment item "Neuravensburg to the border area DE-AT" of this PCI the procedures and the overall national permit granting framework including the legal basis have changed since 31.12.2015. The relevant permit granting regime (under the "Bundesbedarfsplangesetz") leads to new responsibilities (the competent authority has been changed) and additional complex process steps within the permit granting process. In the ACER PCI reporting in 2015 these changes have been announced by project promoters, but could not be concretized in detail, as there were still decisions by the legislator and permit granting authorities necessary. Today project promoters have a clearer view. The external, overriding reasons beyond the control of the project promoters lead to a reschedule of the overall implementation plan, including a later commissioning date."*

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
2.13.2	Ireland-United Kingdom Interconnection between Srananagh (IE) and Turleenan (UK)	EirGrid plc. & System Operator Northern Ireland (SONI) System Operator Northern Ireland (SONI)	After Nov 16th 2013	Planned, but not yet in permitting	2028	Delayed	PERMITTING - Delays in the preparation of necessary application files by the project promoter
2.14	Italy — Switzerland interconnection between Thusis/Sils (CH) and Verderio Inferiore (IT)	Greenconnector Srl Greenconnector AG	After Nov 16th 2013	Permitting	2021	On time	
2.15.1	Interconnection between Airolo (CH) and Baggio (IT)	Terna - Rete Elettrica Nazionale SpA, Swissgrid	Before Nov 16th 2013	Permitting	2022	On time	
2.16.1	Internal line between Pedralva and Sobrado (PT), formerly designated Pedralva and Alfena (PT)	Rede Eléctrica a Nacional, S.A:	After Nov 16th 2013	Planned, but not yet in permitting	2021	Rescheduled	Depending on the Environmental and engineering studies the date can be anticipated to 2020 or postponed to the beginning of 2022.
2.16.3	Internal line between Vieira do Minho, Ribeira de Pena and Feira (PT), formerly designated Frades B, Ribeira de Pena and Feira (PT)	Rede Eléctrica Nacional, S.A.	After Nov 16th 2013	Permitting	2022	Rescheduled	Changes on the generation side (in relation to new renewable-based generation)

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
2.17	Portugal — Spain interconnection between Bearíz — Fontefría (ES), Fontefria (ES) — Ponte de Lima (PT) (formerly Vila Fria / Viana do Castelo) and Ponte de Lima — Vila Nova de Famalicão (PT) (formerly Vila do Conde) (PT), including substations in Bearíz (ES), Fontefría (ES) and Ponte de Lima (PT)	Red Eléctrica de España SAU, Rede Eléctrica Nacional S.A.	Before Nov 16th 2013	Permitting	2018	Delayed	PERMITTING - Delays due to environmental problems (including re-routing and/or siting or re-siting of facility(ies)).
2.18.	PCI capacity increase of hydro-pumped storage in Austria — Kaunertal, Tyrol	TIWAG-Tiroler Wasserkraft AG	Before Nov 16th 2013	Permitting	2028	On time	
2.20	Capacity increase of hydro-pumped storage in Austria — Limberg III, Salzburg (AT)	VERBUND Hydro Power GmBH	Before Nov 16th 2013	Permitting	2021	Rescheduled	The current market conditions (in particular the low power prices) do not allow to make investment decisions.
2.21	Hydro-pumped storage Riedl in the AT/DE	Donaukraft Jochenstein AG	Before Nov 16th 2013	Permitting	2023	Rescheduled	The current market conditions (in particular the low power

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	border area						prices) do not allow to make investment decisions.
2.22	Hydro pumped storage Pfaffenboden in Molln (AT)	Wien Energie GmbH	Before Nov 16th 2013	Under construction	2021	Rescheduled	Changes in the overall planning data input (generation, demand and transmission) with consequent impact on the PCI benefits
2.23	Cluster of internal lines at the Belgian northern border between Zandvliet — Lillo (BE), Lillo-Mercator (BE), including a substation in Lillo (BE) [currently known as "Brabo"]	Elia	After Nov 16th 2013	Permitting	2023	Delayed	PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application files).[202]
2.24	Internal line between Horta-Mercator (BE)	Elia	After Nov 16th 2013	Permitting	2019	On time	
2.25.1	Internal lines Mudejar — Morella (ES) and Mezquite-Morella	Red Eléctrica de España, SAU	After Nov 16th 2013	Under construction	2016	Ahead of schedule	

[202] Project delayed after permit refusal. Different alternatives have been studied and permits will be reintroduced

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	(ES), including a substation in Mudejar (ES)						
2.25.2	Internal line Morella-La Plana (ES)	Red Eléctrica de España , SAU	After Nov 16th 2013	Permitting	2018	On time	
2.26	Spain Internal line La Plana/Morella-Godelleta to increase capacity of the north-south Mediterranean axis	Red Eléctrica de España, SAU	After Nov 16th 2013	Under consideration	2023	On time	
2.27	Capacity increase between Spain and France (generic project)	Réseau de Transport d'Electricité and Red Eléctrica de España SAU	After Nov 16th 2013	Planned, but not yet in permitting	2025	On time	
3.1.1	Interconnection between St. Peter (AT) and Isar (DE)	TenneT TSO GmbH; Austrian Power Grid AG	Before Nov 16th 2013	Permitting	2020	Delayed	PERMITTING - Delays due to environmental problems (including re-routing and/or siting or re-siting of facility(ies)).
3.1.2.	Internal line between St. Peter and Tauern (AT)	Austrian Power Grid AG	Before Nov 16th 2013	Permitting	2023	On time	
3.2.1	Interconnection	Terna - Rete Elettrica	After Nov	Planned, but not	2023	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	between Lienz (AT) and Veneto Region (IT)	Nazionale SpA, APG	16th 2013	yet in permitting			
3.2.2.	Internal line between Lienz and Obersielach (AT)	Austrian Power Grid AG	After Nov 16th 2013	Planned, but not yet in permitting	2025	Rescheduled	Changes due to priority given to other transmission investments
3.4	PCI Austria - Italy interconnection between Wurmlach (AT) and Somplago (IT)	Alpe Adria Energia S.p.A.	Before Nov 16th 2013	Permitting	2019	Delayed	PERMITTING - Delays due to environmental problems (including re-routing and/or siting or re-siting of facility(ies)).
3.7.1.	Interconnection between Maritsa East 1 (BG) and N. Santa (GR)	Elektroenergien Sistemen Operator EAD, Bulgaria and Independent Power Transmission Operator (IPTO) S.A., Greece	After Nov 16th 2013	Permitting	2021	On time	
3.7.2.	Internal line between Maritsa East 1 and Plovdiv (BG)	Elektroenergien sistemen operator (ESO) EAD	After Nov 16th 2013	Permitting	2019	On time	
3.7.3.	Internal line between Maritsa East 1 and Maritsa East 3 (BG)	Elektroenergien sistemen operator (ESO) EAD	After Nov 16th 2013	Permitting	2017	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
3.7.4.	Internal line between Maritsa East 1 and Burgas (BG)	Elektroenergien sistemen operator (ESO) EAD	After Nov 16th 2013	Permitting	2021	Ahead of schedule	
3.8.1.	Internal line between Dobrudja and Burgas (BG)	Elektroenrgien sistemen operator (ESO) EAD	After Nov 16th 2013	Permitting	2022	On time	
3.8.4	Internal line between Cernavoda and Stalpu (RO)	CNTEE TRANSELECTRICA SA	After Nov 16th 2013	Permitting	2020	Delayed	Delays related to acquisition of or access to land
3.8.5	Internal line between Gutinas and Smardan (RO)	CNTEE TRANSELECTRICA SA	After Nov 16th 2013	Permitting	2020	On time	
3.9.1.	Interconnection between Žerjavinec (HR)/Hévíz (HU) and Cirkovce (SI)	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja	Before Nov 16th 2013	Permitting	2018	Delayed	PERMITTING - Delays due to environmental problems (including re-routing and/or siting or re-siting of facility(ies)).
3.9.2.	Internal line between Divača and Beričevo (SI)	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja	Before Nov 16th 2013	Permitting	2021	On time	
3.9.3.	Internal line between Beričevo and Podlog (SI)	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega	After Nov 16th 2013	Planned, but not yet in permitting	2026	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
		omrežja					
3.9.4.	Internal line between Podlog and Cirkovce (SI)	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja	After Nov 16th 2013	Planned, but not yet in permitting	2026	On time	
3.10.1	Interconnection between Hadera (IL) and Kofinou (CY)	DEH Quantum Energy Ltd	After Nov 16th 2013	Planned, but not yet in permitting	2019	On time	
3.10.2	Interconnection between Kofinou (CY) and Korakia, Crete (EL)	DEH Quantum Energy Ltd	After Nov 16th 2013	Planned, but not yet in permitting	2022	On time	
3.10.3	Internal line between Korakia, Crete and Attica region (EL)	DEH Quantum Energy Ltd	After Nov 16th 2013	Planned, but not yet in permitting	2020	On time	
3.11.2	Internal line between Vitkov and Prestice	CEPS, a.s. - The transmission system operator of the Czech Republic	Before Nov 16th 2013	Permitting	2020	On time	
3.11.3.	Internal line between Prestice and Kocin (CZ)	CEPS, a.s. - The transmission system operator of the Czech Republic	Before Nov 16th 2013	Permitting	2028	On time	
3.11.4	Internal line between Kocin and Mirovka (CZ)	CEPS, a.s. - The transmission system operator of the Czech	Before Nov 16th 2013	Permitting	2025	Delayed	PERMITTING - National law changes affecting permitting, including complexities with the

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
		Republic					implementation of the new legislation implementing Regulation (EU) 347/2013 for permitting
3.11.5	Internal line between Mirovka and Cebin (CZ)	CEPS, a.s. - The transmission system operator of the Czech Republic	Before Nov 16th 2013	Permitting	2033	Rescheduled	Changes due to priority given to other transmission investments
3.12	Internal line in Germany between Wolmirstedt and Bavaria to increase internal North-South transmission capacity	50Hertz Transmission GmbH, Amprion GmbH	After Nov 16th 2013	Planned, but not yet in permitting	2022	On time	
3.13	Internal line in Germany between Halle/Saale and Schweinfurt to increase capacity in the North-South Corridor East	50Hertz Transmission GmbH & TenneT TSO GmbH	Before Nov 16th 2013	Under construction	2016	Delayed	No data provided.
3.14.1	Internal line between Eisenhűttenstadt (DE) and Plewiska (PL)	Polskie Sieci Elektroenergetyczne S.A, 50Hertz Transmission GmbH	After Nov 16th 2013	Planned, but not yet in permitting	2030	On time	
3.14.2	Internal line between	Polskie Sieci	After Nov	Permitting	2021	Rescheduled	Better estimate of

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	Krajnik and Baczyna (PL)	Elektroenergetyczne S.A	16th 2013				commissioning date / planning[203]
3.14.3	Internal line between Mikułowa and Świebodzice (PL)	Polskie Sieci Elektroenergetyczne S.A	After Nov 16th 2013	Planned, but not yet in permitting	2021	Rescheduled	Better estimate of commissioning date / planning[204]
3.15.1	Interconnection between Vierraden (DE) and Krajnik (PL)	50Hertz Transmission GmbH & Polskie Sieci Elektroenergetyczne S.A	Before Nov 16th 2013	Under construction	2017	On time	
3.15.2	Installation of phase shifting transformers on the interconnection lines between Krajnik (PL) — Vierraden (DE) and coordinated operation with the PST on the interconnector Mikułowa (PL) —	50Hertz Transmission GmbH & Polskie Sieci Elektroenergetyczne S.A	After Nov 16th 2013	Under construction	2021	Delayed	Delays due to correlation with other delayed infrastructure investments[205]

[203] Based on the Agency's understanding of the reasons.

[204] Idem.

[205] Agency's classification based on the project promoters' description i.e. *"Court on 21st January required a revision of the permit regarding bird protection issues of the outgoing new 380kV-OHL from Vierraden to Neuenhagen (upgraded Uckermark line). This line is a prerequisite to operate with full capacity (4 PST) at 380 kV."*

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	Hagenwerder (DE)						
3.16.1	Interconnection between Gabčikovo (SK) — Gönyű (HU) and Veľký Ďur (SK)	Slovenská elektrizačná prenosová sústava, a.s., MAVIR Hungarian Independent Transmission Operator Company Ltd.	After Nov 16th 2013	Planned, but not yet in permitting	2019	Delayed	Delay related to finalisation of agreements and coordination across borders (for transmission and smart grids PCIs)
3.17	CI Hungary — Slovakia interconnection between Sajóvánka (HU) and Rimavská Sobota (SK)	MAVIR Hungarian Independent Transmission Operator Company Ltd. and Slovenská elektrizačná prenosová sústava, a.s.	After Nov 16th 2013	Planned, but not yet in permitting	2020	Delayed	Delay related to finalisation of agreements and coordination across borders (for transmission and smart grids PCIs)
3.18.1	Interconnection between Kisvárda area (HU) and Velké Kapušany (SK)	Slovenská elektrizačná prenosová sústava, a.s. and MAVIR Hungarian Independent Transmission Operator Company Ltd.	After Nov 16th 2013	Under consideration	2029	On time	
3.19.1	Interconnection between Villanova (IT) and Lastva (ME)	Terna - Rete Elettrica Nazionale SpA, Crnogorski Elektroprenosni Sistem AD.	Before Nov 16th 2013	Under construction	2019	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
3.21	Italy — Slovenia interconnection between Salgareda (IT) and Divača — Bericevo region (SI)	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja Terna S.p.A. - Rete Elettrica Nazionale	After Nov 16th 2013	Under consideration	2022	On time	
3.22.1	Interconnection between Resita (Romania) and Pancevo (Serbia)	CNTEE TRANSELECTRICA & ELEKTROMREZA SRBIJE	After Nov 16th 2013	Under construction	2017	On time	
3.22.2	Internal line between Portile de Fier and Resita (RO)	CNTEE TRANSELECTRICA SA	After Nov 16th 2013	Permitting	2018	Delayed	Delays related to acquisition of or access to land
3.22.3	Internal line between Resita and Timisoara/Sacalaz (RO)	CNTEE TRANSELECTRICA SA	After Nov 16th 2013	Permitting	2023	Delayed	Delays due to correlation with other delayed infrastructure investments
3.22.4	Internal line between Arad and Timisoara/Sacalaz (RO)	CNTEE TRANSELECTRICA SA	After Nov 16th 2013	Planned, but not yet in permitting	2023	Delayed	Delays due to correlation with other delayed infrastructure investments
3.23	Hydro-pumped storage in Bulgaria — Yadenitsa	NATSIONALNA ELEKTRICHESKA KOMPANIA EAD	After Nov 16th 2013	Permitting	2022	Delayed	Delay in tendering process

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
3.24	PCI hydro-pumped storage in Greece — Amfilochia	TERNA ENERGY S.A.	After Nov 16th 2013	Permitting	2021	On time	
4.1	Denmark — Germany interconnection between Tolstrup Gaarde (DK) and Bentwisch (DE) via offshore windparks Kriegers Flak (DK) and Baltic 1 and 2 (DE) [currently known as "Kriegers Flak Combined Grid Solution"]	Energinet.dk, 50 Hertz Transmission GmbH	Before Nov 16th 2013	Permitting	2018	On time	
4.2.1.	Interconnection between Kilingi-Nõmme (EE) and Riga CHP2 substation (LV)	Latvian TSO "Augstsprieguma tikls" AS, Estonian TSO "Elering" AS and Latvian transmission system owner "Latvijas elektriskie tīkli" AS	Before Nov 16th 2013	Permitting	2020	On time	

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
4.2.2.	Internal line between Harku and Sindi (EE)	Elering AS	Before Nov 16th 2013	Planned, but not yet in permitting[206]	2020	On time	
4.2.3	Internal line between Riga CHP 2 and Riga HPP (LV)	Augstsprieguma tikls	After Nov 16th 2013	Under consideration	2020	On time	
4.4.1	Internal line between Ventspils, Tume and Imanta (LV)	"Augstsprieguma tikls"AS, "Latvijas elektriskie tikli" AS	After Nov 16th 2013	Under construction	2019	On time	
4.4.2	Internal line between Ekhyddan and Nybro/Hemsjö (SE)	Affärsverket svenska kraftnät	Before Nov 16th 2013	Permitting	2023	On time	
4.5.2	Internal line between Stanisławów and Olsztyn Mątki (PL)	Polskie Sieci Elektroenergetyczne S.A.	Before Nov 16th 2013	Under construction	2021	Rescheduled	Better estimate of commissioning date / planning[207]
4.5.5.	Internal line between Kruonis and Alytus (LT)	Litgrid AB	Before Nov 16th 2013	Under construction	2018	On time	

[206] The Estonian NRA indicated that the project is in “permitting” status.

[207] Based on the Agency’s understanding about the reasons.

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
4.6	Hydro-pumped storage in Estonia - Muuga	Energiasalv OÜ	Before Nov 16th 2013	Permitting	2026	Delayed	PERMITTING - National law changes affecting permitting, including complexities with the implementation of the new legislation implementing Regulation (EU) 347/2013 for permitting
4.7.	Capacity increase of hydro-pumped storage in Lithuania — Kruonis	Lietuvos energija, UAB	Before Nov 16th 2013	Planned, but not yet in permitting	2021	Rescheduled	Changes due to priority given to other transmission investments[208]
4.8.1	Interconnection between Tartu (EE) and Valmiera (LV)	Augstsprieguma tikls (LV), Elering (EE)	After Nov 16th 2013	Under consideration	2023	On time	
4.8.2.	Internal line between Balti and Tartu (EE)	Elering AS	After Nov 16th 2013	Planned, but not yet in permitting	2024	On time	
4.8.3	Interconnection between Tsirguliina (EE) and Valmiera	Augstsprieguma tikls AS (LV) and Elering AS (EE)	After Nov 16th 2013	Under consideration	2024	On time	

[208] Agency's classification based on the project promoters' description i.e. "*The Project has been temporarily suspended awaiting for the effects of the NordBalt and Lit Pol Link for the Project's business case to develop.*"

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
	(LV)						
4.8.4.	Internal line between Eesti and Tsirguliina (EE)	Elering AS	After Nov 16th 2013	Planned, but not yet in permitting	2025	On time	
4.8.5.	Internal line between substation in Lithuania and state border (LT)	Litgrid AB	After Nov 16th 2013	Planned, but not yet in permitting	2025	On time	
4.8.6.	Internal line between Kruonis and Visaginas (LT)	Litgrid AB	After Nov 16th 2013	Planned, but not yet in permitting	2023	On time	
4.9.	Various aspects of the integration of the Baltic States' electricity network into the continental European network, including their synchronous operation (generic project)	Litgrid AB, Augstsprieguma tīkls AS, ELERING AS	After Nov 16th 2013	Planned, but not yet in permitting	2025	On time	
10.2	Green-Me	Enel Distribuzione S.p.A. Electricité Réseau Distribution France SA RTE Réseau de Transport d'Electricité Terna S.p.A.	After Nov 16th 2013	Under consideration	2019	Rescheduled	The realization of the project relies on an adequate financing level, and on the confirmation, from each promoter, on the sustainability of the project.

PCI Code	PCI name	Project promoter(s)	Permit granting file submission	Current status	Expected year of commissioning	Current progress	Most important reason for delay or rescheduling (if applicable)
10.3.	SINCRO.GRID	ELES, d.o.o., sistemski operater prenosnega elektroenergetskega omrežja Hrvatski operator prijenosnog sustava d.o.o. HEP Operator Distribucijskog Sustava d.o.o. SODO sistemski operater distribucijskega omrežja z električno energijo, d.o.o.	After Nov 16th 2013	Under consideration	2021	On time	

4.8 Annex VIII: PCI specific information - gas

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
Transmission								
5.1.1	Physical Reverse Flow at Moffat interconnection point (Ireland/United Kingdom)	TRA-N-059	GNI(UK)	Ireland United Kingdom	Under consideration	n.a.	Rescheduled	Re-prioritization of the project's implementation against other investments of the project promoter
5.1.2	Upgrade of the SNIP (Scotland to Northern Ireland pipeline) to accommodate physical reverse flow between Ballylumford and Twynholm	TRA-N-027	Premier Transmission Limited (PTL)	United Kingdom*	Under consideration	2021	On time	
5.10	Reverse flow interconnection on TENP	TRA-N-208	Fluxys TENP GmbH	Germany*	Planned, but not yet in permitting	2018	On time	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	pipeline in Germany							
5.11	Reverse flow interconnection between Italy and Switzerland at Passo Gries interconnection point	TRA-F-214	Snam Rete Gas S.p.A.	Italy*	Under construction	2018	On time	
5.19	Connection of Malta to the European Gas network – pipeline interconnection with Italy at Gela and/or offshore Floating LNG Storage and Re-gasification	TRA-N-031 and LNG-N-211	Maltese Ministry for Energy and Health	Italy Malta*	Planned, but not yet in permitting	2026	Rescheduled	Other[209]

[209] The pre-feasibility study was completed in April 2015 and concluded that the optimal solution for the natural gas interconnection (Phase 1) between Malta and continental Europe would be a 560mm diameter pipeline interconnection between Gela in Sicily and Delimara in Malta. As part of the pre-feasibility study deliverables (Work Package 1), the project timeline for Phase 1 was analysed for each distinct phase of the project and updated to reflect more realistically the expected time required for complete project implementation. The main project stages include the basic design studies, permitting process and related environmental studies, detailed engineering design (FEED), tendering procedures and finally the construction and commissioning. As stipulated in Regulation (EU) No 347/2013, this whole permitting procedure has been assumed to take not more than 3.5 years. The re-scheduling of 39 months in the commissioning date compared to the planning as of January 31st, 2015 reflects the results from this updated timeline. The rescheduling is not expected to have an impact on the costs and benefits of the project. It is to be noted that as an intermediate solution Malta will be supplied with natural gas for power generation through a LNG Floating Storage Unit berthed in Delimara which is expected to be in operation in 2016.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	Unit (FSRU)							
5.20	Gas Pipeline connecting Algeria to Italy (via Sardinia) [currently known as "Galsi " pipeline]	TRA-N-012	Galsi S.p.A.	Italy*	Permitting	2019	Delayed	PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application files). Please explain in the relevant question below
5.5	Eastern Axis Spain — France — interconnection point between Iberian Peninsula and France at Le Perthus, including the compressor stations at Montpellier and St. Martin de Crau [currently known as “Midcat”]	TRA-N-161 (Enagas), TRA-N-252 (TIGF), TRA-N-256 (GRTgaz)	Enagás (Spain), TIGF and GRTgaz (France)	France* Spain*	Planned, but not yet in permitting	2022	Rescheduled	Changes due to complementarity with other rescheduled infrastructure investments of any project promoter

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
5.4	3rd Interconnection Point between Portugal and Spain	Portugal: TRA-N-283, TRA-N-284, TRA-N-285; Spain:TRA-N-168	REN-Gasodutos, S.A. and Enagás Transporte S.A.U.	Portugal* Spain*	Planned, but not yet in permitting	2021	Rescheduled	Changes due to complementarity with other rescheduled infrastructure investments of any project promoter
5.6	Reinforcement of the French network from South to North – Reverse flow from France to Germany at Obergailbach/Medelsheim Interconnection point (FR)	TRA-N-047	GRTgaz	France* Germany	Planned, but not yet in permitting	2022	Rescheduled	Lack of interest from the market
5.7.1	Reinforcement of the French network from South to North to create a single market zone, including PCI 5.7.1 Val de Saône pipeline between Etrez and Voisines (FR)	TRA-N-043	GRTgaz	France*	Permitting	2018	Ahead of schedule	
5.7.2	Gascogne Midi pipeline	TRA-N-331 (TIGF) ; TRA-	GRTgaz; TIGF	France*	Permitting	2018	On time	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
		N-391 (GRTgaz)						
5.8.1	Reinforcement of the French network from South to North including PCI 5.8.1 – Est Lyonnais pipeline between Saint-Avit and Etrez (FR)	TRA-N-253	GRTgaz	France*	Planned, but not yet in permitting	2022	Rescheduled	Changes due to complementarity with other rescheduled infrastructure investments of any project promoter
5.8.2	Reinforcement of the French network from South to North including PCI 5.8.2 – Eridan pipeline between Saint-Martin-de-Crau and Saint-Avit (FR)	TRA-F-041	GRTgaz	France*	Permitting	2022	Rescheduled	Changes due to complementarity with other rescheduled infrastructure investments of any project promoter
6.1.1	Poland — Czech Republic Interconnector [currently known as “Stork II”] between Libhošť — Hať (CZ/PL) — Kędzierzyn	TRA-N-136; TRA-N-273	NET4GAS s.r.o.; Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.	Czech Republic* Poland*	Permitting	2019	On time	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	(PL)							
6.1.12	Tvrdonice-Libhošť pipeline, including upgrade of CS Břeclav (CZ)	TRA-N-136	NET4GAS s.r.o.	Czech Republic*	Permitting	2019	On time	
6.1.2	Transmission infrastructure projects between Lwówek and Kędzierzyn (PL)	TRA-N-247 / TRA-N-273	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.	Poland*	Permitting	2018	Delayed	Other[210]
6.1	Gas Interconnection Bulgaria-Serbia (currently known as IBS)	TRA-N-137	Ministry of Energy, Republic of Bulgaria Srbijagas, Republic of Serbia	Bulgaria*	Permitting	2019	Delayed	Delays due to technological reasons (including any changes, re-routing and/or siting or re-siting of facility(ies) initiated by the PP)
6.15	Interconnection of the	TRA-N-139	SNTGN TRANSGAZ	Romania*	Under	2019	On time	

[210] PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application files).

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	national transmission system with the international gas transmission pipelines and reverse flow at Isaccea (RO)		SA		consideration			
6.18	Adriatica pipeline (IT)	TRA-N-007	Snam Rete Gas S.p.A.	Italy*	Permitting	2021	On time	
6.2.1	Poland - Slovakia interconnector	GAZ-SYSTEM : TRA-N-275; Eustream : TRA-N-190	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.; eustream, a.s.	Poland* Slovakia*	Permitting	2019	On time	
6.2.2	Transmission infrastructure projects between Rembelszczyzna and Strachocina	TRA-N-245	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.	Poland*	Under construction	2018	Delayed	Delays related to acquisition of or access to land

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
6.2.3	Transmission infrastructure projects between Tworóg and Strachocina	TRA-N-245	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.	Poland*	Permitting	2020	Delayed	Other[211]
6.23	Hungary — Slovenia interconnection (Nagykanizsa — Tornyiszentmiklós (HU) — Lendava (SI) — Kidričevo)	TRA-N-112 (R15/1 Pince-Lendava-Kidričevo) and TRA-N-325 (Slovenian-Hungarian interconnector)	Plinovodi, Družba za upravljanje s prenosnim sistemom, d.o.o; FGSZ Natural Gas Transmission, Private Company Limited by Shares	Hungary Slovenia*	Permitting	2020	On time	
6.24.1	Romanian-Hungarian reverse flow: Hungarian section 1st stage CS at Csanádpalota (1st phase)	TRA-N-126	FGSZ Natural Gas Transmission Private Company limited by Shares	Hungary*	Planned, but not yet in permitting		Rescheduled	Other[212]

[211] PERMITTING - Delays due to environmental problems (including re-routing and/or siting or re-siting of facility(ies)). Environmental problems also include problems with cultural heritage authorities or any other authority that is involved in the environmental procedure. PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application files).

[212] Producer rescheduled the project.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
6.24.2	Development on the Romanian territory of the National Gas Transmission System on the Bulgaria — Romania — Hungary — Austria Corridor — transmission pipeline Podișor — Horia GMS and 3 new compressor stations (Jupa, Bibești and Podișor) (1st phase)	TRA-N-358	SNTGN Transgaz SA	Romania*	Permitting	2019	Delayed	Delays due to correlation with other delayed infrastructure investments Delay in tendering process
6.24.3	GCA Mosonmagyaróvár	TRA-N-423	GAS CONNECT AUSTRIA GmbH	Austria	Planned, but not yet in permitting	2019	n.a.	0
6.24.4	Városföld-Ercsi– Győr pipeline (capacity 4.4 bcm/a) (HU)	TRA-N-018	FGSZ Natural Gas Transmission Private Company limited by Shares	Hungary*	Planned, but not yet in permitting	2022	Rescheduled	Other[213]
6.24.5	Ercsi-Százhalombatta	TRA-N-061	FGSZ Natural Gas	Hungary*	Planned, but not	2022	Rescheduled	

[213] Black Sea producers in Romania rescheduled the project.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	pipeline (capacity 4.4 bcm/a) (HU)		Transmission Private Company limited by Shares		yet in permitting			
6.24.6	Városföld compressor station (capacity 4.4 bcm/a) (HU)	TRA-N-123	FGSZ Natural Gas Transmission Private Company limited by Shares	Hungary*	Planned, but not yet in permitting	2022	Rescheduled	Other[214]
6.24.7	Expansion of the transmission capacity in Romania towards Hungary up to 4.4 bcm/year (2nd phase)	TRA-N-358	SNTGN Transgaz SA	Romania*	Permitting	2020	Rescheduled	Supply side changes/ uncertainties
6.24.8	Black Sea shore — Podișor (RO) pipeline for taking over the Black sea gas	TRA-N-362	SNTGN Transgaz SA	Romania*	Permitting	2020	Rescheduled	Supply side changes/ uncertainties
6.24.9	Romanian-Hungarian	TRA-N-286[215]	FGSZ Natural Gas	Hungary*	Planned, but not	2022	Rescheduled	

[214] Black sea producers in Romania rescheduled the Black Sea project.

[215] The Agency cannot verify the validity of this information based on the TYNDP 2015.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	reverse flow: Hungarian section 2nd stage CS at Csanádpalota or Algyő (HU) (capacity 4.4 bcm/a) (2nd phase)		Transmission Private Company limited by Shares		yet in permitting			
6.25.1	Pipeline system from Bulgaria to Slovakia [currently known as "Eastring"]	TRA-N-654, TRA-N-656, TRA-N-655,TRA-N-628	Bulgartransgaz EAD; FGSZ Ltd; Transgaz S.A.; Eastring B.V (Eustream, a.s.)	Bulgaria* Hungary* Romania Slovakia*	Planned, but not yet in permitting		On time	
6.25.2	Pipeline system from Greece to Austria [currently known as "Tesla"]	-[216]	FGSZ Natural Gas Transmission Private Company limited by Shares; DESFA S.A.; GA-MA AD; JP. Srijagas; Gas Connect Austria GmbH	Austria Greece Hungary*	Under consideration			
6.25.3	Further enlargement of the	TRA-N-126,	S.N.T.G.N.	Romania*	Planned, but not	2023	On time	

[216] There was no TYNDP code provided by the promoter, even though sections of this project have TYNDP codes.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
	Bulgaria — Romania — Hungary — Austria bidirectional transmission corridor [currently known as "ROHUAT/BRUA", phase 3]	TRA-N-384[217]	TRANSGAZ S.A.		yet in permitting			
6.25.4	Infrastructure to allow the development of the Bulgarian gas hub	TRA-N-593, TRA-N-594, TRA-N-592	Bulgartransgaz EAD	Bulgaria*	Under consideration	2022	On time	
6.26.1	Interconnection Croatia — Slovenia (Lučko — Zabok — Rogatec)	TRA-N-086	PLINACRO Ltd.	Croatia*	Permitting	2018	Rescheduled	
6.26.2	CS Kidričevo, 2nd phase of upgrade	TRA-N-094	PLINOVODI, Družba za upravljanje s prenosnim sistemom, d.o.o.	Slovenia*	Permitting	2020	On time	

[217] The Agency cannot verify the validity of this information based on the TYNDP 2015.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
6.26.3	Compressor stations at the Croatian gas transmission system	TRA-N-334	PLINACRO Ltd.	Croatia*	Permitting	2019	On time	
6.26.4	GCA 2014/04 Murfeld	TRA-N-361	GAS CONNECT AUSTRIA GmbH	Austria	Planned, but not yet in permitting	2019	n.a.	0
6.26.5	Upgrade of Murfeld/Ceršak interconnection	TRA-N-389	PLINOVODI, Družba za upravljanje s prenosnim sistemom, d.o.o.	Slovenia*	Permitting	2020	On time	
6.26.6	Upgrade of Rogatec interconnection	TRA-N-390	PLINOVODI, Družba za upravljanje s prenosnim sistemom, d.o.o.	Slovenia*	Permitting	2020	On time	
6.4	PCI Bidirectional Austrian — Czech interconnection (BACI) between Baumgarten (AT) — Reinthal (CZ/ AT) — Brečlav (CZ)	TRA-N-021; TRA-N-133	GAS CONNECT AUSTRIA GmbH; NET4GAS s.r.o.	Austria* Czech Republic*	Permitting	2020	On time	
6.5.2	Gas pipeline Zlobin-Bosiljevo-Sisak-Kozarac-Slobodnica (HR)	TRA-N-075	PLINACRO Ltd., for natural gas transmission	Croatia*	Permitting	2023	Rescheduled	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
6.8.1	Interconnection Greece — Bulgaria [currently known as IGB] between Komotini (EL) — Stara Zagora (BG)	TRA-N-378	ICGB AD	Bulgaria* Greece	Permitting	2018	On time	
6.8.2	Necessary rehabilitation, modernization and expansion of the Bulgarian transmission system	TRA-N-298	Bulgartransgaz EAD	Bulgaria*	Planned, but not yet in permitting	2020	Delayed	
6.8.4	Gas pipeline aiming at expanding the capacity on the interconnection of the Northern ring of the Bulgarian and Romanian gas transmission networks	TRA-N-379	Bulgartransgaz EAD	Bulgaria	Under consideration		On time	
6.9.3	Gas compressor station at Kipi (EL)	TRA-N-128	HELLENIC GAS TRANSMISSION SYSTEM OPERATOR (DESFA) S.A.	Greece*	Under consideration	2020	On time	
7.1.1	Expansion of the South-Caucasus	TRA-F-395	SOCAR MIDSTREAM OPERATIONS		Under consideration	2020	Delayed	Demand side changes/ uncertainties

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
								Delays due to financing reasons
7.1.1	Gas pipeline to the EU from Turkmenistan and Azerbaijan, via Georgia and Turkey, [currently known as the combination of "Trans-Caspian Gas Pipeline" (TCP), "Expansion of the South-Caucasus Pipeline" (SCP-(F)X) and "Trans Anatolia Natural Gas Pipeline" (TANAP)]	TRA-F-221	SOCAR ("SOUTHERN GAS CORRIDOR" CLOSED JOINT STOCK COMPANY, a SOCAR Affiliate is the major shareholder in TANAP)	Greece	Under construction	2019	On time	
7.1.1	Trans-Caspian Gas Pipeline (TCP)	TRA-N-339	W-Stream Caspian Pipeline Company Limited	Greece	Under consideration	2020	Delayed	Other[218]

[218] The main reason for delay was our inability to submit a proposal for GRANT for feasibility study in 2015. We could not submit, as Romania - the country concerned, identified by commission - has not provided the support letter contemplated by CEF procedures.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
7.1.2	Gas compressor station at Kipi (EL)	TRA-N-128	HELLENIC GAS TRANSMISSION SYSTEM OPERATOR (DESFA) S.A.	Greece*	Planned, but not yet in permitting	2020	On time	
7.1.3	Gas pipeline from Greece to Italy via Albania and the Adriatic Sea [currently known as “Trans Adriatic Pipeline” (TAP)]	TRA-F-051	Trans Adriatic Pipeline AG	Greece Italy	Permitting	2020	On time	
7.1.4	Gas Pipeline from Greece to Italy (currently known as "Poseidon Pipeline")	TRA-N-010	NATURAL GAS SUBMARINE INTERCONNECTOR GREECE-ITALY POSEIDON S.A. (IGI Poseidon S.A.)	Greece* Italy*	Permitting	2020	On time	
7.1.6	Metering and Regulating Stations for the connection of the Greek transmission system with TAP	TRA-N-512	HELLENIC GAS TRANSMISSION SYSTEM OPERATOR (DESFA) S.A.	Greece*	Planned, but not yet in permitting	2020	On time	
7.1.7	Komotini-Thesprotia	TRA-N-014	HELLENIC GAS	Greece*	Planned, but not	n.a	On time	

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	pipeline (EL)		TRANSMISSION SYSTEM OPERATOR (DESFA) S.A.		yet in permitting			
7.3.1	Pipeline from offshore Cyprus to Greece mainland via Crete (currently known as "EastMed Pipeline")	TRA-N-330	NATURAL GAS SUBMARINE INTERCONNECTOR GREECE-ITALY POSEIDON S.A. (IGI Poseidon S.A.)	Cyprus* Greece*	Permitting[219]	2020	On time	
7.3.2	Removing bottlenecks in Cyprus to end isolation and to allow for transmission of gas from the Eastern Mediterranean region	UGS-N-067	Ministry of Energy, Commerce, Industry and Tourism (MECIT)	Cyprus* Greece*	Planned, but not yet in permitting		On time	
7.4.1	Gas compressor station at Kipi (EL)	TRA-N-128	HELLENIC GAS TRANSMISSION SYSTEM	Greece*	Under consideration	2020	On time	

[219] The NRA of Cyprus considers that the correct status of this project is "planned, but not yet in permitting".

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
			OPERATOR (DESFA) S.A.					
7.4.2	Interconnector between Turkey and Bulgaria [currently known as “ITB”]	TRA-N-140	Bulgartransgaz EAD	Bulgaria*	Planned, but not yet in permitting	2020	Delayed	
8.1.1	Interconnector between Finland and Estonia "Balticconnector"	TRA-N-072; TRA-N-023	Elering AS, Baltic Connector OY	Estonia* Finland*	Permitting	2019	Ahead of schedule	
8.2.1	Enhancement of Latvia-Lithuania interconnection	TRA-N-342 (LT), TRA-N-382 (LV)	JSC "Latvijas Gaze", AB "Amber Grid"	Latvia Lithuania*	Planned, but not yet in permitting	2020	Not changed	
8.2.2	Enhancement of Estonia-Latvia interconnection	TRA-N-084	Elering AS	Estonia*	Permitting	2019	On time	
8.3	Poland - Denmark interconnection "Baltic Pipe"	TRA-N-271	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.; Energinet.dk	Denmark* Poland*	Planned, but not yet in permitting	2022	On time	
8.5	Poland - Lithuania interconnection [currently known as "GIPL"]	TRA-N-212, TRA-N-341	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.; AB Amber Grid	Lithuania* Poland*	Permitting	2019	On time	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
LNG								
5.3	Shannon LNG Terminal and connecting pipeline (IE)	LNG-N-030	Shannon LNG Ltd.	Ireland*	Permitting	2021	Delayed	Delays due to risks related to the national regulatory framework or uncertainty of regulatory decisions
6.5.1.	Phased development of a LNG terminal in Krk (HR)	LNG–N–082	LNG Hrvatska d.o.o. za poslovanje ukapljenim prirodnim plinom/ LNG Croatia LLC for liquefied natural gas business	Croatia*	Permitting	2019	On time	
6.9.1	LNG terminal in northern Greece	LNG-N-062, TRA-N-063	GASTRADE S.A.	Greece	Permitting	2018	Delayed	PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
								preparation of application files). Please explain in the relevant question below
8.1.2.3	Tallinn LNG (EE)	LNG-N-146	Vopak LNG Holding B.V. / Vopak E.O.S. Ltd / Port of Tallinn Ltd.	Estonia	Permitting		Rescheduled	Changes due to complementarity with other rescheduled infrastructure investments of any project promoter
8.1.2.2	Paldiski LNG (EE)	LNG-N-079	Balti Gaas OÜ	Estonia	Permitting	2020	Delayed	Delays due to financing reasons
8.6	Gothenburg LNG terminal in Sweden	LNG-N-032	Swedegas AB	Sweden	Permitting	2020	Rescheduled	
8.7.	Capacity extension of Świnoujście LNG terminal in Poland	LNG-N-272	Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A.	Poland*	Planned, but not yet in permitting		On time	

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
UGS								
5.1.3	Development of the Islandmagee Underground Gas Storage (UGS) at Larne (Northern Ireland)	UGS-N-294	Islandmagee Storage Limited	United Kingdom*	Permitting	2021	Rescheduled	Other[220]
6.20.2	Chiren UGS expansion (BG)	UGS-N-138	Bulgartransgaz EAD	Bulgaria*	Planned, but not yet in permitting	2022	Delayed	Other[221]
6.20.4	Depomures storage in Romania	UGS-N-233	Engie Romania SA	Romania	Permitting	2022	Delayed	PERMITTING - Delays due to other permit granting reasons (different than law changes, environmental problems or preparation of application

[220] Results of the data gathering well confirmed the period for the construction of the subsurface infrastructure is longer than previously estimated.

[221] Delays due to postponement of some tender procedures for selection of contractors for the studies.

PCI code	PCI name	TYNDP code	PCI promoter name	Hosting country (*PCI included in the NDP of the country)	Current implementation status (* the project promoter submitted the file before November 2013)	Expected year of commissioning	Current progress (in the last 12 months)	Most important reason for delay or rescheduling (if applicable)
								files). Please explain in the relevant question below
6.20.5	New underground gas storage in Romania	UGS-N-366	Societatea Naţională de Gaze Naturale ROMGAZ S.A.	Romania	Under consideration			
6.20.6	Sărmăşel underground gas storage in Romania	UGS-N-371	Societatea Naţională de Gaze Naturale ROMGAZ S.A.	Romania	Under consideration			
8.2.4	Enhancement of Incukalns Underground Gas Storage (LV)	UGS-N-374	Joint Stock Company "Latvijas Gaze"	Latvia	Planned, but not yet in permitting	2025	On time	

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