



Deliverable 3.6

CATALOGUE OF POTENTIAL SOLUTIONS TO OVERCOME ACCEPTANCE BARRIERS FOR EACH COUNTRY

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Version 2

Summary

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Abstract

The overall objective of WinWind is to enhance the socially inclusive deployment of wind energy by increasing social acceptance of, and support for, onshore wind energy in ‘wind energy scarce regions’ (WESR). The target regions are: Saxony and Thuringia in Germany, Latium and Abruzzo in Italy, Latvia as a whole, Mid-Norway, the Warmian-Masurian Voivodeship in Poland and the Balearic Islands in Spain.

In each WinWind country, one stakeholder desk has been established. The desks serve the purpose of coordinating a structured and solution-oriented stakeholder dialogue as well as facilitating social acceptance and support depending on the specific contexts and regional needs. Each desk is led and coordinated by the WinWind partners representing that country, who have often chosen to do so in collaboration with other partners and supporting stakeholders. Every desk comprises at least 15 representatives from different stakeholder groups and market actors in each target region/country (e.g. developers, investors, community energy organisations and co-operatives, wind energy and business associations, regional/local governments, agencies, municipal and regional authorities, policy-makers, advisers, NGOs, citizen groups, ethnic minorities, research institutes).

While inspired by the same specific objectives, the activities of the country desks and of the engagement and consultation plans vary from country to country. Such variation includes the selection of stakeholders, the point in time chosen for the kick-off of the dialogues as well as the procedures chosen for the consultations. Although there are types of stakeholder groups that are present in each country, there are also stakeholder groups that are more influential in certain countries more than others. Moreover, there are certain stakeholder groups that are specific to individual countries (e.g. representatives from ethnic minorities).

This deliverable provides a catalogue of tailor-made strategies and solutions referring to each WinWind target region. These strategies and solutions address the question of how to treat social acceptance barriers as a result of the indications proposed by the country desks and the online survey. This report builds upon the work of Deliverable 2.3¹ and Tasks 3.2 – T3.4, including the outcomes of the thematic workshops and stakeholder consultations.

The report starts by setting out the background and purpose of the deliverable. Subsequently, potential solutions to overcome acceptance barriers are outlined for each WinWind country. Based on the findings from Deliverable 6.1 (Screening of technical and non-technical regulations, guidelines and recommendations)² and preliminary outcomes of Deliverable 6.3 (Principles and criteria for fair and acceptable wind energy), the proposed solutions are categorised as follows: procedural fairness, distributive fairness, spill-over effects on the local economy, impact on the environment and landscape and improvement of institutional and legal framework conditions.

¹ [Deliverable 2.3: Taxonomy of social acceptance drivers and barriers](#)

² [Deliverable 6.1: Screening of technical and non-technical regulations, guidelines and recommendations](#)

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1 Background and purpose of this deliverable

The development of wind energy – and more specifically, the debates surrounding the planning and implementation of wind power projects - have shown that social acceptance is a topic that needs the involvement of the stakeholders to be fully grasped, especially in efforts towards accomplishing the European policy targets for renewable energy. National strategies to overcome the socio-economic barriers to wind energy acceptance require a large public involvement, supporters and opponents need to work together in a common space for consultation and debate. Stakeholder engagement and stakeholder consultation are together arguably the most important elements on which to ground a successful strategy. In most of the WinWind wind energy scarce regions, opposition has often generated conflicts of interest and mutual suspicion. This needs to be addressed and possibly overcome through an inclusive approach that takes into account differing needs and expectations of the stakeholders as well as the regional or local processes and cultures.

In each WinWind country, one stakeholder desk has been established to coordinate a structured and solution-oriented stakeholder dialogue as well as to facilitate social acceptance and support depending on the specific contexts and regional needs. Each desk is led and coordinated by the WinWind partners representing that country, often choosing to do so in collaboration with other partners and supporting stakeholders. Every desk comprises at least 15 representatives from different stakeholder groups and market actors in each target region/country (e.g. developers, investors, community energy organisations and co-operatives, wind energy and business associations, regional/local governments, agencies, municipal and regional authorities, policy-makers, advisers, NGOs, citizen groups, ethnic minorities, research institutes). The desks meet on a regular basis.

While inspired by the same specific objectives, the activities of the country desks and of the engagement and consultation plans vary from country to country. Such a variation includes the selection of stakeholders, the point in time chosen for the kick-off of the dialogues as well as the procedures chosen for the consultations. Although there are types of stakeholder groups that are present in each country, there are also stakeholder groups that are more influential in certain countries more than others. Moreover, there are certain stakeholder groups that are specific to individual countries (e.g. representatives from ethnic minorities).

Within the WinWind project, stakeholder dialogues and consultations are coordinated within WP3 by the six country desks established by the project partners. Thematic workshops and policy roundtables provide non-biased information to stakeholders and market actors, critically assess best practice of socially acceptable solutions from other wind energy developments, identify options to improve political/market/community acceptance in the target regions and assess best practice transfer opportunities and restrictions. Besides the regular country desk meetings, thematic workshops and policy roundtables, the WinWind project envisaged under Task 3.4a further approach to engage stakeholders, i.e. through dedicated consultations.

This document provides a catalogue of tailor-made strategies and solutions referring to each WinWind target region on how to address social acceptance barriers as a result of the indications

proposed by the country desks and the online survey. It builds upon the work of Deliverable 2.3³ and Deliverables 3.3 – 3.5⁴ including the outcomes of the thematic workshops and stakeholder consultations. The following table illustrates the WinWind target and model regions.

Table 1: WinWind target and model regions

Country	Target Regions (wind energy scarce regions, WESR)	Model Regions
Germany	Thuringia and Saxony	Schleswig-Holstein and Brandenburg
Italy	Abruzzo and Latium	Apulia and Sardinia
Latvia	Riga, Vidzeme, Zemgale and Latgale (most of the country)	Kurzeme, Northern Vidzeme Biosphere Reserve
Norway	Mid-Norway	Fosen District
Poland	Warmian-Mazurian Viovoদেশ	City of Kisielice
Spain	Balearic Islands	Canary Islands

The report starts by setting out the background and purpose of the deliverable. Afterwards, potential solutions to overcome acceptance barriers are outlined for each WinWind country resp. target region. The proposed solutions are categorised as follows: procedural fairness, distributive fairness, spill over on the local economy, neutral or positive impact on the environment and landscape or improvement of institutional and legal framework conditions

³ [Deliverable 2.3: Taxonomy of social acceptance drivers and barriers](#)

⁴ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)
[Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)
[Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

1.1 Stakeholder engagement in the WinWind project

The six stakeholder desks of the WinWind project met on a regular basis and carried out a wide variety of activities. Additionally to the desk meetings, at least two thematic workshops (THWS) were organised in each partner country. These workshops aimed to provide non-biased information to stakeholders and market actors; critically assess best practices of socially acceptable solutions from other wind energy developments; identify options to improve political/market/community acceptance in the target regions and/or assess best practice transfer opportunities and restrictions.

Where relevant, the workshops addressed different forms, pre-requisites, opportunities, and (co-) benefits of direct and indirect financial community engagement, technical aspects, taking into consideration experiences from other partner countries or other relevant experiences. Where appropriate, the consortium invited experts to the thematic workshops or any other relevant events addressing technical or current policy issues. At least one of the thematic workshops included a policy roundtable to address policy proposals with politicians, policy makers and advisory organisations. Final national workshops have already taken place in most of the WinWind countries, provided lessons for improving the social acceptance of wind energy and exhibited results and outcomes of the project. Moreover, additional dedicated stakeholder consultations have also taken place.

Table 2 summarises the country desk activities in each partner country.

Table 2: Overview of WinWind target and model regions

DE	<ul style="list-style-type: none"> • Kick off Country Desk in Berlin (11 Jan 2018) • 1st THWS in Saxony (20 June 2018): <i>Good Practice „Service Unit Wind Energy“; Fair Wind Energy Labels</i> • 2nd THWS in Thuringia (18 Oct 2018): <i>Consideration of environmental aspects and integration of wind energy in forest areas</i> • 3rd THWS in the model region of Brandenburg with policy roundtable (10 Dec 2018): <i>policy measures enhancing the distributional fairness of wind energy</i> • 2nd Desk Meeting and policy roundtable in Berlin (15 May 2019): <i>Acceptance promoting measures</i> • Dedicated stakeholder consultations (May – July 2019) • 3rd and final Desk Meeting (28 October 2019) • Final thematic workshop (28 October 2019): <i>Consulting and service units for wind energy</i>
IT	<ul style="list-style-type: none"> • Kick off Country Desk in Rome (28 Feb. 2018) • 1st THWS in Abruzzo (19 June 2018): <i>Landscape, visual impacts, tourism issues & environmental integration</i> • 2nd THWS in Latium with policy roundtable (21 Feb 2019): <i>Benefits and incentives for local communities</i> • 2nd Desk Meeting with policy roundtable in Rome (21 February 2019) • Dedicated stakeholder consultations: May - July 2019 • 3rd and final Desk Meeting (30 October 2019): <i>The role of wind energy in achieving climate targets</i> • Final THWS (31 October 2019): <i>The role of wind energy in achieving climate targets</i>

D3.6 Catalogue of potential solutions to overcome acceptance barriers for each country

LV	<ul style="list-style-type: none"> • Kick off Country Desk in Riga (30 Nov, 2017) • 1st THWS (June 2018) in Riga: <i>Factors having impact on on-shore wind energy development</i> • 2nd Desk Meeting in Riga (Oct 2018) • 2nd THWS with policy roundtable (24 April 2019): <i>Policy issues and policy instruments to promote on-shore development</i> • Dedicated stakeholder consultations: May- July 2019 • 3rd and final Desk Meeting • Final THWS (January 16, 2020)
NO	<ul style="list-style-type: none"> • Kick off Country Desk in Oslo (23 Jan 2018) • 2nd Country Desk in Arendal (14 Aug 2018): <i>Climate vs Environment</i> • 1st THWS + 3rd Desk Meeting (11 Oct 2018) in Fosen: <i>Local context and barriers, focus on minority rights</i> • 2nd THWS in Oslo with policy roundtable (1 March 2019): <i>Good practices and transfer opportunities</i> • Dedicated stakeholder consultations: May – July 2019 • 4th Desk Meeting (15 Aug 2019): <i>What do we know, where do we go?</i> • Final THWS (14-15 October 2019)
PL	<ul style="list-style-type: none"> • Kick off Country Desk in Warsaw (22 Feb 2018) • 1st THWS (Dec 2018): <i>Barriers perceived by wind investors and factors shaping residents' perception of wind energy</i> • 2nd THWS with policy roundtable (28 March 2019): <i>Exchange of Good Practices</i> • 3rd THWS (Oct/Nov 2019) • 2nd Desk Meeting • Dedicated stakeholder consultations: May – July 2019 • Final THWS (February 2020)
ES	<ul style="list-style-type: none"> • Kick off Country Desk in Canary Islands (11 Dec 2017) • 1st THWS + 2nd Desk Meeting (Nov 2018): <i>Wind energy in protected areas</i> • 2nd THWS with policy roundtable (20 Feb 2019): <i>Tourism and Wind Energy</i> • 3rd Desk Meeting (virtual) • Dedicated stakeholder consultations: May – July 2019 • Final THWS (January 2020)

1.1.1 The stakeholder consultation online survey

Dedicated stakeholder consultations have been carried out to receive feedback about the perceived gravity of acceptance barriers and importance of drivers, to screen solutions that are aimed at improving political/market/community acceptance in the target regions and to receive feedback about domestic and cross-country best practice transfer opportunities and restrictions. The partners coordinating the country desks consulted stakeholders via email, phone, face-to-face interviews, or focus groups. Furthermore, in all countries online surveys were conducted. These were to assess the most important barriers and drivers in the different target regions as well as to identify solutions to improve political, market and community acceptance in the target regions and to identify transfer opportunities.

Through the surveys, comparable data were collected to assess the extent to which different barriers and drivers influence social acceptance. The surveys helped to display the differences and similarities between the WinWind countries and the target and model regions.

Based on the literature review (Deliverable 2.1⁵), the analytic framework (Deliverable 2.2⁶) and the taxonomy of social acceptance barriers and drivers (Deliverable 2.3⁷), CICERO⁸ developed the stakeholder survey (which draws on the work in WP2, WP3, and WP4) in close cooperation with all partners. This includes questions related to impact factor categories such as: technical characteristic of projects, economic impacts, social impacts, market, governance and regulatory frameworks and trust in key actors. The aim of the surveys was to assess the gravity of each barrier, determine the significance of drivers as well as to collect feedback about whether there are additional factors that prevent or enable wind energy development (that were not covered in the project so far). The survey also included a question about transferable solutions that can help promoting the socially inclusive uptake of wind energy.

The surveys were not meant to be statistically representative, but rather can be understood as consultative measures, which follow up on previous discussions about barriers, drivers and good practices within the country desks and other relevant stakeholders. The questionnaire has been used to collect data from experts on wind energy about what they perceive as the biggest barriers and drivers in the different regions/countries. The surveys were distributed among stakeholders in the six WinWind countries in their respective languages.

The survey made use of symmetric scale questions and open questions. The questions on the gravity of barriers and drivers assessed the impact of 34 factors. The following example illustrates the formulation of the survey questions: `To what extent do the following factors prevent or enable projects from being developed in [name of country/region]? The level of impact of each barrier was evaluated using a scale from -3 (-3 means that the factor has a strong negative effect, sufficient to prevent wind energy; -2 means that the factor has a clear negative effect; -1 means that the factor has a small but negative effect) to +3 (+3 indicates that the factor has a strong

⁵ [Deliverable 2.1: Technical and socio-economic conditions, a literature review](#)

⁶ [Deliverable 2.2: Conceptual framework for analysing social acceptance barriers and drivers](#)

⁷ [Deliverable 2.3: Taxonomy of social acceptance drivers and barriers](#)

⁸ Cfr. Aakre et al. (2019)

positive effect, possibly enough to ensure considerable support for wind energy; +2 means that the factor has a clear positive effect; +1 means that the factor has a small but positive effect). 0 indicates that the factor has a neutral effect on the acceptance of wind power. Further details and a template of the survey are to be found in Deliverable 3.5⁹.

In sum, a total of 203 stakeholders responded to the survey, but 24 responses had to be excluded due to missing data. The remaining 181 responses came from 86 German stakeholders (of which 51 from the target regions Thuringia (28) and Saxony (23), and the model region Brandenburg (19); 11 Italian stakeholders (Abruzzo: 8, Lazio: 3), 25 Latvian, 21 Norwegian, 25 Polish (Wojewodztwo) and 11 Spanish (Islas Baleares) participants. Figure 2 illustrates the survey responses according to the six WinWind countries.

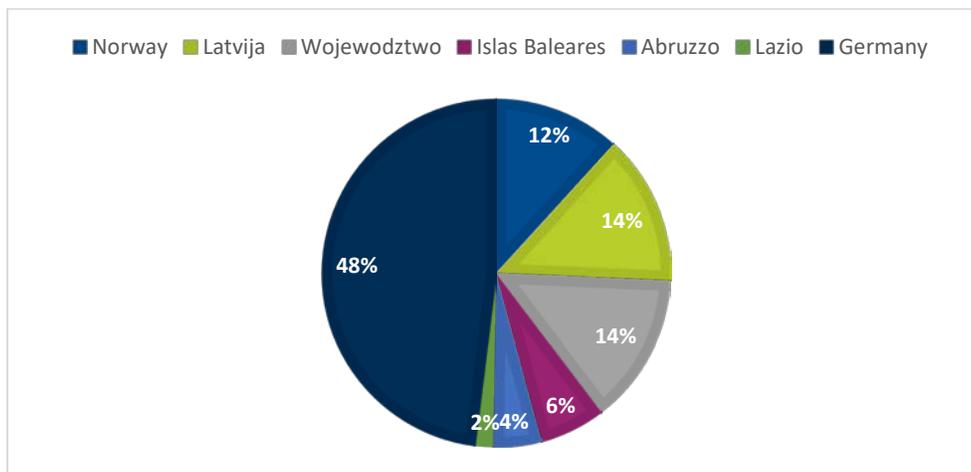


Figure 1: Percentage distribution of online survey respondents in the six WinWind countries

⁹ [Deliverable 3.5: Consultation series of the 6 regional desks in each target region. Summary report](#)

1.2 Categorisation for tailor-made solutions

Based on the findings from stakeholder consultations and the outcomes of the thematic workshops in the six partner countries, a number of strategies and solutions on how to address social acceptance barriers were proposed. These are categorised according to their impact as social acceptance drivers: procedural fairness, distributive fairness, spill over on local economy, impact on environment and landscape or on institutional and legal framework conditions.

In this context, some definitions are necessary. **Procedural fairness** addressing socio-political barriers is understood as a fair decision making process giving all relevant stakeholders an opportunity to participate (Gross, 2007). This can be enhanced by transparent communication, effective formal participation and/or effective informal participation.

Distributive fairness addressing socio-political and economic barriers is understood as the fair distribution of costs and benefits (Wüstenhagen, Wolsink & Bürer, 2007) among all residents and persons affected, including those not directly benefiting from a wind power project as landowners. Distributive fairness can be effectively addressed through direct and/or indirect financial participation and/or passive financial participation, e.g. funds, compensations, reduced municipal tax for the citizens, etc. Table 3 illustrates forms of direct and indirect active and passive financial participation.

Table 3 : Forms of distributional fairness

Active financial participation	
Direct	Citizens as owners/stakeholders of the plants (e.g. co-operative, limited liability company, other legal forms etc.)
Indirect	Citizens as creditors/lenders/financers
Passive financial participation	
Individuals	Land lease payments for land owners, bonus payments for local residents, special electricity tariffs for local residents
Community level	Community foundations/trusts, community associations, compensation payments for the community, in-kind benefits for the community Municipality as owner of the plant Tax revenues from the operation of wind plants

Source: based on EnergieAgentur NRW: 2014, p.6

A spill over on the local economy, and hereby the creation of local added value addressing the economic barriers, is understood as the creation of new jobs, increased local tax revenues or the involvement of regional businesses, e.g. energy supply companies and financing institutions.

Furthermore, under the category neutral or positive **impact on the environment and landscape**, we subsume the use of policies and measures to protect the local landscape, both its physical and socio-cultural value or as the use of measures to reduce negative impacts on wildlife and biodiversity.

Finally, under the category **institutional and legal framework conditions**, we subsume policies and measures like trustworthy wind energy service units, new governance models and similar policies.

On top of the categorisation according to the social acceptance driver addressed, the proposed strategies and solutions are classified also according to the project phase. These include: planning/siting; authorisation/permitting; operation and maintenance of the wind turbines)

Table 4 provides a systematic overview of which countries have proposed or utilised specific solutions and strategies to address the barriers and using drivers under these specific categories. The specific measures for each country are illustrated in the following sections dedicated to the individual countries.

Table 4: Categorisation of the tailor-made solutions and strategies for all WinWind countries

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	DE, IT, LV, NO, PL, ES	DE, IT, LV, NO, ES	DE, LV, PL, ES
	Effective formal participation	IT, LV, PL	IT, NO, ES	PL
	Effective informal participation	DE, IT, LV, NO, PL	DE, IT, NO, ES	IT, NO, PL
	Other	IT, LV, PL, ES	IT, LV, PL, ES	IT, LV, PL, ES
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)	DE, LV, PL	DE, LV, PL, ES	DE, IT, LV, NO, PL
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)	DE, IT, LV, PL	DE, IT, LV, PL, ES	DE, LV, PL
	Other	IT, LV, PL	IT, LV, PL	IT, LV, NO, PL

Spill over on the local economy (creation of local added value)				
Economic barriers	Jobs, revenues, increased local tax revenues	DE, LV, NO	DE, NO, ES	DE, IT, LV, NO, PL
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)	DE, IT, LV	DE, IT	DE, LV
	Other	IT, LV, NO, ES	IT, LV, NO, ES	LV, NO, PL, ES
Socio-environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value	DE, IT, LV, NO, ES	DE, IT, LV, NO, ES	IT, LV, NO, PL
	Measures to reduce impacts on wildlife and biodiversity	DE, IT, LV, NO, ES	DE, IT; LV, NO, ES	IT, LV, NO
	Other	DE, IT, LV, NO	DE, IT, NO	DE, IT, LV, NO
Political and institutional barriers	Improvement of institutional and legal framework conditions			
	Trustworthy wind energy service units, new governance models, etc.	DE, IT, LV, NO, PL, ES	DE, IT, LV, NO, ES	LV, NO
	Other	IT, LV, PL, ES	IT, PL, ES	IT, PL, ES

2 Country-specific potential solutions to overcome acceptance barriers

2.1 Germany

The activities carried out within the German Country Desk and the stakeholder consultations enabled the WinWind project to obtain qualified feedback from the stakeholders on:

- General and region specific market barriers,
- General and region-specific social acceptance problems and barriers,
- Promising good practice approaches from the target regions, model regions and beyond,
- Possible drivers to address or mitigate these barriers
- Possibilities for transferring best practice solutions.

In the frame of the WinWind project, feedback was obtained:

- Through the regular stakeholder desk meetings and dialogue,
- Through complementary thematic workshops and policy roundtables,
- Through dedicated stakeholder consultations (e.g. via expert interviews, focus groups, on-line survey).

In Germany, the dedicated stakeholder consultations generated important insights on general and region specific market barriers and on general and region specific social acceptance problems and barriers.

2.1.1 Results of the activities carried out

In Germany, three country desk meetings, three thematic workshops, two policy roundtables, one final thematic workshop and several stakeholder consultations have been carried out. The main topics addressed were:

- Good Practice „Service Unit Wind Energy“ and Fair Wind Energy Labels
- Consulting and service units for wind energy
- Consideration of environmental aspects and integration of wind energy in forest areas
- Policy measures enhancing the distributional fairness of wind energy
- Acceptance promoting measures

Details about the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the deliverables D3.3¹⁰, D3.4¹¹ and D3.5¹².

The following sections summarise the results especially relevant for strategies and solutions addressing acceptance barriers.

¹⁰ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

¹¹ [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

¹² [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.1.1.1 Main barriers in Germany

In Germany, 86 stakeholders participated to the online survey (Thuringia: 28; Saxony: 23). The results indicate that the size of modern projects, the visibility of wind turbines, the distance of wind turbines from residential areas, the impacts on the physical environment, on biodiversity and wildlife and on health and well-being are perceived as important barriers in German average (evaluation average < -1). These results illustrate the importance of socio-environmental barriers in Germany.

Differently to most of the WinWind countries, factors related to policy are not perceived as a driver (average: > -0.5 and < +0.5) which points out a high potential to improve political and institutional framework conditions. Being asked what the federal government should do to better involve local municipalities and citizens in the planning and approval procedures of wind energy projects, 30 stakeholders indicated their opinions. Additionally, 29 participants gave their opinion on the measures that the state (Länder) governments should implement.

The factors evaluated as relevant drivers are: the impact on greenhouse gas emissions, the impact on local profits and income generation and on individuals` economy, the degree of local ownership of the plants, the regional (or national if regional is unknown) share of renewables in the electricity sector, the opportunity for formal/informal participation and consultation in the planning and permitting process, the information about projects and the transparency of the permitting process. These results suggest that process related and economic factors facilitate wind energy development in Germany and should be considered in developing potential solutions and strategies addressing the regional barriers.

2.1.1.2 German Best Practices

As the German best practice measures, the WinWind consortium selected the Thuringian Service Unit Wind Energy and three community wind farms in the regions of Northern Friesland and Dithmarschen (both in the federal state of Schleswig-Holstein). However, the community wind farm in Neuenkirchen in the district of Dithmarschen received special attention (negative referendum followed by a positive referendum in favour of wind energy on the territory of the municipality). The selection of the best practices was also based on the stakeholder engagement and consultations carried out during the meetings of the country desks and the developed criteria for best practices (WP4).

Community wind farms and local benefit sharing (Schleswig-Holstein)

The community wind farm in Neuenkirchen (Schleswig-Holstein) has been initiated by local farmers and land owners. It is owned by the initiators, other citizens and the municipality. The case illustrates how policy and corporate measure can effectively contribute to enhancing community acceptance. The main motivation for this initiative was to avoid the involvement of external investors and to make sure that the entire community would benefit from the wind farm, not only the land owners and founding stakeholders.

The key drivers for social acceptance addressed in the best practice measure are:

Procedural participation and trust

- Transparent communication
- Political leadership: the mayor played an important role as facilitator/mediator
- Trustworthiness of key actors: the municipality obtained shares for a symbolic amount of money
- Informal procedural participation: Active involvement of local citizens led to a high level of identification with the wind farm
- Active (direct) financial participation of citizens: Possibility to buy shares and participate directly as limited partners
- Passive financial participation of citizens: trade tax revenues for the municipality, land lease pooling model for land owners, foundation of a civic association disbursing 1% of the annual revenues of the wind farm for social and cultural purposes

Reducing impact on environment

- Compensation measures and payments for the intrusion of nature and landscape (usually prescribed by permitting authority based on nature conservation regulations)

Technical characteristics

- Investors voluntarily agree to keep a minimum distance of 2,000 m to the village centre.

The measures turned out to be effective in ensuring or increasing local acceptance. However, the bottom up initiative with its specific dynamics cannot be transferred directly to other contexts. Transferability depends very much on the context, legal framework, institutional settings, the actors, their interests, strategies, commitment, resources, and interactions with other actors. The showcases illustrate a number of accompanying measures which contribute to secure/enhance local acceptance which might be more easily transferable like lease pooling models or benefit sharing mechanisms like donations, in kind benefits, non-profit associations or foundations.

The Thuringian Wind Energy Service Unit

The Thuringian Wind Energy Service Unit was set up in Thuringia in 2015 and provides free, comprehensive and neutral advisory and technical assistance for citizens, municipalities and developers. In addition, the Service Unit started in 2016 to award a quality label for wind energy project developers.

The measure was effective in addressing barriers such as perceived lack of local value creation and community benefits as well as lacking fairness of the procedural participation and complex planning and permitting procedures. The main drivers for social acceptance were shown to be:

Impact on economy

- Positive effects for the local economy

Procedural participation and enhancing trust

- Transparent communication: more direct and better information to all stakeholders
- Effective informal procedural participation: bringing stakeholders together to ensure a constructive dialogue from an early stage of the project
- Trustworthiness of key actors: The Service Unit enjoys a high credibility among almost all stakeholders and is perceived as neutral
- Political leadership/commitment: formulation of a new energy strategy and the recently adopted (end of 2018) climate law (ThüKliG). The services offered by the unit have been already widely used, suggesting that there is a strong degree of trust in it. From 2015 to 2018, 102 communities and 180 companies or other organisations in Thuringia have been advised by ThEGA. There were 143 citizen requests. In Thuringia it is getting increasingly difficult for project developers to initiate a business without the label for fair wind energy. Both facts illustrate the effectiveness and significance of the measures.

For the Service Unit, the transfer potential can be regarded as high. The Service Unit is asked for advice by actors from other federal states, too, and there were several initiatives to set up similar advisory and/or labels. Furthermore, the Thuringian model itself is an example of a successful transfer namely from the administrative district of Steinfurt, where such a unit had been established already in 2011.

2.1.2 Potential solutions to address social acceptance barriers in Germany

The following section summarises possible solutions to overcome acceptance barriers for wind energy in the WinWind target regions of Saxony and Thuringia. This section is mainly based on two sources: a) the findings from various WinWind reports and comparative assessments, and b) the findings of the German country desk activities including the thematic workshops, policy roundtables and stakeholder consultations.

A key lesson from the German country desk activities is that integrated concepts addressing both procedural and distributive fairness can help to strengthen community acceptance of wind energy. Another central lesson is that a key pre-requisite for community acceptance is trust in actors, institutions and processes. In general it is important to communicate the environmental as well as the socio-economic benefits of the transition (*Energiewende*) to a decarbonised energy system.

One of the German best practice cases, the Service Unit Wind Energy in Thuringia together with the label for fair wind energy represent such a promising integrated approach. This measure has a high replication potential and is already being transferred to other federal states in Germany. Also community wind farms in Northern Friesland and Dithmarschen that were chosen in the WinWind project as the second German best practice example, are a good showcase integrating both elements of procedural and distributional fairness.

The following section provides an overview of potential solutions contributing to overcome community acceptance barriers. These solutions take into account the discussions in the frame of the German stakeholder desks. They do not claim to be exhaustive. The corresponding policies and measures are described in more detail in the following sections.

Table 5 provides an overview of potential solutions to address acceptance barriers in the WinWind target regions Saxony and Thuringia.

Table 5: Existing potential solutions to address acceptance barriers in the German target regions

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> Particularly in Saxony, there is a need to support municipalities and residents by providing 'neutral' information and advice regarding the planning of wind energy plants, including advice on informal procedural participation formats and financial participation opportunities for citizens and communities (see the example of the Service Unit Wind Energy in Thuringia). Both in Saxony and Thuringia, municipalities affected by wind energy developments should in their information and engagement activities try to keep a sound balance between opponent groups and other groups of society and address the "silent majority" of local residents. They should develop tailor-made communication strategies addressing in particular the "silent" group of supporters, indifferent or undecided persons Where possible, encourage the use of professional mediators or appropriate dialogue formats Avoid that few active opponents dominate information events and organise the latter in a "marketplace" structure with several information booths. 		
	Effective formal participation	<p>The national government might consider to reduce the minimum thresholds for mandatory EIAs in terms of the number of wind turbines and to make public participation mandatory for smaller project sizes. Formal participation should start much earlier, e.g. by establishing an obligation for developers to inform and engage municipalities, citizens and local stakeholders earlier in the planning process.</p>		

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
	Effective informal participation	<ul style="list-style-type: none"> Informal and voluntary public participation formats going beyond formal consultation procedures should be developed both in Saxony and Thuringia. There are good examples (e.g. former informal working groups in the field of regional planning in Saxony, informal wind plan dialogues in the regional planning region of Oderland-Spree/ Brandenburg) Other informal measures which might be considered include involving 'persons of trust' in local planning and decision-making processes (<i>Bürgervertrauenspersonen</i>). 		
	Other			
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)	<ul style="list-style-type: none"> The governments in Thuringia and Saxony should support the introduction of a federal law or regulation ensuring active and/or passive financial participation of host municipalities and citizens being affected by wind energy projects. In order to ensure a level playing field in the frame of the auctions, a federal law/regulation is considered superior to state-specific regulations prescribing active financial participation. Both state governments should consider to promote active, financial participation of citizens as shareholders or lenders and community wind farms (e.g. by providing seed money for community wind farms, cf. the revolving fund for community/citizen energy in Schleswig Holstein) In Saxony, advisory organisations need to be established providing guidance, technical assistance and comprehensive consulting services for municipalities, citizens, landowners and developers. Both states might consider to set up a community wind energy target complementing official energy policy targets. 		
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)	<p>Municipalities in both states should encourage the development/use of:</p> <ul style="list-style-type: none"> Land lease pool models (cf. example of Neuenkirchen) Benefit sharing mechanisms and voluntary compensation payments to the community (e.g. via non-profit associations, foundations, trusts) Voluntary energy price discount schemes for local communities 		

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues	<ul style="list-style-type: none"> Active and passive financial participation of citizens and municipalities offer great potentials to create regional and local added value through profits and income from wind turbine operations, tax revenues and employment. Regional support schemes promoting community (co-)ownership of wind farms (e.g. financial incentives including risk capital, capacity development, information, advice, networking etc.) 	<ul style="list-style-type: none"> Allocation of trade tax revenues benefiting the host municipality Employment of local companies, skills training, apprentices 	
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)	<ul style="list-style-type: none"> Voluntary contracting of regional/local enterprises for the construction, maintenance and service of wind farms by developers Intermediary/advisory organisations like the Service Unit Wind Energy in Thuringia can help to strengthen local value creation by providing guidance, technical assistance and comprehensive consulting services for municipalities and citizens. This might be a promising model for Saxony as well. The quality label “Partner for Fair Wind Energy” in Thuringia includes five principles of “Fair Wind Energy” which also comprise the involvement of regional energy supply companies and regional financing institutions by the project developers. Cooperation of municipalities, municipal energy utilities (<i>Stadtwerke</i>) and community energy initiatives 		
	Other			

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-environmental barriers	Neutral or positive impact on the environment and landscape			
	<p>Measures to protect the local landscape, both its physical and socio-cultural value</p> <p>Measures to reduce impacts on wildlife and biodiversity</p>	<ul style="list-style-type: none"> Existing intermediary organisations providing expertise, consultation and conflict mediation services might be involved in local planning processes (e.g. Competence Centre Nature Conservation and Energy Transition). 	<ul style="list-style-type: none"> Better communicate the positive effects of environmental compensation measures taken to offset the impact on landscape and nature Compensation payments for intrusion of nature and landscape should be preferably used locally in the community hosting the wind farm. Voluntary EIA by developer and/or additional compensation measures going beyond legal minimum requirements Thuringia: Better communicate good practice examples including for wind energy in forests and emphasise potential synergies of climate protection and nature conservation.. 	
	Other	<ul style="list-style-type: none"> Intermediary organisations providing expertise, consultation and conflict mediation, particularly where conflicts arise between nature protection and the development of RES projects (e.g. <i>Kompetenzzentrum Naturschutz und Energiewende, Dialogforum Erneuerbare Energien und Naturschutz Baden-Württemberg</i> etc.) Trust building measures which might be considered to implement are labelling/certification of environmental assessors, the commissioning of EIAs by the permitting authorities rather than by the developers etc.) 	<ul style="list-style-type: none"> Technological and operational measures (e.g. radar detection of birds, adapting turbine operation to wildlife behaviour, e.g. birds and bats). Bat monitoring and shutdown of wind turbines during certain time periods Saxony might consider to introduce biodiversity guidelines for wind energy developments (see Thuringian model) 	

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Political and institutional barriers	Improvement of institutional and legal framework conditions			
	Trustworthy wind energy service units, new governance models, etc.	<p>Saxony:</p> <ul style="list-style-type: none"> Remove existing planning and permitting barriers for wind energy Promote trust-building through the establishment of intermediary organisations, providing advice and unbiased technical assistance to citizens, municipalities, local stakeholders, incl. policy makers and planners There are promising examples in many other federal states: Service Unit Wind Energy in Thuringia, Citizens' Forum Hesse, advisory bodies in Brandenburg, Baden-Wurttemberg etc. <p>Thuringia:</p> <ul style="list-style-type: none"> Strengthen the position and role of the wind energy service unit Increase the level of ambition of the label for fair wind energy and introduce further benchmarks, e.g. by differentiating between gold, silver and bronze standard 		

2.1.2.1 Potential solutions and strategies addressing procedural fairness

Process related factors are perceived as drivers for the local acceptance of wind energy. The opportunities for informal/formal participation and consultation in the planning and permitting process (average Thuringia: +0.78, average Saxony: +0.78) and the information about projects and the transparency of the permitting process (average Thuringia: +1.17, average Saxony: +0.89) are rated as positively influencing the wind energy development in the WinWind target regions by the local stakeholders. As the potential of strategies addressing procedural fairness is high, the stakeholders suggested several process related strategies.

Transparent communication

Particularly in Saxony, there is a need to support municipalities and residents by providing 'neutral' information and advice regarding the planning of wind energy plants, including informal procedural participation formats and financial participation for citizens and communities. There are several

actors on federal and state level engaging with the development of well researched, easily understandable information such as the state level energy agencies like the Onshore Wind Energy Agency (*Fachagentur Windenergie an Land e.V.*). However, providing neutral information is not enough, the information has to be communicated in an appropriate way to the relevant stakeholders.

Often, particularly in small rural municipalities, mayors and local councillors work on a voluntary basis. They tend to be overburdened by complex planning and approval procedures. Here, professional, neutral, intermediary advisory and support organisations can help to create a more open, constructive communication culture, to organise dialogue processes, and reconcile between different interest groups. They can support local authorities to act on a level playing field with developers. Intermediary organisations, such as the Thuringian Service Unit Wind Energy, have the resources to directly reach out to the concerned stakeholders, including all relevant groups, from the mayor and concerned citizens to the project developers.

Neutral Service Units such as the one in Thuringia provide free, comprehensive and neutral advice and technical assistance services for citizens, municipalities and developers. The unit also helps to communicate transparently spatial planning procedures, resulting in the designation of wind energy zones (suitable wind energy areas, priority wind areas). The understanding of the democratic processes in the planning phase, such as formal public consultation procedures or the right of mayors to vote in regional assemblies for or against the suggested wind designation areas help to create transparency and trust. Regional planning bodies responsible for the designation of wind energy zones may provide for complementary informal information and dialogue formats complementing the formal procedures of participation. But these bodies usually do not have sufficient resources to act as a general wind energy contact point for stakeholders, including those affected by the designation of wind energy zones. In case of conflicts, professional mediators such as the *Kompetenzzentrum Energiewende und Naturschutz* can help to find proper compromise solutions.

More than a marketing tool for project developers or an insurance certificate for the municipality, the label for fair wind energy provides a common set of criteria for a transparent negotiation between the involved stakeholders at “eye level”. Transparent handling of project-related information by the developers and the provision of assistance and informational services is one of the five key principles forming the basis for the label fair wind energy in Thuringia.

Germany has a vivid culture of citizen initiatives opposing wind energy. Often highly professionalised and supported by regional and national umbrella associations, these citizen initiatives often exacerbate a constructive, fact-based dialogue, by putting forward emotional arguments. German desk members agreed that on the one hand the dialogue with opponents is essential for acceptance raising and, respectively, for further project development. Opponent groups should be always addressed locally to keep the discourse as factual as possible. Furthermore, by help of professional mediators or appropriate dialogue formats, municipalities should try to keep a sound balance between opponent groups and other groups of society, such as associations, church groups, Fridays-for-future activists and the “silent majority” of local

residents¹³. An option to avoid that few active opponents dominate an information event is to organise the latter in a “marketplace” structure with several information booths. Tailor-made communication strategies addressing in particular the “silent” group of supporters, indifferent or undecided persons has been highlighted at several country desks as a promising approach.

Effective formal participation

In Germany, suitable areas resp. priority areas for wind energy are designated in spatial development plans (regional level) or urban land-use planning (municipal level). Zoning of wind energy areas in regional plans and municipal land use plans is accompanied by formal (i.e. statutory, prescribed by law) and sometimes informal (i.e. voluntary) information and consultation events. Formal participation of citizens and municipalities is carried out either by regional planning bodies (as in Saxony and Thuringia) or sometimes by municipal authorities. This is done on a sub-state level, varying in the number of regions based on the size of the state. During the development phase, the authorities are required to carry out public consultations. Within a certain deadline, residents may submit statements. WinWind partners have asked country desk members and other stakeholders in several occasions, whether the regional planning authorities should be in charge of designating wind energy zones and most stakeholders agreed that the regional level is the proper level for planning. However, a key message from the German desk activities was that regional planning bodies should be supported by intermediary organisations, such as the wind energy service unit in Thuringia and similar organisations.

Many municipalities do not use their limited opportunities to influence the exact position/design of wind turbines/height of the turbines within the priority zones by developing local land use plans. In Brandenburg, municipalities are even able to determine the amount and the use of compensation in their local land use plans. Again, transparent information and direct contact is recommended to make municipalities aware of their radius of operation and to let them know their individual benefits as an exchange for the effort of an additional land use plan.

In Germany, the formal participation possibilities in the authorisation process are rather limited. Only where the number of wind turbines reaches 20 or where an environmental pre-assessment leads to the conclusion that an EIA needs to be carried out, a formal participation process must be carried out. This means that in practice many projects are implemented without any formal public consultation. Therefore, informal dialogue and public engagement formats and processes are of pivotal importance to promote local acceptance. However, dialogue and participation should not only be left to the commitment of the developers and operating companies, but additionally supported by local governments and authorities. Hence, there are grounds to reduce the legal minimum thresholds and to make public participation already mandatory for smaller sizes of projects. Furthermore, we suggest that formal participation should start much earlier, e.g. by establishing an obligation for developers to inform local municipalities earlier in the planning process.

¹³ Empirical studies analysing the attitudes and behaviour of residents towards wind energy projects in host municipalities suggest that the group of passive supporters, indifferent or undecided persons represents clearly a majority whereas the group of active opponents is rather small (“vocal minority”) (Hildebrandt et al. 2018, Zoellner, Rau & Schweizer-Ries 2009).

Effective informal participation

Well-designed, informal participation formats and processes can help to increase the perceived fairness and justice in the planning process and thus increase the chances of trust and acceptance. Initiators of participation processes should offer dialogues at an early stage and at the same time inform about the actual possibilities of participation and influence. In addition, the citizens want to know how the results will flow into the further planning process. Creating an open participation culture can help to build acceptance - but participation alone does not necessarily lead to more acceptance.

Potential solutions include information, dialogue and consulting formats, including public information events, roundtables, market places, informal working groups, dialogue sessions etc. Informal participation should already be in the process of regional planning and designation of wind energy zones in regional plans. Here, WinWind identified several promising approaches in Saxony and Brandenburg. Developers and municipalities hosting wind farms should provide early and transparent information on their projects. Where available, public, neutral advisory bodies might be involved (like the wind energy service unit in Thuringia). In order to obtain the Thuringian label for fair wind energy, project developers in Thuringia are asked to communicate early and in a transparent way. Involvement of all interest groups in the vicinity of a planned wind farm during the entire planning phase is a key principle of the label.

2.1.2.2 Potential solutions and strategies addressing distributional fairness

The current distribution of costs and benefits is not perceived as facilitating the wind energy development in Thuringia and Saxony (average: < +0.5). As distributional fairness is a potential strong driver, the local stakeholders suggested several measures addressing the fair distribution of costs and benefits in the stakeholder engagement and consultation activities.

Active financial participation

Active financial participation has two forms: direct participation means that citizens participate as owners/shareholders of the operating company (e.g. co-operative, limited liability company, other legal forms), whereas indirect participation means that citizens act as creditors/lenders. (EnergieAgentur NRW, 2014, p.6).

Direct financial participation of citizens as shareholders can be an effective means to promote local acceptance for wind energy projects. This concept is characteristic for many citizen/community owned wind farms (see the WinWind best practice examples of Northern Friesland and Dithmarschen) as well in many other regions in Germany.

However, community wind farms have not equally developed in Germany. In many regions, particularly East Germany, developer-led models are dominating under which wind projects are initiated, developed, and partly operated by commercial developers, usually not rooted in the region in which the project is being developed, with the community hosting the project playing more a passive role. The investor either offers opportunities for active financial participation of (e.g. part of the turbines in community ownership) or passive financial participation by providing community benefits (donations, compensations, special electricity tariffs, in-kind benefits etc.).

Community ownership of wind farms is rather seldom in the federal states of East Germany (former GDR). This has several reasons, like e.g. adverse land ownership structures, lower income levels and lack of private capital particularly in rural regions). However, commercial developers increasingly provide active and passive financial participation opportunities for citizens and municipalities. This is partly encouraged by public actors. The quality label “Partner for Fair Wind Energy” which is awarded by the Service Unit Wind Energy to project developers voluntarily adhering to defined standards regarding procedural and financial participation of local communities, seeks to enhance distributional justice and local value creation. The label helps to find financial participation possibilities as part of the negotiation process between project developer, the service unit and the host municipalities.

In Mecklenburg-Western Pomerania, the Citizens’ and Municipalities’ Participation Act (*Bürger- und Gemeindenbeteiligungsgesetz*) obliges project developers to set up a limited liability company for new wind farms and to offer shares of at least 20 percent of this company to citizens and municipalities within a radius of five kilometres of their turbines. Alternatively, the developers can offer compensation payments. Project developers may also opt to offer citizens a savings product instead of shares or may decide to offer special electricity tariffs for the region concerned.

Passive financial participation

Passive financial participation of citizens comprises various forms¹⁴

- Land lease payments for land owners including pool models
- Special electricity tariffs for local residents (tariff discounts)
- Formation of community foundations/trusts (*Bürgerstiftungen*) or community associations (*Bürgervereine*), which accrue and disburse parts of the revenues of the wind farms for social and cultural purposes
- Other voluntary compensation measures and payments
- In-kind benefits for the community
- Municipal (co-)ownership of the plants
- Trade tax revenues from the operation of the plants
- Planned: property tax revenues from landowners on whose land turbines are installed
- Special levy to be paid by the operators of the wind farms to the host municipalities (recently introduced in the federal state Brandenburg, currently discussed for the federal level)
- Mandatory compensation measures and payments for the intrusion of nature and landscape (pursuant to the Nature Conservation Act)
- Other benefit sharing mechanisms.

There are many examples of commercial developers and community energy actors providing possibilities for passive financial participation of citizens on a voluntary basis.

Referring to the WinWind best practice example of the community wind farm in Neuenkirchen, the land lease pool model allows a large number of landowners to benefit from the community wind

¹⁴ cf. Energieagentur NRW, 2014, p.6

farm via land lease payments, not only those landowners on whose property the wind turbines are installed. This helps to minimise envy and ensures support by landowners. Furthermore, the foundation of a civic association (*Bürgerverein Neuenkirchen e.V.*) enables the community as a whole to benefit from the wind farm (not only the citizens who are actively involved as limited partners). Each year, this association receives 1% of the revenues of the wind farm as donations for cultural, educational and social projects. During the WinWind transfer workshop carried out in August 2019, the mayor of Neuenkirchen considered it essential that such an association or similar organisation is founded before the wind farm is built in order to ensure community acceptance from the very beginning.

In Germany, local trade tax (*Gewerbesteuer*) is charged for profits from wind turbines, which means that wind farms can provide a stable source of revenue for local governments (and indirectly for the citizens). Regarding the allocation of trade tax revenues from wind energy projects, the standard breakdown formula envisages that at least 70 % of the tax revenues is transferred to the municipality where the wind project is located, while the remainder accruing to the municipality where the operating company is registered. However, host municipalities can negotiate to retain even up to 100 % of the tax revenues. In the case of community wind farms, usually 100 % of the trade tax remains within that community (cf. again the case of Neuenkirchen). A drawback is that these tax revenues are not exempt from the municipal financial equalisation scheme (*Kommunaler Finanzausgleich*), and depending on the financial situation of the host municipality, trade tax revenues may only partly remain on ground.

In Mecklenburg-Western Pomerania, the Citizens' and Municipalities' Participation Act (*Bürger- und Gemeindenbeteiligungsgesetz*) obliges project developers to offer shares of at least 20 percent to citizens and municipalities within a radius of five kilometres of their turbines. Alternatively, developers can offer the municipalities compensation payments. Project developers may also opt to offer citizens a savings product instead of shares. Alternatively, they may offer energy price discounts or special electricity tariffs for the region concerned. In June 2019 the government of the federal state of Brandenburg adopted a new law which obliges operators of wind farms to pay a special levy of 10,000 EUR annually to municipalities in a three-kilometre radius of new turbines. The levy will only apply to new plants. The municipalities must use the funds accruing from the special levy for measures in their municipalities to increase the acceptance of wind turbines.

The federal state government of Thuringia has so far preferred a voluntary approach. The Service Unit provides free and neutral advisory and technical assistance services for citizens, municipalities and developers. The label for fair wind energy includes certain standards for active/passive financial participation of citizens and benefit sharing mechanisms (see above).

In order to ensure a level playing field for all developers and in order to avoid market distortion effects there were claims by various stakeholders to develop nationwide regulations enabling host municipalities to benefit from wind farm profits. This has also been discussed in various WinWind country desks and thematic workshops and a majority of stakeholders expressed their support for a federal solution.

At the federal level, a parliamentary working group has been set up in 2018 to develop proposals for complementary measures to increase acceptance of onshore wind, including measures promoting the financial participation of municipalities in wind energy developments. Several

proposals have been developed by different policy and market actors, including a nationwide special levy to be paid by the operators to municipalities hosting the wind farms. Furthermore, the German wind energy association (BWE) proposed a minimum share of 1-2% of the operator' annual turnover to be shared with communities. Further proposals include, inter alia, to reform the municipal concession fee system or to introduce a wind energy resource fee. None of these proposals, however, has been considered so far by the federal government. Instead, the federal government aims to enable municipalities to introduce property tax for wind energy. This tax is likely borne by the landowners. However, these plans have been criticised as they are unlikely to have any impact on the local perception of wind energy projects, as the amount of revenues will probably be modest and not exempt from municipal financial equalisation and therefore do not necessarily remain on the ground. Hence, the impact on local acceptance is expected to be rather poor. Hence, discussions on appropriate solutions to strengthen the financial participation of municipalities are likely to continue at federal level.

2.1.2.3 Potential solutions and strategies addressing the impact on local economy

The impact on local economy is perceived diverse in Saxony and Thuringia. The impacts on the tourism sector seem to be a barrier both in Thuringia (average: -0.62) and in Saxony (average: -0.89) while the impacts on the agricultural sector were not perceived as relevant, neither in Saxony (average: +0.37) nor in Thuringia (average: -0.14). On the other hand, the impacts on local profits and income generation (average Saxony: +0.63, average Thuringia: +1.05) and on individuals' economy (average Saxony: +1.24, average Thuringia: +1.10) are perceived as drivers.

Jobs, revenues, increased local tax revenues

Active and passive financial participation of citizens and municipalities offer great potential to create regional and local added value through profits and income from wind turbine operations, tax revenues and employment. In a recent representative survey on the attitudes wind energy commissioned by the German Onshore Wind Energy Agency (FA Wind, 2019), 82 percent of survey respondents said that to increase public acceptance of wind energy it is important to ensure that municipalities can use income from wind power to increase the local quality of life. Seventy-nine percent named cheaper electricity and 66 percent the integration of local actors in the project as likewise important factors to increase public acceptance.

Involvement of regional businesses

Contracting regional/local firms (e.g. for construction works, service/maintenance) is a specific characteristic of the community wind farms in Schleswig-Holstein forming part of the respective WinWind best practice case. Also the Service Unit Wind Energy in Thuringia helps to strengthen local value creation by providing guidance, technical assistance and comprehensive consulting services for municipalities, communities and citizens. One of the five principles of the "Fair Wind Energy" label in Thuringia comprises the involvement of regional energy supply companies and financing institutions.

2.1.2.4 Potential solutions and strategies addressing the impact on environment and landscape

The German stakeholder consultation conducted in the frame of WinWind showed that the (perceived) negative impacts for biodiversity and wildlife represented one of the strongest acceptance barriers to wind energy developments (average in Thuringia and Saxony < -1). However, German legislation based on the Federal Nature Conservation Act, is already rather demanding and provides for strong supervision and control mechanisms. Questions of nature and species protection are addressed within the process of wind energy zoning in spatial planning and particularly in the authorisation/permitting procedure. Assessing the compliance of wind farm developments with nature conservation and species protection rules makes for the largest part of the approval procedure in Germany.

In Germany, an environmental impact assessment (EIA) is mandatory if a wind farm project comprises 20 or more wind turbines. If the number of turbines ranges between 3 and 20, a pre-assessment is necessary which then indicates whether a full assessment is required. The EIA indicates, whether the interference on the local environment caused by the project is ecologically

justifiable and determines the extent and the kind of compensation measures. If negative effects are expected, either compensatory measures are prescribed by the authorities or the implementation is prohibited. Sensitive siting, design options, aversions, technical systems for bird detection and operational measures can help to mitigate the impact on nature and species. It is common practice that operation of wind turbines is only granted if certain species-specific mitigation measures are implemented. These include temporary curtailments to reduce the risk of collisions with birds and bats, or data collection requirements during operation (e.g. bat monitoring).

Several organisations including environmental NGOs propose further trust building measures (e.g. labelling/certification of environmental experts performing EIAs, commissioning of EIA by permitting authority and not by project developer which is currently the rule).

Intermediary organisations provide important expertise, consultation and conflict mediation services, particularly where conflicts arise between nature protection and the development of wind projects (e.g. *Kompetenzzentrum Naturschutz und Energiewende*, *Dialogforum Erneuerbare Energien und Naturschutz Baden-Württemberg* etc.).

In the frame of the German country desk, one of the four thematic workshops was dedicated to wind energy developments in forests which is an actual and very sensitive issue in Thuringia and Brandenburg, both forest-rich states where wind developments in forests are (partly) possible. All federal states control wind energy development in forests via forest and nature protection law, spatial planning and guidelines (e.g. Guideline of the state of Brandenburg for planning, permitting and operating of wind power plants in forests). In states with a small forest cover, wind energy use in forests is restricted or completely prohibited (e.g. Schleswig-Holstein).

Several options to minimise negative impacts on forest ecosystem were identified:

- Use of contaminated or damaged forest sites
- Use of monocultural, species-poor forests
- Use of space for logistics and transport outside of forest area whenever possible,
- Use of space-saving vehicles and cranes.

The application of these measures is, at least partially, ensured by an ecological construction supervision during the building phase, determined by the Building Code. Wind farmers may be required to turn off the turbines during prescribed phases as well as to ensure distraction measures. For endangered species, resettlement measures need to be carried out including the valorisation of the replacement habitat by the project developer. As a rule, compensation measures have to be carried out (e.g. unsealing of a paved area as compensation for road construction). The compensation and reforestation of sites used for construction offer the opportunity to actively contribute to ecological forest conversion, e.g. by using a diverse set of climatically adapted tree species. The Thuringian forest law requires reforestation of the area cleared for the wind turbines at least by factor 1. The expansion of wind energy in forest areas is highly contested, but offers, at least partially, also opportunities to use compensatory measures for ecological forest conversion or ecological upgrading of forest areas. The possible opportunities and synergies should be examined and positive examples should be promoted in the public discourse.

2.1.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

Since its introduction in 2000, the German Renewable Energy Sources Act with its feed-in-tariffs and premiums supported the development of renewable energies and wind. The attractiveness and long term orientation of the feed-in-tariffs/premiums provided for a high level of investment security and enabled loan-based investments in the renewable energy sector for a wide variety of stakeholders, not just for big market actors with the necessary risk capital. Without this investment security, the dynamic development of citizen energy projects in Germany would have not been possible.

In 2017, Germany switched to an auctioning system based on competitive bidding, increasing the risks particularly for community-based energy initiatives. For that reason, in 2018, the government of the federal state of Schleswig Holstein established a community energy fund (*Bürgerenergiefonds*) to provide risk capital for groups of citizens planning to develop renewable energy projects. This fund is used to cover upfront costs, e.g. for site, noise or environmental impact assessments and other planning costs, but the money must only be paid back if the project is successfully realised. This model can be useful for other regions and countries. The scheme is designed as a revolving fund to finance a cycle of operations to which reimbursements are returned for reuse. Since 2018, renewable energy communities including citizens who wish to develop community wind farms can apply for a maximum of 200,000 EUR to cover pre-financing costs. This is accompanied by free advisory services provided by local energy consulting companies.

The existence of intermediaries providing neutral advisory, dialogue and assistance services, such as the Thuringian Service Unit for wind energy, is dependent on the political commitment of the respective state government. Service units following the Thuringian model should be established in all federal states and should be preferably independent from the current political constellations. At several occasions, the Thuringian Service Unit emphasised that the Thuringian label for wind energy would not be effective without the complementary advice and consultation of municipalities, citizens and developers.

Many stakeholders contributing to the German country desk appreciate a federal law or regulation ensuring the financial participation of host municipalities and citizens being affected by wind energy projects. Leaving this exclusively in the hand of developers would imply that many municipalities would not be involved financially, which would cause decreasing acceptance. Mandatory rules enacted only in a small number of federal states (*Länder*) may disadvantage developers in that specific state and bear the risk of market distortion. Furthermore, the federal government should consider to shift the current auction design from a price only system to a system based on a multi-criteria auctions. Multi-criteria auctions help to achieve also secondary policy objectives as they not only consider the price level of the bids, but also socio-economic criteria including community engagement, (co-)ownership and community benefits.

The use of surplus electricity from wind turbines, sector coupling and regional electricity price offers were also identified as important acceptance-promoting solutions. Legal barriers enabling local use of surplus wind based electricity should be removed. Electricity generation and

consumption must be brought together and creation of regional added value must be boosted by locally generated RES-E.

The new rules included in the new Germany's Climate Action Programme envisage a minimum distance of 1,000 meters between wind turbines and residential housing areas, but allow the federal states and municipalities to deviate and impose lower distances. Although setback distances between wind turbines and housing areas are one of the dominating topics of the current public and political discourse on wind energy in Germany, there is only weak empirical evidence that higher setback distances imply higher community acceptance. Empirical studies investigating the “proximity hypothesis” have not produced any clear consensus.¹⁵ A study by Hübner/Pohl (2015)¹⁶ suggests that other factors play a more important role for local acceptance, such as financial participation and informal procedural participation of local residents in the planning process.

¹⁵ Rand, J. & Hoen, B., 2017, Thirty years of North American wind energy acceptance research: What have we learned? *Energy Research & Social Science*, Volume 29, 2017, Pages 135-148, <https://doi.org/10.1016/j.erss.2017.05.019>.

¹⁶ Hübner, G. & Pohl, J. 2015, 'Mehr Abstand - mehr Akzeptanz? Ein umweltsychologischer Studienvergleich', Fachagentur Wind an Land.

2.1.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for Thuringia

- Strengthen the role of the wind energy service unit
- Increase the level of ambition of the label for fair wind energy and introduce further benchmarks, e.g. by differentiating between gold, silver and bronze standard
- Set a community wind energy target for Thuringia and promote community ownership of wind farms (e.g. provision of risk capital)
- Better communicate the economic benefits of wind farms
- Develop tailor made communication strategies for developers and municipalities addressing the “silent majority” of passive supporters and indifferent or undecided persons
- Promote informal participation of citizens during spatial planning and permitting processes
Communicate good practice examples including wind energy in forests and emphasise potential synergies of climate protection and nature conservation
- Support the introduction of a federal law or regulation ensuring active and passive financial participation of host municipalities and citizens being affected by wind energy project

Summary of potential solutions for Saxony

- Remove legal and planning barriers for wind energy
- Establish intermediaries providing neutral, advisory services for municipalities, citizens and developers like the service unit wind energy in Thuringia
- Promote community ownership of wind farms (e.g. capacity development, provision of risk capital)
- Develop tailor made communication strategies addressing the “silent majority” of passive supporters, indifferent or undecided persons
- Promote informal participation of citizens during planning and permitting processes
- Communicate good practice examples and emphasise potential synergies of climate protection and nature conservation
- Set a community wind energy target for Saxony and promote community ownership of wind farms (e.g. provision of risk capital)
- Support the introduction of a federal law or regulation ensuring active and passive financial participation of host municipalities and citizens being affected by wind energy project

2.2 Italy

The strategic goals of the stakeholder engagement and consultations in Italy aim at obtaining a feedback from the stakeholders (STK) on:

- Promoting dialogue, consultation and find agreed solutions;
- Identification at national and regional level of social acceptance problems and barriers;
- Assessment of potential good practice measures helping to increase social acceptance;
- Definition of process and strategies to help social acceptance;
- Identification of good practices to transferring to/from other regions/countries.

While the regular stakeholder desk meetings address primarily a narrow circle of stakeholders committed to regular participation in the stakeholder desks, the thematic workshops, policy roundtables and dedicated consultations are to address and to involve a broader range of stakeholders.

The key findings of the stakeholder dialogues and consultations were directly fed into the analysis of barriers and the taxonomy, in the selection and analysis of good practice cases, selection of potential transfer cases and transfer activities.

They tailor-made proposals for the target regions to raise social acceptance and deriving policy recommendations are based on the findings from the stakeholder engagement and consultations.

2.2.1 Results of the activities carried out

In Italy, three desk meetings, two thematic workshops, one policy roundtable, several stakeholder consultations and one final thematic workshop have taken place. The main topics addressed in Italy are:

- Wind energy and climate change
- Local context and barriers
- Landscape, nature and tourism
- Tax cuts and other opportunities for the local communities
- Good practices and success stories
- Local strategies to implement global policies

Details about the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the deliverables D3.3¹⁷, D3.4¹⁸ and D3.5¹⁹.

The following sections summarise the results especially relevant for strategies and solutions addressing acceptance barriers.

¹⁷ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

¹⁸ [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

¹⁹ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.2.1.1 Main barriers in Italy

In the Italian target regions Lazio and Abruzzo, socio-environmental barriers play an important role. The 11 experts from the target regions (Lazio: 3, Abruzzo: 8) participating in the WinWind stakeholder consultation survey perceive the size of modern projects, the visibility of wind turbines, the distance of wind turbines from residential areas, the impacts on the physical environment, on biodiversity and wildlife and on the tourism sector as relevant barriers (average < -1). Accordingly, factors related to the impact of wind turbines on the landscape and the following consequences for the tourism industry are seen as the most important barriers.

On the other hand, the results of the survey indicate that the distribution of economic benefits and costs between actors within the community and between communities hosting wind power and other communities and the degree of local ownership of the plants are relevant drivers (average > +1). Consequently, potential solutions should address distributional fairness. Also factor related to procedural fairness such as the opportunities for informal/formal participation and consultation in the planning and permitting process, information about projects, the transparency of the permitting process, trust in processes and trust in information are perceived as fostering the wind energy development (average > +1). Finally, the discourse on wind energy in the public sphere/media and policy related factors such as the political climate for wind energy development and the national/regional/local wind energy targets, plans and policies in terms of taxation are perceived as drivers (average > +1) by the 11 regional experts participating in the consultation.

These findings are consistent with the results of the stakeholder survey launched in Italy in an early stage of the WinWind project (see Deliverable 3.5²⁰) with 70 participants showing that the factors the most relevant for the acceptance of wind energy in Italy are the size of wind turbines, the impact on landscape, the impact on fauna (socio-environmental aspects), laws and regulations (political aspects) and local information (factor related to procedural fairness).

2.2.1.2 Italian Best Practices

Based on the stakeholder engagement and consultations and the developed criteria for best practices (WP4), the WinWind consortium has selected the “Abruzzo Repowering” and the Sardinian tax cuts and landscape commitments as Italian best practice measures.

Abruzzo Repowering

Repowering of wind farms is the process of replacing existing older and less productive wind turbines with new turbines and better features. The central objectives of such measures are to both increase the energy production and reduce the environmental and visual impact of the installations. Such a measure has served as a best-practice case for promoting the social acceptance of wind energy in Abruzzo. The WinWind analysis pointed out that the initial barriers

²⁰ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

of an impact on the environment, lack of procedural participation and trust and of low benefits for the local economy have been mainly addressed by the following drivers:

Impact on the environment

- Reducing the impact on landscape: Particular attention to the project design, avoiding visual impact and reducing acoustic emissions
- Reducing the impact on biodiversity/wellbeing: Use of anti-reflective coatings reduced impact from glint and glare on avifauna

Procedural participation and trust

- Effective formal procedural participation: Public meetings from the planning stage throughout until the actual implementation
- Trust in key actors: As consequence of the formal procedural participation, strong degree of trust between developer, local community and local authority

Impact on economy

- Impact on local economy: Employment was created to carry out the repowering process; restoration of the road network and grid connection increased accessibility of the area.

The measure has been highly effective in achieving social acceptance in Abruzzo. However, the lasting effectiveness of social acceptance of this initiative depends on continuous knowledge and information exchange about the site's electricity production, as well as the direct and indirect environmental and economic benefits that the initiative has brought and continues to bring to the territory. Furthermore, it is necessary to maintain and consolidate the existing benefits, such as the specialised employment and ensuring that the environmental impact does not get worse. Regarding the transferability, it is necessary to consider the age of the existing wind farms and to determine whether the lifetime of the existing wind farm is appropriate for intervention and repowering. Normally, turbines are between 12-20 years old at the time they are repowered. The expected repowering ought to generate approximately 50% more energy. Additionally, it is important to consider other contextual factors such as the favourability of existing regulations and local decision makers, funding availability, the approaches/strategies of relevant investors and developers and the strength resources.

Sardinia Tax Cuts and Landscape Commitments

In this best practice example, the developer, local authority and the local community came together and successfully overcame the social acceptance barriers through a participatory and constructive approach. The measures include contributions by the developer to the municipal budget (2% of the gross income achieved each year would be given to the municipality budget accounting for approx. 12% of the local municipalities budget), as well as listening to and acting upon the environmental and landscape concerns of the local population.

The initial barriers of a lack of regional co-benefits and the environmental damage could be addressed through the following drivers:

Impact on economy

- Effect on local economy: Realisation, management and maintenance of the wind farm – local workers
- Passive financial participation: 2% of gross revenue achieved annually for every kWh delivered to the local municipality

Procedural participation and trust

- Informal procedural participation: highly participatory nature of the budget determination

Impact on environment

- Impact on environment: Reduction in the number and density of the wind farms
- Impact on landscape: Reduced noise pollution through appropriate technologies

The measures implemented in Tula, primarily during the second development period, have been highly effective in reaching their goals. These have namely concerned local community information and education; involvement of local communities in the decision making (on both the revenues and in the planning process) and the creation of a collaborative relationship between Enel Greenpower, Sardinian Region and the public administration of Tula. As a result of the success of this wind farm and its promotion of social acceptance, the municipality of Tula has participated and been commended by a number of EU initiatives.

Tula's experience has shown some important aspects for the purpose of transferability. Firstly, Tula's experience shows that an active involvement of the stakeholders is more important than single consultation or information activity. Secondly, the feasibility of this experience lies in the availability, above all, of the responsible parties (Region, Municipalities and the energy utility ENEL) to open a common path without prejudice to other positions. It is certainly financially feasible for other wind energy developers to also allocate a small share of the income to the local municipality which their installations affect.

However, such a participatory approach, whereby local citizens contribute towards determining the specific budget and the spending of the revenues from the wind farm, is only practically viable in small municipalities such as Tula where there is closer proximity between the citizens and local administration. Thus, the key enabling factor for this case study is the small size of the municipality which is connected to a closer proximity between citizens and the local administration.

2.2.2 Potential solutions to address social acceptance barriers in Italy

The following section summarises possible solutions to overcome acceptance barriers for wind energy in the WinWind target regions of Abruzzo and Lazio. This section is mainly based on two sources: a) the findings from various WinWind reports and comparative assessments, and b) the findings of the Italian country desk activities including the thematic workshops, policy roundtables and stakeholder consultations.

Table 6: Potential solutions to address acceptance barriers in the target regions Lazio and Abruzzo

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> • Accessibility and availability of information (open to the public and/or to specific stakeholders) on the planning processes and authorisation procedures and about the costs and benefits of financial support. • Shared analysis (i.e. studies/investigations) on the need for new facilities for local impact assessments (including technological facilities). 		
	Effective formal participation	<ul style="list-style-type: none"> • Effective public engagement measures in all the decision-making process. • Political will to enhance exchange between local institutions and citizens (for example through public meetings as well as involvement in procedures of individual projects) 		
	Effective informal participation	The participatory process should involve the project developers, local residents and local authorities through public meetings from the planning stage to the actual implementation.		
	Other	<ul style="list-style-type: none"> • Energy Cooperative • Tax Cuts and Landscape Commitment 		

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)			Individual commercial developers could commit to provide opportunities for active or passive financial participation of local communities or provide some other community benefits
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)	<ul style="list-style-type: none"> • Tax reduction for households • Garbage tax: freeze/reduce citizen payments • Removal of Personal Income Tax (IRPEF - the additional tax for the municipality) • Removal of municipal real estate tax (IMU) for first time buyers. • Adoption of measures to enhance the quality of life in the area such as: <ul style="list-style-type: none"> - “Bonus baby” for new-born; - Economic incentives for family - Reimbursement of travel fees for students of secondary schools; - Educational services (cultural events) for all age groups 		
	Other	Energy Cooperative		

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues			<ul style="list-style-type: none"> • Employment opportunities; • welfare
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)	<ul style="list-style-type: none"> • Development of participatory and localised methods to engage ordinary citizens to invest in and realise the energy transition • Local or community ownership of wind farms should be also developed 		
	Other	Tax Cuts and landscape commitment		
Socio-environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value	<ul style="list-style-type: none"> • Selection of sites with no environmental restrictions in the area (e.g. natural reserve, protected area, SIC etc.) • Utilising advanced wind technologies (Layout design , including acoustic emission reduction, use of anti-reflective paints) • Maintenance of the road network and grid connection • Environmental education in schools • Dissemination of cognitive frameworks and comparative data on the impact caused by the different energy sources • Environmental Impact Assessment • Regional list of non-suitable areas for WE • Selection of sites without environmental restrictions 	<ul style="list-style-type: none"> • Repowering • Opening wind parks to the general public • Carefully designing and developing the plant's internal roads and infrastructures by involving local inhabitants • Acoustic emission control 	

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
	Measures to reduce impacts on wildlife and biodiversity	<ul style="list-style-type: none"> Guidelines building wind farms - Environmental Impact Assessment Utilising advanced wind technologies Regional list of non-suitable areas for WE Selection of sites without environmental restrictions Environmental Impact Assessment 		<ul style="list-style-type: none"> Repowering Research, Study and an in-depth analysis on the impacts Use of anti-reflective paints Acoustic emission control
	Other	<ul style="list-style-type: none"> Improving knowledge about the impacts of wind farms on nature and biodiversity Tax cuts and landscape commitment 		
Political and institutional barriers	Improvement of institutional and legal framework conditions			
	Trustworthy wind energy service units, new governance models, etc.	<ul style="list-style-type: none"> Energy Regional Plan (ERP) Energy planning implementation shared with local authorities, utilisation of transparent procedures, promotion of the role of facilitators/mediators, ensuring local authorities' access to third-party technical bodies. Cooperation/coordination among institutions responsible for policies at different levels PSLP - Participatory Local Development Plans - (Mod. URBACT program) 		
	Other	<ul style="list-style-type: none"> Guidelines for the constructing wind farms - Environmental Impact Assessment 	<ul style="list-style-type: none"> Public Authorities consultation during the final project phase 	
		Tax cuts and landscape commitment		

2.2.2.1 Potential solutions and strategies addressing procedural fairness

The Italian electricity sector is evolving rapidly due to the effects of the energy transition, focused on achieving sustainability goals and improving system security. The most significant elements of the new model are the integration and management of renewable energy, energy efficiency, grid digitalisation and storage systems. In 2017 the Italian government approved the National Energy Strategy setting out future policy goals for the electricity sector. The objective is to make the national energy system more competitive, more sustainable, and more secure. Italy has already achieved its 2020 renewable energy targets, with energy from renewable energy sources accounting for 17.5 % of total energy consumption in 2015, in comparison with the 17 % target to be reached by 2020. The new ambitious target set out by the 2017 National Energy Strategy is a 28% share of renewable energy in total energy consumption by 2030.

The general principles governing authorisation procedures for the construction and operation of generation facilities are set out under national law, notwithstanding each region may implement regional laws regulating the authorisation procedure within the national framework. Generally speaking, the authorisation procedures for the construction and operation of generation facilities depend upon the type of source (e.g. conventional or renewable sources), the capacity of the plant, the type of installation (i.e. ground-mounted or roof-top mounted), and the area where the project is supposed to be built (e.g. an area safeguarded from a landscape perspective).

Fairness in wind energy procedures implies an essential level of mutual trust (however defined) between communities, developers and state institutions. This is a necessary component of any process of civic engagement and for the public to ultimately accept the legitimacy of siting decisions. A perceived lack of fairness can be a central factor for creating conflicts over wind energy projects. Accordingly, improvements of procedural fairness could have a positive impact on local acceptance. The 11 experts from the target regions Abruzzo and Lazio perceive process-related factors such as opportunities for informal/formal participation and consultation in the planning and permitting process (average: +1.82) and information about projects and the transparency of the permitting process (average: +1.73) as drivers for the local acceptance of wind energy. The Italian Best Practice Sardinia Tax Cuts and Landscape Commitments addressed procedural fairness, also the Spanish Best Practice Som Energía - Energy Cooperative chosen by the Italian stakeholders to be transferred to Pescara aims at enhancing citizens' participation. In addition, further strategies addressing process related factors have been suggested in the stakeholder engagement and consultation activities.

Transparent communication

Communication misses the own targets when it does not provide meaningful information to the public, does not address the real concerns of people, and does not provide them with timely feedback. The stakeholder consultation in Italy has highlighted the role of effective communication which is accessible in all the decision-making process. A more creative problem solving is possible when the community is widely informed. Through communication and shared analysis, the communities are aided to improve the social-scientific knowledge and to avoid conflicts. Specifically, the solutions envisaged which required the involvement of the competent authority in each stage, are:

- Accessibility and availability of information (open to all or only to specific stakeholders) on the planning processes and authorisation procedures and about the costs and benefits of financial support. The information should be provide by the competent authority
- Shared analysis (campaigns/studies) on the real need for facilities and impact assessments (including technological aspects).

Effective formal participation and collaborative

Public participation on wind energy issues must be always supported by an in-depth information (clarity on the scope of any decision areas) and a “place-based approach” should be encouraged. A collaborative process brings together various sectors and community interests to work toward the common purpose of maintaining environment and landscape, but at the same time respond to the need to produce clean energy.

Competence and commitment (in public administration)

Competence (and commitment) in public administrations and legal authority to act are a fundamental pre-requisite for achieving the objective of good governance processes. Skills and professionalism as specific competencies are required for the public administrations and their employees in order to govern public goods and safety; to implement policies and administrative processes; to apply a public service perspective; to interact effectively within the administration and with citizens.

Effective informal participation

The participatory process should involve the project developer, local residents and local authorities through public meetings from the planning stage to the actual implementation.

2.2.2.2 Potential solutions and strategies addressing distributional fairness

The fair distribution of costs and benefits among all residents and persons affected, including those not directly benefiting from a wind power project as landowners is a strong driver for local acceptance. In Abruzzo and Lazio, the distribution of economic benefits and costs between actors within the community (average: +1.82) and between communities hosting wind power and other communities (average: +1.27) and the degree of local ownership of the plants (average: +1.27) are perceived as fostering wind energy development by the 11 regional experts participating in the WinWind survey.

Still, the stakeholders identified the need to further improve the distributional fairness in Abruzzo and Lazio. The Spanish Best Practice Som Energía – Energy Cooperative transferred to Pescara in May 2019 addresses distributional fairness. Further strategies have been suggested in the stakeholder engagement and consultation activities.

Active financial participation (direct and/or indirect benefits)

Individual commercial developers could play a role in voluntarily committing themselves to provide opportunities for active or passive financial participation of local communities or some other community benefits.

Local value creation

From local value creation, two categories of benefits can be highlighted: Direct (income of the municipality); Indirect (employment of workers).

The realisation of the plant, in addition to the environmental and economic benefits can also produce effects on local employment.

Local added value contributes to the perception of distributional fairness.

Direct financial participation and benefits

Financial Measures included in the budget of the municipalities can contribute as a driver for promoting social acceptance.

Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)

In Italy, the hosting municipalities were allowed to make agreements with the wind companies and received production-based royalties. The situation has changed since the adoption of the Ministerial Decree of September 9, 2010. The decree expresses very clearly that compensatory measures in favour of the municipalities are not due merely for the fact that they are hosting RES-plants. Compensatory measures are allowed only if the requirements linked to the implementation of the national energy strategy require high territorial concentrations of activities or the installation of high impact facilities and infrastructure. In addition, they cannot consist of pure monetary reimbursements and must be directly correlated to the impacts to be compensated, to energy efficiency interventions, to the diffusion of installations of renewable energy sources or to raise awareness of citizenship on the aforementioned themes.

In this context, individual commercial developers could play a role in voluntarily committing themselves to provide opportunities for active or passive financial participation of local communities or some other community benefits. Tula can be regarded as a representative case (cf. corresponding Best Practice case study Tax Cuts and Landscape Commitments in Sardinia).

Examples of passive financial participation that should improve social acceptability are:

- Tax reduction for household
 - Garbage tax: no change increase in the tax system for many years
 - Removal of Personal Income Tax (IRPEF): the additional tax for the municipality
 - Removal of the municipal real estate tax (IMU): IMU is waived for the first home
- Adoption of measures to enhance the quality of life in the area such as:
- “Baby bonus” for new-born;
 - Economic incentives for family
 - Reimbursement of travel fees for students of secondary schools;
 - Educational services (cultural events) for all age groups

2.2.2.3 Potential solutions and strategies addressing the impact on local economy

Currently, the economic impact is perceived as twofold in Abruzzo and Lazio: impacts on tourism sector (average: -1.36) and on agricultural sector (average: -0.91) are rated as barriers while impacts on local profits and income generation (average: +1.00) and on individuals` economy (average: +0.82) are evaluated as drivers by the experts participating in the stakeholder consultation survey.

In order to overcome misunderstandings on wind energy deployment, it is necessary that the Government and the Regions establish certain rules and ensure unambiguous procedures for the development of wind energy and for the achievement of the EU target to 2030. Only with a widespread growth of renewable sources, capable of exploiting the potential present in the different regions, it will be possible to achieve the set clean energy goals. Yet, the national guidelines for the assessment and approval of plants from renewable sources have never been approved, and therefore, for wind energy as for other renewables, there is a situation in which,

from time to time, it is necessary to find different solutions in the territories with the risk of appeals and controversy. A regulation (166/2009 of the Constitutional Court) came into force and ruled against the Region of Basilicata so that this is not allowed to provide independently the identification of criteria for the proper inclusion in the landscape of RES plants. This task, on the other hand, is the responsibility of the Ministry of Economic Development in agreement with the Ministries of the Environment and Cultural Heritage (Presidential Decree 387/2003).

The impact of wind power on the Italian economy (especially at local scale) is affected by the necessity to overcome other barriers such as administrative and authorisation barriers.

Apart from the Italian Best Practice Sardinia Tax Cuts and Landscape Commitment, some further interesting experiences have been developed on a local scale.

Economic effects of wind production on gross revenue achieved annually for every kWh produced and placed on the network;

- Use of resources for the implementation of services concerning young people; families, disabled and elderly (e.g. Tula Sardinia (ITA) benefits to students of all levels, incentives to families for newborns – abolition of the tax of property on the first home, reductions on the waste tax, realisation of public works)
- Improvement of the environmental culture of the municipality and citizens through a strong environmental policy for the reduction of energy bill, adopted by the local administration (Emas procedure, Covenant of the Mayor...)

2.2.2.4 Potential solutions and strategies addressing the impact on environment and landscape

Environmental concerns play an important role in the wind energy discourse in Abruzzo and Lazio. A significant part of the territory is protected, both for its cultural and its ecological value. Apart from the landscapes protected under the Code of Cultural Heritage and Landscape (2004, updated 2008), natural parks covering 10% of Italy and UNESCO world heritage sites have to be considered.

Consequently, socio-environmental factors are perceived as relevant barriers. The visibility of wind turbines (average: -1.82), the impacts on the physical environment (average: -2.55) and on biodiversity and wildlife (average: -2.18) are rated as strongly hindering the local wind energy development by the WinWind stakeholders participation in the online survey. The argument of no greenhouse gas emissions is not perceived as a relevant driver (average: +0.36).

The Ministry of Culture proposed guidelines for wind energy plants considering landscape characteristics (morphological, formal, historical, perception). Currently, the regions are the main promoters of directives and guidelines; in general, these are heterogeneous documents that consider landscape aspects only partially.

Regional plans, at the moment mostly not finalised, are an important tool for supporting the development of renewable energies. They have to provide clear guidelines regarding the criteria of landscape suitable for wind energy deployment considering historical and ecological landscape characteristics. Without a clear governance, conflicts concerning landscape arise at multiple

levels: institutional; between stakeholder groups; between local institutions and population; population.

Currently, a minority of regions approved an updated landscape plan, but all regions carry out landscape assessment procedures. Apart from the need for clear institutional regulations, several strategies addressing environmental factors have been suggested in the stakeholder engagement and consultation activities.

Measures to protect the local landscape and to reduce impacts on wildlife and biodiversity

The Italian Best Practice Repowering is an effective measure reducing impact both on the local landscape and on wildlife and biodiversity. Also the Best Practice Sardinia Tax Cuts and Landscape Commitment is a successful example combining economic, procedural and ecological drivers. In addition, several measures have been suggested:

- Selection of sites with no environmental restrictions in the area (natural reserve, protected area, SIC etc.)
- Accurate selection of advanced wind technologies (Layout design, including acoustic emission reduction, Use of anti-reflective paints)
- Take care/improvement of the road network and grid connection
- Environmental education at school
- Dissemination of cognitive frameworks and comparative data on the impact caused by the different energy sources
- Environmental Impact Assessment
- Regional list of non-suitable areas for WE
- Wind parks open to the general public
- Accurate definition of plant internal roads and infrastructures by involving local inhabitants in order to create benefits for the community such as a recreation area close to the wind farm (sport, music, hiking etc.)
- Open accessibility
- Acoustic emission control
- Use of anti-reflective paints
- Research, Study and an in-depth analysis on the impacts through the universities and the public bodies in charge

2.2.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

Reconciling energy targets with landscape conservation is a critical issue in Italy. This issue concerns, above all, RES with the highest residual potential still to be used, i.e. wind and solar photovoltaic. As landscape conservation is a mandatory requirement, the Italian National Energy Strategy (SEN) promotes the revamping and repowering of wind, hydro and geothermal power plants, assigns priority to brownfield sites, and allocates a greater number of resources for RES and energy efficiency enhancements.

In Italy, support schemes for RES-E are managed by Gestore dei Servizi Energetici (GSE – Manager of Electricity Services). Electricity generated from renewable energy sources is promoted through reduced VAT- and real estate tax deductions. The electricity from RES fed into the grid can be sold on the free market or to the GSE on a guaranteed minimum price (“ritiro dedicato”). Alternatively, renewable energy producers can opt for net-metering (“scambio sul posto”) which provides economical compensation to PV-producers for the electricity fed into the grid. In March 2018, the Ministry for Economic Development approved a draft of the Renewable Energy Ministerial Decree (“Decreto FER 2018-2020”) governing support schemes for renewable energies. Grid operators are obliged to give priority access to renewable energy plants. They are also obliged to give priority dispatch to electricity from renewable sources. Plant operators can request the grid operator to expand the grid if the connection of a plant requires this expansion.

The regional experts participating in the WinWind stakeholder consultation survey perceive these national/regional/local policies regarding financial support schemes (average: +1.00) and taxation (average: +1.18) as drivers for the development of wind energy. Also the national/regional/local wind energy targets (average: +1.36) and wind energy plans (average: +1.55) are evaluated as supportive.

To improve institutional and legal framework conditions, several strategies have been suggested by the stakeholders participating in the WinWind stakeholder activities.

Trustworthy wind energy service units, new governance models, etc.

The Regional Energy Plans (REP) develop and implement energy and environmental policies, develop alternatives to the consumption of hydrocarbons, limit the impact on the environment and on the public health caused by fossil fuels and enhance the participation in activities aiming at a sustainable development.

A current problem in developing the REP lies in the coordination between the different institutional levels. A participatory and constructive approach has to be taken. In particular, local authorities need to be involved, the role of facilitators has to be promoted, transparent procedures have to be identified and local authorities` access to third-party technical bodies has to be ensured.

- PSLP - Participatory Local Development Plans - (Mod. URBACT program)

In addition, Environmental Impact Assessment should be carried out and public authorities should offer consultations to the general public.

A Best Practice addressing political and institutional barriers is the Sardinia Tax Cuts and Landscape Commitment.

2.2.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for Abruzzo and Lazio

- Participatory and constructive approach in developing Regional Energy Plans (REP)
- Repowering
- Environmental Impact Assessment
- Local Impact Assessment
- Clear regulatory framework including criteria for landscape protection
- Tax reduction for local residents
- Measures enhancing quality of life
- Public participation and transparency of the decision-making process
- Facilitate energy cooperatives
- Facilitate community owned wind farms

2.3 Latvia

In Latvia, the strategic goal of stakeholder engagement and consultation was to facilitate a solution-oriented dialogue and common understanding to promote effective and socially accepted solutions for wind energy development.

Key objectives of the stakeholder dialogues were:

- To reach a common understanding about existing barriers and critical issues on wind energy development in the whole country;
- To recognise and understand the role and influence of social acceptance;
- To motivate and mobilise stakeholders for a common dialogue;
- To share the knowledge of best practices identified within the WinWind project with a wider group of stakeholders.
- To assess solutions to improve social acceptance
- To identify transferable best-practices and provide input on their adaption

In the frame of the WinWind project, feedback was obtained:

- Through the regular stakeholder desk meetings and dialogue,
- Through complementary thematic workshops and policy roundtables,
- Through dedicated stakeholder consultations (e.g. via expert interviews, focus groups and on-line survey).

In Latvia, the dedicated stakeholder consultations generated important insights on general and region specific market barriers and on general and region specific social acceptance problems and obstacles as well as on strategies to address these barriers.

2.3.1 Results of the activities carried out

In Latvia, two desk meetings, two thematic workshops, one policy roundtable and several stakeholder consultations have taken place. The final thematic workshop combined with the final desk meeting will be carried out in January 2020. The topics addressed in Latvia are:

- Factors having an impact on on-shore wind energy development
- Policy issues and policy instruments to promote on-shore development
- Good and Best Practices
- Community Energy

Details about the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the Deliverables D3.3²¹, D3.4²² and D3.5²³.

The following sections summarise the results especially relevant for strategies and solutions addressing acceptance barriers.

²¹ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

²² [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

²³ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.3.1.1 Main barriers in Latvia

Results from the online consultation with the stakeholders carried out in June-July 2019 indicate that the size of modern projects, the distance of wind turbines from residential areas, the impacts on the physical environment, on biodiversity and wildlife, on health and well-being and on quality of life are relevant barriers (evaluation average <-1).

The WinWind stakeholders perceive socio-environmental barriers as the core factors hindering wind energy development in Latvia. Both the physical and the socio-cultural value of the landscape seem to be crucial for the Latvian population. In addition, health and well-being are important concerns and are perceived as stronger barriers in Latvia than in most of the other WinWind regions. Latvian stakeholders also differ in their perception of the impact on the agricultural sector as a barrier (average: -0.88, evaluated as neutral or as a driver in DE, NO, PL, ES) and in their low rating of the impacts on local profits and income generation (average: +0.60, average \geq +1 in other WinWind regions).

On the other hand, regional (or national if regional is unknown) share of renewables in the electricity sector is rated in Latvia as a more relevant driver than in the other WinWind regions (average: +1.5; average < +1 in IT, NO, PL, ES). Also, the need for other infrastructure improvement seems to have a regional importance (average: +0.88, perceived as a driver only in Poland and Latvia).

The potential solutions to address social acceptance barriers derived from the stakeholder engagement and consultations reflect the particular importance of socio-environmental concerns, of health and well-being and of infrastructure in Latvia.

2.3.1.2 Latvian Best Practice

As Latvian Best Practice, the WinWind consortium agreed on the “Proactive Landscape Planning North Vidzeme”

Proactive Landscape Planning North Vidzeme

The planning measure undertaken at the national level in the WESR region of Latvia, North Vidzeme concerns wind energy zoning in a protected region – North Vidzeme Biosphere Reserve (NVBR). This area is significant in the sense that it is one of high national and international biodiversity and cultural heritage as well as also being a zone suitable for wind energy considering its wind speeds. The measure demonstrates the method for planning unconventional landscape elements, such as wind turbines, in protected landscapes, while maintaining the values of the biosphere reserve. Within the Landscape Ecological Plan (LEP), those biosphere reserve zones were defined as where single wind turbines and their groups may be located. These were enabled by agreements among stakeholders on zoning. The stated wind energy areas had been established at the national level by the Cabinet of Ministers Regulation No.353 (2008). In sum, this is a case which demonstrates that the performance of planning at the regional level, based on the LEP methodology, may allow wind energy developments which do not compromise the values of biodiversity, nature and culture heritage of the region.

The WinWind analysis showed that the initial barriers of the impact on the environment, the socio-cultural values attached to the land, the ineffective regulatory framework and the lack of trust in key actors could be addressed by the measure based on the following drivers:

Impact on environment

- Reducing the impact on biodiversity/wildlife: use of an assessment instrument mapping the risks and identifying the risk territories
- Reducing impact on landscape: The application of the LEP methodology made it possible to agree on criteria for permitting the deployment of wind energy

Individual characteristics

- Concern for socio-cultural features: LEP does not allow wind energy near valuable heritage sites and landscape of high visual quality; consideration of local people`s lifestyles

Procedural participation and trust

- Effective formal participation of citizens: local community was entitled to object to wind energy specific areas (public discussions, public survey)
- Trust in key actors: achieved in several participatory phases, most importantly during the elaboration of the LEP

Due to a number of reasons such as the radical change in national regulation on setback distances for wind parks and turbines adopted in 2013 setting a minimum distance of 500m from buildings in rural and of 1.000m in densely populated areas, wind parks have not yet been developed in the North Vidzeme region. Thus, it is difficult to determine the effectiveness of this measure to promote social acceptance. However, the determination of this process and the zoning, which has already been carried out has significantly improved the social acceptance of the stakeholders and citizens who are particularly engaged with the matter.

There are no clear barriers for the transferability of the LEP approach. It is important to note that the transferability relates to the main principles and approaches, not to the specific features of the practice and the way these features were implemented in the NVBR zoning procedures. The mapping methods are not by themselves the solution.

2.3.2 Potential solutions to address social acceptance barriers in Latvia

The following table summarises the Latvian tailor-made strategies and solutions derived from the stakeholder engagement and consultations.

Table 7: Potential solutions to address acceptance barriers in the target regions in Latvia

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> National guidelines for RES project-developers Availability of credible information Information dissemination Communication on local benefits Joint working group Transparent negotiation and decision-making 	<ul style="list-style-type: none"> Communication that state-of-art wind energy technologies are required and will be used Communication on what requirements are needed for dismantling of the turbines and after technical life-time 	Wind park operator ensures communication on <ul style="list-style-type: none"> Results of birds and bats monitoring Benefits provided Any problems occurred
	Effective formal participation	<ul style="list-style-type: none"> Use of all formal public participation options Support municipalities in providing information and support 		

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
	Effective informal participation	<ul style="list-style-type: none"> • Diverse forms of informal participation – disseminate effective methods • Participation in decision making on wind turbine location • Surveys about inhabitant's awareness and attitude towards a planned wind farm • Consider informal participation formats in the administrative territorial reform • Strategies for transparent communication 		
	Other	Community wind farms		
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)	<ul style="list-style-type: none"> • Offer wind park shares • Community wind parks 	<ul style="list-style-type: none"> • Sign framework conditions for involvement of local STK 	
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)	<ul style="list-style-type: none"> • Information dissemination on best practices • Rent to land owners • Land lease pool model • Agreements among land owners • Local non-profit fund • Compensations for households 	<ul style="list-style-type: none"> • National framework conditions • Administrative Contract • Establish land lease pool model 	<p>Self-government and/or local fund administration ensure active communication on use of revenues</p>
	Other	Community wind farms		

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues	Statement on wind park contribution to self-government budget		Active communication on use of revenues
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)	Statement on wind park contribution to contracting local companies		Transparent communication on local business involvement
	Other	<ul style="list-style-type: none"> • Renovation of local roads • Community wind farms 		
Socio-environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value	<ul style="list-style-type: none"> • Siting in areas with low population density • Improvement of roads quality • Guarantee for dismantling works • Pro-active planning (Northern Vidzeme Biosphere Reserve) 	Administrative contract on compensation mechanisms	<ul style="list-style-type: none"> • Active and transparent communication on implemented measures • Compensatory activities • Development of new recreation area • Repowering
	Measures to reduce impacts on wildlife and biodiversity	<ul style="list-style-type: none"> • Promote protection of birds and bats, feeding ground areas and mitigation routes • EIA process and EIA statement 	Include EIA procedure in Administrative Contract	<ul style="list-style-type: none"> • Monitoring, particularly regarding birds and bats • Compensatory measures • Repowering

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
	Other	<ul style="list-style-type: none"> • Setback distances • Availability of credible information on impacts due to visual effects, electromagnetic radiation, noise • Elaboration of national regulation 		Monitoring of effects (as far as technically feasible)
Political and institutional barriers	Improvement of institutional and legal framework conditions			
	Trustworthy wind energy service units, new governance models, etc.	<ul style="list-style-type: none"> • Including clear framework conditions in municipal planning documents • Providing active and transparent communication • National regulation defining procedures and operational principles • Administrative Contract • Pilot projects of community wind parks • Consultative expert point • National RES projects` support fund 	<ul style="list-style-type: none"> • Adequate communication • Administrative Contract 	Annual sustainability public report of wind park

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
	Other	<ul style="list-style-type: none"> • Reforming taxation system • Lobbyism • Education of wind energy • Information dissemination • Capacity buildings of municipal specialists and planners • Linkage of energy communities and local/regional development 		

2.3.2.1 Potential solutions and strategies addressing procedural fairness

The Latvian stakeholders consider procedural fairness as a driver for the social acceptance of wind energy. In the stakeholder consultation survey, information about projects and the transparency of the permitting process was evaluated in average with +0.75 and opportunities for informal/formal participation and consultation in the planning and permitting process in average with +0.58. Trust in processes (average: +0.63) and trust in information (average: +0.67) also seem to positively influence the deployment of wind energy. In national desk meetings, thematic workshops, policy roundtables and stakeholder consultations, the Latvian stakeholders proposed several strategies to enhance the procedural fairness.

Stakeholders perceive community wind parks as an effective measure for improving procedural fairness. The German best practice “community wind farm and local benefit sharing” addressing impact on the local economy, impact on environment and landscape, distributive fairness and procedural fairness was chosen to be transferred to Latvia. A further proposal concerned the establishment of a joint working group including the representative of self-government, local stakeholders/local people and wind park developers performing negotiations in all stages is proposed.

Transparent communication

In Latvia, there is a lack of public information/awareness on wind energy. In the frame of a recent Environmental Impact Assessment (EIA) (2018) carried out for a planned wind farm project in the region of Zemgale, a population survey was carried out in the area of the planned wind park. This survey showed that around the half of local people in the vicinity of the wind park is not informed on the planned project and a significant part of respondents indicated that information on the negative impacts of wind parks is based on their own personal thoughts. This points out that improvement of communication should be a focus of any future endeavour to raise social acceptance of wind energy. Credible information on the impact on health, wildlife, biodiversity, particular wind energy technologies allowing to minimise negative impacts and, in the operation phase, on the results of birds and bats monitoring and on benefits provided to the local community should be made available. To minimise the knowledge gap between professional wind energy developers on the one hand and municipal decision-makers, specialists of municipal administration and local citizens on the other, the responsibility for clear and transparent communication should be with the wind park developer and with the national government developing guidelines for RES project developers.

Transparent communication is crucial throughout the planning/siting, the authorisation/permitting and the operation and maintenance of the wind turbines. In the planning/siting phase, a joint working group should be established, negotiation and decision-making should be carried out transparently and project developers should follow the guidelines provided by the national government. In the initial phase, the availability and dissemination of credible information with a focus on local benefits is crucial. In the authorisation/permitting phase, focus is on communicating that state-of-art technologies are required and will be used and what requirements for dismantling of the turbines after its technical lifetimes are stated. Finally, communication on the results of birds

and bats monitoring, on the benefits provided and on any problems occurred has to be ensured during operation and maintenance of the turbines.

However, the trust in information continues to be rather low, and therefore the information and communication process should be given a greater political consideration.

Effective formal participation

The possibilities of formal participation and consultation in the planning process at municipal level are rather well developed in Latvia (details provided in the WinWind Deliverable 6.1). Still, a more detailed planning and the creation of maps of wind energy areas at the stage of municipal development and spatial planning by the active use of all formal public participation options should be carried out. Moreover, the framework conditions on wind energy development should be established within the spatial planning procedure.

By now, municipalities are rather reluctant to develop precise wind park areas zoning within the spatial plan. The reason could be that local administration often lack the capacities and resources to cope with the complex issue of planning wind turbines and ensuring public participation on this. In its turn, the lack of clear and widely discussed framework for siting wind plants in the municipality territory is one of important reasons causing future opposition to particular wind park projects. This barrier should be addressed by supporting the municipalities in providing information and support.

Effective formal participation is especially important in the planning/siting of a wind turbine, all options for formal public participation should be used.

Effective informal participation

The public survey carried out in the frame of the EIA procedure (see above) indicates that a high number of local residents (40%) did not consider important to be involved in public discussion events on wind park project and 30% respondents had no opinion. Partially this result could be explained by the individual characteristics of the respondents. On the other hand, this may reflect distrust in processes / difficulties to impact the decisions. It follows that an effective informal participation is a challenge as people are mostly not willing to get involved. Partially, this can be addressed by public authorities by providing informal methods for a wider dissemination of information on the planning and on particular wind projects.

There are positive examples of informal participation in Latvia, e.g. a voluntary survey about inhabitant's awareness and attitude towards a wind farm, commissioned by a public body (municipality) during the planning and permitting stage, but the dissemination of effective informal participation methods among wind park developers, municipalities and local communities should be improved. There is a need to support municipalities and local communities by providing "neutral" information and advice regarding the planning of wind plants, including informal procedural participation formats, among them formats for direct dialogue with citizens. This issue should be considered in the context of the planned administrative territorial reform in Latvia (decreasing the number of local municipalities around 3 times, to be accomplished in 2021).

Effective informal participation is especially important in the planning/siting of a wind turbine. In this phase, the crucial strategies to enable transparent communication are also important for an effective informal participation. People should be well informed and participate in the decision making from the very beginning, e.g. in the location of the wind turbine.

2.3.2.2 Potential solutions and strategies addressing distributional fairness

Distributional fairness is perceived as a potential driver for the wind energy deployment in Latvia. The distribution of economic benefits and costs between actors within the community is evaluated in average with +0.88 by the Latvian stakeholders, also the distribution of benefits and costs between communities hosting wind power and other communities (average: +0.80) and the degree of local ownership of the plants (average: +1.00) are evaluated as having a positive impact on local acceptance of wind energy.

The best practice measure chosen by the Latvian stakeholders to be transferred to Latvia, the German “community wind farm and local benefit sharing”, focuses on distributional justice by enabling both active and passive financial participation of citizens.

To promote community wind farms in Latvia and to enhance distributional fairness in general, further strategies have been proposed in desk meetings, thematic workshops, policy roundtables and stakeholder consultations.

Active financial participation

To enable an easy active financial participation, a legal framework promoting community wind parks and financial support by the national government should be established. A certain fraction of wind park shares should be offered to inhabitants of the local community as well as to local public stakeholders (as in the Best Practice Community Wind Farm in Germany). An Administrative Contract should regulate the conditions for the involvement of local stakeholders.

Passive financial participation

The land lease pool model offering rent both to the owners of the land with the wind turbines and to the owners of the neighbouring lands as applied in the best practice (Germany) is perceived as a measure to increase local acceptance. Even now, landowners are generally positive and the EIA (2018) showed that the shares of local respondents who consider the impact on property value to be negative or positive are almost equally large (respectively 22% and 18%). Agreements among landowners or applying a land lease pool model instead of paying rent only to the land owners holding the turbines could increase the positive effect of wind energy on land value.

Compensations for households placed in the certain distance from the siting and the contribution of the wind park to a local non-profit fund or fixed voluntary donations per MWh to the local community as done by Nelja Energia (operating in Estonia and Lithuania) are evaluated as effective strategies.

National framework conditions should promote passive financial participation, administrative contracts should regulate the conditions for the transparent communication of the use of money in the local non-profit fund.

In addition, information on best practices should be disseminated.

2.3.2.3 Potential solutions and strategies addressing the impact on local economy

The impact on local economy is evaluated as both fostering and hindering the deployment of wind energy in Latvia. On the one hand, the current impacts on tourism sector (average: -0.17) seem to be neutral while the impacts on the agricultural sector (average: -0.88) are perceived as reducing local acceptance. On the other hand, the impacts on local profits and income generation (average: 0.60) and on individuals` economy (average: 0.84) are evaluated as positively influencing the local acceptance of wind energy in the WinWind stakeholder consultation survey. The EIA (2018) conducted for the planned wind parks in Zemgale indicates that around 40% of respondents consider that the development of wind parks might have a positive impact on local/municipal development, another 40% respondents are neutral. It follows that the impact on local economy in Latvia is an important driver.

The best practice chosen to be transferred to Latvia strongly addresses the positive impact on local economy. The strategies used in the German case to create local added value are perceived as effective for the Latvian context as well.

Jobs, revenues, increased local tax revenues

As described above, the contribution of the wind park to a local non-profit fund or fixed voluntary donations per MWh to the local community as done by Nelja Energia (operating in Estonia and Lithuania) is evaluated as an effective strategies. However an active communication on the use of the revenues has to be ensured.

Involvement of regional businesses

The wind park developers should make use of contracting procedures favouring local companies for the construction of wind park, related roads etc. and also involve local banks and communicate that transparently to the local community.

Other

The renovation of local roads is an effective strategy enhancing local acceptance (EIA, 2018).

2.3.2.4 Potential solutions and strategies addressing the impact on environment and landscape

In Latvia, the impact on environment and landscape is an important concern regarding wind energy projects. The recent survey, which was carried out in the frame of the EIA procedure for the wind park in the region of Zemgale (see above), indicates that a significant part of local respondents (44%) consider that the development of wind parks will have or might have a negative impact on nature. The Latvian stakeholders participating in the WinWind project rated the visibility of wind turbines in average with -0.96. The impacts on the physical environment (e.g. landscape, protected areas, increased traffic) are evaluated as the strongest barrier (average: -2.00). Effects of wind energy plants on biodiversity and wildlife, especially avio-fauna, is an important factor expressed by the Latvian society and NGOs in general and in particular by local citizens in EIA procedures. Also concerns on avio-fauna is a popular argument against wind power. In the WinWind stakeholder consultation survey, the impacts on biodiversity and wildlife are rated in average with -1.68. At the same time, the impacts on greenhouse gas emissions seem to be a driver (average: 1.72), even if the reduction of GHG emissions is not perceived as an important argument for wind power in current public discourses as Latvia has already a high RES share in its energy mix.

The German best practice community wind farm in Schleswig-Holstein chosen by the Latvian stakeholders to be “transferred” to Latvia address also environmental factors. The wind farm operators in the case of *Grenzstrom Vindtved* established a local nature protection association for the management of compensation activities. In Ellhöft, the operators of the plant supported the development of a new recreation area in the community, as well as a hiking, riding and bicycle path. Additionally, the repowering in *Grenzstrom Vindtved* allowed the replacement of numerous older turbines by a smaller number of modern and more powerful ones which had a positive effect for the landscape.

Apart from the positive evaluation of the strategies applied in Schleswig-Holstein, the Latvian stakeholders proposed further strategies to improve the impact on environment and landscape.

Measures to protect the local landscape, both its physical and socio-cultural value

To protect the local landscape, wind parks should be sited in areas with low population density. Additionally, the wind park operator should improve the road quality in the local community/municipality and guarantee for dismantling works. The compensation mechanisms have to be regulated in the so-called “Administrative Contract”, measures have to be communicated actively and transparently.

A good practice example is the pro-active planning for wind energy suitable areas in the Northern Vidzeme Biosphere Reserve, a spatial planning based on the landscape ecological planning method for wind energy areas in valuable environmental and landscape territory.

Measures to reduce impacts on wildlife and biodiversity

To reduce impacts on wildlife and biodiversity, wind park area maps should be developed taking into account the conditions for birds and bats nesting, feeding ground areas and migration routes. The public trust in the EIA process and EIA statement has to increase and the EIA procedure has

to be included in the Administrative Contract. Finally, the impacts on birds and bats have to be monitored.

Other

Another important concern in Latvia is the impact on health (impacts on health and well-being in the stakeholder consultation survey: average -1.88). This issue can be addressed by setting adequate setback distances from residential areas, by the availability of transparent and credible information on expected impacts on health and by a further elaboration of national normative regulation and setting limit values for low-frequency noise and overall noise, vibration and shadow-flicker. The effects should be monitored as far as technically feasible.

2.3.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

In Latvia, institutional and legal framework conditions seem to have a positive rather than a negative impact on wind energy deployment. In the WinWind stakeholder consultation survey, national/regional/local wind energy targets (average: +1.33) and national/regional/local wind energy plans (average: +1.08) are evaluated as drivers, while national/regional/local wind energy policies regarding taxation (average: +0.38) and financial support schemes (average: +0.29) do not seem to have a significant impact on wind energy development.

At the national level, there are important on-going discussion on RES development and on the definition of an indicative national RES 2030 target within the Integrated National Climate-Energy Plan 2030. At the municipal level, support for wind energy has been expressed in the municipal planning documents (municipality sustainable development strategy, development programme, zoning for wind energy in municipality spatial plan).

Trustworthy wind energy service unity, new governance models, etc.

Including clear framework conditions (methods) on how to involve local communities and share benefits from wind power in the municipal planning documents could be an important acceptance promoting factor. Active and transparent communication is seen as crucial, especially in the very early stages. In addition, pilot projects of community wind parks, the establishment of a advisory body and of a national RES projects` support fund available for renewable energy communities might be promising policy strategies. The Administrative Contract between the wind park developer and the self-government remains a central element. The procedures and operational principles should be defined in national regulations. Each wind park operator should be obliged to provide an annual sustainability report.

Other

In addition, the taxation system should be reformed in order to enable the host municipalities to financially benefit from wind parks and complementary awareness raising and education about wind energy should be provided. Furthermore, capacity building of municipal technical staff and planners and the community ownership of wind farms should be encouraged.

2.3.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for Riga, Vidzeme, Zemgale and Latgale

- National guidelines for RES project developers
- Communication on local benefits, impact on birds and bats, technologies used
- Use of all formal public participation opportunities
- Support municipalities in providing information and consultation
- Voluntary surveys about inhabitant`s awareness and attitude towards wind farm
- Facilitate community wind farms (legal framework; financial support)
- Land lease pool model
- Local non-profit fund
- Renovation of local roads
- Guaranteeing for dismantling work
- Pro-active planning (Northern-Vidzeme)
- EIA process and EIA statement
- Monitoring of effects (birds and bats; noise; etc.)

2.4 Norway

In Norway, the strategic goal of stakeholder engagement and consultation was to assess the importance of barriers and drivers and to discuss measures that may affect the social acceptability.

The goals of the different stakeholder consultations included

- Exchanging experiences
- Identifying important factors affecting social acceptability
- Identifying innovative measures and processes
- Increasing local knowledge about the target region Fosen
- Exploring possibilities for learning and transferring knowledge and ideas from other countries or regions

The dedicated stakeholder consultations aimed to complement the country desk meetings and the thematic workshops in receiving feedback on best practices and their transferability, on specific social acceptance problems, barriers and drivers by spreading the online stakeholder consultation survey among the stakeholders. The Norwegian partner CICERO developed the survey based on the taxonomy of barriers and drivers (Deliverable 2.3²⁴).

The stakeholder engagement and consultations generated important insights on general and region specific market barriers and on general and region specific social acceptance problems and barriers as well as on strategies to address these barriers identified.

2.4.1 Results of the activities carried out

In Norway, four desk meetings, two thematic workshops, one policy roundtable, one final thematic workshop and several stakeholder consultations have taken place. The topics addressed were

- Climate vs. Environment
- Fosen: Local context and barriers
- Minority rights
- Good practices and transfer opportunities
- What do we know and where do we go?

Detailed descriptions of the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the deliverables D3.3²⁵, D3.4²⁶ and D3.5²⁷.

The following sections summarise the results especially relevant for strategies and solutions addressing acceptance barriers.

²⁴ [Deliverable 2.3: Taxonomy of social acceptance drivers and barriers](#)

²⁵ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

²⁶ [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

²⁷ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.4.1.1 Main barriers in Norway

Results from the online consultation carried out in June-July 2019 with the stakeholders in the target region Mid-Norway indicate that impacts on the physical environment (e.g. landscape, protected areas, increased traffic) is the most important acceptance barrier (average -2.0, with 48% of the respondents giving the factor a score of -3, which indicates that the factor is sufficient to prevent projects from being realised), followed by the visibility of wind turbines (average -1.7, 20% gave it a score of -3), the size of modern projects (average -1.7, 28% gave a score of -3), and impacts on biodiversity and wildlife (average -1.7, 22% gave a score of -3).

Unlike in the other WinWind regions, where the discourse on wind energy in the public sphere/media is on average considered to have a neutral impact on social acceptance, the public discourse on wind energy is rated as the fifth most important social acceptance barrier in Mid-Norway (average -1.3). A few of the respondents even scored this factor as having an impact of -3, i.e. that this factor, by itself, is sufficient to prevent projects from being realised.

These results correspond well with the overall impression that wind energy development has become subject to an increasing amount of opposition in the public sphere and media over the past few years. The strong opposition in the public discourse often revolves around other important acceptance factors, including perceived or real impacts on the physical environment (average -2.0), biodiversity and wildlife (average -1.7), impacts on quality of life including recreational opportunities (average -1.2) and sense of place (-1.2), but also a perceived lack of economic benefits to local communities and individuals and the fact that Norway already has close to 100% share of renewables.

2.4.1.2 Norwegian Best Practices

As Best Practices enhancing local acceptance in the Norwegian context and possibly transferable to other regions/countries, the local house Birkenes and the Fosen community dialogue have been chosen.

Local House Birkenes

In the Norwegian municipality of Birkenes, the national regulator has given E.ON Vind Norway a permit to develop 21 wind turbines. Before the permit was issued, as part of a broader voluntary agreement, the developer offered to build a local maintenance and educational house, labelled the 'innovation house' in Birkenes. In the agreement, the developer states that it is positive towards building the house from local timber. It will serve as a local educational centre, promoting understanding and social acceptance of wind energy. Another part of the agreement was to reduce possible negative effects of the construction and operation of the wind power plants for local interests, by ensuring reasonable and relevant mitigation measures. This agreement tipped the political majority in the municipality in favour of wind power development in Birkenes, yet only marginally. The fact that the local council supported the wind project has probably made it politically easier for the Ministry of Petroleum and Energy to decide to give the developer the permit. The local businesses were very important actors in persuading politicians to initiate negotiations with the developer.

The measure addresses the following drivers:

Procedural participation and trust

- Transparent communication: innovation house engages citizens in the operation of the wind power plant
- Effective informal participation: Direct community involvement in the permitting process and in the operating phase

Impact on economy

- Impact on local economy: Innovation house is expected to have a positive effect on the local economy; developer and subcontractors make use of local products and services

Impact on environment

- Impact on GHG emission: Use of local timber, local glass fibre and renewable energy rather than fossil fuels reduce footprint of the construction phase

While the innovation house and the other mitigating and compensatory measures have been important for tipping the majority of the municipal council to vote in favour of the proposed project, it is uncertain to what extent the measure has affected local acceptance in the population as a whole. Moreover, there is still considerable resistance. In addition, the innovation house itself has not been decisive for increasing social acceptance. The most important contents in the agreement with E.ON, that made more politicians vote in favour of the project, were the mitigating and compensatory measures. The local society remains split on the issue.

The measure can be transferred to other regions, but it would be useful to adapt it to local contexts, depending on what local businesses and resources exist. Generally, the transferability of the innovation house is high, as it is not considered as being too resource demanding for a developer to build a house and attend for some educational purposes.

There was no interest from any learning region in transferring the local house Birkenes to their region.

Fosen Community Dialogue

The Fosen project is one of the biggest onshore wind energy projects in Europe. In terms of social acceptance, the Fosen wind energy case is interesting because the dialogue has been extensive. The national regulator arranged 35 meetings between the developers and the local community. These dialogue meetings were primarily a policy measure that provides information from the regulator and developer to the population and vice versa. These were part of the concession process, but in contrast to other concession processes, which focus on one particular project, the four projects were coordinated and discussed in the same process. The Sami Parliament of Norway (who were the key affected stakeholders and opposition) and the reindeer herder groups in Fosen both requested that the Fosen projects be considered together. This was to get a better idea of the overall impacts, before they could evaluate which projects should be granted concessions.

The stakeholder engagement and consultations outlined that the initial barriers of socio-cultural factors, a perceived negative impact on the environment and a lack of trust in key actors and planning processes could be addressed mainly because of the following drivers included in the measure:

Procedural participation and trust

- Effective formal participation: policy measure engaging the local community in the decision-making and planning
- Effective informal participation: NVE arranged a total of 65 meetings

Environmental impact

- Impact on biodiversity/wildlife: Modification of power line pathway and further investigations of the environmental impacts

Impact on economy

- Impact on local economy: improved infrastructure; increased tax income; local jobs; increase of the activities of the local business

Market

- Security of supply of energy: wind energy development meeting existing energy demand and security of supply in the region

Although this measure has been highly resource-demanding, especially with regard to the organisation of all the meetings, several stakeholders argue that it has been effective. The meetings have contributed towards creating legitimacy of the process and trust in the national regulator, who decides whether to give a permitting license after mapping out the advantages and disadvantages of wind power projects.

The transfer potential is high, as almost all the EU states involve the public in consultations during the licensing process and/or spatial planning processes.

2.4.2 Potential solutions to address social acceptance barriers in Norway

The following table summarises the Norwegian tailor-made strategies and solutions derived from the stakeholder engagement and consultations.

Table 8: Potential solutions to address acceptance barriers in the target region Mid-Norway

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> Fast technology development: projects different than originally planned – negative reactions Solution: provide more precise licenses which must be used faster than today's licensing rules suggest 		
	Effective formal participation		Establish a committee with representatives from the regional level and from minorities such as the Sami people that selects who carries out the impact assessments	
	Effective informal participation	<ul style="list-style-type: none"> The government should more actively participate in discussions in social media (e.g. Facebook) to share information. Local common counselling forums 		
	Other			
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)			
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)			<ul style="list-style-type: none"> Basic interest tax for wind power Parts of tax for municipality

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
	Other			Corporate compensatory measures
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues	Road construction		<ul style="list-style-type: none"> • Basic interest tax on wind power • Parts of this tax for municipality
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)			
	Other	Corporate local compensatory measures having a positive impact on tourism		
Socio- environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value	<ul style="list-style-type: none"> • Improve knowledge • Placing close to already existing infrastructure, not in untouched nature • For each area set aside for wind power development, area of same size set aside where nature remains untouched • Plans for how to bring area back to its natural state 		Wind parks open to the general public
	Measures to reduce impacts on wildlife and biodiversity	Same as for measures to protect the local landscape		Research and Development
	Other	Improve knowledge about impacts on nature and biodiversity		Innovation houses in wind parks contributing with information about wind power energy

Political and institutional barriers	Improvement of institutional and legal framework conditions		
	Trustworthy wind energy service units, new governance models, etc.	The government should follow up the process with the National frame with a clear message on how much power should be deployed and what the power should be used for (i.e. export, domestic production, electrification).	<ul style="list-style-type: none"> • Basic interest tax • Part of tax for municipality

2.4.2.1 Potential solutions and strategies addressing procedural fairness

In general, there is high trust in Norwegian laws, institutions and regulations of the energy sector. Planning of energy power plants is not a local responsibility, but in the hands of national authorities. The regulator, the Norwegian Water Resources and Energy Directorate (NVE), is a directorate under the Ministry of Petroleum and Energy (OED) with responsibility for the management of the nation's water and energy resources and a trusted organisation. The licensing process involves the public in open hearings. The concession process is transparent in terms of making all the documentation publicly available on its home page and carrying out public meetings.

Subsequently, it is not surprising that factors related to procedural fairness are evaluated as drivers for wind energy in the WinWind target region of mid-Norway. Trust in processes (average: 1.21), trust in information (average: 1.25), opportunities for informal/formal participation and consultation in the planning and permitting process (average: 1.05) and information about projects and the transparency of the permitting process (average: 0.95) are perceived as positively influencing the development of wind energy.

Still, opponents argue that the regulators sing from the same hymn sheet as the wind energy developers and that the process is not sufficiently transparent, as for example land owners and developers have sometimes already made agreements prior to a project has been reported to the regulator (i.e. before entering into the concession process).

Accordingly, improvement of procedural fairness could have a positive impact on local acceptance. In the stakeholder engagement and consultation activities, several strategies addressing related factors have been suggested.

Transparent communication

The technology is developing quickly. Few, tall turbines replace many, small ones, and they are placed somewhat differently in the terrain to what was originally planned. When a final project is very different than what was originally planned (i.e. the developer is allowed to use the best available technology), people react negatively. One solution is to provide more precise licenses, which must be used faster than today's licensing rules suggest. Today the common rule is that the project needs to be implemented within 5 years including a possibility of an extension of 5 years.

Effective formal participation

To ensure effective formal participation, a committee with representatives from the regional level and from minorities such as the Sami people that selects who carries out the impact assessments should be established.

Effective informal participation

To address both the procedural fairness and the public discourse on wind energy (important social acceptance barrier in mid-Norway), the government should more actively participate in discussions in social media (e.g. Facebook) to share information. In addition, local common counselling forums as established at Hitra in 2001 between the municipality, local businesses and nature, environment and recreational interest groups are a promising form of informal participation. Ever since 2001, the regulator advises municipalities and local interest groups to establish such forums.

2.4.2.2 Potential solutions and strategies addressing distributional fairness

Distributional justice is not perceived as an important barrier or driver by the stakeholders from the Norwegian target region. The distribution of economic benefits and costs between actors within the community (average: +0.14) and between communities hosting wind power and other communities (average: +0.24) are perceived as neutral while the degree of local ownership of the plants seems to be a potential driver (average: +0.85).

By now, many foreign companies invest in Norwegian wind power. Foreign ownership is mentioned in the news and in discussions, but not (yet) an important social acceptance barrier. In Fosen, Statkraft is responsible for project execution on behalf of Fosen Vind. The joint venture is owned by the Norwegian utilities TrønderEnergi and Statkraft, and the European investor consortium Nordic Wind Power DA. Wind Power DA is established by Credit Suisse Energy Infrastructure Partners and is supported by the Swiss power company BKW. The fact that a regional owner is part of the project has been considered as being a driver for social acceptance initially, although perhaps not a necessary condition.

The biggest challenge for distributional fairness in Norway is the impact of wind power on the indigenous people's way of living, in particular reindeer herding by increasing pressure on land and untouched nature. Most of the land in Northern Norway is used for raising reindeer. In the Fosen Vind project area there is about 2100 reindeers. Reindeers are not kept in captivity but roam free on pasture grounds. The UN Committee on the Elimination of Racial Discrimination has asked Norway to stop the ongoing wind power constructions in Fosen.

Measures proposed to protect the rights of Sami population and to ensure their involvement are described under section 1.4.2.1 – Potential solutions and strategies addressing procedural fairness. But not only the indigenous people, also the general public values untouched nature and expresses the need of compensation.

Active financial participation (direct and/or indirect)

To enhance the profit of the municipality and the local population, a basic interest tax on wind power, such as for oil, natural gas and large hydropower plants, and earmark parts of this tax for the municipality, as is the case for large hydropower should be introduced.

Other

In addition, constructing cabins inside the wind parks that are open to the general public like the local innovation house Birkenes makes the outdoors more accessible for example to people with disabilities who are dependent on roads to be able to get around. Another example for an effective corporate, local compensatory measure are the Nord-Odal skiing facilities.

2.4.2.3 Potential solutions and strategies addressing the impact on local economy

In Norway, wind energy has in general a positive impact on the local economy.

Municipalities that have property tax regulations, benefit from this tax (e.g. in Fosen the municipalities will receive a 0.7% property tax from wind power installations, which is equal to 0.7% of estimated value of a new installation minus depreciations). In addition, the construction phase gives a large number of regional jobs, as there are local competitive entrepreneurs, who can take these jobs. In Fosen the operating phase is 5-15 person-years for operating each of the 6 windfarms. The service sector experiences a similar number of increase in person-years.

Also, in a report developed for the purpose of creating a 'national frame' for wind power (launched on 1 April 2019), the national regulator writes that in general impact assessments conclude that wind turbines do not cause significant negative impacts on agricultural land because the area that is directly affected constitutes only small part of the resource base for wilderness in the areas. The same report suggests that grazers are negatively affected during the construction phase. When it comes to forests, the report mentions that the network of roads that are constructed may contribute to more easily get control of forest fires.

In the stakeholder consultation survey, the experts from the target region rate the impacts on local profits and income generation as a driver (average: +1.76) while impacts on agricultural sector are not perceived as relevant (average: +0.10).

Regarding individuals' economy, the situation is diverse. Land owners who benefit from selling land to wind project developers are positive while people who live nearby are concerned with decreasing values of their land and houses. Still, the WinWind stakeholders from mid-Norway perceive the impact on individuals' economy as a driver (average: +0.76).

Individual economic disadvantages are mainly expected in cottage areas where an important factor for market value is easily accessible hiking areas, wind turbines which affect large parts of these areas, can create a negative effect on property prices, even in cases where the wind turbine is not visible or visually dominant from the view of the cabins. Here, wind energy has a negative

impact both on property values and on the tourism sector. The impact on the tourism sector is perceived as a barrier by the mid-Norwegian stakeholders (average: -0.76).

Jobs, revenues, increased local tax revenues

A basic interest tax on wind power, such as for oil, natural gas and large hydropower plants, and earmark parts of this tax for the municipality, as is the case for large hydropower should be introduced.

Another promising strategy is the building of roads. In Lister, the wind developer has built 25 km roads with 50 exits. As a result, farmers can collect timber, have cultivated moors and can more easily bring and collect.

Other

In addition, corporate local compensatory measures, e.g. the Nord-Odal skiing facilities or the local innovation house in Birkenes having a positive impact on the tourism sector, are proposed.

2.4.2.4 Potential solutions and strategies addressing the impact on environment and landscape

The impact on environment and landscape is a crucial barrier in Norway. Results from the online consultation in June-July 2019 with the stakeholders in the target region Mid-Norway indicate that impacts on the physical environment (e.g. landscape, protected areas, increased traffic) is the most important acceptance barrier (average -2.0, with 48% of the respondents giving the factor a score of -3, which indicates that the factor is sufficient to prevent projects from being realised), followed by the visibility of wind turbines (average -1.7, 20% gave it a score of -3). Impacts on biodiversity and wildlife (average -1.7, 22% gave a score of -3) is the fourth important factor. Even if it varies from project to project what are the biggest concerns with impact of wind energy on wildlife and biodiversity (e.g. sea eagles at Smøla, reindeers in Mid-Norway and Northern Norway), these aspects always play a role.

The positive impact on greenhouse gas emissions is in mid-Norway a less strong driver than in other WinWind countries (average: +0.81). As Norway's electricity generation is almost fully renewable (hydro 96%, natural gas 2% and wind 2%), phasing out fossil fuels is not a driver for social acceptability in Norway. Certain green NGOs and the Norwegian Wind Energy Association emphasise the importance of wind energy and its contribution to reducing greenhouse gas emissions. In this sense, climate change is a social acceptance driver. On the other hand, nature conservationist groups argue that investments in wind power do not contribute to decreasing GHG emissions in Europe. This is because Norwegian electricity generation is part of the EU Emissions Trading System (ETS). An increase in renewable electricity production does not reduce the emissions that are included in the ETS. If, however the electricity produced replaces fossil fuels in sectors not covered by EU ETS, such as transport, increased wind power production may reduce GHG emissions.

Measures to protect the local landscape, both its physical and socio-cultural value and to reduce impacts on wildlife and biodiversity

The knowledge base of nature and biodiversity that is used in the authorisation/permitting process should be improved and the physical impacts should be weighted higher.

To protect untouched nature, consider placing wind turbines close to already existing infrastructure and whenever an area is set aside for wind power development, another area of the same size should be set aside, where nature remains untouched. Finally, wind power developers should – before they receive permits to install wind turbines – be required to draft a plan for how to bring the area back to its natural state following decommissioning when the turbines have reached their end of life.

To help the general public familiarising themselves with the impacts on the local landscape, wind parks should be open for visitors. A good practice example is the Møllestua cabin in Fosen – a facility open to the general public built by the developer helping the general public experience the physical impacts on nature.

Regarding the impact on wildlife and biodiversity, policy measures such as funding for research and development (e.g. the project “BirdWind”, about 35 million NOK) are perceived as effective.

There are examples that wind projects increase their acceptance in terms of support from local authorities, once original number and size of plants have been reduced. However, such reductions are typically only marginal and does not have much effect on visibility, and therefore, does not affect social acceptability among the population much.

Other

The knowledge base of nature and biodiversity has to be improved. The 21 thematic reports related to the development of the ‘National frame for wind power’ show that the existing knowledge about effects on certain species such as bats in Norway is low. Innovation houses in wind parks contribute with information about wind power energy and can also provide information on nature and biodiversity.

2.4.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

The target set in the EU Renewables Energy Directive of achieving a 67.5% share of renewable energy was, when this target was introduced, a driver for social acceptability of wind power. By now, that target is achieved and the new Norwegian Energy White Paper from 2016 is less clear: The government aims to fostering economic development and value creation through the effective use of profitable renewable resources. It does not include a particular target for wind energy. It follows that national/regional/local wind energy targets (average: +0.40) and the national/regional/local wind energy plans (average: +0.10) are not relevant for wind energy development.

Taxation (average: +1.20) is perceived as a driver. The fact that wind power is taxed more favourably than hydro power implies that it could be even a stronger driver.

Large hydropower installations, often with the flexibility to regulate production, are taxed much more heavily than wind power and small hydropower. In addition, operators of large hydropower must sell 10% of their production to lower-than-market prices to the municipality. Wind power is from 2016 subject to favourable tax depreciation rules. The investment can be depreciated linearly over only five years, resulting in more positive cash flows early in the project's life. This fact contributes to make citizens more in favour of hydropower than wind power (i.e. they experience that there are larger local benefits from hydropower than wind power).

Policies regarding financial support schemes are rated as a driver (average: +1.20).

To improve the institutional and legal framework conditions, the government should follow up the process with the National frame with a clear message on how much power should be deployed and what the power should be used for (i.e. export, domestic production, electrification). In addition, a basic interest tax on wind power, such as for oil, natural gas and large hydropower plants, and earmark parts of this tax for the municipality, as is the case for large hydropower should be introduced.

2.4.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for Mid-Norway

- Provide precise licenses which must be used faster than today`s licensing rules suggest
- Establish committee with representatives from regional level and from minorities carrying out the impact assessments
- Pro-active approach to influence public discourse (media; social media)
- Basic interest tax for wind power, parts of tax for municipality
- Corporate compensatory measures having a positive impact on tourism and quality of life
- Road construction
- Placing close to already existing infrastructure, not in untouched nature
- Improve knowledge about impacts on nature and biodiversity
- Wind parks open to the general public

2.5 Poland

The strategic goals of stakeholder engagement and consultations in Poland was to gain knowledge on the social acceptance of wind energy in the target region, to provide information exchange and raise awareness, to identify best practice and ultimately to trigger new activities to realise the WinWind goals.

The stakeholder consultations aimed to identify and discuss best practices and respective transfer possibilities (e.g. in the area of community engagement) and to help identifying the benefits of (community) wind energy to society (concerning local economy, environment and others).

The stakeholder engagement and consultations provided important insights on both relevant barriers and potential strategies and solutions to overcome them.

2.5.1 Results of the activities carried out

In Poland, one stakeholder desk meeting, two thematic workshops, one of them including a policy roundtable and various stakeholder consultations have taken place. The topics addressed were:

- Barriers perceived by wind investors and factors shaping residents` perception of wind energy
- Exchange of good practices
- Transferability of best practices
- Gravity of barriers and drivers

One final national desk meeting combined with the final thematic workshop is foreseen in February 2020.

Detailed descriptions of the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the deliverables D3.3²⁸, D3.4²⁹ and D3.5³⁰.

The following sections illustrate the results especially relevant for strategies and solutions addressing acceptance barriers.

²⁸ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

²⁹ [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

³⁰ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.5.1.1 *Main barriers in Poland*

In the stakeholder consultation survey, the stakeholders from the Polish Warmian-Mazurian target region ranked the size of modern projects, the visibility of wind turbines, the distance of wind turbines from residential areas and the impacts on the physical environment on biodiversity and wildlife and on health and well-being as relevant barriers (average > +1). Socio-environmental barriers are perceived as the most hindering factors for the development of wind energy.

In addition, the political climate is perceived as a relevant barrier (average: -1) in particular in the Warmian-Mazurian region (this is perceived as a barrier only in Poland and Norway).

On the other hand, the impacts on greenhouse gas emission and on local profits and income generation as well as opportunities for informal/formal participation and consultation in the planning and permitting process and information about projects and the transparency of the permitting process are ranked in average with more than +1. As these economic and socio-political factors are perceived as relevant drivers, measures aiming at enhancing the local acceptance should consider these factor.

Also, the improvement of infrastructure (perceived as a potential driver only in Poland and Latvia, Warmian-Mazurian average: +0.84) seems a promising measure to increase local acceptance.

2.5.1.2 *Polish Best Practice*

As Polish best practice measure, the WinWind consortium has selected the case of the municipality of Kisielice based on the stakeholder engagement and consultations and the developed criteria for best practices (WP4).

Kisielice Municipality

Despite its small size, the municipality of Kisielice has become a well-known best practice for promoting social acceptance of wind energy. This has been achieved due to its investments in renewable energy sources as a means of stimulating local economic development. The municipality of Kisielice was the first energy self-sufficient municipality in Poland. Thanks to the fact that 72% of the land in the municipal area is farmland, reflecting the agricultural character of the municipality, achieving this energy self-sufficiency was largely possible through the installation of wind energy. Investments on pilot wind farms were initiated and coordinated by the local municipality.

The local authorities, especially the mayor of the municipality, significantly contributed towards creating the conditions for mutually beneficial wind energy developments. This was done by increasing trust which enabled a dialogue and information exchange among all the relevant stakeholders. The mayor was also key for guaranteeing external finance for the project.

The following drivers were addressed.

Impact on economy

- Impact on local economy: taxes; improvements in local infrastructure
- Passive financial participation: land owners (farmers) are payed, both the farmers providing land for the turbines and the farmers providing access to build power lines

Procedural participation and trust

- Formal procedural participation: systematic public consultations during the preparatory process
- Informal procedural participation: additional meetings with farmers in Łęgowo, where the land for the pilot project was purchased
- Transparent communication: by providing reliable information, presenting experiences of other countries, and informing about local benefits through informational meetings, local residents were convinced of the benefits of wind energy

Governance

- Political leadership: vision constantly pursued and developed by the mayor who played a key role

The initiative has been highly successful in its implementation and objectives and has shown to be effective in achieving local acceptance. Regarding transferability, the project carried out in Kisielice could be replicated in small rural municipalities with a strong agriculture base, with one or two dominant and densely built-up towns or villages and a relatively low average population density. Such municipalities typically have extensive areas of farmland further away from inhabited areas.

Effective communication with the main stakeholders has proven to be a central success factor in such projects. Key for this to be a credible success is for the communication to be led in a way that avoids unfulfilled promises. Moreover, populations between 5,000-10,000 people make it relatively easy to carry out communication campaigns, public consultations and therefore effective communication and engagement.

However, the most important success factor is a person/institution responsible for implementation of such an idea. Ideally, it may be a person representing local authorities, who has a power to act, capability of connecting residents and ability of resolving social problems and opposition. It should be a reliable person, who is considered respected and fully committed to a project.

2.5.2 Potential solutions to address social acceptance barriers in Poland

The following section summarises possible solutions to overcome acceptance barriers for wind energy in the WinWind target region of Warmian-Mazurian. This section is mainly based on two sources: a) the findings from various WinWind reports and comparative assessments, and b) the findings of the Polish country desk activities including the thematic workshops, policy roundtables and stakeholder consultations.

Table 9: Potential solutions to address acceptance barriers in the target region Warmian-Mazurian

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> Establishment of regional spatial planning offices Informational and educational campaigns Survey about inhabitant's awareness and attitude Service Unit Wind Energy Community Wind Farms 		Survey about inhabitant's awareness and attitude towards the wind farm
	Effective formal participation			
	Effective informal participation			
Other	<ul style="list-style-type: none"> Development of wind projects within the framework of energy clusters Higher engagement of public authorities/municipalities and local leaders 			
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)	Community owned wind turbines		

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)	<ul style="list-style-type: none"> • Extended land lease agreements • Supplements to electricity tariffs for end-users • Compensatory measures 		
	Other	Service Unit Wind Energy		
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues			Compensatory measures
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)			
	Other			Land lease pool model
Socio-environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value			Centre for education, information and culture located nearby wind turbines
	Measures to reduce impacts on wildlife and biodiversity			
	Other			

Barriers	Drivers	Planning/siting	Authorisation/permitting	Operation and maintenance of the Wind turbines
Political and institutional barriers	Improvement of institutional and legal framework conditions			
	Trustworthy wind energy service units, new governance models, etc.	<ul style="list-style-type: none"> Setting regional RES targets Service Unit Wind Energy Establishment of regional spatial planning offices 		
		Development of wind projects within the framework of energy clusters		

2.5.2.1 Potential solutions and strategies addressing procedural fairness

In the Polish target region Warmian-Mazurian Voivodeship, there is a low level of community involvement in planning and permitting processes and no noticeable engagement of public authorities in informational activities and campaigns. Following, the public awareness regarding impacts and benefits of wind energy at a local level is low as well. Still, the Warmian-Mazurian stakeholders perceive procedural fairness as a potential driver for local wind energy development. Information about projects and the transparency of the permitting process (average: +1.40), opportunities for informal/formal participation and consultation in the planning and permitting process (average: +1.08), trust in processes (average: +0.76) and trust in information (average: +0.72) are evaluated as positive factors.

Transparent communication, effective formal participation and effective informal participation

The regional stakeholder see potential solutions to address socio-political barriers in three of the best practices from other countries proposed in the WinWind project: the Service Unit Wind Energy (Germany), the Community owned wind turbines (Germany) and the Local House Birkenes (Norway). In the Warmian-Mazurian context, that house should be a centre for education, information and culture located nearby the wind turbines aiming at informing citizens and local communities about the project and creating a facility of public use increasing the cultural value for the region.

Referring to the Polish Best Practice “Kisielice Municipality”, a higher engagement of public authorities/municipalities and local leaders is seen as an effective strategy to enhance procedural fairness and trust.

In addition, one good practice from Latvia, a survey about inhabitant’s awareness and attitude towards the wind farm, is perceived as transferable to Poland. In the Warmian-Mazurian region,

this survey should be implemented by municipalities giving an insight in the perception of wind energy by citizens on the local level. The survey would mainly address the citizen`s opinion on the benefits and negative effects of the wind farm.

In general, wind projects should be developed within the framework of energy clusters. Energy clusters are civil law agreements between different entities including local governments, which aim at becoming energy efficient regions through a more effective use of local renewable energy sources. Wind energy is a core technology in many successfully operating energy clusters, moreover, wind energy can bring more stakeholders within the energy clusters together and can evoke more positive synergies and benefits.

The concept of energy clusters was introduced into the Polish legal order by the Act of 22 June 2016 (Journal of Laws, item 925) amending the Act on Renewable Energy Sources from 2015. Formally, energy cluster define a civil law agreement, which is a contract concluded by its participants. Such a contract can be concluded by natural persons, legal persons, scientific units, research institutes and local self-government units. Clusters will also promote the growth of RES and hence contribute to improved quality of environmental compartments at the regional and national levels. Finally, they are to help local economies develop by encouraging investors to put in their money and, as a result, stimulate the growth of technologies and new jobs. Energy clusters also drive the growth of local economies based on the effect of synergy for the local market actors.

Furthermore, regional planning offices should be established, provide information and consultation to citizens and relevant stakeholders and initiate informal dialogues. The regional planning offices should be supervised by appropriate governmental bodies ensuring their proper and independent operation.

2.5.2.2 Potential solutions and strategies addressing distributional fairness

While evidence shows that distributional fairness is a possible strong driver for local acceptance and development of wind energy, the stakeholders from the Warmian-Mazurian region hardly consider it relevant. The distribution of economic benefits and costs between actors within the community (average: +0.52) and between communities hosting wind power and other communities (average: +0.40) are not perceiving as contributing to the local development of wind energy. Also the degree of local ownership of the plants is rated as having only a slightly positive impact (average: +0.64).

A possible explanation for these low ratings is to be found in the lack of distributional justice and best practice examples on local level.

Active (direct and/or indirect) and Passive financial participation

The Best Practice “Community Wind Farms” (Germany) is perceived as an effective strategy addressing distributive fairness including both the community owned wind turbines and the land lease pool model. In addition, a Service Unit Wind Energy (Germany) could provide information on active and passive financial participation opportunities to citizens and municipalities.

Another promising strategy proposed by the Polish regional stakeholders is the reduction of electricity tariffs for end-users of the municipality hosting the community wind farm. Also

compensatory measures are perceived as effective if they benefit all citizens from a broadly defined local community and do not cause intra-community conflicts. Examples for such compensatory measures are e.g. the renovation of the local school or the establishment of a centre for education, information and culture located nearby the wind turbines (e.g. the Local Innovation House Birkenes, Norway).

2.5.2.3 Potential solutions and strategies addressing the impact on local economy

In general, the effect of wind energy deployment on the local economy is rather positive, because of the property tax of 0.7% charged on wind turbines; it increases the income of municipalities in the regions. In addition, new jobs are created. In the stakeholder consultation survey, impacts on local profits and income generation have been rated in average with +1.04 and impacts on individuals` economy in average with +0.64. On the one hand, tax income and the creation of jobs have a positive impact, on the other hand, there is a risk of decreased value of property and/or land.

The impact on the tourism sector is perceived as slightly negative (average: -0.52), the impact on the agricultural sector as slightly positive (average: +0.56).

The stakeholders from the Polish target region see corporate compensatory measures and land lease pool models as effective strategies to address economic barriers.

2.5.2.4 Potential solutions and strategies addressing the impact on environment and landscape

Climate concerns like the effect of wind energy on greenhouse gas emissions seem to be a relevant driver (average: +1.46) in the Warmian-Mazurian region as people are aware that Poland is not meeting the RES targets.

But as in the other WinWind countries, socio-environmental barriers do also play an important role in Poland. The Warmian-Mazurian stakeholders perceive the visibility of plants (average: -1.04), the effect on the physical environment (average: -1.38) and the effect on biodiversity and wildlife (average: -1.33) as hindering the local development of wind energy.

The Warmian-Mazurian Voivodeship is a touristic region and consequently the change of landscape does also have economic implications.

Also the concerns regarding birds and wildlife are high, partially because a large area of the Warmian-Mazurian region is covered by NATURA 2000 and other forms of territorial environmental protection

The Polish stakeholders perceive the lack of information and the “catastrophic scenarios” regarding the impact of wind energy on biodiversity and wildlife as the core problem. As a result, informational and educational campaigns carried out by trusted independent organisations and a centre for education, information and culture located nearby the wind turbines (Local Innovation House Birkenes, Norway) are indicated as favoured strategies.

2.5.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

Up to date, the institutional and legal framework conditions are not perceived as having a relevant impact on local wind energy acceptance in the Warmian-Mazurian region. National/regional/local wind energy plans (average: +0.24) and policies regarding taxation (average: -0.38) are not considered having an influence. Merely the policies regarding financial support schemes (average: +0.88) seem to be a driver. As the national target envisages a share of renewable sources in final energy consumption of 15% to be achieved by 2020, national/regional/local targets are perceived as a slightly positive factor (average: +0.52).

As the RES targets are perceived as a potential acceptance driver, setting regional RES targets based on natural resources taking into account starting conditions is the most important strategy according to the Warmian-Mazurian stakeholders. That approach could contribute to enhancing commitment of local authorities in wind energy investments (positive impact of local authorities` engagement: Kisielice Municipality).

In addition, regional planning offices and a Service Unit Wind Energy (as in Germany) should be established.

2.5.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for Warmian-Mazurian Voivodeship

- Establishment of Service Unit Wind Energy
- Facilitation of Community Wind Farms
- Surveys about inhabitants` attitude and awareness towards wind farm
- Informational and educational campaigns
- Centre for education, information and culture located nearby wind turbines
- Development of wind projects within the framework of energy clusters
- Encouraging public authorities/municipalities and local leaders
- Land lease pool model
- Supplements to electricity tariffs for end-users
- Corporal compensatory measures
- Setting regional RES targets
- Establishment of regional spatial planning offices

2.6 Spain

The stakeholder engagement and consultations in Spain were carried out at two main levels: the regional level (wind energy scarce target region and model region) and at the national level (ministries, national energy agencies and associations).

The main goal of the stakeholder engagement and consultation activities was to gain an insight of social acceptance of wind energy in the respective regions. More specifically, the stakeholder engagement and consultation measures aimed to shed light on the following issues:

- The general political and legislative framework
- The regional political and legislative framework
- Reasons for successful development of wind energy in the model region (Canary Islands)
- How the model region overcame specific technical and market barriers
- Identification of prevailing technical and market barriers in the target region (Balearic Islands) to be overcome
- The specific social acceptance problems and barriers in the target region
- The potential transferable good practices from model region and other Spanish regions.

The desk activities were coordinated by ECORYS at the national level whereas ACER was particularly active at the regional level (Canary Island – model region).

The stakeholder engagement and consultations provided valuable insights with regards to identified bottlenecks, the taxonomy and possible (transfer of) best practices. The target regions benefit directly since tailor-made project proposals and policy recommendations can be given to raise social acceptance of wind energy.

2.6.1 Results of the activities carried out

In Spain, three country desk meeting, two thematic workshops, one policy roundtable and several stakeholder consultations have taken place. The topics addressed were:

- Wind energy in protected areas
- Tourism and Wind Energy
- Best Practices and Transfer opportunities

The final thematic workshop will be carried out in January 2020.

Details about the activities carried out, the discussions that have taken place and the results of these discourses are to be found in the deliverables D3.3³¹, D3.4³² and D3.5³³.

The following sections summarise the results especially relevant for strategies and solutions addressing acceptance barriers.

³¹ [Deliverable 3.3: First consolidated summary report of desk activities in the target regions](#)

³² [Deliverable 3.4: Second consolidated summary report of desk activities in the target regions](#)

³³ [Deliverable 3.5: Consultations series of the 6 regional desks in each target region; Summary Report](#)

2.6.1.1 Main barriers in Spain

As there exist many designated Natural Parks and numerous natural reserves on the Balearic Islands, socio-environmental barriers play an important role. The results from the stakeholder consultations survey carried out between May and July 2019 with experts from the Balearic Islands indicate that the size of modern projects, the visibility of wind turbines, the distance of wind turbines from residential areas and the impacts on the physical environment and on biodiversity and wildlife are the most relevant barriers (evaluation average < -1).

Unlike in the other WinWind regions, where small but several parks, rather than large but fewer parks are not perceived as increasing local acceptance, the installation of small but several parks is considered an effective strategy to enhance local acceptance on the Balearic Islands (average: +2).

In addition, the impacts on local profits and income generation, the degree of local ownership of the plants and the national/regional/local wind energy targets are perceived as relevant drivers (evaluation average > +1) and should be considered in strategies and solutions addressing acceptance barriers.

2.6.1.2 Spanish Best Practices

As Spanish best practice measures, the WinWind consortium has selected the Gran Canaria Wind and Water project and the Som Energia Energy Cooperative based on the stakeholder engagement and consultations and the developed criteria for best practices (WP4).

Gran Canaria Wind and Water

Following a major crisis concerning the supply of water and energy in the South-East of the Island of Gran Canaria, three local authorities joined forces to resolve the issue, creating the Mancomunidad del Sureste de Gran Canaria. Although the objective was to solve the water crisis, through the desalination of water, vast amounts of energy were required for this. Consequently, the municipality allowed private investors to develop a number of very large wind farms in the region, in return for a share of the income from the installations. A total of 71 MW has now been installed in the Mancomunidad.

The results of the WinWind analysis outline that the initial barriers of mistrust and lack of transparency of wind farm installation processes and lack of regional co-benefits could be addressed through the following drivers:

Market

- Secure supply of energy and water & emotional ownership: provision of affordable, sufficient and consistent supply of water and energy

Impact on economy

- Impact on local economy: Local value creation (300 jobs)
- Passive financial participation: 25% of income from wind farms given to local municipality in return for land
- Active (direct) financial participation: 5% of wind farms owned by the local business

Procedural participation and trust

- **Transparent communication:** information and knowledge of the fruits of the initiative to the general public (videos, radio discussions, school posters, etc.). This stage was arguably the most substantial and effective means of promoting the social acceptance.

Vast amount of wind turbines installed and therefore the continuous expansion strongly demonstrates that the initiative Mancomunidad del Sureste de Gran Canaria has been able to successfully improve the social acceptance of wind energy. Indeed, such rapid and significant expansion would not be possible if there was considerable social rejection. Additionally, now, the residents have an emotional ownership over the farms, and thereby the social acceptance has become something which is almost never questioned by the local populations.

Through the provision of energy for water desalination, and by benefiting the local society through value creation and enabling financial participation, the initiative has drastically improved the social acceptance of wind energy. Crucially, much of this success can be attributed to an excellent and effective communication strategy.

Regarding the transferability, two steps have been identified as highly necessary for successful transfer of this initiative. Firstly, there must be a specific need/lack of energy. Indeed, this problem must be apparent and real within the local populations. Secondly, in order to enable the installation of the wind farms, there must be explicit and well communicated benefits for the local populations. The idea of using wind energy to supply water and to promote the use of agriculture is thousands of years old.

In sum, the transferability of this measure can be considered as reasonably high. This is due to the fact that there are many regions both nationally and internationally which require a considerable amount of energy for local economic purposes. Generating and using this energy locally represents a highly effective means of improving the social acceptance of wind energy.

This measure has not been selected for transfer.

Som Energia Energy Cooperative

Som Energia, which in Catalan translates to “we are energy”, is the first and now largest energy cooperative in Spain. The fundamental basis of most energy cooperatives is to invest in or provide reliable and fairly priced energy. Indeed, a rapidly growing feature of energy cooperatives is to promote the production and use of sustainable energies. In this regard, Som Energia is involved in the marketing and consumption of sustainable energies. It provides a 100% guarantee that the energy that members purchase comes from renewable energy production facilities. Such energy transparency had not previously existed in Spain. Additionally, Som Energia in recent years has begun to play a significant role in encouraging and facilitating its members to invest in sustainable energy production facilities. Currently, wind energy accounts for 47% of the total energy used by Som Energia members.

The WinWind analyses illustrated that the initial barriers of lack of opportunities to procedural/financially participate and lack of transparent communication could be met by the best practice because of the following drivers:

Impact on economy

- Active (direct) financial participation: 100 Euro fee to become member - 100% guarantee for renewable energy; Som Energia encourages and facilitates its members to invest in sustainable energy production facilities

Procedural participation and trust

- Effective informal procedural participation: Cooperative governed and financed by its members; bottom-up approach
- Transparent communication: The energy and enthusiasm of the members in favour of wind energy has had highly positive spillover effects for promoting further communication and participation among other segments of society.

Individual characteristics

- Emotional ownership: By providing citizens with an opportunity to both consume and invest in energy sourced from wind, this creates a real connection between the citizens and the means of energy production

Som Energia has effectively contributed to overcoming numerous social acceptance barriers which were particularly high in Spain. In nine years it has gathered 50,000 members, generated 10 million kWh/year and has invested almost 13 million EUR in sustainable energies. Through enabling citizens to financially participate and invest in wind energy, a highly positive perception has been created. The positive perception in this group has fuelled the enthusiasm of many to further contribute towards the cause, something which has led to spill-over effects on other social groups, local politicians and even other utilities companies.

It appears that this initiative has plenty of transfer and replicability potential. However, a crucial driver for a successful transfer is sharing the same values and priorities as energy cooperatives do. In Catalonia, this existed, and the land was already reasonably industrialised. However, in areas such as Castilla Leon, where social acceptance of this was much lower due, it has been harder. It has been explained that a first step for establishing an energy cooperative is to mobilise, create and promote a local group. The second step would be to gather sufficient finances to invest in the projects and the cooperative. Som Energia claims that for a cooperative this is not a significant hurdle to overcome, given that the model that they propose is low cost and more cost-efficient. This is explained by the fact that they do not have the sunk costs which big utility companies have, offices in expensive capital cities (Som Energia has just one office in the countryside Girona), and high human resource costs (given that it is non-profit and voluntary). This suggests that energy cooperatives can indeed be implemented in a cost-efficient way.

2.6.2 Potential solutions to address social acceptance barriers in Spain

The following section summarises possible solutions to overcome acceptance barriers for wind energy in the WinWind target region of the Balearic Islands. This section is mainly based on two sources: a) the findings from various WinWind reports and comparative assessments, and b) the findings of the Spanish country desk activities including the thematic workshops, policy roundtables and stakeholder consultations.

Table 10: Potential solutions to address acceptance barriers in the target region Balearic Islands

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
Socio-political barriers	Procedural fairness			
	Transparent communication	<ul style="list-style-type: none"> Past: Low levels of transparency Proactive information dissemination of future project developments necessary 		Promote awareness of benefits of wind energy in the region (repowering Es Mila park)
	Effective formal participation		Give a formal role in the authorisation procedure to directly affected communities	
	Effective informal participation		Obtain well regarded and widely known insular biodiversity/nature protection offices	
	Other	Best/Good Practices: Energy Cooperatives, Gran Canaria Wind and Water, Galicia Singular Wind Farms		
Socio-political and economic barriers	Distributive fairness			
	Active financial participation (direct and/or indirect)		<ul style="list-style-type: none"> Current model of ownership effective (public owned) Cooperative scheme for repowering and for new plants 	
	Passive financial participation (e.g. funds, compensations, reduced municipal tax for the citizens, etc.)		Cooperative scheme for repowering and for new plants	

Barriers	Drivers	Planning/siting	Authorisation/ permitting	Operation and maintenance of the Wind turbines
Economic barriers	Spill over on the local economy (creation of local added value)			
	Jobs, revenues, increased local tax revenues		<ul style="list-style-type: none"> • Make job creation for repowering and maintenance public • Help compensate seasonal employment cycles 	
	Involvement of regional businesses (e.g. energy supply companies and financing institutions)			
	Other	<ul style="list-style-type: none"> • Promote islands as “Sustainable islands”, label “sustainable tourism” to boost tourism sector • Rent for land owners • Best/Good Practices: Energy cooperative; Canaria Wind and Water; Galicia Singular Wind Farms 		
Socio- environmental barriers	Neutral or positive impact on the environment and landscape			
	Measures to protect the local landscape, both its physical and socio-cultural value	Present and possible future location of plants is careful choice – should be maintained		
	Measures to reduce impacts on wildlife and biodiversity	Use of most advanced technological means to reduce avifauna damages		
	Other			

Improvement of institutional and legal framework conditions			
Political and institutional barriers	Trustworthy wind energy service units, new governance models, etc.	Creation of renewed and specialised regional Energy Agency	
	Other	<ul style="list-style-type: none"> • BBC law • Good Practices: Galicia Singular Wind Farms, Galicia Regional Wind Farm Plans; El Hierro Energy Transition 	

2.6.2.1 Potential solutions and strategies addressing procedural fairness

Currently, there is great distrust among local residents towards investor and the non-transparent planning processes on the Balearic Islands, but the recently approved Climate Change Law of the Balearic Islands addresses these barriers. The law requires positive action to ensure more formal and informal participation, in particular through the empowerment of publicly elected local officials. But the law is not implemented yet and by now, the 11 experts from the Balearic Islands participating in the WinWind stakeholder consultation survey consider procedural fairness as not relevant for the local acceptance. Information about projects and the transparency of the permitting process was evaluated with an average of +0.09, trust in processes (average: +0.09) and trust in information (average: +0.18) were perceived as neutral as well. Still, enhancing procedural fairness is a potential strong driver for local acceptance.

Furthermore, there are several Good and Best Practice examples both on a national and on a regional level relevant for the Balearic context. The Spanish Best Practices Som Energía and Canaria Wind and Water and the Good Practice Galicia Singular Wind Farms (simplifying the procedure for the attainment permits of wind farms for municipalities and enabling small/medium consumers to be under the special regime and to obtain the feed in tariff for the generated electricity) are inspiring examples illustrating the possibility to achieve broad local acceptance by addressing, among others, the procedural fairness.

In addition to the Good Practice examples, the Balearic stakeholders developed further strategies to address the local barriers.

Transparent communication

Past experiences and attempts in the region with low levels of transparency in both siting and authorisation have yet to be fully overcome. It is therefore fundamental that citizens are aware of any future project developments through proactive information dissemination as well and opening up many possibilities for involvement. The necessary and foreseen repowering of the Es Mila wind park in Menorca could be a perfect occasion to promote awareness of the benefits of wind energy in the region.

Effective formal participation

The local and directly affected communities need to be given a formal role in the authorisation of any future wind park.

Effective informal participation

In each of the individual islands, it is necessary to obtain the broader approval (i.e. not simply related to EIA) of the well regarded and widely known insular biodiversity/nature protection offices. These have significant influence over citizen concerns relating to nature protection.

2.6.2.2 Potential solutions and strategies addressing distributional fairness

On the Balearic Islands, the new passed BBC Law will prescribe that there must be a certain degree of community ownership and fair distribution of benefits from sustainable energy revenues. But this is not yet implemented nor realised in practice and previously to the BBC Law, no provisions exist to enhance distributional justice.

Still, the Balearic stakeholders participating in the survey perceive the distributional justice as promoting local acceptance of wind energy. The distribution of economic benefits and costs between actors within the community (average: +1) and between communities hosting wind power and other communities (average: +0.73) are evaluated as drivers.

Regarding the degree of local ownership, the situation on the Balearic Islands is rather particular as the only wind park existing is owned by the local authority. That current model of ownership is considered as an effective one, the wind turbines are sited on the land and owned by the municipal waste company and thereby publicly owned, rather than being privately owned. Even if there has not been much of the profit individually distributed to the local residents, this type of public ownership has been positively received. Following, the public ownership could be an important driver for the future installations. The experts participating in the survey consider the degree of local ownership a driver on the Balearic Islands (average: +1.36). Indeed, it is likely that any future installations would also be locally owned.

Examples of Good and Best Practice addressing the distributional fairness and possibly partially transferable to the Balearic context are the Renewable Energy Cooperative Som Energia and the Galicia Singular Wind Farms.

Active and Passive financial participation (e.g., funds, compensations, reduced municipal tax for the citizens, etc.)

The current model of ownership is considered as an effective one (owned by the municipal waste company and thereby publicly owned, rather than being privately owned).

The potential for a cooperative scheme for the repowering and for new plants could be explored, given that the workshops have demonstrated the interest of local communities directly owning the wind parks in order to also obtain a more direct financial benefit from their existence.

2.6.2.3 Potential solutions and strategies addressing the impact on local economy

Regarding the impact on local economy, tourism is an important factor on the Balearic Islands. The Islands host 13 million tourists each year in a multibillion-euro sector. Therefore, a significant amount of the jobs in the Balearic economy are dependent on tourism. Consequently, there are concerns that the installation of wind energy plants might negatively affect tourism, due to the negative impacts on the landscape and perception of the islands. As there is currently only one wind farm deployed on the Balearic Islands, these concerns are not yet at the forefront of the debate concerning wind energy. The Balearic stakeholders consider the impact on tourism as not relevant for the local acceptance (average: +0.09). Still, the potential impact of future installations on the tourism sector has to be considered.

A strategy addressing that barrier could be to promote the islands as “sustainable islands” and to use the “sustainable tourism” label for trips to the islands if more energy used in the hotels/restaurants comes from sustainable sources. This could boost the tourism sector in the islands.

At the same time, the impacts on local profits and income generation (average: +1.64) and on individuals` economy (average: +0.82) are perceived as drivers. Currently, many land owners are in favor of using their land for sustainable energy purposes, given their positive experience and incomes gained from solar PV land rent. Further profiting through the installation of wind energy plants is an attractive option. On the other hand, Menorcan land is most commonly owned by large and historically wealthy land owners who often prefer to preserve the quality and nature of their land, rather than use it for pure commercial purposes, other than traditional agriculture.

Measures addressing the local profits and income generation and the individuals` economy independent from the owning of land are the Energy Cooperative Som Energia, the Galician singular wind farms³⁴, and the Canaria Wind and Water project³⁵.

Jobs, revenues, increased local tax revenues

The eventual job creation for the repowering and maintenance should be made public and could (in a minor way) help compensate seasonal employment cycles.

2.6.2.4 Potential solutions and strategies addressing the impact on environment and landscape

By now, there are only four wind turbines on the Balearic Islands (the En Mila site in Menorca). The wind turbines are old and only stand at 55m, the visual impact is lower than in other European

³⁴ <https://www.energynews.es/en/gas-natural-fenosa-opens-spains-first-wind-farm-built-with-no-subsidies/>

³⁵ <https://www.aeeolica.org/comunicacion/notas-de-prensa/3489-la-mancomunidad-del-sureste-de-gran-canaria-gana-el-vii-premio-eolo-a-la-integracion-rural-de-la-eolica>

regions. However, visual impact is of great concern for local residents, who do not want any landscape disturbance on the island due Menorca's protected area status.

In the Balearic Islands there exist many designated Natural Parks such as the Cabrera Archipelago, a small island of 100sq kilometers 14 km off the coast of Mallorca. Numerous natural reserves also exist across the Islands. In Mallorca, there are 4, the largest being Parc Natural de s'Albufera de Mallorca which is a protected wetland park of 1,647 hectares. In Menorca, there also exist 2 nature reserves, and in Ibiza one. It is also noted that the Island of Menorca was declared a Biosphere Reserve by UNESCO in 1993, given the great variety of habitats that it comprises. Collectively, these pose a significant barrier.

The local Balearic Ornithology and Nature Defence Group (GOB) has been the most significant and effective form of opposition against the use of wind energy. It wants protected natural areas to be excluded from the implementation of wind and photovoltaic parks; and demands that Areas of Agricultural Interest of the Territorial Plan of Mallorca should be excluded from the areas of exploitation. The installation of wind farms is understood as posing a serious risk during the migratory movements for threatened species as they pass through Mallorca.

The Balearic stakeholders rated the visibility of wind turbines (average: -1.82), the impacts on the physical environment (average: -2.18) and on biodiversity and wildlife (average: -2.45) as relevant barriers.

The Italian Best Practice case of Wind farm repowering chosen to be transferred to the Balearic Islands addresses these barriers. .

The impacts on greenhouse gas emissions are considered as relevant by the stakeholders participating in the survey (average: 2.27), that driver is particularly reflected in the regional policies regarding wind energy.

In the following, the focus will be on the strategies reducing the impact on landscape, wildlife and biodiversity.

Measures to protect the local landscape, both its physical and socio-cultural value

The present (and possible future) location of the plants is already a good and careful choice and should be maintained (i.e. being in the land of the municipal waste company and also being far away from any local inhabitants).

Measures to reduce impacts on wildlife and biodiversity

Present and future plants should guarantee the use of the most advanced technological means to reduce avifauna damages. Many of these were discussed in the workshops and are particularly important to Menorca given its position on the migratory route for birds. Any future park developments must ensure the consideration and use of these technologies.

2.6.2.5 Potential solutions and strategies addressing the improvement of institutional and legal framework conditions

There is political will for supporting renewable energy both on a national and on a regional level.

According to the Balearic Climate Change Law, 9347 (2018), by 2030 35% of the energy generated would come from renewable energy sources and by 2050 100%. That Law is also promoting the further use of wind energy in order to diversify the energy mix on the islands and includes measures addressing procedural and distributional fairness.

The Balearic experts perceive National/regional/local wind energy targets (average: +1.54), plans (average: +0.73), policies regarding taxation (average: +0.54) and policies regarding financial support schemes (average: +0.9) as drivers.

Best/Good Practices related to institutional and legal framework conditions are the Galicia Singular Wind Farms, the Galician Regional wind farm plans and the Mancomunidad in the Southeast of the Canary Islands developing wind and water.

Trustworthy wind energy service units, new governance models, etc.

The creation of a renewed and specialised regional Energy Agency (strongly supported by the regional government) will permit a closer and detailed follow up of the construction and maintenance process

2.6.2.6 Summary of potential solutions for the target regions

Summary of potential solutions for the Balearic Islands

- Proactive information dissemination of future project developments
- Promote awareness of local benefits
- Formal role in authorisation procedure to directly affected communities
- Obtain biodiversity/nature protection offices
- Cooperative Scheme for repowering and for new plants
- Promote islands as “Sustainable Islands”, label “Sustainable Tourism” to boost tourism sector
- Keep current model of ownership (public owned)
- Careful choice of location
- Use of most advanced technological means to reduce impact on avifauna
- Establishment of renewed and specialised regional Energy Agency

3 Conclusions and next steps

WinWind initiated a broad variety of stakeholder engagement and consultation activities, many of which came in a different formats. The WinWind country desks proved to be a very important vehicle to ensure a wide stakeholder engagement and participation. They provided a key platform for a fruitful dialogue with market actors and other stakeholders. Moreover, a high number of stakeholder consultations have been carried out ranging from bilateral, face to face consultations, phone or personal interviews, focus groups to a dedicated online stakeholder consultation survey.

The stakeholder consultations in the different countries have addressed various thematic issues and engaged a broad variety of interest groups and market actors. In several cases, most notably in Latvia and Norway, opponents of wind energy have been constructively involved in the activities. Each country desk paid special attention to ensure the participation of the most relevant and influential actors involved in the development and implementation of wind projects. This was because such actors are central to the promotion of its social acceptance.

The dedicated online stakeholder consultations brought to the fore the acceptance barriers and drivers which have been considered relevant for the WinWind target regions. Such consideration came from the different experts and stakeholders in those regions and beyond. They, in part, confirmed the original hypotheses and expectations of the consortium concerning the removal of key barriers

Although there is a wide literature body on social acceptance of wind energy (reviewed in WinWind Deliverable 2.1³⁶), up to now, there has been a relatively low number of studies comparing and contrasting social acceptance in such a high number of countries and regional contexts (Suškevičs et al. 2018). The activities carried out within WP3 of WinWind in dialogue with stakeholders of six countries contribute to close this research gap. This is because the outcomes of the activities complement and add value to evidence derived mostly from one or two countries empirical work or to desk research carried out elsewhere. Although the specific barriers and drivers identified differ between countries and regions, some broadly shared issues and themes have been recognised. Such issues are relevant for a wide spectrum of countries and these are significant for the social acceptance of wind energy in general.

This document indicated a number of potential solutions to overcome acceptance barriers, with a focus on the WinWind target regions. The drivers identified by the national stakeholders are varied and can be taken into consideration to overcome more than one type of barrier. Some of them have a general character and are thereby transferable or applicable to more than one country in the WinWind project (e.g. community wind farm, energy cooperative, service unit (all best practices chosen for transfer/all best practices). However, a large number of the drivers (as well as the barriers that they are meant to overcome) are context specific and relevant for a particular region.

This report merely provides a catalogue of possible solutions to overcome a number of key hindrances for the development of wind energy. Based on the findings from the stakeholder consultations and the outcomes of the thematic workshops in six different socio political, ecologic,

³⁶ [Deliverable 2.1: Technical and socio-economic conditions, a literature review](#)

economic and geographical contexts, the proposed strategies and solutions on how to address social acceptance barriers were categorised according to their focus on the social acceptance drivers: procedural fairness, distributive fairness, spill over impact on local economy, impact on environment and landscape or on institutional and legal framework conditions. This appears to be a valid way to consolidate the findings and distil from the narratives discussed in the thematic workshops the elements that can form the basis for policy recommendations. These solutions however have not been ranked, neither in terms of importance nor in terms of their degree of (policy) feasibility.

This work, together with Deliverable 2.3³⁷ and Deliverable 4.3³⁸, has been intended to provide a very good basis for the policy analysis and guidance in Work Package 6. Specifically, it delivers relevant background and context specific factual evidence to identify the alternatives for selecting policy options that are implementable and can be recommended for a course of action. This will be done as a next step in Deliverable 6.5. This deliverable will translate the overall project findings into practical proposals to optimise regulatory and policy frameworks in the target regions, also reflecting the outcomes of the stakeholder consultations and the catalogue of possible solutions analysed here.

³⁷ [Deliverable 2.3: Taxonomy of social acceptance drivers and barriers](#)

³⁸ [Deliverable 4.3: Synthesis and comparative analysis of best practice case studies for promoting the social acceptance of wind energy](#)

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