



Innovative actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects

Final Report

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Innovative actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects

Final Report

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Abstract

Regulation on guidelines for trans-European energy infrastructure (Regulation (EU) 347/2013 or the TEN-E Regulation) identifies several energy infrastructure priorities to meet the European Union's energy and climate policy objectives in terms of market integration, security of supply and sustainability. In view of implementing this method, regional groups have been established, comprising project promoters, regulators, government ministries of the Member States and other relevant stakeholders¹. This allows for a tailored approach to identifying and supporting the development and construction of the most needed infrastructure projects considered as Projects of Common Interest (PCIs)².

This general aim of the study is to contribute to developing innovative actions and strategies to boost public awareness, trust and acceptance, which would in turn speed up the development of key electricity infrastructure. All this is necessary for the completion of the EU's internal energy market through **improved transparency and communication on the local benefits of PCIs** and by **addressing citizens' reservations**.

The study presents an analysis of the drivers and barriers to acceptance of PCIs based on desk research and a pan-European survey conducted in all EU Member States. It also presents two case studies (pilot regions), which include an analysis of the PCI implemented in the respective regions, a mapping of local stakeholders and the level of awareness and acceptance in each region towards transmission development. Building on this analysis, the study develops tailored communication strategies and campaigns designed to further raise awareness and acceptance levels towards PCIs.

The key findings of this study highlight the need for early consultation and engagement of citizens, local communities and stakeholders in the design phase of a PCI. Their continuous involvement throughout the entire implementation process is also found important. The main aim is to ensure the decision-making process includes all parties that will be impacted by the project and provide them a platform for sharing their views, opinions, objections and alternatives that might need to be followed. Although project promoters have the obligation to carry out public consultations within the framework of PCI implementation in line with European and national legislation and standards, the study concluded that the timing of such consultations as well as their systematic application throughout all the implementation phases of the projects are key to ensuring awareness, trust and ultimately acceptance towards PCIs.

¹ CEF ENERGY CALL 2014, https://ec.europa.eu/inea/sites/inea/files/download/calls2014/CEF-energy/cef_energy_2014_call_for_proposals_final.pdf.

² Projects of Common Interest, <https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>.

Executive Summary

*This is the final report of the study titled **Innovative actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects**. Commissioned by the Directorate-General for Energy (DG ENER), the study was assigned to the consortium led by INTRASOFT International and PLANET S.A., along with Navigant, White Research, Entso-E and Valeu in 2019 for 24 months (plus a four-month extension to ensure adequate time for running the campaigns). The aim of the report is to present the results of the empirical work that has been carried out in the context of the study within the 28 months of implementation.*

Context and background

Tapping into the renewable energy potential will require the European Union's electricity infrastructure to be better interconnected and modernised.

Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure (TEN-E Regulation)³ introduced a method for trans-European infrastructure planning. Building on the strengths of regional cooperation, the TEN-E Regulation identifies several energy infrastructure priorities to meet the EU's energy and climate policy objectives in terms of market integration, security of supply and sustainability. In view of implementing this method, regional groups have been established, comprising project promoters, regulators, ministries of the Member States and other relevant stakeholders⁴. This allows for a tailored approach to identifying and supporting the development and construction of the most needed infrastructure projects considered as PCIs⁵.

The concept of PCIs covers transmission lines, pipelines, facilities, equipment and installations falling under the energy infrastructure categories included in the TEN-E Regulation with a significant cross-border impact between at least two Member States. PCIs benefit from streamlined planning and permit granting, lower administrative costs and increased public involvement through consultations, such as measures aimed at maximising their transparency and reducing implementation timeframes. In October 2019, the European Commission published its fourth list of PCIs. This list contains 149 projects: 101 electricity transmission and storage, 5 smart grid deployment, 32 gas, 6 oil and 5 cross-border carbon dioxide networks. The large number of electricity and smart grid projects shows the increasing role of electrification in the energy system and the need for network reinforcements enabling the integration of renewables and facilitating cross-border trade. The fifth PCI list is planned for adoption by the European Commission before the end of 2021 under the existing regulation on Trans-European Energy Networks (TEN-E).⁶

Despite the clear environmental, societal and economic benefits of enhanced interconnections and progress on the regulatory side, cross-border infrastructure projects often face reservations from citizens and other stakeholders that lead to opposition and lack of acceptance of the projects. In most cases, reservations are linked to low levels of trust which result from insufficient information, a lack of early consultation or feelings of being excluded from the decision-making process⁷.

These are challenges that should be addressed in a timely and impactful manner. In order for the EU to fully meet its decarbonisation objective, large investments need to be

³ Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure.

⁴ CEF ENERGY CALL 2014, https://ec.europa.eu/inea/sites/inea/files/download/calls2014/CEF-energy/cef_energy_2014_call_for_proposals_final.pdf.

⁵ Projects of Common Interest, <https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>.

⁶ Europex (Association of European Energy Exchanges), <https://www.europex.org/eulegislation/third-list-of-pcis-2/>.

⁷ Publications Office of the European Union, 'Study on Electricity Infrastructure Developments in Central and South Eastern Europe: Final Report', Website, 21 March 2017, <https://publications.europa.eu/en/publication-detail/-/publication/b4f865d9-0eca-11e7-8a35-01aa75ed71a1/language-en>.

made in new low-carbon technologies, renewable energy, energy efficiency and grid infrastructure. Lack of information, trust and acceptance of trans-European projects can lead to delays in project implementation, project relocation, and even project suspension.

Since investments are made for periods of 20 to 60 years, it is crucial to act immediately and implement all the necessary measures to ensure the smooth implementation of projects related to energy infrastructure. It is also important to ensure the highest possible levels of public understanding, trust and acceptance.

Two previous studies prepared for the European Commission (the first in 2014⁸ and the second in 2017⁹) aimed to facilitate communication about energy infrastructure and help increase public acceptance. The overall aim of the current study was to further develop innovative actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects.

Study objectives and activities

The main objective of this study is to increase public understanding and acceptance towards the development of trans-European energy infrastructure projects (PCIs) in order to ensure the best possible implementation of interconnectors. The overarching goal is to speed up the development of key electricity infrastructure, which is considered necessary for the completion of the EU's internal energy market. This will be realised through improved transparency and communication on the local benefits of these PCIs and by addressing citizens' reservations.

To achieve the aforementioned objectives, a series of activities were performed, including a pan-European analysis of regions in terms of public acceptance. This provided insight into the drivers and barriers to public acceptance, as well as the target groups and specific recommendations on the deployment of communication activities.

Two pilot regions were selected based on specific criteria. Based on the analysis, two region-specific communication campaigns were designed to address grid development issues. At the same time, they offered clarifications on local benefits and concerns in the process of trans-European energy infrastructure development. The activities were designed with the ultimate goal to support engagement at the local level by communicating PCI benefits for citizens and the local community.

As part of the study, a series of activities were undertaken. A summary of these activities follows.

Identification of the main drivers and barriers for public acceptance of energy infrastructure projects and the ranking of regions in the EU based on these drivers. This activity involved a quantitative and a qualitative approach for the identification and selection of the regions.

As a **follow-up**, and based on the ranking of regions in the EU, the following actions were implemented:

- A proposal for the two most relevant regions that have been selected as 'pilot regions' for the planning and implementation of communication activities.
- An analysis of the selected pilot regions and their main drivers and barriers for public acceptance.

⁸ Roland Berger – Strategy Consultants 'Study regarding grid infrastructure development: European strategy for raising public acceptance. European Commission Tender No. ENER/B1/2013/371: Revised Final Report', 2014, https://ec.europa.eu/energy/sites/ener/files/documents/20140618_grid_toolkit_report.pdf.

⁹ Publications Office of the European Union, 'Follow-up actions to increase awareness of existing insights and tools to improve stakeholder engagement and public acceptance of infrastructure development: Final report – Study', Website, 26 March 2018, <https://op.europa.eu/en/publication-detail/-/publication/166dceee-49c5-11e8-be1d-01aa75ed71a1/language-en>.

- An assessment of the most appropriate timing for project promoters to roll out public acceptance actions in order to maximise the impact of these actions.
- The setup of a Steering Committee as designated core network of campaign associates (ENTSO-E, Transmission System Operators-TSOs, and NGOs) to better coordinate national/regional communication activities.

The **design and development** of a ready-to-use communication package (dedicated to project promoters) includes the following:

- Presentation templates, leaflets and flyers to be adapted and ready for printing.
- An engagement book for project promoters, aiming to support them in the process of involving citizens and local stakeholders through communication activities.
- A factsheet with Questions & Answers about PCIs, as well as their main objectives and benefits.

The **design** of a communication campaign for each pilot region. The campaign will be developed in English and in the pilot regions' official language in order to ensure widespread dissemination about the local grid infrastructure. The campaign also features a tailored strategy for stakeholder engagement, including but not limited to:

- amplification of the stakeholder mapping.
- identification of local communication and media channels.
- identification of synergies with the activities of Commission Representations (and possibly also the EDICs¹⁰) in the regions.

Development of a media outreach plan and corresponding communication materials in English and the pilot regions official language including, but not limited to:

- Local newspaper editorials (print and online).
- Radio advertisements.
- Visuals for social media use.
- Proposal for updates of the current infrastructure webpage under the existing DG ENER website¹¹ and corresponding webpages on public acceptance.

This is in line with the ongoing digital transformation of the Europa website overseen by DG COMM.

Conclusions and recommendations

Taking stock of the experience gained during the implementation phase, the study has formulated a number of conclusions and suggestions to be considered for future communication, awareness raising and public engagement activities directly relevant to improving the trust and public acceptance of PCIs.

Overall, designing, organising and implementing communication and awareness raising activities, which involve direct engagement with the public, can be challenging and require greater attention and focus.

The aim should be to offer transparency and clarity on the key messages regarding the PCI objectives, the benefits and the positive impact for the local community. This should be done, always bearing in mind the concerns and doubts raised by the local stakeholders and identifying ways for addressing them while keeping them informed and up to date. Local actors should have the right to be informed and to participate in the decision-making process securing trust and acceptance at all levels of implementation through open and honest dialogue.

¹⁰ Europa, Meet us: https://europa.eu/european-union/contact/meet-us_en.

¹¹ European Commission, Energy Infrastructure: <https://ec.europa.eu/energy/en/topics/infrastructure>.

Overall, successful communication campaigns and public engagement activities hinge on the following:

- Setting clear campaign objective (i.e. improve public acceptance of PCIs).
- Performing extensive research and ensuring there is a good understanding of the issues at hand.
- Outlining the goals and objectives that the campaign and the communication activities should achieve so that the formulation of the messages can be on point in a concise and clear manner.
- Identifying the objectives and key messages in order to allow the campaign design to be completed efficiently, effectively and normally. These should not be changed once the campaign is ready to launch.

While working on the communication activities, it is essential to consider the following:

- Know your audience and address the right stakeholders.
- Identify efficient ways for involving your target audience by providing a platform for them to share their concerns and viewpoints as well as participate in the decision-making process.
- Carefully select the campaign messages to ensure they are accurate, informative and non-technical, and that they fully meet the needs of the specific audiences.
- Select the mix of media channels that will be used to disseminate the messages of the campaign. Usually, a mix of digital and more traditional media is proposed, but it is advisable to customise based on the actual needs of the audiences targeted.
- Be ready to adapt. Amendments may be required in the timing, the means and the tools used for the campaign. Changes should be foreseen. As such, flexibility is essential to ensure that a campaign is impactful.
- Set up the team with all required expertise and ensure clear roles, tasks and responsibilities have been assigned. Central management of a campaign is always more efficient and effective as it allows linear overview of all activities and easier adaptation according to the needs.

In conclusion, all communication activities should be considered part of a wider learning process. While different audiences require different approaches and each campaign has unique characteristics (with its own set of challenges and risks), there are numerous opportunities to enhance collaboration with relevant stakeholders.

1. Introduction

This chapter presents the scope and structure of this report and explains the background and focus of this study.

1.1. Scope of this report

This document presents the results of the empirical work carried out in the context of the Directorate-General for Energy (DG ENER) study **Innovative actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects**. It provides the background of the study and the main rationale behind it. It also summarises the methodological approach adopted to achieve the study objectives, the empirical evidence that was gathered and the analysis that has been conducted throughout the different tasks implemented. In terms of geographical scope, it includes an analysis of the empirical evidence that has been collected at EU level. It also includes a more focused analysis of the two pilot regions selected to apply a communication strategy and run communication campaigns at local level.

1.2. Structure of this report

The rest of the document is structured as follows:

- **Introduction** – In the rest of this chapter, the **background** of the study is described for the reader to become familiar with the information necessary for understanding it. The section concludes stating the **focus of the study**, followed by a detailed description of the undertaken activities. The section also includes the contingency measures put in place to address the risks and threats faced throughout the duration of the planning and implementation of communication activities, taking into account the limitations faced due to the COVID-19 outbreak.
- **Approach and Methodology** – In this chapter, the reader is presented with the methodology followed concerning the tasks that have already been completed.
- **Identification, definition and classification of drivers for public acceptance of energy infrastructure projects** – This chapter presents the outcomes concerning the public acceptance of PCIs and the drivers but also barriers for public acceptance (Task 1).
- **Ranking and selection of pilot regions** – This is a presentation of the ranking of regions (according to Task 1 results, and the selection of pilot regions under Task 2).
- **Analysis of pilot regions** – This is an analysis of pilot regions and the findings of the focused research per region which took place during Task 2.
- **Steering Committee** – This chapter presents the process for recruiting the Steering Committee members and organising their participation to the study activities.
- **Communication Activities** – The focus of this chapter is the communication planning and respective activities undertaken within the framework of this study.
- **ANNEXES** – Supporting material and evidence (as referenced throughout the document) are included as separate documents.

1.3. Background of the project

The EU aims to become climate-neutral by 2050, in line with its commitment under the Paris Agreement¹². The European Commission is continually working on achieving the

¹² European Commission, Climate Action, https://ec.europa.eu/clima/policies/international/negotiations/paris_en.

EU's long-term vision for climate-neutrality. The European Green Deal¹³ and almost all EU policies and regulatory efforts are aligned towards the objective to keep global temperature increase under 2°C and pursue efforts to keep it to 1.5°C.

At the heart of this energy transition will be the increase in the share of renewables. The variability in power generation of renewable energy sources can be compensated for by producing surplus energy when available, and then storing this surplus, in order to be used when insufficient electricity is generated. Furthermore, better and increased interconnections will provide improved security of supply. Also, a larger energy market will offer benefits, such as enhanced system adequacy and lower system costs resulting in lower energy prices.

The European Commission recognises that the electricity infrastructure needs to be better interconnected and modernised across Europe in order to tap into the important potential of renewable energy. Regulation (EU) No 347/2013¹⁴ on guidelines for trans-European energy infrastructure (TEN-E Regulation) has set out a method for trans-European infrastructure planning, building on the strengths of regional cooperation. The TEN-E Regulation identifies several energy infrastructure priorities to meet the EU's energy and climate policy objectives in terms of market integration, the security of supply and sustainability. In view of implementing this method, regional groups have been established, comprising project promoters, regulators, ministries of the Member States and other relevant stakeholders¹⁵. This allows for a tailored approach to identifying and supporting the development and construction of the most needed Projects of Common Interest (PCIs)¹⁶ which are key cross-border infrastructure projects that link the energy systems of EU countries.

The concept of PCIs covers transmission lines, pipelines, facilities, equipment and installations falling under the energy infrastructure categories laid down in the TEN-E Regulation with a significant cross-border impact between at least two Member States. PCIs benefit from streamlined planning and permit granting, lower administrative costs and increased public involvement through consultations, i.e. measures to maximise their transparency and reduce implementation timeframes. In October 2019, the European Commission published its fourth list of PCIs, which contains 149 projects: 101 electricity transmission and storage, 5 smart grid deployment, 32 gas, 6 oil and 5 cross-border carbon dioxide networks. The number of electricity and smart grid projects shows the increasing role of renewable electricity in the energy system and the need for network reinforcements enabling the integration of renewables and more cross-border trade.

Despite the clear environmental, societal and economic benefits of enhanced interconnection and progress on the regulatory side, cross-border infrastructure projects often face reservations from citizens and other stakeholders. These reservations are usually the result of low levels of trust, typically caused by insufficient information, lack of early consultation or feelings of being excluded from the decision-making process¹⁷.

It is important to address these challenges in a timely manner. For the full decarbonisation objective of the EU to be achieved, large investments need to be made in new low-carbon technologies, renewable energy, energy efficiency, and grid infrastructure. Lack of information, trust and acceptance of trans-European projects can lead to delays in project implementation, project relocation and even project suspension.

¹³ COM(2019) 640 final, https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf.

¹⁴ Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013 on guidelines for trans-European energy infrastructure, <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:115:0039:0075:EN:PDF>.

¹⁵ CEF ENERGY CALL 2014, https://ec.europa.eu/inea/sites/inea/files/download/calls2014/CEF-energy/cef_energy_2014_call_for_proposals_final.pdf.

¹⁶ Projects of Common Interest, <https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>.

¹⁷ Publications Office of the European Union, 'Study on Electricity Infrastructure Developments in Central and South Eastern Europe: Final Report', Website, 21 March 2017, <https://publications.europa.eu/en/publication-detail/-/publication/b4f865d9-0eca-11e7-8a35-01aa75ed71a1/language-en>.

Since investments are made for periods of 20 to 60 years, it is crucial to act immediately and take all the necessary measures to ensure the smooth implementation of projects related to energy infrastructure. It is important for the highest possible levels of public understanding, trust and acceptance to be reached.

In light of this, the European Commission commissioned two studies (the first in 2014¹⁸ and the second in 2017¹⁹) with the goal of facilitating communication about energy infrastructure and to increase public acceptance. This study has been built on the general context of trans-European energy infrastructure projects to further develop innovative actions and strategies and boost public awareness, trust and acceptance.

1.4. The focus of this study

The objective of this study is to 'increase public understanding and acceptance towards the development of trans-European energy infrastructure projects (PCIs)' and ensure the best possible implementation of interconnectors. This would speed up the implementation of key electricity infrastructure necessary for the completion of the EU's internal energy market through improved transparency and communication on the local benefits of these PCIs. It would also serve to address citizens' reservations.

Specifically, an analysis of regions in terms of public acceptance was delivered and provided insight into the drivers and barriers of public acceptance, as well as the target groups and specific recommendations for the deployment of communication activities. Two pilot regions were selected for further in-depth analysis. As a result, two region-specific communication campaigns were designed to address grid development issues. At the same time, the campaigns offered clarifications on local benefits and concerns in the process of trans-European energy infrastructure development. The activities were designed with the ultimate goal to support engagement at the local level by communicating benefits for citizens and the local community.

The main tasks undertaken within the frame of this study were as follows:

Task 1: Identification of main drivers and barriers for public acceptance of energy infrastructure projects and ranking of regions in the EU based on these drivers. This activity involved a quantitative and a qualitative approach for the identification and selection of the regions.

Task 2: Selection and analysis of two pilot regions based on the ranking of regions performed in the previous task. The task involved:

- Preparation of a proposal for the two most relevant regions that have been selected as 'pilot regions' for the planning and implementation of communication activities.
- Analysis of pilot regions and their main drivers and barriers for public acceptance.
- Definition of the most appropriate timing for project promoters to roll-out public acceptance actions as to maximise the impact of these actions.

Task 3: Creation of a Steering Committee as designated core network of campaign associates (ENTSO-E, Transmission System Operators-TSOs and NGOs) to improve coordination of national and regional communication activities.

Task 4: Design and development of a 'ready to use' communication package dedicated to project promoters, including:

¹⁸ Roland Berger – Strategy Consultants 'Study regarding grid infrastructure development: European strategy for raising public acceptance. European Commission Tender No. ENER/B1/2013/371: Revised Final Report', 2014, https://ec.europa.eu/energy/sites/ener/files/documents/20140618_grid_toolkit_report.pdf.

¹⁹ Publications Office of the European Union, 'Follow-up actions to increase awareness of existing insights and tools to improve stakeholder engagement and public acceptance of infrastructure development: Final report – Study', Website, 26 March 2018, <https://op.europa.eu/en/publication-detail/-/publication/166dceee-49c5-11e8-be1d-01aa75ed71a1/language-en>.

- Templates for presentations, leaflets and flyers to be adapted and ready to print.
- An engagement book, for project promoters, aiming to support them in the process of involving citizens and local stakeholders through communication activities.
- Factsheet with Questions and Answers about PCIs, their objectives and benefits.

Task 5: Design of a communication campaign for each pilot region in English and in the pilot regions' official language. The aim was to communicate about the local grid infrastructure and provide a tailored strategy for stakeholder engagement. This included the following:

- Amplification of existing stakeholder Mapping.
- Identification of local communication and media channels.
- Identification of synergies with the activities of Commission Representations (and possibly also the EDICs²⁰) in the regions.

Task 6: Development of a media outreach plan and corresponding communication materials in English and the pilot region's official language including:

- Local newspaper editorials (print and online).
- Radio advertisements.
- Visuals for social media use.

Task 7: Proposal for updates of the current infrastructure webpage under the existing DG ENER website²¹ and corresponding webpages on public acceptance. This was in line with the ongoing digital transformation of the Europa website carried out under the supervision of DG COMM.

Task 8: Enhancing the use of the Confluence Platform. This platform, however, was not used as the collaborative tool would require too much effort and resources and surpass the timeframe of this study.

Task 9: Energy Infrastructure Forum working session. This task was not accomplished due to restrictions imposed during the COVID-19 pandemic.

Task 10: Study Closure, including delivery of all outputs of the study, preparation and submission of the final report and presentation of conclusions and lessons learned from the implementation of the communication campaign and related stakeholder engagement activities.

1.5. COVID-19 & relevant contingencies

During the preparation/setup phase of the two campaigns, the implementation of the study was challenged by the restrictions imposed during the COVID-19 pandemic. Even though a generic contingency plan was in place for the study, a new one was developed to take into account the challenges and limitations posed by the pandemic.

The need for a specific contingency plan to deal with the new reality of the pandemic was identified as a necessity from the early stages of implementation. One of the targeted locations (Northern Italy) was highly affected by COVID-19 at the early stages of the pandemic. Consequently, a preliminary assessment of risks related to COVID-19 with respect to the campaign activities and deliverables was carried out. Potential alternatives were examined. A more in-depth elaboration of the contingency plan was included in the two communication strategy documents, considering the pandemic would continue to be a high-risk factor during the implementation of the campaigns.

²⁰ Europa, Meet us, <https://europa.eu/european-union/contact/meet-us.en>.

²¹ European Commission, Energy Infrastructure, <https://ec.europa.eu/energy/en/topics/infrastructure>.

The table below presents the communication activities and the risks associated with the COVID-19 pandemic. It also presents the alternative planning undertaken in efforts to maintain the communication objectives without hampering effectiveness.

Table 1: Contingency planning

Contingency planning		
Communication activity/Deliverable	Risk	Alternative
Printed toolkit	<p>The printed toolkit included various materials, such as flyers and posters for dissemination to project promoters.</p> <p>There was a risk that project promoters would not be able to use this material, or to physically distribute it to the public as physical events would be cancelled or postponed</p>	Digital versions and ready-for-print files were provided to project promoters to ensure the material is available for use at present and future activities.
Digital toolkit	No risk identified.	
Engagement book	No risk identified.	
Factsheet for citizens	These are printed factsheets for the public. The factsheets included FAQs and most common concerns during consultations. There was a risk these printed factsheets would not be possible to disseminate due to lack of physical events.	The factsheets were produced as web material and published on DG ENER's website. Specific calls to action through social media informed citizens and directed them to the website for download purposes.
Citizens' dialogues	Face-to-face meetings with citizens were initially planned but postponed due to the pandemic and the restrictions due to the pandemic.	The organisation of virtual events and webinars was suggested.
Webinars	No risk identified.	
Out-of-home advertising	No risk identified.	
Press kit	No risk identified.	
Advertorials	No risk identified.	
Radio ads	No risk identified.	

2. Approach and Methodology

This chapter presents the conceptual approach and the methodology that was followed during the empirical work carried out.

For the successful completion of this study, a multilevel methodological approach was followed, taking into account the necessity to diversify data collection means, to leverage results from one task to develop subsequent tasks, and to involve the key stakeholders identified.

To ensure the thoroughness of research and guarantee high-quality results, the study has employed a mixture of data collection techniques that complement each other. The data collection techniques include desk research, expert validation webinars, an EU-wide level survey and interviews. These are described in detail below.

Desk research

The data collection phase was initiated with extensive desk research to identify and define factors of public acceptance. One detail worth highlighting is that the focus was on both the drivers and barriers of public acceptance. Desk research was conducted in two phases²²: on an EU-wide level (Task 1: Identifying drivers and ranking regions) and at a later stage, on the selected pilot regions level (Task 2: Selection of pilot regions and in-depth analysis).

On an EU-wide level, to identify the factors affecting public acceptance of PCIs, approximately 95 sources were reviewed. The sources covered different types of documents, including academic and policy papers, as well as project reports, online news articles and project websites²³, covering the EU's geographical scope. Of these 95 sources, 65 were further analysed. The remaining 30 were deemed less relevant (due mainly to their geographical scope or questionable comparability).

Member States were represented, to various degrees, with a number of sources citing precise examples from certain Member States²⁴. Conversely, a few Member States were only briefly mentioned, without specific case studies or examples²⁵.

In a later phase, following careful selection of the two pilot regions, in-depth desk research was carried out. It focussed on the two selected pilot regions to provide thorough input to feed into the Confluence Platform and the database of stakeholders and their activities (Task 3: Review and redevelopment of Steering Committee), the design of the communication package (Task 4: Design and development of ready-to-use communication package), and the DG ENER Infrastructure webpage (Task 7: Update DG ENER Infrastructure page). The aim was to gather precise and incisive information about the selected pilot regions, with the quality and validity of the data considered matters of prime concern.

Specifically, the focus was on gathering information regarding the drivers of public acceptance of trans-European Energy Infrastructure projects, the grid development of the selected pilot regions, the timing and volume of public consultations, the identification of key influencers and finally, the mapping of effective and less effective practices in engaging with stakeholders.

To gather all the relevant information systematically for the pilot regions and the PCIs involved, conventional search engines were used, such as Google and Google Scholar²⁶.

²² To distinguish the desk research phases we refer to the first phase on EU – wide level as desk research, while the second phase on the selected pilot regions level as in-depth desk research.

²³ Available on demand.

²⁴ This is the case for France, Germany and the Netherlands for instance.

²⁵ The cases of Croatia, Bulgaria, Slovenia and Slovakia for instance.

Furthermore, to guarantee an accurate and complete view of the PCIs and the pilot regions, the websites of local stakeholders were visited for expert reports. As such, detailed reports were searched as well as studies from the industry, public authorities, Non-Governmental Organisations (NGOs), organisations and academic resources and reviewed local, regional and national press articles.

The review of all the sources provided a complete overview of the PCIs and the target groups of the selected regions.

Expert validation webinar

To complement the information derived from desk research, an expert validation process was implemented during Task 1, in the form of interactive webinars. In particular, the expert validation of webinars allowed for the confirmation of the main drivers and barriers for public acceptance collected during the desk research phase. It also ensured that no relevant factors had been excluded by gathering experienced professionals and asking for their insights and expertise. The validation of desk research results was the starting point for the study to design an EU-wide level survey exploring public acceptance of PCIs for each Member State in more detail.

Two webinars were organised in mid-February 2019 to accommodate the schedule of the 12 experts who expressed their willingness to participate.

Ahead of the webinar, a briefing note²⁷ was sent to the experts explaining the reasons for the organisation of the webinar and inviting them to contribute. The brief also presented the findings of the desk research. Once the webinar was scheduled, the link to the join the meeting was sent to participants.

An expert validation webinar report was submitted to the Commission at the start of March 2019. It was consulted for further details on the organisation of the webinars.

EU-wide survey

To gain insights into the main drivers of public acceptance of trans-European energy infrastructure projects, an extensive survey was designed. The findings of this EU-level survey provided information on the importance given to the identified drivers. In other words, it provided an indication of which drivers have an important (statistically significant) effect on public acceptance. The findings also supported the subsequent ranking of regions based on the scores of specific variables. Through regression modelling, the importance of drivers in shaping the acceptance and understanding of the public quantitatively was assessed. The results indicated which drivers actually have an impact, how strong this impact is and whether other interactions are linked to this driver. This helped to better define target segments and shape the messages to be used according to the region.

The survey was set up in Sawtooth²⁸, an advanced software that allows for conjoint analysis, which is the optimal research analysis method for understanding how people make complex choices²⁹. Once the questionnaire had been approved by the Commission, the survey³⁰ was Alpha- and Beta³¹-tested online, refined and launched in mid-March

²⁶Google scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines.

²⁷ See Annex A – Brief sent to experts.

²⁸ Sawtooth is a sophisticated, versatile, yet easy-to-use online research and data collection tool which includes advanced features, <https://www.sawtoothsoftware.com/>.

²⁹ For details, <https://www.sawtoothsoftware.com/products/conjoint-choice-analysis>.

³⁰ See Annex B.1 Survey questionnaire.

³¹ Alpha testing is a type of acceptance testing. It's performed to detect all possible issues/bugs before releasing the product to everyday users or the public. The focus of this testing is to simulate real users by using a black box and white box techniques. The aim is to carry out the tasks that a typical user might perform. Alpha testing is carried out in a lab environment and before Beta testing, and usually the testers are internal employees of the organisation.

2019, on the crowdsourcing platform Clickworker³². The survey addressed the general public to explore the public acceptance of PCIs in energy infrastructure. The quality of responses was controlled through *ad hoc* attention questions (including a 'check question' that was intended to disqualify participants who did not actually read the questions carefully) and monitoring tools. The survey was kept open until mid-May 2019. During data collection, responses were monitored regularly to ensure a balanced geographical spread. Eventually, 5 242 people took part in the survey. However, incomplete responses were discarded (709) as well as those of respondents who failed the 'check question' (808). Finally, respondents were filtered based on their completion time: all outliers with a completion time below average were excluded as speeders (757). After data cleaning, 2 968 responses were retained (43.38 % exclusion rate)³³. Results were analysed with Sawtooth built-in analysis tools and SPSS³⁴.

The survey included four main components:

1. Public acceptance: quantification
2. Drivers and barriers: quantification and ranking
3. Independent variables: familiarity with PCIs, peer approval, trust, environmental knowledge
4. Demographics and additional variables

The first component included the key questions that were subsequently combined to develop the dependent variable of the survey (i.e. public acceptance of PCIs) plus a set of questions aimed at exploring the level of public acceptance of PCIs and how this changes in relation to other variables. The first component also assessed perceptions of PCIs according to a 1-7 Likert scale³⁵ and looked at the relationship between acceptance and the specific type of energy infrastructure projects.

The second component included two Max-Diff³⁶ exercises whose purpose was to quantify and rank respondents' preferences in terms of drivers that can increase public acceptance of PCIs and factors that can hinder acceptance (drivers).

The Beta Testing of a product is performed by 'real users' of the software application in a 'real environment' and can be considered as a form of external User Acceptance Testing. The Beta version of the software is released to a limited number of end-users of the product to obtain direct feedback on the product quality which is a major advantage of Beta Testing and helps to test the product in an end user's environment.

³² This was selected as the most efficient way to ensure a representative sample of respondents across Europe since respondents receive a small compensation for completing tasks, so they have an incentive to go through the survey. For details see: <https://www.clickworker.com/>. Furthermore, crowdsourcing platforms offer some additional methodological advantages, namely anonymity (therefore low social desirability bias), completion speed, and population diversity.

³³ The sample is balanced in terms of gender (48.1 % male, 51.4 % female, 0.5 % not disclosed). Some unbalances exist as far as the geographical spread is concerned. During the data collection phase, the researchers tried to increase the response rate for countries that were lacking respondents, namely Bulgaria, Croatia, Cyprus, Estonia, Latvia, Lithuania, Luxembourg, Malta, Slovenia and Slovakia by opening the survey on M-Turk, another crowdsourcing platform with an international audience, but the sample per country did not increase enough to be considered representative. Therefore, during the analysis phase, these countries were coded as missing values and not included in the models since the limited number of responses cannot be considered representative of the country population.

³⁴ SPSS Statistics is a powerful statistical software platform, <https://www.ibm.com/products/spss-statistics>.

³⁵ Likert, R. (1932), "A Technique for the Measurement of Attitudes". *Archives of Psychology*. 140: 1-55.

The Likert scale is named for American social scientist [Rensis Likert](#), who devised the approach in 1932. In a nutshell, Likert scale is a type of rating scale, used in questionnaires, that is designed to measure people's attitudes, opinions, or perceptions. Subjects choose from a range of possible responses to a specific question or statement; responses typically include 'strongly agree', 'agree', 'neutral', 'disagree', and 'strongly disagree'. Often, the categories of response are coded numerically, in which case the numerical values must be defined for that specific study, such as 1 = strongly agree, 2 = agree, and so on. Scaling answers increases the nuances of the analysis and does not limit it to binary (yes/no) and absolute dimensions.

³⁶ Max-Diff is a form of conjoint analysis in which respondents evaluate all possible pairs of items within the displayed set and choose the pair that reflects the maximum difference in preference or importance. More precisely, Max-Diff involves respondents repeatedly indicating the best and worst options out of a given set. As respondents progress through the sets, the researcher gets a fuller picture of what is most

The third component included some additional elements tested as independent variables since the literature suggested they might affect the level of public acceptance. These additional variables included familiarity with PCIs (both as a concept and in terms of proximity of the place of residence to implementation areas), peer approval (i.e. the influence that the perception friends, family and neighbours have of PCIs may play on one's own level of acceptance), trust in the actors implementing the project and the knowledge respondents have of environmental and energy-related issues. This component included a control question to eliminate respondents who were not answering the questionnaire attentively.

The fourth component included several questions about the profile of the respondent, such as gender, age, place of living (country, type of location – i.e. city, suburb, rural area – and type of dwelling – i.e. rented, owned, other), educational background, occupational status, annual income. These demographics and auxiliary variables (anything that may be driving or hindering public acceptance of PCIs) were used to check for possible correlations with the level of public acceptance of PCIs.

The survey ended with a thank you note and a final question on the respondent's interest in receiving additional information about PCIs. This question was included as it was considered a proxy for the respondents' interest in the topic and was used to check its correlation with other variables, and especially the dependent one (public acceptance).

Besides descriptive analytics (e.g. means), correlations between variables were tested, and used the statistically significant ones to give more insights into the topic of public acceptance of PCIs. Furthermore, the survey was developed to offer advanced result components, and especially inferential analytics to uncover drivers for and barriers to key variables (e.g. what drives or limits respondents' acceptance). Through latent class and clustering techniques, hidden groups of stakeholders were investigated. These are groups that are based on similar preferences/priorities and which consider certain aspects differently than other groups. These advanced components rely on mainstream research techniques (quantitative modelling, clustering algorithms) which provide considerable empirical evidence to our findings (vs *ad hoc* analytics or often misleading basic statistics like means/medians).

The survey results were enriched using qualitative data from desk research and interviews. Based on the aggregated findings, it was possible to select the two regions that hold potential for the implementation of the communication campaign.

Interviews

To complement the data collected with the previous methodological tools, a series of interviews were conducted. These interviews took place in two phases³⁷. The first was on an EU-wide level (Task 1), and, at a later stage, on a pilot region level, once the two pilot regions were selected (Task 2).

On an EU-wide level, interviews mainly aimed at asking project promoters across Europe about the difficulties they encounter when designing and implementing PCIs. On an *ad hoc* basis, other stakeholders were also interviewed, for instance, representatives of relevant associations, or representatives of related non-governmental organisations. An interview guide was designed based on results from the expert validation webinar and preliminary findings from the pan-European survey to gather relevant information. The interviews with project promoters complement these findings by providing information from the point of view of the professionals promoting the PCIs, to better understand what type of barriers they encounter, and the measures they may have taken to increase

important and what is least important in situations where trade-offs and choices are required. This means that one does not know whether a factor is a driver or barrier as it would be the case with traditional rating scales (absolute importance), but also gets an understanding of how important it is compared to other factors (relative importance), <https://www.sawtoothsoftware.com/products/maxdiff-software>.

³⁷ Similar to the two phases of desk research, here we distinguish between the interviews on an EU-wide level and the in-depth interviews in the selected pilot regions.

the level of public acceptance. The interviews provide indications on the level of public acceptance of PCIs by European regions. Geographical balance was ensured by interviewing experts across the European Union. The list of interviewees contacted was obtained from the target group identification that took place during the desk research on an EU-wide level.

The interview guide was drafted based on the findings of desk research, the results of the expert validation webinar and the preliminary results of the pan-European survey. This ensured the focus of the interviews was relevant. The interview guide was semi-structured, which allowed flexibility in the order in which questions are asked, meaning that the interview guide mainly supported the interviewers in directing the discussions and ensuring that all the points were covered. The interview guide as forwarded to all interviewees of Task 1 is annexed to this document³⁸.

While the initial target for the interviews on EU-wide level was at least two interviews per Member State, this was re-evaluated for various reasons. One reason was the withdrawal of the United Kingdom from the EU. Also, in certain countries, there are no PCIs (Luxembourg is an example), or there are a very limited number of PCIs (Malta, for instance, has only one PCI). Based on these considerations, a new target was set to conduct 50 interviews. The majority of the interviews lasted one hour, which exceeds the anticipated 30 minutes. The interviews lasted longer than expected because the project promoters who eventually participated in this phase, enthusiastically shared their experience and provided a great deal of information.

In a few cases, impediments such as time constraints hindered the participation of project promoters in the interviews. With the assistance of the Joint Research Centre, which provided additional useful contacts, it was possible to conduct interviews with project promoters in 22 Member States. This ensured a balanced geographical coverage. Moreover, many of the experts interviewed had extensive knowledge of PCIs in different countries, which helped to gain further insight. The list of PCIs whose project promoters interviewed during Task 1 is annexed to this document³⁹.

The interview process was launched in mid-March 2019 by reaching out to potential interviewees. The interviews were scheduled in April and May 2019.

On a pilot regional level, a series of in-depth interviews were conducted to complement data collected during the in-depth desk research of the selected pilot regions. The objective of the in-depth interviews was to identify the challenges encountered during the communication activities aimed at raising public awareness and promoting ongoing PCIs in the selected pilot regions. Therefore, the target group for the interviews were the project promoters, public authorities of the relevant areas and other stakeholders, e.g. representatives of related associations. The list of interviewees was drawn on the basis of the target group identification that took place during the in-depth desk research of the selected pilot regions.

For the validation of the relevant information analysed for the two pilot regions, a second interview guide was designed for each pilot region, based on the preliminary findings of the in-depth desk research. This ensured the right focus of the interviews. As in the previous phase, the interview guide was semi-structured so as to direct the discussions and ensure all the points were covered. The interview guides, as forwarded to all interviewees in each region during Task 2, are annexed to this document⁴⁰.

The interviews with project promoters from each pilot region complemented the previous findings by providing additional information. The challenges encountered during the planning and implementation of the projects were described, along with the reasoning of

³⁸ Annex – B.3.

³⁹ Annex – B.4.

⁴⁰ Annex – B.5.1 Pilot Region: North – East, Ireland and Annex – B.5.2 Pilot Region: Friuli – Venezia – Giulia, Italy.

setting a specific timing for public consultations and communication activities. In addition, the interviews with public authorities, elected representatives and representatives from the relevant municipalities provided a thorough understanding of each region and the drivers and barriers of public acceptance per region. The interviews were conducted by telephone and on-site in order to meet the interviewees' busy schedules and facilitate the process.

The target of 30 interviews was met. The majority of the interviews ran longer than the scheduled 30 minutes. This was mainly due to the willingness of the project promoters and the relevant stakeholders to share their experiences and views by providing vital information.

The recruitment of interviewees in the pilot regional level started in October 2019. The first interviews were held in November 2019. The entire process was completed in December 2019 with an additional onsite meeting/consultation that took place in Paluzza (Italy) on 9 January 2020.

General Data Protection Regulation (GDPR)

To comply with the EU General Data Protection Regulation (GDPR), a privacy notice and subject consent form were sent to all potential interviewees (at EU-wide level and pilot regional level), detailing the purpose of collecting and processing their personal data. All interviewees submitted the form prior to the interviews. The forms were carefully recorded and filed. A subject request form was also sent to the interviewees, which is an obligation under the GDPR, informing interviewees of their rights and how to send any requests regarding the modification or deletion of their data.

Steering Committee

The purpose for setting up the Steering Committee was to recruit members from the pilot regions.

Following up on the completion of Tasks 1 and 2, the study focused on the tasks relevant to the communication activities. As described in section 7 of the current document, the in-depth research and interviews conducted during Task 2 fed into the formulation of key messages and concepts that were utilised for the campaigns in the pilot regions. The campaigns, which were initially scheduled to roll out at the start of the summer of 2020, commenced during the first four months of 2021.

3. Identification, definition and classification of drivers for public acceptance of energy infrastructure projects

This chapter presents the combined results obtained from the different means of data collection: desk research, expert validation webinar, survey and interviews concerning the drivers for public acceptance of energy infrastructure projects and specifically Projects of Common Interest on an EU – wide level.

3.1. Identification of drivers and barriers for public acceptance of energy infrastructure projects

The identification of drivers and barriers influencing public acceptance of energy infrastructure projects and specifically PCIs started with the desk research and the reviewing and analysis of relevant studies and reports, covering the European Union's geographical scope (see Section 2 – Desk Research). The information collected was further complemented through two expert validation webinars (see Section 2 – Expert validation webinar), which allowed:

- firstly, to confirm the comprehensiveness of the pool of drivers and to substantiate the main identified drivers of public acceptance based on the experts' insights and experience, and
- Secondly, to design the pan-European survey accordingly (see Section 2 – Pan-European Survey).

Finally, through a series of interviews with selected stakeholders (see Section 2 – Interviews), important qualitative input was gathered to complement the data collected and corroborate the preliminary findings up until that point. The analysis of the data collected, resulted in the following lists, referring to the drivers of public acceptance and the barriers that limit public acceptance of PCIs.

The **drivers** of public acceptance include:

- Transparency and fairness of process
- Involvement of residents in decision making
- Siting of the infrastructure
- Awareness of the environmental benefits
- Positive impact on local economy
- Involvement of local organisations
- Use of a familiar technology
- Energy supply security
- Trust in investors and project promoters.

The **barriers** of public acceptance include:

- Lack of involvement of residents in decision making
- Lack of transparent communication
- Unfair distribution of costs and benefits
- Impact on landscape
- Noise, malodour or other nuisances
- Health and safety
- Impact on air and water quality
- Impact on personal comfort.

The next step was the quantification of the level of public acceptance of PCIs and the analysis of the relative importance of the drivers and barriers of public acceptance at European level as presented in the following Section 3.2 and 3.3, respectively.

3.2. Public acceptance of Projects of Common Interest

Defining the dependent variable

Different definitions of public acceptance exist in the literature and no standard definition has been found yet⁴¹. To account for this discrepancy in the quantitative part, a dependent variable was developed that included both the dimension of acceptance and that of support. As mentioned in Hofman (2015)⁴², "Social or public acceptance is generally defined, as a positive attitude towards a technology or measure, which leads to supporting behaviour if needed or requested, and the counteracting of resistance by others. Acceptance that only covers an attitude without supportive behaviour may be described as 'tolerance'." Therefore, the variable "public acceptance of Projects of Common Interest" was created by combining the following three questionnaire items:

- How likely is it for you to accept a new Project of Common Interest in the area where you live?
- How likely is it for you to support a new Project of Common Interest in the area where you live?
- I am ready to support the rollout of Projects of Common Interest in the energy sector.

Thus, it is possible to measure public acceptance in terms of how likely it is to accept PCIs, support them and how ready the respondent is to support their rollout. Taking zero as the mean value, the level of public acceptance has a range of 4.28, varying between a minimum of -2.63 and a maximum of 1.64. The descriptive statistics follow⁴³:

Table 2. Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Public Acceptance of PCIs	2968	4.28	-2.63	1.64	.0000	.84537
Valid N (listwise)	2968					

Inferential analysis: public acceptance and independent variables

The value of the range and the mean value of public acceptance have limited informative power if taken at face value. Consequently, an inferential analysis was performed to gather more meaningful insights into the relation of public acceptance and additional variables. A linear regression model was used to test a number of potential factors (predictors) that were expected to significantly affect public acceptance. The model used was found to have a significant power: more than 51% of the variance in the level of public acceptance of PCIs can be explained by the factors included in the model (observe the Adjusted R-squared in the model summary in **Error! Not a valid bookmark self-reference.**).

Table 3. Linear regression model's explanatory power of the dependent variable

Model Summary					
Model	R	R-Squared	Adjusted R-Squared	Std. Error of the Estimate	
1	.718 ^a	.516	.512	.59040	

⁴¹ See, among others:

Batel, S., Devine-Wright, P., and Tangeland, T., 2013, "Social acceptance of low carbon energy and associated infrastructures: A critical discussion", *Energy Policy*, 58: pp. 1-5.

Bertsch, V., Hall, M., Weinhardt, C. and Fichtner, 2016, "Public acceptance and preferences related to renewable energy and grid expansion policy: Empirical insights for Germany", *Energy*, 114, pp. 465-477.

Cohen, J.J., Reichl, J. and Schmidthaler, M., 2014, "Re-focussing research efforts on the public acceptance of energy infrastructure: A critical review", *Energy*, 76: pp. 4-9.

Wüstenhagen, R., Wolsink, M., and Bürer, M.J., 2007, 'Social acceptance of renewable energy innovation: An introduction to the concept', *Energy Policy*, 35: pp. 2683-2691.

⁴² For further information see, Erwin Hofman (2015), "Social Acceptance of Renewable Energy". Climate Policy Info Hub, 18 February 2015. Online available at: <http://climatepolicyinfohub.eu/social-acceptance-renewable-energy>. (accessed 28.02.2020) and references therein.

⁴³ Z-scores (standardised values) were used together with reliability test (Cronbach alpha .800) for the scaling.

In Table 4, we present the variables included in the model, along with their values⁴⁴. Variables that are not statistically significant are “greyed out”. These are factors that do not affect public acceptance: using them as levers to increase acceptance would not be effective nor efficient. Statistically significant variables are highlighted in orange. These are the factors that make a difference in shaping the level of public acceptance of PCIs.

Table 4. Linear regression model

Coefficients ^a			
	Standardized Coefficients	t-value	Sig.
	Beta		
(Constant)		-22.148	.000
Peer Approval of Projects of Common Interest	.213	13.223	.000
Gender	-.029	-2.208	.027
How old are you?	.028	2.083	.037
I know why the creation of an integrated energy market through cross-border cooperation in Europe is needed.	.050	3.118	.002
I know why there is a need to use new technologies and renewables for the energy sector in Europe	.047	2.982	.003
I knew the concept of Project of Common Interest before taking this survey.	-.016	-1.203	.229
How much do you think your opinion matters in the planning of the local energy system?.	.039	2.806	.005
Have you ever campaigned in favour of a Project of Common Interest?	-.037	-2.539	.011
Have you ever campaigned against a Project of Common Interest?.	.015	1.035	.301
How important are the following policy objectives in your opinion? Economic Competitiveness	.019	1.377	.169
How important are the following policy objectives in your opinion? Environmental Sustainability	.037	2.501	.012
How important are the following policy objectives in your opinion? Security of energy supply	.018	1.252	.211
How important are the following policy objectives in your opinion? Subjective Acceptance/Valuation by the Public	-.048	-3.516	.000
Are you affiliated with an environmental organisation?	-.010	-.729	.466
I am willing to pay more to support the rollout of Projects of Common Interest in the energy sector.	.174	11.819	.000
I trust energy infrastructure projects if they are initiated by the community.	.060	4.105	.000
I trust energy infrastructure projects if they are implemented by renown international and national companies	.019	1.168	.243
I trust energy infrastructure projects supported by the European Union.	.072	4.151	.000
Project of Common Interest in energy infrastructure are important to ensure sustainable growth at national level	.156	10.087	.000

⁴⁴ See Annex – B.2. For each *Beta* value (Standardised Coefficient), we report the *t-value*, and the probability (*p*) value, *Sig.* The *p-value* is used to test the null hypothesis for each variable, H_0 : the coefficient is equal to zero (not statistically significant) versus the alternative H_a : the coefficient is not equal to zero (statistically significant). If the *p-value* is less than the significance level then we can reject the null hypothesis, H_0 , and accept the alternative, H_a . The significance level we consider here is equal to 0.05. We could test the null hypothesis using the *t-value* for each coefficient, where we would reject the null hypothesis if the absolute *t-value* is greater than the *critical value t* based on the student’s *t*-distribution. For more information on linear regression and hypothesis testing please see, Davidson, R., & MacKinnon, J.G. (2004), *Econometric Theory and Methods*, Oxford University Press, Ch. 4. *Beta* values indicate the direction of the influence that each of them has on the level of public acceptance: if *beta* values are positive it means that the higher the value of the factor, the higher the score of public acceptance.

Coefficients ^a			
	Standardized Coefficients	t-value	Sig.
	Beta		
The development of a Project of Common Interest in energy infrastructure near the area where I live would contribute to improving the image of the region	.246	15.880	.000

a. Dependent Variable: Public Acceptance of Projects of Common Interest

Looking further into the results of the linear regression, the reader can observe that each of the factors that are statistically significant affect the level of public acceptance by a different magnitude. For instance, from Table 4 above, we see that the higher the age of the respondents, the higher the level of public acceptance⁴⁵. It should be noted, though, that the average age of respondents is 33 and that the vast majority of respondents is between 20 and 29 years old (38% of the total sample). The second biggest age class is 30-39 (30% of the total sample). Only 9% of respondents declared to be older than 50. The age distribution is shown in Figure 1.

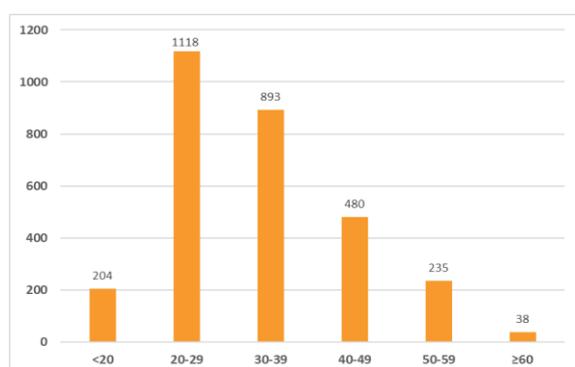


Figure 1. Age distribution of survey respondents

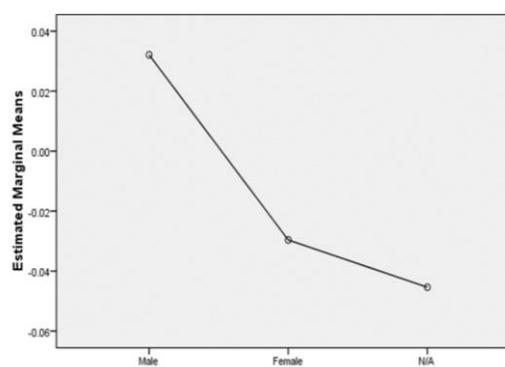


Figure 2. Estimated marginal means of public acceptance of PCIs (per gender)

In addition, it is noteworthy that the two factors at the end of the list in Table 4, namely "Projects of Common Interest in energy infrastructure are important to ensure sustainable growth at national level" and "The development of a Project of Common Interest in energy infrastructure near the area where I live would contribute to improving the image of the region" are two leading drivers with a high positive effect on public acceptance (respectively, *t-values* are 10.087; 15.880)⁴⁶. Considering their effect together with the positive effect of the factors Peer Approval of Projects of Common Interest and the willingness to pay more to support the rollout of a Project of Common Interest (respectively, *t-values* are 13.223; 11.819)⁴⁷ points towards the following: the more people believe that PCIs ensure sustainable growth at national level and contribute to improving the image of the region, the higher the level of public acceptance; similarly, the higher the peer approval of family, friends and neighbours, or the willingness to pay more to support a PCI, the higher the level of public acceptance.

⁴⁵ The factor (predictor) "How old are you?" is statistically significant since its *Sig.:0.027 < Significance level:0.05* and positively affect the dependent variable Public Acceptance of Projects of Common Interest by a factor of 0.0208.

⁴⁶ The factors (predictors) "Projects of Common Interest in energy infrastructure are important to ensure sustainable growth at national level" and "The development of a Project of Common Interest in energy infrastructure near the area where I live would contribute to improving the image of the region" are statistically significant with *t-values > critical value t* (or else *Sig.: 0.00 < Significance level: 0.05*) and positively affect the dependent variable Public Acceptance of Projects of Common Interest by a factor of 0.156 and 0.246 respectively.

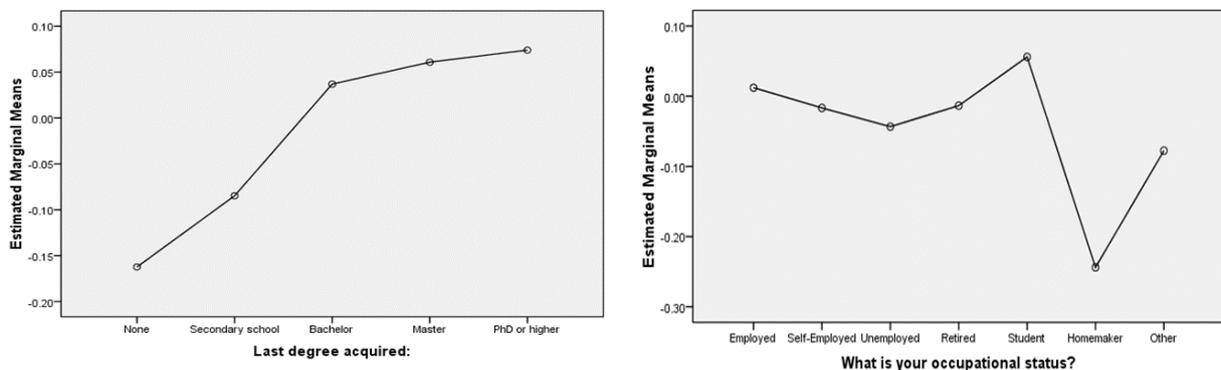
⁴⁷ The factors (predictors) "Peer Approval of Projects of Common Interest" and "The willingness to pay more to support the rollout of a Project of Common Interest" are statistically significant with *t-values > critical value t* (or else *Sig.: 0.00 < Significance level: 0.05*) and positively affect the dependent variable Public Acceptance of Projects of Common Interest by a factor of 0.213 and 0.174, respectively.

Considering the factor of gender⁴⁸, findings as presented in Figure 2, suggest that public acceptance is higher among male respondents and lower among female survey takers. It should be noted that this does not imply a direct causal relationship between the gender and the level of acceptance of PCIs, but rather indicates the mere existence of a relation between these two variables. Such relation may be explained by intermediate relations⁴⁹ (for instance, female respondents may generally be more concerned by possible health consequences of PCIs and this would explain lower scores in their level of acceptance) or by spurious relations⁵⁰ (for instance, the majority of female respondents may have children, while the majority of male respondents may have no children; in this case, it is the fact of being a parent that affects the level of acceptance, not the gender). Therefore, the relevance of gender should be considered for communication actions but should also be explored more to understand what determines the relation between gender and public acceptance.

It is important to stress that several of the statistically significant factors above have to do with perceptions/beliefs and knowledge. These are aspects that can be addressed by a targeted communication campaign. Additionally, the communication campaign may leverage peer approval if conducted at the local level, working closely with communities of stakeholders.

Interestingly, the educational level and the type of employment have a significant effect on public acceptance. As illustrated in Figure 3 (Left), respondents with higher educational degrees tend to have higher acceptance of PCIs, whereas the level of public acceptance of PCIs tends to be lower among homemakers (i.e. people who manage a home and family and do not have an income from a job) as illustrated in Figure 3 (Right).

Figure 3. (Left) Estimated marginal means of public acceptance of PCIs (per educational level) (Right) Estimated marginal means of public acceptance of PCIs (per type of employment)



⁴⁸ "Gender" factor is statistically significant with t -values > critical value t (or else $Sig.: 0.027 < Significance level: 0.05$) and positively affect the dependent variable (Public Acceptance of Projects of Common Interest) by a factor of -0.029 respectively. Analysis of variance (ANOVA) was used to gain more insights into the relation with public acceptance

⁴⁹ Intermediate relations indicate that a relation is observed between variable X and variable Z, but X does not cause Z alone. The real cause of Z is another variable (Y), which is linked to X, meaning that if X happens, it causes Y, which causes Z.

⁵⁰ In this case, two variables have no causal connection, but appear to have a causal relation because of an unobserved third variable.

Knowledge and information

To better understand the role of knowledge and provision of information, some additional analyses were carried out focusing on a sub-group of the whole sample, namely people who declared that they lived or are currently living close to a PCI (619 respondents). The results point to the fact that, among the people who declared to have lived or currently live close to a PCI, having received information about the project can greatly affect the level of public acceptance: people who were informed about the project are more likely to accept it, as illustrated in Figure 4.

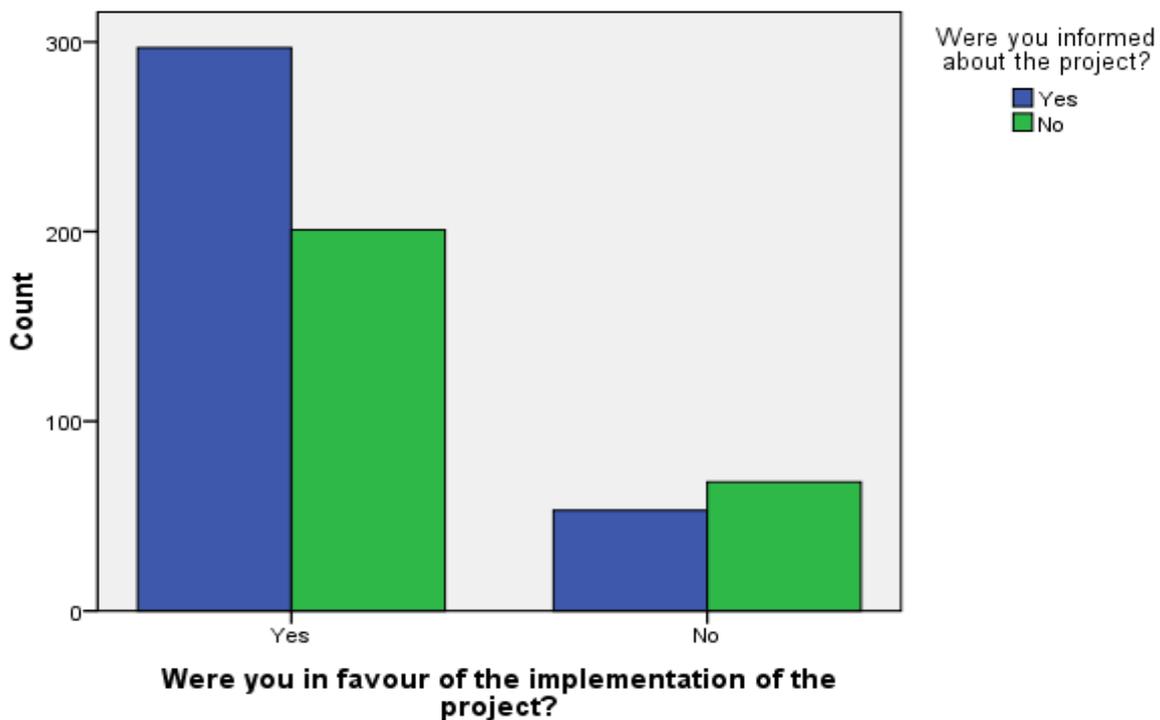


Figure 4. Relation between having received information about a PCI in the vicinity and the acceptance of the project

Statistical analysis was also used to explore whether different types of information might be related to increased levels of acceptance. Within the sample of respondents who lived or are living close to a PCI and were informed about the project (350 people), it was tested⁵¹ whether the different means of communication used to inform respondents had a significant effect on the acceptance of the PCIs. Based on the survey questionnaire, the following media were tested:

- Newsletter or mailing list
- Press release on printed media
- Post on website and/or social media
- Leaflets
- Extensive media campaign
- Word of mouth
- Events
- Other

⁵¹ Binary logistic regression and chi squares were used.

The item "Post on website and/or social media" was the only one found to be significant: when no website or social media were used, 19.2 per cent of respondents claim not to be in favour of the project; when they were used, this percentage dropped to 8.4% (Sig. 0.004)⁵².

Table 5. Effects of the use (and lack thereof) of website and/or social media on acceptance of the project (Crosstabulation)

			Were you in favour of the implementation of the project?		
			Yes	No	Total
Use of website and/or social media to inform about PCI	No	Count	177	42	219
		% within Means to inform about the project_Post on website and/or social media	80.80%	19.20%	100%
		% within Were you in favour of the implementation of the project	59.60%	79.20%	62.60%
	Yes	Count	120	11	131
		% within Means to inform about the project_Post on website and/or social media	91.60%	8.40%	100%
		% within Were you in favour of the implementation of the project	40.40%	20.80%	37.40%

These findings on the link between knowledge, information and support are echoed by insights from the majority of experts interviewed during this project. Most of them insisted on the fact that not only is it key to regularly share information with the public and demonstrate transparency, but that informed citizens are usually more inclined to accept trans-European energy infrastructure projects. For instance, as mentioned by an expert from the Netherlands, "when you inform them, they are more supportive". A project promoter working in Estonia corroborated to this by stating that "informed citizens are more supportive due to the rationalisation of the economic, environmental and societal aspects of the projects", or, as explained by a project promoter from Slovakia, "information minimises people's fears and increases their trust". On the other hand, some experts mentioned that "informed citizens (...) create obstacles in the implementation", and that citizens possessing too detailed information oppose projects. However, while these two comments are worth considering, they do not necessarily reflect the situation in the countries the experts were from (Spain and Germany), as other stakeholders from these countries, who were also interviewed in this project, stated that informed citizens increase the chances of local support. Moreover, as stated by different experts, people are usually less supportive to energy infrastructure projects at the very start of the project's timeline because they do not know about the project, or because they have misconceptions and concerns. It is therefore important to tackle these doubts or misunderstandings by organising an informative communication campaign from the start of the project, as explained by an expert from Croatia.

However, almost all interviewed experts agreed on the fact that an energy project being labelled as "Project of Common Interest" does not make a difference in the public's acceptance. In other words, informing citizens about the objectives and details of a project is important to build support, but, communicating about the status of the project, namely PCI, does not contribute to the overall level of public acceptance. As explained by a project promoter from Poland "[informed citizens] are much more informed than non-informed ones. However, there is no difference between Projects of Common Interest and non-Projects of Common Interest". An expert from Italy corroborates to this idea by stating that "in our opinion, the citizens do not take the PCI status into consideration".

Type of infrastructure

The survey also looked more specifically at different types of energy infrastructure to assess how people's perceptions may change depending on the specific infrastructure

⁵² Analysis values (crosstabulation and logistic regression) are presented in Annex – B.2.

used in a project. However, it should be noted that the type of infrastructure that fall under “generation” infrastructure, are not covered by the TEN-E Regulation which is the planning tool for European cross-border transmission infrastructure, and although not in the scope of the TEN-E Regulation, this specific survey question looked beyond transmission and storage infrastructure to provide additional insights for stakeholders involved.

With that being said, the analysis showed that the likelihood to support the construction of renewable energy infrastructures (e.g. solar energy infrastructure and wind farms) close to the respondent’s place of residence is higher than in the case of coal plants and gas extraction wells, which are more likely to be opposed. An overview of the main descriptive statistics is presented in Table 6 below (values close to 1 indicate opposition, values close to 3 indicate support).

Table 6. Descriptive statistics of support per type of infrastructure

Would you accept, support or oppose the construction of the facilities listed near your place of residence?	N	Mean
Coal plant	2,968	1.73
Wind farm	2,968	2.52
Solar energy infrastructure	2,968	2.72
Biomass plant	2,968	2.42
Natural gas extraction well	2,968	1.97
Power to Gas	2,968	2.31
Overhead electricity power line (including pylons)	2,968	2.06
Under-ground cables	2,968	2.49
Pumped hydro storage	2,968	2.55

While it is useful at face value to understand the broader levels of support that could be

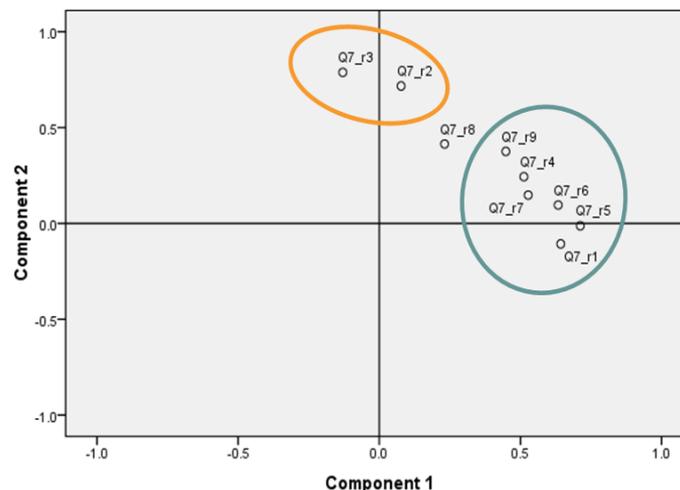


Figure 5. Visualisation of the factor analysis per type of infrastructure (rotated space plot)

expected depending on the type of infrastructure implemented in a PCI, this analysis aimed at investigating whether these nine different types of infrastructure belong to higher-level factors (blocks) based on their likelihood to be supported. Therefore, factor analysis was used to determine whether similar patterns of responses exist and the possibility of any underlying latent variables. The factor analysis confirmed that people tend to perceive the various types of infrastructure differently and that there are higher – unseen – hierarchies of the types. In particular, the nine different energy infrastructure types we indicated above fall under two distinct blocks⁵³ and one outlier: one block is constituted by wind farms and solar energy, while the other one includes coal plants, biomass plants, gas extraction wells, power-to-gas technology, power lines/electricity pylons and pumped hydro storage. Underground cables do not clearly fit in either block.

⁵³ Eigenvalue > 1. The rotated factor loadings from the factor pattern matrix are presented in Annex – B.2.

A possible explanation of this striking division into two blocks can be the fact that block 1 consists of two well-known energy infrastructure types respondents are more likely to be familiar with i.e. solar energy and wind farms. These two are also widely promoted types of energy infrastructure and tend to be more popular than the types of infrastructure pertaining to block 2. The latter includes infrastructure types that are presumably less well-known and which people are less familiar with and that respondents are less clear on the need for such infrastructure to be in place in order to be able to benefit from the first block. Furthermore, citizens tend to accept renewable energy generation infrastructure more than block 2 infrastructures as they see the immediate benefit of the renewable energy generation infrastructure more easily. It could also be hypothesised that the infrastructure of the first block is perceived more positively in terms of sustainability and its impact (for instance, on health, safety and in terms of noise and smell) is more easily predictable than the infrastructure types of block 2.

In general, this indicates that, depending on the type of energy infrastructure selected as a PCI, the focus and extent of information and communication about it may have to be adapted. Further analysis would be needed to provide type-specific insights and/or determine the driving factors for each block.

Hidden clusters

One of the main assumptions for the analysis was that the general public tends to have largely different views, perceptions and attitudes about PCIs. In order to be able to target the communications better towards specificities and diverse audiences, we needed to account for these differences and to identify any clusters. Therefore, we created a subdivision of respondents based on more than just demographics (which in some cases can be deceiving). In this premise, a clustering exercise was implemented based on the selection of a subset of the most significant variables (see Table 4 above), notably: peer approval, trust (trust in projects initiated by the community and in projects supported by the European Union) and the two beliefs about PCIs (“Projects of Common Interest are important to ensure sustainable growth at national level”, and “Projects of Common Interest can contribute to the improvement of the image of the region”). This algorithmic test can help group respondents based on their key attitudes towards PCIs. Four clusters were identified (through the use of k-means). One of them is clearly positive about PCIs and three of them group respondents who score below average in public acceptance of PCIs. Table 7 shows the results in more detail. It should be noted that the maximum values against which the individual scores per cluster have to be read are indicated in the column on the right.

Table 7. Cluster analysis results

	Cluster				Max Value
	1	2	3	4	
Group Size	961	943	469	595	2,968
Public Acceptance of PCIs	.67	-.06	-.92	-.26	1.64
Peer Approval of PCIs	5.24	4.38	3.50	4.26	7
PCIs in energy infrastructure are important to ensure sustainable growth at national level	6	6	5	6	7
The development of a PCI in energy infrastructure near the area where I live would contribute to improving the image of the region	6	6	4	4	7
I trust energy infrastructure projects supported by the EU.	6	5	3	6	7

Cluster 1 is characterised by high levels of public acceptance and scores high in all other key aspects. These are the “Stars” in terms of public acceptance of PCIs. It is also the largest cluster in the sample with 961 respondents.

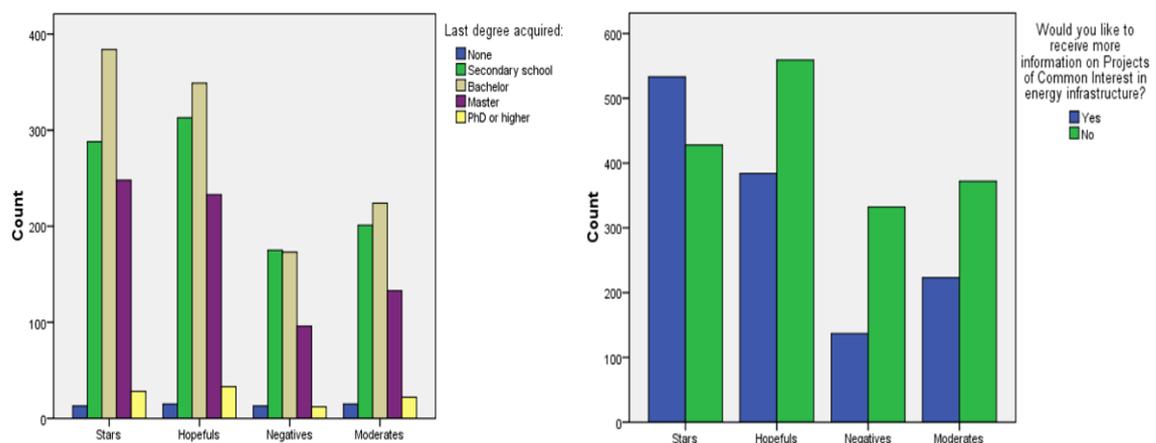
Cluster 2, labelled as the “Hopefuls”, is slightly below average in public acceptance of PCIs, and, while cluster members score high in peer approval and attitudes about PCIs, their trust level in PCIs supported by the European Union is somewhat lower. The cluster

is the second largest in size (943 respondents). This was considered a significant cluster to target in a communication campaign.

Cluster 3, or the “Negatives”, is characterised by low levels in all key metrics. They have a very low public acceptance score (-.92, which is close to one standard deviation). It is the smallest of the clusters (469 respondents) and was considered a potential niche segment. It would require substantial communication resources to increase its members’ score to near-acceptance levels.

Cluster 4, or the “Moderates”, does not score high in public acceptance of PCIs. While it scores lower than the “hopefuls” in attitudes related to PCIs, its members have a high level of trust in infrastructure projects supported by the European Union, which makes them an interesting target for this project. The four clusters are distinguished by significant differences along important variables. Although they do not differ along demographics like annual net income, occupational status, area they live in nor based on their experience living close to PCIs (or lack thereof), they differ in age (ANOVA Sig .000) and educational level, with more educated people being more prevalent in the “Stars” and the “Hopefuls” (chi-square .011) as illustrated in Figure 6 (Left). In addition, the “Stars” are more open in receiving additional information about PCIs, as illustrated in Figure 6 (Right). Finally, their numbers also differ among countries (chi-square .029), which can be a useful insight for the ranking of regions, as explained thoroughly in Section 4.

Figure 6. (Left) Educational level per cluster, (Right) Willingness to receive additional information per cluster



3.3. Drivers and barriers of public acceptance

In order to better understand the relative importance (utility score) of drivers and barriers of public acceptance of PCIs at European level, a survey was used to carry out two Max-Diff exercises. The first exercise focused on drivers that increase public acceptance. Survey respondents were confronted with a trade-off scenario, asking them to select the most and least important factor helping them accept a new PCI implemented close to their place of living. Six times in a row, respondents were asked to choose between a unique combination of five different drivers, orthogonally designed to contain subsets from a list of ten items that included the drivers that increase acceptance identified through the literature and the first results from the interviews (see Section 2).

The second exercise focused on barriers that limit public acceptance, followed the same logic. Survey respondents were asked to select the factor they would be most and least concerned about if a PCI was implemented close to their place of living. They had to choose between four items every time from a list of eight items that included the barriers that limit public acceptance identified through the literature review and the interview results.

The list of the drivers and barriers is already presented in brief in Section 3.1. In what follows, we present the further quantification of the drivers and barriers of public acceptance.

3.3.1. Drivers of public acceptance

As illustrated in Figure 7, the analysis of the drivers that increase acceptance indicates that “awareness of the environmental benefits” is the strongest driver of public acceptance since it is more important than the “use of a familiar technology” by a factor of ten. “Transparency and fairness of process” can also strongly drive public acceptance, as well as “energy supply security” and the project’s “positive impact on local economy”. The “involvement of local organisations” and “residents’ financial ownership of the project” scored very low in comparison with the other drivers, signalling that respondents considered them less important.

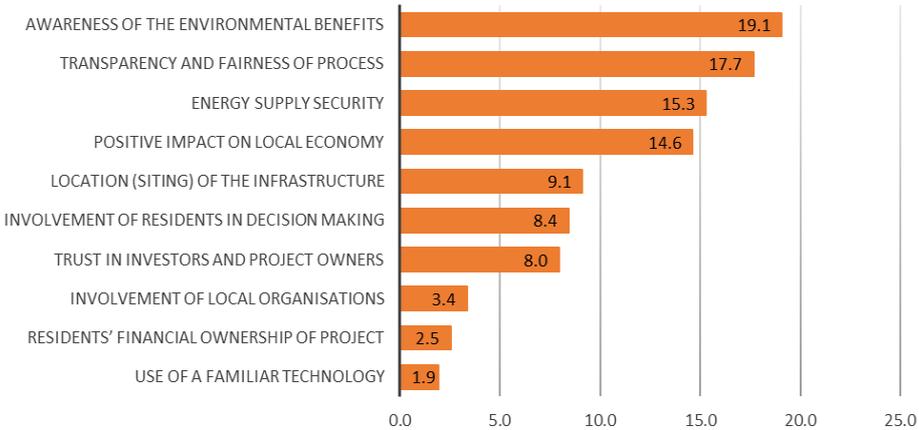


Figure 7. Drivers that increase public acceptance

It is of course important to note that “residents’ financial ownership of the project” is not applicable to transmission infrastructure covered by the TEN-E Regulation. Given there is only marginal relevance, this aspect is not carried forward in the analysis.

Awareness of the environmental benefits

On the one hand, and reflecting the results from the survey, project promoters from several Member States believe that mentioning environmental benefits linked to the project is the most effective argument to gain public acceptance and support. According to a project promoter from Cyprus, “the environmental reason is one of the best tools to get people’s interest”, and “the awareness that the project is needed for environmental reasons is one of the most important drivers of public acceptance”, according to project promoters from Slovakia.

However, this argument is not relevant in all countries. According to a German expert, “what activates people is personal impact. This may result, for example, from expected effects on the value of their property, effects on the landscape or feared health risks”. On the other hand, as expressed by a project promoter from Denmark, “people only care about their close environment”, as opposed to environmental benefits on a larger scale. These views are echoed by experts from Finland, Belgium, Estonia, Poland and Slovenia. In Croatia, according to a project promoter, the environmental argument is sometimes used against energy infrastructure projects, as a “big power project was stopped because [of] an environmental organisation”.

Moreover, according to Slovenian project promoters, the environmental argument has different effects: “Strict environmental and protective requirements are forcing the transmission network lines closer to populated areas, which is causing additional local resistance as the public has the perception that fauna, such as birds, are more protected than people”. In addition, it was noted that “a Project of Common Interest is never

understood as something needed due to environmental reasons but is often regarded as a project that will create benefits for other countries, partly for Slovenia but no benefits for the local communities that a new transmission line is crossing”.

Security of supply

The security of supply, whilst listed as the third most important factor in the survey, seems relevant only to a few Member States, according to project promoters interviewed. For Bulgarian, Estonian and Czech experts, the security of supply is one of the most important factors for their fellow citizens. However, this factor is barely discussed by project promoters from other countries.

Impact on local economy

While the positive impact on the economy is ranked as an important driver according to the general public, it is once again a factor that divided project promoters, as they do not follow the same practices nor have the same views.

On the one hand, experts from Bulgaria, Greece and Slovenia insist that the impact on the local economy, notably through the creation of jobs, is a very important factor to build acceptance of PCIs because people see direct benefits related to the construction or modernisation of the infrastructure.

On the other hand, the impact on the local economy is an ambivalent one to use according to several project promoters interviewed during this project. Firstly, because people tend to think of an impact in terms of job creation, which cannot be guaranteed by project promoters. When designing an energy infrastructure project, companies must follow public procurement rules and implement a tendering process: contracts are often awarded to large (sometimes foreign) companies with a specialised workforce, as the required construction skills are specific. This was explained by several experts from Germany, Finland, Poland, Latvia. In Cyprus, the fact that jobs are not available to local people was even noted as being a barrier to public acceptance, and it was suggested that project promoters should find other ways of compensating communities (such as participating in local projects, for instance by upgrading school equipment).

Project promoters from Belgium, Estonia and Slovakia explained that the situation is more nuanced, as they themselves have limited powers to employ a local workforce, but have witnessed projects where large companies, contracted through public procurement processes, employ local people on an ad hoc basis. Project promoters from these countries acknowledged that it is not always feasible to employ local people, but according to their experience, when it is possible, public acceptance levels rise.

As for the contribution to local projects, which was also discussed under the interviews guide’s question 3f, “impact on local economy”, experts were also divided. On one hand project promoters from Austria, Poland, Belgium, Slovenia and France believed that contributions to the local community, such as upgrading school equipment or improving natural areas are good ways of increasing public acceptance. On the other hand, experts from Germany and Finland, believe that, in theory, it could be helpful, but that in practice, it could be misinterpreted. Moreover, a few stakeholders even stressed that the impact on the local economy could be perceived by citizens as negative: for instance, in Spain, where energy infrastructure projects could be seen as a barrier to tourism growth. Likewise, an expert from Germany indicated that energy infrastructure projects could be seen as a barrier to agriculture, especially when it comes to undergrounding of cables, as opposed to overhead lines.

To conclude on this particular factor, according to several stakeholders it is essential to be clear with the citizens right from the start, to manage expectations and “remind local people that the transmission infrastructure will contribute to the quality of electricity supply which brings benefits to local economy” as highlighted by an expert from Slovenia. In another example, an expert from Germany stated: “with an honest and

continuous approach, it is possible to find a solution with a minimum of impact for everyone". This leads us to the next two factors.

Transparency and fairness of process

Transparency and fairness of the process is an important factor of public acceptance, according to the pan-European survey. This finding is mirrored by the experience of project promoters interviewed in this project, as they all agree that transparency and fairness of procedures are of paramount importance. According to these experts, regular communication is the best tool to convey transparency of the projects' processes, including communicating on barriers. For instance, a German project promoter mentioned that by explaining the construction process and informing the locals on the actions taken to minimise the inconvenience, trust rises towards the project promoter, and the willingness to cope with imperfect circumstances also rises. For example, it may be advisable to inform local residents that the construction will be loud and dusty, but only within certain times and for a certain period. Finnish project promoters also highlighted the importance of communicating the effects of the project and of "telling the whole story", to build trust.

Being upfront from the beginning of the process, by presenting a clear and in-depth cost-benefit analysis, which clarifies direct and indirect benefits in terms of welfare, CO₂ emission reductions, etc. is also crucial according to an Italian project promoter. Communicating the costs is a sign of openness and transparency, according to different project promoters.

Although most decisions have already been taken at the design stage, during which public consultations are held, communicating throughout the project's lifespan is necessary, according to a German project promoter. Emphasising this point, the expert explained that decisions cannot be changed during the implementation phase, as contracts have already been signed, but project promoters should nevertheless continue to inform citizens on the progress of the project. The importance of consistent and continuous communication, thanks to a solid communication plan, was echoed by a project promoter from Ireland. Moreover, informing local stakeholders as soon as an issue arises is also viewed as important by project promoters.

An important aspect to consider is also moving from "just communicating" to establishing an open dialogue, by understanding individuals and how they react, according to Finnish experts. When communicating with local stakeholders, it is important that project promoters adopt a simplified language, as opposed to an "engineering language", as stressed by a Polish expert. Moreover, most stakeholders interviewed indicated that project promoters should always be visible and approachable by the public, for instance, by being represented at information events, and being present on social media. This was echoed by a German stakeholder, who explained that it is important to "make the content understandable and relevant to [locals]", by describing the objectives of the project in a way in which they can relate and connect, "explaining what the project means to certain groups", and "[explaining] the project and the possibilities for participation in a way that the specific group can understand and really contribute." He also added that the company he works for has developed a set of methods for communicating with the public:

- "smaller meetings" with representatives from the federal state's ministries etc.
- "mid-size events" with expert input for local administrations
- "information markets" in town-halls etc. for the broad public
- "mobile citizens' office stops" on market squares etc. for the broad public

Trust may also be built through partnerships or collaborations with strategic stakeholders, such as non-governmental organisations or universities. For instance, Estonian project promoters often collaborate with local technical universities in order to find ways to present and explain complex techno-economic issues linked to the project. Moreover, according to a French project promoter, "a long-term partnership with local non-governmental organisations will help increase people's trust". This is echoed by

Finnish representatives, who stress that non-governmental organisations’ opinions are usually perceived as trustworthy by the public. In Belgium, partnerships with non-governmental organisations have been initiated recently. Representatives from these organisations are currently increasingly involved as members of steering committees, for instance.

Involvement of residents

According to almost all stakeholders interviewed, involving the residents is one of the most important factors, even if the driver has a medium relative importance based on the survey results. During the discussions with professionals, the importance of this factor was always emphasised. Not only for conformity with legislation but also to increase public acceptance and support. The majority of project promoters claimed that residents should be involved as early as possible, to demonstrate goodwill and build a trustworthy relationship. Examples of involvement described by project promoters include workshops, a “celebration of the power station”, public consultations, discussions in town halls, information stands, approaching citizens in local markets, and engaging the press. The importance of local media was highlighted by several project promoters, including those from Ireland, Denmark, Estonia and Slovenia.

Nevertheless, a few comments were made about the timing of the public consultations. Experts from Denmark, Italy and Spain mentioned that it would perhaps be beneficial to involve the public once the project is “more mature” in order to communicate on a clearer and more defined situation and to be able to answer people’s questions better. However, this was only mentioned by a minority of project promoters. Others were convinced that not involving the public in the early phases of the project becomes a barrier that limits acceptance.

3.3.2. Barriers that limit public acceptance

Looking at the barriers that limit public acceptance in Figure 8 one can notice a major difference in the relative importance (utility scores) between the factors that concern people the most if a new PCI is implemented close to their place of living. As shown below, “Impact on air and water quality” and “health and safety issues” are by far the most important concerns (28.5% and 28% respectively), while the scores for the other six items are much lower. This seems to be in line with the findings from the drivers that increase public acceptance, placing much importance on the environmental dimension.

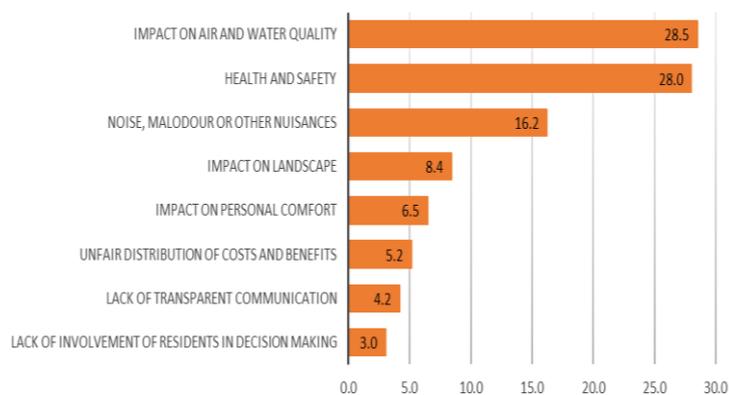


Figure 8. Barriers that limit public acceptance

Health and safety

Results from the interviews with project promoters echo the findings highlighted above. According to professionals, concerns about electromagnetic fields (EMFs) and other health concerns are crucial and often create public opposition to projects. In some places, the concerns are exacerbated by unreliable information shared, for instance, on social media, which misleads the public. Some solutions have been implemented with various degrees of success. For example, as explained by a Belgian expert, an

electromagnetic group called “Belgian BioElectromagnetic Group (BBeMG)” was contracted to research electromagnetic fields, but their results were not perceived as independent by the public.

Moreover, another issue was highlighted by a Belgian expert, who explained that some experts in electromagnetic fields do not have sufficient experience or the necessary skills to communicate with the public, therefore not improving the situation. A possible solution is to involve regional authorities, which are independent. A more successful example comes from Denmark, where a project promoter explained that the Danish Health Agency has addressed the issue by publishing information directed towards the public. According to this expert, Danish society is correctly informed thanks to the Agency’s initiative. In France and Italy, measurements are performed to decrease electromagnetic fields rates to the minimum grade.

In Slovenia success is very limited, despite efforts by project promoters to reassure the public, through collaborations with spatial planning representatives and representatives of ministries, publishing clarification articles on their webpage, and printing leaflets on electromagnetic radiation.

On the broader subject of health and security, Estonian project promoters indicated that communicating the overall safety record of the company in charge of the PCI is crucial for reassuring the public. Almost all project promoters agreed that these concerns should be listened to and addressed.

Impact on property values

The impact on property values is also an important factor to be considered according to project promoters from Croatia, the Czech Republic, Estonia, Finland, Greece, Slovakia and Slovenia. In most of these countries, citizens whose property value is affected by PCIs receive compensation. According to project promoters from Croatia and the Czech Republic, the possible decline in property value is one of the most important concerns of local citizens and local authorities. Czech project promoters highlighted that they do not pay out compensations, but instead contribute to local projects to support the municipality.

3.3.3. Groups with homogenous preferences

The findings presented in the previous sections are at an aggregate level – they provide robust insight into the preferences of the entire sample. For the purpose of this report, the study provides a closer analysis of this aggregated view. With the help of an advanced analytic method (hierarchical Bayes), the aggregate results are broken down into groups that have been identified to have homogenous preferences.

The analysis presented here shows five different groups, as shown in Table 8.

Table 8. Groups with different relative importance among positive drivers

	Group 1	Group 2	Group 3	Group 4	Group 5
Group size	876	338	496	603	656
Transparency and fairness of process	20.8	12.5	12.8	22.4	10.4
Involvement of residents in decision making	3.7	5.5	19.5	13.2	3.5
Location (siting) of the infrastructure	1.5	8.7	10.0	10.7	19.1
Awareness of the environmental benefits	23.4	7.4	10.8	23.1	21.4
Positive impact on local economy	18.0	14.2	16.9	2.4	19.6
Involvement of local organisations	3.5	4.7	7.8	2.5	1.8
Use of a familiar technology	0.9	13.1	2.0	0.9	1.1
Energy supply security	15.6	19.6	6.1	13.1	19.7
Trust in investors and project owners	10.9	9.8	5.3	10.4	2.3

Just to mention some differences, **Group 1** is the least affected by the location of the infrastructure. This is also the biggest group (876 respondents). **Group 2** is the group that “plays safe”: it gives comparatively less importance to the awareness of environmental benefits and values much more the energy supply security and the use of a familiar technology. This is, however, a comparatively smaller group (338 respondents). **Group 3** (496 respondents) places greater importance on the involvement of residents in decision making and seems overall more concerned about the local dimension (it gives more importance than all other groups to the involvement of local organisations, and also scores high in the positive impact on the local economy). **Group 4** is very similar to Group 1, but smaller in size (603 respondents). It gives more importance to the location of the infrastructure and is substantially less interested in the impact of the PCI on the local economy. The awareness of environmental benefits, the positive impact on the local economy and the location of the infrastructure are very important for **Group 5** (656 respondents), which is instead the least concerned by the transparency and fairness of the process.

Similarly, there are also differences concerning the barriers, as illustrated in Table 9. If we look at the four groups identified through latent class analysis, we can see that all groups are concerned by the impact of the project on the quality of air and water. However,

Table 9. Groups with different relative importance among barriers

	Group A	Group B	Group C	Group D
Group size	1012	427	695	834
Lack of involvement of residents in decision making	1.1	4.9	8.3	1.9
Lack of transparent communication	1.7	3.9	11.7	3.2
Unfair distribution of costs and benefits	2.3	3.9	14.3	3.1
Impact on landscape	2.7	14.7	3.4	18.8
Noise, malodour or other nuisances	22.2	26.2	6.9	7.4
Health and safety	32.2	10.2	26.7	31.9
Impact on air and water quality	27.6	22.8	24.6	31.2
Impact on personal comfort	10.3	13.3	4.0	2.5

Group A is very concerned by health and safety issues and other possible nuisances, while **Group B** is concerned about personal issues (impact on personal comfort and risk of noise, malodour or other nuisances) and is the least concerned about health and safety.

Group C is the most concerned about the fairness and transparency of the process (unfair distribution of costs and benefits, lack of transparent communication and lack of involvement of residents in decision making). Finally, **Group D** is the least concerned by the impact on personal comfort and by noise, malodour and nuisances, but is the most concerned about the impact on the landscape.

The empirical analysis performed during research at the EU – wide level has revealed some interesting findings, which have been analysed within this report. The following are the main key findings for the drivers and barriers of public acceptance. Additional research has been carried out in the two selected regions to better understand the specific drivers and barriers that can increase or limit the level of public acceptance locally that are presented in Chapter 5.

3.3.4. Key findings for drivers and barriers of public acceptance

The triangulation of the data and the empirical analysis conducted concerning drivers and barriers of public acceptance of PCIs, led, among others, to the following main conclusions:

- **Low awareness (interest) of what is behind the letters “PCI”:** the concept of “Project of Common Interest” does not appear to be well-known or to have any positive impact on the general public. Project promoters even believe that the status conferred to a project by the “Project of Common Interest” label does not change people perceptions, because interests seem concentrated on the local level, rather than on cross-border issues.

- **The importance of information:** Whilst communicating on what “Project of Common Interest” means is not strategic according to project promoters, it was found during desk research, confirmed during the expert webinars, and corroborated by both the survey and the interviews, that informed citizens are more likely to accept and even support PCIs. This means that effective communication campaigns, conveying clear and understandable information about the project’s objectives and details, which address any concerns held by citizens, would be effective at increasing public acceptance and support.
- **Communication strategies should focus on aspects that matter:** Quantitative evidence suggests that there are drivers with different importance in influencing public acceptance and that some drivers are not statistically significant, which means less effort should be allocated to them. Instead, communication efforts should concentrate on aspects that are shown to be statistically significant or on drivers that have higher relative importance.
- For instance, the analysis of the survey results showed a strong correlation between peer approval and public acceptance. In other words, the higher the approval of a PCI by family, friends and neighbours, the higher the individual’s likelihood to accept it. This finding again shows the importance of effective communications. By delivering an impactful communication campaign that successfully reaches a group of people, it could be possible to have ripple effects on individuals close to the primary communication targets and thereby increase public acceptance of a wider public.
- Moreover, according to the quantitative analysis, there seems to be a significant difference in the acceptance levels according to where an individual lives: in rural areas/suburbs, acceptance levels are lower than in cities. In efforts to increase public acceptance of PCIs, resources could, therefore, focus on rural areas.
- **Environmental benefits are perceived differently, according to different projects and contexts:** The analysis of the survey results demonstrated that the public would accept and support PCIs more readily if the projects positively contributed to environmental issues and that one of the most concerning factors about the implementation of PCIs is indeed their possible impact on the environment (quality of air and water) as well as health and safety. However, the analysis of the qualitative data suggests a more nuanced situation, with the environmental factor appearing more ambivalent. It could be used as an argument and be received by those who are sensitive to the ecological argument. Still, it should not be used in isolation, since other factors can also be influential drivers or barriers. Moreover, in some European regions, NIMBYism⁵⁴ is a strong feeling amongst citizens, and putting forward the environmental aspect of a project was perceived as not useful by experienced project promoters. Investigating in more detail the local situation before carrying out a communication campaign and implementing a PCI would be essential to identify the most relevant factors locally and leverage them to convince more reluctant people.
- **Standardisation is important without overlooking local and tailored communication strategies:** From in-depth discussions with project promoters across the European Union, it can be said that even within the same country, different project promoters sometimes did not have the same experience or have not been faced with the same reactions from the local communities. This could be attributed to varying approaches on behalf of the promoters or local factors that impact public perceptions of trans-European energy infrastructures differently. This calls for further standardisation of communication processes, but also for tailored strategies. In the latter case, a toolbox of communication materials easily

⁵⁴ NIMBY (not in my back yard) is a characterisation of opposition by residents to a proposed development in their local area. The residents’ viewpoint is called Nimbyism.

adaptable to each region could be made available and would have to be customised for each region and/or type of project.

4. Ranking and selection of pilot regions

This chapter presents the ranking and selection of pilot regions, based on the drivers of public acceptance for Projects of Common Interest as identified in the previous sections.

4.1. Ranking and scenarios

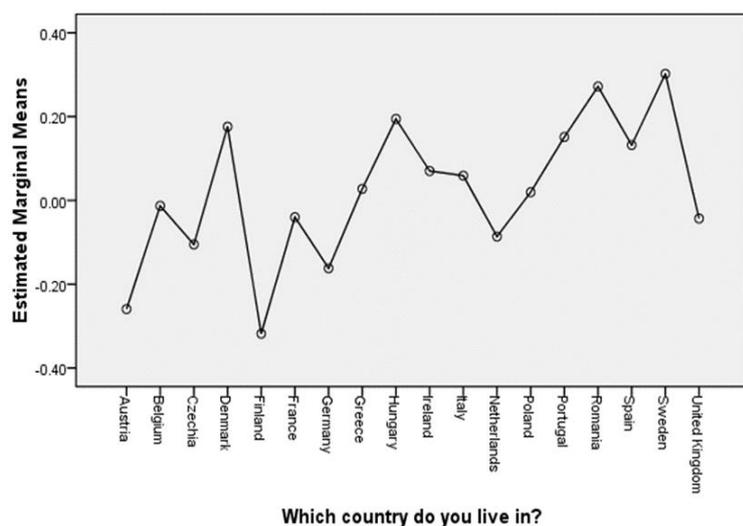


Figure 9. Estimated marginal means of public acceptance of Projects of Common Interest (per

To facilitate an informed decision on the ranking and selection of pilot regions, further analysis was carried out based on the results from the interviews, the survey and the statistical analysis presented so far. As indicated in Figure 9, there is a statistically significant difference (p-value .000) in the public acceptance of PCIs among different countries. The ranking that follows in Table 10 is based on the normalised (z-score) value of public acceptance per country⁵⁵ from highest to lowest, where zero indicates the mean.

Table 10. Normalised table of public acceptance mean z-values per country

Country	Mean
Sweden	0.3021
Romania	0.2719
Hungary	0.1944
Denmark	0.1760
Portugal	0.1514
Spain	0.1322
Ireland	0.0702
Italy	0.0591
Greece	0.0276
Poland	0.0196
Belgium	-0.0131
France	-0.0399
United Kingdom	-0.0431
Netherlands	-0.0862
Czech Republic	-0.1050
Germany	-0.1621
Austria	-0.2593
Finland	-0.3181

Furthermore, to check the robustness of the results from the empirical analysis, the qualitative data collected through the interviews with project promoters was analysed and their input on the challenges of implementing trans-European energy infrastructure projects in their region.

First, it is interesting to note that not all of the project promoters mentioned the public's reservations as their main concern. Several experts mentioned the lack of support from local authorities, administrative burdens, the involvement of many stakeholders and the long duration of the projects as key elements that affect the implementation of PCIs. These concerns are not represented in the survey ranking, which instead focused on positioning Member States according to the level of public acceptance.

The combination of factors cannot be disregarded. A particularly striking example is the case of Belgium. The country has a medium score in terms of public acceptance, but - according to project promoters - lack of space, planning issues and the separation between central and regional political systems are the main barriers to projects' implementation. Other examples comprise Slovenia, where project promoters explained that the difficulty mainly comes from "procedural complications" rather than the public's views, as well as

⁵⁵ Countries for which the sample of respondents was too small were omitted to avoid skewing the results.

Bulgaria, where, according to a project promoter, administrative burden “makes Projects of Common Interest non-manageable timewise”.

Regarding public acceptance and its influence on project implementation, the interviews corroborated the results of the pan-European survey. For instance, project promoters from Denmark believe that, in comparison with other European Union countries, it is relatively easy to implement trans-European energy infrastructure projects in the country. Spanish project promoters also rated their country as “medium” on the difficulty scale, explaining that it depends on the way a project is designed, the timing and the way the project is implemented. They also stressed that a specific issue in Spain relates to tourism, as people tend to fear that energy infrastructure projects will have a downward effect on the region’s touristic reputation, and therefore local economy. In Poland, which scores medium according to Table 10 the situation is described as being “difficult, but not yet extreme”, with Polish project promoters interviewed explaining that the greatest difficulty is to get the approval of the inhabitants living close to the project site. Similarly, Italian experts consider it is challenging to implement PCIs in the country, mainly because of the reservations deriving from the residents, which is aligned with the score of the country in Table 10. The ranking of countries as produced by the survey results was also confirmed by an expert from Austria who explained that, because of the high living standards, “a change is not primarily seen as an opportunity” but is rather perceived as a threat. Finally, according to a European Union wide association representative, with experience working with European Transmission System Operators in several countries, the countries with lower public acceptance are located in Central Europe, as “the public does not want any more power lines in the lands of Central Europe.”

A notable case is that of Finland. Although Finland ranks low in Table 10, the two project promoters contacted both mentioned that it is easier to implement projects in Finland than in the rest of the European Union. By combining these two findings, it seems that Finnish project promoters are able to convincingly communicate the correct information and do not experience any difficulties in implementing trans-European energy infrastructure projects.

As the reader can observe, ranking is not a straightforward exercise and many factors have to be considered in the selection of the pilot regions. Additional considerations, for instance, according to the type of infrastructure or per clusters, increase the variability of the outcomes. Therefore, five indicative scenarios were developed, each proposing a different ranking on the basis of alternative considerations and desired objectives of the communication campaign.

Scenario 1 - Raise awareness

Focus: Raise awareness among countries with limited knowledge on Projects of Common Interest

One approach considered concerns targeting regions with limited knowledge on PCIs (i.e. people who do not know whether they live close to a PCI and people who may not even know what a PCI is). However, this would not necessarily affect the likelihood of public acceptance of a PCI in a significant way⁵⁶. Denmark, Finland, and the Netherlands seemed to represent interesting possibilities under this scenario as the reader can observe in Figure 10.

⁵⁶ If you refer back to the linear regression model in Table 4, you can see that the item “I knew the concept of Project of Common Interest before taking this survey” is not statistically relevant, which suggests that simply raising awareness about the concept of Projects of Common Interest would not necessarily affect the likelihood to accept it.

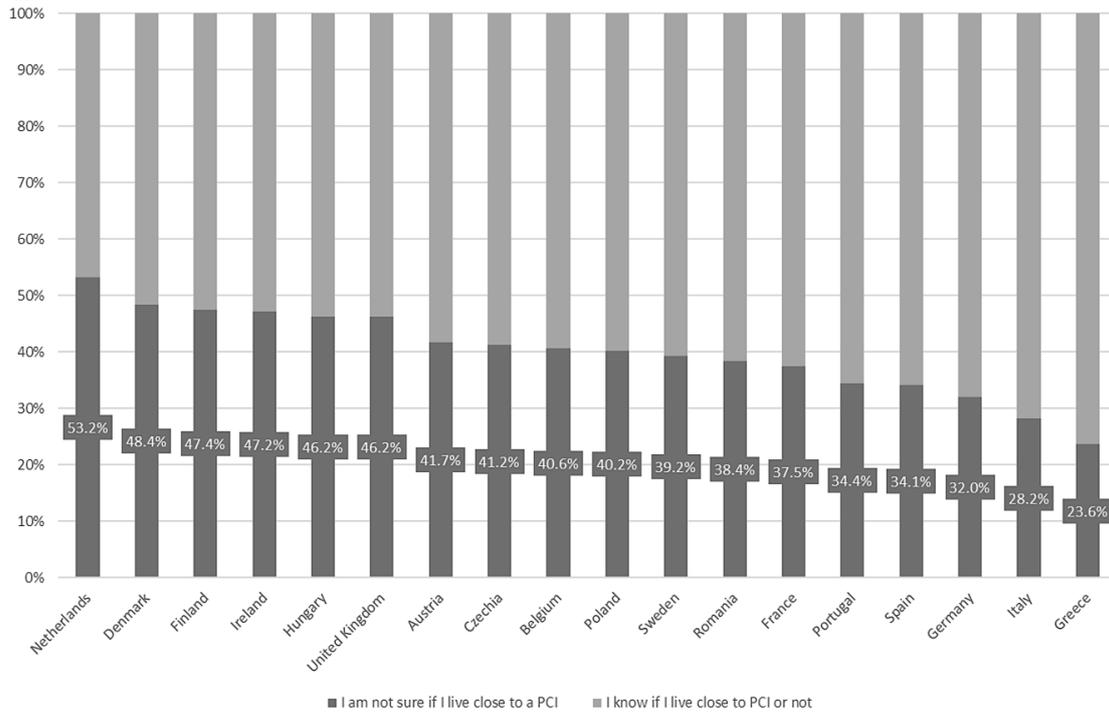


Figure 10. Distribution of people who are not sure they have lived close to a PCI per country

Scenario 2 - Tackle reservations

Focus: Enhance public acceptance levels in regions with reservations towards Projects of Common Interest

Another approach considered selecting the pilot regions according to the highest reservation levels recorded in the survey results, where communication could focus on designing a strategy to raise awareness, build support, and overcome concerns. Possible candidates included Finland and Germany, which are the Member States with high percentages of “Negatives” based on the clusters per country diagram illustrated in Figure 11. Also, based on the mean z-values, these are also countries that show a public acceptance level below average.

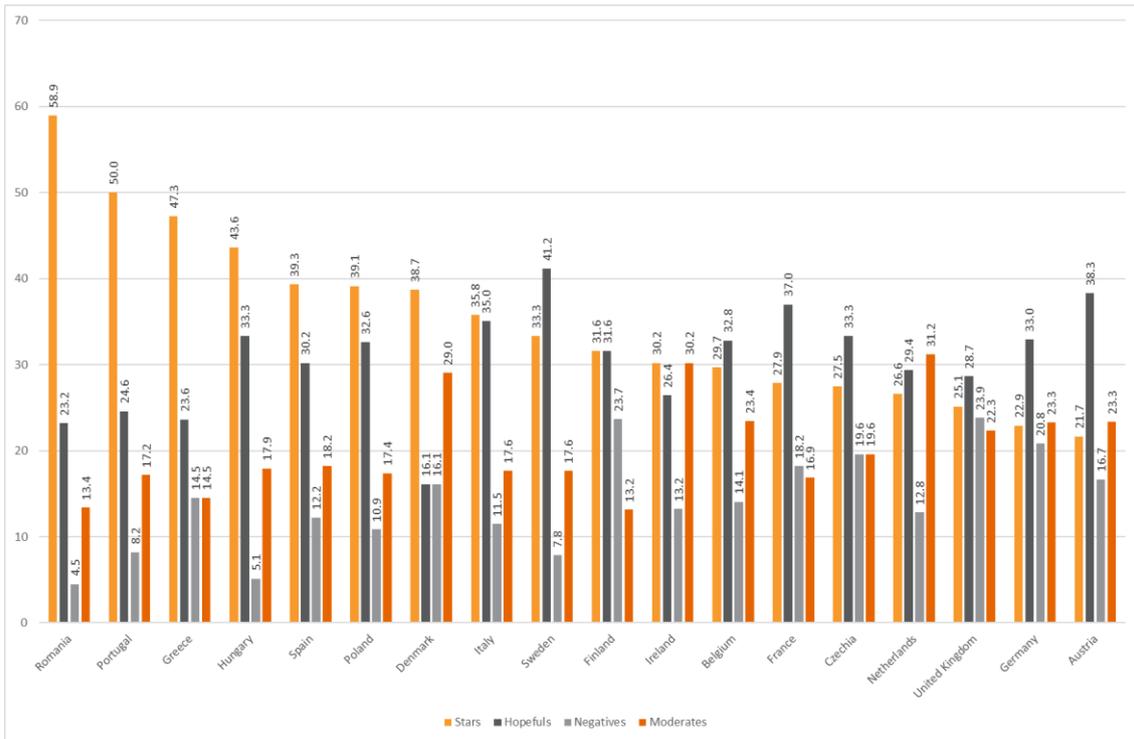


Figure 11. Spread of cluster members per country

Scenario 3 – Maintain approval

Focus: Maintain public acceptance levels in regions that already score high in this indicator

Another considered alternative was to focus on the countries with the highest percentage in “Stars” even though the need for a communication campaign to raise the level of awareness and public acceptance of PCIs is less urgent in this case since these countries score higher in the level of public acceptance (e.g. Romania, Portugal and Greece). One other option could be to concentrate on regions with the highest proportion of “Hopefuls” to increase their trust level in PCIs supported by the European Union, with their high score in peer approval being used as a lever. Examples under this scenario would include Austria, France and Sweden. The reader can observe the countries with high percentages of “Stars” and “Hopefuls” based on the clusters per country diagram illustrated in Figure 11.

Scenario 4 – Enhance potential

Focus: Enhance public acceptance levels by focusing on regions with a high percentage of “Moderates”

Another case considered selecting regions with a high percentage of “Moderates”. This is interesting due to the fact that these countries show a high level of trust in infrastructure projects supported by the European Union, while at the same time being less positive towards PCIs. Examples include Denmark, Italy, Czech Republic, Austria, Ireland, Spain and the Netherlands, as illustrated in Figure 11.

Scenario 5 – Target infrastructure types

Focus: Concentrating on regions with reservations towards electricity overhead lines

The quantitative analysis has revealed that people have different levels of public acceptance according to the type of energy infrastructure. The analysis, as illustrated in Figure 5, depicts two blocks that appear to be quite distinctive, with presumably different types of attitudes linked to each block. The first block suggests similarities in the perception of wind and solar infrastructure, while the second block indicates similar perceptions towards technologies such as biomass plants, natural gas extraction wells, power-to-gas technology, power lines/electricity pylons and pumped hydro storage, of which the last two fall under the scope of the TEN-E Regulation. As illustrated in Figure 12, countries are ranked according to the likelihood to oppose the construction of the infrastructure close to the respondents’ dwelling – from the highest (Denmark) to the lowest (the Czech Republic).

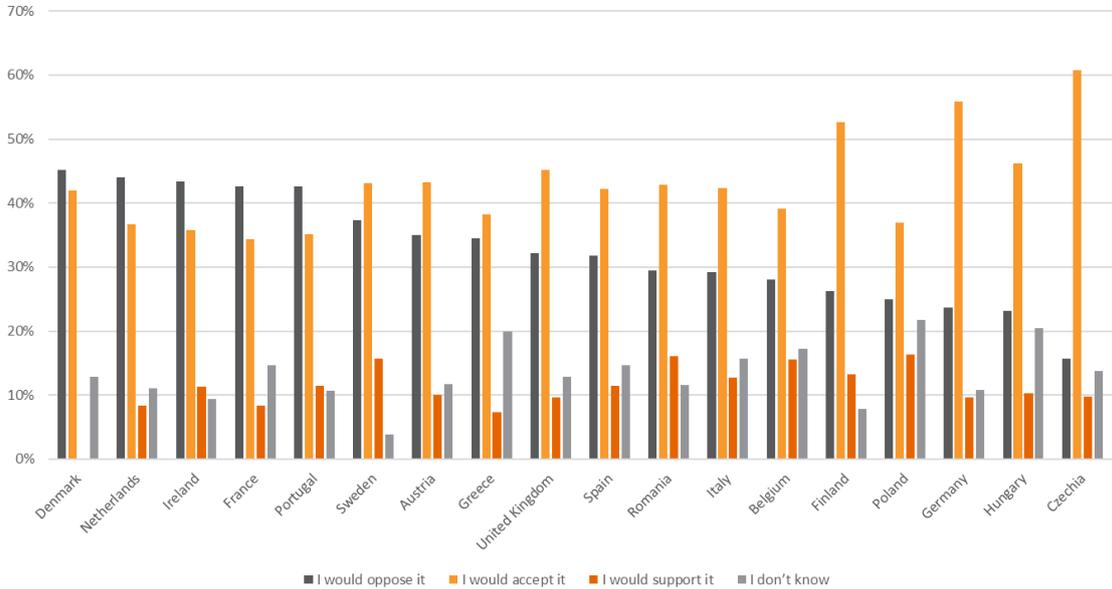


Figure 12. Distribution of reservation, acceptance and support per country – Electricity overhead line

4.2. Selection of pilot regions

The different possibilities available for the selection of the pilot regions were discussed during the meeting held with the Commission on May 20, 2019. A progressive and iterative process was followed. During this process, some additional parameters were considered that concerned the type of PCIs, their number per country, their phase of development, their geographical distribution, and also, the attitude of project promoters and local stakeholders towards the study.

Concerning the type, it was decided to concentrate on onshore PCIs that are more representative and involve a wider array of stakeholders (residents, landowners, etc.). Moreover, it was decided to concentrate on countries that are the basis of a variety of PCIs, as selecting a country with only one PCI of a certain type would potentially limit the transferability of the outcomes of the project. Regarding their development phase, it was decided to concentrate on PCIs that are either in the design or an early construction phase. Furthermore, it was decided to select PCIs that are part of different priority

corridors⁵⁷. Finally, the interest of project promoters and stakeholders in the study, as identified during the interviews conducted at an EU – wide level (Task 1), was one of the factors taken into account.

Based on the above, the following cases were identified:

- Austria: Western or Southern part
- Ireland: Eastern part
- Italy: Northern part
- Slovenia, the entire country

The focus was on the following PCIs:

- North-South electricity interconnections in Western Europe (NSI West Electricity):
 - Ireland (2.13.1 Interconnection between Woodland (IE) and Turleenan (UK))
 - Italy (2.14 Interconnection between Thusis/Sils (CH) and Verderio Inferiore (IT))
- North-South electricity interconnections in Central Eastern and South-Eastern Europe (NSI East Electricity):
 - Austria (3.1.1 Interconnection between St. Peter (AT) and Isar (DE), 3.1.2 Internal line between St. Peter and Tauern (AT), 3.1.4 Internal line between Westtirol and Zell-Ziller (AT), 3.4 Interconnection between Würmlach (AT) and Somplago (IT)),
 - Italy (3.4 Interconnection between Würmlach (AT) and Somplago (IT))
 - Slovenia (3.9.1 Interconnection between Žerjavenec (HR)/ Hévíz (HU) and Cirkovce (SI))

Eventually, Ireland and Italy were the selected Member States, within the corridors North-South electricity interconnections in Western Europe and North-South electricity interconnections in Central-Eastern and South-Eastern Europe respectively.

Particularly for Ireland, the selected pilot region was the North-East region (as defined by EirGrids' seven network region division⁵⁸), containing the PCI 2.13.1 Interconnection between Woodland (IE) and Turleenan (UK) also known as the North-South Interconnector. For Italy, the selected pilot region was the Friuli Venezia Giulia (FVG) region, containing the PCI 3.4 Interconnection between Würmlach (AT) and Somplago (IT).

⁵⁷ [Trans-European Networks for Energy – Electricity corridors](#): North Seas Offshore Grid (NSOG), North-South electricity interconnections in Western Europe (NSI West Electricity), North-South electricity interconnections in Central Eastern and South Eastern Europe (NSI East Electricity), Baltic Energy Market Interconnection Plan in electricity (BEMIP Electricity).

⁵⁸ EirGrid has divided up the network into seven regions: north west, north east, east, midlands, west, south west, south east (source: "Grid 25: A Strategy for the Development of Ireland's Electricity Grid for a Sustainable and Competitive Future", EirGrid).

5. Analysis of pilot regions

This chapter presents the cases of the two pilot regions and the findings of the in-depth desk research and in-depth interviews.

In order to roll-out communication activities in the pilot regions selected in the previous section (North-East region of Ireland, Friuli Venezia Giulia region of Italy), an in-depth desk research and in-depth interviews were conducted (see Section 2 – Approach and methodology).

The data collection methodologies employed led to region-specific and time-bound information regarding the specific PCIs of the selected pilot regions (2.13.1 Interconnection between Woodland (IE) and Turleenan (UK), 3.4 Interconnection between Würmlach (AT) and Somplago (IT)). Incisive information on the reasons shaping stakeholders' level of public acceptance of the PCIs in the selected pilot regions was gained, considering the factors of public acceptance on EU – wide level identified in Chapter 3 of this report, and further researching on the ones that are specifically related to the pilot regions. The meticulous analysis of the pilot regions includes focused research on existing energy infrastructure projects in these two regions, a thorough description of the grid development in terms of current and planned projects, the current phase of the projects, and the effective and less effective practices in engaging and communicating with stakeholders. The end goal was to design tailored communication campaigns that could help other project promoters across Europe determine their own communication activities. Moreover, a mapping of the two pilot regions' stakeholders was conducted (Annexed in this report in Annex D – Stakeholder mapping of pilot regions).

To further enrich the empirical work undertaken for the case of Friuli Venezia Giulia region in Italy there was an onsite visit upon the stakeholders' request to perform face-to-face interviews, in addition to the standard method of interviewing stakeholders via telephone. Hence, a meeting was organised and held in the city of Paluzza on January 9, 2020, with the mayors of the affected municipalities and in particular with the Mayors of Tolmezzo, Paluzza and the former Mayor of Cavazzo Carnico, who was involved from the very beginning of the specific PCI and has been very supportive of the current study. During this meeting, a total of 13 representatives of the involved municipalities were present. The interviews had the form of an open discussion, which allowed the representatives to be able to express their views and opinions on the PCI in their area. The diversification of all the data collected ensures that the full picture is grasped and the perspectives of all stakeholders are analysed and combined to provide relevant recommendations.

5.1. Pilot Region: North – East, Ireland

The following sections present the results of the in-depth analysis of the North-East region of Ireland and the PCI 2.13.1 Interconnection between Woodland (IE) and Turleenan (UK).

5.1.1. Profile of the Region

The North-East region of Ireland includes the counties of Cavan, Monaghan, Meath, and Louth. The interconnection between Woodland (IE) and Turleenan (UK) passes through the counties Cavan, Monaghan, and Meath, all of which have experienced population growth over the past decade. The main areas of employment in the counties of Cavan and Monaghan revolve around agriculture, rural development, tourism and the service industry sector, while unemployment is slightly above the national average. As far as County Meath is concerned, the economic base is relatively diverse amongst many employment sectors. Employment and economic activities are dispersed throughout the county. The main areas of employment in County Meath revolve around the service sector and manufacturing, followed by agriculture and tourism. Unemployment is close to the national average.

The south and east of the County Monaghan are hilly, but the rest of the county is a fertile plain with two main rivers and a rural landscape. Cavan has a mainly hilly (drumlin) landscape, forests and lakes. Regarding land uses, most of the land is classified as agricultural. Agriculture is mainly based on dairy farms, pig and beef farms. Meath is one of the most densely populated counties in Ireland due to the fertile agricultural plains along the Boyne valley, which dominate the county. Meath's landscape is largely rural.

There are several tourist attractions and amenities in the counties of Cavan and Monaghan, offering a variety of tourist experiences, primarily based around the themes of culture, sightseeing, ecology and outdoor activities. In addition to the larger towns, where there is a higher concentration of tourist and amenity facilities, there are several smaller towns and villages in Cavan and Monaghan which have several local attractions and amenities for the surrounding population. Despite these attractions, the number of visitors to the southeast Cavan area and the eastern part of Monaghan is relatively low by comparison with other counties in Ireland. In Meath, there are many tourist attractions throughout the county. It is an important tourist destination, with the ancient passage tombs designated as a United Nations, Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Site. The importance of the county as a tourist destination arises as a result of its archaeological and architectural heritage, rural landscape, towns and villages, and coastline. Tourism is important to County Meath, particularly as it is located close to Dublin, which receives the highest number of overseas tourists and revenue. There is a number of existing rural tourism enterprises in the county in the vicinity of the proposed PCI.

In counties of Cavan and Monaghan, there are no designated European sites or nationally designated sites occurring within the immediate routing of the PCI. The closest designated site is Tassan Lough, a proposed Natural Heritage Area (pNHA), located approximately 250m south of the PCI routing. The closest European site is Killyconny Bog candidate Special Area of Conservation (cSAC), located approximately 11 km to the south-east of the PCI routing. Moreover, there are no rare or protected flora species in the vicinity of the routing. However, the whooper swan is a species of bird considered to be highly vulnerable to collision with overhead lines and populate this area throughout winter months. The sites close to the PCI at which the swans are recorded include Comertagh, Mill and Rafteragh Loughs (foraging and roost sites), Lough Egish and Lough Morne (foraging and roost site) and Balintra (foraging site). Finally, protected mammal species (in particular badger, otter and bat species) occur within the counties of Cavan and Monaghan.

In County Meath, there are three designated areas of conservation within 5 km of the PCI routing. Of these, the River Boyne and River Blackwater [cSAC and Special Protection Area (SPA)], which consists of two of these designations, is oversailed by the alignment at two locations, although no towers or other elements of the development. Two pNHAs and other non-designated habitats of conservation value also occur within 5km of the line of the PCI. There are no rare or protected flora species in the vicinity of the line of the PCI. Additionally, lapwing and kingfisher are key sensitive bird species that breed in Meath. Whooper swan is a species that extensively populated this area during winter in numbers that regularly exceed nationally significant levels (greater than 150 birds). Overall, many important sites have been identified relatively close to the line of the PCI. These include Tara Mines Tailings Ponds (roost site), River Blackwater Valley (various foraging sites), Headford Estate (roost site), Yellow River (foraging site), Cloony Lough (area), Cruicetown (area) and Balrath Estate (foraging and roost site). As in the cases of County Cavan, and County Monaghan, there are protected mammal species in Meath, in particular badger, otter and bat species.

5.1.2. "North-South Interconnector" Project of Common Interest

5.1.2.1. Grid Development of the Region

The Grid Development of Ireland is based on EirGrid's published Report on Grid25, which is EirGrid's strategy to develop Ireland's electricity transmission system. The strategy aims to support economic growth and job creation.

It facilitates a reliable supply of electricity for all consumers, providing the infrastructure to enable Ireland to realise its renewable potential.

The Government policy statement on the Strategic Importance of Transmission and Other Energy Infrastructure 2012 specifically endorses and supports the Grid25 development strategy. It reaffirms that Grid25 represents a unique Government policy and is in the directions of the national interest.

- In Ireland, the grid development comprises:
- A new single-circuit 400 KV overhead transmission line in Monaghan, Cavan, and Meath.
- A new 400 KV circuit along the unused northern side of the existing Old street to Woodland 400 KV double circuit line.
- Associated works in and adjacent to the Woodland substation in Meath.
- An associated temporary construction material storage yard in County Monaghan.
- Associated permanent and temporary construction and excavation works.

The North-East Region has some potential for onshore wind generation and a high potential for offshore wind. The area shares a border with Northern Ireland, which makes the region and the PCI that will run through it significantly important to the All-Island Single Electricity Market. The 220 KV and planned 400 KV transmission network in the region provides a strong power corridor between Dublin and Belfast. A high capacity gas pipeline runs between north Dublin and the Northern Ireland gas system, providing the potential for gas-fired generation in the northeast.

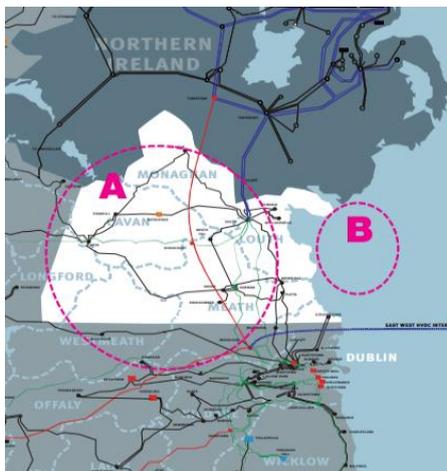


Figure 13. North East region of Ireland.

Source: "GRID 25. A Strategy for the Development of Ireland's Electricity Grid for a Sustainable and Competitive Future", EirGrid.

Between 1995 and 2005 the demand for electricity in the region has grown by about 55%. It is expected that by 2025 the demand will have grown by a further 60%. Renewable generation connections are expected to include up to 145 MW wind generation in Area A and 125 MW offshore wind generation in Area B⁵⁹, as demonstrated in the following Figure 13.

Currently, there is one electricity interconnector linking the Northern Ireland grid and the Republic of Ireland grid. The two transmission systems are connected via a double circuit 275 KV line running from Tandragee in Northern Ireland to Louth in the Republic of Ireland. Capacity reliance on the 275 / 220 KV cross-border circuit is restricted to 100 MW North to South and 200 MW South to North.

The single electricity market supports growing economies through efficient electricity market operations. Ireland continues to experience

⁵⁹ Source: GRID 25. A Strategy for the Development of Ireland's Electricity Grid for a Sustainable and Competitive Future. For details see: [http://www.pleanala.ie/misc/PCI/PCI1/DAF2/Volume%203B/Reference%20Material/EirGrid%20\(2008\)%20Grid25%20Strategy.pdf](http://www.pleanala.ie/misc/PCI/PCI1/DAF2/Volume%203B/Reference%20Material/EirGrid%20(2008)%20Grid25%20Strategy.pdf)

significant economic growth. It is, therefore, vital that the electricity system is efficient and supports such growth. Ireland must have adequate grid infrastructure that coincides with the current growth projections of the economy and the required power need.

A key barrier to the efficient operation of the single electricity market has been the limited interconnection between the electricity systems of Ireland and Northern Ireland. With only one interconnector of scale between the two electricity systems, they do not seem appropriate to operate as a single system. This limits the benefits that can be derived from the single electricity market. Conclusively, the North-South Interconnector is critical to the long-term security of supply and the release of operational efficiencies in the Single Electricity Market.

5.1.2.2. Project profile

The PCI 2.13.1 Interconnection between Woodland (IE) and Turleenan (UK) is being developed by EirGrid for Ireland and by System Operator for Northern Ireland (SONI)⁶⁰. The PCI is further described below.

Ireland's current high voltage direct current (HVDC) interconnection is with Great Britain via the East-West interconnector (EWIC)⁶¹. Ireland also maintains existing interconnection ties to Northern Ireland that use high voltage alternating current (HVAC). The North-South Interconnector project, planned for 2023, would increase the total transfer capacity between Ireland and Northern Ireland to 1,100 MW. In October 2013, the European Commission designated this project as a PCI. In particular, the project involves the addition of a new 400 KV overhead line through the counties Monaghan, Cavan and Meath. The grid would connect to the network in County Tyrone (NI) by crossing the border between Armagh (NI) and Monaghan (IE) and join the network in Ireland in the existing substation in Meath. The overhead line will be implemented with the erection of 299 pylons across Cavan, Meath and Monaghan and will link a substation at Woodland, Batterstown in County Meath with a planned substation in Turleenan, in the Dungannon area of County Tyrone.



Figure 14. Map of North-South
Source: <https://www.independent.ie/business/farming/>

In relation to the timeline and main facts of the project, the North-South Interconnector is currently on the permitting phase. According to the publicly available documents⁶² containing the implementation plan that relies on information provided by the promoter (last updated in November 2019) and is in line with the provisions of the TEN-E Regulation, the feasibility study started on April 2, 2001, and ended on July 1, 2004. Following the request from July 1, 2004, the PCI received approval from the National Regulatory Authority (NRA) on November 22, 2004. Moreover, the Front-End Engineering Design (FEED)⁶³ study began in 2013 and ended in 2014. On January 2, 2014, the permit granting was requested, and the decision was given on January 23, 2018. The planning approval was granted by An

⁶⁰ For details visit, <http://www.soni.ltd.uk/>.

⁶¹ See: <http://www.eirgridgroup.com/site-files/library/EirGrid/EWICTradingBrochure.pdf>.

⁶² See: https://ec.europa.eu/energy/maps/pci_fiches/PciImplementationPlan_2.13.1.pdf

⁶³ An engineering design approach used to control project expenses and thoroughly plan a project before a fix bid quote is submitted. It may also be referred to as Pre-project planning (PPP), front-end loading (FEL), feasibility analysis, or early project planning

Bord Pleanála (ABP)⁶⁴ – that is the authority responsible for the determination of appeals and other related matters under the local Planning and Development Act⁶⁵ – in December 2016. All planning and mitigation measures have been cleared as of February 9, 2019⁶⁶, and since June 2019, Electricity Supply Board (ESB) Networks⁶⁷ has been engaged in a competitive tender process for a framework contract for the design, test and supply of steelwork for the PCI. This framework contract has been awarded; however, no critical procurement process for construction will be concluded until all planning issues in Northern Ireland are resolved. The Final Investment Decision was granted in September 2019. The construction activities were estimated to begin in January 2020 and it is estimated to end in December 2022. Finally, the PCI is estimated to be commissioned in April 2023.

5.1.2.3. Public consultation and communication

Concerning the North-South Interconnector, EirGrid has engaged in public consultation activities, supported by relevant communication tools since 2007. Those activities derive from the existing standards of transparency related to public participation during the implementation of PCIs, included in the TEN-E Regulation No 347/25-04-2013, international conventions and national legislation. Also, EirGrid has engaged directly with landowners, and/or landowner representative groups as appropriate, and throughout has reviewed and considered requests by landowners⁶⁸.

In its publicly available reports about consultation and communication activities⁶⁹, EirGrid has presented the reservations that it has faced in each phase of the project. During the consultation periods, the public mentioned its concerns regarding the potential impact on health from either type of energy infrastructure, underground or overhead lines, due to the electromagnetic field of transmission lines. The concerns have been greater in the case of overhead transmission lines. Additional reservations existed for the potential noise impacts to areas in the proximity of the line route and the tower structures. At the same time, specific concerns involved the environmental issues and the welfare of animals in proximity to the transmission lines, the project's potential impact on cultural heritage and archaeological sites, the impact of the pylons on the visual landscape and its touristic appeal and the potential impact of the project on property values. Moreover, EirGrid mentions that people are worried about the effectiveness of the consultation process.

The following sections present in a concise way the public consultation and communication timeframe and phases, the stakeholders and target groups, as well as the consultation activities and communication tools employed.

Timeframe and phases

The stages that were adopted for the consultation and communication activities of the *North-South Interconnector* were the following⁷⁰:

PRE PHASE 1: (Feb 2007 - Aug 2007)
PHASE 1: Consultation on emerging preferred route corridors (Oct 2007 – May 2008)
PHASE 2: Evaluation of route corridors (Jun 2008 – Mar 2009)
PHASES 3 and 4: Consultation on line route within a preferred route corridor (Apr 2009 – Dec 2009)
STAGE 1 and 2: Re-evaluation (Dec 2010 – Jun 2013)

⁶⁴ See: <http://www.pleanala.ie/>.

⁶⁵ For details on the Planning and Development Act 2000, see: <http://revisedacts.lawreform.ie/eli/2000/act/30/revised/en/html>.

⁶⁶ For information on the planning and legal hurdles see: <http://www.eirgridgroup.com/the-grid/projects/north-south/the-project/>.

⁶⁷ See: <https://esb.ie/>.

⁶⁸ EirGrid, 2014. North-South 400kV Interconnection Development, Concept for Public Participation.

⁶⁹ EirGrid, 2014. North-South 400kV Interconnection Development, Volume 2B, Public and Landowner Consultation Report.

⁷⁰ Same as above.

STAGE 3: Preferred Project Solution (Jul 2013 – Dec 2013)
STAGE 4: Project Proposal Stage (Jan 2014 – Jun 2015)
STAGE 5: Consultation participants/ Stakeholders (2015 – 2016)

The general overview of the key consultation and communication phases which were undertaken for *North-South Interconnector* since 2007⁷¹, is presented below in Table 11:

Table 11. Overview of consultation and communication phases targeting the public.

Source: “North-South 400 kV Interconnection Development Public and Landowner Consultation Report. Volume 2B”, EirGrid, 2014

	2007-2010	2011-2016
Strand 1: Structured Phases of Public Consultation and / or Engagement	<p>Phase 1 introduced the public to the project, the Route Corridor Options and how they were decided upon (<i>October 2007 – May 2008</i>).</p> <p>Phase 2 focused on the announcement of the Preferred Route Corridors and indicative line route (<i>March 2009-July 2009</i>).</p> <p>Phases 3 and 4: These phases ran in tandem and involved on-going consultation in respect of the assessment of the indicative line routes and preparation of the planning application (focusing in particular on landowners). (<i>August 2009 – lodgement of the planning application in December 2009</i>). [Also: formal statutory consultation which occurred as part of the Strategic Infrastructure Development (SID) application for approval process (<i>December 2009 – June 2010</i>).]</p>	<p>Re-evaluation Process Phase (2011 – 2013) This two-phase process corresponded with the publication of the Preliminary Re-evaluation Report and Final Re-evaluation Report and the wider public consultation activities undertaken at this time.</p> <p>Preliminary re-evaluation phase: formal consultation period (<i>May 9, 2011 – July 1, 2011</i>).</p> <p>Final re-evaluation phase: formal engagement period (<i>April 16, 2013 – May 27, 2013</i>).</p> <p>The Preferred Project Solution Phase – this phase focused on consultation on the preferred project solution and the Preferred Project Solution Report. (<i>July 16, 2013 – September 9, 2013</i>).</p>
Strand 2: Focused Landowner Engagement	<p>The EirGrid project team sought to contact landowners directly and / or visit them further to publication of the Preferred Corridors and Indicative Line Routes (<i>March 2009 – July 2009</i>) and subsequently while undertaking baseline studies and completing the Environmental Impact Statement (EIS) during preparation of the planning application (<i>August 2009 – December 2009</i>).</p>	<p>Phase 1 – Focused landowner engagement took place following the publication of the Indicative Route (this corresponded with the publication of the Preliminary Re-evaluation Report).</p> <p>Phase 2 – Focused landowner engagement took place following the publication of the Preferred Project Solution Report in <i>July 2013</i>.</p> <p>Phase 2 – Following assessment of all the modification requests received, landowners were informed (in writing) of the Final Line Design and tower location that EirGrid was intending to submit to ABP for approval (<i>December 2013</i>).</p>

⁷¹ Same as above.

Stakeholders and target groups

For this study, it was important to identify the relevant stakeholders and target groups. Stakeholders are actors that can influence others or be influenced by others. Therefore, the term "stakeholder" can include all actors involved. By referring to a target group, we refer to a public or private audience that is affected or represents those affected by the PCI.

EirGrid has conducted various stakeholder mapping exercises across different project stages, while at all stages of the project, EirGrid has maintained a database of stakeholders. Figure 15 presents an overview that is considered as representative.

Some key stakeholders and target groups are:

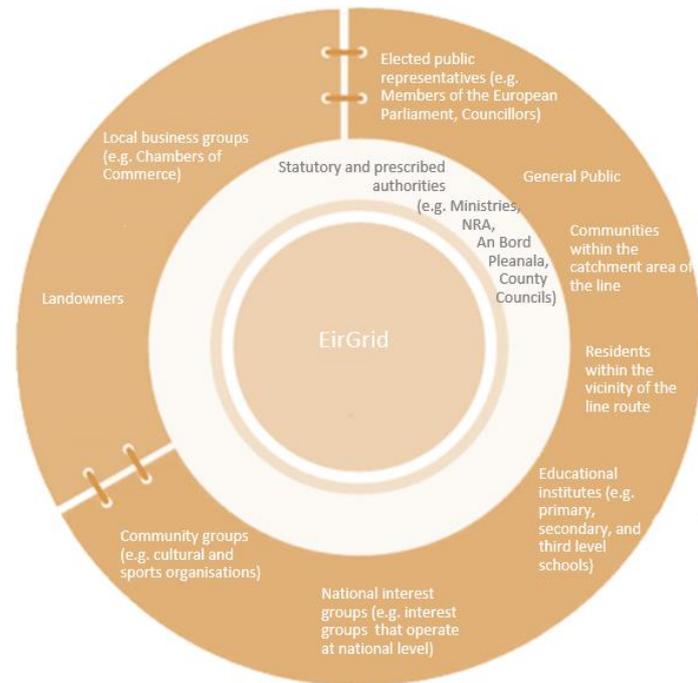


Figure 15. Stakeholders' mapping

- *EirGrid*, which is the independent electricity Transmission System Operator (TSO) in Ireland, the Market Operator (MO) in the wholesale electricity trading system and the main project promoter for the North-South Interconnector.
- *An Bord Pleanala*, the Competent Authority for PCIs under European Regulation No. 347/2013, which deals with trans-European energy infrastructure.
- *Department of Communications, Climate Action and Environment*, a Department of the Government of Ireland that is responsible to formulate and implement policy and legislation on the liberalisation and regulation of the electricity markets.
- *Eastern and Midland Regional Assembly* is a public association that participate and co-ordinate various EU projects
- *An Taisce (The National Trust of Ireland)*, which is a charity that works to preserve and protect Ireland's natural and built heritage.
- Landowner representatives such as County Monaghan Anti-Pylon Committee (CMAPC) and the North-East Pylon Pressure Campaign Ltd (NEPP), which are the most well organised local land-owners' groups.

Other organisations and interest groups were identified and/or have participated in the consultation and communications process, such as prescribed bodies that need to be advised of the application lodgement in advance (including representative bodies such as the County Councils), Chambers of Commerce, businesses, schools, health centres, sports associations, etc.⁷² The mapping of stakeholders has been used during the in-depth interviews conducted.

Consultation activities and communication tools utilised

Public consultation for the project to date was designed to adhere to the following three-pillar concept of accessibility, meaningfulness and accountability⁷³:

- Accessibility is the effort to communicate project information and key project messages to the public, the landowners and other stakeholders, which is essential for the success of any consultation.

⁷² For a more detailed list see, **Error! Reference source not found.**

⁷³ Source: "North-South 400 kV Interconnection Development Public and Landowner Consultation Report. Volume 2B", EirGrid, 2014

- Meaningfulness means providing clear information to the public on what aspects of the project are still open for consultation, what was/may be subject to change, and what decisions have already been taken and are not subject to change. Explaining which aspects of the project plan can still change allows stakeholders to understand the level and type of input they can realistically have in the project as it develops. On the other hand, meaningfulness also requires that the submissions and views of stakeholders are taken into consideration.
- Concerning accountability, public consultation aimed to raise awareness and maximise subsequent participation of the public and landowners in the process. The feedback provided by stakeholders during each phase of public consultation was recorded in a dedicated project database. This information was disseminated and reviewed to ensure that it was considered as part of the decision-making process. EirGrid, therefore, was able to account for the information received from the public and stakeholders at each phase and demonstrate how it was reviewed and considered as part of a subsequent reporting that was published for the project.

To this end, communication tools have been interwoven with consultation activities with the aim:

- to make project information available;
- to readily inform about the project status; and
- to maximise participation in the consultation process.

The consultation mechanisms and communication tools used by the project promoter throughout the implemented consultation activities, as identified during the in-depth desk research, included the following:

- Consultation Meetings
- Information Open day events
- Open offices to public
- Oral Hearing
- Presentation
- Information centres
- Phone line
- Reporting
- Email and Postal Address
- Brochures and Leaflets
- Briefings
- Project website, regularly updated
- Media

The use and emphasis on each of the aforementioned mechanisms and tools depended on the consultation phase and its aim. However, it has been an iterative process during which feedback gathered has been used to improve mechanisms and tools.

5.1.2.4. Insights and perspectives

The European Commission's 2050 vision⁷⁴ presents options for a future climate and energy policy that will put Europe on the path towards a net-zero greenhouse gas emissions economy. The strategic priorities of the road to climate-neutral economy⁷⁵ entail, among others, large scale electrification of the energy system coupled with the deployment of renewable energy sources. This is due to the fact that many sectors, such as transport as well as heating and cooling, currently dominated by fossil fuels, will

⁷⁴ European Union: Communication from the Commission to The European Parliament, The European Council, The Council, The European Economic and Social Committee, The Committee of the Regions and the European Investment Bank, "A Clean Planet for all A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy", COM/2018/773. Permanent Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0773>.

⁷⁵ See: https://ec.europa.eu/clima/sites/clima/files/docs/pages/vision_1_emissions_en.pdf.

gradually transition to energy supply from renewable sources towards full decarbonisation of European Union's energy system. This requires a further focus on ensuring optimal interconnection and energy integration across the European Union. The development of trans-European energy infrastructure projects is necessary to ensure the security of energy supply across the European Union and the integration of the internal energy market, enhance the competitiveness of the economy and meet the climate and energy targets.

EirGrid has embarked on the deployment of the necessary energy infrastructure projects that allowed the maintenance and advancement of the Single Electricity Market (SEM)⁷⁶, the wholesale electricity market for the island of Ireland, first established in November 2007⁷⁷. The Single Electricity market was replaced in 2018 by the Integrated Single Electricity Market (I-SEM)⁷⁸, the new wholesale market for electricity on the island of Ireland, to meet the requirements of the European Union Target Model (which is a development flowing from the Third Energy Package⁷⁹). The Integrated Single Electricity Market is fundamental to the cost-effective incorporation of electricity supply from rapidly growing renewable sources. The North-South Interconnector is critical as it will ensure the long-term electricity supply and energy independence of Ireland, by reducing reliance on imported fossil fuels such as oil and natural gas.

EirGrid's general communication strategy is largely centred around the goals of energy security and the reduction of greenhouse gas emissions that is also evident in the promoted relevant strategy in the case of the North-South Interconnector, particularly with regard to the general public, but ultimately to other target groups.

As the project advanced, the consultation and communication strategy has been reassessed and adapted to address specific stakeholders' reservations, resulting in an even more case and place-specific strategy. This is evident in Figure 16 and Figure 17. Figure 16 illustrates the exact timing of the various activities within the project stages. The reader can observe all the consultation events implemented at the time. The different stages of consultation are also illustrated. Most of the consultation activities and events are concentrated in Stages 1 and 2 (between 2010-2013). During this period, all key decisions, determined in 2009 project's phases, were subject to review and public consultations resulting in a comprehensive re-evaluation of the project. In Figure 17, the reader can observe the list of stakeholders that participated not only in the aforementioned public consultation activities but throughout the whole North-South Interconnector consultation, along with the extent of stakeholders' participation rate. It is obvious from the figure that the key participants with a higher participation rate are the stakeholders most affected by the project, such as landowners and the statutory and prescribed authorities. The sources of the data collected for this figure comprised consultation records⁸⁰ and publicly available sources⁸¹ concerning information on the date, the participants, the medium and location of all consultation activities between 2007 – 2016.

⁷⁶ See: <http://www.eirgridgroup.com/customer-and-industry/i-sem/>.

⁷⁷ See: <https://www.semcommittee.com/sem/>.

⁷⁸ See: http://www.eirgridgroup.com/_uuid/f110639e-9e21-4d28-b193-ed56ee372362/EirGrid-Group-I-SEM-Quick-Guide.pdf.

⁷⁹ See: Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC. Permanent link: <https://eur-lex.europa.eu/eli/dir/2009/72/oj> and https://ec.europa.eu/energy/topics/markets-and-consumers/market-legislation/third-energy-package_en.

The European Target Model is the umbrella term for a detailed list of common EU guidelines, procedures and codes to enable a single EU – wide wholesale electricity market. This electricity market integration is one of the medium-term goals of the Third Package. The implementation of these common EU guidelines will allow electricity and gas to be traded freely across the EU. Source: <https://www.dccae.gov.ie/en-ie/energy/topics/Electricity/internal-energy-market-for-electricity/Pages/I-SEM.aspx>.

⁸⁰ North-South 400 kV Interconnection Development, Application Form for Approval, Schedule 5 – Consultation Record, EirGrid.

⁸¹ For details visit, <http://www.eirgridgroup.com/the-grid/projects/north-south/whats-happening-now/>

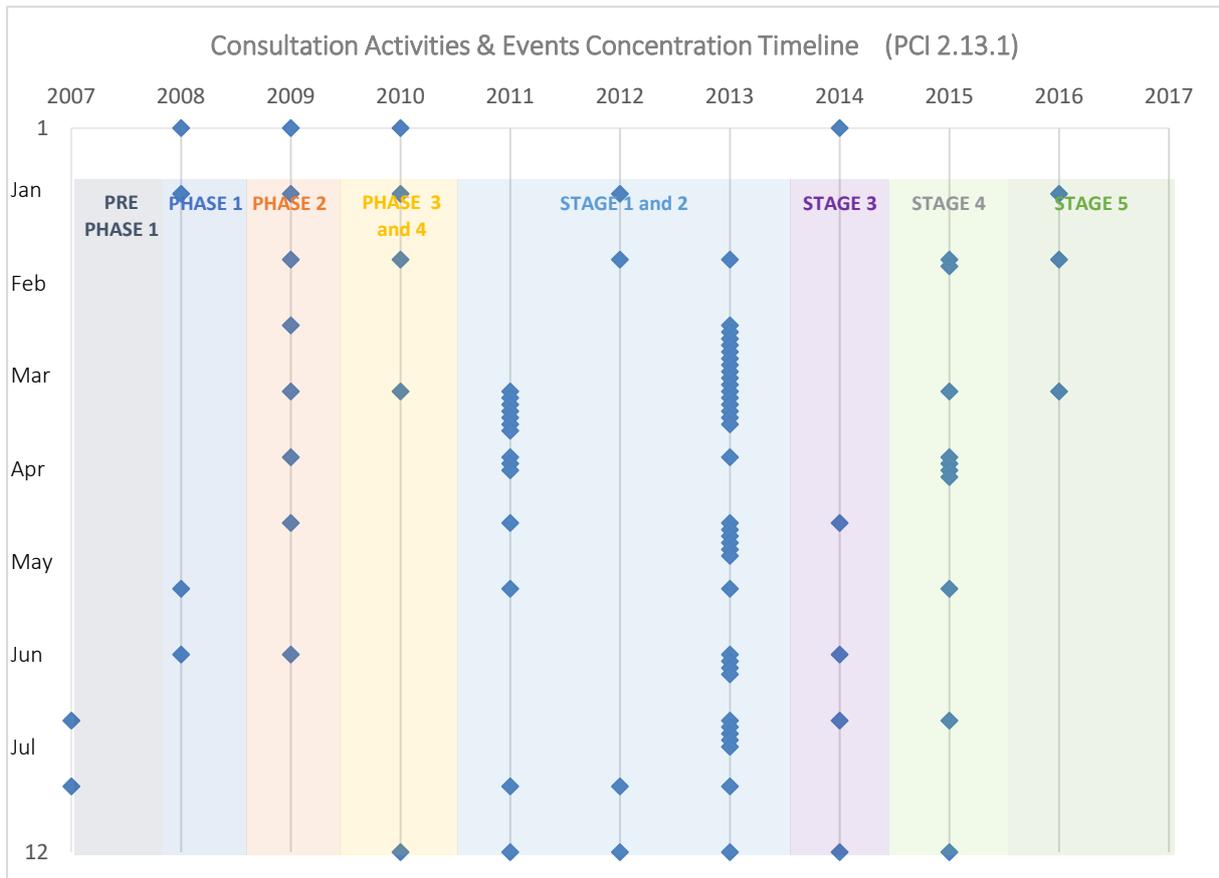


Chart Legend:	PHASE 1: Consultation on emerging preferred route corridors (Oct 2007 – May 2008)
	PHASE 2: Evaluation of route corridors (Jun 2008 – Mar 2009)
	PHASES 3 and 4: Consultation online route within a preferred route corridor (Apr 2009 – Dec 2009)
	STAGE 1 and 2: Re-evaluation (Dec 2010 – Jun 2013)
	STAGE 3: Preferred Project Solution (Jul 2013 – Dec 2013)
	STAGE 4: Project Proposal Stage (Jan 2014 – Jun 2015)
	STAGE 5: Consultation participants/ Stakeholders (2015 – 2016)

Figure 16. Consultation/ Communication Activities and Event Concentration Timeline of the North-South Interconnector.

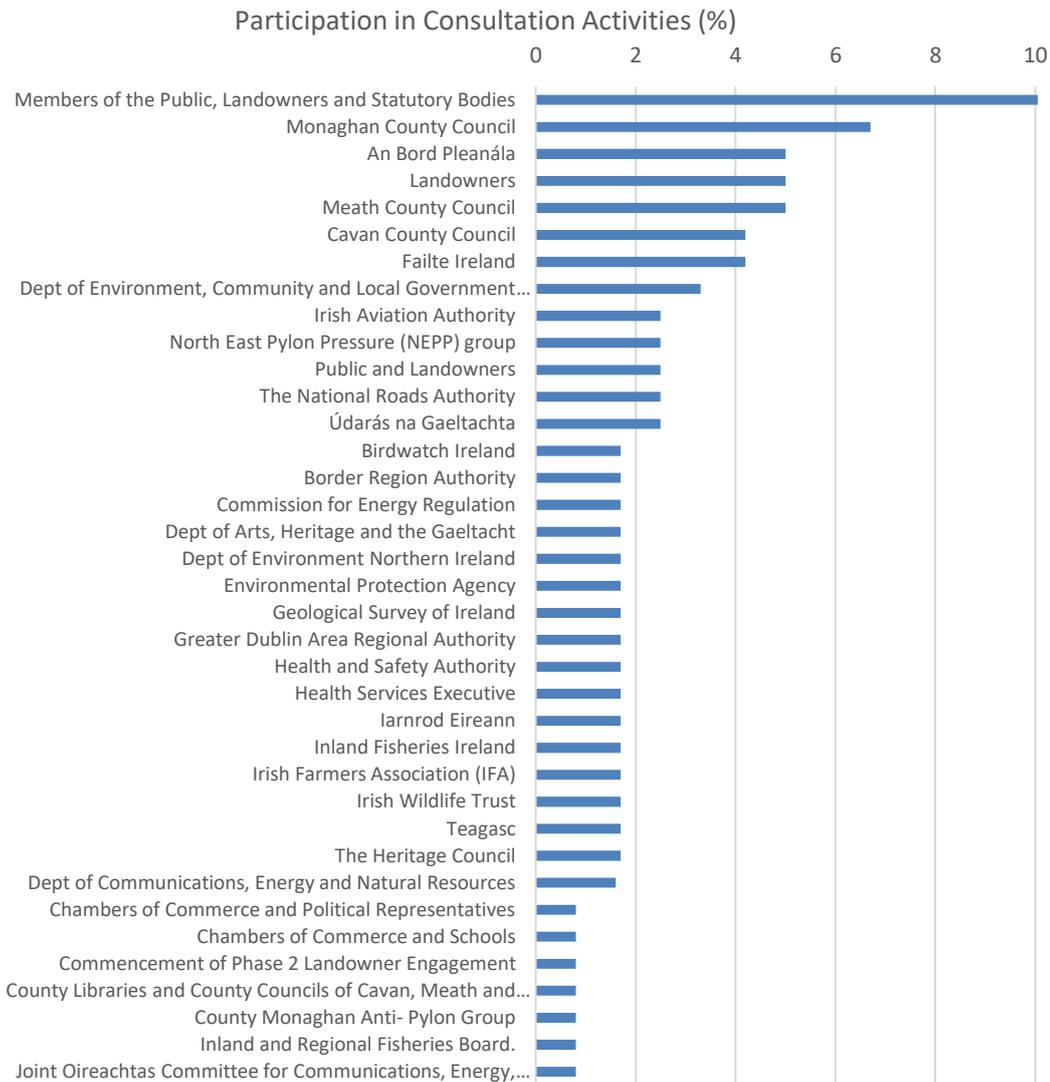


Figure 17. Participation of Stakeholders in Consultation Activities.

Therefore, a proper approach would be to underline the project’s importance and positive impact in the broader area (i.e. regionally and/or nationally), and concurrently focus on specific target groups and issues that are of concern to the local community. For Ireland – as a small country in population and surface area – this approach should be implemented at the national level. This seems to be the opinion of many interviewees, indicating the need to target a broader area (national level) initially. Once the preferred route is selected, consulting with the local community directly affected by the project is necessary. This step should be highly localised and involve target groups such as landowners, residents and elected representatives.

Other interviewees have commented that the group targeting should be twofold throughout the project, simply changing the relevant participation proportion at each stage accordingly. It has been noted that it is important for a project promoter to ensure the project’s support from additional regions other than the area where the project takes place, as this will significantly facilitate public acceptance locally as well. Moreover, it has been pointed out that after the preferred route’s selection, the target groups affected by the project begin to evaluate the project in more detail. In contrast, the less affected groups tend to disengage. Thus, while initially, the emphasis is on the country level and general drivers, then the mix changes and more emphasis should be given to specific areas and stakeholders. This has an impact both on the consultation mechanisms utilised, as well as the communication tools employed and the key messages promoted, given that any reservations encountered are localised and specific.

In fact, stakeholders seem to prefer personalised and one-to-one meetings with the project promoter over other types of contact and similar communication mechanisms such as open offices to the public, information centres or even open day events⁸² as interviewees have noted. EirGrid engaged with landowners on a one-to-one basis during the consultation and communication activities, by visiting their homes to develop personal relationships. This type of direct contact between local communities and the project promoter may lead to better dissemination of all the necessary information and help mitigate their concerns. Moreover, it is important to note that the communication material disseminated needs to be more focused to address the regional concerns. During the in-depth interviews conducted, one of the interviewees confirmed this noting that people are interested in better understanding the benefits available to them, to their community, to the economy and the jobs that will be created for the local inhabitants. In addition, the same interviewee indicated that people who have experience with this type of infrastructure must explain the benefits and present the actual improvements this new infrastructure would bring to local people. It was further highlighted that this has to be done each time in a way that is appropriate to the specific target audience, for example, there are people who find it difficult to read technical designs or maps in their standard format.

It is worth noting that many of the misgivings of the local community highlighted during the analysis concern the barriers that limit public acceptance in Section 3.3.2. EirGrid has performed a comprehensive reporting codification, as evidenced by the in-depth interviews that were conducted. There have been health and safety concerns about the underground electromagnetic fields and especially overhead lines. Accordingly, there have been reservations on the part of the interviewees about the potential impact of the project on property values, future development potential and the possibility of land restoration after project completion⁸³. Additional points concerned environmental issues and the welfare of animals in proximity to the transmission lines. Finally, concerns were also raised regarding the project's potential impact on cultural heritage and archaeological sites in proximity to the preferred line route and pylon locations⁸⁴.

The fact that these reservations are repeated in many PCIs could be interpreted as a call for additional action on an EU – level. In the case of the *North-South Interconnector*, these reservations have been mitigated to a large extent, but not completely eliminated, despite extensive consultation supported by various communication tools, including a due diligence investigation by experts for the laying of underground cables. In that sense, perhaps it would be beneficial for the public acceptance of PCIs to intensify the effort delivered for their promotion at an EU – level. This would mean supporting further research on issues of common interest, such as the health impact of electromagnetic fields, thus providing the project promoters with the relevant evidence and the communication tools for disseminating results to wider audiences and help overcome widely spread beliefs. A proposal with a similar approach was also submitted in the context of in-depth interviews.

5.2. Pilot Region: Friuli – Venezia – Giulia, Italy

The following sections present the results of the in-depth analysis of the Friuli Venezia Giulia region of Italy and the PCI 3.4 Interconnection between Würmlach (AT) and Somplago (IT).

⁸² See previous subsections for details on the consultation activities and communication tools.

⁸³ Examples include the fertility of the land, a fall in property values, potential loss of development on the land in respect to future planting of trees.

⁸⁴ Examples include ring forts in proximity of the line route, the Neolithic site at Montag Lake, Crannong within Whitewood Lake, The Boyne Valley, Trim Castle, Heritage sites in Cruicetown/Nobber, Whitewood and Brittas House, Bective area Archaeology in Teltown and Local heritage features located on landowner lands including forts.

5.2.1. Profile of the Region

The Friuli Venezia Giulia (FVG) Region is the north-east region of Italy. It borders Austria to the north and Slovenia to the east. To the south, it faces the Adriatic Sea and to the west, its internal border is with the Veneto region. The region is mostly mountainous alpine in the north (Carnia, Carnic Alps, and the Julian Alps) with vast pine forests, pastures, mountain lakes and numerous streams and rivers. It is hilly in the southeast and the remaining area combines the central and coastal plains, with arid and permeable soil.

The region of Friuli Venezia Giulia is one of the most developed areas in the country. Its economy is based on small and medium-sized enterprises, specialised farming and high-quality tourism, and a significant exporting sector in traditional products. Agriculture and farming maintain an essential role in the economy of the region. Its high-quality products are exported not only within the country and Europe (fruit and vegetable, cheese) but have become known worldwide for their quality (cured ham and wines, primarily white ones). The production of soy and timber production in Carnia is also noteworthy.

In the Friuli Venezia Giulia Region, there are three Important Bird Areas (IBA) close to the line, namely IBA 043 "Alpi Carniche", IBA 048 "Media Valle del Tagliamento" and IBA 206 "Valle dell Torrente But". Moreover, the Natura 2000 Areas that are close to the line of the PCI are SPA IT332100 "Alpi Carniche" and SAC IT3320001 "Gruppo del Monte Coglians". The line of the PCI interferes with the Special Protection Area (SPA) belonging to Natura 2000 Network identified with the code IT 3321001 "Alpi Carniche". In addition, it is close to the Special Area of Conservation (SAC) IT3320001 Mount Coglians Group, of Natura 2000 network. The rest of Natura 2000 sites are at least 3 km away from the line of the PCI route.



Figure 18. Map displaying the Interconnection between Würmlach

Source: «Nuovo elettrodotto in cavo interrato a 220 kV "SOMPLAGO (Italia) – WÜRMLACH (Austria)" (Merchant Line) Studio di Impatto Ambientale», 3E Ingegneria srl, 10/10/2018.

5.2.2. "Interconnection between Würmlach (AT) and Somplago (IT)" Project of Common Interest

5.2.2.1. Grid Development of the Region

The recently adopted Italian Integrated National Plan for Energy and Climate (PNIEC) foresees – among other things – to strengthen electricity interconnections and market coupling with the other Member States and third countries with the aim of promoting efficient exchanges.

The National Transmission Grid (RTN) is interconnected with foreign countries through 25 lines: 4 with France, 12 with Switzerland, 2 with Austria, 2 with Slovenia, 2 DC connections (a cable connection with Greece and a dual connection, called the "SACOI" interconnection, between Corsica, Italy and Sardinia), an additional AC cable between

Sardinia and Corsica, a submarine and terrestrial 220 KV cable connection between Italy and Malta.

- The following connections are currently under construction or preliminary design:
- the HDVC Piosasco - Grand'Ile connection (Italy - France),
- the HVDC connection Villanova - Tivat (Italy - Montenegro),
- the connection 132 KV Prati di Vizze / Brennero (Italy - Austria),
- the Sardinia - Corsica - mainland Italy SACO13 connection (Italy - France),
- the Italy - Tunisia connection (ELMED project).

Finally, as can also be seen in the Integrated Energy and Climate National Plan, new possible interconnectors funded (in whole or part) by private parties have been identified. These are Merchant Lines, i.e. interconnection infrastructures with foreign countries whose capacity transport is fully managed by the investors, for a specific period, for their consumption or commercial uses. The projects of interest concern the borders with France, Switzerland, Austria, Slovenia and Montenegro.

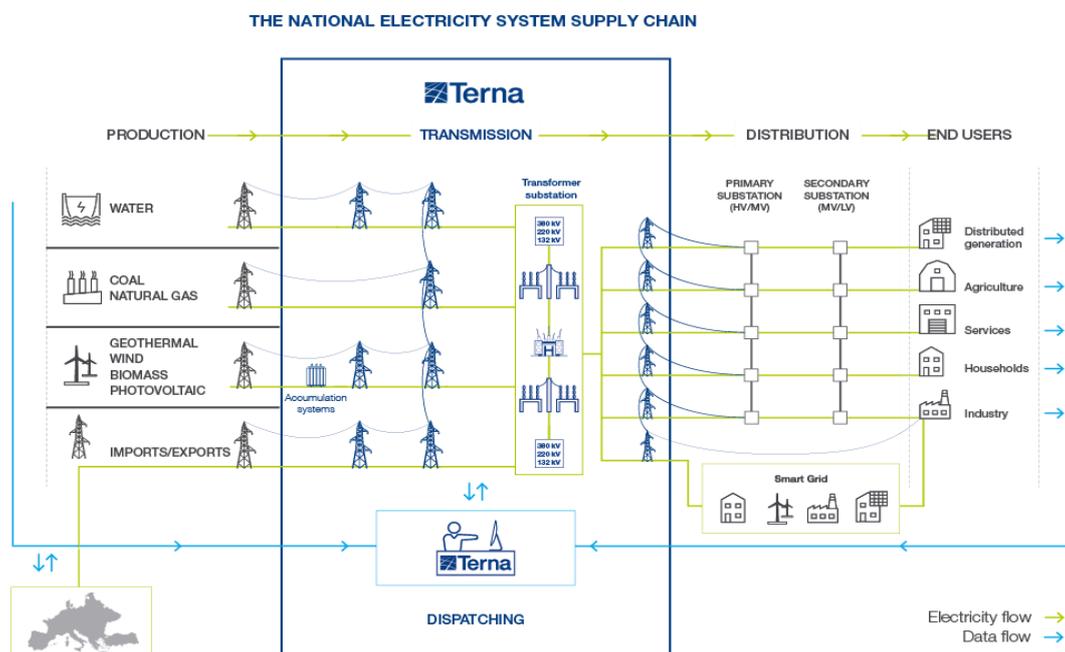


Figure 19. The national electricity system supply chain

Source: <https://www.terna.it/>

The Interconnection between Würmlach (AT) and Somplago (IT) was born from the enactment of Legislative Decree August 29, 2003, no. 239 "Urgent provisions for the safety and development of the national electrical system and for the recovery of electricity power" (converted into law by Law October 27, 2003, No. 290) and the implementing decree referred to the D.M. October 21, 2005, of the Ministry of Productive Activities. Under this law, the Government recognised the possibility for private subjects to establish interconnections with other States for a predefined number of years. At the end of this timeframe, the infrastructures become property of the operator of networks for the transmission of electricity (TSO).

5.2.2.2. Project profile

The PCI 3.4 Interconnection between Würmlach (AT) and Somplago (IT) in the Friuli Venezia Giulia Region is currently in the permitting phase.

The project is located in the province of Udine, in the Municipalities of Cavazzo Carnico, Tolmezzo, Arta Terme, Sutrio, Paluzza and Cercivento and concerns a 220 KV A.C. underground cable between Italy and Austria. It is 51 km in length and has about 300 MW of capacity, with a Phase Shift Transformer (PST) located in Austria. The local

Regional Authorities prompted a range of activities to address the potential impact of the project on the economy in addition to social, touristic, environmental and health impacts, after having concentrated the various concerns of the local communities. Hence, the project was redesigned, including extensive rerouting and laying its line underground for all its length.

Figure 20 and Figure 21 illustrate a summary of the power line lengths in each municipality crossed before the rerouting when the power line was overhead (Figure 20), and after the rerouting when the line was transferred underground (Figure 21).

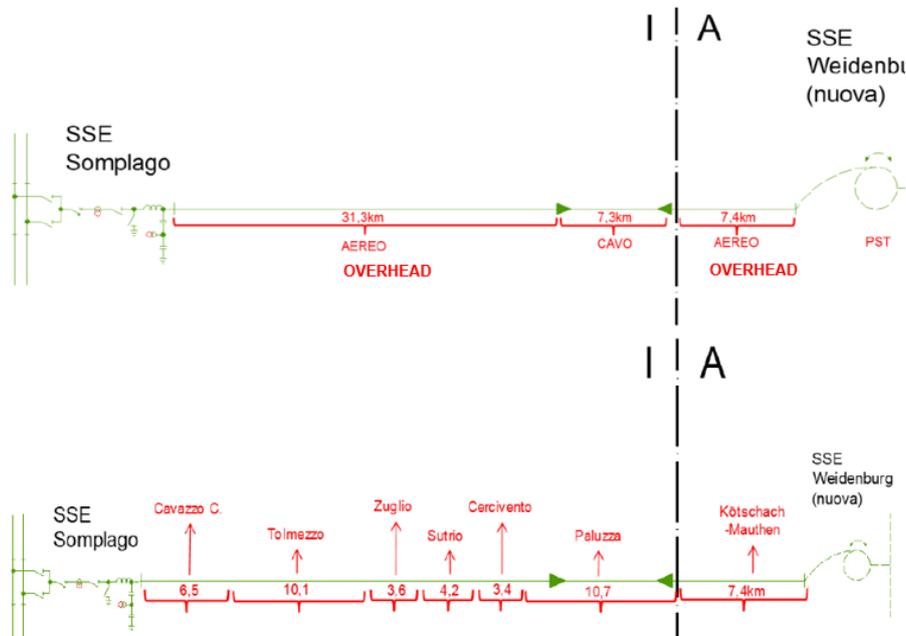


Figure 20. The power line sections for each municipality crossed, before the redesign of the project.

Source: «Nuovo elettrodotto in cavo interrato a 220 kV "SOMPLAGO (Italia) – WÜRMLACH (Austria)" (Merchant Line) Studio di Impatto Ambientale», 3E Ingegneria srl, 10/10/2018.



Figure 21. The power line sections for each municipality crossed, after the redesign of the line.

Source: «Nuovo elettrodotto in cavo interrato a 220 kV "SOMPLAGO (Italia) – WÜRMLACH (Austria)" (Merchant Line) Studio di Impatto Ambientale», 3E Ingegneria srl, 10/10/2018.

The Ministry of Development reinitiated the permitting process in December 2018 and the Ministry of the Environment, Land and Sea began the consultation procedure on the new Environmental Impact Assessment (EIA) in March 2019. The new project maintains the existing grid nodes (Somplago, a municipality in Cavazzo Carnico in Italy, and

Würmlach, a municipality of Kötschach-Mauthen in Austria) and foresees a completely underground solution. This is in order to satisfy the requirements of local stakeholders, as well as the guidelines provided by Friuli Venezia Giulia Regional Energy Plan (REP). Figure 22 (Left) illustrates a map presenting the comparison between the original project and the redesigned project and Figure 22 (Right) illustrates the map of the new redefined interconnection.

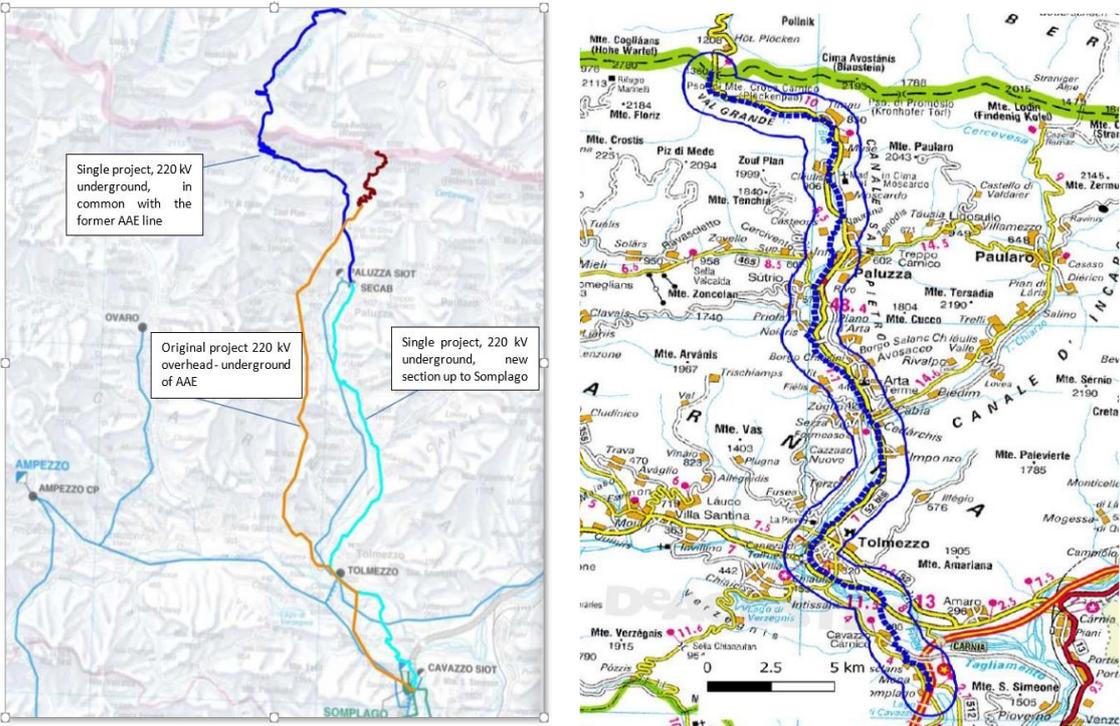


Figure 22. (Left) Map presenting the original project in comparison with the new redesigned project. (Right) Map of the new redefined interconnection.

Source: "Nuovo elettrodotto in cavo interrato a 220 kV "SOMPLAGO (Italia) – WÜRMLACH (Austria)" (Merchant Line) Studio di Impatto Ambientale", 3E Ingegneria srl, 10/10/2018.

The project is being developed by Alpe Adria Energia SRL (AAE) for both Italy and Austria. It envisages the construction of a new 220 KV underground cable power line for the connection of the new sorting station in Würmlach (Austrian territory) with the existing 220 KV electricity station in Somplago (Italian territory). As aforementioned, it involves a completely underground solution after the modification of the project promoted by Alpe Adria Energia SRL, which concerned the construction of an overhead line between the same network nodes. The design change was necessary to meet the requests and indications received from the local stakeholders, in particular from the municipalities and Friuli Venezia Giulia Region.

The project line will have a capacity of approximately 300 MW and its length from Somplago Station to the Austrian border will be about 40 km. The project proposal aims to minimize the landscape and environmental impact, mainly by developing along the path of existing main and secondary roads. Finally, the implementation of shielding channels is expected to reduce any effect of electromagnetic fields further, even though they already lie below the legally specified limits.

5.2.2.3. Public consultation and communication

According to the publicly available implementation plan⁸⁵ for the Interconnection between Würmlach (AT) and Somplago (IT), which relies upon the information provided by the promoter and is in line with the provisions of the TEN-E Regulation, the FEED study began on June 2018 and ended on December 2018. The granting of the permit was requested on December 20, 2004, and the decision was given on December 31, 2019. The construction activities are estimated to begin on August 3, 2020, and to finish on November 12, 2021. The PCI is estimated to be commissioned in 2022.

The following subsections present in a concise way, the public consultation activities conducted along with their timeframe, the stakeholder and target groups that participated, and the communication tools used.

Timeframe

The permitting phase for both Italy and Austria lasted from 2004 until 2015. In 2013 the project obtained the PCI status. In 2015, the permitting process was suspended in Italy by MISE based on a request from the Friuli Venezia Giulia regional authorities⁸⁶. Between 2015 and 2018 an integration of various projects took place, which led in 2018 to the integration with the Alpen Adria Energy Line (AAEL), for a new completely underground solution. In December 2018 they restarted the "Unique Authorisation" process through MISE, followed by the Environmental Impact Assessment process through MATTM in March 2019 and began the exemption process (Reg. 714/2009 both in Austria and in Italy).

The communication activities were initiated in 2004 when Pittini – Fernere Nord Group presented the initial project to the municipalities. Following on, in 2005 a public meeting was organised by "Agenzia Regionale per la Protezione dell'Ambiente del Friuli Venezia Giulia (ARPA FVG)", where they presented to the public the contents of the environmental law for the construction of a power line that should guarantee the protection of people from electromagnetic fields. After a long period, due to the redefinition of the project, the project promoters organised a public debate to introduce the underground project to the citizens. At this meeting, the list of participators included – inter alia – the mayors of the affected municipalities, representatives of the Friuli Venezia Giulia Region, the Regional Environmental Agency (ARPA) and an expert from the National Health Institute. Additionally, in September 2018 there was a meeting with the Region's technicians, the project promoters, the mayors of the municipalities and ARPA FVG. Finally, in March 2019, the Environmental Impact Assessment of the redefined project was published, providing a timeframe of two months for the public to state their submissions and concerns to the study.

The main stages of the communication activities performed for the PCI 3.4, Interconnection between Würmlach (AT) and Somplago (IT), were drawn up following interviews with the project promoters and identified as:

Stage 1: Assessment of the project and what it is dealing with
Stage 2: Engagement of the relevant stakeholders
Stage 3: Examination of the strengths and weaknesses of the project
Stage 4: Identification of the stakeholders that are in favour or against the project
Stage 5: Schedule the timeframe and the timing of the communication activities
Stage 6: Consultation on the Environmental Impact Assessment (current stage)

Before the permitting phase, the promoters published information linked to the authorisation procedure and aimed at the citizens and the local municipalities.

⁸⁵ Implementation plan (last update November 2019). For details, visit: https://ec.europa.eu/energy/maps/pci_fiches/PciImplementationPlan_3.4.pdf

⁸⁶ Source: Alpe Adria Energia Presentation at the DG ENER – INNOVATIVE ACTIONS – INTERACTIVE WORKSHOP, Brussels, ENTSO-E Premises, 27/02/2020.

Stakeholders and target groups

For this project, the approach to the identification of relevant stakeholders and target groups was similar to the one used for the North-East Region. Stakeholders are actors that can influence others or be influenced by others.

The stakeholders participating in the consultation and communication activities of this PCI included:

- Local elected representatives (mayors of the municipalities involved) and national representative stakeholders
- Statutory and prescribed authorities
- Interest groups
- Local business groups - Associations of small-medium enterprises,
- Public and community associations and groups (representatives of the valley)
- Landowners
- Residents within the vicinity of the line route
- The general public.

Some key stakeholders and target groups are:

- ⇒ *Alpe Adria Energia Srl (AAE)* – jointly owned by Enel Produzione S.p.A and Alpe Adria Energy Line S.p.A, with each company having a 50 per cent share, is the main promoter of the PCI.
- ⇒ *ARPA FVG (Agenzia Regionale per la Protezione dell'Ambiente del Friuli Venezia Giulia)* – *Regional environmental agency*, is in charge of the consultation and communication engagement activities targeting the public.
- ⇒ *The Ministry of Economic Development and in particular, the General Directorate of the Electricity Market, renewables, energy efficiency, the Nuclear-Manager Div. IV Infrastructure and network systems*, is responsible for the permitting procedure of the PCI.
- ⇒ *The Ministry for Environment, Land and Sea Protection of Italy*, is responsible for collecting public comments and monitoring their publication on the competent authority's website.
- ⇒ *Secab-Societa Elettrica Cooperativa Alto But* had a representative participating in some of the meetings, especially during 2017 with inhabitants of Paluzza's municipality.
- ⇒ *Finally, Terna Rete Italia Spa* is not directly involved in the PCI 3.4, but is involved in the National Grid Development Plan of Italy and collaborates with Renewables Grid Initiative.

Other organisations and interest groups were identified and/or have participated in the consultation and communications process, such as prescribed bodies that need to be advised of the lodgement of the application in advance, Chambers of Commerce, businesses, etc. The mapping of stakeholders has been used during the in-depth interviews.

Consultation activities and communication tools utilised

The activities organised by the project promoters included roundtables, with open citizen participation, the results of which were also reported on local media. The public debate held on April 19, 2018, was supported by AAE, with the participation of the affected municipalities and environmental and health experts, Friuli Venezia Giulia representatives and citizens. This public debate was preceded and succeeded by meetings with Municipalities to tune the project and implement the suitable modifications. ARPA FVG visited the local municipalities with experts from the Italian Institution of Health to talk about electromagnetic fields health impact on the public. Finally, the promoters had one-to-one meetings with associations and stakeholders. A public engagement took place once or twice a year, without media releases.

Public consultation for the project to date was designed to adhere to the following principles.

- *Commitment:* Ensure that public consultation complies with the general principles of open decision-making and that the results of the consultation are integrated into the decision-making process.
- *Clarity:* The public consultations objectives, their subject, recipients, roles and methods are clearly defined before any consultation begins.
- *Transparency:* All the aspects of the consultation process are made available to all citizens.
- *Support to participation:* Enhance public participation through information, communication and educational activities.
- *Privacy:* Sensitive public data are not published and the privacy of participants in public consultations is ensured.
- *Impartiality:* Guarantee the impartiality of planning and carrying out a public consultation.
- *Inclusion:* Ensure that participation in the consultation process is as accessible, inclusive and open as possible, granting all stakeholders equal opportunities to participate.
- *Timeliness:* A consultation is carried out at a stage when the different viewpoints are still under discussion and the different approaches to the issue, which is the subject of the consultation can still be taken into consideration. The consultations start early enough to allow all citizens to express themselves before the formal procedures; once a question is raised, the promoter tries to provide answers as soon as possible.
- *Citizen-oriented approach:* Anyone taking part in a consultation is required to invest a certain amount of time and resources. Therefore, consultations shall be organised in such a fashion as to make this task reasonable and facilitate participation.

The consultation mechanisms and communication tools applied throughout the relevant activities of the Interconnection between Würmlach (AT) and Somplago (IT), were identified and comprised the following.

- Consultation meetings organised by the project promoter and the municipalities with the affected communities before the start of the Environmental Impact Assessment procedure.
- Information open day events, during which the project promoters met with the public.
- Oral hearings, i.e. public meetings where project promoters and public discussed and talked regarding the project,
- Presentation of the project,

- Meetings of the project promoter with all the institutional stakeholders to present the project,
- Public debates, via round tables or open face-to-face meetings with the citizens.
- Face to face meetings, with mayors and authorities of each region.
- Email and postal address, for the locals to communicate with the promoters.
- Website dedicated to the project.
- Media releases.

The use and emphasis on each of the aforementioned mechanisms and tools depended on the consultation phase and its aim. However, it has been an iterative process during which feedback gathered has been used to improve mechanisms and tools.

5.2.2.4. Insights and perspectives

The PCI Interconnection between Würmlach (AT) and Somplago (IT) will double the present net transfer capacity between Austria and Italy and provide greater security of energy supply. Additionally, it will guarantee an improved quality, safety and reliability of the interconnected electricity systems, by reducing the risk of congestion and power surges. Moreover, as mentioned in ENTSO-E's Ten-Year Network Development Plan (TYNDP) 2016 and 2018⁸⁷, the project will increase the use of more efficient energy production and put downward pressure on energy prices.

As both in-depth desk research and in-depth interviews with stakeholders have shown, health issues that allegedly could be caused by electromagnetic fields and noise have been the main reasons for stakeholders' reservations, especially among people residing along the transmission line. Other reservations concerned the environment and the potential impact of transmission lines on the landscape, deforestation and the danger on the fauna and flora of the area that may occur during the construction and operation phases⁸⁸. The possible economic and social implications were extensively mentioned during the in-depth interviews, and also by the mayors of the affected municipalities during the on-site meeting that took place in Paluzza, Italy (January 2020). Reservations concerning the effect on tourism and agricultural practices along the route of the transmission line have been raised. Also, during the in-depth interviews and the on-site meeting, Torviscosa Thermoelectric Power Plant has been mentioned. Torviscosa Thermoelectric Power Plant covers the energy demand of Friuli Venezia Giulia and provides jobs in the area. In that sense, the necessity of the interconnection for local people was questioned.

It has to be noted that the project promoter commissioned scientific studies to examine the environmental impacts of the project and any effect from the electromagnetic fields. This did not put an end to the reservations of the local communities. Eventually, the project promoter had to redesign the project, so the line was completely underground. However, this did not totally put an end to the reservations of the local communities. Figure 23 and Figure 24 illustrate an indicative timeline of the consultation activities of the initial and redesigned project. Activities organised by the project promoter and statutory stakeholders are in a green frame, important facts following these activities are in petrol frame and collective activities organised by local authorities (mainly with reservations about the project) are in orange frame.

⁸⁷ "Report: Project 210 - Würmlach (AT) - Somplago (IT) interconnection". For details, see: <https://tyndp.entsoe.eu/tyndp2018/projects/projects/210>

⁸⁸ Special Protection Area (SPA) belonging to Natura 2000 network identified with the code IT 3321001 "Alpi Carniche" was not mentioned explicitly neither during the in-depth interviews nor during the on-site meeting.

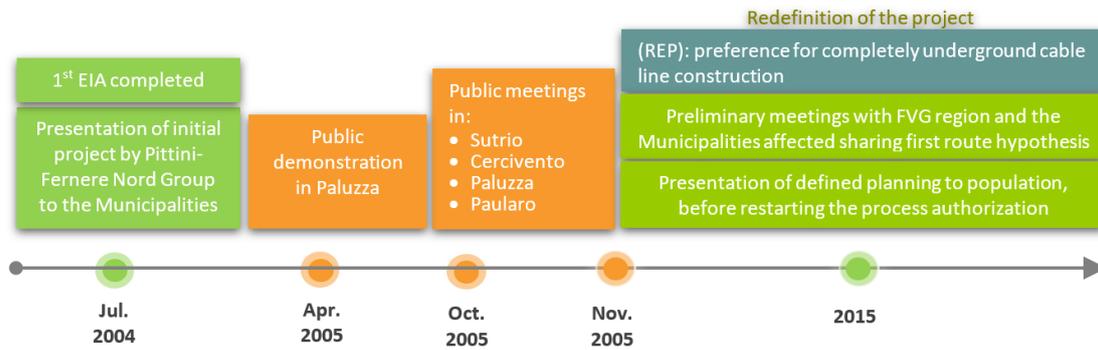


Figure 23. Timeline of initial project and redefinition period.

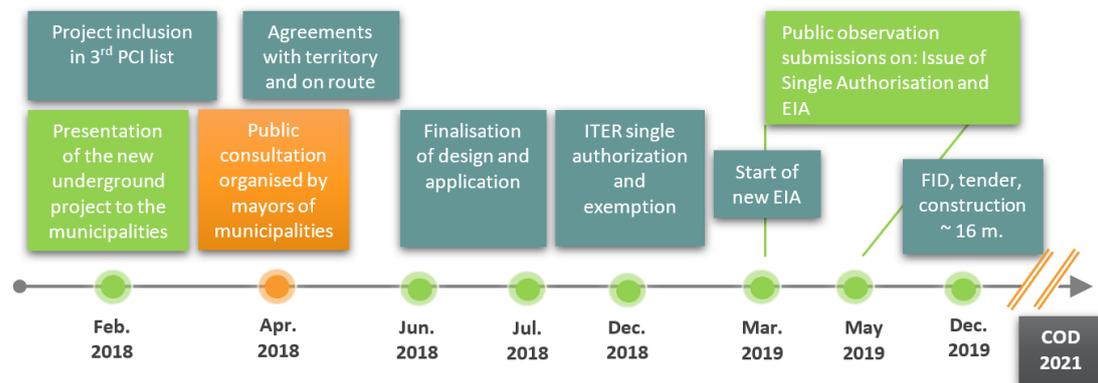


Figure 24. Timeline of new redefined project 2018– current.

Besides the delay already caused and still expected, the undergrounding of the line is going to increase the investment and maintenance cost significantly. Overall, the reservations the project promoter faced have been persistent. A representative of the project promoter noted the importance of obtaining lessons for the future from the whole process.

Concerning consultation and communication activities, the project promoter indicated that it would have been useful to expand these to the whole Friuli Venezia Giulia Region. During the permitting phase, the related activities were focused on the area and the people most affected by the project, mainly along the route of the transmission line. The main focus should remain the same, but it would be to the project’s benefit to gain broader support in the region. Once this phase ends, the project should then be disseminated on a national level.

Consultation and information provided locally, such as open days’ events, information centres and public hearings were among those methods most preferred by the participants of the on-site meeting. The provision of information through the website and social media were also mentioned as effective ways of engaging the public. At the same time, participants referred to more traditional means, such as the publication of articles in the local press. Many stakeholders highlighted that they would have preferred more consultation activities, especially of this type. The necessity for the further segmentation of the target groups, according to their specific interests, has also been mentioned by the project promoter. Moreover, one of the stakeholders mentioned that consultation and communication activities should continue at a local level during the construction phase to mitigate the objections of the communities and accommodate any newly arising concerns.

Likewise, the project promoter highlighted that although there were entities and people in favour of the project, this did not become apparent. As it was mentioned in the in-depth interviews, besides persuading those harbouring doubts, the objective should also

be to increase support among those in favour of the project and further involve them in the consultation.

As in the case of Ireland, it was acknowledged by the project promoter and mentioned by the rest of stakeholders that the information provided needs to be clear and comprehensible to facilitate inclusion as there are people that find it hard to read technical designs or understand technical terminology.

Finally, the necessity to increase public understanding of the usefulness of PCIs at a European Union level was mentioned.

5.3. Interactive workshop - Sounding board for the planning of the campaigns

Following up the completion of the second study task, the study in collaboration with the Renewable Grid Initiative (RGI)⁸⁹, a collaboration of NGOs and TSOs from across Europe engaging in an 'energy transition ecosystem-of-actors' - organised a workshop in Brussels, on the 27th of February 2020, which aimed to bring together Transmission System Operators (TSOs), project promoters, Non-Governmental Organisations (NGOs) and other relevant stakeholders from across Europe in order to discuss on how to develop a meaningful and useful communication campaign at local level for raising awareness and promoting the benefits of PCIs.

The agenda for the workshop included the following sessions:

- Brief introduction of the study and its objectives to participants
- Interactive session on how to build a meaningful and useful communication campaign at local level
- Presentation of local experiences from project promoters (Northern Italy - PCI 3.4 Somplago-Würmlach)
- Next steps – follow up

For the interactive part of the workshop, the participants were divided into three groups, and a rapporteur per group was assigned. The aim of the exercise was to try and define the following components for building a customised communication strategy at the local level:

1) Aims

- What do we want to achieve?
- What is the vision?

2) Audience segmentation

- Definition of the different subgroups

3) Geographic segmentation

- Definition of the target audience by location

4) Objectives

- Set SMART objectives (specific, measurable, attainable, relevant and time-based)

5) Positioning/ Concept

- Matching the selected image with our target audience
- Description of the concept

6) Tactics

⁸⁹ <https://renewables-grid.eu/>

- Define the actions that need to be taken in order to achieve your goals
 - Online communication activities proposed
 - Offline communication activities proposed
 - Multiplier relations.

The key points of the discussion are summed up in the following proposals and suggestions regarding what needs to be taken into account while designing a communication strategy:

Aims – what do we want to achieve

Boost public awareness and improve understanding of the benefits of the PCI projects
Provide better information regarding the aspirations of the EC on the PCIs
Avoid any potential delays in the realisation of the project
Gain stakeholders support → turn them into partners
Greater awareness of what is a PCI project
Provide more education/ information about energy market/ systems
As much transparency as possible
Explain/ elaborate on the necessity of the project
Try to get people to be engaged as early as possible (early stage of the projects)/ Start as early as possible
Explain what the role of the study is for the EC; connect to the Green Deal and to the sustainable global goals
Use as an opportunity to improve or change the branding of the EC activities on energy
Try to get the support of the local authorities and build a relationship with them
Aim for sustainability (sustainable grids)

Audience segmentation – definition of subgroups

Local authorities / politicians
Local communities
Landowners
Farmers
Consumers/ general public
Local NGOs
Fishery industry/ employers (in the case of submarine projects)
Military
Civil society

Geographic segmentation – target group by location

It is important to have both direct and indirect stakeholders' management;
The focus should be broad and not just in the area where the study is being implemented (or where opposition exists).
Municipal Authorities are very important and play a pivotal role in shaping the views of the people residing in their area of jurisdiction.

Objectives

Website visits→ people who wish to find out more about the project or PCIs in general will go to the website provided through the campaign
Attendance rates for information events → these are considered to be very important as they are the place where people feel their voice is going to be heard. On the other hand, these can also be a platform for presenting and making clear that there are benefits coming out of PCI projects.

Use of hashtag (#)
Social media impact
Interaction factors

Positioning

Togetherness and the things that we can achieve when we join forces;
Point out necessity of the project;
Explain – be transparent – of who we are and what it is that we do;
Combat climate change through sustainable grids;
Highlight positive effects in our everyday lives/ tangible outcomes for the community;
Positive environmental effects → this is a very important message for citizens;
Creation of new jobs locally – support to local workforce;
Stress the efforts made by project promoters to respond to the needs of the local society and explain the reasons why sometimes their requests can't be answered;
Use of technology to reduce electromagnetic fields (EMF);
Infrastructure projects may be privately owned but will eventually be transferred to the national network (e.g. for the case of Italy and Austria);
Make a more reliable connection between climate change, nature protection and energy infrastructure;
A larger share of renewables in the energy sector means a lot of changes in the energy infrastructure. Increasing share of RES means moving away from "negative, prohibitive conversation on infrastructure". It is essential to realise that the introduction of more RES will lead to new, more sustainable Grids;
Protection of nature → RES sponsors;
Formation of strategic alliances;
Municipalities – how the needs of communities are affected;
Special planning dialogue.

Tactics

Offline communication activities could include:

Setting up meetings with relevant stakeholders
Link project goals /values with the concerns of the local society
Mailings/ information boards on public places
Special planning dialogue.
Hire locals to explain projects
Being present/ approachable
Sponsoring
Open days
Newspapers (printed material) → in some cases this is the only means that may work
Presence in the location where the project is being implemented – set-up platform for citizens dialogue. Always remain open for taking in any comments, complaints, etc.
Organise "open days" for informing the local community
Radio-ads
TV-ads to a lesser extent
"Citizens' dialogues" as a platform for discussion.
Webinars could be very useful in terms of educating people / helping them better understand the notion of a PCI and the benefits that may come with it. These could be co-organised and supported by the project promoters in association with local stakeholders.
Case studies and good practice examples might also work.

Online communication activities could include:

Website

Social media

Provide interactive opportunities with a real person

The experience in Italy has shown that websites and social media are not so effective.

Overall, for running a campaign, though, it is essential to provide a website and have a presence in social media to make sure that you also appeal to a younger audience.

Multiplier relations could include:

Sustainable stakeholder management

Build real relationships

Local authorities (i.e. mayors) can play a crucial role

Technical offices of the regions (independent parties)

European Representation in the country

Europe Direct Offices

Citizens' associations

The workshop concluded with several useful takeaways::

- A good communication approach would be to show the bigger picture and explain how a specific PCI is related to its objectives; Solidarity and how we are connected are appropriate concepts to build on.
- the European Green Deal to become an umbrella where specific PCIs could be presented as part of a bigger effort. If a PCI entails wider benefits for an area, then we should say that besides the overall benefits of the New Green Deal for the EU27 there are benefits for the specific area, too.
- Discussion results indicated that explaining the necessity of a certain PCI investment is key/ priority. The communication strategy needs to answer this question by linking the PCI to a greater objective (by all means greater than energy security).
- It would be useful if we could grasp the complexity resulting from the various stakeholders, interests and opinions and make it simple.
- Alliances need to be created to promote PCIs. Different target groups need to be approached by different entities; for instance, there are target groups or localities that are in favour of specific entities and not in favour of others. In such cases, the alliance should decide which entity of the alliance should be approaching which target group/locality.
- Timing is always important when deciding to communicate about a project. It is preferable to start communication and awareness raising activities at an early stage, otherwise the effectiveness and the impact of the activities will be low.

6. The Steering Committee

This chapter presents the work related to the Steering Committee, including the creation, involvement and organisations represented in the committee.

Based on the tender specifications, it was necessary to review and assess the participation of members in the Steering Committee. It was also required to work with them to create a new working process for supporting the study's activities and providing guidance and suggestions to improve the study's communication-related aspects.

However, following the launch of the study, it was clarified that the Committee had not been established in the first place. The main goal of the Committee was to enhance the cooperation and coordination of energy infrastructure communication activities and was considered important at the time. To further elaborate, the members were expected to further disseminate the campaign messages at local level and promote the campaigns through their networks (multiplier effect). The process of recruiting members to join the Committee was then initiated.

This process began at the end of 2019, with a goal of recruiting 25 members based on their fulfilment of the following criteria:

- Willingness to get involved (see more details below);
- Geographic representation;
- Stakeholder type;
- Engagement.

While the process of selecting and recruiting the committee was completed, it was put on hold after its creation, due to the pandemic.

The Committee members were briefed at the end of 2020 about the campaign plan (set to start in early 2021). A Steering Committee Engagement plan was developed and shared with them in December 2020, explaining the upcoming work and materials to be delivered for review. Finally, a virtual meeting took place on 15 January 2021 to provide information and answer questions about the Steering Committee members' expected role.

The following actions were proposed:

- Set up a dedicated mailing list for all Steering Committee members.
- Share all material that would be used for the campaigns in order to provide feedback/comments.
- Share the timeline for each campaign's activities.
- Invite active participation in the Virtual Community Dialogues or Targeted Online Debates, as well as the webinar to be organised in the context of the campaigns, with a variety of potential roles to be undertaken (e.g. presenter, moderator, sharing expert opinion, etc.).
- Share insights throughout the duration of the campaigns' roll-out in order to support the process and provide own insights on potential improvements or corrective measures if required.
- Invite participation in the campaign evaluation process by reviewing the outcomes and providing own feedback and recommendations.

The Steering Committee members provided initial feedback on the draft campaign materials for both local campaigns and joined the webinar organised to present good practices for engaging with local stakeholders in the context of the PCI communication activities that took place on 28 April 2021.

Several Steering Committee members offered to further continue their work in their capacity as members in order to support awareness raising and communication activities on PCIs after the study's completion.

The table below lists the organisations represented in the Steering Committee.

Organisation	Geography
Enagás, S.A.	EU
ENTSOE - European Network of Transmission System Operators for Electricity	EU
50Hertz Transmission GmbH	EU
Renewables Grid Initiative	EU
Louth County Council	Ireland
Ireland Department of Communications, Climate Action and Environment	Ireland
RPS Group	Ireland
An Taisce	Ireland
An Bord Pleanála	Ireland
EirGrid PLC	Ireland
Italy Ministry of Economic Development, Division IV: Infrastructure and Network Systems	Italy
Enel Global Trading S.p.A.	Italy
Enel Global Trading S.p.A.	Italy
ARERA	Italy

7. Communication activities

This chapter presents all the key communication activities of the project, including the work of Tasks 4–10.

7.1. Background

Following the completion of Task 2, there was focus on the tasks related to the design and implementation of communication activities targeting project promoters across the EU, as well as specific communication campaigns targeting the two identified pilot regions. It is worth mentioning that throughout the design of the communication activities for both regions, there was close collaboration with the project promoters to ensure continued commitment to be involved and support the designed activities.

The design of the communication strategies began in April 2020. These included detailed audience segmentation, key messages per segment, campaign slogan and hashtags, communication materials to be produced, media buying campaign and channels mix, as well as tactics to engage with stakeholders and the general public. Following consultations with the project promoters, the final versions of the communication strategies, roll-out plan and timeline were approved.

As noted in the introduction, before kicking off with the communication-related activities, it was agreed that a contingency plan would be launched to address potential risks related to the COVID-19 pandemic. The plan was developed in March 2020 to take into account all aspects with a high probability of affecting the campaigns.

7.2. Development of a ready-to-use communication package

The aim of this Task was to support project promoters in their engagement activities towards stakeholders through a fresh set of communication materials and recommendations. Drawing on the results from Tasks 1, 2 and 3, as well as direct feedback from project promoters and the Commission, the existing materials were reviewed and updated, while entirely new ones were developed. These were made available to project promoters in form of a downloadable communication package.

Task 4 focused on meeting the following three goals:

- Support project promoters in their engagement activities.
- Improve previously existing communication material.
- Provide a fresh set of ready-to-use material.

Drawing on the results of previous tasks (Tasks 1, 2 and 3), as well as direct feedback from project promoters and the European Commission, some of the existing materials were reviewed and updated. This material is currently available on the [DG ENER – Public Acceptance of Infrastructure Projects](#) web page.

The package includes the following:

- [Engagement book](#) – support material for PCI project promoters (EN);
- [Animated video](#) – explaining PCIs (EN);
- [Poster](#) – available for editing and printing by promoters who wish to use their own promotional events (EN);
- [Online brochure](#) – explaining PCIs, their benefits and key objectives as well providing some examples (EN);
- [Online factsheet](#) – A set of the most common questions on PCIs and respective answers (EN).

In addition, a PCI promoters toolkit was produced. It consists of material that can be adapted to the needs of local promoters by translating the messages and adding logos or illustrations. The editable toolkit includes:

- [PowerPoint slides](#)
- [Poster templates](#)
- [PowerPoint template with ready-to-use social media posts.](#)

The promoters' toolkit is available on demand and can be requested by sending a message to: ENER-C4-PROJECTS@ec.europa.eu

7.2.1. Developing the campaign's concept and visual identity

A campaign concept and visual identity document for each of the two regions was prepared based on the feedback received and preferences expressed by the European Commission and the pilot regions' project promoters. The visual identity selected was developed taking into account the Green Deal visuals and was customised to the campaign's overall key messages. Materials were prepared in line with the European Commission guidelines for graphic and web design⁹⁰. In order to respond to the specificities of the two regions, the visual identity developed for the PCI brand has been adopted according to their local needs. For Northern Italy, a different visual has been used to represent the pylons, while for Ireland a different slogan has been identified as more accurate.

The visual identity, together with the slogans and hashtags, was used in all outputs (e.g. posters, leaflets, media outreach material) to create brand awareness and help people connect with the campaign.

7.3. Communication campaign for each pilot region

The communication campaigns at local level were intended to increase public awareness in the two selected pilot regions. The initial intention was to design a communication campaign to communicate the local PCI in each pilot region in both English and the official language, as well as to implement a tailored strategy for stakeholder engagement.

The strategy for these two communication campaigns was based on the outcomes of previously completed tasks, and on the analysis of stakeholders and target groups. The Commission and the pilot regions' project promoters were involved from the very beginning in the validation of the communication strategy and specific campaign messages.

The timing for the roll out of the two campaigns was decided to be postponed for after the summer of 2020, to allow proper assessment of the situation due to the outbreak of the COVID-19 pandemic. Instead, it was suggested that the campaigns should be planned for autumn, thus leading to a necessary extension of the study duration.

Regional Campaigns for North-South Interconnector (Ireland) PCI & the Somplago – Würmlach (Italy) PCI

Campaign in Ireland (North – South Interconnector)

EirGrid, the project promoter of the North-South Interconnector, as well as the local government in the counties of Monaghan, Cavan and Meath in Ireland, and Armagh and Tyrone in Northern Ireland, were kept informed and up to date about the status and progress of the campaign preparation.

⁹⁰ https://ec.europa.eu/info/resources-partners/european-commission-visual-identity_en

In a meeting that took place during the third week of January 2021, after discussing the strategy, it was jointly decided that the campaign should not be launched in the planned timeframe as the timing was not aligned with the policy priorities set out for the region. The support of the project promoter and local authorities is crucial to the success of local communication and engagement campaigns. The promoter agreed on relaunching the initiative at a more opportune occasion.

The dedicated material included the following:

For general public engagement:

- Key visual available for printed and digital use
- Poster templates – available for printing and digital use and editable format
- Leaflet – available for printing and digital use
- Factsheet – available for printing and digital use
- E-info sheet – available in digital format
- PPT – editable format

For the web campaign:

- Online advertorials (to be published on meathchronicle.ie and anglocelt.ie)
- Print advertorials (to be published on Meath Chronicle and Anglo Celt)
- Radio script (radio spots to air on LMFM contemporary media)
- Google ads campaign

Campaign in Italy (Somplago – Wurmlach)

The European Commission provided final approval of the strategy and all material for the Italian campaign in December 2020. The time period for the campaign was 15 February – 15 March.

Even though the strategy was approved, including a series of activities like social media and organisation of virtual events to engage with citizens and local stakeholders, the promoter decided that some of the activities should not be implemented. Although a social media calendar was prepared as initially planned, there was a misunderstanding in terms of how the social media campaign would roll out: Alpe Adria Energia (the promoter) has no social media accounts and thought the campaign would be implemented by the Commission social media accounts. This led to the decision of not running a social media campaign for the region. The promoter also decided not to organise virtual events as they perceived the participation would be low and the impact very limited.

Overall, all material for public engagement was prepared and is available in English and Italian for future use by the project promoter:

- Key visual available for printed and digital use
- Poster templates – available for printing and digital use and editable format
- Leaflet – available for printing and digital use
- Factsheet – available for printing and digital use
- E-info sheet – available in digital format
- PPT – editable format

Furthermore, the following material has been prepared and used for the media buying campaign:

- Online advertorial (published on ilfriuli.it)
- Print advertorial (published on Messagero Veneto)
- Radio spot (aired on Gruppo Company radio stations)
- Google ads campaign
- Outdoor panel for arterial roadways

The evaluation of the media buying campaign's performance is provided in a separate report in the annex.

The general digital campaign & webinar

In mid-March 2021 it was decided that a general PCI communication campaign would be launched to raise awareness and inform target audiences at a broader EU level.

It was agreed to run a social media campaign to promote PCIs, utilising the DG ENER Twitter account (@Energy4Europe) and DG ENER [public acceptance of energy infrastructure](#) website on how to communicate PCIs and engage with citizens, as well as to post the new materials created as part of the study:

- [Engagement book](#) (EN)
- [Animated video](#) (EN)
- [Poster](#) - (EN)
- [Online brochure](#) (EN)
- [Online factsheet](#) (EN)

The social media campaign took place in the period between 12 April and 28 April 2021.

In addition, it was agreed to organise an online webinar. To promote the event, a dedicated [event page](#) and registration page were developed. The event was promoted on social media (Twitter), and an invitation was sent by the Commission to project promoters, TSOs, NGOs, local governments and policymakers at local, national and European level. In total, 204 people registered.

The webinar was organised on 28 April 2021. It addressed the issue of "**Public acceptance of Projects of Common Interest: How to engage with your local communities**". The focus of the event was on showcasing good practices in communication and engagement campaigns aimed at raising awareness and improving acceptance of PCIs.

The event was hosted on the Zoom platform in the form of a webinar and was attended by 170 people.

There were six guest speakers and five presentations:

- Public acceptance of Projects of Common Interest (PCIs), key to accelerating their implementation, Joachim Balke, Head of Unit, Infrastructure and Regional Cooperation, DG ENER
- Innovative Actions and strategies to boost public awareness, trust and acceptance of trans-European energy infrastructure projects – study scope, objectives and outcomes, Efthymios Altsitsiadis, Co-founder & Scientific Lead, White Research
- Putting Communities at the heart of Engagement – The Celtic Interconnector EirGrid Story, Michael Mahon, Chief Infrastructure Officer, EirGrid
- Early engagement with local communities: effectiveness of public consultations, Roberto Locatelli, Head of Business Development of Somplago – Wurmlach project, Head of Technical Development at Enel Global Trading Spa/Global Front Office / Origination & Merchant Lines.
- Best practices for communication and engagement in grid development, Stephanie Bätjer, Senior Manager – Communications, Renewable Grid Initiative.
- Tools and practices for how to design and implement public awareness campaigns on PCIs, Alexandros Stylianou, Head of Communication Services Delivery, INTRASOFT International.

During the event, the Mentimeter interactive tool was used to keep the participants engaged in the discussion and assess the event while in progress.

The evaluation of the social media campaign's performance, the workshop report, the Mentimeter results, the workshop statistics and the user survey statistics are available in the annexes.

7.4. Media outreach plan

An integral part of the communication strategies for the two pilot regions was reaching out to media. Local and regional media were identified as the most suitable ones to reach local communities. Our team worked together with a media agency to identify outlets and types of placements according to local habits and specificities, and available budget.

The following media mix was proposed for both regions:

- Google Ads campaign
- Online and print advertorials placements
- Radio campaign

Furthermore, out-of-home advertising was proposed as part of the media campaign in Italy.

The detailed media plan for both regions is included in the communication strategies annexed to the document.

The media campaign in Ireland was cancelled, for the aforementioned reason, which resulted in cancellation fees for placements that had already been booked. Budget from the Irish campaign was shifted to the Italian campaign in order to:

- Accommodate requests by the Italian project promoter for inclusion of more outlets in the media plan.
- Address the fact that the Google Ads campaign was banned as there was no match with the ALPEADRIA logo and the respective website used in the produced campaign material, and it was required to switch to an ad campaign instead.

The media campaign in Italy took place between 15 February and 30 March 2021. The evaluation of the media buying campaign's performance is annexed to this document.

7.4.1. Communication activities timeline

The following table presents the timeline of the project's main communication deliveries.

Date	Milestone
February 2020	Interactive workshop - Sounding board for the planning of the campaigns.
March 2020	Campaign preparation begins.
April 2020	Selection of final concept and visual identity.
July 2020	First draft of communication strategies submitted.
August 2020	Draft communication strategies sent to promoters for review/ feedback.
August - December 2020	Iterations and exchanges with the Commission for finalising the strategies and the material. Project promoters review strategy updates and discuss progress.
December 2020	Final approval of communication strategies by the European Commission.
December 2020	Final approved strategies shared with promoters for review and validation.
January 2021	Cancellation of campaign in Ireland.
January - February 2021	Adaptations and translations of the material for the campaign in Italy.
March 2021	Decision for preparing and running a social media campaign on PCIs and webinar.
February – April 2021	Roll out of campaign in Italy.
April 2021	Roll out of social media campaign on PCIs and webinar.
May 2021	Campaigns evaluation and reporting.

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Table 12. Milestones of communication activities

7.5. Updates of the existing infrastructure webpage and corresponding webpages on public acceptance

Following the completion of Tasks 1 and 2, a number of documents summarising the work performed and the key findings were delivered. Furthermore, multiple articles were drafted for publication on the energy infrastructure webpage and the respective pages for public acceptance.

As an outcome of Task 1, the following articles were prepared (see attached annex):

- What are the main negative drivers of public perception?
- What are the main challenges facing project promoters across Europe when implementing projects?
- What are the main drivers of public acceptance regarding PCIs?
- Which factors affect public perception of projects of common interest (PCIs)?

As part of Task 2, the following articles were prepared (see attached annex):

- Pilot Region Selection – Analysis & Suggestions
- Pilot Region Selection: Italy & Ireland

In addition, for the generic campaign that was rolled out in April 2021, a new text to revamp the DG ENER public acceptance web page was prepared. The final text was significantly modified as to meet the style and tone of the webpage.

7.6. Enhancing the use of the Confluence Platform

The purpose of this task was to make better use of the Connected Energy Infrastructure Community space on the European Commission's Confluence Platform. The aim was to inform and engage the Steering Committee members.

Considering that the Confluence Platform operates as an internal network where stakeholders can share information and documentation (requiring continuous management and monitoring), it was decided that the use of the Confluence Platform would require too much time and resources, especially given the delay in the establishment of the Steering Committee. For this reason, an alternative solution was sought. Instead, a mailing list, respecting GDPR rules was created: SteeringCommittee_Ener@intrasoft-intl.com and has been used for all communications with the Steering Committee members.

7.7. Energy Infrastructure Forum working session

This task was not accomplished due to COVID-19 restrictions.

7.8. Closure & handover of study results

The purpose of the task is to ensure the smooth closure (phasing out) of the study and to support the future sustainability of key results. The scope of the task is to ensure that all outputs and results of the study are handed over to the Contracting Authority along with all material, methods and supporting tools.

A further aim of this activity is to transfer the knowledge produced and the experience gained during the entire operation to the widest possible range of stakeholders and parties involved or interested to be involved in future similar study development and implementation processes as a means to support the future sustainability of the study.

The Final Report contains a short description of overall achievements including insights gained as well as recommendations for the future. All outputs of the study and material developed (annexed to this document) will be dispatched to the Contracting Authority in electronic format.

8. Insights and recommendations for planning and implementing communication and public engagement activities

This chapter presents the lessons learnt from the implementation of the project, communication campaigns, public engagement activities as well as suggestions for the future.

PCIs are key cross border infrastructure projects that link the energy systems of EU countries. Even though they are intended to help the EU achieve its energy policy and climate objectives (i.e., to provide affordable, secure and sustainable energy for all citizens, and achieve the long-term decarbonisation of the economy, in accordance with the Paris Agreement), they are very often confronted with scepticism. Citizens, local governments and NGOs raise concerns and oppose their implementation. The reason for this opposition may be the result of insufficient information, limited awareness and lack of adequate public consultations during the early stages of the projects.

Insights and recommendations for planning and implementing communication and public engagement activities

Based on the experience gained during the implementation of this study it is clear that awareness raising activities and early engagement of local communities and stakeholders are key to the successful design and implementation of PCIs.

First and foremost, it is essential that project promoters work closely with the local communities from the early stages of a project. This will ensure the early identification of the 'pain points' that the project may bring to the local communities. Timely discussions to help identify potential solutions or alternative options is crucial. Giving local stakeholders the option to participate in the decision-making process is both proper (as the project will affect their lives) and important for ensuring improved acceptance of the project. Of course, this does not mean that opposition will be eliminated.

Planning communication and public engagement activities is important. To do this in an efficient and impactful manner, it is advisable to:

- Set clear goals and objectives for the campaign;
- Perform extensive research and ensure there is a good understanding of the issue at hand;
- Define the goals and objectives that the campaign and the communication activities aim to achieve so that the formulation of the messages can be on point in a concise and clear manner;
- Formulate the key messages that will maximise the efficiency and effectiveness of the campaign.

ALIGNMENT WITH LOCAL AUTHORITIES/GOVERNMENT TO SECURE SUPPORT

There are two key elements to consider:

- 1) Alignment with the local government priorities, and
- 2) Selection of the right time to launch a campaign or start any communication, awareness raising or public engagement activities.

Local governments set their own agenda and prioritise the policies they wish to support and or promote accordingly. Engaging with the local government to discuss these priorities and adjust the planning of the communication campaign and other relevant activities can determine whether a campaign will be successful.

Communicating information to the local authorities about the project and asking for their support to improve public awareness is one of the main steps. Discussing their concerns

on potential negative impacts for the local community should follow. Involving them in the decision-making process for the project implementation is fundamental. Making sure the messages you want to convey about the benefits and added value of the project fit their policy agenda and planning is crucial. As such, this should be agreed upon in advance, to ensure that the timing for launching any communication and public engagement activities will not cause any frictions.

ADDRESS THE RIGHT STAKEHOLDERS

Performing a target audience segmentation is essential in order to assess how different stakeholders:

- are aware of the subject (e.g. know what a PCI is, how it works, whether there is a local project);
- understand the subject (benefits/risks/effects on everyday life);
- feel about the subject (positive/negative/neutral);
- want to learn more about the subject or discuss the subject (openness for learning more, contributing to the discussion, supporting PCIs as multipliers).

If the subject is not of high importance for the community or there is complete lack of awareness, then it will be difficult to generate interest and support for the campaign. If the selected messages can feed off a general feeling of concern already within the community, there is a good chance of gaining its support. If the stakeholders are of high relevance, but have a low level of awareness, they need to be informed first so that they can start forming an opinion that can then be influenced.

INVOLVE THE TARGET GROUP IN CAMPAIGN PLANNING

To enhance the campaign's effectiveness, it is important to design it together with members of the community being targeted. To do this, it is advisable to identify the main pain points for the local community (through interviews, surveys and public consultations) and also consider the key arguments used by the opposition.

It is important to ensure that the language and tone used, as well as the media platforms and channels for promoting the campaign messages, are selected in cooperation with the target groups in question.

It is advisable for messages to be plain and simple, without using too many technical terms that could confuse people and turn them away from the campaign. The messages should be easy to relate to. The slogan should contain elements that will grab people's attention.

Inviting locals to become directly involved in the project during the communication campaign is fundamental for promoting engagement. People should feel they are actually being listened to. Providing different options for them to become involved is highly advisable. One good practice scenario used on several occasions by project promoters (e.g. EirGrid for the Celtic Interconnector) is the sharing of locals' stories. Videos featuring interviews or testimonials by locals like entrepreneurs and teachers who describe how project outcomes have improved their life, business, etc. could be highly impactful. Other options for getting people involved could include:

- Organise open discussions to table issues and concerns that should be taken on board during the campaign.
- Set up an online forum for people to publish their comments, questions and concerns about the campaign, as well as suggestions for improvement, where an authorised assignee will be responsible for responding and maintaining the dialogue.

- Organise informative meetings inviting the representatives of the local community, NGOs, etc. to report on the campaign progress and explain how the concerns raised are being tackled.
- Ask the community to share their thoughts with others (use them as multipliers) for the suggestions taken on board and the concerns addressed.

SELECT THE RIGHT KEY MESSAGES

For the formulation of the key messages to be communicated, it is essential that the information is carefully checked before it is released. Inaccuracies can be used to undermine the legitimacy of the campaign, especially for controversial topics. The messages selected should serve all interest groups and avoid being too technical. It is also highly recommended to test the messages with representatives of the different target audiences before the official campaign or communication activities are launched, and to take feedback or any proposed changes on board. This will help ensure you have the strongest and more appealing messages.

SELECT THE PROPER COMMUNICATION MIX

To ensure that all target audiences can be reached in the most efficient and effective manner, it is crucial to define the communication mix that will be put in place for the campaign. The campaign can utilise digital and/or more traditional media channels.

Using mainstream media and networks can prove very effective for getting messages across but not always. Although the social media and the digital communications are a large part of our daily life, not all people are familiar with technology or acquainted with the use of computers, tablets and smartphones. The audience segmentation analysis will help in identifying which channels should be preferred and prove more effective and impactful. For example, the discussions and interviews performed for the Somplago-Wurmlach PCI led us to use more traditional communication media and channels for the campaign in the area due to the limited use of digital means by the locals.

BE FLEXIBLE

It is essential that once a campaign has been launched, there is a continuous process for recording feedback and that this feedback is incorporated, even if this means that changes will have to be made to improve the campaign and enhance its impact.

If the campaign is attracting a lot of interest, attention and support, it is essential to speed up the timeframe and scale it up quickly. This ensures that the campaign can be sustained over the planned period.

Communication campaigns work better when they are centrally coordinated. A single organisation should manage the process and assign all other parties with tasks and activities, easing communication and making workflows more effective.

SET UP OF THE TEAM TO COLLABORATE ON COMMUNICATION ACTIVITIES

For studies such as this, that address both policy and communication related aspects and include a wide range of activities varying from research and audience mapping to implementation and evaluation of communication campaigns, the setup of the right team from the initial planning phase is essential. All involved parties should commit to bring on board the right type of expertise, directly linked to the different activities.

With regards to the design of communication strategies, the design of communication material, the planning and implementation of the actual communication activities it is important to include team members with relevant background and expertise, taking on board aspects of both digital communication and traditional communication related aspects.

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Abbreviations

AAE	Alpe Adria Energia SRL
ABP	An Bord Pleanala
AC	Alternating current
ANOVA	Analysis of variance
ARPA FVG	Agenzia Regionale per la Protezione dell'Ambiente del Friuli Venezia Giulia
AT	Austria
BEMIP	Baltic Energy Market Interconnection Plan
CH	Switzerland
CIPRA	International Commission for the Protection of the Alps
CMAPC	County Monaghan Anti-Pylon Committee
COD	Commercial Operation Date
cSAC	candidate Special Area Conservation
CTA	Call to Action
DC	Direct Current
DE	Germany
DG COMM	Directorate-General for Communication
DG ENER	Directorate General of Energy
DNA	Deoxyribonucleic acid
EC	European Commission
EU	European Union
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMF	Electro-magnetic fields
ESB	Electricity Supply Board
ESRI	Environmental Systems Research Institute
EWIC	East-West interconnector
FEED	Front-End Engineering Design
FID	Final Investment Decision
FVG	Friuli Venezia Giulia
GDPR	General Data Protection Regulation
HR	Croatia
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IBA	Important Bird Area
IE	Ireland
IPPC PERMIT	Integrated Pollution Prevention and Control Permit
IT	Italy
KPI	Key Performance Indicator
KV	kilovolt
MW	Megawatt
MO	Market Operator
NEPP	North-East Pylon Pressure Campaign Ltd
NGOs	Non-Governmental Organisations
NI	Northern Ireland
NIMBY	Not In My Back Yard
NRA	National Regulatory Authority
NSI	North South Interconnections

NSOG	North Seas offshore grid
NTN	National Transmission Network
PCI	Project of Common Interest
PDF	Portable Document Format
pNHA	proposed Natural Heritage Area
PPT	Microsoft PowerPoint
PST	Phase Shift Transformer
REP	Regional Energy Plan
RTN	National Transmission Grid
RPS	Rural Planning Services
SAC	Special Areas of Conservation
SEN	National Energy Strategy
SEW	Socio-Economic Welfare
SI	Slovenia
SID	Strategic Infrastructure Development
SMART	Specific, measurable, attainable, relevant, timely
SONI	System Operator for Northern Ireland
SPA	Special Protection Areas
SPA	Società per azioni (company with shares)
TEN-E	Trans- European Networks for Energy
TYNDP	Ten-Year Network Development Plan
TSO	Transmission System Operator
UK	United Kingdom
UNESCO	United Nations, Educational, Scientific and Cultural Organisation
URL	Uniform Resource Locator

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