Interreg Europe

Co-funded by the European Union

BIOWIND

FINAL STUDY

Activity A 1.1

Comparative analysis of partners' territorial environmental and socioeconomic drivers of public opposition to wind power projects

DECEMBER 2023

Executive Summary

This report documents the findings of the survey conducted within the context of BIOWIND Activity 1.1 (A1.1), titled “Joint elaboration on the environmental and socioeconomic drivers of public opposition to wind power project”. Project partners assessed the impact different factors of social opposition have on wind energy projects and identified the main stakeholder groups to oppose wind energy developments in their region. Partners also indicated the policy tools and/or actions which are effective in mitigating social opposition to and enhancing public acceptance of local wind energy projects. Two optional questionnaires aimed to capture the views of stakeholder groups and the public respectively regarding factors that influence their attitude towards local wind energy projects, and also the policy measures to alleviate their concerns about wind energy developments.

The report presents and analyses the results of each of the three questionnaires and elaborates on challenges for the uptake of wind power at both project and country level. The report is structured as follows:

- **Chapter A** introduces the topic of social acceptance of wind energy projects, followed by an overview of the BIOWIND project and Activity 1.1.

- **Chapter B** summarises the survey and the methodology used for data collection, including the method used for the identification and evaluation of the criticality of drivers of social opposition to wind energy development

- **Chapter C** initially presents and discusses the survey results. The overview of results is presented in three subsections: a) Partners’ input, b) Stakeholders’ input, and c) Public’s input. Then the discussion of results focuses on the key challenges for the uptake of wind power as reflected in public opinion, the common issues to be jointly tackled during the project, and specificities that need to be addressed by each partner.

Table of Contents

LIST OF ABBREVIATIONS

BE	Belgium
CARM	Autonomous Community in the Region of Murcia, General Directorate of the Natural Environment
CDDA	Central Danube Development Agency Nonprofit Ltd.
CSO	Civil Society Organisation
e.g.	exampli gratia (for example)
ERDF	European Regional Development Fund
ES	Spain
EU	European Union
FAEN	Asturias Energy Foundation
FI	Finland
GR	Greece
HU	Hungary
i.e.	id est (that is)
LV	Latvia
MOSV	Marshal Office of Świętokrzyskie Voivodeship
NGO	Non Govermental Organisation
NIMBY	Not In My Back Yard
NVBR	North Vidzeme Biosphere Reserve
NWRA	Northern and Western Regional Assembly
PVB	Province of Flemish Brabant
PI	Policy Instrument

RCSO	Regional Council of South Ostrobothnia
RES	Renewable Energy Sources
RSES	Regional Spatial and Economic Strategy
RWG	Region of Western Greece
UPAT	University of Patras
ZPR	Zemgale Planning Region

LIST OF FIGURES

LIST OF TABLES

A. Introduction

I. About social acceptance of wind energy projects

Broadly speaking, the term "social acceptance" may be defined[1] as "*a favourable or positive response (including attitude, intention, behaviour and—where appropriate—use) relating to a proposed or in situ technology or socio-technical system by members of a given social unit (country or region, community or town and household, organization)*".

It is important to distinguish between "general social acceptance", a concept describing acceptance of wind energy technology on a broader (national or European) level, and "local social acceptance", a term describing acceptance of energy projects at the local community level. The latter is often also termed "community acceptance" and is directly influenced by issues such as "trust", "procedural justice", and "distributional justice".

One can identify three categories of factors that stand out [1]–[4] as key considerations in shaping one's attitude towards local wind energy projects, namely (a) the technical characteristics of wind farms, (b) individual characteristics, and (c) contextual characteristics.

(a) Technical characteristics of wind energy project

Wind project characteristics such as the number, height, and colour of turbines installed, the required development or upgrade of transport and communication infrastructure, and the distance from residential, protected and other areas of concern are linked to the social, economic and environmental impacts of the project. Among other, the visual impact of turbines, the associated noise pollution and flickering, the disruption of local ecosystems, as well as the decreased in real estate values and reduced attractiveness of touristic areas, have been shown to shape the public perception and consequently public opinion of wind energy projects.

(b) Individual characteristics

How individuals perceive and assess the impacts of wind energy projects in their area is influenced by several characteristics, which include socio-demographic factors (e.g., age, gender, level of education, etc.) and socio-cultural values (e.g., local/place attachment, sense of place, self-identity, political affiliation, worldview, etc). The familiarity of individuals with wind energy and wind energy developments has also been shown to influence people's views towards local wind energy projects.

(c) Contextual factors

The contextual factors refer to the regulatory and governance framework, together with the energy market characteristics. The former includes, among other, the territorial policies regarding the planning and permitting processes, and the communication between communities-local authorities-project developers. The latter refers to considerations regarding the penetration of renewables in the energy market and whether the country is an energy importer or exporter, parameters that are linked to general public concerns about energy security and independence and the cost implications of wind energy adoption. The element of trust in key actors (i.e., institutions, decision-makers, investors, etc.) also needs to be considered in the regional context as it highly affects the extent to which individuals perceive procedures related to the establishment of wind farms as fair, and their engagement in wind energy projects (e.g., consultation processes) as meaningful.

II. The BIOWIND Project's Activity 1.1

The BIOWIND project, funded by the INTERREG Europe programme, aims to address two major intertwined factors hindering the proliferation of wind energy at territorial level, namely the opposition of local communities, and complicated permitting procedures. To this end, the project will support the partnership of 11 partners from 8 EU countries, through joint policy learning and exchanges of experiences, aiming to set forward an integrated wind planning approach addressing all dimensions of the "Climate - Biodiversity - Public Opinion" nexus, enhance social acceptance and secure sustainable wind energy expansion.

From a wider EU perspective, the BIOWIND project aims to accelerate the expansion of sustainable wind energy developments to support the transition to a net-zero economy, and to ensure public consensus and equitable distribution of the benefits of renewable energy sources (RES) to local communities. The project also supports regions in integrating biodiversity considerations and environmental management measures into energy policies, in accordance with the EU Biodiversity Strategy[5] and the Birds and Habitats Directives[6]–[8].

The overall aim of **Activity 1.1 – "*Joint elaboration on the environmental and socioeconomic drivers of public opposition to wind power project*"** is to enhance project partners' understanding on territorial sources of opposition to wind energy projects and increase their capacity to develop place-based responses to increase social acceptance.

Utilising territorial data collected and submitted by BIOWIND partners this study containing a detailed analysis of the key environmental and socioeconomic obstacles to the uptake of wind energy. The study aims to highlight common challenges to be jointly tackled during the

BIOWIND project and elaborates on specificities that need to be addressed by each project partner individually through policy instruments (PIs).

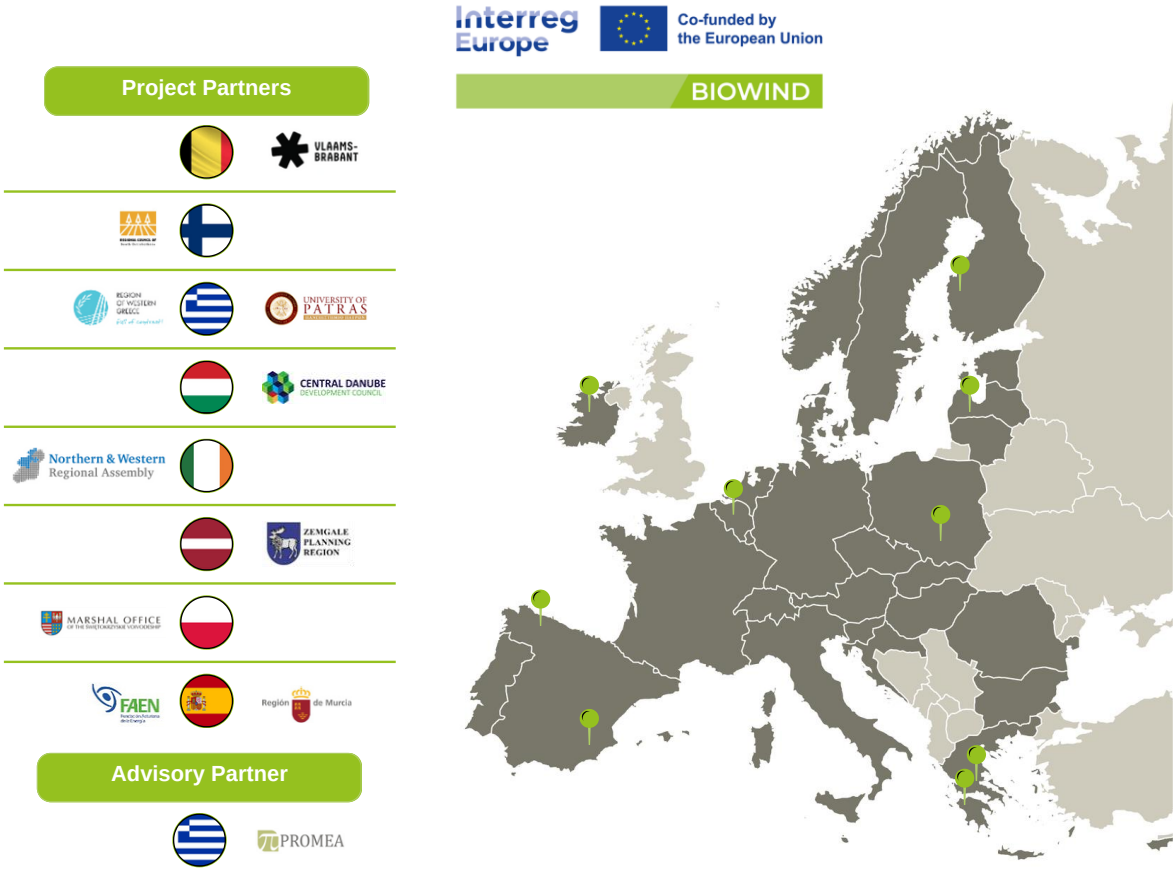

Figure 1: *The BIOWIND Partnership*

The joint thematic study of Activity A1.1 will provide valuable input for the interregional learning and capacity building activities (workshops and site visits) that will be organised during the BIOWIND project's Core phase. Moreover, the results of the Activity are expected to be particularly useful in helping partners identify areas of policy improvements in their territories in order to increase public acceptance for wind energy initiatives.

B. Survey Methodology & Design

To identify and document territorial drivers of public opposition and resistance to wind energy developments, a survey methodology was designed, which included three questionnaires as described in the following sections of Chapter B.

III. Methodology

The objective of Activity A1.1 is to establish an understanding of:

i. The prevailing territorial environmental and socioeconomic considerations that act as principal points of concern and local resistance to wind energy initiatives.
ii. The key challenges for the uptake of wind power as reflected in public opposition, so as to identify the common issues to be jointly tackled through territorial PIs.

To this end, the survey's focus is on assessing the level of impact and the frequency of occurrence of each opposition factor, both at country-level and at project-level. **To facilitate consistent, comparable, and efficient data collection the methodology employs the use of questionnaires.** The tool's main questionnaire (partners' questionnaire), which all partners were required to complete, employed both closed- and open-ended questions to guide partners in identifying territorial drivers of local opposition, assessing the impact of each driver to wind energy projects, and reporting policy measures potentially effective in mitigating social opposition. In addition, two auxiliary questionnaires were included, which could optionally be used by project partners to gain a more nuanced understanding of the principal points of concern of the different stakeholder groups involved in and affected by wind energy projects. The first of the additional optional questionnaires (stakeholders' questionnaire) could be utilised to receive feedback from different stakeholder groups on their views towards local wind energy developments. Similarly, the second of the optional additional questionnaires (citizens' questionnaire), aimed to obtain feedback directly from individuals in the project territories regarding local wind energy projects. Project partners were encouraged to invite the public to complete it via posts in their websites.

All questionnaires were uploaded (in English) to the EUSurvey platform, the European Commission's online surveying tool. Upon request from project partners and aiming to facilitate the collection of data from stakeholders and the public, the respective questionnaires were also uploaded to the platform in other project partner official languages. The stakeholders' questionnaire was made available in English, Dutch, Finnish, Spanish, and Polish. Similarly, the citizens' questionnaire was available in English, Dutch, Finnish, Spanish, Polish, and Hungarian.

IV. Survey objectives & scope

The data collection tool developed by PROMEA aims to map territorial drivers of social opposition to wind energy developments, and to further identify common sources of opposition. The outcomes of the survey, mainly the partners' questionnaires submitted, are used to propose place-based responses to mitigate social opposition to wind energy developments in partners' countries. The outcomes of the additional two questionnaires (stakeholders' and citizens' questionnaires) are used to improve the partnership's understanding of the territorial specificities of local opposition.

IV.1. Key Performance Indicators

The methodology had set minimum targets for data collection, taking into consideration both the degree of difficulty and time required to conduct research and contact regional stakeholders, as well as the timeline of Activity A1.1. The targets aimed to support tracking and monitoring the data collection process, and ensure that the appropriate, in quantity and quality, data would be collected.

The methodology considered three scenarios regarding the use of the two optional questionnaires (stakeholders' and citizens' questionnaires) by project partners. An overview of collection targets under each scenario is given in **Table 1**, while **Table 2** summarises the corresponding data collection levels achieved.

Table 1: *Submitted questionnaires by each project partner in a baseline, a preferred, and an optimal scenario*

Stakeholders' Questionnaire Feedback	Baseline Scenario	Preferred Scenario	Optimal Scenario
Project partners' questionnaires	✓	✓	✓
Stakeholders' questionnaire			
- Number of questionnaires received	-	2 - 6	> 7
- Different stakeholder groups participating	-	2 - 3	> 4
- Questionnaires received per stakeholder group	-	1 - 3	≥ 2
Citizens' questionnaire (public survey)			
- Number of respondents	-	≤ 15	> 15
- Different stakeholder groups participating	-	≥ 2	> 2
- Respondents per stakeholder group	-	1 - 4	> 4

Table 2: *Data collection outcomes*

Stakeholders' Questionnaire Feedback	Data Collection Outcome
Project partners' questionnaires	✓
Stakeholders' questionnaire	
- Number of questionnaires received	19
- Different stakeholder groups participating	6
- Questionnaires received per stakeholder group	3 on average
Citizens' questionnaire (public survey)	
- Number of respondents	132
- Different stakeholder groups participating	6
- Respondents per stakeholder group	22 on average

The data collection outcome for the **Stakeholders' Questionnaire was in line with the Optimal Scenario**, however, it is important to note that out of eight distinct stakeholder groups involved, half of them submitted only one questionnaire. Similarly, the data collection outcome

for the **Citizens' Questionnaire was also within the Optimal Scenario**, however half of the stakeholder groups involved submited only one questionnaire.

V. Identification and evaluation of the criticality of drivers of social opposition to wind energy development

In alignment with the objectives of Activity 1.1, the criticality of drivers for social opposition to wind energy projects is evaluated at both territorial level (per project partner region) and project level (all project partner regions). **The evaluation is based on the information submitted via the main questionnaire completed by project partners**.

On partner country level, the criticality of each identified territorial opposition factor is assessed based on its level of impact. The evaluation of the level of impact of opposition factors uses a scale from 0 – 4, where 0 reflects "neutral impact" and 4 reflects "disruptive impact" (**Table 3**).

Table 3: *The 5-point scale used for assessing the level of impact of opposition factors*

Grade	Level of impact
0	Neutral impact – The factor has an overall neutral impact on social opposition
1	Minor impact – The factor has a minor impact on social opposition, but it does not lead to considerable conflicts regarding wind projects' development or cause delays to the wind project's development.
2	Moderate impact – The factor has a moderate impact on social opposition, and while it leads to conflicts these are promptly mitigated by relevant authorities, therefore only minor delays to the wind project's development are caused.
3	Significant impact – The factor has a significant impact on social opposition, and it leads to conflicts which require time consuming mitigation actions by relevant authorities or leads to juridical procedures; hence causing significant delays in the wind project's development.
4	Disruptive impact – The factor is sufficient to prevent wind energy projects from being realised.

At project level, common opposition factors are identified and evaluated regarding their level of impact on wind energy projects, considering also how many project partner territories have

reported each opposition factor (frequency). In this case, the evaluation of the level of impact of opposition factors uses the same scale from 0 – 4 used on territorial level (**Table 3**), but the average impact score of each factor is used. The frequency of each opposition factor is described on a scale from 0 – 10, depending on how many of the project partners have reported each opposition factor. The classification of criticality of common social opposition factors based on the average impact score obtained by each one is explained in **Table 4**.

Table 4: *Classification of criticality of common opposition factors based on their average impact score*

Classification	Description	Average Impact Score
Prevailing opposition factor	An opposition factor that has significant or disruptive impact on wind projects' development; its impact ranging from long delays to preventing the projects from being realised.	**3.1 - 4**
Important opposition factor	An opposition factor that has moderate impact on wind projects but does not cause significant delays to the wind project's development.	**2.1 - 3**
Occasional opposition factor	An opposition factor that has minor impact on wind projects and does not cause delays to the wind projects' development.	**0.1 - 2**
Neutral opposition factor	An opposition factor that does not affect social opposition and thus has an overall neutral impact on wind projects.	**0**

It should be noted that although the average impact score is the main parameter to assess the criticality of each opposition factor at project level, its frequency should also be taken into consideration to understand the differences between critical opposition factors in different project partner regions.

For example, it might be that a given opposition factor is evaluated as having a disruptive impact (grade 4) by three partners, while seven partners evaluated said factor as having moderate (grade 2) or minor (grade 1) impact. In that case, based on the average impact score obtained (1.9 – 2.6), the factor is classified as occasional or important opposition factor at project level, even though for some partners it might lead to wind energy projects being

cancelled. Such remarks are useful when discussing the specificities of territorial PIs' improvements aiming to mitigate social opposition in partners' regions.

C. Analysis of collected data

The following sections provide a comprehensive analysis of the collected data, followed by a discussion of the key findings regarding key challenges as reflected in the public opinion, the common issues to be tackled at project level, and the specificities that need to be addressed by each partner individually through their PIs.

VI. Overview of data collected

It is noted that upon review of the questionnaires submitted by partners, stakeholders, and the public, collected data were refined according to the requirements and focus of each section of the respective questionnaire so as to make the best use of the partners', stakeholders', and public's contributions.

VI.1. Partner's Input

The Partners' Questionnaire comprised three sections (see **ANNEX I**):

- Section 1 – Evaluation of the impact of social opposition factors
- Section 2 – Identification of stakeholder groups likely to oppose to local wind energy projects
- Section 3 – Policy tools and actions to ease concerns about local wind power projects

VI.1.1 Data Cleansing

The following key pre-processing actions of collected data were performed prior to the analysis of partners' input:

Section 1: Evaluation of the impact of social opposition factors

- The additional regulatory and governance opposition factor *"Government Decree"* specified by the Central Danube Development Agency (CDDA) (HU) has been omitted from the analysis because it is a legislative document that shapes the regulatory framework of wind energy development, but it does not affect the public's opinion towards wind energy projects.
- The additional distrust factor *"Companies profit without economic gain for local communities"* specified by the Asturias Energy Foundation (FAEN) (ES) has been omitted from the analysis, as it falls under the regulatory and governance opposition factor "Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)".

- The additional distrust factor *"Lack of information about wind energy"* specified by the Zemgale Planning Region (ZPR) (LV) has been omitted from the analysis, as it falls under the distrust opposition factor "Difficult access to reliable information regarding wind energy projects".

Section 2: Identification of stakeholder groups likely to oppose to wind energy projects

- The Province of Flemish Brabant (PVB) (BE) identified *"Municipalities"* as an additional stakeholder group likely to oppose wind energy projects but did not indicate any of the opposition factors of Section 1 as the driving force(s) for the opposition of Municipalities. However, as PVB referred to *"Fear of opposition of local residents*" as the basis of the opposition of Municipalities. To which end, and aiming to facilitate the analysis of input data it has been considered that Municipalities will invoke the same opposition factors as the residents in their administrative region. Consequently, the prevailing factor of local residents' opposition has been taken into consideration for the Municipalities as well.

Section 3: Policy tools and actions to ease concerns about local wind power projects

- The additional policy tools/action to mitigate social opposition to wind energy projects identified by Regional Council of South Ostrobothnia (RCSO) (FI) *"Monetary initiative to accept wind turbines as part of the view"* has been omitted from the analysis as it does not specify a particular policy tool or action.

VI.1.2 Evaluation of the impact of social opposition factors

In Section 1 of the questionnaire, project partners were asked to evaluate the impact of several predefined factors on social opposition to wind energy developments using a 5-point scale, from 0 to 4 according to the following description:

0 - Neutral impact / Non-Applicable
1 - Minor impact
2 - Moderate impact
3 - Significant impact
4 - Disruptive impact

Partners were also given the choice to identify and evaluate additional factors of social opposition which they considered to have an impact on wind energy projects in their territory. This section (**VI**) presents an overview of both country level and project level (aggregated) results, and are further discussed in the following section (**VII**).

⇒ **Environmental Factors**

As depicted in **Figure 2**, apart from Belgium and Ireland, project partner countries have identified at least one environmental factor of social opposition as having significant (grade 3) or disruptive impact (grade 4) on wind energy projects. Partners from Belgium and Ireland evaluated all environmental factors as having minor impact (grade 1) on wind energy projects.

At project level (**Figure 3**), *"bird collisions"* and *"habitat disturbance"* are evaluated as important opposition factors (average impact score 2.9 and 2.4 respectively), while the remaining environmental factors are evaluated as occasional opposition factors with their average impact scores varying from 1.4 to 2.0.

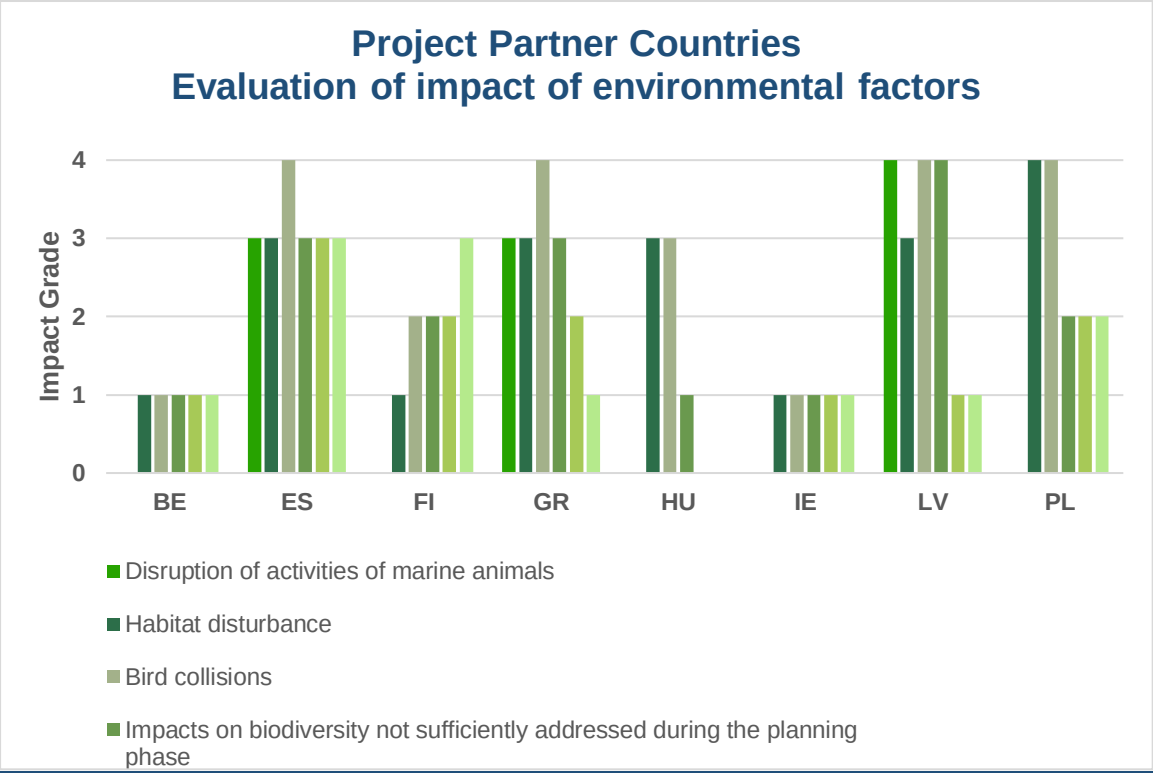

Figure 2: *The evaluation of impact of each environmental factor at project partner country level.*

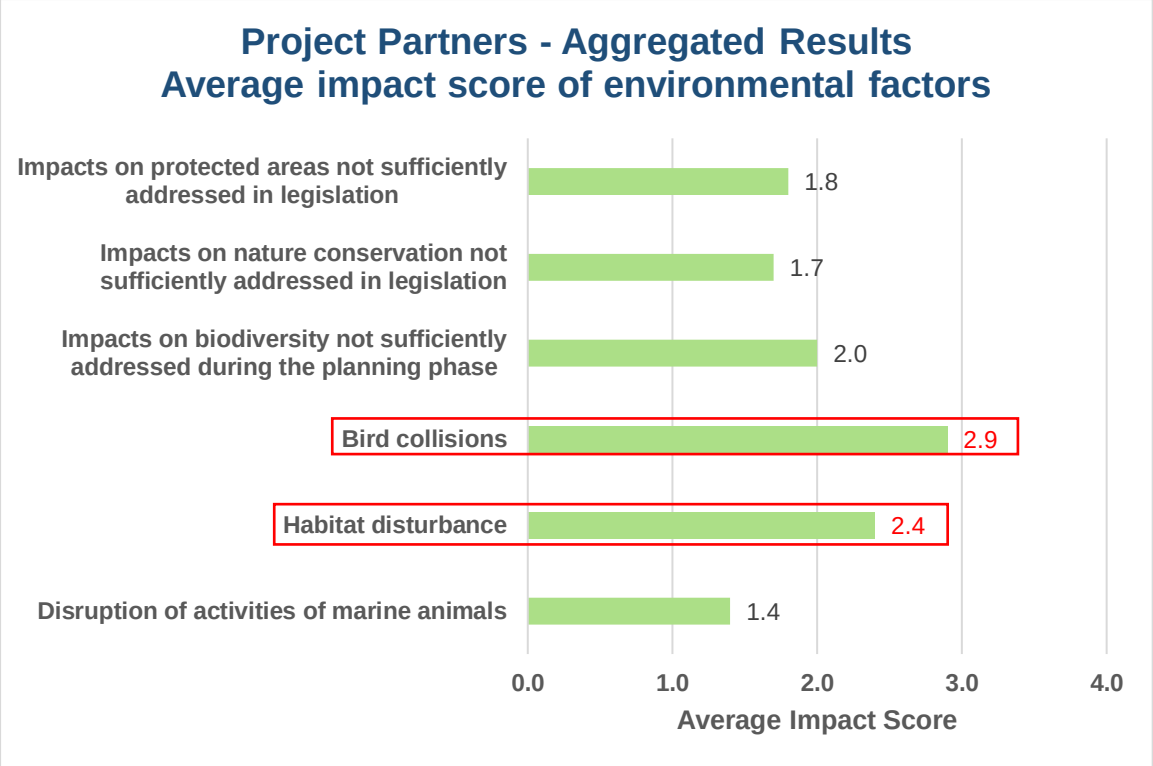

Figure 3: *The average impact score of each environmental factor at project level (aggregated results).*

⇒ **Economic Factors**

Besides the predefined economic factors of social opposition, the two Spanish partners indicated two additional economic factors. The Autonomous Community of the Region of Murcia - General Directorate of the Natural Environment (CARM) reported *"Lack/low compensation of landowners"*, and FAEN reported *"Impact on other activities such as fishing"*.

As depicted in **Figure 4**, apart from Ireland, project partner countries have identified at least one economic factor of social opposition as having significant (grade 3) or disruptive (grade 4) impact on wind energy projects. The Irish partner evaluated all economic factors as having minor impact (grade 1) on wind energy projects.

At project level (**Figure 5**), *"Reduced attractiveness of recreational areas due to visual impacts of wind farms"*, *"Reduced attractiveness of touristic areas due to visual impacts of wind farms"*, and *"Decrease in real estate values"* are assessed as important opposition factors (average impact score 2.7, 2.5, and 2.3 respectively), while the remaining environmental factors are evaluated as occasional opposition factors – their average impact scores varying from 0.4 to 1.6.

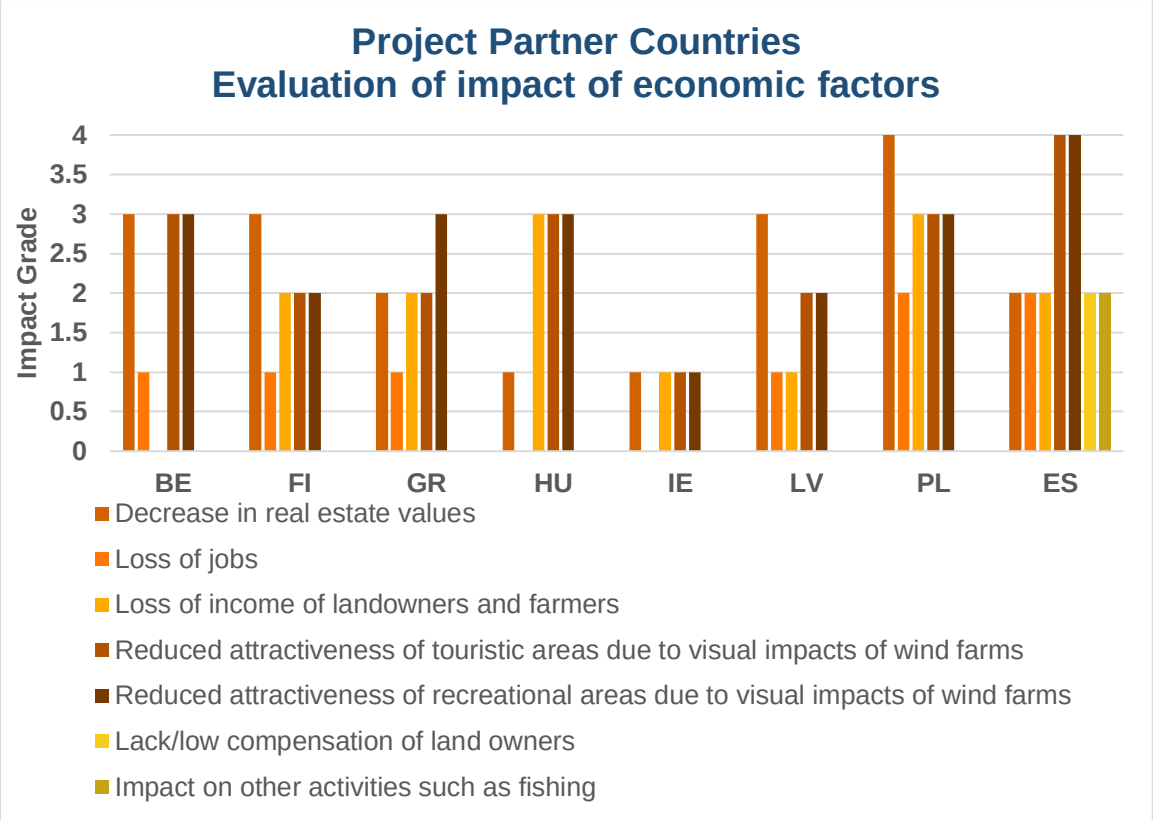

Figure 4: *The evaluation of impact of each economic factor at project partner country level.*

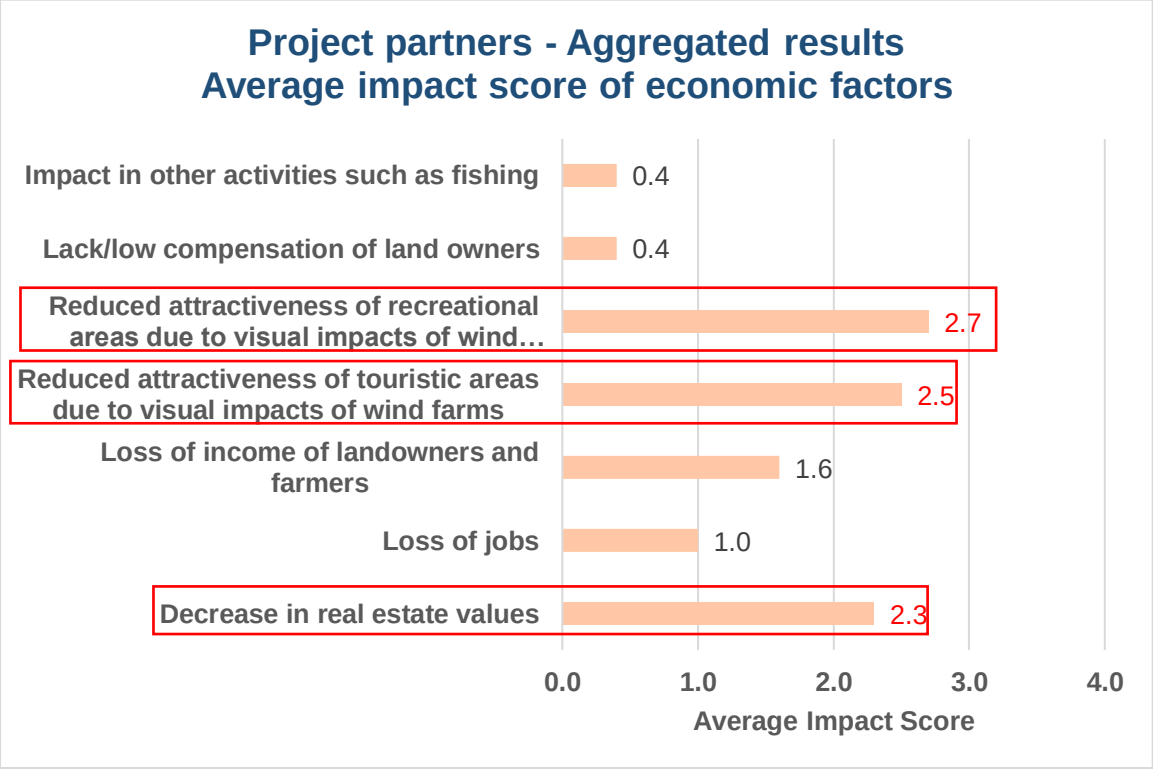

Figure 5: *The average impact of each economic factor at project level (aggregated results).*

⇒ **Societal Factors**

As depicted in **Figure 6**, half (50%) of the project partner countries have identified at least one societal factor of social opposition as having significant (grade 3) or disruptive (grade 4) impact on wind energy projects.

At project level (**Figure 7**), only *"decreased quality of life"* is evaluated as an important opposition factor (average impact score 2.3), while the remaining societal factors are evaluated as occasional opposition factors – their average impact scores varying from 0.4 to 1.4.

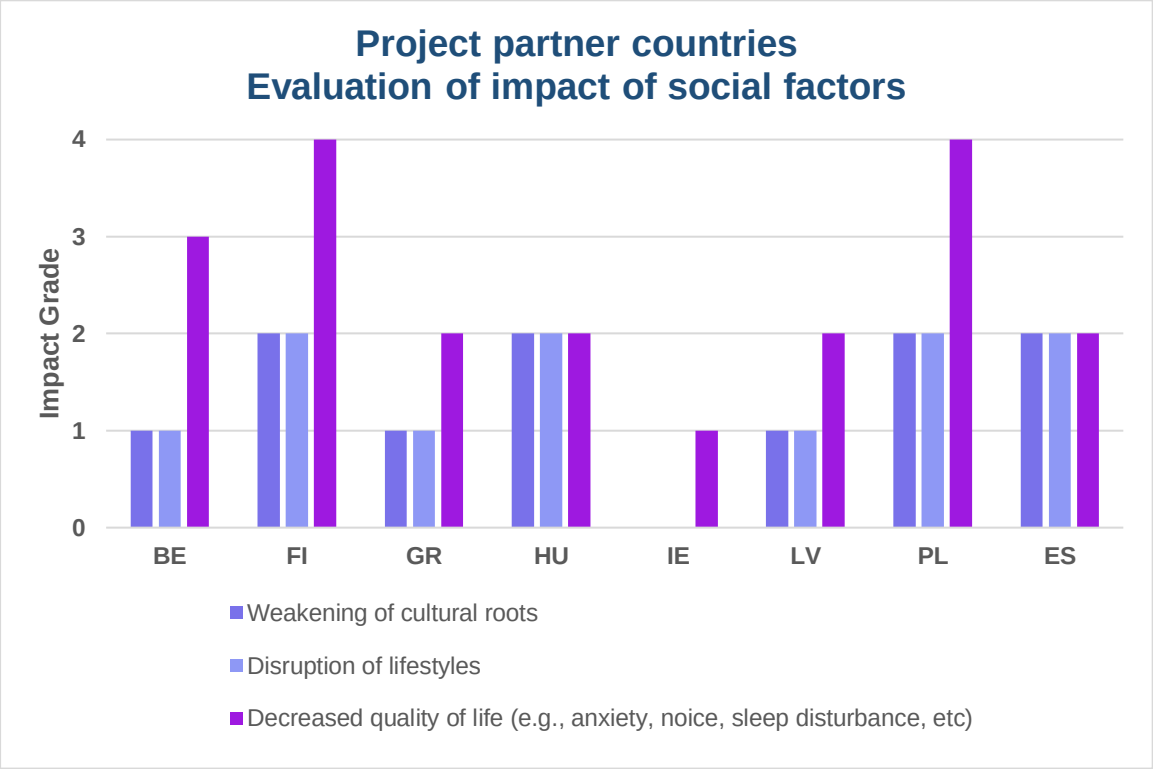

Figure 6: *The evaluation of impact of each societal factor at project partner country level.*

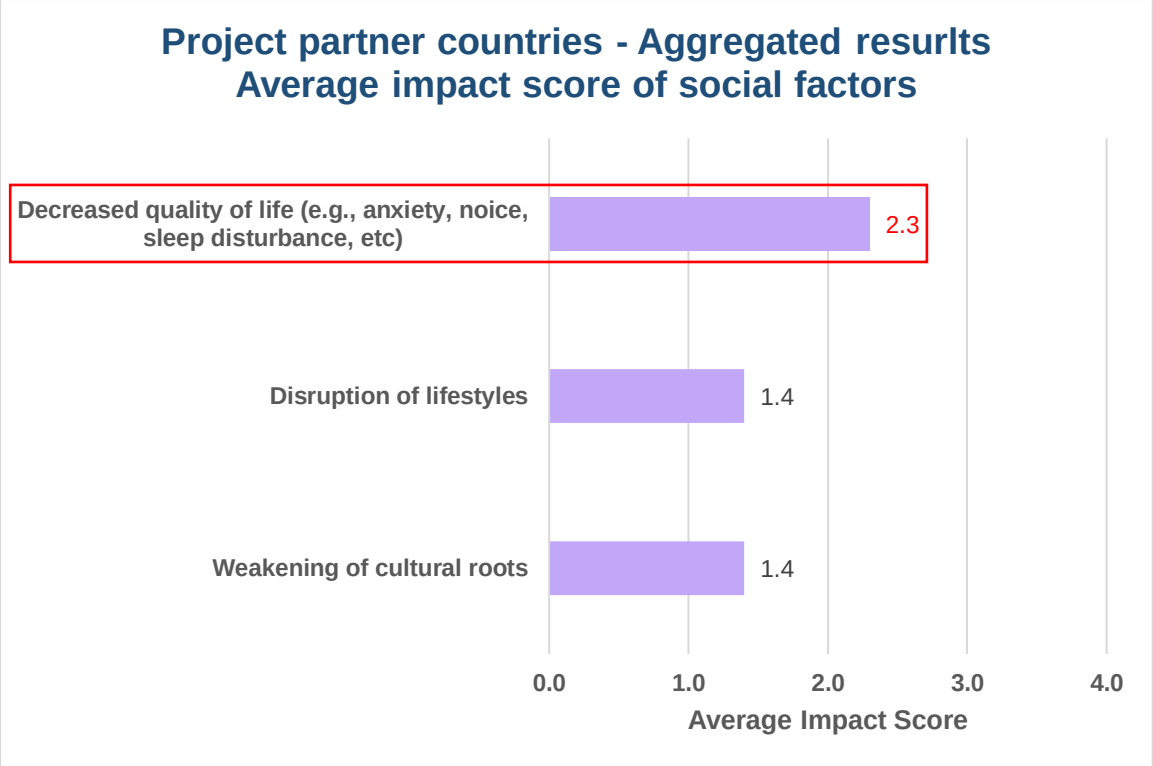

Figure 7: *The average impact of each societal factor at project level (aggregated results).*

⇒ **Regulatory and Governance Factors**

As depicted in **Figure 8**, apart from Finland, Ireland, and Latvia, project partner countries have identified at least one regulatory and governance factor of social opposition as having significant (grade 3) or disruptive (grade 4) impact on wind energy projects. The Finnish partner evaluated both regulatory and governance factors as having moderate impacts (grade 2) on wind energy projects, while the Latvian partner evaluated the impact of both factors to (grade1) on wind energy projects to be minor (grade1). The Irish partner evaluated the impact of one factor to have neutral impact (grade 0) and of the other to have minor impact (grade 1) on wind energy projects.

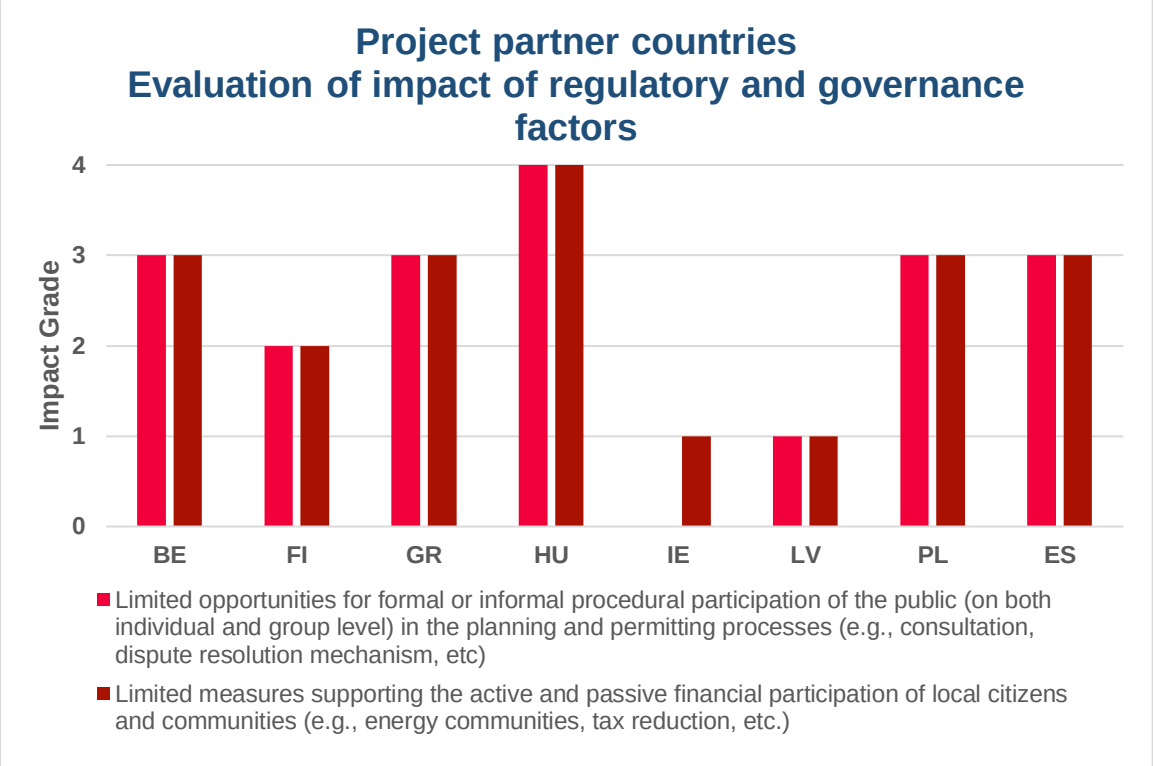

Figure 8: *The evaluation of impact of each regulatory and governance factor at project partner country level.*

At project level (**Figure 9**), both regulatory and governance factors were evaluated as important opposition factors, the average impact scores being 2.5 for *"Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc)"* and 2.4 for *"Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)"*.

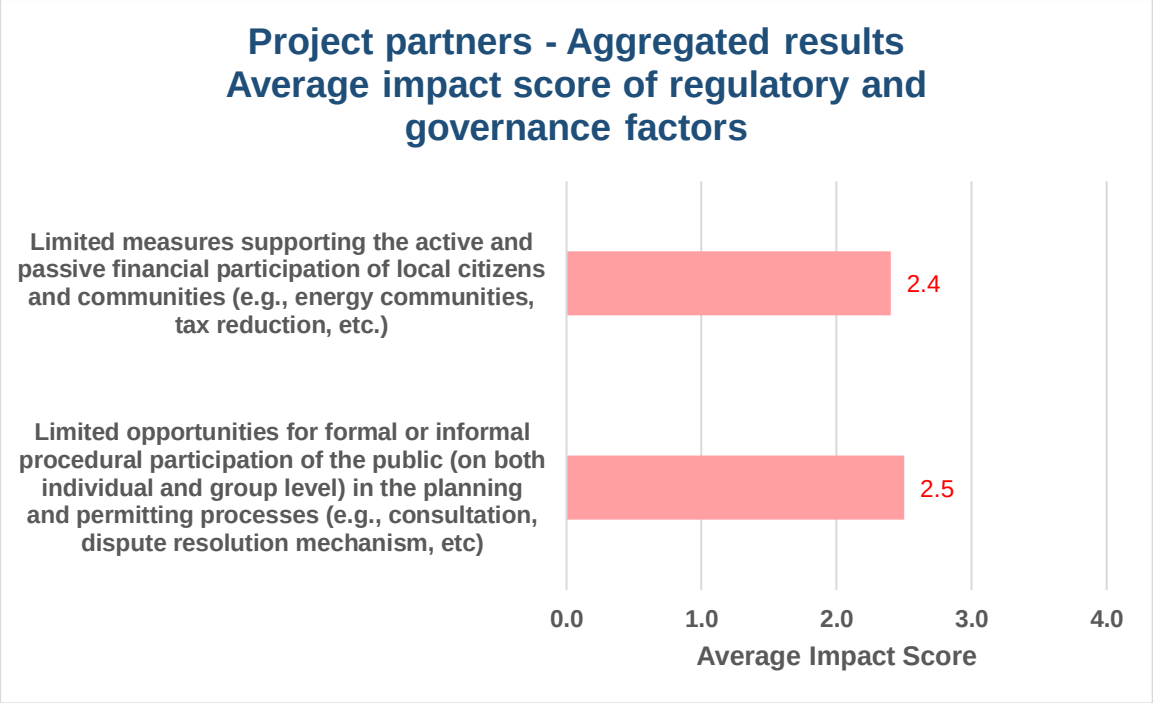

Figure 9: *The average impact score of each regulatory and governance factor at project level (aggregated results).*

⇒ **Distrust Factors**

Besides the predefined distrust factors, PVB (BE) identified an additional distrust factor, namely "*Technical language of official documents*" as having a moderate impact on wind energy projects. As depicted in **Figure 10**, apart from Ireland and Latvia, project partner countries have identified at least one distrust factor of social opposition as having significant (grade 3) or disruptive (grade 4) impact on wind energy projects. The Latvian partner evaluated the impact of all distrust factors as moderate (grade 2), while the Irish partner evaluated the impacts of the distrust factors as either neutral (grade 0) or minor (grade 1).

At project level (**Figure *11***), three out of four distrust factors were evaluated as important opposition factors (average impact score within the range 2.1 - 3). Only the factor *"Technical language of official documents"* was evaluated as an occasional opposition factor with an average impact score of 0.2.

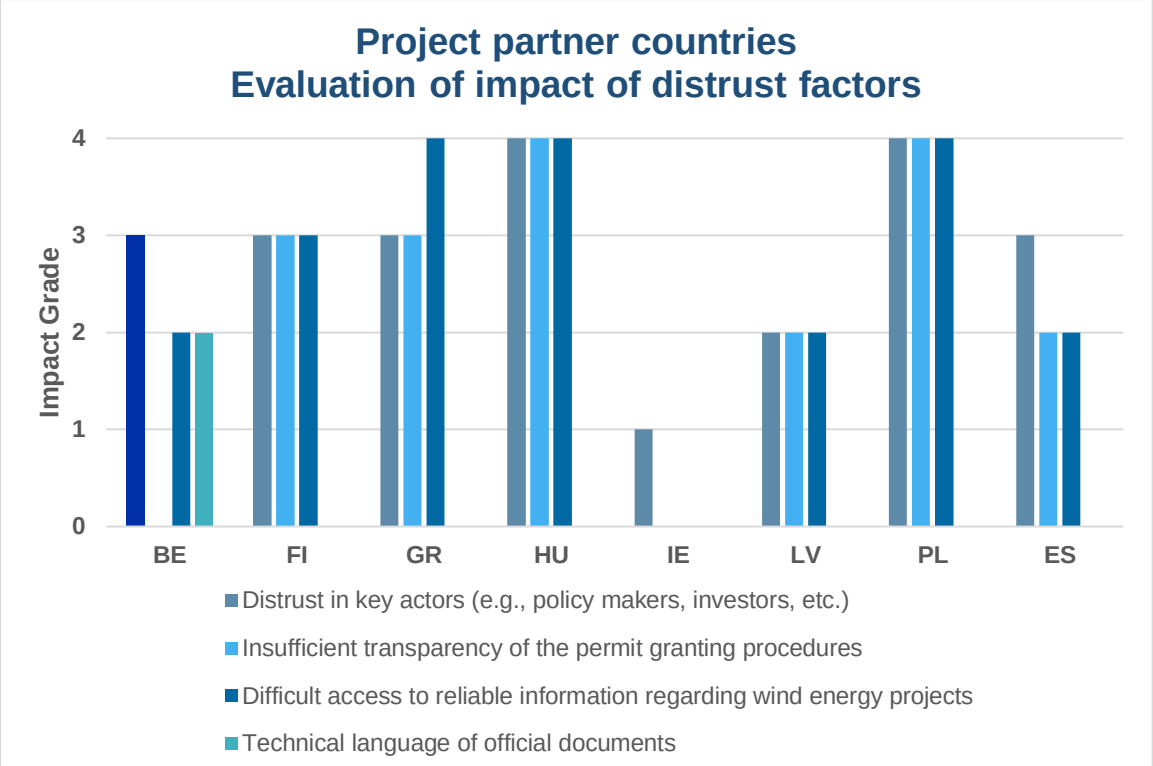

Figure 10: *The evaluation of impact of each distrust factor at project partner country.*

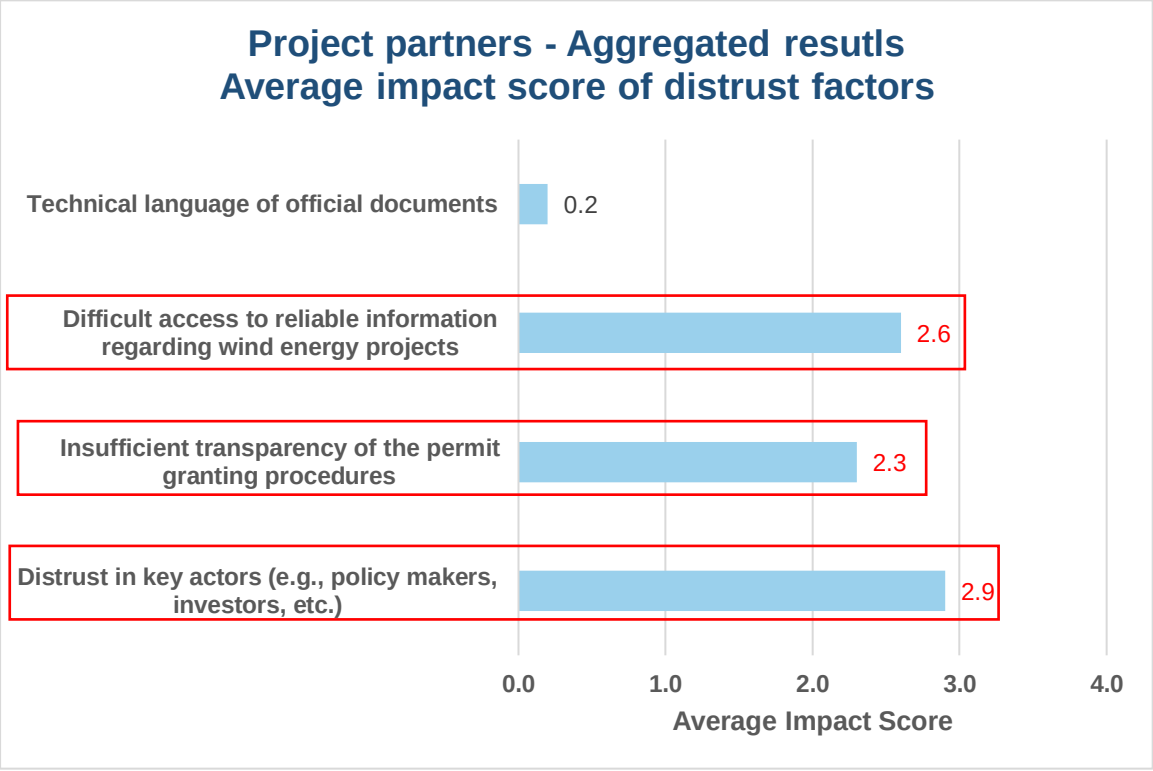

Figure 11: *The average impact of each distrust factor at project level (aggregated results).*

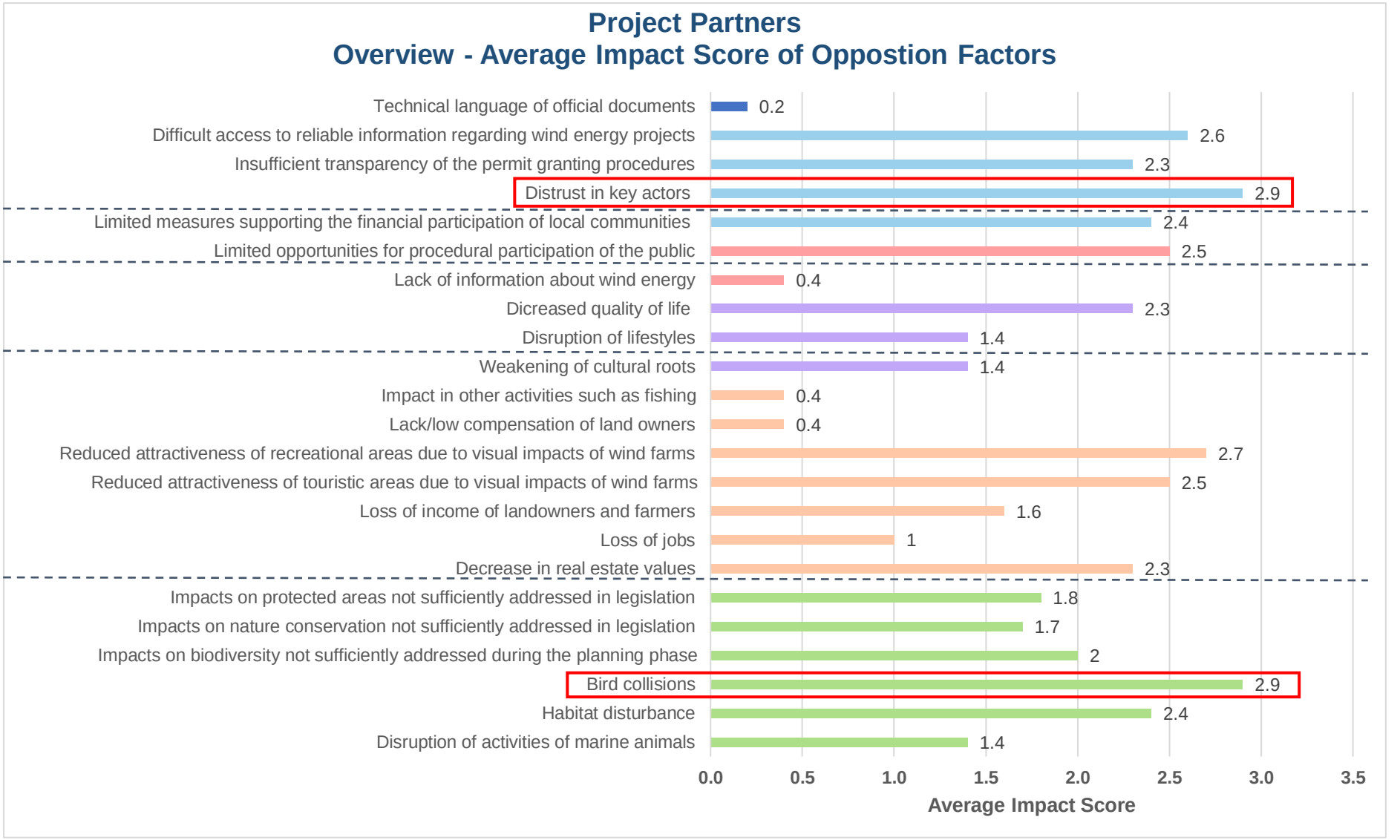

Figure 12: *Overview of the average impact score of social opposition factors (aggregated / project level results). The two factors with the highest impact score are marked with a red border.*

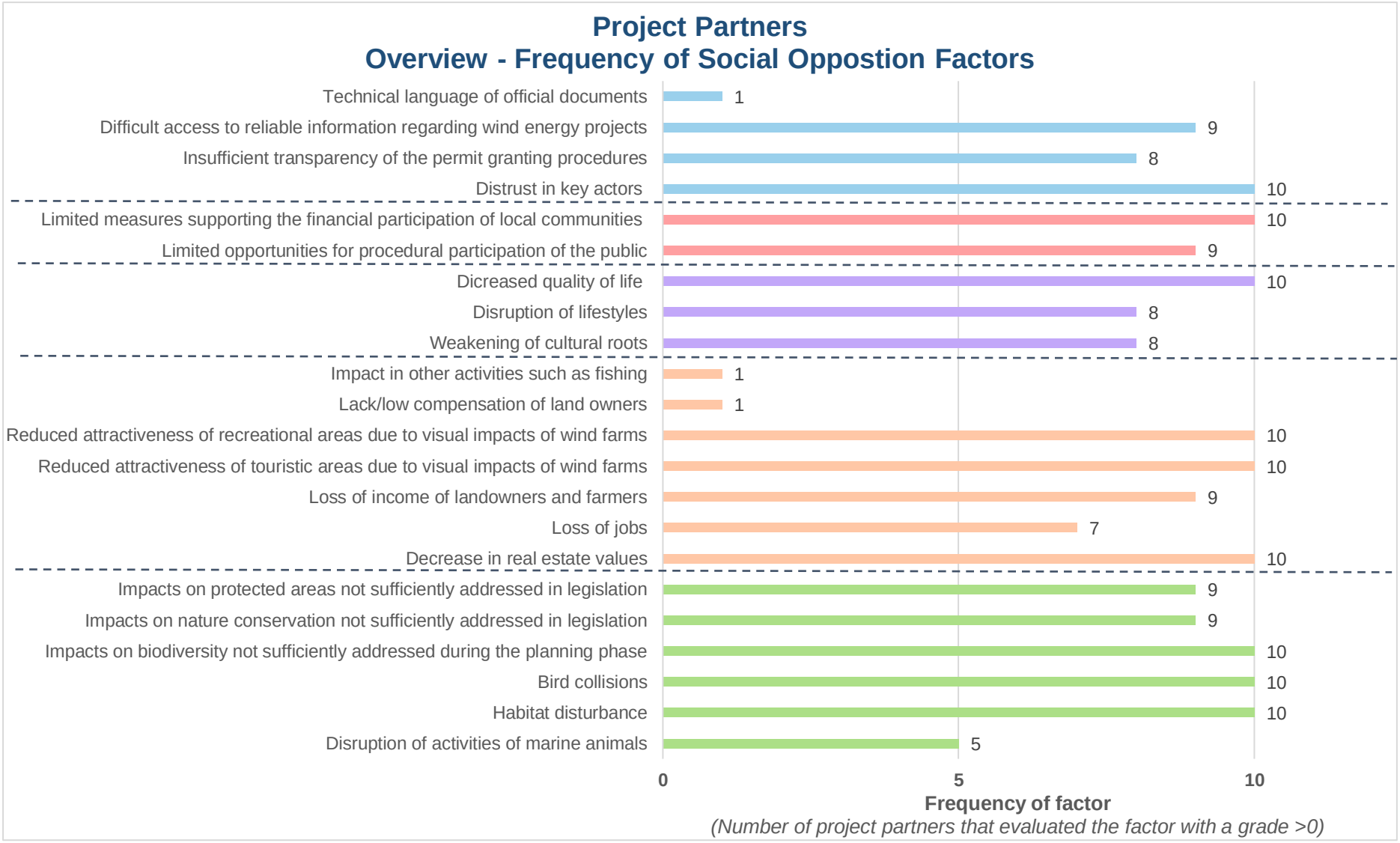

Figure 13: *Overview of the frequency of social opposition factors (aggregated / project level results). Frequency refers to the number of projects partners that have evaluated a given factor with an impact grade greater than zero (>0).*

VI.1.3 Identification of stakeholder groups likely to oppose to wind energy projects

In Section 2 of the questionnaire project partners were presented with a list of stakeholder groups and were asked to choose those groups that are likely to oppose to local wind energy projects, with the option to specify other stakeholder groups that may be against wind development in their region. Furthermore, partners were asked to indicate the main driver(s) for each stakeholder group's opposition, with reference to the opposition factors assessed in the previous section of the questionnaire (see **VI.1.2 - Evaluation of the impact of social opposition factors**).

"Local residents" were indicated by all partners (on a country level), while *"environmental NGOs"* were identified by all partners apart from Hungary (**Figure 14**). Moreover, two partners specified additional stakeholder groups likely to oppose wind energy project in their region; PFV (BE) identified *"Municipalities"*, and FAEN (ES) the *"Fishing sector"*.

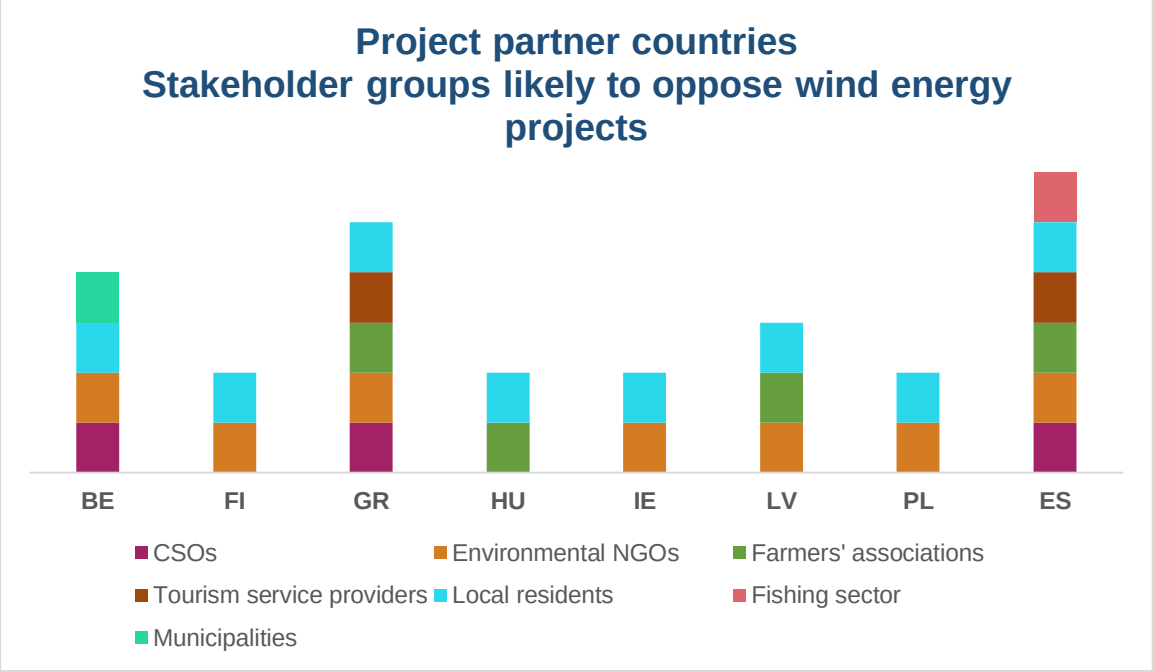

Figure 14: *Stakeholder groups likely to oppose wind energy projects per project partner country.*

Summarising partners' input, twelve of the opposition factors included in Section 1 of the questionnaire were identified by partners as the prevailing factors of opposition of the different stakeholder groups potentially opposing to wind energy projects. On the whole, partners considered that the majority of opposition is likely to be based two factors, *"decreased real estate values"* and the *"disruption of lifestyles"* (**Figure 15**). The detailed summary of prevailing opposition factor(s) of each stakeholder group as identified by project partners at project level is given it **Table 5**.

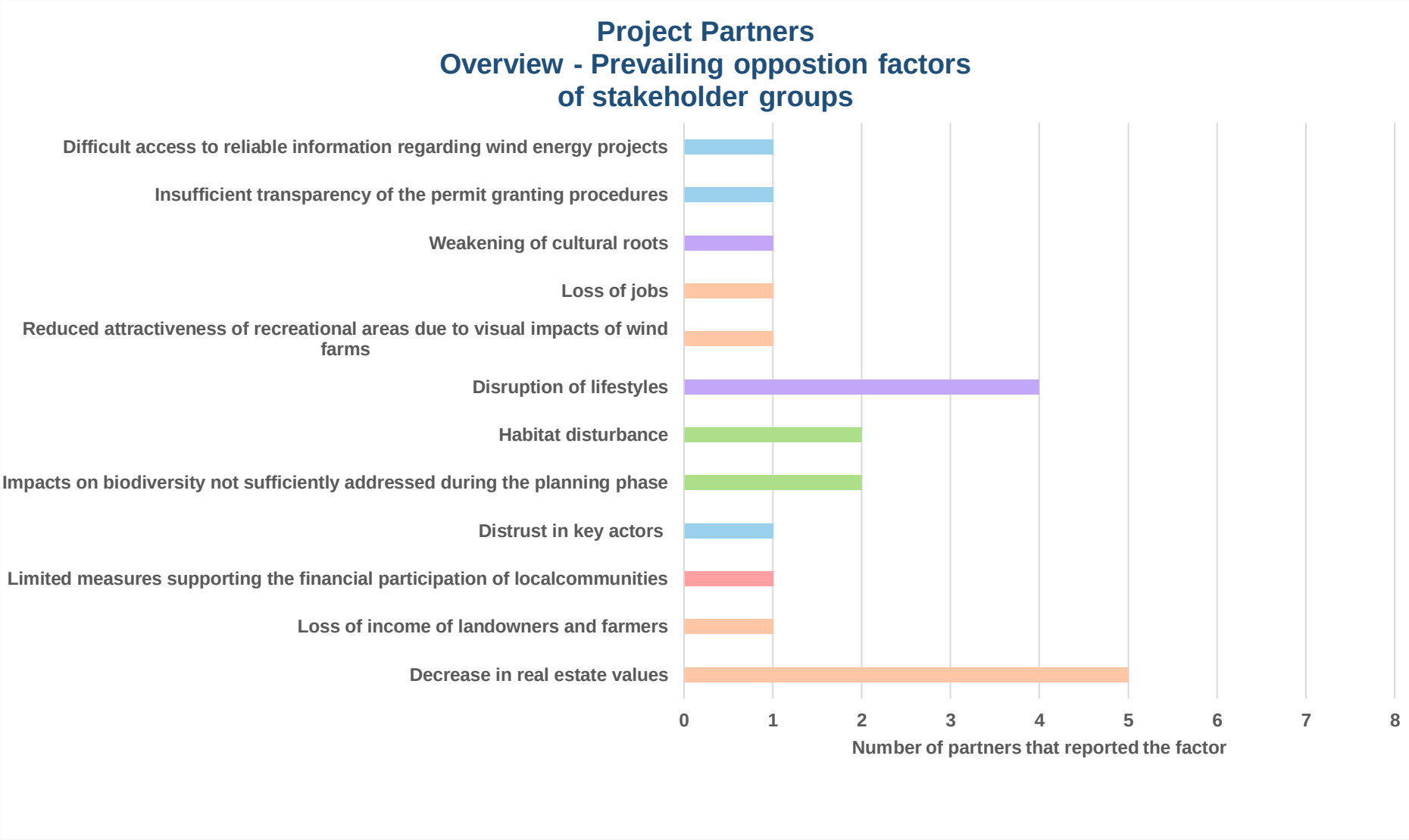

Figure 15: *Prevailing opposition factors of stakeholder groups at project level (aggregated results).*

Table 5: *Overview of the stakeholder groups and the respective prevailing opposition factor(s) at project level (aggregated results).*

Opposition Factor Category	Prevailing Opposition Factor(s)	Stakeholder Group
Economic	Decrease in real estate values	CSOs
	Loss of income of landowners and farmers	
Governance and Regulatory	Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)	
Distrust	Distrust in key actors (e.g., policy makers, investors, etc.)	
Environmental	Impacts on biodiversity not sufficiently addressed during the planning phase	Environmental NGOs
	Habitat disturbance	
Societal	Disruption of lifestyles	Farmers' associations
Economic	Decrease in real estate values	
Economic	Reduced attractiveness of recreational areas due to visual impacts of wind farms	Tourism service providers
Societal	Disruption of lifestyles	Local residents
Economic	Decrease in real estate values	
Environmental	Habitat disturbance	Fishing sector
	Impacts on biodiversity not sufficiently addressed during the planning phase	
Economic	Decrease in real estate values	
	Loss of jobs	
Societal	Weakening of cultural roots	
	Disruption of lifestyles	
Distrust	Insufficient transparency of the permit granting procedures	
	Difficult access to reliable information regarding wind energy projects	
Societal	Disruption of lifestyles	Municipalities
Economic	Decrease in real estate values	

VI.1.4 Policy tools and actions to ease concerns about local wind power projects

Project partners were presented with a list of policy actions and/or tools and were asked to choose the ones which could potentially ease concerns about wind power projects and enhance local acceptance, with the option to specify other policy tools or/and actions for mitigating social opposition in their territories. Furthermore, partners were asked to briefly elaborate on how the policy tools or/and actions identified will help mitigate the main factors of local opposition.

It is important to note that the Belgian partner (PVB) indicated "*Education of new generation for projects in the future (pro-active approach)"* as an additional tool to address social opposition to wind energy projects.

At project level (**Figure 16**), *"consultation during the planning phase"* and *"Information sessions and public forums to address concerns of stakeholders*" are the tools/actions indicated by most partner countries (7 out of 8) as capable of mitigating social opposition to and enhancing social acceptance of local wind energy projects.

Furthermore, according to project partners, the various policy instruments and measures are mainly implemented to address citizens' environmental concerns, increase transparency and facilitate access to information, and mitigate the economic impacts of wind projects.A discussion on how the different policy instruments help mitigate the various opposition factors is included in the following section (**VII - Discussion of results)**.

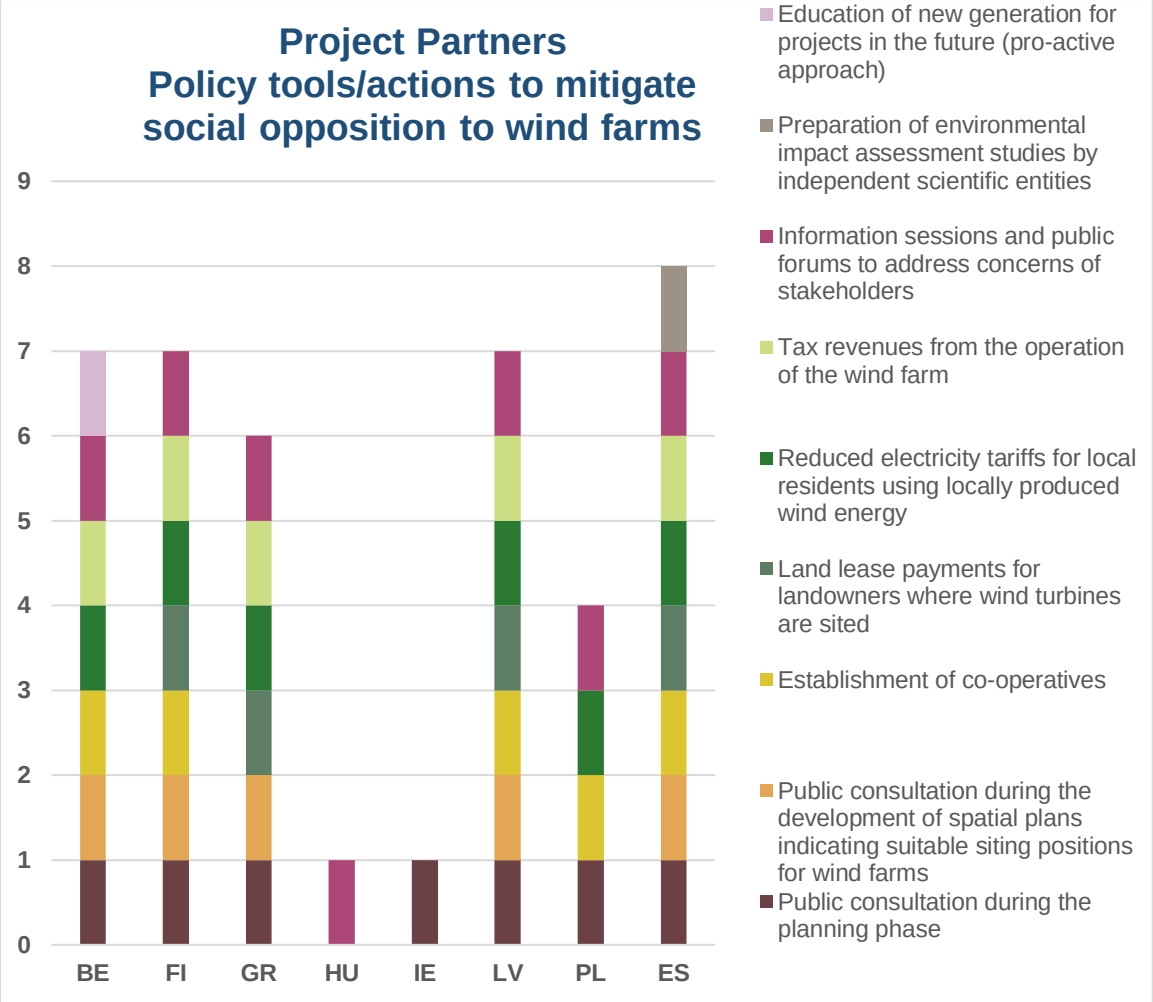

Figure 16: *Policy tools and/or actions identified at project partner country level to ease social opposition to wind energy projects.*

VI.2. Stakeholders' Input

The Stakeholders' Questionnaire comprised three sections (see **ANNEX II**):

- Section 1 – Respondent's information
- Section 2 – Evaluation of the impact of social opposition factors
- Section 3 – Policy tools and actions to ease concerns about local wind power projects

In total, nineteen stakeholders' questionnaires were submitted to the EUSurvey platform. Stakeholders from all project countries, apart from Hungary and Greece, completed the questionnaire (**Figure 17**). The range of stakeholder groups represented in the survey is quite diverse as seen in **Figure 18**; the main group represented being *"government/administration"* (including municipalities, regional administration, local government, and national government) with a total of seven questionnaires submitted, followed by "*local residents"* and *"wind project developers"* with three questionnaires submitted by each group.

The **prevailing factors of social opposition** as they emerged at stakeholder group level and at country level are given in **Table 6** and **Table 7** respectively.

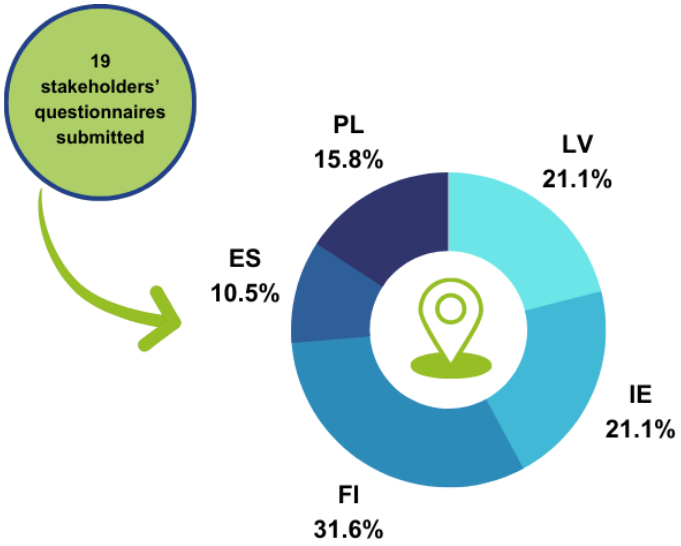

Figure 17: *Country coverage in the stakeholders' questionnaire.*

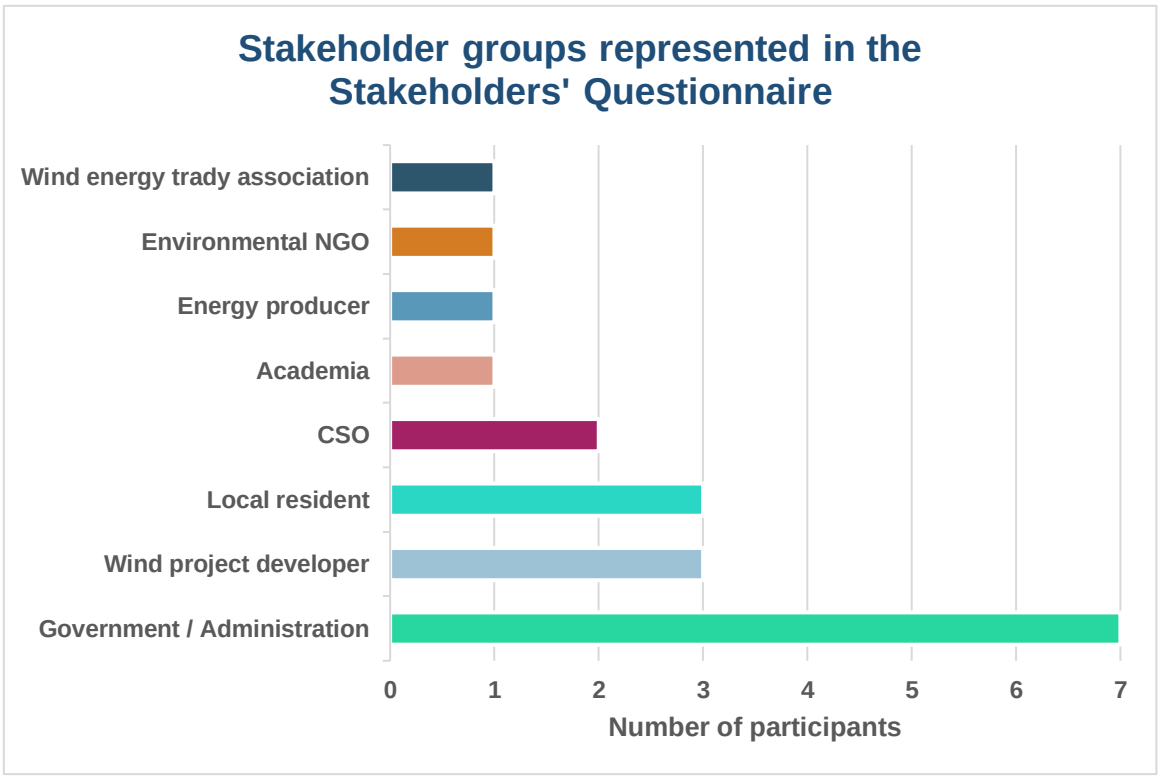

Figure 18: *Stakeholder groups represented in the stakeholders' questionnaire.*

Table 6: *Prevailing opposition factor(s) per stakeholder group represented in the stakeholders' questionnaire.*

Academia
- Decrease in real estate values - Difficult access to reliable information regarding wind energy projects - Distrust in key actors (e.g., policy makers, investors, etc.) - Insufficient transparency of the permit granting procedures - Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc) - Loss of income of landowners and farmers - Weakening of cultural roots
CSO
- Difficult access to reliable information regarding wind energy projects - Distrust in key actors (e.g., policy makers, investors, etc.)
Energy producer
- Bird collisions - Effects on service sectors and suppliers - Impacts on biodiversity not sufficiently addressed during the planning phase - Reduced attractiveness of touristic areas due to visual impacts of wind farms
Energy trade association
- Distrust in key actors (e.g., policy makers, investors, etc.) - Reduced attractiveness of recreational areas due to visual impacts of wind farms - Reduced attractiveness of touristic areas due to visual impacts of wind farms
Environmental NGO
- Bird collisions - Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc) - Difficult access to reliable information regarding wind energy projects - Disruption of activities of marine animals - Impacts on biodiversity not sufficiently addressed during the planning phase

- Impacts on protected areas not sufficiently addressed in legislation
- Insufficient transparency of the permit granting procedures
- Reduced attractiveness of recreational areas due to visual impacts of wind farms
- Reduced attractiveness of touristic areas due to visual impacts of wind farms

Government/Administration

- Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc)

Local resident

- Decrease in real estate values

Wind project developer

- Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc)
- Weakening of cultural roots

Table 7: *Prevailing opposition factor(s) at project partner country level of stakeholder groups represented in the stakeholders' questionnaire.*

Country	Prevailing Opposition Factor
FI	➢ Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc)
IE	➢ Distrust in key actors (e.g., policy makers, investors, etc.)
LV	➢ Reduced attractiveness of touristic areas due to visual impacts of wind farms ➢ Reduced attractiveness of recreational areas due to visual impacts of wind farms
PL	➢ Decrease in real estate values
ES	➢ Bird collisions ➢ Impacts on biodiversity not sufficiently addressed during the planning phase ➢ Reduced attractiveness of touristic areas due to visual impacts of wind farms

Stakeholders were presented with a list of **policy tools and/or actions** and were asked to choose the ones **that could potentially ease concerns about wind power projects and enhance local acceptance** of said projects, with the option to specify other policy tools/actions to mitigate social opposition in their territories. The policy tool/action indicated by most stakeholders as particularly effective in easing social opposition was *"public consultation during the planning phase*" (**Figure 19**). The *"establishment of energy cooperatives"* was also considered effective, mainly by government/administration representatives.

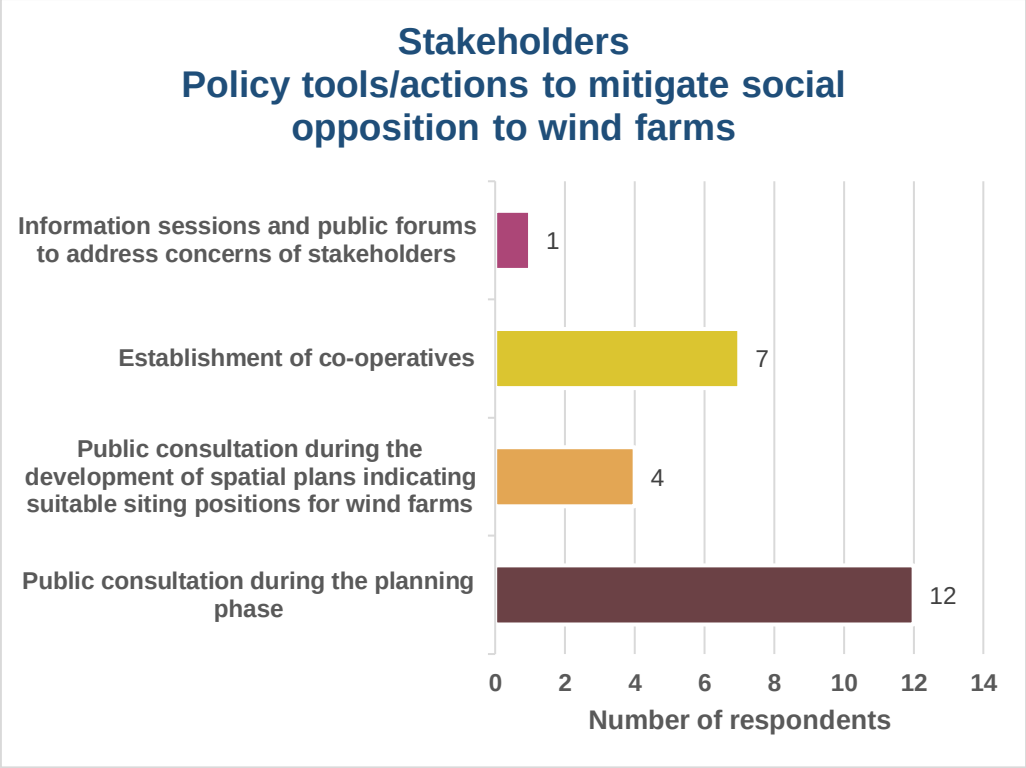

Figure 19: *Policy tools/actions to mitigate social opposition to wind energy projects as identified by the stakeholder groups represented in the stakeholders' questionnaire.*

VI.3. Public's Input

The Publics' Questionnaire comprised three sections (see **ANNEX III**):

- Section 1 – Respondent's information
- Section 2 – Identification of the impact of social opposition factors
- Section 3 – Policy tools and actions to ease concerns about local wind power projects

In total**, one hundred and thirty-two questionnaires** were submitted via the EUSurvey platform. The majority of respondents (73%) came from Poland (**Figure 20**), and local residents was the main group of stakeholders to participate in the online survey (**Figure 21**). Most of the respondents (42%) belonged to the age group 36-45 (**Figure 22**).

Respondents were requested to indicate whether a list of predetermined **factors shape their opinion and attitude towards wind power projects**, with the option to specify other factors that affect their opinion.

Over two thirds (>66%) of respondents identified the following four factors to shape their opinion and attitude towards local wind energy projects: a) *"Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)"*, b) *"Distrust in key actors (e.g., policy makers, investors,*

etc.)", c) *"Difficult access to reliable information regarding wind energy projects"*, and d) *"Distrust in the planning and authorization process"* (**Figure 23**).

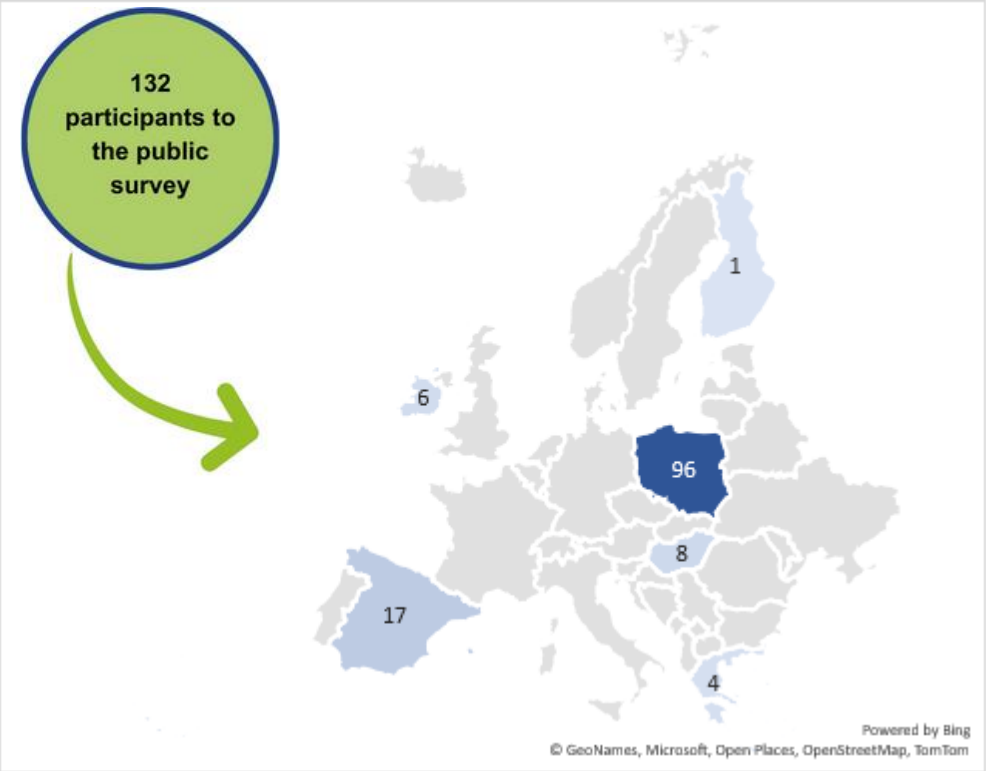

Figure 20: *Geographic distribution of participants in the public survey.*

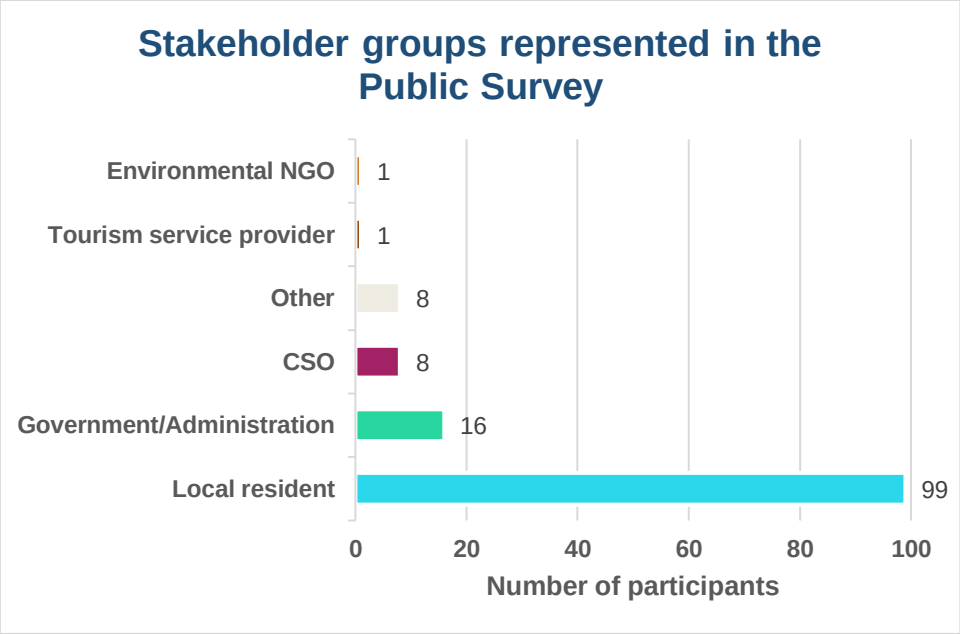

Figure 21: *Respondents per stakeholder group in the public survey.*

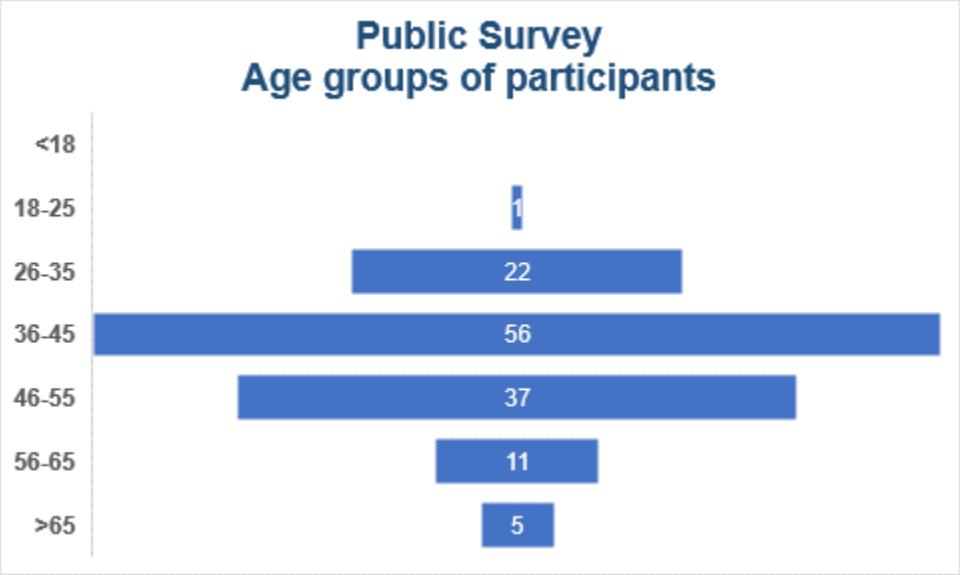

Figure 22: *Age distribution of participants in the public survey.*

In a similar manner to the stakeholders' questionnaire, participants to the public survey were presented with a list of **policy tools and/or actions** and were asked to choose the ones **that could potentially address their concerns about wind power projects and enhance local acceptance** of said projects, with the option to specify other policy tools/actions to mitigate social opposition in their territories. The policy tool/action identified by most respondents (64%) as particularly effective in mitigating social opposition was *"public consultation during the planning phase"* (**Figure 24**).

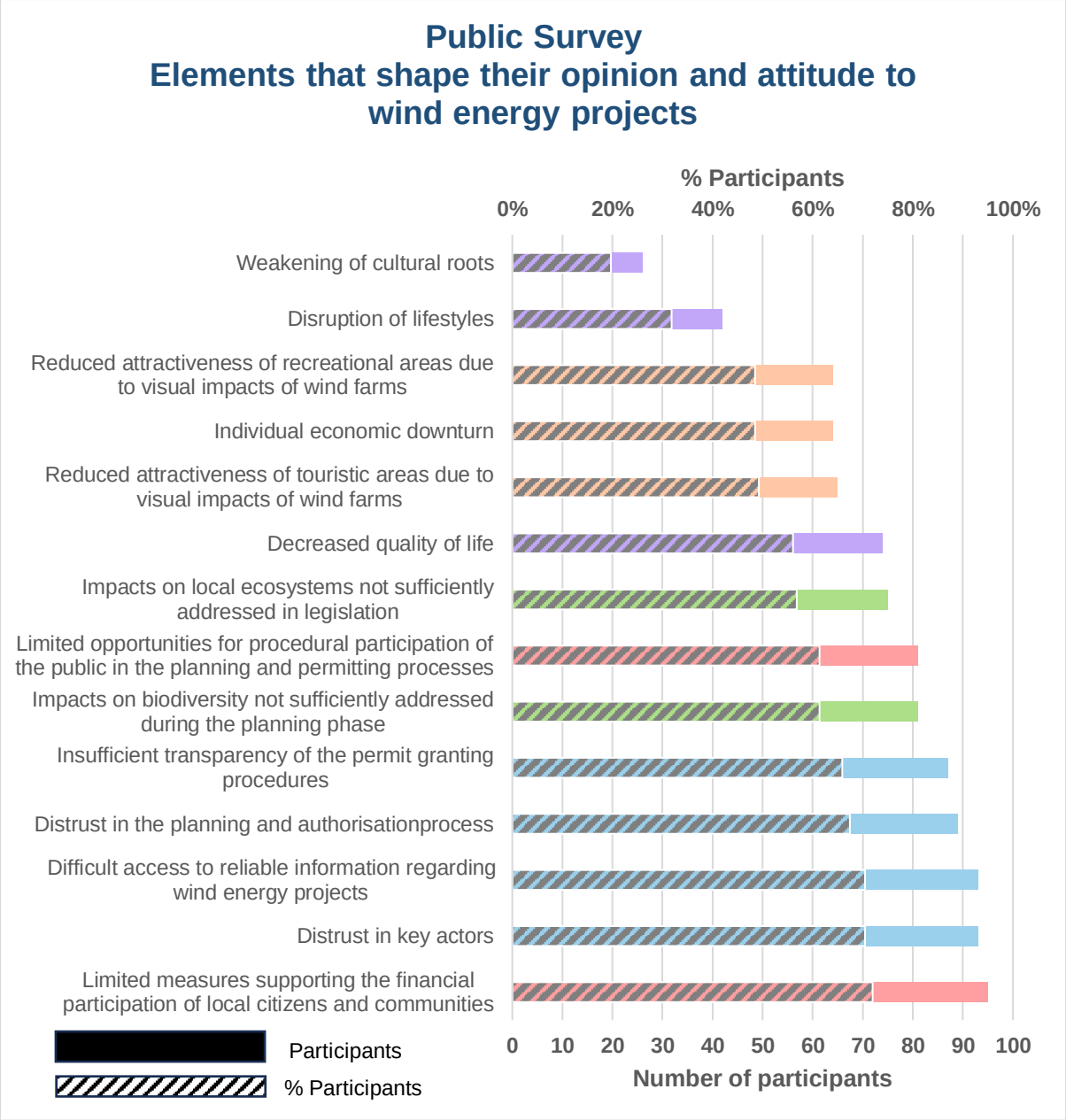

Figure 23: *Elements identified by participants of the public survey that shape their opinion and attitude towards wind energy projects.*

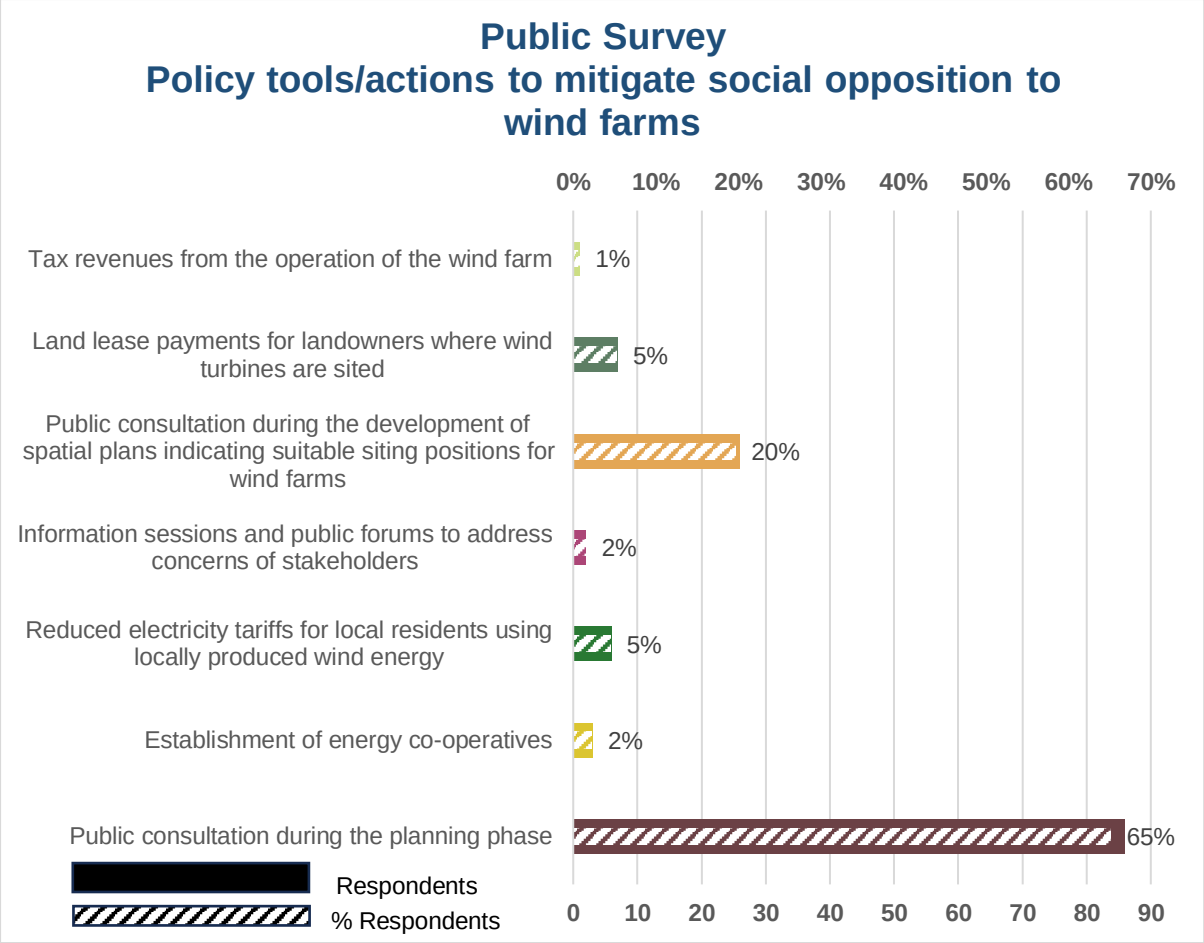

Figure 24: *Policy action and tools indicated by participants in the public survey to mitigate social opposition to wind farms.*

VII. Discussion of results

The discussion of the results aims to help partners better understand the key challenges for the deployment of wind energy projects through the perspective of the public so as to identify the common issues to be addressed during the activities of the BIOWIND project, while also paying attention to the specificities of each project partner's region. Discussion is primarily based on a comparative analysis of the Project Partners' Questionnaire and the Citizens' Questionnaire. However, submitted contributions to the Stakeholders' Questionnaire did not provide adequate support for extracting and backing up meaningful quantitative conclusions. This is due to the limited number (<2) of submitted questionnaires by each of the stakeholder groups "*Environmental NGOs*", "*Tourism service providers*", and "*Farmers' association*". In an analogous manner, remarks and conclusions extracted from the public survey should also be treated with caution as the prevailing majority of respondents came from one country.

VII.1. Key challenges for the uptake of wind power as reflected in public opinion

To better understand the drivers of social opposition, the submitted Citizens' Questionnaires have been analysed per stakeholder group. The analysis excluded the stakeholder groups *"Environmental NGOs"*, *"Tourism service providers"*, and *"Farmers' association"* because only one questionnaire was submitted by each of these groups. Moreover, the analysis does not include participants to the public survey who identified as *"Government/Administration"* because in the context of BIOWIND public opinion refers to the opinion of community members or groups.

VII.1.1 Local Residents

Of the ninety-nine local residents that participated to the online public survey, 94% had not previously lived in the vicinity of a wind farm. To that end, it is not possible to extract any conclusions regarding the correlation between attitudes towards wind energy projects and prior experience living near wind farms.

The five major drivers of social opposition as identified by seven out of ten respondents were:

- *"Distrust in key actors (e.g., policy makers, investors, etc.)"* (70%)
- *"Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)"* (70%)
- *"Difficult access to reliable information regarding wind energy projects"* (68%)
- *"Distrust in the planning and authorisation process"* (68%)

- *"Insufficient transparency of the permit granting procedures"* (66%)

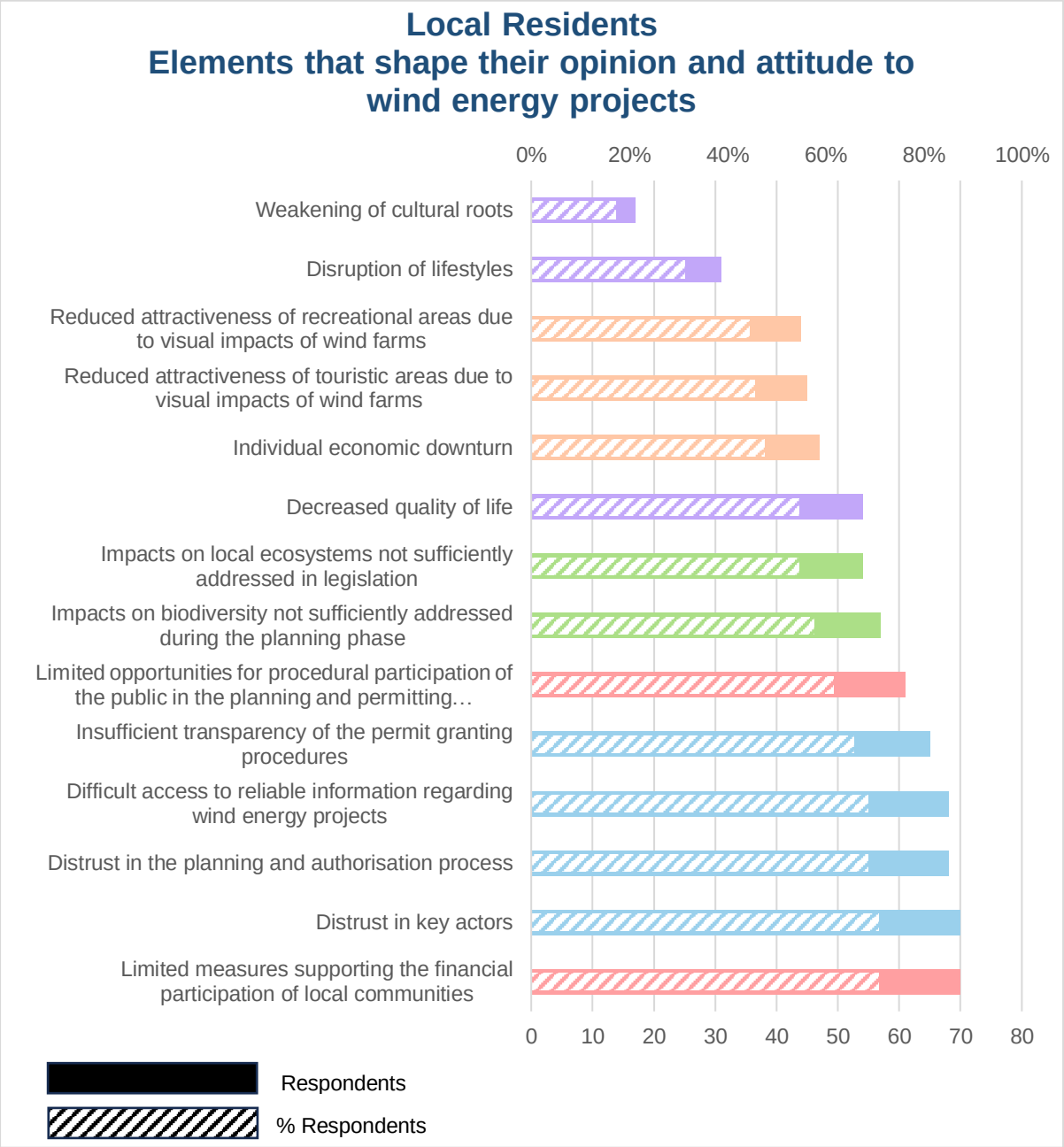

Figure 25: *Main factors that affect local residents' opinion and attitude towards wind projects.*

It becomes evident that questions of trust and transparency and the opportunities for financial participation of the local community in wind energy projects are the prevailing parameters that shape local residents' opinion and attitude towards wind energy developments. To this end, most local residents have identified policy measures that improve the transparency of the planning and permit-granting processes as effective in alleviating their concerns about wind energy projects and fostering a positive outlook towards wind energy developments in general,

which will in turn increase public support for local wind energy projects (i.e., wind energy projects in the vicinity of the local residents' residences). In particular, the establishment of public consultation mechanisms in the planning phase and awareness actions are seen by local residents as the most effective policy measures to strengthen their trust in project developers and policy makers. They also identified direct and indirect compensation schemes for the community affected by a wind energy project, such as a reduced tax on wind generated electricity and the use of produced electricity for public buildings and lighting, as effective in enhancing public acceptance of wind energy projects.

VII.1.1 Civil Society Organisations

Seven out of the eight respondents (88%) representing civil society organisation (CSOs) that completed the online public survey, referred to **issues regarding trust** as their key considerations regarding wind energy projects:

- *"Distrust in key actors (e.g., policy makers, investors, etc.)"*
- *"Insufficient transparency of the permit granting procedures"*
- *"Difficult access to reliable information regarding wind energy projects"*

In addition, six out of eight respondents (75%) highlighted the **impacts of wind energy projects in the local economy** (primarily the reduced attractiveness of touristic and recreational areas) as well as in their everyday life, which along with **the limited opportunities for financial participation** (e.g., energy communities, tax reduction, etc.) in local wind energy developments are significantly parameters that shape their opinion towards local wind energy projects.

Furthermore, all respondents highlighted that a public consultation mechanism during the planning phase has a positive impact on easing their concerns and promoting a positive outlook towards local wind energy projects. The process of public consultation is viewed as a partnership building process that helps establish trust in policy makers and project developers, as citizens and citizens' groups feel that their views and concerns are being taken into account during decision making processes.

Additionally, half of the respondents mentioned the following policy measures as being effective in reducing opposition and promoting public acceptance of local wind energy projects:

- consultation mechanisms during the development of spatial plans to indicate suitable siting positions for wind farms,
- information sessions and public forums to address concerns of stakeholders,
- reduced electricity tariffs for local residents using locally produced wind energy, and

- land lease payments for landowners where wind turbines are located.

VII.2. Common issues to be jointly tackled during the project

A comparative analysis of a) project partners' input regarding the impact of drivers of social opposition (see **Figure 12**), b) partners' input with respect to the prevalence of each opposition factor (see **Figure 13**), and c) the public's answers about the key factors that shape their opinion and attitude towards wind energy projects (see **Figure 23**), reveals that environmental concerns do correlate with social acceptance of wind energy projects – as believed by project partners - but the strength of correlation might be lower than that of other factors like socioeconomic impacts and trust.

While some respondents from the public also cited the potential negative impacts of wind farms to the local ecosystems and their impact on the attractiveness of the touristic and recreational areas, the most frequently cited considerations of respondents were: a) Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.), b) Distrust in key actors, c) Distrust in the planning and authorisation process, and d) Difficult access to reliable information regarding wind energy projects. Respondents highlighted the fact that oftentimes underlying concerns of the public regarding local wind energy projects relate to or stem from distrust and limited information about the processes, the local impacts, and the benefits for the local community of wind energy projects.

Project partners need to therefore prioritise addressing three main obstacles to the development of wind energy projects: a) distrust, particularly of local residents, b) lack of information or misinformation of the public about wind energy projects and wind energy in general, and c) lack of or limited measures for the financial participation of local communities to wind energy projects.

Misinformation plays a key role in undermining trust between the public and project developers, as well as between the public and authorities. In addition, misinformation and distrust reinforces the reluctancy of local communities to become engaged with local wind energy projects either through participatory mechanisms (e.g., consultation mechanisms) or direct financial participation schemes (e.g., co-operatives, citizens as creditors of wind farms, etc.). On the other hand, lack of financial compensation schemes of local communities (e.g., reduced electricity tariffs, land lease payments, etc.) also undermines trust between the public and authorities, and the public and project developers.

Considering that fairness, participation, and trust influences social acceptance, a planning and permitting process that is perceived as "fair" and meaningful (i.e., the public can actually

influence the development of the wind farm through their feedback, can lead to greater acceptance of the outcome, even if it does not fully satisfy all stakeholders. The public has highlighted their need to have access to quality and localized information on renewable energy, and how public consultation during the planning phase can help to alleviate their concerns regarding wind energy projects. Local residents have additionally commented on the positive effect of public consultation during the development of spatial plans indicating suitable siting positions for wind farms (**Figure 26**). It also became evident from the public survey that those living near wind facilities favour measures and provisions that ensure that the local communities, which are directly impacted by the wind farm, also benefit from the wind energy project.

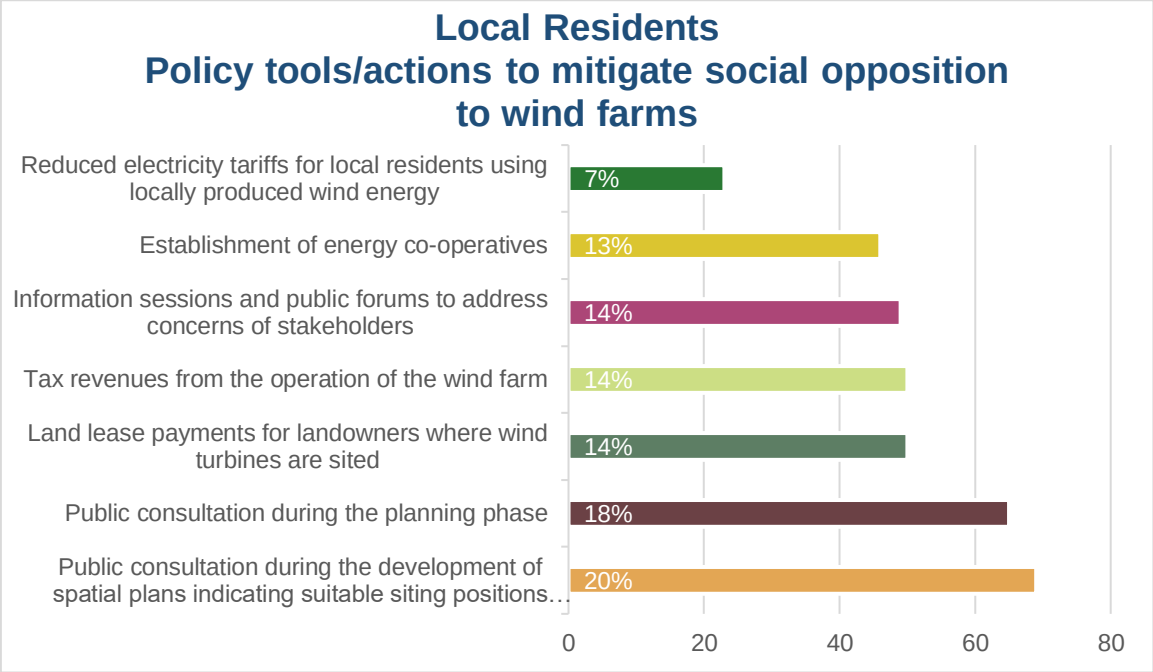

Figure 26: *Policy actions that could ease local residents' concerns about wind power projects and enhance local acceptance of said projects.*

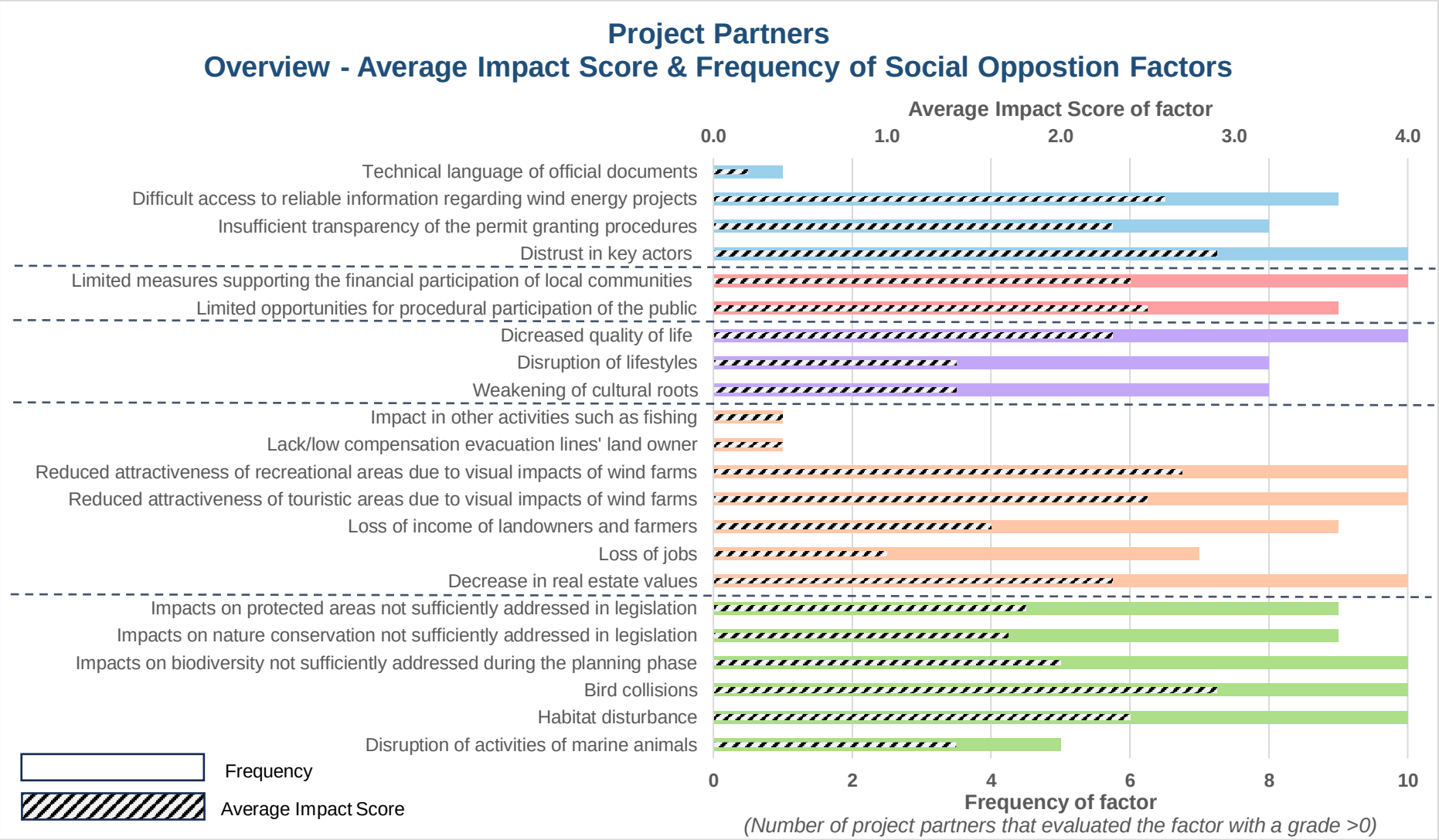

Figure 27: *Overview of partners' input regarding the average impact score and frequency of social opposition factors (aggregated / project level results).*

VII.3. Specificities that need to be addressed by each partner

To support project partners in the development of effective local policy responses to mitigate public opposition to wind energy projects in their region, a country-based analysis of the prevailing drivers of social opposition followed by a summary of the key policy actions and tools to enhance social acceptance of wind energy projects is presented below. The analysis is based on project partners' submitted questionnaires, supported by additional findings from the stakeholders' and citizens' questionnaires - if relevant data is available. In addition, individual recommendations are included for each partner with regards to their main policy instrument associated with the BIOWIND Project.

VII.3.1 Belgium

In Belgium, economic and regulatory factors were identified as having the greatest impact on social opposition to wind projects, potentially resulting in conflicts that necessitate time-consuming mitigation measures or legal proceedings, thus leading to significant delays in the development of wind projects. Environmental factors were evaluated as having a minor impact on wind projects (grade 1) or even a neutral impact (grade 0). The six factors that were considered to have a significant impact (grade 3) on wind projects were as follows:

Economic factors

- Decrease in real estate values
- Reduced attractiveness of touristic areas due to the visual impacts of wind farms
- Reduced attractiveness of recreational areas due to the visual impacts of wind farms

Social factors

- Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc.)

The 5-point scale used for assessing the level of impact of opposition factors at project partner country level

0 - Neutral impact
The factor has an overall neutral impact on social opposition

1 Minor impact
The factor has a minor impact on social opposition, but it does not lead to considerable conflicts regarding wind projects' development or cause delays to the wind project's development.

2 - Moderate impact
The factor has a moderate impact on social opposition, and while it leads to conflicts these are promptly mitigated by relevant authorities, therefore only minor delays to the wind project's development are caused.

3 - Significant impact
The factor has a significant impact on social opposition, and it leads to conflicts which require time consuming mitigation actions by relevant authorities or leads to juridical procedures; hence causing significant delays in the wind project's development.

4 - Disruptive impact
The factor is sufficient to prevent wind energy projects from being realised.

Regulatory & Governance factors

- Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc.)
- Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)

Distrust factors

- Distrust in key actors (e.g., policy makers, investors, etc.)

Furthermore, it is expected that the principal stakeholder group to oppose wind energy projects will be local residents, their attitude also shaping the opinion of local CSOs about wind energy projects. It needs to be noted that the opposition of local residents to wind energy projects could potentially also affect the attitude of Municipalities, which in fear of resistance of local residents to proposed energy projects might also adopt a negative stance towards such developments in their areas.

⇒ **Province of Flemish Brabant**

The Spatial Policy Plan of Flemish Brabant 2023-2050 provides a framework for the spatial development of the region, in line with the regional and national goals of climate change adaptation, resource efficiency, environmental sustainability, social cohesion, and inclusive economic growth. In light of the fact that local opposition, particularly the one expressed by local residents, is likely to influence the Municipalities in the Province to also oppose wind energy projects, the development of a comprehensive awareness and communication plan aimed at engaging stakeholders, educating communities, addressing concerns, and fostering trust, might be instrumental in curtailing public opposition. In this context, the following actions could be effective in bridging the information gap, alleviating opposition, and building consensus among stakeholders regarding the benefits and significance of wind energy in achieving regional sustainability goals:

- **Development of educational material:** The action could include the development of educational materials, fact sheets, and accessible resources explaining the benefits of wind energy, including its role in reducing carbon emissions, creating jobs, and enhancing energy security. The dissemination of the information could be implemented through multiple channels such as public forums, workshops, websites, social media, and informational campaigns.
- **Organisation of community engagement events:** The action could include the organisation of town hall meetings, public consultations, and stakeholder forums where concerns can be addressed, questions answered, and feedback obtained. In addition,

involving the local communities in the decision-making process in a more meaningful way and taking their input into consideration in project planning will help build trust in and increase the transparency of the project development process.

- **Development of partnerships and collaborations:** The action may include the collaboration with local groups, NGOs, academic institutions, and industry experts to address common concerns of the public such as noise pollution, impacts on wildlife, property values, and health effects by providing evidence-based studies, mitigation strategies, and best practices adopted in successful wind energy projects.
- **Encourage wind farm benefit schemes:** Encouraging the establishment of benefit schemes by wind energy project developers, such as Benefit Funds and Environmental Funds, can help foster a positive relationship between local communities and project developers, and ensures that economic and social benefits of wind projects are shared in a transparent and equitable manner.

VII.3.2 Finland

Finland was among the countries where the impact of a number of opposition factors was identified as disruptive, potentially hindering the implementation of wind projects. In detail, the decreased quality of life due to the technical characteristics of wind farms (e.g., noise, red lights etc.) and the phenomenon of bird collisions on wind turbines were classified as disruptive (grade 4). In addition, the impact of distrust and environmental concerns were classified as significant (grade 3), potentially resulting in conflicts which would require time consuming mitigation measures by relevant authorities or lead to legal proceedings; in turn causing significant delays in the development of wind projects. Finally, local residents and environmental NGOs were identified as the key stakeholder groups most likely to oppose to local wind energy projects. Local residents in particular are expected to oppose on the basis of economic and social concerns along with distrust issues.

⇒ **Regional Council of South Ostrobothnia**

The Regional Programme of South Ostrobothnia 2022-2025 aims to support the region to achieve its short-term development objectives, facilitating the transition towards a low-carbon, digital, and more inclusive economy. In this context, the program places emphasis to resource efficiency and climate change adaptation, giving priority to establishing an integrated smart energy system based on renewable energy. To balance the objectives of net-zero transitioning with the broader sustainable development objectives of the region's communities, it is suggested that the Regional Council of South Ostrobothnia (RCSO) attaches greater importance to a collaborative strategic approach with regards to wind energy developments. The approach should aim to further engage the public through the various stages of wind

projects, from planning to operation and decommissioning. Suggested elements of the strategy considered to be effective to foster dialogue, understanding, and consensus-building while mitigating potential conflicts are:

- **Inclusive land use planning:** Facilitating the participatory engagement of local communities in land use planning could help address the environmental concerns raised by NGOs and local residents. A public consultation process to determine new locations could balance energy generation goals with addressing community concerns about the environmental and socioeconomic impacts of wind farms.
- **Introduction of financial benefits:** Measures to ensure that local communities hosting wind energy projects receive economic benefits from the projects could include compensation for the land used to install wind turbines, reduced electricity tariffs for using locally produced wind energy, and tax revenues from the operation of the wind farm.
- **Direct financial involvement of local communities:** Facilitating the establishment of energy cooperatives has been recognised as an effective measure to build trust with the local community, and increase engagement, as it fosters a sense of ownership and shared benefits among community members.
- **Encourage environmental conservation projects:** Supporting environmental conservation projects initiated by wind project developers can contribute to a positive public perception of both RCSO and the wind project developers. Moreover, facilitating and leveraging partnerships of wind project developers and conservation organisations can further showcase RCSO's commitment to environmental protection and conservation.

VII.3.3 Greece

The two Greek project partners have differing evaluations on the impact of opposition factors. However, to support partners' preparedness, the worst-case scenario, which involves the highest grade/level of impact of opposition factors, will be considered. The overall results are to some extent in alignment with the conclusions at project level. However, in Greece, environmental factors have a greater impact on social opposition compared to economic factors, which is not the case at project level.

Greece was among the countries where the impact of some opposition factors was recognised as disruptive (grade 4), potentially preventing wind energy projects from being realised. In detail, factors classified as having a disruptive impact to wind energy projects were:

- public considerations regarding the impacts (of wind farms) on biodiversity not sufficiently addressed in legislation.
- public considerations regarding the impacts (of wind farms) on protected areas not sufficiently addressed during the planning phase,
- difficult access to reliable information about wind energy projects, and
- limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc).

In addition to local residents, CSOs, and environmental NGOs, opposition to wind energy projects is also expected to come from farmers' associations and tourism service providers, depending on the region. These groups are concerned about the visual impact of wind farms on the attractiveness of tourist and recreational areas.

⇒ **Region of Western Greece**

The Regional Operational Programme of Western Greece 2021-2027 aims to promote smart, sustainable, and inclusive economic and social development. Among the Programme's strategic priorities are the establishment of an enabling environment for investments, the adaptation to climate change, and the enhancement of resource efficiency. To this end, RWG is encouraged to take steps to promote and enhance the active involvement of local communities in wind energy projects, while also addressing potential concerns of specific regional stakeholders. Suggested elements of a policy approach that prioritises community involvement, simplification of regulations, and stakeholder engagement in wind energy development are:

- **Creating an enabling environment for community-led initiatives:** Encouraging local community participation in wind energy projects by promoting cooperative ownership models and investment schemes, should be complemented with the introduction of financial incentives tailored for local residents or communities to invest in or own shares of wind energy projects. Such schemes could involve revenue-sharing or preferential feed-in tariffs for community led wind energy projects.
- **Organising awareness raising activities:** Informative campaigns and educational programs could help dispel misconceptions and address concerns related to the potential negative impacts of wind farms. Such activities should aim to provide accurate information and highlight the benefits of wind energy projects while minimizing concerns about their effects on local livelihoods and economies.

⇒ **University of Patras**

The University of Patras (UPAT) provides technical assistance to RWG for the design and implementation of energy planning and environmental policies, including the Regional Operational Programme of Western Greece 2021-2027. In this context, UPAT could offer evidence-based insights and recommendations to assist RWG in fostering social acceptance and addressing local opposition to wind energy projects, including:

- **Recommend monitoring systems and methodologies:** Leveraging its scientific expertise and strong R&D activity in renewable energy technologies, UPAT could assist RWG in the implementation of continuous environmental monitoring systems to track key environmental parameters related to the development and operation of wind farms, such as noise levels, air quality, wildlife impacts, and soil erosion.
- **Support communication and outreach programmes:** UPAT could become a valuable contributor in developing effective communication and outreach strategies to disseminate accurate information about wind energy projects, their benefits, potential impacts, and addressing misconceptions or misinformation. This could include creating educational materials, websites, community newsletters, and engaging through social media to improve public understanding.

VII.3.4 Hungary

Hungary is one of the few European countries which have a very restricting regulatory framework about wind energy (Government Decree). Construction of wind farms is limited to small-size farms (household wind turbines), and wind turbines or wind parks are not allowed to be constructed within 12 km of the borders of areas suitable for building purposes. In practice, these limitations rule out all of Hungary, effectively banning wind power plants. In addition, difficult access to information about wind energy projects and the limited opportunities for the procedural or/and financial participation of citizens and communities in wind energy projects are evaluated as disruptive factors (grade 4), potentially preventing wind energy projects from being realised. Local residents and farmers' association are expected to oppose wind energy projects, the former on the basis of environmental considerations and the latter on the basis of loss of income from wind energy developments.

⇒ **Central Danube Development Agency Nonprofit Ltd.**

The Central Danube Priority Area Operational Programme aims to foster economic development in the Central Danube region and contribute to achieving the national priorities for smart specialization, digitalization, and green energy transition. Considering the current lack of an integrated regional approach to RES development and the absence of wind-related

actions in the Operational Programme, it is recommended that CDDA gives particular emphasis on implementing a comprehensive, multilevel, and participatory approach aimed at increasing public knowledge and facilitating public involvement in wind energy projects. Suggested elements of the approach are:

- **Raising awareness about wind energy:** Educational campaigns, workshops, public events, and complimentary informational material can become pivotal tools in dispelling misconceptions, providing accurate information, and increasing awareness about the benefits of wind energy. Additionally, showcasing successful wind energy projects including their positive contributions to local economies and improved energy security can help foster a more favourable perception of wind energy developments.
- **Incentivizing active participation of local communities:** A regulatory framework that incentivises community participation and engagement in wind energy projects will help align the interests of local residents with those of wind project developers, thereby mitigating social opposition and creating a more supportive environment for wind energy initiatives. Public consultation mechanisms during the planning and permit-granting process promote transparency and allow for the incorporation of local perspectives, ultimately reducing opposition.
- **Providing financial benefits for local communities:** When communities feel financially engaged or directly benefit from the operation of wind farms, they are more likely to support and positively engage with the project. To which end, CDDA is advised to encourage the adoption of financial benefits measures by wind project developers, such as reduced electricity tariffs for local consumers and payments for land use.
- **Encourage local job creation:** Encouraging wind project developers to prioritise hiring local residents both during the construction phase of wind farms and for ongoing operation and maintenance, will help boost the local job market and enhance overall economic well-being of local communities. In addition, local residents employed may gain access to training programs and resources, enhancing their skills and capabilities.

VII.3.5 Ireland

The Irish project partner did not mention any opposition factor that could have substantial impact on wind energy projects; all factors were evaluated either as having minor impact (grade 1) or neutral impact (grade 0). This assessment can be attributed to the fact that Ireland has experienced significant growth in its wind energy capacity over the past decade, even though at times local wind energy developments are faced with fierce social opposition mainly by local residents. Moreover, the largest wind farm in Ireland in terms of installed capacity is situated in Co. Galway[9], a county that is within the region of jurisdiction of NWRA. Even so,

the Irish partner acknowledged that environmental NGOs and local residents are likely to oppose wind energy projects. The former on the grounds of environmental concerns regarding the wind farms' impact on wildlife (e.g., bird collisions, habitat disturbance, etc.), and the latter on the grounds of visual and noise impacts of wind farms, and the lack of accessible and reliable information. These remarks are consistent with public input from Ireland, where (Irish) local residents have highlighted the importance of wind farms' impact on the landscape and their daily lives. They also cited general misinformation about wind energy developments and lack of communication and trust between the public and project developers and/or authorities as issues that need to be addressed to enhance social acceptance of wind energy projects.

⇒ **Northern and Western Regional Assembly**

The Regional Spatial and Economic Strategy 2020-2032 (RSES) provides a high-level development framework for the Northern and Western Region through a 12-year roadmap to address the territorial challenges and priorities for a low carbon, climate-resilient, and environmentally sustainable economy. In line with the Strategy's priority "Growth Ambition: Economy and Employment" and bearing in mind that public opposition mainly stems from local residents and environmental NGOs, the following policy recommendations are provided to NWRA:

- **Promote initiatives for environmental preservation:** Supporting conservation projects initiated by wind project developers can enhance the public's view of both NWRA and wind project developers. Additionally, fostering partnerships between wind project developers and conservation organizations can help highlight NWRA's dedication to protecting and conserving the environment while also promoting the region's green transition.
- **Introduction of financial incentives for local communities:** The introduction of reduced electricity tariffs and land lease payments to install windfarms will provide direct benefits to local communities in the vicinity of wind farms which in turn helps foster a more positive perception of wind farms within members of the local community.
- **Encourage collaboration with local businesses:** Encouraging the partnership between wind project developers and local businesses can result in various economic, social, and environmental benefits for local communities. It can lead to increased employment opportunities for local contractors, suppliers, and service providers, while also stimulating entrepreneurial initiatives within the community.

VII.3.6 Latvia

Environmental concerns were identified by the Latvian project partner as the primary cause of social opposition in Latvia. The phenomenon of bird collisions was identified as having a disruptive impact (grade 4) on wind energy projects. Impacts on nature conservation and protected areas not sufficiently addressed in legislation were additionally identified as having a significant impact (grade 3) in wind energy projects. Additionally, the decreased real estate values were also specified as an opposition factor of significant impact.

These observations although they differ from the aggregated results at project level, they are consistent with the Latvian stakeholders' input who identified environmental considerations along with the economic impacts on touristic and recreational areas, and the distrust in key actors as the most critical factors of social opposition. The Latvian partner has also noted the phenomenon of NIMBY, which is related to the lack of information about wind energy and the limited opportunities for public participation and engagement in local wind energy projects.

⇒ **Zemgale Planning Region**

The Zemgale Planning Region Development Programme 2021-2027 addresses the major development challenges for Zemgale Region including climate change adaptation, low carbon economy, resource efficiency, and environmental protection. The strong public opposition to wind energy projects in the region stems from concerns of regional stakeholders (i.e., local residents, farmers' associations and environmental NGOs) about the environmental and economic impacts of wind farms in their region. To this end, it is recommended that ZPR gives particular attention to establishing effective communication with and enhancing the direct engagement, of local communities, so as to ensure that the community receives direct benefits from the development of wind farms in their area. Suggested elements of the strategy, which are considered to be effective in enhancing collaboration and building trust and acceptance are:

- **Implementing consultation mechanisms within spatial planning:** Consultation mechanisms provide platforms for open dialogue, allowing concerns of different stakeholder groups to be heard, addressed, and incorporated into decisions regarding the zones for wind turbine siting.
- **Streamlining access to funding of community-led initiatives:** Facilitating access to funding for community-led initiatives such as energy cooperatives allows communities to actively participate in wind energy developments in their region building a sense of ownership as local residents have a stake in the success of the wind energy project.

- **Facilitate access to transparent and credible information:** Establishing transparent communication channels, such as websites, the radio, and social media, to disseminate accurate and easily understandable information about wind energy projects will help resolve misinterpretations about the impacts of wind energy projects while building trust in key actors involved in wind energy projects (e.g., project developers, authorities, etc.)
- **Encourage environmental educational initiatives:** Wind farms can serve as educational opportunities for local communities. ZPR is advised to encourage the development and implementation of educational programmes about nature conservation by wind energy project developers, particularly ones addressed to students. Such initiatives help promote the environmental stewardship of both ZPR and wind project developers.

VII.3.7 Poland

The evaluation of criticality of territorial opposition factors by the Polish partner is highly consistent with the aggregated results at project level. The environmental, economic, social, and distrust factors evaluated as having a disruptive impact (grade 4) on wind energy projects, potentially preventing wind energy projects from being realised, are:

- Habitat disturbance
- Bird collisions
- Decrease in real estate values
- Decreased quality of life
- Distrust in key actors (e.g., policy makers, investors, etc.)
- Insufficient transparency of the permit granting procedures
- Difficult access to reliable information regarding wind energy projects

In addition, the economic impacts of wind farms on touristic, recreational, and farming areas were identified to have a significant impact (grade 3) on wind energy projects, similarly to the limited opportunities for the procedural and financial participation of local residents and communities in wind energy projects.

The stakeholder groups expected to mainly oppose wind energy projects are environmental NGOs and local residents. The inputs of Polish stakeholders and the Polish public (local residents) support the assessment of the Polish partner. Local residents' opinion and attitude towards local wind energy projects is mainly affected by their distrust in the planning and authorisation process and their distrust in key actors, the difficult access to reliable information regarding wind energy projects, and finally the limited measures supporting the active and

passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.).

⇒ **Marshal Office of Świętokrzyskie Voivodeship**

The European Fund for the Świętokrzyskie 2021-2027 is the main programming instrument for realizing the region's development. It defines the development priorities and types of actions to be evaluated for funding as set out in the Programme's 10 priority areas. In line with the Programme's priorities for the deployment of renewables and regional development, MOSV is advised to advance the implementation of particular policy actions which will balance the deployment of wind energy with safeguarding the environment and local economies, thus reducing social opposition to wind energy projects. The suggested actions to be prioritised are:

- **Introduction of benefit-sharing mechanisms for local residents:** Community funds and revenue sharing schemes distribute the positive economic benefits of wind energy projects among local stakeholders and can help alleviate opposition to wind energy developments. The former (community funds) allocate a portion of the project's revenue or profits to support community development initiatives, such as infrastructure improvements, educational programs, or healthcare facilities. In the latter (revenue sharing) a percentage of the revenue generated from the wind energy project is offered to the local community or landowners hosting the turbines.
- **Facilitate the direct financial participation of local residents and communities:** Promoting the direct investment of local residents or communities in wind energy projects through ownership shares, energy cooperatives, or other financial participation models can provide additional income streams and a sense of empowerment where community interests are aligned with the success of the project.
- **Introduction of consultation mechanism in spatial planning:** Consultation mechanisms during the development of spatial plans allow for local residents and stakeholder groups to express their concerns regarding the visual impacts, effects on local ecosystems, and socioeconomic impacts of wind farms. Addressing concerns and incorporating feedback into planning can significantly reduce social opposition while also building trust and fostering transparency of the planning processes.
- **Enhance awareness raising:** Aiming to address concerns of local communities and dispel misinformation about the potential adverse effects of wind farms, MCSV is encouraged to implement information campaigns employing various communication channels including print media, social media, and if possible public stands.

VII.3.8 Spain

In a manner analogous to Greece, the evaluation of the impact of the opposition factors varies between the two Spanish project partners. However, to support partners' preparedness the worst-case scenario (i.e., highest grade/level of impact) will be considered. Overall results are to some extent consistent with project level conclusions, although in Spain social factors have a greater role in shaping social opposition.

Spain was among the countries where the impact of some opposition factors was recognised as disruptive (grade 4), potentially preventing wind energy projects from being realised. In detail, those factors are:

- Environmental considerations regarding incidents of birds' collisions on wind turbines, the impacts on biodiversity not sufficiently addressed in legislation, and the disruption of activities of marine animals,
- Reduced attractiveness of touristic areas due to the visual impact of wind farms,
- Reduced attractiveness of recreational areas due to the visual impact of wind farms, and
- Distrust in key actors (e.g., policy makers, investors, etc.).

Depending on the region, wind energy projects may face opposition not only from local residents and environmental NGOs but also from tourism service providers, farmers, and fishermen. These groups are worried about the negative effects of wind farms on primary production and the visual appeal of touristic and recreational areas.

⇒ **Autonomous Community of the Region of Murcia. General Directorate of the Natural Environment**

The goal of the European Regional Development Fund (ERDF) Programme 2021-2027 of the Region of Murcia is to promote smart, sustainable, and inclusive economic development in the Region. Among the Programme's policy objectives are the promotion of the use of energy from renewable sources and the conservation of local biodiversity and ecosystems. To create a more enabling environment for wind energy investment, CARM is advised to employ the ERDF to provide financial support to wind energy projects through two alternatives:

- **Enhancing funding of community-led initiatives:** Providing ERDF funding to community-led initiatives promotes direct community engagement and creates direct local economic benefits for the communities, in turn contributing to a more positive perception of wind energy projects within communities and ultimately reducing social opposition.

- **Including community participation criteria for the selection of wind projects (non-community led) to receive funding:** Including community participation criteria in the selection of wind projects encourages meaningful engagement, transparency, and consideration of local concerns by project developers. The engagement of the local communities will ensure that the wind energy project's goals with community interests, and that local voices are heard and considered in the project development process.

⇒ **Asturias Energy Foundation**

The Asturias Energy Foundation (FAEN) provides technical and scientific support to the Principality of Asturias (namely the DG Energy of the competent Regional Ministry) for the design and implementation of regional energy policies, including the Community Energy Transition Strategy which is the main policy instrument of the autonomous community of Asturias to promote the transformation of the regional energy sector from fossil-based to zero-carbon. In this context, it is expected that it would be beneficial to strengthen the framework regulating the active and passive financial participation of local residents and communities in wind energy projects through two different actions:

- **Enhancing indirect financial benefits for local communities:** Effective and well-received by local residents benefits at individual (resident) level include land lease payments for landowners where turbines are sited, and reduced electricity tariffs for local residents. At community level, similarly effective benefits include community foundations or trusts, and tax revenues from the operation of the wind farm.
- **Facilitating the establishment of energy cooperatives:** Energy cooperatives stimulate local economic growth and generate income within the community, showcasing the positive impacts of wind energy projects to local social and economic prosperity ultimately reducing local opposition to wind energy projects in their area.

D. Bibliography

[1] P. Upham, C. Oltra, and À. Boso, 'Towards a cross-paradigmatic framework of the social acceptance of energy systems', *Energy Research & Social Science*, vol. 8, pp. 100–112, Jul. 2015, doi: 10.1016/j.erss.2015.05.003.

[2] M. Segreto *et al.*, 'Trends in Social Acceptance of Renewable Energy Across Europe—A Literature Review', *IJERPH*, vol. 17, no. 24, p. 9161, Dec. 2020, doi: 10.3390/ijerph17249161.

[3] Linnerud, Kristin, Aarke, Stine, and Dottehud Leiren, Merethe, 'Deliverable 2.2: Conceptual framework for analysing social acceptance barriers and drivers', WinWind-764717, 2018. [Online]. Available: https://winwind-project.eu/fileadmin/user_upload/Resources/Deliverables/WinWind_Deliverable_2.2_Conceptual_framework_final.pdf

[4] G. Ellis, N. Schneider, and R. Wüstenhagen, 'Dynamics of social acceptance of renewable energy: An introduction to the concept', *Energy Policy*, vol. 181, p. 113706, Oct. 2023, doi: 10.1016/j.enpol.2023.113706.

[5] Euroepan Commission, Directorate-General for the Environment, 'EU Biodiversity Strategy for 2030'. European Commission, May 20, 2020. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52020DC0380

[6] European Parliament and Council of the European Union, 'Directive 2009/147/EC on the conservation of wild birds', *OJ L 20*, pp. 7–25, Jan. 26, 2010.

[7] Council of the European Union, 'Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora', *OJ L 206*, pp. 7–50, Jul. 22, 1992.

[8] K. Sundseth, *The EU birds and habitats directives: for nature and people in Europe*. Luxembourg: Publications Office of the European Union, 2015.

[9] Wind Energy Ireland, 'Wind Stats'. [Online]. Available: https://windenergyireland.com/about-wind/the-basics/facts-stats

E. ANNEXES

Annex I: Questionnaire for Project Partner

To answer the questionnaire please visit the following link to the EU Survey platform:

https://ec.europa.eu/eusurvey/runner/BIOWIND_A1-1_QNR-partners

Interreg Europe | Co-funded by the European Union | BIOWIND

Activity A1-1
Questionnaire to identify regional opposition factors and evaluate their impact on wind projects' development

Respondent's Information

Name

Affiliation

Email

Country covered

Section 1 - Evaluation of the impact of social opposition factors

Please evaluate the impact of the following factors on social opposition to wind energy developments using a 5-point scale, from 0 to 4 according to the following description:

0	1	2	3	4
Neutral impact / Non-Applicable	Minor impact	Moderate impact	Significant impact	Disruptive impact

Factors	**Grade 0-4**
Environmental factors	
Disruption of activities of marine animals	
Habitat disturbance and fragmentation	
Bird collisions	
Impacts on biodiversity not sufficiently addressed during the planning phase	
Impacts on nature conservation not sufficiently addressed in legislation	
Impacts on protected areas not sufficiently addressed in legislation	

Other *(please specify)*	
Other *(please specify)*	
Economic factors	
Decrease in real estate values	
Loss of jobs	
Loss of income of landowners and farmers	
Reduced attractiveness of touristic areas due to visual impacts of wind farms	
Reduced attractiveness of recreational areas due to visual impacts of wind farms	
Other *(please specify)*	
Other *(please specify)*	
Societal factors	
Weakening of cultural roots	
Disruption of lifestyle	
Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc.)	
Other *(please specify)*	
Other *(please specify)*	
Regulatory and governance factors	
Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc)	
Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)	
Other *(please specify)*	
Other *(please specify)*	
Distrust factors	
Distrust in key actors (e.g., policymakers, investors, etc.)	

Insufficient transparency of the permit granting procedures

Difficult access to reliable information regarding wind energy projects

Other *(please specify)*

Other *(please specify)*

Section 2 - Identification of stakeholder groups likely to oppose to wind energy projects

Please choose which of the following stakeholder groups are likely to oppose to local wind energy projects

- CSOs
- Environmental NGOs
- Farmer's associations
- Tourism service providers
- Local residents
- Other *(please specify)*
- Other *(please specify)*
- Other *(please specify)*

For each stakeholder group identified as likely to oppose to wind power projects, please indicate the prevailing driver of their opposition. *(Please refer to the opposition factors listed in Section 1, including the ones you have individually specified.)*

Section 3 – Policy tools and actions to ease concerns about local wind power projects

Please choose which of the policy tools or/and actions which based on your research could potentially ease concerns about wind power projects and enhance local acceptance of said projects.

- Public consultation during the planning phase
- Public consultation during the development of spatial plans indicating suitable siting positions for wind farms

- Establishment of energy co-operatives
- Reduced electricity tariffs for local residents using locally produced wind energy
- Information sessions and public forums to address concerns of stakeholders
- Other (please specify)
- Land lease payments for landowners where wind turbines are sited
- Tax revenues from the operation of the wind farm
- Other (please specify)
- Other (please specify)

Please briefly elaborate on how the policy tools or/and actions identified in the previous questions will help mitigate the main factors of local opposition identified in Section 1 *(including the ones you have individually specified)***.**

Annex II: Questionnaire for Stakeholders

To answer the questionnaire please visit the following link to the EU Survey platform:

https://ec.europa.eu/eusurvey/runner/BIOWIND_A1-1_QNR-stakeholders

Interreg Europe | Co-funded by the European Union | BIOWIND

Activity A1-1
Questionnaire to identify regional opposition factors and evaluate their impact on wind projects' development

Section 1 – Respondent's information

Name

Stakeholder Group

☐ Civil society organisation
☐ Environmental NGO
☐ Farmers' association
☐ Local resident
☐ Tourism service provider
☐ Energy producer
☐ Energy distributor
☐ Energy retailer
☐ Other (please specify)

Email

Country covered

Section 2 - Evaluation of the impact of social opposition factors

Please evaluate the impact of the following factors on social opposition to wind energy developments using a 5-point scale, from 0 to 4 according to the following description

0	Neutral impact – The factor has an overall neutral impact on social opposition.
1	Minor impact – The factor has a minor impact on social opposition, but it does not lead to considerable conflicts regarding wind projects' development.
2	Moderate impact – The factor has a moderate impact on social opposition, and although it leads to conflicts these are promptly mitigated by relevant authorities and thus no significant delays to the wind project's development are caused.
3	Significant impact – The factor has a significant impact on social opposition, and it leads to conflicts which require time consuming mitigation actions by relevant authorities or leads to juridical procedures; hence causing significant delays in the wind project's development.

4	Disruptive impact – The factor is sufficient to prevent wind energy projects from being realised.

Factors	**Grade 0-4**
Environmental factors	
Disruption of activities of marine animals	
Habitat disturbance and fragmentation	
Bird collisions	
Impacts on biodiversity not sufficiently addressed during the planning phase	
Impacts on nature conservation not sufficiently addressed in legislation	
Impacts on protected areas not sufficiently addressed in legislation	
Other *(please specify)*	
Other *(please specify)*	
Economic factors	
Decrease in real estate values	
Loss of jobs	
Loss of income of landowners and farmers	
Reduced attractiveness of touristic areas due to visual impacts of wind farms	
Reduced attractiveness of recreational areas due to visual impacts of wind farms	
Other *(please specify)*	
Other *(please specify)*	
Societal factors	
Weakening of cultural roots	
Disruption of lifestyle	
Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc.)	

Other *(please specify)* Other *(please specify)*	
Regulatory and governance factors	
Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc) Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.) Other *(please specify)* Other *(please specify)*	
Distrust factors	
Distrust in key actors (e.g., policymakers, investors, etc.) Insufficient transparency of the permit granting procedures Difficult access to reliable information regarding wind energy projects Other *(please specify)* Other *(please specify)*	

Section 3 – Policy tools and actions to ease concerns about local wind power projects

Please choose which of the policy tools or/and actions you consider could ease concerns about wind power projects and enhance local acceptance of said projects

- Public consultation during the planning phase
- Establishment of energy co-operatives
- Reduced electricity tariffs for local residents using locally produced wind energy
- Information sessions and public forums to address concerns of stakeholders
- Public consultation during the development of spatial plans indicating suitable siting positions for wind farms
- Land lease payments for landowners where wind turbines are sited
- Tax revenues from the operation of the wind farm
- Other (please specify)

- Other (please specify)

- Other (please specify)

Please briefly elaborate on how the policy tools or/and actions identified in the previous questions will help mitigate the main factors of local opposition identified in Section 2 *(including the ones you have individually specified)***.**

Annex III: Questionnaire for the Public

To answer the questionnaire please visit the following link to the EU Survey platform:

https://ec.europa.eu/eusurvey/runner/BIOWIND_A1-1_QNR-public

Interreg Europe | Co-funded by the European Union | BIOWIND

Activity A1-1
Questionnaire to identify regional opposition factors and evaluate their impact on wind projects' development

Section 1 – Respondent's information

Stakeholder Group	☐ Civil society organisation	☐ Environmental NGO
	☐ Farmers' association	☐ Tourism service provider
	☐ Local resident	☐ Other *(please specify)*

Age **Gender**

Previously lived in the vicinity of wind farm Y / N

Country covered

Section 2 - Identification of the impact of social opposition factors

Please indicate which of the following elements with regards to wind power projects shape your opinion and attitude to said projects.

Environmental factors	
Impacts on biodiversity (e.g., bird collisions, habitat disturbance, etc.) not sufficiently addressed during the planning phase	☐
Impacts on local ecosystems (e.g., protected areas, nature conservation, etc.) not sufficiently addressed in legislation	☐
Other *(please specify)*	☐
Other *(please specify)*	☐

Economic factors	
Local economic downturn (e.g., decrease in real estate values, loss of jobs, etc.)	☐
Individual economic downturn (e.g., loss of income of landowners and farmers, etc.)	☐

Reduced attractiveness of touristic areas due to visual impacts of wind farms	☐
Reduced attractiveness of recreational areas due to visual impacts of wind farms	☐
Other *(please specify)*	☐
Other *(please specify)*	☐
Societal factors	
Weakening of cultural roots	☐
Disruption of lifestyle	☐
Decreased quality of life (e.g., anxiety, noise, sleep disturbance, etc.)	☐
Other *(please specify)*	☐
Other *(please specify)*	☐
Regulatory and governance factors	
Limited opportunities for formal or informal procedural participation of the public (on both individual and group level) in the planning and permitting processes (e.g., consultation, dispute resolution mechanism, etc)	☐
Limited measures supporting the active and passive financial participation of local citizens and communities (e.g., energy communities, tax reduction, etc.)	☐
Other *(please specify)*	☐
Other *(please specify)*	☐
Distrust factors	
Distrust in key actors (e.g., policymakers, investors, etc.)	☐
Distrust in the planning and authorisation process	☐
Insufficient transparency of the permit granting procedures	☐
Difficult access to reliable information regarding wind energy projects	☐
Other *(please specify)*	☐
Other *(please specify)*	☐

Section 3 – Policy tools and actions to ease concerns about local wind power projects

Please choose which of the following policy tools or/and actions you consider could ease your concerns about wind power projects and enhance your acceptance of said projects

- Public consultation during the planning phase
- Establishment of energy co-operatives
- Reduced electricity tariffs for local residents using locally produced wind energy
- Information sessions and public forums to address concerns of stakeholders
- Other (please specify)
- Public consultation during the development of spatial plans indicating suitable siting positions for wind farms
- Land lease payments for landowners where wind turbines are sited
- Tax revenues from the operation of the wind farm
- Other (please specify)
- Other (please specify)

Please briefly elaborate on how the policy tools or/and actions identified in the previous questions will help mitigate the main factors of local opposition identified in Section 2 *(including the ones you have individually specified)***.**