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# Is Energy Localized or Gone with the Wind? An Analysis of Iberdrola's Wind Energy Localization Initiatives in Burgos, Spain

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# Is Energy Localized or Gone with the Wind?
# An Analysis of Iberdrola's Wind Energy Localization Initiatives in Burgos, Spain.

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## Abstract

While renewable energy systems offer solutions to mitigate greenhouse gas emissions, promote sustainable development, and foster a just energy transition, certain energy projects account for local needs while others do not. While community energy projects are known to provide localized energy benefits, less is known about large-scale companies' abilities to foster just transitions through their energy systems. To better understand how global actors can promote a just and sustainable transition through renewable energy deployment, I explore the following research question with a focus on the global electric utility Iberdrola: To what degree does Iberdrola implement energy localization initiatives through wind energy projects in Burgos, Spain? Energy localization is defined as the degree to which private energy companies implement environmental, social, and economic initiatives through their energy projects that both incorporate local actors through a procedural approach and are socially accepted by local stakeholders. I hypothesize that the greater implementation of relevant environmental, social, and economic initiatives and the incorporation of local actors through a procedural approach by Iberdrola will be positively associated with higher levels of stakeholder acceptance of wind farms. Results from semi-structured interview, content analysis, and executive meetings showed the polarizing perspectives of energy localization among stakeholders and in comparison, to Iberdrola. My analysis revealed that Iberdrola performs the best in economic components of energy localization, while its social and procedural efforts need improvement. Looking toward Martin's (2002) virtue matrix and Szemen & Boyer (2017) concept of a defensive energy transition, Iberdrola's energy localization initiatives are largely compliant and defensive, acting within the system of profit and capitalism, and are not transformative, implying a true just transition. While energy localization implementation remains a daunting task moving forward, I conclude with various recommendations that Iberdrola could implement to enhance sustainability performance and positively impact local communities. My research establishes a conceptual framework for measuring energy localization of wind energy projects by privately owned energy companies.

## Acknowledgments

There are many people that I cannot thank enough for helping me throughout this process. First and foremost, I am extremely grateful and appreciative of my advisor, Patrice Franko, who has provided me with tremendous guidance and support throughout this entire process. Patrice, when I think back to the moment when we first chatted about the seeds of this project, you convinced me to take on this challenge, and I am so grateful for your belief in me at that moment and throughout this journey. Our weekly meetings, email exchanges, and countless check-ins made this entire process possible. I truly cannot thank you enough.

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## Relevant Abbreviations and Acronyms

| **Name** | **Translation** *(if applicable)* | **Abbreviation/ Acronym** |
|---|---|---|
| Asociación Ábrego Medioambiente y Desarrollo Rural | Ábrego Environment and Rural Development Association | Ábrego |
| Asociación de Promotores de Energía Eólica de Castilla y León | Association of Wind Energy Promoters of Castilla y León | Apecyl |
| Ballestas and Casetona Wind Farm | N/A | BaCa |
| Carbon Dioxide | N/A | CO2 |
| Ente Público Regional de la Energía de Castilla y León | Regional Public Energy Entity of Castilla y León | EREN |
| Environmental Impact Assessment | N/A | EIA |
| Environmental Social Governance | N/A | ESG |
| European Union | N/A | EU |
| Fundación Caja de Burgos | The Caja de Burgos Foundation | FCB |
| Greenhouse Gas | N/A | GHG |
| Hectares | N/A | ha |
| Integrated National Energy and Climate Plan | N/A | INECP |
| Megawatts | N/A | MW |
| Mesa Eólica Merindades de Burgos | Merindades Burgos Wind Committee | Mesa Eólica |
| Photovoltaic | N/A | PV |
| Power Purchase Agreement | N/A | PPA |
| Special Protected Area | N/A | SPA |
| Sustainable Development Goal | N/A | SDG |
| Universidad de Burgos | University of Burgos | UBU |
| Valmayor de Cuesta Urria | N/A | Valmayor |

# Chapter 1: Introduction and Context

## Renewable Energy to Promote a Just Transition

Our planet is facing a global, catastrophic climate crisis. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report highlights the current state of climate change, along with its risks, impacts, and adaptation measures (IPCC, 2023). The report identifies unsustainable energy use as a key driver of increased greenhouse gas (GHG) emissions. In 2019, 79 percent of global GHG emissions derived from the energy, transport, industry, and buildings sectors. International organizations and policies, such as the UNFCCC, the Kyoto Protocol, and the Paris Agreement, frame climate and energy policymaking at the national level, where countries aim to establish policies that improve energy efficiency. The report highlights that reaching net-zero carbon dioxide (CO2) and GHG emissions must include a transition from fossil fuels to extremely low or zero-carbon-emitting energy sources, including renewable energy. Since a dominant contributor toward climate change is energy consumption, accounting for roughly 60 percent of global GHGs, clean energy investment is integral to reduce the impacts of climate change and promote Sustainable Development Goal (SDG) 7, ensuring access to affordable and clean energy (United Nations, 2024b), shown in Figure 1.1. While the report emphasizes the potential synergies between sustainable development, energy efficiency, and renewable energy, it also cautions against tradeoffs that these processes propose (IPCC, 2023).


**Figure 1.1:** The 17 Sustainable Development Goals balance the three dimensions of sustainable development—the economic, social, and environmental aspects (United Nations, 2024c).

Sustainable development is a crucial component of addressing the climate and energy crisis. Sustainable development, defined by the World Commission on Environment and Development (WCED) in the 1987 Brundtland Report, is defined as development that meets the needs of the present without compromising future generations' abilities to meet their own needs (Brundtland, 1987). An integral component of sustainable development is implementing a sustainable energy pathway, including promoting energy efficiency through the equitable development of renewable energy. Renewable energy sources are known to contribute to local sustainability through various socioeconomic and environmental benefits. Renewables are a key component to GHG emissions reduction and mitigating climate change (del Río & Burguillo, 2008). Dincer (2000) highlights how renewable energy is an effective and efficient long-term solution for sustainable development, as these resources are regenerative and readily available at a reasonable cost while generating fewer negative impacts for society. Further implicit in the pursuit of sustainable development is the implementation of a just transition; this notion refers to not leaving anyone behind in the transition to more environmentally sustainable societies and net-zero carbon emissions (United Nations, 2023). A just transition hinges on inclusive dialogue that engages the realities, priorities, and needs of societies. While energy provision crosses public and private spheres, governments, companies, and communities must be engaged in dialogues to promote an inclusive and sustainable energy shift.

To better understand how global actors can promote a just and sustainable transition through renewable energy deployment, I explore the following research question: To what degree does Iberdrola implement energy localization initiatives through wind energy projects in Burgos, Spain? Energy localization is defined as the degree to which private energy companies implement environmental, social, and economic initiatives through their energy projects that both incorporate local actors through a procedural approach and are socially accepted by local stakeholders. Spain is a global leader in renewable energy generation, notably wind energy. Located in Castilla y León, the province of Burgos is a dominant source of wind energy. Iberdrola, a global electric utility company headquartered in Bilbao, Spain, has established a notable presence in the national wind energy market as the main developer of wind energy across Spain, and more precisely, in Burgos. While Iberdrola has stated its commitment to providing localized impacts through its wind energy projects, conflicting evidence raises skepticism of Iberdrola's localized effects. Thus, I seek to determine the success of Iberdrola's wind energy

localization efforts. I hypothesize that the greater implementation of relevant environmental, social, and economic initiatives and the incorporation of local actors through a procedural approach by Iberdrola will be positively associated with higher levels of stakeholder acceptance of wind farms. My research establishes a conceptual framework for measuring energy localization of wind energy projects by privately owned energy companies.

In the remainder of Chapter 1, I will introduce the necessary background and context needed to understand and frame my research question. First, I will explore the European Union's (EU's) energy agenda and regulation. Then I describe Spain's national energy context and targets, including national processes of electricity market reform, which has shaped how major energy players are situated and operate in the current market. To center on wind energy, I first illustrate the situation of wind energy in Spain, then focus on the local energy context in Burgos. As a prominent developer of wind energy in Spain and the subject of my research, I close this chapter by describing Iberdrola. I outline their history as a company, presence in Spain, Castilla y León, and Burgos, and their corporate ESG strategy.

The roadmap for my thesis is as follows. Chapter 1 provides the relevant background information to contextualize and frame my research, and Chapters 2 and 3 outline my literature review and methodologies, respectively. Chapters 4 and 5 present the Iberdrola and stakeholder evidence, respectively, where Chapter 6 includes a critical analysis; this is where I situate the key findings within the literature and integrate my argument. In conclusion, Chapter 7 outlines key takeaways, recommendations for improvement, and implications moving forward.

**European Union Energy Context and Regulation**

Faced with the threat of climate change and the energy crisis, the EU has taken a leading global role in combating GHGs, establishing climate neutrality targets, and promoting a socially just transition through the energy sector. To address pressing and current climate change issues in the energy sector, the EU's Regulation on the Governance of the Energy Union and Climate Action introduced Integrated National Energy and Climate Plans (INECPs) in 2019 (European Commission, 2024a). These 10-year mandated plans outline how EU countries will address the five components of the energy union, including decarbonization, energy efficiency, energy security, internal energy market, and research, innovation, and competitiveness. All EU Member States were required to submit their final INECPs for 2021-2030 by December 31, 2019, and

must submit a progress report every 2 years. Thus, deploying renewable energy is a legal imperative for EU states and plays an integral role in helping them achieve their energy goals.

In response to recent electricity price shocks from the Ukraine War, the EU is reforming the electricity market of the Union (European Council, 2024a). A main change is that electricity prices will be less dependent on the price of fossil fuels, thus creating a buffer between markets and electricity, providing protection for consumers, and stability for companies. These rules will also increase the deployment of green electricity as it promotes the integration of renewable energy into the system. This will help meet the EU's ambitious climate targets outlined in their Fit for 55 package—a proposed package passed in 2023 to bring EU legislation in line with its target to reduce net emissions by at least 55 percent by 2030 (European Council, 2024b). With greater investments in new renewable power-generating facilities (including solar, geothermal, hydropower, nuclear, and wind), green electricity generation will increase. Notably, solar and wind energy are predicted to more than double by 2030 (European Council, 2024a). As a key sector in this energy transition, wind energy is expected to be a significant contributor to the EU member states' energy and climate goals in the following decades.

To help fund these goals, the EU has adopted measures such as the Innovation Fund, financed through its emissions trading scheme (ETS), which could contribute EUR 10 billion toward the development of low-carbon and carbon capture technologies, energy storage, and renewable energy generation (European Council, 2021). To promote a more equitable and sustainable energy transition, the EU additionally implemented the Modernization Fund, financed through the ETS to promote a socially-just transition to a less carbon-intensive economy in 13 lower-income member states from 2021-2030. These EU-driven policies and efforts have set the regulatory framework for member states to prioritize an equitable energy transition to best promote sustainable development and achieve climate change and energy sector objectives. These regulations are a few examples of the comprehensive and high EU regulation within the energy sector, which places countries and large-scale actors in the energy industry under the jurisdiction of strict energy targets and compliance procedures.

**Spain Energy Context**

As a geographical area heavily impacted by climate change, the Mediterranean region has experienced unprecedented rates of warming and is heating faster than many other global

regions; it is expected to reach 2 degrees Celsius of warming within the upcoming 20 years (Miller et al., 2023). Spain, located in the Mediterranean region, is strongly affected by the climate crisis. The country has experienced declining rainfall, high-intensity droughts, and extreme heat waves, among other climate-driven issues. While Spain faces pressing climate issues, a reduction in GHG output through a transition to green energy sources can help reduce climate change impacts in the nation.

To align with European energy and climate policymaking and be a leading EU country in the energy transition, Spain implemented its first Integrated National Energy and Climate Plan 2021-2030 in January 2020. The most updated version—the 2023 draft update—highlights how a green energy transition can help modernize the economy, create sustainable jobs, strengthen competitiveness, and reduce external energy dependency. In addition, this transition will create opportunities for rural development, improved human health, social justice, and environmental outcomes (European Commission, 2023). This plan highlights targets among different areas of the energy transition that are contributing to climate and energy objectives:

- 2 percent reduction in GHG compared to 1990 levels;
- 48 percent renewables on final energy use;
- 44 percent final energy consumption (FEC) energy efficiency improvement;
- 81 percent renewable energy in electricity generation;
- Have 19 GW of installed self-consumption and 22 GW of electricity storage;
- Reduce external dependency from 73 percent in 2019 to 51 percent in 2030;
- 43 percent emissions reduction from diffuse sectors, and 70 percent reduction of sectors under emissions trading compared to 2005.

By implementing measures to achieve these targets, the Spanish economy will experience an estimated annual GDP increase of EUR 34,700 billion and growth in employment with 522,000 more jobs (European Commission, 2023). To achieve the INECP goals, two laws were implemented: the Long-Term Decarbonization Strategy of 2020 (LTS) and the Climate Change and Energy Transition Law of 2019. Spain's 2021-2030 INECP provided a structuring framework for these policies; these laws detail the legal procedures to carry out the INECP's objectives.

The LTS extends Spain's decarbonization goals to carbon neutrality by 2050. It also outlines how Spain will achieve a 90 percent GHG emissions reduction compared to 1990 levels.

Carbon sinks will absorb the remaining 10 percent of emissions, achieving carbon neutrality by 2050. This plan analyzes economic decarbonization options through investing in cost-effective and green technology, growing employment opportunities, and increasing Spain's renewable energy leadership role. It also aims to empower citizens and promote social justice through an equitable transition (European Commission, 2023). The LTS forecasts that electricity production will derive from 100 percent renewable sources by 2050 (European Commission, 2020). As such, the deployment of new renewable energy technologies is essential to achieve an energy matrix composed only of renewable energy sources.

With a national commitment to addressing the climate crisis and ensuring compliance with the Paris Agreement, Spain has established strict climate and energy targets through its Climate Change and Energy Transition Law of May 20, 2021. The law aims to facilitate the decarbonization of Spain's economy and promote a circular resource economy, adaptation to climate change impacts, and a sustainable development model that addresses social inequalities and generates employment (Climate Change and Energy Transition Law, 2021). It outlines specific climate-related goals to achieve by 2030, including reducing GHG emissions of the Spanish economy by 23 percent compared to 1990 levels, ensuring that 42 percent of final energy consumption and 74 percent of electricity is generated from renewable sources. By 2050, Spain aims to establish climate neutrality, 100 percent renewable energy for electricity, and 97 percent renewable energy in the complete energy mix (IEA, 2022). In this way, the development of renewable energy is crucial to help Spain align with its climate change and energy goals. Achieving such ambitious energy goals while promoting a just transition will require effective collaboration of public actors, private providers, and civil society.

**Electricity Reform and Energy Sector Dynamics in Spain**

In the past couple of decades, the Spanish electricity system has undergone several significant reforms to improve competitiveness and regulation, reduce monopolization, and lower prices within the electricity sector. Before the start of the twenty-first century, the process of liberalizing the electricity sector in Spain began with the introduction of the 1994 Law on the Regulation of the National Electricity System (LOSEN), which created the Regulatory Commission and allowed entry for new companies in the sector (Alonso, 2001). To further improve competitiveness and regulation in the power sector, Spain passed the 54/1997

Electricity Law, which entered into force at the beginning of 1998. Prior to the 54/1997 Electricity Law, many vertically integrated electricity companies—mostly privately owned—dominated the Spanish Power industry. Following the establishment of this law, several principles sought to improve competitiveness within the sector. These included implementing separation of regulated activities (transmission and distribution) from non-regulated activities (generation and trading). It also included non-discriminatory access to the network, the regulation of transmission and distribution as natural monopolies with regulated tariffs paid by all network users, and more (Alonso, 2001).

In December of 2013, the 1997 Electricity Law was amended and replaced by the new Law 24/2013 of 26 December 2013, commonly known as the Electricity Act. The Electricity Act further liberalized the Spanish electricity sector by organizing the industry into four separate categories: generation, transmission, distribution, and supply (CMS, 2015). The National Markets and Antitrust Commission (NCMC) replaced the Spanish Energy Commission as the new regulatory body. Previously, the sector had been vertically integrated and regulated, in which one energy company could be responsible for multiple stages of production (i.e., generation, transmission, and distribution) in the electricity supply chain (EPA, 2024). The Electricity Act marked a shift away from vertical integration and regulation toward a more competitive model, in phases. In the current sector, supply and generation are partially liberalized—the markets are partially opened to free competition, allowing additional companies to participate to dissolve the power of existing monopolies (Next Kraftwerke, 2024). Alternatively, large companies, such as Iberdrola and Endesa, remain vertically integrated but have separated their distribution activities, for functional, legal, and accounting means. However, one exception remains in the transmission segment, in which Red Eléctrica de España, S.A. (REE) is the single-transmission operator (TSO) in Spain (CMS, 2015). Despite this, the TSO is fully unbundled—there is a distinction between generation, transmission, and distribution/retail in the energy sector (Next Kraftwerke, 2024)—as management has been separated and effective decision-making right measures have been taken.

Furthermore, there are two types of electricity suppliers: liberalized suppliers, who sell at market prices, and last resort suppliers, which are mandated to sell to specific customers (the vast majority of final consumers) at a government-set fixed price, known as the last resort tariff (LRT) (CMS, 2015). The four dominant operators in the Spanish energy system are Endesa

Group, Iberdrola Group, EDP/Hidrocantábrico Group, and Gas Natural Fenosa Group. Through their subsidiary companies, these promoters are the key operators in the generation, distribution, and supply electricity sectors. Figure 1.2 highlights the market share of Spain's primary electricity providers in the liberalized market in 2021. Iberdrola has the largest market share at 34 percent, indicating its dominant presence in the Spanish electricity sector (Statista, 2022).

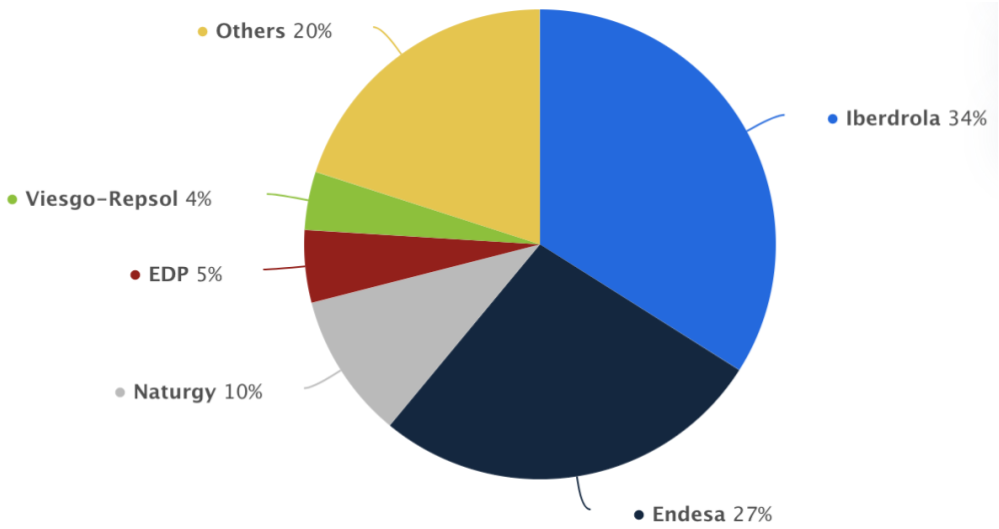


**Figure 1.2:** In 2021, Iberdrola had the greatest market share of 34 percent within the liberalized energy market in Spain (Statista, 2022).

Overall, despite that previous electricity reforms have aimed to reduce monopolization while improving liberalization, competitiveness, and regulation in the Spanish electricity sector, large energy companies still dominate and to an extent, control most of the national energy market. To promote a just energy transition aligned with Spain's INECP and climate targets, these companies must be part of the solution.

### Wind Energy in Spain

As a powerful renewable energy source, wind energy helps nations across the world, like Spain, make progress on their climate and energy targets. Globally, Spain is a dominant player in the wind energy sector. Spain has the second highest installed wind capacity in the EU and the fifth highest globally, while having the eighth highest in renewable installed capacity in the world (European Commission, 2023). Domestically, Wind energy is currently the leading energy market in Spain; this power source has the greatest installed capacity of 30 gigawatts and the second-largest source of electricity in 2022 (Fernández, 2023b), accounting for 22.14 percent of Spain's electricity (Fernández, 2023a). In 2023, wind energy was the first source of electricity

generation in Spain (AEE, 2024). The nation has 22,042 wind turbines—most of which are onshore technology—amounting to 1,345 wind farms in 1,053 municipalities. Wind energy generates over 61,000 GWh and covers 24 percent of the energy consumed nationwide. In 2022, the wind sector contributed to 0.5 percent of the Spanish gross domestic product (GDP) and created a total of 39,015 jobs, all while avoiding 32 metric tons of CO2 into the atmosphere (AEE, 2024). From 2013 to 2020, wind energy has further contributed 1.9 billion euros to Spain's (GDP). Spain's National Energy and Climate Plan aims to continue to transform the onshore wind industry, reaching 40.6 gigawatts of wind power capacity by 2025 and exceeding 50 gigawatts by 2030 (Fernández, 2023a). While Spain generated 1,640 MW of wind power in 2022, 4 GW per year is necessary to reach Spain's installed wind energy goal of 62 GW by 2030, outlined in its INECP. This electricity is needed for direct consumption by households and businesses, but also industrial consumption through key sectors, such as renewable hydrogen. It is imperative that Spain meets its wind power installation goals or there will be multi-sectoral implications. Figure 1.3 highlights key statistics relating to wind energy in Spain (AEE, 2024).

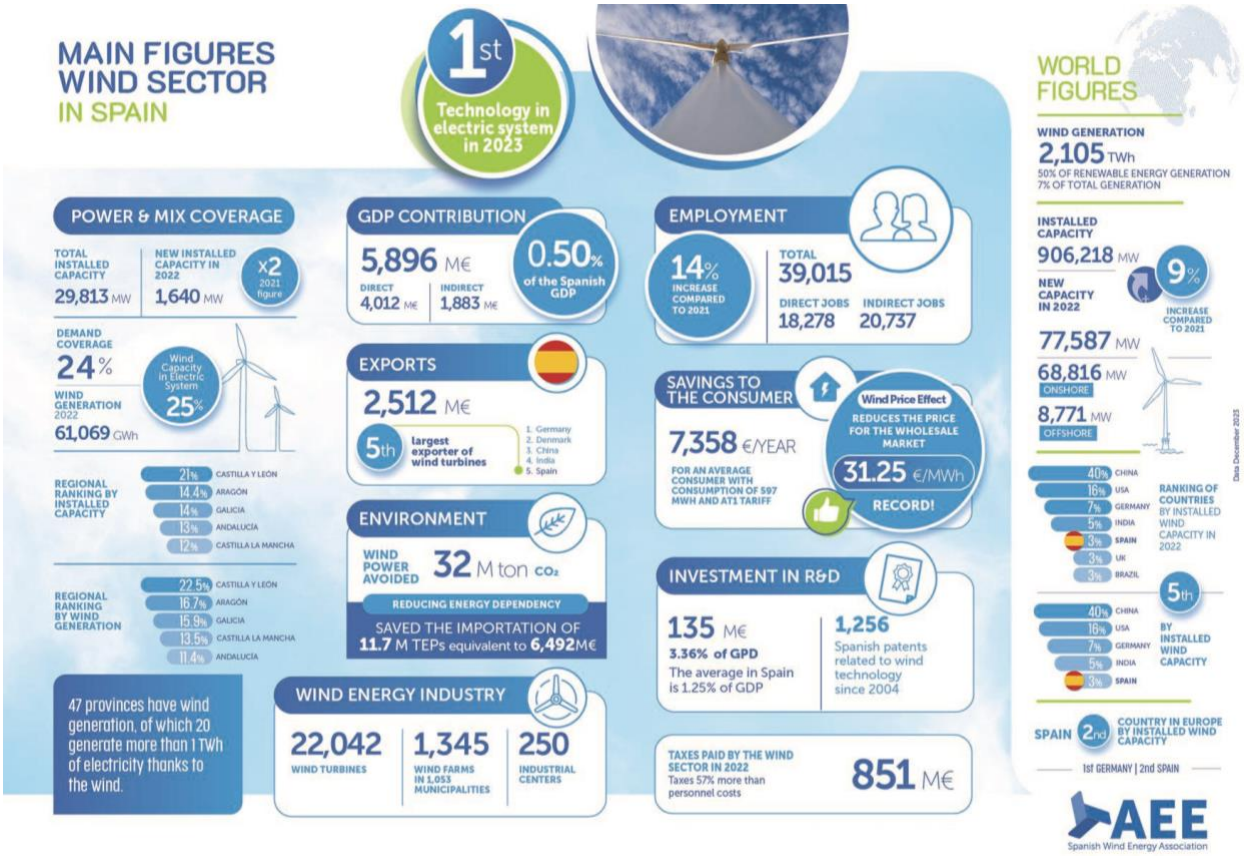


**Figure 1.3:** Wind energy in Spain is a dominant component in the energy sector, with a total installed capacity of 29,813 MW (AEE, 2024).

**Burgos as a Favorable Site for Wind Energy**

Located in northern-central Spain in the autonomous community of Castilla y Léon, the Burgos province is one of Spain's leading provinces in renewable energy generation. Burgos is an industrial leader in the automotive, agriculture, and agri-food industries (ERDF, 2017). It is known for its quality and varied gastronomy, as well as its rural tourism sites, due to its high natural and landscape heritage. However, a significant challenge facing the province of Burgos is depopulation. The province is home to 355,693 people, yet 68.9 percent live in three localities—Burgos, Aranda de Duero, and Miranda de Ebro (CHERRIES, 2020). Only 31 percent of the population—110,328 individuals—live in the remaining 368 municipalities or 1,197 population centers. Out of these 1,197 population centers, 953 of them have fewer than 100 inhabitants. A prominent demographic issue in the province is the rural environment, as the rural areas and countryside of Burgos are depopulated since many young inhabitants choose to leave these rural areas in search of better employment opportunities and livelihoods. As a result, 24.04 percent of the population is over 65 years old (CHERRIES, 2020).

While Burgos is known for its beautiful landscape and population challenges, it is also a leader in renewable energy. Burgos produces renewable energy generated from solar, biomass, hydraulic, and wind sources. In 2022, 87.9 percent—5,816,424 MWh—of Burgos's energy generation came from renewable sources (Pérez Miguel, 2023a). Regarding solar power, 1,222 photovoltaic (PV) installations generate 31.2 MW for self-consumption (Pérez Miguel, 2023b). This technology is designed to consume what is produced, usually located in homes or companies. Burgos is the province in Castilla y León with the greatest installed self-consumed solar power, amounting to 23.3 percent of the total of the autonomous community (134 MW). In 2022, Burgos produced 93,825 MWh of solar PV energy, contributing to 4.79 percent of the regional total. Biomass is another emerging renewable energy source in the Burgos province, which is home to over 480,000 hectares (ha) of forest biomass surface with the potential for sustainable annual use of over 190,000 tons of dry pine product matter and 200,000 tons of hardwoods, mostly in the zones of Las Merindades y la Demanda-Pinares (SODEBUR, 2020). Data from the Biomass Observatory, developed by the Spanish Association for Biomass Energy Valorization (AVEBIOM), shows 8,323 biomass installations in the province of Burgos in 2023 (Pérez Miguel, 2022). The installations include biomass stoves and boilers, and the growth rate of these installations has increased by 502.5 percent since 2011. While biomass consumption

produces GHGs, it is cheaper than diesel, gas, or electricity, and at times, can be less polluting. Hydropower was also present in the 2022 gross annual production, contributing to 69,920 MWh (EREN, 2022). Furthermore, fossil-fuel generated thermal energy still totaled 702,844 MWh.

**Table 1.1:** The Ente Público Regional de la Energía de Castilla y León's (EREN's) Annual 2022 report provides the gross electricity production (MWh) for each province (EREN, 2022).

| Province | Nuclear | Thermal[1] | Hydro | Wind | Solar PV | Solar Thermal-Electric | **TOTAL** | % National Total | % Regional Total |
|---|---|---|---|---|---|---|---|---|---|
| ÁVILA | 0 | 0 | 76,983 | 585,276 | 132,598 | 0 | 794,857 | 3.48% | -0.61% |
| BURGOS | 0 | 702,844 | 69,920 | 4,609,093 | 93,825 | 0 | 5,475,682 | 24.01% | 1.45% |
| LEÓN | 0 | 456,047 | 487,611 | 703,678 | 131,851 | 0 | 1,779,187 | 7.80% | -3.73% |
| PALENCIA | 0 | 277,262 | 76,551 | 1,914,597 | 186,331 | 0 | 2,454,741 | 10.76% | -0.76% |
| SALAMANCA | 0 | 153,318 | 3,024,770 | 371,178 | 287,448 | 0 | 3,836,715 | 16.82% | -38.60% |
| SEGOVIA | 0 | 145,237 | 6,460 | 90,204 | 127,011 | 0 | 368,912 | 1.62% | -19.30% |
| SORIA | 0 | 358,414 | 8,980 | 2,461,756 | 32,797 | 0 | 2,861,948 | 12.55% | -1.10% |
| VALLADOLID | 0 | 482,676 | 3,850 | 1,594,307 | 714,408 | 0 | 2,795,241 | 12.25% | -2.69% |
| ZAMORA | 0 | 16,510 | 918,063 | 1,255,274 | 253,094 | 0 | 2,442,941 | 10.71% | -25.43% |
| **Total regional** | 0 | 2,592,308 | 4,673,188 | 13,585,364 | 1,959,363 | 0 | 22,810,224 | 100.00% | -13.16% |
| **Total national** | 58,589,336 | 112,580,069 | 21,989,538 | 60,041,911 | 28,030,751 | 4,535,636 | 285,767,242 | ---- | 6.71% |
| % Castilla y León | 0.00% | 2.30% | 21.25% | 22.63% | 6.99% | 0.00% | 7.98% | ---- | ---- |

Most notably, the province of Burgos is a leader in wind energy installations and production. As a province, Burgos has become a strategic site for wind energy due to its favorable wind conditions and mountainous landscape (García, 2022). On a regional level,

[1] Thermal energy includes coal plants, fuel and gas, combined cycle, co-generation, and renewable thermal (EREN, 2022).

Castilla y Léon has the highest percentage of installed wind capacity—21.5 percent—than any other Autonomous Community in Spain and has the highest ranking by wind generation of 22.5 percent (AEE, 2024). As shown in Table 1.1, within the autonomous community, Burgos produces the most wind energy of any other province, contributing to 33.93 percent of Castilla y León's wind energy sourced energy in 2022 (EREN, 2022). In 2022, Burgos produced 4,609,093 MWh generated from wind energy, which accounted for 84.17 percent of the total energy produced by the province. As the leading producer of wind energy in the country, Burgos plays a pivotal role in helping Spain achieve its decarbonization and renewable energy targets, as well as promoting a just and sustainable energy transition. Across Spain and within Burgos, Iberdrola is a dominant generator and provider of electricity. Before showcasing Iberdrola's presence in Burgos through its wind energy projects, the next section introduces the firm.

## Iberdrola's Spanish Operations

*History of Iberdrola and its Presence in Spain, Castilla y León, and Burgos:*

Iberdrola, a global energy electric utility company, is headquartered in Bilbao, Spain, and is a world leader in renewable energy development. With a market value of USD 81.39 billion, Iberdrola is the fifth-largest global electric utility company, as of June 2023 (Statista, 2023). Figure 1.4 highlights Iberdrola's earnings across its energy production and customers (generation and commercialization) and networks (distribution) for Q1 in 2022 (Financial Times, 2023).

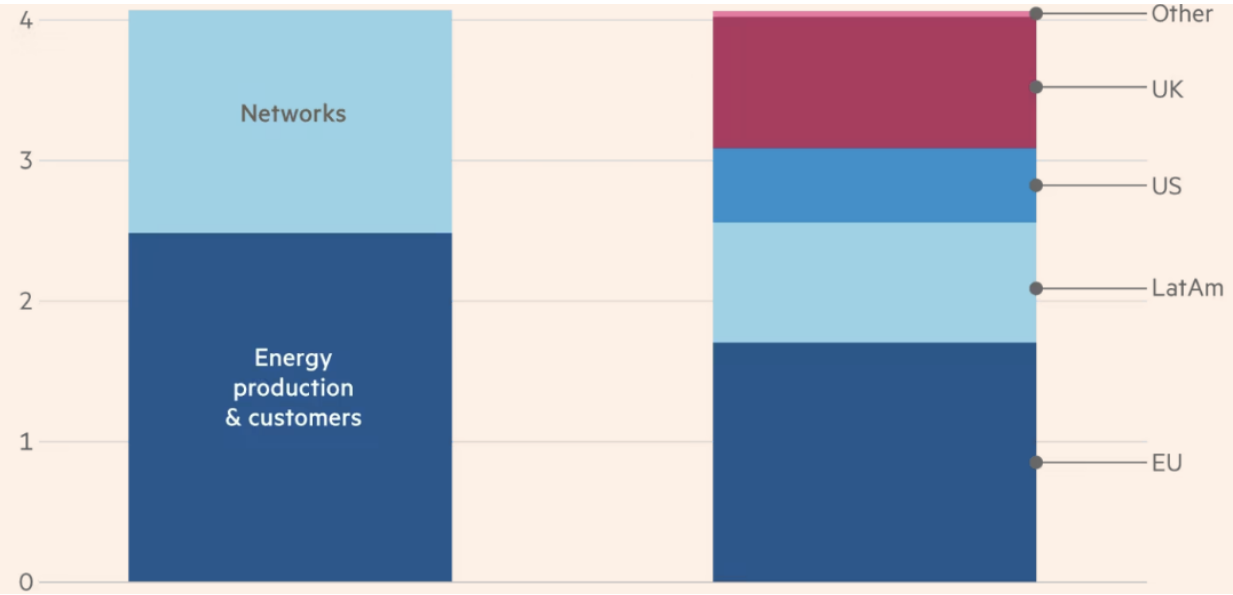


**Figure 1.4:** For Q1 in 2022, over 60 percent of Iberdrola's global earnings came from generation and its customer business, whereas 39 percent came from networks (Financial Times, 2023).

In 1912, Iberdrola was formed from the merger of Iberduero and Hidroélectrica España (Iberdrola, 2024g). Iberdrola operates through the country subholdings, such as Avangrid in the United States. Figure 1.5 highlights the company's global corporate structure (Iberdrola, 2024c). Spain's subholding is Iberdrola España, S.A.U., which operates through the following subsidiaries: Iberdrola Energía Sostenible España, S.A.U. (Iberdrola's commercialization and generation business), i-DE Redes Eléctricas Inteligentes, S.A.U. (Iberdrola's networks business), and Iberdrola Energía España, S.A.U. (head of Iberdrola's commercialization business).

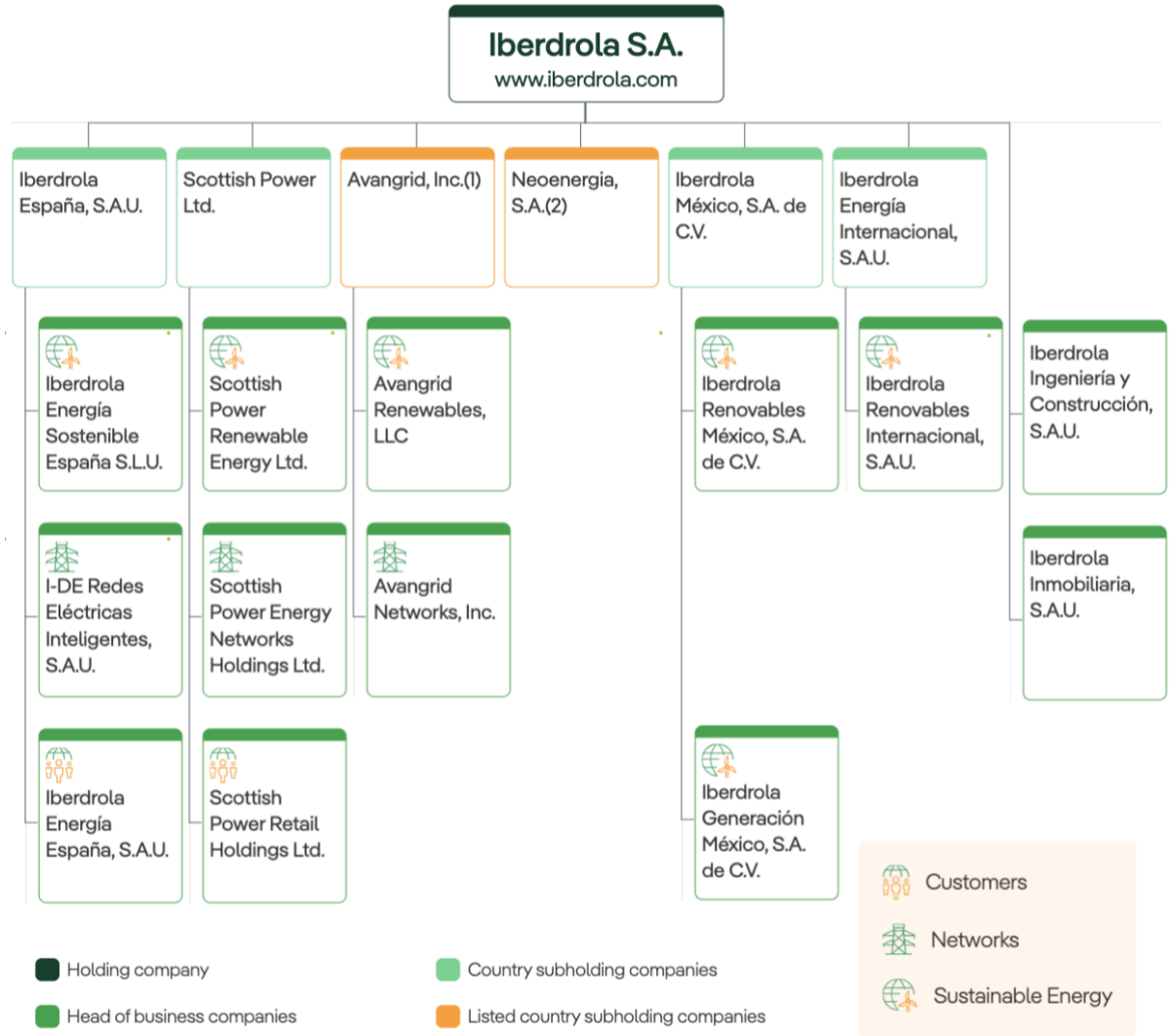


**Figure 1.5:** Iberdrola operates through six country subholdings. Iberdrola España, S.A.U. is the Spanish subholding, which operates through three subsidiaries (Iberdrola, 2024c).

Iberdrola operates in dozens of countries, supplying energy to around 100 million people and employing over 42,000 individuals. When Chairman Ignacio Galan assumed his role in 2006, he provided a vision of how renewable energy should play a part in future development.

Under Galan, the company began investing in renewable energy two decades ago as a basis for its sustainable business model, and thus, became an early leader in the global renewable energy space. Through Q1 of 2024, Iberdrola has installed 42,387 megawatts (MW) of operational renewables (Iberdrola, 2024e). To provide an example of Iberdrola's investment growth in renewable energy, from Q1 of 2019 to Q1 of 2024, the installed capacity of renewables, including onshore wind, hydropower, and solar PV, increased by 37.5 percent, from 15,791 MW in 2019 to 21,708 MW in 2024 (Iberdrola, 2020a; Iberdrola, 2024l).

To reach Spain's decarbonization targets in the energy sector, there is a need for large-scale solutions, which paves the way for intervention of multinational energy companies. While serving as one of the largest electricity suppliers in the nation, Iberdrola is a major developer of onshore wind energy in Spain with an installed capacity of 6,550 MW and a net production of 10,726 GWh (Iberdrola España, 2024c). In 2024, 70.2 percent of Iberdrola's installed capacity in Spain is from renewable energy, 21.2 percent of which is onshore wind. By holding an influential role in renewable energy in Spain, Iberdrola is responsible for helping catalyze the nation's green climate and energy transition (Iberdrola, 2024l).

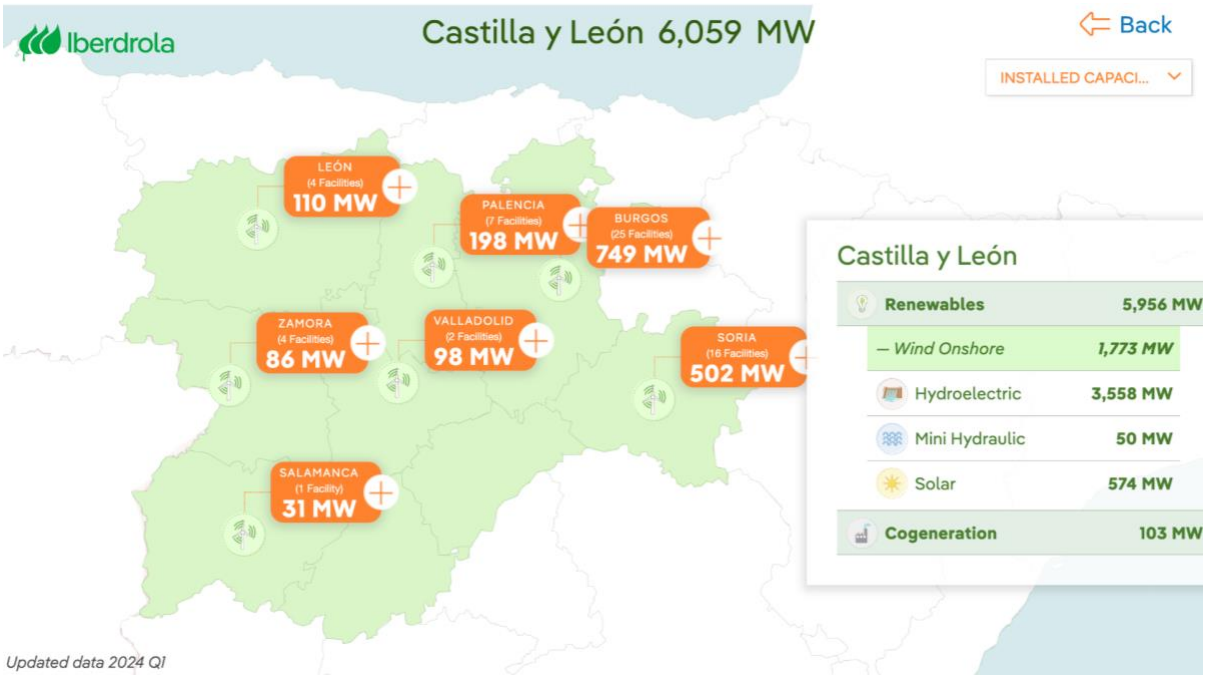


**Figure 1.6:** Iberdrola has installed the most wind farms in Burgos, with a total installed capacity of 749 MW, compared to other provinces in Castilla y León (Iberdrola, 2024f).

In Spain, Iberdrola has 196 onshore wind facilities, spread across 13 autonomous communities. Out of those 196 wind facilities, 59 of them—comprising 30.1 percent of Iberdrola

national wind energy contribution and producing 1,773 MW—are in Castilla y Léon. Figure 1.6 highlights the breakdown of Iberdrola's onshore wind farms in Castilla y León (Iberdrola, 2024f). Within Castilla y Léon, the province of Burgos has the greatest number of facilities at 25, housing 42.37 percent of Iberdrola's wind farms in the autonomous community and 12.76 percent of the company's wind farms nationally with an installed capacity of 749 MW. Iberdrola's largest wind farm in Burgos is the Buniel wind farm (104 MW), located in the towns of Albillos, Arcos de la Llana, Buniel, Cavia, Cayuela, Villagonzalo Pedernales and Villalbilla de Burgos. Other wind park's Iberdrola has deployed in Burgos are Alto de la Degollada (50MW), Valdemoro (49.5 MW), and Huesa (18 MW). Figure 1.7 highlights Iberdrola's onshore wind farms in Burgos (Iberdrola, 2024f).

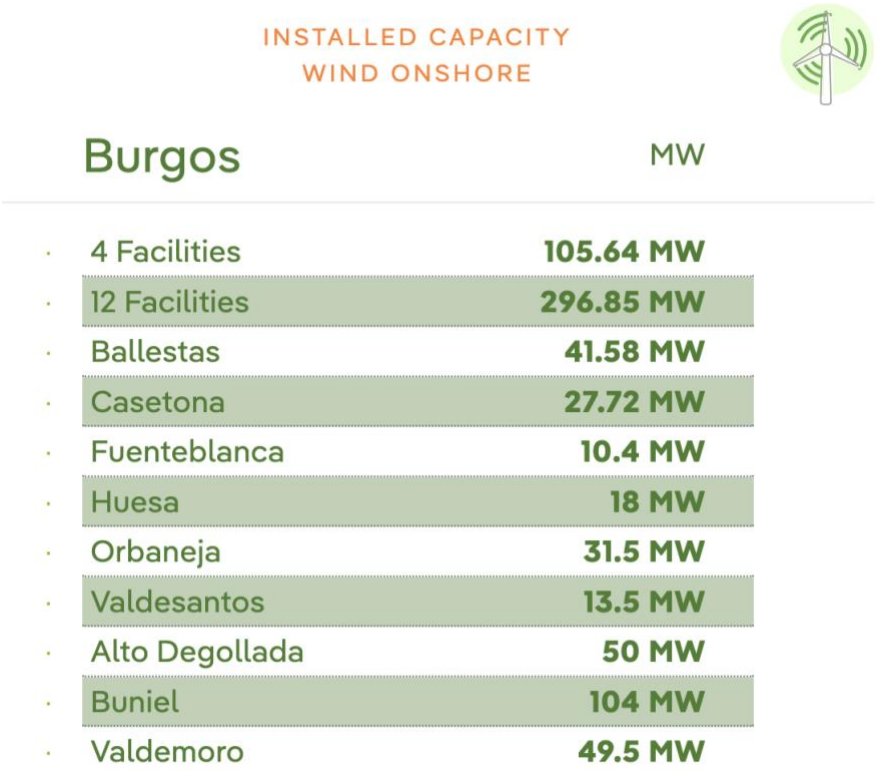


**Figure 1.7:** Out of Iberdrola's 25 wind farms in Burgos, the Buniel wind farm has the greatest installed capacity of 104 MW (Iberdrola, 2024f).

*Iberdrola's Environmental Social Governance (ESG) strategy:*

Outlined through its environmental social governance (ESG) strategy,[2] Iberdrola has established a target to achieve carbon neutrality for scope 1 and scope 2 emissions by 2030 and

[2] Environmental Social Governance (ESG) refers to the environmental, social, and governance criteria that is used in investing to score companies on sustainability and responsibility metrics (Investopedia, 2024).

net-zero emissions—including scope 3—by 2040, fueled through four drivers: 100 percent renewables, 100 percent green procurement, 100 percent more robust and digitized, intelligent networks, and green products and solutions for customers (Iberdrola, 2024b).[3] The company claims that these climate commitments will help them uphold their values of promoting an inclusive transition, universal access to competitive energy, and a net positive impact on biodiversity, all while positively impacting society and nature (Iberdrola, 2024b). These commitments are supported by Iberdrola's governance scheme as they are embedded in Iberdrola's By-Laws. The By-Laws entrust the company's Board of Directors with the responsibility to uphold these environmental and social objectives through approving and producing regular climate action reports, as well as ensuring adequate annual reporting, to achieve climate neutrality by 2050. To help realize and finance its ESG goals, Iberdrola is implementing its Strategic Plan 2024-2026, where the company states it will invest 41 billion euros by 2026 to drive the energy transition and help build a globally accessible and sustainable electrical energy model based on preserving the planet and the welfare of people (Iberdrola, 2024k). Thirty percent of this investment—EUR 15.5 billion—will be in renewable energy with an estimated 30 percent allocated for onshore wind investment. Wind energy is an integral component of Iberdrola's contribution to the energy transition, and as shown in Figure 1.8, Iberdrola indicates that wind energy provides several advantages (Iberdrola, 2024i).

While promoting renewable energy development, Iberdrola has stated its commitment to engaging local communities through its implementation of a just energy transition—a low-carbon transition that is inclusive, fair, equitable, and leaves no one behind (KPMG, 2023). The company claims to engage stakeholders within its business and operations by adding sustainable added value, referring to Iberdrola's ESG activities that contribute to sustainable development and benefit stakeholders (Iberdrola, 2024p). For example, through its energy projects, Iberdrola aims to provide universal energy access, assist vulnerable groups, and promote socially responsible supply chain practices, among other activities to promote added value. Part of their efforts to provide additional value to stakeholders is through their social dividend initiative, Convive program, and Citizen's Innovation Platform, all of which emphasize Iberdrola's

[3] Scope 1 emissions are emissions from sources directly controlled by an organization, whereas Scope 2 emissions are those that a company causes indirectly through energy use and purchase. Scope 3 refers to emissions not directly produced by a company but those from up and down its value chain (National Grid, 2024).

commitment to integrating communities and driving social, economic, and environmental change.[4] In the next chapter, I outline my literature review and the methodological process that I followed throughout my research.


**Figure 1.8:** Iberdrola lists the advantages of wind energy (Iberdrola, 2024i).

[4] I will explore these social initiatives in more detail in Chapter 4.

## Chapter 2: Literature Review

Within the literature, the term energy localization is not a well-developed framework, yet many scholars identify the necessary components involved in energy localization. Notably, del Río and Burguillo's 2008 article, "Assessing the impact of renewable energy deployment on local sustainability: Towards a theoretical framework" serves as a foundational piece for developing the framework to assess the impact of renewable energy systems. Del Río and Burguillo (2008) highlight that both a substantive and procedural sustainability approach framework should assess the sustainability of renewable projects in specific territorial areas and local communities. Substantive sustainability is based on addressing the renewable energy project's local impact on the three dimensions of sustainability: economic, social, and environmental. This approach considers how a renewable project contributes to the welfare of its community, focusing on how improving local social, economic, and environmental conditions can raise residents' standard of living and provide local benefits. Alternatively, procedural sustainability refers to engaging in a participatory, social process that considers the interests and opinions of all stakeholders. From Del Río and Burguillo's (2008) analysis of the procedural sustainability literature, they summarize that it is important to not only focus on the direct economic, environmental, and social outcomes and impacts of a renewable energy project but also on the perception of the local population, its acceptance of the project, and the distribution of benefits across local actors.

Previous research has considered mostly substantive impacts, often failing to include all social, environmental, and economic impacts, or take a more procedural lens. Thus, prior research has not utilized an integrated framework through the concept of energy localization to analyze the impact of renewable energy development on local communities. Heinbach et al.'s (2014) study exemplifies this. Through their studying utilizing a methodical approach to quantify the employment and value added resulting from renewable energy systems at the local town level in Germany in the year of 2011, Heinbach et al. (2014) focus solely on economic impacts regarding the benefits of renewable energy. They break down this value added into three components: 1) After-tax profits of the participating enterprises, 2) Net incomes of involved employees, and 3) Taxes paid on business profits and on adjusted gross employee income. Heinbach et al. (2014) find significant economic benefits resulting from renewable energy systems—a total of 9.3 million euros of municipal value added generated through Germany's

renewable energy systems for the modeled average municipality in 2011. However, the study fails to consider other factors, notably the environmental, social, and procedural components, that add value, improve the sustainability, and increase community acceptance of a renewable energy project. Alternatively, del Río and Burguillo (2008) argue that both a top-down, substantive approach and bottom-up procedural sustainability framework are essential for analyzing the contribution of renewable energy projects on local sustainability. To determine the criteria for evaluating energy localization, I utilize del Río and Burguillo's framework, including both substantive and procedural sustainability components, as this approach attempts to holistically determine the local impacts of a renewable energy project on the surrounding communities.

**Substantive Approach**

Through their summary of substantive sustainability literature, del Río and Burguillo (2008) highlight an approach called the triangular and constant-capital approach, which considers the three dimensions of sustainable development (economic, social, and environmental) to assess the sustainability and impact of a renewable energy project, shown in Figure 2.1. Del Río and Burguillo offer examples of how these dimensions can increase a community's standard of living, through renewable energy projects. They particularly emphasize growth, efficiency and stability for economic factors, inclusion and governance for social aspects, and resilience/biodiversity, natural resources, and pollution for the environmental component, all to improve poverty, equity, and coevolution among local communities. In the context of my research, I utilize the three dimensions of sustainable development to characterize the various 'environmental, economic, and social initiatives' that Iberdrola could implement to involve and benefit the local communities through its wind energy projects.

Other research in the literature emphasizes the importance of the substantive approach in evaluating the localized impacts of a renewable energy project, offering the following examples of environmental, economic, and social initiatives:

- **Environmental initiatives** consist of preventing exploitation of a community's natural resources, reducing local pollution, safeguarding ecosystem stability and integrity (del Río & Burguillo, 2008), decarbonization via reduced air pollution and other environmental benefits (Sovacool, n.d.)., reducing dependence on fossil fuels, combating

landscape degradation and visual intrusion of facilities, lowering noise pollution (Stigka et al., 2014), integrating wind energy with storage systems, and siting of wind farms on degraded lands with limited to no species habitats (Msigwa et al., 2022).

- **Social initiatives** include establishing peace and social cohesion, permitting stakeholder participation, increasing regional cohesion (del Río & Burguillo, 2008), providing tourism facilities and visitor centers, promoting education visits and school support, and sponsoring local groups and teams (Centre for Sustainable Energy, 2007).
- **Economic initiatives** are rooted in improving the local population's living standards, increasing the regional per capita income, reducing energy dependence, increasing energy supply diversification, reducing unemployment and poverty levels, providing job permanence and quality (del Río & Burguillo, 2008), assisting local development, promoting energy security, (Stigka et al., 2014), creating installation, operation, and maintenance job opportunities, receiving certification emission reduction revenue and transmission line expansion planning (Msigwa et al., 2022), using locally manufactured content, using local contractors, buying shares and promoting local investment opportunities, renting land to local landowners, improving local community facilities, and providing lump sum/regular payments into a fund to benefit local residents for externalities (Centre for Sustainable Energy, 2007).

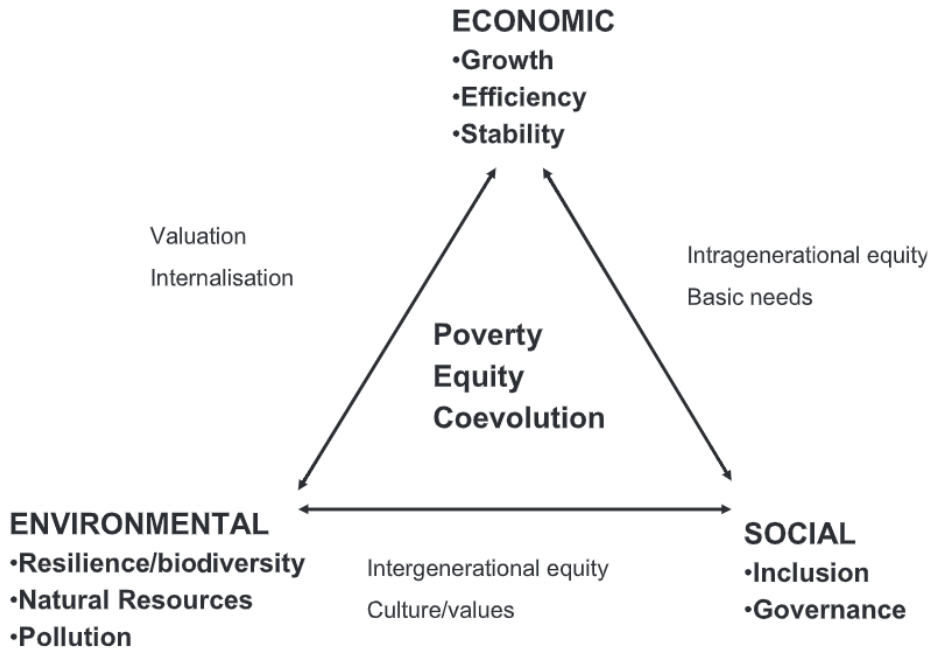


**Figure 2.1:** Del Río and Burguillo's (2008) triangular and constant-capital approach assesses the substantive components of sustainability: the environmental, social, and economic.

To further elaborate on social initiatives, Timón Iglesias (2023) studied the impacts of local livelihoods surrounding Iberdrola's Francisco Pizarro solar farm in Western Spain. The researcher found that the greatest impact on local people's livelihoods depended on local authorities and the social town-wide initiatives they decided to implement. This study emphasizes the importance of the social component in the substantive approach to best promote societal acceptance and ensure benefits are localized from renewable energy systems. To better understand the energy localization of wind projects, I will utilize this substantive approach to help determine community and stakeholder acceptance of the wind farms in the Burgos province.

**Procedural Approach**

To investigate the extent to which stakeholder involvement in wind energy projects increases energy localization and community acceptance, solely utilizing a substantive approach is not sufficient. Through their assessment of the social acceptance of the wind energy industry in Isthmus of Tehuantepec, Mexico, Martínez-Mendoza et al. (2020) illustrated that in addition to substantive sustainability criteria, such as employment generation and landscape impacts, the researchers evaluated communities' perception of how access to information and involvement in decision-making processes related to acceptance of the wind farms. Martínez-Mendoza et al. (2020) find that landowners are seemingly the only beneficiaries of the wind farms, as they receive compensation for renting their land. Alternatively, the community largely does not accept the wind energy systems, as there is a lack of transparency and information regarding the systems, and communities and local stakeholders are not included in the decision-making process. Additional findings suggest that most community members believe that the wind farms cause environmental harm, primarily due to noise pollution. These projects also brought social unrest by promoting social conflicts and through a lack of access and information regarding the benefits of these systems. Interestingly, individuals do not consider that the wind energy systems are increasing economic opportunities in the community, emphasizing that in this case, measuring the economic output of these systems is not relevant to community acceptance. Overall, while evaluating substantive sustainability outcomes, this study additionally captures the value of transparency of information and inclusion of the local community in decision-making processes. This emphasizes the importance of a procedural approach in promoting community

acceptance of a wind farm; I utilize del Río and Burguillo (2008) foundational piece to define procedural approach.

Upon evaluating literature on procedural sustainability, del Río and Burguillo (2008) highlight that there should be consideration of a wide array of relevant stakeholders and local interests concerning the renewable energy project. Del Río and Burguillo (2008) define the procedural approach as a participatory approach to renewable energy development in which all local stakeholders' and parties' opinions and interests are considered. Embedded within this framework is the necessity of establishing a procedural approach to promote acceptance of renewable energy projects by the local community. Thus, in the context of my paper, I define procedural approach as the degree to which Iberdrola consulted and involved the interests and perspectives of all relevant stakeholders throughout the development of wind energy projects to best promote community acceptance.

Many scholars in the literature of procedural sustainability affirm the importance of a procedural approach in implementing energy localization of renewable energy projects. Klok et al. (2023) provide several examples of how a company's procedural process through wind energy projects works to increase perceived justice and build trust among local stakeholders, including involving local communities in project site selection, engaging local authorities, and providing process transparency. Permitting stakeholder participation in meetings, workshops, and draft plans surrounding project construction and facilitating quality of communication between all actors further facilitates this participatory process. Duarte et al. (2022) further highlight that an open procedure approach—referring to a transparent process and open dialogue with stakeholders surrounding the energy project—and local participation have helped improve community acceptance of wind projects. To achieve more social acceptance of renewable energy deployment, the authors conclude that there needs to be more of a "bottom-up" (as opposed to "top-down") approach in which there is a transparent, participatory, and decentralized management model, and the tangible and intangible benefits are clear for the local community. The literature further expresses that partial or complete community ownership of renewable energy projects increase local acceptance and provision of socioeconomic benefits. Musall and Kuik (2011) offer evidence that co-ownership (commercial and community shared ownership) of wind energy evokes more positive local community attitudes toward wind energy than sole ownership by a commercial company. Overall, these conclusions offer insight that energy

localization is improved when community stakeholders are involved in and consulted throughout the decision-making process of renewable energy deployment. My work will add to the understanding of this concept.

**Gaps**

There are various gaps in the study of private companies' ability to implement energy localization. While many studies and energy initiatives focus on economic (Hirsch & Sovacool, 2013; Heinbach et al., 2014) or environmental impacts (Robinson, 2004) of renewable energy systems, many studies fail to evaluate all the substantive elements and the procedural aspects when determining localized impacts of a project. Thus, a major gap is that there is a lack of a comprehensive framework to thoroughly measure the energy localization of wind farms. This is further supported by Berka and Creamer's (2018) comprehensive literature review, which summarizes the local impacts of community renewable energy and the processes and conditions from which they arise. Berka and Creamer (2018) highlight that the most common impacts are indirect, longer-term, and result from investment of project revenues in the surrounding community. However, there was a scarcity of statistical evidence of direct local impacts since few studies have explicitly evaluated the immediate local impacts of renewable energy projects. This complements the prior literature gap, emphasizing that the measurement of energy localization does not follow a consistent methodology and is defined differently on a case-by-case basis dependent on the investigator's perspective on "successful" local impacts. This leads to a lack of a widespread consensus on whether private companies invested in local sustainability initiatives can implement successful energy localization through renewable energy projects. Additionally, results further highlight the significant discrepancies and community-specific opinions that exist in public perception surrounding wind energy (Duarte et al., 2022), all of which impact the perception of energy localization of wind systems. In this way, my research will help establish a conceptual framework and concrete methodology for measuring energy localization of wind energy projects by privately owned energy companies.

## Chapter 3: Methodologies

To combat climate change and contribute to a just energy transition, renewable energy projects must have beneficial, localized effects on the surrounding community. Strong localization includes adapting products, services, and content to the local environment and begins with early and open consultation with communities. Energy companies tend to have a large global reach, impacting numerous communities all over the world. Iberdrola, for example, operates in dozens of countries, including Spain, the United Kingdom, the United States, Brazil, and Mexico. Corporate-level initiatives described in annual sustainability reports would have different levels of engagement in different environments. Even within one country, the local conditions and social structure vary. While Iberdrola has expressed commitment to energy localization through its facilities globally, I seek to investigate the degree to which this is carried out through wind energy in Burgos. Through my research, I combine a bottom-up and top-down approach to energy localization by engaging both with local stakeholders in the Burgos province, as well as Iberdrola representatives and publicly available reports and accounts. I map out integral components of the local energy context in Burgos, as well as the degree of consultation with local stakeholders throughout the wind farm development process. I seek to answer the following questions: Were communities consulted? If so, when? Were a wide range of groups included? Were substantive initiatives implemented that cater to local community needs? Does this consultation regarding wind project development procedures and the accompanying localization initiatives affect social acceptance of the wind farm and increase the likelihood of perceived economic, environmental, and social benefits from the project?

Concerning my case selection of Iberdrola, I was fascinated both with its connection to Maine and Spain. Iberdrola is the parent company of Avangrid, which owns Central Maine Power (CMP), a major electric utility company in Maine. After hearing mixed perspectives concerning CMP over my years at Colby, I was curious about whether its parent company Iberdrola is subject to the same scrutiny. When learning about the CMP corridor as well, several complaints from local community members arose from a lack of company consultation. I thought it would be interesting to understand on a broader, cross-continental level how CMP's extension company is handling the same challenges of renewable project development and community involvement. Since I studied abroad in Sevilla during my junior year spring, I thought it would be fascinating to explore these energy challenges back in Spain with one of the largest global

energy companies. Additionally, Iberdrola is known for having favorable ESG performance ratings among other competitors in the industry. Based on CMP/Iberdrola's controversial reputation in Maine, I was intrigued by these favorable ESG ratings and wanted to uncover the reality of their sustainability performance, particularly through localized community impacts.

I chose the Burgos province as my research site due to its role as a leading producer of wind energy in Spain. Burgos is one of the provinces where Iberdrola invests the most in onshore wind development in the country due to the high installed capacity of wind energy. Additionally, Burgos is in close proximity to Iberdrola's corporate headquarters, located in Bilbao. Upon selecting a research site, I also wanted to factor in what constitutes a 'community' in the context of renewable energy. Through the exploration of different communities impacted by renewable energy systems, Tarhan (2015) offers two approaches to defining community: "communities-of-location" versus "communities-of-interest." Communities of location are geographically defined whereas communities of interest are not geographically bound but form a community through individuals' support of a common interest. As a geographically bound community that experiences evident impacts and has various perspectives, whether positive or negative, on the development of wind energy, I felt that the province of Burgos represented both a community of location and interest. Thus, Burgos as my research site allows me to define the barriers of 'local'—referring to within the province—and to holistically evaluate the perspectives of communities in this province. While analyzing the province on a macro level, I aimed to culminate specific local community perspectives on localization, as these rural municipalities are the areas most directly affected by Iberdrola's wind energy systems and localization efforts. Evaluating energy localization on the provincial level through a culmination of these local experiences, versus solely focused on one municipality, allowed me to access a wider range of perspectives to help analyze my research question.

After choosing to focus on the wind farms in Burgos, I collected evidence through semi-structured conversations with stakeholder groups, meetings with Iberdrola ESG executives, email exchanges with Iberdrola representatives, and content analysis. To gauge local perception, acceptance, and benefits of Iberdrola's Burgos wind farms in the local communities, I engaged in semi-structured conversations, asking a range of 10 to 20 questions. Through preliminary research, I identified relevant stakeholders specific to the Burgos community that were either directly or indirectly involved in wind energy in the province. I reached out to a broad range of

stakeholders involved in or impacted by different components of the wind industry, including but not limited to wind organizations, governmental groups, local sustainable development NGOs, academic affiliated groups, local community members, and more. I also aimed to reach a wide range of stakeholders that have diverse interests and opinions related to wind energy and Iberdrola. After reaching out to relevant actors via email, I had conversations with 12 participants from 8 stakeholder groups, both in-person and virtually via Google Meets, Zoom, or WhatsApp. These conversations lasted, on average, from 20 minutes to an hour. My conversations with Ribering and Guzmán Renovable took place through an academic, panel-style presentation. At the event, I spoke with representatives from Guzmán Renovable and heard perspectives on energy localization from about 10 community members, shown in Figure 3.1. When referring to all stakeholder representatives, I use "they" for all pronouns to keep gender identity confidential. Geographically, these organizations are located in different areas in the province of Burgos and the autonomous community of Castilla y León. Furthermore, the stakeholders, while all related to wind energy in Burgos, had varying levels of direct and indirect involvement, as well as a diverse range of perspectives of and relationships with Iberdrola. This was intentional, as I wanted to hear perspectives from both sides to best construct an unbiased argument. These are the following stakeholder groups I conversed with:[5]

- **Asociación Ábrego Medioambiente y Desarrollo Rural (Ábrego):** A non-profit association that promotes the repopulation of the rural environment through activities, projects, and events to social, economically, and culturally energize the rural community and its connection to the urban community (Ábrego, 2024).
- **Association of Wind Energy Promoters of Castilla y León (Apecyl):** An association that promotes the development, execution, and implementation of wind energy projects within the autonomous community of Castilla y León (Apecyl, 2024).
- **Ente Público Regional de la Energía de Castilla y León (EREN):** An organization that unifies, develops, and integrates policies approved and implemented in the energy sector at the regional level (Ayuntamiento de Burgos, 2024).

[5] When referencing these organizations, I abbreviated some of their names, created new acronyms, or utilized existing acronyms to reduce wordiness in my thesis. Additionally, often throughout my thesis, I utilize the organizations' names or acronyms to refer to the representative's perspective for simplicity and conciseness. Despite this wording, I am not claiming that the representative is necessarily speaking on behalf of the whole organization and that these perspectives match those of all the representatives that work for the organization.

- **Fundación Caja de Burgos (FCB):** A foundational entity that mainly promotes social and economic development in the province of Burgos (FCB, 2013).
- **Guzmán Renovable:** A non-profit organization that installed one of the first solar energy communities in Castilla y León, located in Guzmán, Burgos (Guzmán Renovable, 2023).
- **Mesa Eólica Merindades de Burgos (Mesa Eólica):** An association for the knowledge, conservation, defense, and study of nature, particularly specialized in the effects of wind farms on the environment (Mesa Eólica, 2024)**.**
- **Ribering:** A coworking space for collaboration in Aranda de Duero, a city in the southern part of Burgos, that hosts local community events regarding education, business incubation, culture, open innovation, well-being, or health (Ribering, 2024).
- **Universidad de Burgos (UBU):** A public university in Burgos.


**Figure 3.1:** During a panel event in collaboration with Guzmán Renovable and Ribering, I gave an academic presentation on my research and engaged in an open discussion with community members (Ribering, 2024).

From the conversations and the presentation, I collected qualitative evidence on the economic, social, and environmental initiatives that Iberdrola implements through its wind energy projects in Burgos, as well as the degree to which it promotes a procedural approach to engage relevant stakeholders in decision-making processes. After collecting data, I utilized the AI software Sonix to upload, transcribe, and translate the recorded conversations into English. All quotes have been translated into English from Spanish utilizing Sonix.

The second part of my research consisted of attending Iberdrola ESG corporate meetings. Out of serendipity, there was a Colby Jan Plan centered around analyzing Iberdrola's ESG+F goals that I was able to participate in. I was accompanied by Laney Brown '90, Avangrid Vice

President in Sustainability, Alison Beyea, the Executive Director of the Goldfarb Center, Professor Yang Fan, Todger Anderson Assistant Professor of Investing and Behavioral Economics, Zoky Zhou ‘24, Koto Yamada ‘25, Leila Iredell ‘26, and Zane Schiffman ‘26. As a part of the course, I traveled to Bilbao for one week and attended 12 presentations from 15 Iberdrola ESG executives, all centered on topics related to ESG+F[6] within Iberdrola, ranging from sustainability targets, to Net Zero, to biodiversity, to procurement, to ESG financing, and more. Figure 3.2 captures a snapshot of our conference room before one of these meetings. While I was unable to directly quote speakers, I used the cohort information as background to shape my research regarding Iberdrola’s energy localization efforts.[7]

**Figure 3.2:** During my week in Bilbao, I attended several Iberdrola meetings in their corporate headquarters (left to right: Professor Fan, Mia Cromwell ‘24 (me), Alison Beyea, Laney Brown ‘90, Zane Schiffman ‘26, Zoky Zhou ‘24, Leila Iredell ‘26, and Koto Yamada ‘25).

While I was not able to directly incorporate Iberdrola executives’ perspectives into my thesis, I received permission to reach out to one Iberdrola executive from Bilbao who specializes

[6] Iberdrola uses the term ESG+F to include finance in their ESG strategy.

[7] Because of the agreement I made with the Goldfarb cohort, I was not able to associate my personal research with the work of the cohort. As a result, I was not able to ask any of the Iberdrola executives if they wanted to participate in my research, except for one executive I received permission to email this spring (who never responded). Thus, I was not able to hear any of their perspectives on Burgos wind energy localization initiatives during my time in Bilbao.

in stakeholder engagement. I also engaged in additional Iberdrola outreach. I emailed Iberdrola's environmental contact and submitted 6 requests through their query mailbox under the topics of diversity and inclusion, the environment, human rights, society at large, sustainability management, and sustainable events.[8] I also reached out to five Iberdrola representatives working as directors, delegates, and/or project managers involved in Iberdrola's onshore wind energy projects in Burgos via LinkedIn. Out of these efforts, two connections were successful: I engaged in email exchange conversations with two of Iberdrola directors in the Burgos area.[9] I differentiate between these individuals by referring to them as 'Iberdrola director one' and 'Iberdrola director two.'[10]

Regarding content analysis, I analyzed Iberdrola's 2023 Statement of Non-Financial Information Sustainability Report, the 2022 Biodiversity Report, and the 2024 Integrated Report as well as complementary policy documents, such as Iberdrola's Environmental Policy and Stakeholder Engagement Policy and Policy on Respect for Human Rights. Additionally, I utilized Iberdrola's main website, along with its Iberdrola España and Iberdrola España Foundation websites. I further analyzed Iberdrola's Blog called Historias en Verde: Historias sobre Energía, Futuro y Sostenible. I also supplemented Iberdrola evidence and stakeholder evidence with other relevant Spanish environmental, economic, and social reports, news sources, and environmental impact assessments (EIAs). I sought out a wide range of news sites, public reports, and other content to best understand the context of Iberdrola's energy localization, as well as to understand and consider all perspectives on the matter.

After gathering data, to assess my hypothesis, I utilize the operational definition of energy localization. In the context of my research, I operationalize energy localization as the degree to which Iberdrola implements relevant environmental, social/procedural, and economic initiatives through their Burgos wind projects that impact communities, characterized as strong positive, weak positive, weak negative, and strong negative. Rooted in the literature on energy localization and based on my qualitative data from Iberdrola and stakeholder groups, I created energy localization groupings to best organize and evaluate the data. As shown in Table 3.1, I

[8] Every time I attempted to submit a query request on both the English and Spanish Iberdrola websites, the screen would project the message, "The data received by the application is not correct." It is unclear if my messages were ever received.

[9] To be most efficient and effective with the limited interactions I had with Iberdrola, I emailed the contacts four questions directly related to Iberdrola's energy localization initiatives in Burgos instead of conducting interviews.

[10] For a list of references of all interviews and email exchanges, both cited as conversations, see Appendix A.

evaluated Iberdrola's wind energy localization initiatives in Burgos based on the following substantive and procedural categories:

**Table 3.1:** The energy localization components—substantive and procedural—are relevant to the various environmental, social, and economic categories assessing Iberdrola's wind energy localization efforts in Burgos.

| Energy localization components | Energy localization categories | Relevant literature |
|---|---|---|
| Environmental **substantive** initiatives | - Promoting decarbonization<br>- Safeguarding biodiversity, nature, and landscapes | Del Río and Burguillo (2008)<br>Stigka et al. (2014)<br>Msigwa et al. (2022)<br>Sovacool (n.d.) |
| Social **substantive** and **procedural** initiatives[11] | - Consultation with and representation of local communities<br>- Implementation of social services & programs | Centre for Sustainable Energy (2007)<br>Del Río and Burguillo (2008)<br>Duarte et al. (2022)<br>Klok et al. (2023)<br>Martínez-Mendoza et al. (2020)<br>Musall and Kuik (2011)<br>Timón Iglesias (2023) |
| Economic **substantive** initiatives | - Providing local employment and procurement<br>- Issuing taxation and compensation to landowners<br>- Reducing energy dependence | Centre for Sustainable Energy (2007)<br>Del Río and Burguillo (2008)<br>Heinbach et al. (2014)<br>Msigwa et al. (2022)<br>Stigka et al. (2014) |

To analyze my qualitative data from my field notes and evaluate the successful implementation of the different components of energy localization from Table 3.1, I utilize a four-point scale, shown in Table 3.2. This scale characterizes Iberdrola's implementation of energy localization as ranging from strong positive (high implementation of energy localization components, fewer contradictory evidence, and stronger support for localization) to strong negative (low implementation of energy localization components, fewer contradictory evidence, and limited support for localization). I utilize this scale to evaluate Iberdrola's performance in

[11] Methodologically, since social substantive efforts were often intertwined with the procedural approach (for example, Iberdrola's adequate consultation with communities would allow them to better understand what the community needs, and thus, implement relevant social services), I group these components when presenting and analyzing the data.

the energy localization categories from the literature that the company has committed to implement, specifically by weighing complementary and contradicting Iberdrola and stakeholder arguments. Arguments that "outweigh" others are claims that come from groups that are more in-touch with energy localization outcomes than others (for example, individuals' perspectives on consultation who live in the communities where Iberdrola's wind farms are located may outweigh claims of people from the city center who are not directly experiencing Iberdrola's consultation schemes). This scale guided my determination of whether local stakeholders perceive greater benefits or drawbacks in energy localization components, compared to what Iberdrola has committed to provide or has implemented through its wind energy systems in Burgos. In addition to comparing Iberdrola's implementation of localized impacts, I use the scale to compare how different stakeholders perceive Iberdrola's economic, social/procedural, and environmental initiatives. These procedures helped me to evaluate Iberdrola's wind energy localization impacts in Burgos.

**Table 3.2:** The four-point scale, ranging from strong positive to strong negative, evaluates the environmental, social/procedural, and economic components of Iberdrola's wind energy localization initiatives in Burgos.

| | |
|---|---|
| **Strong positive** | Both Iberdrola's and stakeholder groups provide strong evidence that energy localization is implemented. There are contradictory examples present among stakeholders and compared to Iberdrola, but positive arguments fully outweigh any negative claims. |
| **Weak positive** | Both Iberdrola's and stakeholder groups provide evidence that energy localization is implemented. There are contradictory examples present among stakeholders and compared to Iberdrola, but positive arguments outweigh the negative claims. |
| **Weak negative** | Stakeholder perspectives provide evidence that energy localization is not being implemented. There are contradictory examples present among stakeholders and compared to Iberdrola, but negative arguments outweigh the positive claims. |
| **Strong negative** | Stakeholder perspectives provide strong evidence that energy localization is not being implemented. There are contradictory examples present among stakeholders and compared to Iberdrola, but negative arguments fully outweigh any positive claims. |

**Methodological Challenges**

There were various methodological challenges that arose throughout my research process, the first being the difficulty of access as a whole. Initially, my intention was to select three or four wind farms in Burgos and travel directly to local communities where the wind farms were sited. This would allow me to gauge local perceptions, speak to people directly impacted by these systems, and concretely determine energy localization on a smaller but representative scale. However, due to the rural and remote locations of these towns and transportation challenges, such as no access to Uber or a different car-share platform, I was not able to travel directly to the local communities. Additionally, due to the small size of these towns, some having as little as five people, it seemed less valuable to focus on a few wind farms and towns since there would have been less information and perspectives available to shape my arguments. Because of this, my analysis of wind energy localization took more of a macro-lens, aiming to evaluate energy localization of Iberdrola's wind energy systems across the entire province, while utilizing specific local examples to support these overarching perspectives.

Further concerning accessibility, I faced challenges regarding the broad range of stakeholders involved in Iberdrola's wind energy localization efforts, along with getting responses from people. Since energy localization is such a complicated process that impacts a wide range of people and organizations, there is an expansive group of relevant stakeholders involved. Since there was no single target stakeholder audience but instead, many different stakeholders involved in this topic, this complicated my ability to reach out to the relevant groups. Regarding content analysis, the complicated nature of energy localization—along with most of the content being in Spanish—made it more difficult to both narrow down the content to analyze and also be able to access relevant content. Because of this, I chose to rely more heavily on the stakeholder interview perspectives (community, governmental, and university organizations) through the interviews while adding complementary perspectives through articles or other relevant information. While important perspectives may have been left out of my analysis, the stakeholders I interviewed were different types of groups (for example, NGO versus a university) with varying connections to Iberdrola and perspectives on energy localization. As such, I aimed to ensure that the stakeholder evidence was representative of the public discourse on this topic.

There were also challenges with accessing Iberdrola's perspectives. While I was able to hear directly from 15 Iberdrola executives and their perspectives on many ESG+F issues that directly or indirectly related to the company's wind energy localization efforts, I was not able to directly incorporate this information into my thesis. I was able to ask questions that were parallel to and informed my research, and I utilized this knowledge as background and to shape my research on Iberdrola's efforts. Regarding additional Iberdrola outreach not related to the corporate ESG team involved in the Goldfarb project, it was extremely challenging to find the names of individuals working in Iberdrola's wind energy initiatives in Burgos, let alone their emails. Even though I was able to connect with and hear perspectives from two Iberdrola directors, this personalized qualitative evidence was substantially less than the evidence from the stakeholder side. Because of these methodological challenges with the cohort and limited channels to communicate with Iberdrola executives and directors, I had to rely on mostly public documentation to convey Iberdrola's argument and perspectives on Burgos energy localization, while adding complementary qualitative responses from the two Iberdrola representatives. Since I had fewer qualitative data from Iberdrola's side, I understand that this leaves out more personalized information and opinions regarding their localization initiatives. While there were perspectives that could have made my analysis more complete, my research aimed to be as comprehensive and representative as possible given these access challenges.

## Chapter 4: Iberdrola Evidence

With such an evident presence in the wind industry in Burgos, it is imperative that Iberdrola implements wind energy localization initiatives in the province. While not yet explicitly defined or utilized, the energy localization framework is supported by the literature. This concept includes the implementation of substantive environmental, social, and economic benefits for the local communities, as well as carrying out a procedural approach with relevant stakeholders and groups. Due to the integral role wind energy plays in achieving Iberdrola's energy objectives, as well as Burgos's leading role in wind energy generation, it is important that Iberdrola prioritizes the implementation of wind energy localization in the province.

In the following chapter, I present Iberdrola's publicly available sources that showcase their corporate energy localization strategy, including where these commitments play out in Burgos. In this chapter, I solely focus on presenting Iberdrola's perspective. Therefore, I only include sources written or published by Iberdrola.[12] To contextualize Iberdrola's overall sustainability performance in the context of my research, I begin the chapter by presenting Iberdrola's ESG indices ratings. Then, I provide a snapshot of previous literature on Iberdrola's energy localization efforts to help frame the existing discrepancies I seek to address. Next, I outline Iberdrola's corporate energy localization strategy through their annual reports, ESG statements, news sources, and additional website public outreach. These sections are separated by the environmental, social/ procedural, and economic components outlined in Table 3.1 in Chapter 3. To connect these efforts to my research, I outline where Iberdrola's commitments materialize through wind energy localization efforts in Burgos.

Following this chapter of Iberdrola's corporate commitments, in Chapter 5, I introduce the dataset of stakeholders' perspectives on Iberdrola's wind energy localization in Burgos. Looking forward to Chapter 6, I situate Iberdrola and stakeholder evidence within the literature through a critical analysis of my argument. To read a set of summarized results, along with a critical analysis comparing stakeholder opinions to Iberdrola evidence, please refer to Chapter 6.

### ESG Indices' Ratings of Iberdrola's Sustainability Performance

Before showcasing Iberdrola's corporate energy localization commitments, I highlight Iberdrola's performance on various ESG indices. While energy localization is underdeveloped as

[12] I include a select few articles from non-Iberdrola sources to provide slightly more information on topics.

a framework for measuring local impacts of energy systems, a company's ESG indices can provide relevant insight to a company's performance compared to other corporate actors. Available sustainability metrics are crucial to identifying positive energy localization implementation through wind energy systems. According to True Tamplin of Finance Strategists, ESG indices are "a type of stock market index that incorporates companies' ESG performance in their evaluation" (Tamplin, 2023). These indices help combine social responsibility and sustainability with stock market investment. They further help provide investors with a comprehensive overview of a company's ESG performance and thus, identify companies that are performing well in sustainability and aware of their negative impacts on society and the environment.

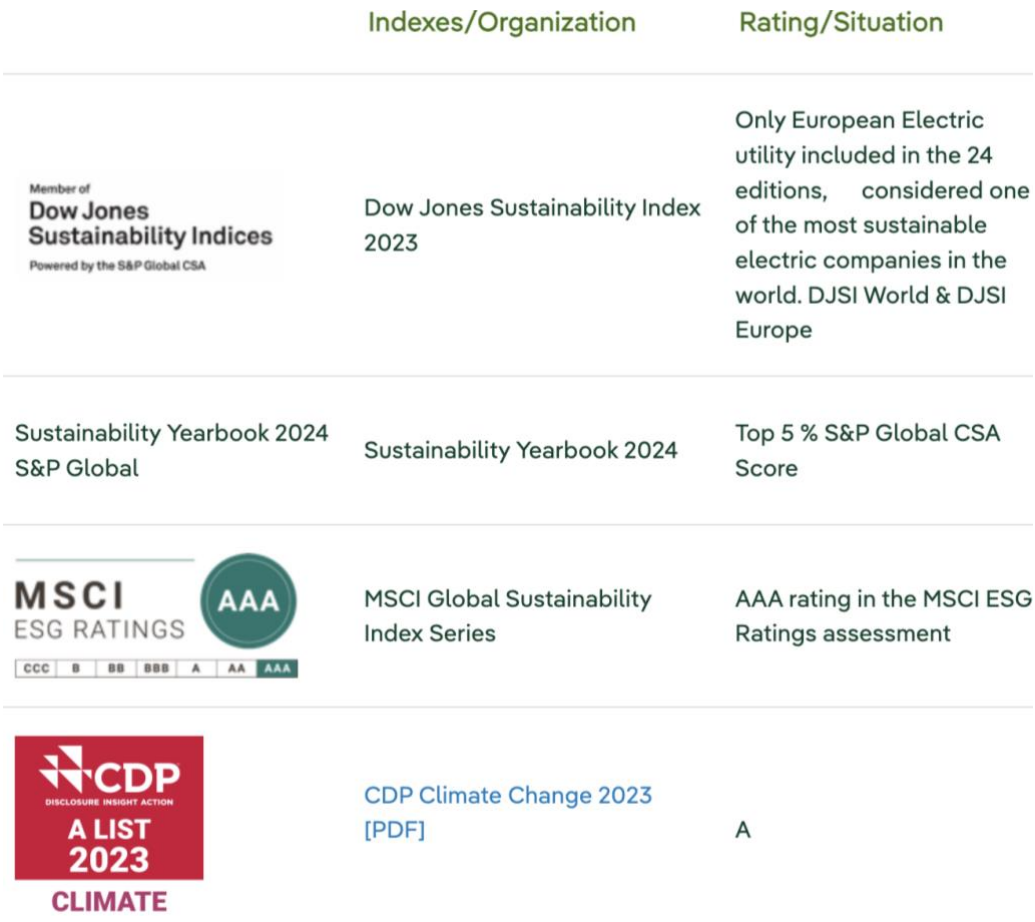


**Figure 4.1:** Iberdrola has favorable sustainability ratings based on various ESG indices (Iberdrola, 2024j).

On its website, Iberdrola identifies its valuation through several main sustainability indices (Iberdrola, 2024j). Figure 4.1 highlights Iberdrola's ESG ratings based on various of the

main rating indexes and organizations, overall highlighting Iberdrola's favorable performance in various ESG indices. For example, Iberdrola earned AAA rating in the MSCI ESG Ratings assessment and achieved Top 5 percent in the S&P Global CSA Score. In relation to other utility companies, Sustainalytics rates Iberdrola's ESG risk rating at low risk (17.2), ranking 60 out of 717 of utilities and ranking 2,895 out of 16,275 companies on in the complete index, as of December 14, 2023 (Sustainalytics, 2023). Compared to other major competitors, such as Enel SpA and American Electric Power Co., Inc., Iberdrola has the lowest ESG risk rating (17.2), placing 60 out of 718 companies in the industry. Figure 4.2 showcases Iberdrola's ESG rating compared to other dominant utilities in the global industry. Sustainalytics further finds that Iberdrola's exposure to different material ESG issues is high, and its management of these sustainability components is strong. Overall, these third-party indexes consider Iberdrola to have favorable ESG ratings. While ESG is not a direct correlation to energy localization, strong performance in the ESG realm could suggest that Iberdrola is more adherent to sustainability matters, and thus, may be performing well in energy localization.

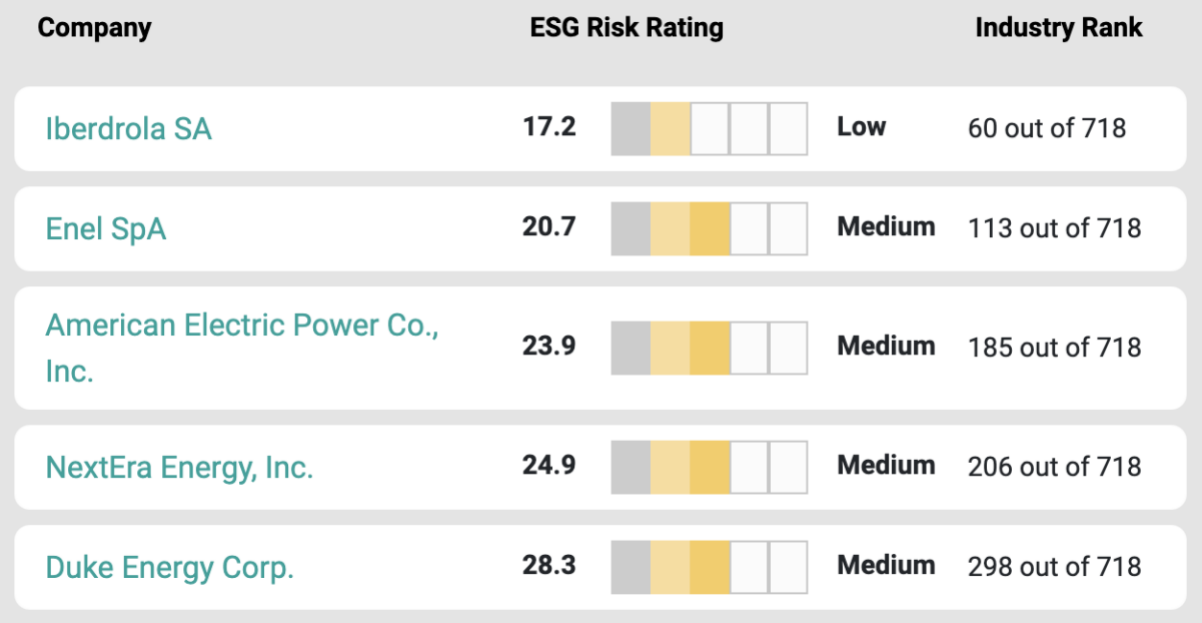


**Figure 4.2:** In comparison to industry competitors, Iberdrola has the lowest, most favorable ESG risk rating (Sustainalytics, 2023).

### How the Literature Discusses Iberdrola's Energy Localization Efforts

To frame the complicated nature of energy localization and discrepancies in relation to the case of Iberdrola, I preview the literature of past scholars' work regarding Iberdrola's energy localization initiatives. These articles are by no means exhaustive of the literature regarding

Iberdrola energy localization impacts, but they sparked my interest as studies that emphasized Iberdrola's success or failure to localize energy benefits. As mentioned in the methods, the disagreements among scholars and the public regarding Iberdrola's energy localization initiatives through this preliminary research provided a purpose behind my research—uncovering the extent to which Iberdrola implements energy localization through its wind facilities in Burgos.

As a company that impacts many people through its global outreach, scholars support that Iberdrola is invested in benefiting local communities through its projects. Alvarez-Meaza et al. (2020) highlight that Iberdrola promotes the implementation of open collaboration with the scientific community and other institutions. Open innovation relies on using procedures and information within and outside the firm, implementing policies to promote positive environmental and social welfare, and engaging in knowledge sharing with other companies and communities. This implements a sustainable business model when striving for balanced social development. Iberdrola further aims to implement a sustainable development strategy through its Renewable Energy Stakeholder dialogue initiative (Poisson-de Haro & Bitektine, 2015). This initiative aimed to maintain an affiliation with Iberdrola's stakeholders in renewable energy, job creation, and other social matters. The firms' ultimate strategies for sustainable development were based on non-market capabilities—the influence of their stakeholders and how to best position themselves to gain a competitive advantage.

However, Iberdrola's ESG strategy, while committing to involving stakeholders, does not always establish socioeconomic benefits for local communities. In the case of the Maranchón wind farm in Guadalajara, Spain, Eitan et al. (2018) conclude that while the local community benefits from employment opportunities, electricity is often not consumed locally, and the local community lacks a stake in decision-making processes. Thus, community involvement and benefits are relatively low. These findings provide contradictory evidence to Iberdrola's implementation of positive local impact through its renewable energy projects. In the case of the wind corridor in the Istmo de Tehuantepec in Mexico, Sirén Gualinga (2023) highlights that while Iberdrola has installed an estimated total of 1600 wind turbines in the area, the company did not adequately consult Indigenous Peoples or receive free, prior, and informed consent (FPIC) for wind turbine construction. Additionally, Moreno and Ruiz-Alba (2021) analyzed the degree to which Endesa and Iberdrola, as interest groups and sponsors of COP25, may have influenced their media coverage in the Spanish press before, during, and after the World Climate

Summit. The researchers found that in the media texts about Iberdrola and Endesa that address COP25, 51 percent utilized a "greenwashing" framing. Moreno and Ruiz-Alba (2021) emphasize that advertising, sponsorship, and energy companies and other stakeholders seeking to influence discourse surrounding energy issues and climate change could leave out more critical perspectives. In their article that seeks to identify the drivers and develop a conceptual framework of greenwashing, Delmas and Burbano (2011) define greenwashing as "as the intersection of two firm behaviors: poor environmental performance and positive communication about environmental performance." Relating the concept of greenwashing to Moreno and Ruiz-Alba's (2021) study, these researchers found evidence that positive narratives concerning Iberdrola's environmental performance in the Spanish press surrounding COP25 may have clouded out inadequate sustainability fulfillments.

Ultimately, while some of these findings support Iberdrola's dedication to promoting positive local outcomes through the expansion of their renewable energy projects, there is conflicting evidence that finds that communities are not benefiting from these initiatives and that greenwashing may be occurring. Thus, it is unclear whether Iberdrola is legitimately promoting sustainable renewable energy solutions along with localized community benefits. Because of these discrepancies, I seek to explore and understand what is actually occurring regarding Iberdrola's wind energy initiatives in Burgos. In the remainder of this chapter, I outline Iberdrola's corporate energy localization strategy through environmental, social, and economic categories and then specify where these commitments are fulfilled in Burgos.

**Environmental Energy Localization Corporate Strategy**

To implement an energy localization framework within its business model, Iberdrola frames its environmental efforts through various annual reports and news articles. Iberdrola's Environmental Policy, created in 2007 and recently amended in 2024, establishes a framework that integrates the protection of the environment and nature along with the company's strategy, operations, and investment (Iberdrola, 2024o). These principles emphasize Iberdrola's effort to implement a sustainable development model that respects historical heritage, nature, and biodiversity and aims to protect, conserve, and advance natural heritage through stakeholder engagement and innovative solutions (Iberdrola, 2023a). Iberdrola's environmental policy further identifies emissions reduction, biodiversity, and nature protection as high-priority lines of

action (Iberdrola, 2024o). Iberdrola's annual reports—the 2023 Sustainability Report, the 2024 Integrated Report, and the 2022 Biodiversity Report—outline Iberdrola's corporate strategy and commitments to implementing environmental energy localization at a local scale. These documents provide the overarching frameworks for what should be occurring within local Burgos communities. The following two subsections present Iberdrola's environmental substantive localization initiatives related to decarbonization and nature, landscape, and biodiversity.

*Promoting Decarbonization:*

Through the 2023 Sustainability Report and embedded in the company's purpose and values, Iberdrola outlines its global commitment to contribute to a comprehensive energy transition through decarbonization[13] (Iberdrola, 2023a). Through the development of renewable energy, Iberdrola aims to promote decarbonization and electrification of the entire economy in adherence to the SDGs. Decarbonization is incorporated into the Iberdrola business model, where the company invests in renewable energy to promote an economic model based on a decarbonized energy strategy. To accelerate the decarbonization of the economy, Iberdrola has implemented a Climate Action Plan that aims to reduce its direct emissions over the next few decades; the group aims to achieve scope 1 and scope 2 neutrality by 2030 and net-zero emissions—including scope 3—by 2040. Promoting 100 percent renewables is one of Iberdrola's key levers to achieving the Climate Action Plan targets. This involves investing in renewable energy, increasing storage capacity, and promoting new renewable technologies. To finance these objectives, Iberdrola's Strategic Plan 2024-2026 (Figure 4.3) outlines the company's commitment to invest EUR 41 billion to further drive energy decarbonization through renewable energy deployment, along with network and storage investments (Iberdrola, 2024k).

Iberdrola "is also aware that the transition toward a decarbonized model will entail structural changes with a considerable impact on certain regions, areas, and groups" (Iberdrola, 2023a). As such, Iberdrola applies its social dividend principle and its commitment to stakeholders to ensure that a just transition is carried out.[14] Iberdrola additionally has programs,

[13] According to Deloitte, decarbonization refers to "removal or reduction of carbon dioxide (CO2) output into the atmosphere," and it is "achieved by switching to usage of low carbon energy sources" (Deloitte, 2022).

[14] I define and explore Iberdrola's social dividend and Stakeholder Engagement Model in this chapter's section, Social Energy Localization Corporate Strategy.

including the Citizen's Innovation Platform and Convive, which aim to carry out Iberdrola's sustainable energy model where decarbonization efforts combine with Iberdrola's positive for society commitment: "Iberdrola is committed to an orderly, just and inclusive transition, promoting economic and industrial development" (Iberdrola, 2023a). Within Spain, Iberdrola director one notes Iberdrola's commitment to decarbonization: "In recent decades, the commitment to green generation [of the Iberdrola Group] has been one of the basic pillars of development, both in Spain and internationally, seeking electricity generation free of carbon emissions" (Iberdrola director conversation 1).

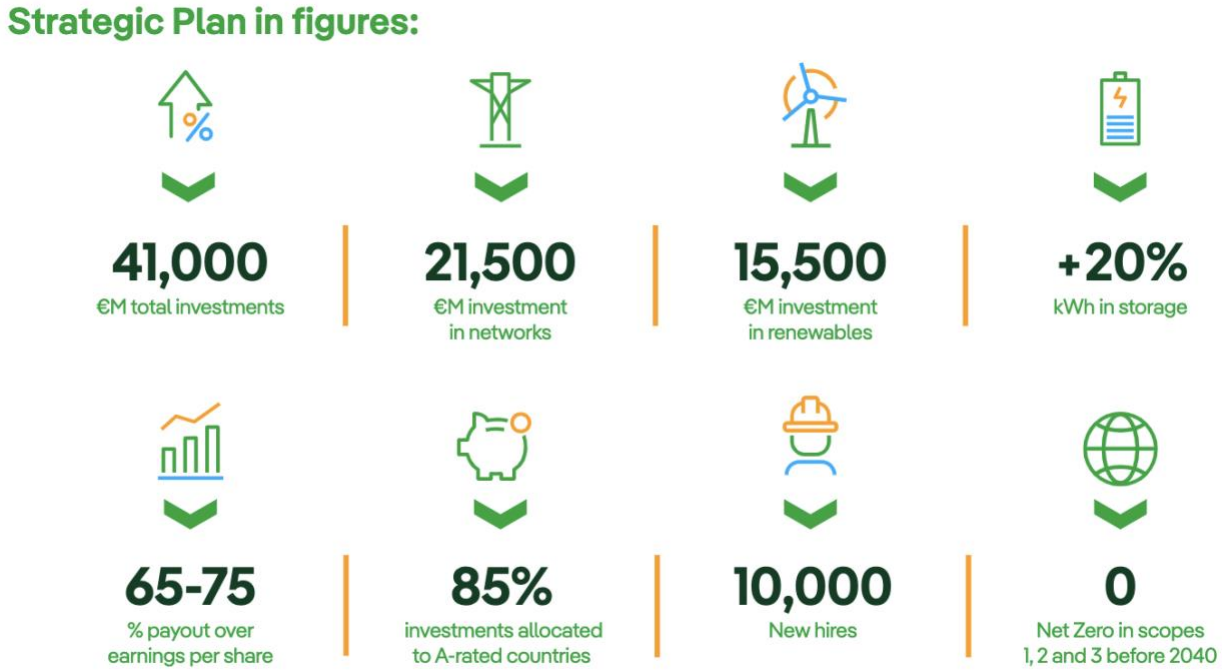


**Figure 4.3:** Iberdrola's 2024-2026 Strategic Plan aims to invest EUR 15,500 million euros in renewable energy, 30 percent of which will be allocated to onshore wind (Iberdrola, 2024k).

One example of Iberdrola's contribution to decarbonization through wind energy is Scottish Power's[15] pilot project of three wind projects in Barhill, South Ayrshire. After building relationships with this community for two decades, Scottish Power was "selected for launching the initiative to provide smart solutions and personalized advice to the local population and to support the achievement of net-zero emissions" (Iberdrola, 2023a). Scottish Power has further helped the community apply for funding distributed by the Scottish Government's Community and Renewable Energy Scheme (CARES) to facilitate solar panel, battery storage, and heat

[15] Scottish Power is Iberdrola's United Kingdom subsidiary.

pump installation at a hotel within the community. This opportunity aimed to help create local employment opportunities and improve village tourism, thus contributing social town-wide initiatives in addition to decarbonization benefits.

*Safeguarding Biodiversity, Nature, and Landscapes:*

In addition to decarbonization efforts, Iberdrola aims to construct an energy model in harmony with both nature and people through its 2030 Biodiversity Plan (Iberdrola, 2022a). The report outlines Iberdrola's corporate commitment to achieving net positive impact on biodiversity by 2030. This target considers the direct impact of Iberdrola's activities throughout the lifecycle of their facilities on threatened species and high-value ecosystems. To provide an initial framework and principles of action outlining a nature-positive growth model, Iberdrola implemented a Biodiversity Policy, established in 2007 but most recently amended in 2024 (Iberdrola, 2024n). The policy outlines Iberdrola's four lines of action regarding the implementation of its plan: "1) protect biodiversity and make sustainable use of natural capital; 2) continuously identify, quantify and assess the impacts and dependencies of the group's activities; 3) collaborate with stakeholders and improve; and 4) raise awareness and communicate internally and externally with transparency" (Iberdrola, 2022a). Iberdrola states that it has implemented measures to prevent and reduce the impact its activities have regarding land use changes, climate change, and pollution, particularly through identifying impacts and dependencies, then aiming to implement the mitigation hierarchy—avoid, minimize, remedy, and compensate. They seek to avoid and minimize biodiversity impacts at all costs through protective measures, while remedying and compensating violations through species reintroductions, for example. The mitigation hierarchy commitment implies that Iberdrola has implemented concrete biodiversity and ecosystem protection mechanisms throughout the life cycles of all of their facilities, including its wind farms in Burgos.

As is the case with many countries, the landscapes, ecosystems, biodiversity, and nature within Spain hold a high degree of intrinsic value among local populations and contribute to cultural heritage, particularly within rural communities. Through its operations, activities, and facilities nationwide, Iberdrola undoubtedly impacts the natural environment. In Spain, Iberdrola's Biodiversity Report highlights that a total of 683 species listed on the IUCN Red

List[16] that are impacted by their facility activities—8 are critically endangered, 20 are endangered, 41 are vulnerable, 53 are near threatened, and 561 are of least concern (Iberdrola, 2022a). Additionally, 16.5 percent of onshore wind farms in Spain are located in protected areas, affecting 36,700 ha. Concerning degrees of protection, these lands are impacting Sites of Special Scientific Interest (SSSI) and Priority Habitat of Annex 1, Habitat Directive (92/43/CEE).[17] To continue to safeguard fauna and ecosystems, Iberdrola must implement mitigation measures to reduce the harm it places on vulnerable species and protected landscapes in Spain and Burgos.

On an ecosystem-level scale in Spain, one way Iberdrola has attempted to remediate its impact on the environment is through its establishment of more than 20 initiatives for the restoration, improvement, and conservation of ecosystems. These programs have planted over 766,700 trees, helping to restore land-use changes affected by human and facility impacts, as well as recover natural landscapes by removing infrastructure (Iberdrola, 2022a). Concerning wind farms and network lines, Iberdrola has implemented actions to promote protection and conservation of biodiversity, particularly regarding fauna and birdlife (Iberdrola, 2023a). Iberdrola states that it has adapted over 140,000 wind turbine base supports in Spain since 2018 by implementing bird protection technologies, including installing AI-surveillance cameras, eye-shape vinyl patterns, and painted blade deterrents. In the Cavar wind farms in Navarra and Zorreras in Zahara de los Atunes, Cádiz, Iberdrola painted one of three wind turbine blades black. Results based on a study from the Norwegian Institute of Nature Research found that painting a turbine blade black, which provides greater contrast and increases visibility of the facility for birds, reduced bird sightings by 70 percent (RRSS, 2021). The company has additionally engaged in remedy methods, such as reintroducing eight Spanish imperial eagle chicks. They also claim to construct pigeon coops, dens, ponds, middens, burrows, nesting boxes for birds and bats, and fences around transformers, all to provide refuge and protection for different species living in the habitats surrounding Iberdrola's wind farms.

[16] The International Union for Conservation of Nature Red List of Threatened Species (IUCN Red List) is "the world's most comprehensive information source on the extinction risk of animals, fungi and plants" in which "assessors place species into one of the IUCN Red List Categories, based on a series of assessment criteria" (IUCN, 2024).

[17] Sites of Specific Interest (SSSI) are the "areas of land and water that we consider best represent our natural heritage in terms of flora (i.e. plants), fauna (i.e. animals), geology (i.e. rocks), geomorphology (i.e. landforms), and a mixture of these natural features" (NatureScot, 2020). Priority Habitat of Annex I under the Habitat Directive (92/43/CEE) are the most threatened habitats under the directive that need active, recurring management (European Commission, 2024b).

To improve ecosystem stability surrounding its wind farms, Iberdrola analyzes and attempts to remediate its impacts on nature and biodiversity through the environmental impact assessments (EIAs) process. As mandated by the Spanish Law on Environmental Assessment of 2013, projects that may have significant impacts on the environment must undergo an EIA (IEA, 2021). Iberdrola's director one indicates that Iberdrola carries out initial analyses before the formal EIA (Iberdrola director conversation 1). These processes include:

- "Inventory of environmental and fauna values;
- Annual birdlife study, with evaluation of species, camping areas, nesting sites, trajectories of migratory birds, risks, etc.
- Annual bat study, integrating the latest analysis methodologies, and specifically analyzing the proximity of colonies, and more;
- Study of other environmental values, linked to protected taxonomic species;
- Study of cumulative synergistic effects with other projects in the environment" (Iberdrola director conversation 1).

After these initial studies are carried out, director one emphasizes that the facility undergoes a complete EIA process, which determines the relevant protection measures. The EIA is based on principles of environmental protection and improvement, including mitigation of environmental impacts, preventative action measures, public participation, integrating environmental aspects in decision-making procedures, and implementation of action in accordance with scientific knowledge (IEA, 2021). The local environmental authority carries out reports within three months to note significant environmental and climate impacts of the project.

To showcase some key environmental, social, and economic factors that are considered in the EIA process, Table 4.1 illustrates details in from the EIAs and Environmental Impact Declaration[18] of three of Iberdrola's Burgos wind farm cases—the Buniel (Molina Martín & Díez Martínez, 2019), the Valdesantos (Artesa Estudios Ambientales, 2018), and the Alto de la Degollada (BOPBUR, 2007) wind farms:[19]

[18] Concerning the Alto de la Degollada wind farm, I was not able to find the official EIA. The Law 21/2013 of 9 December on Environmental Assessment requires that projects undergo an EIA (IEA, 2021). However, this law was established after the construction of the Alto de la Degollada wind farm. I utilize a provincial resolution that outlines the "Environmental Impact Declaration" for the project as a parallel to an EIA to determine relevant impacts.

[19] I chose these three wind farms based on their different range in size—the Buniel (104 MW), the Alto de la Degollada (50 MW), and the Valdesantos (13.5 MW)—to encapsulate how Iberdrola's different sized wind farms may evoke varying levels of harms in Burgos.

**Table 4.1:** The EIAs of three of Iberdrola's Burgos wind farms identify various environmental, social, and economic factors that are considered through this process (Artesa Estudios Ambientales, 2018; BOPBUR, 2007; Molina Martín & Díez Martínez, 2019).

| | |
|---|---|
| **Environmental factors** | ● Moderate impacts to vegetation, protected areas, fauna, and landscapes ***(Buniel)***<br>● Loss of 4.85 ha (4.64 ha of crops and 0.21 ha of forestry) ***(Valdesantos)***; loss of 12.11 ha of agricultural land ***(Buniel)***<br>● Prevention of polluting discharges ***(Alto de la Degollada)***<br>● Reduction of visual contamination via 1,500-meter plant screen ***(Alto de la Degollada)***<br>● Birdlife: severe impacts through collision ***(Buniel)***; moderate risk to birdlife via collisions and displacement ***(Valdesantos)***; relocation of turbines to protect steppe bird species and monthly monitoring of injured bird species ***(Alto de la Degollada)*** |
| **Social factors** | ● Social services: project not associated with complementary infrastructure services ***(Buniel)***<br>○ No predicted changes in population distribution ***(Buniel)***<br>● Consultation: one-month period of open appeals ***(Alto de la Degollada)*** |
| **Economic factors** | ● Adjacent crop areas can continue to be grazed or cultivated ***(Buniel)***<br>● Creation of 30 direct jobs and indirect opportunities in hospitality ***(Buniel)***<br>● Increase local procurement through subcontractors ***(Buniel)***<br>● Creation of local labor and tourism opportunities ***(Valdesantos)*** |

Iberdrola's director one explained the reporting process that occurs between Iberdrola and administrations through environmental monitoring procedures: "All projects in the construction or exploitation phase integrate environmental monitoring of the project that is maintained throughout the useful life of the exploitation, which takes into consideration the commitments of the promoter with the administration acquired through the proposal of the Environmental Monitoring Program (one for the construction phase [and] one for the operation phase)" (Iberdrola director conversation 1). Reports are completed annually to the relevant environmental administration and include "specific monitoring of corrective and compensatory measures resulting from the Environmental Impact [Assessment]," as well as "weekly/fortnightly visits to the facilities by specialized personnel to monitor the birdlife, and specifically to analyze whether there has been any incident involving birds or bats" (Iberdrola director conversation 1).

As infrastructural projects that pose various threats to the environment, Iberdrola's wind farms are subject to EIAs. Iberdrola's Biodiversity plan emphasizes Iberdrola's commitment to implementing the mitigation hierarchy (avoid, reduce, mitigate, and compensate) within all stages of project implementation, including starting with EIA procedures at the design phase (Iberdrola, 2022a). Figure 4.4 shows several components Iberdrola considers when choosing the location of a wind farm (Iberdrola, 2024i).

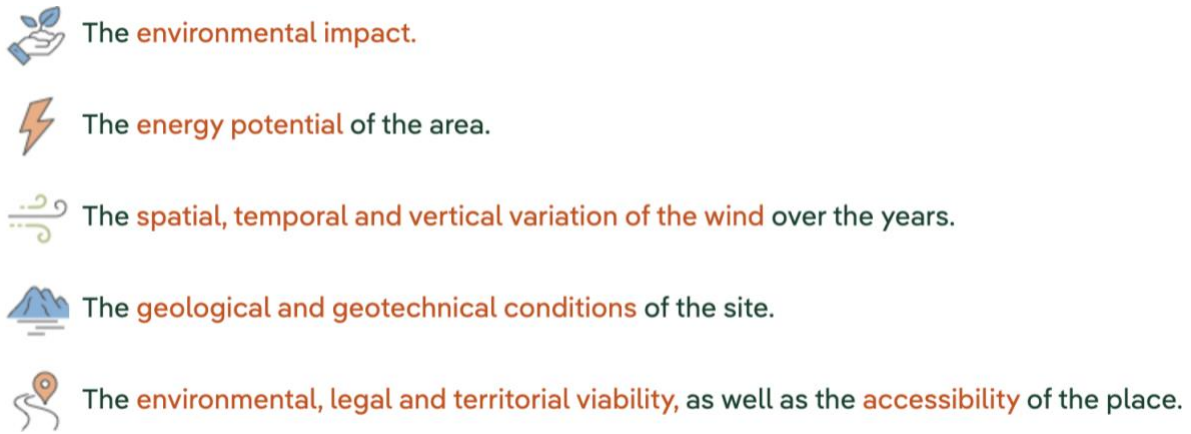


**Figure 4.4:** Iberdrola considers several factors, such as the environmental impact and energy potential of the area, when determining where to site wind farms (Iberdrola, 2024i).

Iberdrola further states that they perform all necessary environmental studies, depending on the project complexity, the environmental conditions, and the sensitivity of the implementation area (Iberdrola, 2022a). A few examples are Detailed Environmental Programme Reports (RDPA), Forest Inventories, and Simplified Environmental Reports (RAS). These procedures emphasize Iberdrola's compliance with the law and stated commitment to preserving, protecting, and limiting harm to biodiversity and ecosystems surrounding their facilities.

**Environmental Energy Localization Initiatives in Burgos**

*Promoting Decarbonization:*

Within Burgos, Iberdrola's decarbonization efforts through wind energy are notable on a provincial level but are not as apparent at the municipality level. Out of 76 articles relating to Burgos on Iberdrola's website, 12 articles mentioned wind energy in Burgos, eight of which mention the decarbonization benefits of the wind farms through CO2 abatement. On the Iberdrola España website, out of the six articles that mentioned wind energy (out of 34 total articles mentioning Burgos), five of them mentioned CO2 reduction benefits. Through Historias en Verde, one article out of five mention wind energy, out of a total 10 articles that referred to

Burgos. As highlighted through the Iglesias wind project in Burgos, Iberdrola indicates that this 70 MW wind farm will provide clean energy for over 66,000 homes each year and will avoid 32,000 tons of CO2 emissions annually (Iberdrola, 2022d). This is also present among additional Iberdrola wind park complexes, such as the Herrera Complex, which supplies 60,000 homes with energy while abating 50,000 tons of CO2 per year (Iberdrola, 2020b). Additionally, the Buniel wind farm will generate enough clean energy for 350,000 homes each year, preventing 154,000 emitted tons of CO2 annually. Concerning the Buniel wind farm, Iberdrola states that this emissions abatement is "proof of the usefulness of this technology for protecting the environment and mitigating global warming" (Iberdrola, 2019). Meanwhile, technological advancements in wind power in Burgos through the Herrera wind farm have reduced the environmental impact of these systems while achieving a greater production of clean, decarbonized energy (RRSS, 2020). The other articles similarly expressed CO2 abatement and energy provision capabilities of Iberdrola's Burgos wind farms.

*Safeguarding Biodiversity, Nature, and Landscapes:*

In the Burgos province, there have been various initiatives to implement eye-shaped vinyls on wind turbines as protection measures to deter birds (Iberdrola, 2022a). Out of the 23 articles referencing Iberdrola's Burgos wind energy projects across its four websites, four articles mentioned biodiversity mitigation measures, one of which referenced vinyl deterrence methods, shown in Figure 4.5 (Iberdrola, 2021). These solutions have been implemented based on previous studies carried out by Norwegian research centers and based on experiences at French airports. The studies conclude that certain figures or shapes on white panels placed on "supports" on the ground can deter species from coming near the wind farms (Iberdrola, 2022a). Specifically at the Lourdes-Tarbes-Pyrénnés airport in south-eastern France, these disguise vinyl painting methods resulted in a 65 percent reduction in bird of prey, proving their efficiency for protecting these bird species (Iberdrola, 2021). In Burgos, as of 2021, vinyl shapes had been added to 60 turbines on the Ballestas and Casetona (BaCa), Páramo, Cotera, Vega, Viñas, Urbel del Castillo, and Fuente Blanca wind farms, and there were plans to install more of these vinyl shapes at an additional 6 of the Burgos with farms with the possibility to further extend this program. Two vinyl transfers—with the appearance of staring eyes—were added from 3.5 to 4 meters from the base of the wind turbines. As of 2022, these painting mechanisms have been

implemented within 10 wind farms, impacting 72 wind turbines (Iberdrola, 2022a). The second article on Iberdrola's website highlighted how the company plans to install bird detection technology at the Iglesias wind farm as a biodiversity protection measure: "Iberdrola will implement various initiatives at this wind farm to improve the visibility of its wind turbines and deter the presence of certain species of birds in the area, installing bird detection equipment to avoid any collisions" (Iberdrola, 2022d).

**Figure 4.5:** Iberdrola paints wind blades (right) and implements vinyl eyes on wind turbine bases (left), specifically in Burgos, to protect birdlife and deter collisions (Iberdrola, 2021).

Further concerning birdlife technology, Iberdrola's director one notes Iberdrola's use of a new deterrent system through wind facilities in Burgos: "A novel birdlife protection system is being implemented, with the capacity to automate stops in case of risk to birds, and with detection even in conditions of lack of visibility, with differentiated actions depending on the type of bird. It has been a pioneer in testing the various systems on the market" (Iberdrola director conversation 1). Iberdrola has also carried out tests for new technologies and devices to study their effectiveness in protecting birdlife (Iberdrola director conversation 1).

Additionally, three articles from Iberdrola España referenced more generally how symbioses are created between renewable energy sources and biodiversity, two of which particularly referenced the way that the land can serve a dual purpose for agriculture and energy production (Iberdrola España, 2022a; Iberdrola España, 2022c). Both articles mention how renewable projects are combined with the generation of ecosystem services through livestock

use, beekeeping, and the cultivation of aromatics. Although, while more generally referencing renewable energy, these articles were focused primarily on the biodiversity coexistence with solar PV installations. Alternatively, an article referencing the Magdalena wind farm in the Merindades Region in Burgos highlights how "renewables form a symbiosis with nature and bring life to the rural world, as in this wind farm, which produces clean energy in a unique natural environment" (Iberdrola España, 2023a). This article alludes to the mutually beneficial relationship between wind energy and natural landscapes in the Merindades Region surrounding this wind project. Clara Fierro, Iberdrola's Director of Wind Project Construction in Castilla y León further noted that "renewables coexist perfectly with traditional activities such as agriculture and livestock, always ensuring respect for the environment, 'an inalienable principle for Iberdrola'" (Iberdrola, 2022c).

Iberdrola has additionally implemented monitoring processes and partnerships to protect birds through its wind farms and other facilities. Specifically in the Alto de la Degollada wind farm, Iberdrola utilizes censuses, detection, identification, and location of injured fauna to improve steppe bird monitoring (Iberdrola, 2022a). Within the BaCa wind farms, Iberdrola has implemented continuous ultrasound monitoring for the census of the Chiroptera to improve the conservation and monitoring efforts of these bat species. Additionally, Iberdrola partnered with BirdLife International to improve its biodiversity protection mechanisms (Iberdrola, 2023a).[20]

Regarding broader biodiversity conservation efforts to improve areas surrounding Iberdrola's energy projects, Iberdrola's Spanish Foundation collaborated with the Natural Heritage Foundation of Castilla y León to implement a wetland corridor in the Páramos region, a region located in the northwest area of Burgos (Iberdrola España, 2018). This initiative is part of Iberdrola Spain Foundations' commitment to environmental protection through supporting threatened species conservation and habitat restoration programs. In Páramos, Iberdrola invested EUR 40,000 to restore degraded areas and to create refuges and watering holes to aid resting and breeding birds. Every year, these birds pass through this area on their travels through the migratory corridor from Northern Europe and the lagoons of Villafáfila, La Nava and the south of the Iberian Peninsula (Fundación Iberdrola España, 2022). Iberdrola additionally planted trees and vegetation, which provide food and shelter for a variety of animals, including the wolf, wild

[20] Birdlife International is a global organization that aims to "conserve birds, their habitats and global biodiversity, working with people toward sustainability in the use of natural resources" (BirdLife International, 2024).

cat, and birds, such as the Golden Eagle. The town of Santibáñez, where tree planting was primarily concentrated, received over 26,300 plantations of pines, rowan trees, oaks, and gall oaks to help improve biodiversity conditions in the areas. Implementing conservation projects coincided with building tourist viewpoints in Pesquera de Ebro, which allow people to safely view the landscape. Iberdrola's first director further emphasized that Iberdrola engages in conservation activities, including forest repopulation, construction of ponds, and installation of feeders and waterers for game species (Iberdrola director conversation 1).

Another initiative helping to mitigate Iberdrola's overall impact on biodiversity was through the burial of an electricity line and removal of the transformation center within the municipality of Haza (Iberdrola España, 2022b). With the Department of the Environment of the Regional Government of Castilla y León and the Haza City Council, Iberdrola and these entities invested EUR 250,000 to build an underground electricity connection over the span of 1.3 kilometers. This initiative helped to improve the visual impact of distribution lines, as well as safeguard cultural heritage of the town and fauna. Birds are particularly vulnerable to these distribution lines, as the municipality provides nesting grounds for over a dozen species of protected birds, including vultures, eagle owls, and more. By moving distribution lines underground, these efforts helped to mitigate bird species' impacts.

**Social Energy Localization Corporate Strategy**

As a multinational global company, Iberdrola has over 600,000 stakeholders, employs close to 42,276 people, and supplies energy to nearly 100 million people in dozens of countries, with assets valued greater than EUR 150,000 million (Iberdrola, 2023a). To best promote sustainable development and an equitable energy transition for all of its stakeholders, Iberdrola implemented the General Sustainable Development Policy, which outlines the framework and general principles that shape Iberdrola's sustainable development strategy. Outlined in the policy, Iberdrola's main objectives are to foster sustainable value creation for all stakeholders and equitably contribute to all people that contribute to Iberdrola's success through its operations and activities. This intention to create value for stakeholders and promote a just energy transition is explored through Iberdrola's notion of a social dividend, which is outlined in Article 7.2 of the By-Laws. Iberdrola defines social dividend as "the direct, indirect or induced contribution of value of its activities for all stakeholders, particularly through its contribution to the achievement

of the Sustainable Development Goals (SDGs) approved by the United Nations and its commitment to best environmental, social and corporate governance (ESG) practices" (Iberdrola, 2024m). Furthermore, Iberdrola's Policy on Respect for Human rights establishes that Iberdrola's operations and activities must respect human rights within the areas it operates. Under the Human Rights Regulatory Framework, Commitment F states Iberdrola's aim "to respect the right of all of the communities in which it operates to a clean, healthy and sustainable environment, considering their expectations and needs" (Iberdrola, 2023c). These initiatives codified in Iberdrola's internal policies and business decisions showcase their commitment to creating value for all stakeholders and fostering a more equitable energy transition.

*Consultation with and Representation of Local Communities:*

To promote positive relationship building with stakeholders, Iberdrola created a Stakeholder Engagement Model by which it claims to carry out its stakeholder relations through these processes (Iberdrola, 2023a). As shown in Figure 4.6, this model aims for Iberdrola to have a deep understanding of and communication with stakeholders; its purpose is to understand stakeholder expectations and establish action plans to mitigate and minimize negative effects while maximizing positive community impacts. Along with this engagement model, Iberdrola implemented a Recommendations Guide for Conducting Public Consultations,[21] along with social impact studies, to ensure stakeholder viewpoints are properly consulted. Among this guide of good practices with local communities and stakeholders, Iberdrola implements a digital tool to carry out these practices and help facilitate the management and documentation of community consultation. Implicit in this plan is Iberdrola's facilitation of communication engagement channels with stakeholders, both in-person and online. Iberdrola emphasizes the importance of these consultation tactics by claiming that they are utilized at nearly all its facilities: "Almost 100% of the company's main locations of operation are thus subject to these types of activities, focused on meeting the needs of its stakeholders, especially in local communities" (Iberdrola, 2023a). Iberdrola further notes that wind projects are located in rural areas to impact the least amount of people: "Wind farms are normally installed in depopulated rural areas, isolated from population centers, to prevent noise from disturbing the inhabitants" (Iberdrola, 2024i). Based on Iberdrola's statements and high investment in Burgos facilities, there should be an abundance of

[21] After looking for this document, I was not able to find it through Iberdrola's publicly available documents.

procedural programs and stakeholder engagement examples to provide in relation to its wind projects in Burgos.

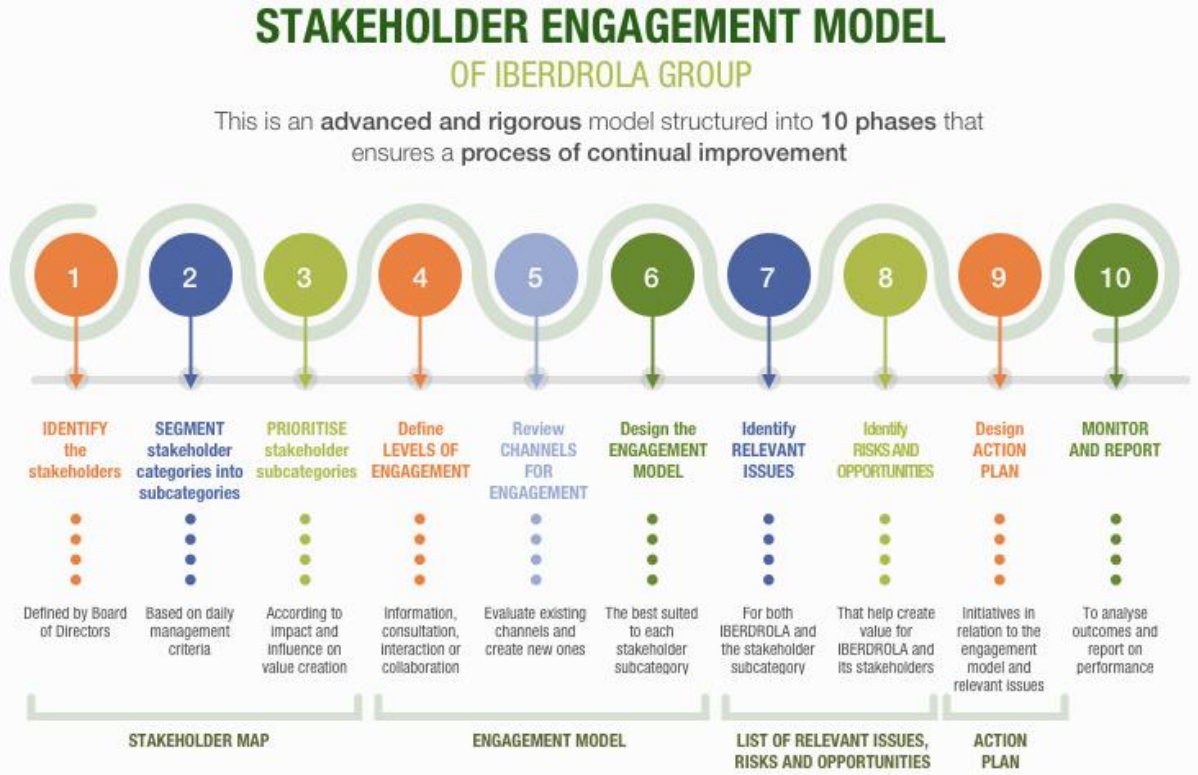


**Figure 4.6:** Iberdrola's Stakeholder Engagement Model emphasizes the company's commitment to proper consultation and stakeholder communication methods through all of its main facilities (Iberdrola, 2024a).

*Implementation of Social Services and Programs:*

To materialize their implementation of energy localization, Iberdrola has established programs and initiatives to help benefit local communities through their facilities. Iberdrola director one notes, "There are countless examples of pioneering initiatives in projects in Burgos linked to different aspects" (Iberdrola director conversation 1). Iberdrola launched the Convive Program to integrate Iberdrola's environmental, decarbonization strategy with socioeconomic development and biodiversity conservation (Iberdrola, 2023a). Some of the actions implemented through this program consist of integrating livestock grazing or beekeeping within facilities, committing to using local suppliers, generating local employment, and training opportunities, and more initiatives centered around developing a new green industry. This program further includes partnerships with organizations. To combat rural depopulation, Iberdrola partnered with the Arriago Project and implemented renewable energy projects in three Spanish communities as

pilot projects (Herrera, 2021). Specifically, Iberdrola partnered with the Zamora Provincial Council, the governing body of the western Spanish province of Zamora, to financially support the Arriago Project. The goal of this project was to help to unite urbanities and facilitate their movement to rural areas.[22]

Another program emphasizing Iberdrola's social commitment is the Citizens Innovation Platform, which began in 2020 to avoid potential job losses resulting from the closure of the Lada and Velilla coal plants, located in Asturias and Palencia, Spain, respectively (Iberdrola, 2023a). This initiative promoted entrepreneurship initiatives that aimed to accelerate collaboration between public entities, citizens, and companies, promoting knowledge generation and synergy creation to address specific economic and demographic challenges of each place. One of the initiatives Iberdrola implemented was the joint development of a solar panel factory in Langreo between Exiom, an Asturian business group, and Iberdrola. There was also a partnership established between the Association of Beekeepers of Northern Palencia (APINORPA) and Iberdrola to provide beekeeping training for the community.

Iberdrola additionally has global foundations that promote patronage and sponsorship. Iberdrola's foundation in Spain is known as the Fundación Iberdrola España (Iberdrola, 2023a). The foundations have aligned their mission, vision, and values with the global SDGs, and thus, represent Iberdrola's commitment to sustainable development within the country it's located in. They particularly focus on education, providing opportunities for disadvantaged students, research opportunities in the energy sector, and scholarships with prestigious museums, to name a few examples. All these actions outline Iberdrola's global and Spanish-led initiatives to implement social energy localization within the communities where it has a presence.

Concerning Iberdrola's social energy localization strategy, Iberdrola's director one further emphasized Iberdrola's aim to connect with local communities and implement relevant programs: "Iberdrola seeks local support for its projects, with the involvement and commitment of local Administrations. In this sense, it develops and [has partnered with] various initiatives

[22] According to Herrera (2021), Iberdrola's decision to contribute to the Arriago project "occurs in the context of a summer in which the municipalities affected by the Ricobayo discharge have expressed their discontent with the company's attitude and the damage caused by the absence of water in their towns [from] the environmental and economic point of view." Thus, Zamora's "Provincial Council celebrated that the energy firm 'collaborates with the province again' and added that the public institution had been holding talks with Iberdrola to evaluate the way to compensate Zamora in some way after the Ricobayo controversy." The Ricobayo controversy refers to when Iberdrola, "during [the 2021] summer season in reservoirs such as Ricobayo, deplet[ed] the local wealth associated with the swamps and caus[ed] adverse effects on the fauna and flora of the complex" (Garrido, 2021).

such as the 'Vente a Vivir a un Pueblo' platform,[23] actions of the Foundations, or other collaborations that are considered appropriate" (Iberdrola director conversation 1). All these perspectives represent Iberdrola's commitment to implementing both substantive social initiatives and engaging in a procedural approach, within their wind farms in Burgos.

**Social Energy Localization Initiatives in Burgos**

*Consultation with and Representation of Local Communities:*

Iberdrola's director one indicates that Iberdrola carries out its consultation processes in Burgos through different levels, including management in national, regional, and municipal administrations (Iberdrola director conversation 1). Consultation is additionally carried out at the organization level with negotiations with companies and organizations that operate in the environment and provide relevant services. It is also implemented at the owner level, through negotiations with impacted landowners, and at the competition level, via dialogue with competing companies regarding connecting projects. They further elaborate about the consultation process at the community level: "At the local community level, meetings are held with the City Councils to propose the project. Once explained, other processes are initiated aimed at transmitting the project to the population (informative talks with Neighborhood Councils and associations/press news/meetings with affected private owners, etc.). Additionally, contacts are initiated with organizations or companies with facilities of general interest that operate in the project environment, to explain the initiative" (Iberdrola director conversation 1). From these consultation procedures, the first director elaborates on how the management process and establishment of each wind farm project is dependent on the different stakeholder and other analyses that are carried out: "The decisions on how to articulate the [wind project] launch are made by the project developer according to the particularities of the initiative that is intended to be consolidated, and according to what, from its analysis (aligned with the company's objectives), it considers most appropriate. The type of management and the moment are not prioritized in the same way; this will depend on the analysis carried out, and the conclusions of the strengths and weaknesses of the project, and how it is considered most appropriate to launch the initiative" (Iberdrola director conversation 1). They indicate that "all possible means are used to communicate with the interlocutors," via in-person, conferences, email, official records, letter,

[23] This program is explored in this chapter's subsection, Implementation of Social Services Program.

telephone and more, all "depending on the preference of the 'other party' (administration, organization, society, association, or owner)" (Iberdrola director conversation 1).

Iberdrola's first director indicates that Iberdrola's Stakeholder Engagement Model in Burgos begins with the town councils affected by wind farm generation and then those impacted by the local infrastructure (Iberdrola director conversation 1). Following this, interventions are made with neighborhood councils, communities, associations, communiqués, and owners. While consulting the landowners is the last level, they indicate that "there would be dialogue with the organizations or companies that operate in the environment, sooner or later, depending on the type of condition and the relevance considered" (Iberdrola director conversation 1).

*Implementation of Social Services Programs:*

Regarding Iberdrola's energy localization initiatives in Burgos, the primary way Iberdrola emphasizes social aspects is through their commitment to improving rural depopulation in Burgos through its wind farms. Out of the 23 articles that mentioned wind energy in Burgos across Iberdrola's four websites, 10 articles mentioned how Iberdrola's implementation of wind energy combats population challenges. One article highlights four Burgos towns that were recognized for their efforts to combat rural depopulation, shown through Figure 4.7 (Iberdrola España, 2022c). The municipality Cavia hosted the presentation of the Towns with a Future awards, which showcased the platform Vente a Vivir a Un Pueblo that has been used to fight against population challenges. 'Vente a Vivir a Un Pueblo,' which translates to 'Come Live in a Town' is a "platform that helps urbanites choose which town is worth going to live in, how and why" (Vente a Vivir, 2021). Through the Town with a Future awards, Iberdrola recognizes these awarded towns' efforts to combat rural depopulation. The awards given to these four towns include the creation of a video card, which Iberdrola identifies as "the most modern and complete platform to encourage urbanites to settle in rural environments" (Iberdrola España, 2022c). The residents of these towns will also gain tools including free online training in new technologies, housing and transfer exchanges, employment opportunities, and a new marketplace to help provide visibility to local products and services. Iberdrola's delegate in Castilla y León, Miguel Calvo, noted, "Iberdrola promotes renewable energies as an engine of rural development, and in this way, towns emerge as a guarantee of the future with numerous initiatives around 'green' principles that drive their activity and its population" (Iberdrola España, 2022c). The

mayors of the winning towns—Iglesias, Hontanas, Rabé de las Calzadas, and Cavia—affirmed their support of Iberdrola's renewable energy efforts as the company has helped revitalize the rural communities through economic opportunities. Specifically, Francisco Javier Peña, the mayor of Hontanas, "has valued the income that renewables provide in the area, which are installed 'with care and respect'" (Iberdrola, 2022c). The mayor Rabé de las Calzadas, Diego Rodríguez, believes that the primary issue contributing to rural depopulation is a lack of stable employment in rural areas; better employment opportunities would prevent individuals from traveling to the cities for work (Iberdrola, 2022c).


**Figure 4.7:** Iberdrola's collaboration with the 'Vente a Vivir a un Pueblo' platform, translated to 'Come Live in a Town," recognized four Burgos towns' efforts to combat rural depopulation through the Town with a Future awards (Iberdrola España, 2022c).

Further concerning the Vente a Vivir a Un Pueblo platform, Iberdrola director one recognizes the importance of this initiative, noting that it is "a national social initiative, with concrete actions and dissemination in the media, in which the municipalities of Burgos have had a relevant involvement" (Iberdrola director conversation 1). The other articles generally describe how Iberdrola's renewable energy systems, particularly through local employment provision, promote renewable development in Castilla y León and Burgos. For example, one article notes that the Iglesias wind farm will contribute to "a new energy landscape that fixes population in rural areas" (Iberdrola, 2022d).

Another social initiative Iberdrola carries out through its wind farms in Burgos is through the promotion of educational opportunities. In August 2023, students and professors from the

technical architecture and civil engineering degree course at UBU visited the BaCa wind farm, the BaCa evacuation substation, and the Revilla Vallejera PV plant (Iberdrola España, 2023c). During this visit, Eduardo Carrasco, head of the Burgos-Palencia area, and Álvaro Vadillo, head of operations at the Burgos facilities, taught students about the components of a wind turbine blade, along with methods and processes of construction and maintenance of the wind farms. Iberdrola states how this experience allowed students to learn first-hand how this renewable energy is generated and distributed. Iberdrola director one further indicates that university talks and collaborations social initiatives Iberdrola provides for local communities, along with road reparation and heritage restoration in affected towns (Iberdrola director conversation 1).

Albeit not directly related to the installation of wind energy, one initiative explored a direct energy localization initiative Iberdrola implemented in Burgos through a solar energy project (Iberdrola, 2023b). In the rural town of Revilla Vallejera, a municipality of 100 inhabitants in Burgos, Iberdrola implemented a 50 MW solar farm, which hybridized the existing BaCa wind project. Through this initiative, Iberdrola collaborated with the local community, in which the townspeople helped to select the location of the wind farm to ensure the least harm for agricultural production and the environment (Iberdrola, 2024h). Due to the humidity, heat, and shady conditions the sub-PV conditions provided, Iberdrola collaborated with a mushroom growing company Fungi Natur to grow mushrooms in this favorable terrain (Diario de Burgos, 2023). The mushrooms were inoculated on 50 logs and buried in trenches between the rows of the PV cells. Four species of mushrooms—poplar, oyster, shiitake, and reishi—and 50 truffles were planted across a 100-meter span; they will be ready to be harvested in 2 years. In addition to promoting plant growth, the pastures housing the solar farm are also home to sheep, who graze throughout the fields. The Revilla Vallejera town council was recognized in Iberdrola's Convive Awards, which Iberdrola awards to projects that "recognize the best coexistence initiatives between renewable energies, nature and people" among the Convive programs (Iberdrola, 2024h). This solar project additionally received the Seal of Excellence in Sustainability and the Conservation of Biodiversity in PV plants from the Spanish Photovoltaic Union (UNEF), which awards solar projects in Spain that meet the highest standards for social and environmental integration (Iberdrola España, 2024d). Iberdrola director two indicated that Revilla Vallejera

municipality is an example of energy localization in Burgos,[24] and the Convive program is an example of the fruition of Iberdrola's Stakeholder Engagement Model (Iberdrola director conversation 2). The collaborative project in Revilla Vallejera provides an example of solar energy localization implemented by Iberdrola in Burgos.

**Economic Energy Localization Corporate Strategy**

To best promote a sustainable and just transition, Iberdrola frames its economic contributions through its Strategic Plan 2024-2026 and ability to generate local community investments. Through its Strategic Plan 2024-2026, Iberdrola plans to invest 41 billion euros from 2024-2026, with the trend continuing through 2030, to amplify the energy transition, increase employment opportunities, and reduce emissions (Iberdrola, 2024d). In this way, Iberdrola aligns its growth in renewable energy and networks with its scope I and II 2030 carbon neutrality and Net Zero 2040 goals. Through its EUR 15,500 million investment in renewables, Iberdrola will allocate roughly 30 percent for onshore wind (Iberdrola, 2024k) Within the electricity industry, Iberdrola has invested over EUR 150,000 million in the past 20 years to finance its strategic commitment to a safe, sustainable, and competitive energy model (Iberdrola, 2023a). In 2022, Iberdrola generated 500,000 direct and indirect employment opportunities worldwide, contributing over EUR 47,500 million to the global GDP and contributing over EUR 17,600 million of direct and indirect total annual taxes. Iberdrola highlights that positive impacts of its economic investments are present in communities: "The positive effects at the local level include, among others, the improvement of the economy and employment (direct and indirect), the revitalization and repopulation of depopulated rural areas, the generation of fees, levies and taxes at different times and in different areas of activity, the training of professionals, [and] the support of local communities through different forms of sponsorship" (Iberdrola, 2023a).

*Providing Local Employment and Procurement:*

To improve the industry in the geographical areas where it operates, Iberdrola aims to contract through local suppliers strategically, allowing the company to help create both direct

[24] From my analysis, while the Revilla Vallejera solar project hybridized the existing BaCa wind farm, this solar project was not implemented in conjuction with BaCa and had no clear connection to the wind farm in terms of implementing a localized benefit to compensate for damages caused by the wind farm. Thus, while this solar project hybridized the existing BaCa wind farm, I argue that it is an isolated solar initiative that cannot be considered wind energy localization.

and indirect employment opportunities. Within Spain in 2023, 91.1 percent of procurement or equipment, contracting materials, works, and services came from local suppliers (Iberdrola, 2023a).[25] Iberdrola additionally aims to promote employability by providing job opportunities in the green sectors in the communities it operates in. Since 2021, Iberdrola has engaged in and co-led the European Round Table's Reskilling for Employment (R4E) project (Iberdrola, 2023a). Iberdrola highlights that this program "seeks solutions to the existing training mismatch in Europe, creating a collaborative ecosystem of re-skilling with the participation of companies, public bodies, trade unions, industry associations, and training providers" (Iberdrola, 2023a). Iberdrola has implemented this learning within the energy sector, where they provide specific initiatives for unemployed individuals and aim to support the local economy in the communities where they operate. Currently, they have provided employment for over 1,000 local individuals.

Additionally, Iberdrola's social initiatives, such as Convive and the Citizens Innovation Platform, have aimed to provide training, generate local employment, and involve local suppliers in development processes. Iberdrola highlights how it also implements additional local community investments through its power facilities: "During the construction and operation of its facilities, Iberdrola also carries out certain infrastructure activities that are unrelated to its facilities, but rather that are intended to meet the needs of the social environment, resolving existing shortcomings in the local communities" (Iberdrola, 2023a). Notably, Iberdrola's Foundations also promote socioeconomic initiatives to help contribute to the local economic development of the communities in which they operate. During 2022, the Iberdrola Group's Foundations contributed EUR 13.5 million to socioeconomic development programs in local communities, supporting initiatives with a focus on social action, training and research, art and culture, biodiversity, and institutional programs (Iberdrola, 2022b).

*Issuing Taxation and Compensation to Landowners:*

Among these economic impacts, Iberdrola's monetary contribution through land purchase and taxes are present at the global, national, and local levels. In 2023, Iberdrola paid EUR 925 million in corporate income tax in Spain (Iberdrola, 2023a). Regarding global tax contributions,

[25] Local suppliers are defined as "suppliers registered in the same country as the Iberdrola subsidiary for which it does business are considered to be local based on the Tax ID assigned to the supplier" (Iberdrola, 2023a). As such, Iberdrola España could source goods from other countries and still have the label as local procurement because they are administered from this Spanish-owned business. This poses complications for what can actually be deemed 'local' procurement.

Iberdrola España contributed EUR 3,482 million in 2023, EUR 2,448 million of which was company contributions and EUR 1,034 million was contributions due to third-party payments. Iberdrola additionally utilizes the Business for Societal Impact B4SI model to assess and measure the company's business contributions to communities.[26] Regarding these global contributions to society, Iberdrola implemented EUR 7,515 thousand in specific community contributions and EUR 33,083 thousand in community investment, adding EUR 7,610 thousand for initiatives aligned with the business. The community investment was broken down into various areas of contribution. These included socioeconomic development (EUR 6,493 thousand), energy sustainability (EUR 4,713 thousand), arts and culture (EUR 4,176 thousand), education and training (EUR 6,077 thousand), cooperation and community service (EUR 18,539 thousand), other (EUR 8,211 thousand), and management costs (EUR 3,453 thousand). As such, Iberdrola's contribution to the community in 2023 was equal to 1.1 percent of net profits for the year, globally. All these claims showcase Iberdrola's stated commitment to implementing economic substantive energy localization initiatives.

*Reducing Energy Dependence:*

To align the company growth strategy and targets with the current EU energy context and Spanish regulatory decisions that favor energy independence and customer protection,[27] Iberdrola has incorporated reducing energy dependence (i.e., fostering energy independence) into its company strategy. Within its business model, Iberdrola indicates that "the energy transition to a low-emissions economy is a great opportunity to create independence, wealth, generate employment, and improve the state of the planet and people's health" (Iberdrola, 2023a). One of Iberdrola's primary drivers to create energy independence is through its commitment to renewable energy deployment, of which onshore wind plays an integral role. Through its involvement in the energy transition, Iberdrola is committed to implementing less dependence on imported fossil fuels and diversification of the energy supply. Iberdrola identifies how energy dependence, particularly on fossil fuels, can create challenges for consumers: "Dependence on imported fossil fuels, in addition to entailing a cost, can carry risks associated with price

[26] Iberdrola states that the Business for Societal Impact B4SI model standard "only recognizes projects that involve voluntary contributions for social or environmental protection ends, for non-profit purposes, and that are not restricted to groups related to the company" (Iberdrola, 2023a).
[27] See Chapter 1 for more information.

fluctuations and supply chain issues" (Iberdrola España, 2024a). Alternatively, implementing local renewables, including wind energy, will "allow countries rich in these energy sources, such as Spain, to be less dependent on imports and to have a more diverse, stable and secure energy supply" (Iberdrola España, 2024a). Iberdrola further claims that its growth strategy centered on increasing electricity use while breaking dependence on fossil fuels "is the best way to further increase the value we create for everyone" (Iberdrola, 2024k). As such, wind energy plays a critical role in helping Iberdrola reduce its fossil fuel dependence, contribute to reductions for the EU, Spain, and Burgos, and promote a just transition that creates value for all stakeholders.

**Economic Energy Localization Initiatives in Burgos**

*Providing Local Employment and Procurement:*

**Figure 4.8:** The Construction of the Buniel wind farm employs civil works companies, such as the burgos-based company Copsa, and was expected to involve 200 professionals during peak project periods (Iberdrola España, 2023d).

Within Burgos, out of the 23 Iberdrola website articles that mentioned Burgos wind farms, 18 of them mentioned the generation of local employment opportunities, and nine of them mentioned how the wind farms were engaging in local procurement. For example, Iberdrola

indicates that the construction of the Herrera wind farm complex in Burgos (63 MW) will create jobs for nearly 800 individuals, and local, Burgos-based companies, such as the Copsa building company, will carry out fieldwork and civil engineering works (Iberdrola, 2020b). Additionally, many components of the wind turbines were manufactured in Spain, including the gondolas in Soria, the generators in Cantabria, and notably, the multipliers in Burgos. Regarding the Buniel wind farm (Figure 4.8), it was predicted to employ 200 professionals during peak periods and additionally contains an important local component: the project employed Copsa and utilized local industrial and raw material suppliers by sourcing the wind turbine gearboxes from Lerma, Burgos (Iberdrola España, 2023d). The Iberdrola director one affirms that local job opportunities leave a significant presence in local Burgos communities: "The generation of direct/indirect employment linked to the projects is notable, which is very important in the works phase (10-14 months) and is very stable in the exploitation phase" (Iberdrola director conversation 1). By generating local employment, sourcing local procurement, and bolstering local infrastructure through its wind farm projects, Iberdrola aims to improve economic conditions in these rural Burgos towns.

*Issuing Taxation and Compensation to Landowners:*

Regarding taxation and land payments in Burgos, Iberdrola director one notes that Iberdrola pays various municipalities for its facilities. They indicate that this "represent[s] very relevant income for the City Council" (Iberdrola director conversation 1). These taxes are for construction, facilities, and works, which they note comprise between 2 to 4 percent of the total project budget, along with the IBI tax[28] and the Economic Activities Tax (IAE),[29] which are paid yearly. The income generated from land occupation is also paid annually. In relation to Burgos, the director continues that in Iberdrola's tax benefits, along with the involvement of local administrations and development of initiatives, help to increase public acceptance of the wind farms: "All [of] these elements together mean that the projects proposed by Iberdrola in the

[28] The IBI tax stands for "Impuesto sobre Bienes Inmuebles," which is a property tax unique to Spain (Iberian Tax, 2023). Iberian Tax highlights how the IBI tax plays "an important role in supporting local municipalities and ensuring the provision of essential public services" (Iberian Tax, 2023).

[29] According to the Agencia Tributaria, "The IAE taxes the development of economic activities, i.e. the self-management of production and/or human resources means for the purpose of intervening in the production and distribution of goods and services" (Agencia Tributaria, 2024). All activities, except agricultural, dependent livestock, forestry, and fishing activities are subject to the IAE.

province of Burgos are generally very well received, favoring the support of the different administrations, and social support in general" (Iberdrola director conversation 1).

*Reducing Energy Dependence:*

Iberdrola's 25 onshore wind farms that contribute 748 MW in the Burgos province help to reduce the province's dependence on external forms of fossil fuel energy (Iberdrola España, 2024b). Large wind facilities in Burgos, such as Buniel (104 MW), BaCa (69.3 MW), Herrera II (63 MW), and Valdemoro (49.5 MW), are supplying electricity to thousands of homes and promoting the province's, region's and nation's energy independence from external influences. Concerning the Buniel wind farm, Iberdrola highlights how this project promotes the EU's REPowerEU Plan, which aims to accelerate the energy transition by reducing Europe's dependence on fossil fuel imports, particularly from Russia (Iberdrola España, 2023b). Within Spain, the Buniel wind farm helps the nation reach Spain's 42 percent renewable target by 2030 under the INECP. The CEO of Iberdrola España notes, "Spain has great potential in renewable energies and with initiatives such as [the Buniel wind farm], we contribute to making our country a benchmark in the sector, facilitating investments that promote the transition towards an economy that is less dependent on fossil fuels and that contributes, at the same time, to generating economic growth and employment" (Iberdrola España, 2023b). In this way, Iberdrola promotes energy independence of Burgos communities through its wind facilities.

Through Iberdrola's commercialization business, Iberdrola's first director notes that consumers can choose to purchase energy from renewable sources. This would allow customers to benefit from the stable and secure wind energy generated in Burgos and provide them with more autonomy over their energy decisions. They note, "From Iberdrola Comercializadora, there is the possibility of acquiring green energy through a specific type of contract, which is guaranteed through GDO (Guarantee of Origin) and certified by the CNMC (National Market and Competition Commission) that the energy you consume is of renewable origin" (Iberdrola director conversation 1). They additionally note that people can consume renewable energy through a Power Purchase Agreement (PPA). The U.S. Department of Energy's (DOE's) Better Buildings initiative defines PPA as "an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property" (Better Buildings DOE, 2024). PPA's allow the customer to purchase electricity from the system. Local consumption through contracts and PPAs would help localize energy independence benefits from wind energy.

This dataset presents Iberdrola's corporate energy localization commitments and how they materialize through wind energy systems in Burgos. Within the province, Iberdrola primarily implements decarbonization and bird preservation mechanisms regarding environmental benefits. Concerning the social and procedural aspects, Iberdrola's efforts relating to wind energy center on reducing depopulation. Economically, the company's initiatives are notable through bolstering local economic opportunities and contributing to energy independence. In the next chapter, I present the dataset on the eight stakeholder groups' perspectives on Iberdrola's wind energy localization in Burgos.

# Chapter 5: Stakeholder Evidence

In this chapter, I present key evidence from the conversations I had with the eight stakeholder organizations, highlighting their perspectives on Iberdrola's implementation of wind energy localization in Burgos through the relevant energy localization categories.[30] When showcasing the stakeholder evidence, I think it is important that individuals' complete narratives are told, so I include this chapter as a full reporting, qualitative dataset.

## Introduction to the Eight Organizations

The Asociación de Promotores de Energía Eólica de Castilla y León (Apecyl) was founded in 1999, and it is located in the city center of Valladolid, Castilla y León. This association promotes the development, execution, and implementation of wind energy projects within the autonomous community of Castilla y León (Apecyl, 2024). Apecyl is an organization of wind energy developers that aims to jointly defend the interests of the promoters. In this way, Apecyl is a partner of Iberdrola (Apecyl conversation). In this conversation, I spoke with one representative from Apecyl. Concerning Iberdrola's degree of implementation of wind energy localization in Burgos, Apecyl affirmatively believes that Iberdrola does implement energy localization, notably due to local job creation and wind project suitability with stakeholders (Apecyl conversation).

The Universidad de Burgos (UBU) is a public university in the city center of Burgos, and it was established in 1994. In this conversation, I spoke with a professor in the Public Law Department who has expertise in various research fields related to renewable energy, the environment, and sustainable development. This professor has interacted with Iberdrola indirectly through their work, as they have studied wind energy through their research. The professor has also engaged in urban planning and energy-related projects through a student-led sustainability group (UBU conversation). Overall, this professor strongly believes that Iberdrola promotes wind energy localization in Burgos by providing beneficial agreements with landowners, supplying a demand for clean energy, and effective engagement with communities (UBU conversation).

The Ente Público Regional de la Energía de Castilla y León (EREN) is a regional government-affiliated organization that was founded in 1996, and it is located in the city center

[30] See Table 3.1 in Chapter 3 for more information.

of León, a nearby province to Burgos in Castilla y León. This organization unifies, develops, and integrates policies approved and implemented in the energy sector at the regional level (Ayuntamiento de Burgos, 2024). The development work for this energy agency mainly focuses on regional energy planning, and they advise other municipalities, agencies, medium-sized companies, individuals, and more on energy issues within the autonomous community (EREN conversation). EREN additionally drafted the wind power plan of Castilla y León, and their main roles are to manage and obtain sustainable energy projects in cooperation with other partners, mainly European. As such, the organization claims to be a loyal partner of Iberdrola (EREN conversation). During this conversation, I spoke with two individuals from EREN, which I will differentiate as representative 1 and representative 2. EREN believes that Iberdrola is obligated to implement wind energy localization in Burgos. The agency believes Iberdrola does so by providing local benefits through economic employment opportunities and through legal requirements through EIAs, which allow for stakeholder contribution.

Fundación Caja de Burgos (FCB) was founded in 1926, and it is located in the city center of Burgos. This organization is a foundational entity that mainly promotes social and economic development in Burgos (FCB, 2013). It is additionally a foundation that promotes environmental education in the province of Burgos through thematic areas of action, social welfare, education, and environment, all linked to sustainability (FCB conversation). FCB works indirectly with Iberdrola, as it promotes energy companies by supporting various entrepreneurial programs. In this conversation, I spoke with one individual in the sustainability department of FCB. Overall, the organization does believe that Iberdrola implements energy localization, notably by generating infrastructures and employment while reducing carbon emissions. Concerning social aspects, however, the foundation believes that there are mixed social opinions and perspectives among the Burgos community regarding Iberdrola. FCB also has concerns that there is a separation between Iberdrola and local communities (FCB conversation).

Ribering is a coworking space for collaboration in Aranda de Duero, a city in the south of Burgos, and it was founded by the parent company NBS Climate in 2022.[31] This community space hosts local events aiming to contribute to positive transformation in the Ribera del Duero

[31] NBS Climate is a "Spanish social enterprise that facilitates the design, evaluation and continuous improvement of Nature-Based Solutions to build resilience to climate impacts, by applying the IUCN Global Standard for NBS whose professional certification we hold" (NBS Climate, 2024).

region, particularly in the areas of education, business incubation, culture, open innovation, well-being, and health (Ribering, 2024). At this community, panel-style event, I was able to speak with two representatives from the stakeholder group Guzmán Removable and hear perspectives on energy localization from about 10 community members. When showcasing the perspectives of the community members, I do not differentiate between individuals and cite these comments as ones from the 'Ribering conversation.' The Ribering community, while not directly working with Iberdrola, has experienced direct or indirect impacts on Iberdrola's wind energy projects as they all live in the province of Burgos. Overall, the consensus of the event participants was that large utility companies, like Iberdrola, do not contribute fully to wind energy localization in general, and in Burgos in particular, due to various reasons related to their oligopolistic nature (Ribering conversation). As a result, their wind energy projects do not substantially boost rural repopulation. Also, these large entities usually lack transparency and do not fully engage with local communities. Alternatively, small-scale energy projects led by communities create more localized impacts.

Guzmán Renovable is a non-profit organization, founded in 2022, that established one of the first energy communities in Castilla y León, located in Guzmán, Burgos (Guzmán Renovable, 2024). During the Ribering presentation, I heard perspectives from two members of Guzmán Renovable that helped implement the joint solar community. I will refer to these individuals as representative 1 and representative 2 to differentiate between them. This organization has no indirect interactions with Iberdrola, yet the organization finds that regulatory challenges Iberdrola is involved in regarding the industrial audit process can slow down grid connection for self-consumption projects, making the process more challenging (Ribering conversation). Overall, the Guzmán Renovable representatives believe that Iberdrola does not implement wind energy localization in Burgos because despite that Iberdrola creates economic activities in Burgos communities, it is not as localized as community energy initiatives (Ribering conversation). They indicate that Iberdrola's wind farms could contribute to rural depopulation.

Asociación Ábrego Medioambiente y Desarrollo Rural (Ábrego) was established in 2014 in the city center of Burgos, Castilla y León. It is a non-profit association that promotes the repopulation of the rural environment through activities, projects, and events to energize the rural community and its connection socially, economically, and culturally to the urban community (Ábrego, 2024). The association focuses on the different municipalities in rural Burgos and aims

to provide environmental education and agricultural training (Ábrego conversation). The non-profit additionally operates through a political lens to demand social justice for people living in rural communities. In this way, Ábrego indirectly interacts with Iberdrola through their work in these rural communities where Iberdrola's wind farms are located. During this conversation, I spoke with two individuals from Ábrego, as well as one individual living in a small rural village in the north of Burgos, known as Valmayor de Cuesta Urria (more simply known as Valmayor). I will refer to the two individuals from Ábrego as representative 1 and representative 2, and I will refer to the village resident as the individual from Valmayor. The Ábrego representatives as well as the individual from Valmayor strongly believed that Iberdrola does not implement wind energy localization in the province of Burgos because they do not consider the opinions of the local communities, the electricity is not consumed locally, and wind energy is contributing to depopulation with no provision of social benefits (Ábrego conversation). Additionally, these individuals believe that the problem is beyond Iberdrola but stems from the capitalist, profit-driven energy system that benefits from overconsumption.

Mesa Eólica Merindades de Burgos (Mesa Eólica) was founded in 2000 in the Merindades Region, which is in the north of Burgos. It is an association promoting the knowledge, conservation, defense, and study of nature, particularly specializing in the effects of wind farms on the environment (Mesa Eólica, 2024). The organization takes legal action through the declaration of allegations against wind projects that are not following the law (Mesa Eólica conversation 1). As such, they directly interact with large-scale wind promoters, such as Iberdrola, and are actively fighting against the development of large-scale wind energy in the Merindades Region. These members also live in local communities that experience the first-hand impacts of wind energy. I engaged in separate conversations with two representatives of Mesa Eólica. I will differentiate between these conversations and representatives, referring to each as conversation and representative one or two, respectively. Both these individuals emphasized that Iberdrola is entirely failing to implement wind energy localization in Burgos, particularly by exploiting renewable energy, harming biodiversity and the landscape, worsening rural depopulation, providing no consultation with local groups, and not implementing social services (Mesa Eólica conversation 1; Mesa Eólica conversation 2). They further emphasize that Iberdrola is promoting an unsustainable, capitalist energy model.

While three of the stakeholder groups believed Iberdrola implemented wind energy localization in Burgos, one had mixed perspectives, and four of the organizations did not. This emphasizes the oppositional and differing viewpoints relevant groups have and how controversial of an issue wind energy localization is among individuals within the Burgos community. In this chapter, I present the stakeholder evidence in a more in-depth manner. I will describe the local energy context in Burgos, aligned with the environmental, social/procedural, and economic considerations of Iberdrola's degree of implementation of wind energy localization from these relevant groups. After holistically presenting and contrasting the stakeholder arguments both for and against wind energy localization, I will offer my analysis and recommendations in Chapters 6 and 7, respectively.

**Local Burgos Energy Context**

Before I present the stakeholder groups' perspectives on energy localization, I want to offer the important factors stakeholders expressed that characterize the local energy context in Burgos. Historically, the northern area of Burgos, known as the Merindades Region, has been a prominent generator of energy for the rest of the province and for Spain through the Garoña nuclear power plant (Ribering conversation; Mesa Eólica conversation 1). This plant was 416 MW and operated for 30 to 40 years before it was decommissioned in August of 2017 (Mesa Eólica conversation 1). In recent years, wind energy has been the new focus (Ribering community) and has emerged as a dominant player in the Burgos energy market. FCB highlights how Burgos is a leader in Spain in wind energy generation: "Wind energy in the province of Burgos… is the main energy that has been developed, and if compared to the rest of the national territory, the province of Burgos has been positioned as a reference in wind energy production for years" (FCB conversation). The UBU professor also notes the importance of wind energy in Burgos: "Sustainable energy in Burgos, by definition, is wind energy, which is by far the one that occupies the most land, produces the most watts and supplies the most energy to the public" (UBU conversation).

Wind energy is particularly favorable in Burgos due to the mountainous terrain and landscape, noted by EREN representative one: "When you need to take advantage of the wind, you can't take it from everywhere equally. You have to go to areas that are quite windy, and those areas in Burgos are quite a windy area. They are in certain areas, but not everywhere,

particularly in mountainous areas" (EREN conversation). This makes Burgos a strategically beneficial location for wind energy generation (FCB conversation). Wind energy is also more compatible with the rural landscape of Burgos because wind power does not remove land like PV energy does, which allows farmers to continue to cultivate the land (Apecyl conversation). In comparison to solar energy, wind energy has reached a level of commercialization on a larger scale that solar has not: "Solar energy is for self-consumption, and wind energy is mass-produced for sale, making wind energy and projection by far the most important today" (UBU conversation). Therefore, wind energy is more optimal for widespread, commercial use across Burgos. Figure 5.1 illustrates a photo I took of the Burgos landscape when traveling to Aranda de Duero. The high number of wind turbines on the horizon emphasize how advantageous wind energy is in the rural, mountainous Burgos landscape.

**Figure 5.1:** Located in the northern part of Spain, the province of Burgos has recently become a strategic site for wind energy due to its windy climate and rural, mountainous landscape.

However, within Burgos, generation of wind energy exceeds consumption, noted by FCB, Ábrego, and Ribering. EREN representative one and a Ribering community member noted that some people have felt that wind energy is saturated in the province (EREN conversation; Ribering conversation). Likely to align Spain with its INECP and energy targets, the Spanish government has pushed for a fast-developing energy transition, without so many impediments

(Mesa Eólica conversation 2). As such, representative 2 from Mesa Eólica claims that energy transition has lacked binding planning (Mesa Eólica conversation 2).[32]

Another dynamic regarding wind energy in Burgos is the differing experiences resulting from urban and rural Burgos communities. Representative one from EREN highlights that the local communities—not the major cities—are the most impacted by the facilities: "Between these three towns, [capital Burgos, Miranda del Ebro, and Arana de Duero], you will practically have 70 to 80 percent of the population of the province of Burgos. A wind farm can be 40, 50 or 60 kilometers away from these towns, so these towns, from what you say, the Burgos society has hardly any relation with these wind farms. The impact is more local to the towns around the facilities, yes, but not to the society of the province of Burgos, which is much larger" (EREN conversation). Thus, perceiving energy localization benefits on the community-level concerning the province of Burgos must factor intra-province dynamics and must place the emphasis more on the local communities that site the wind farms.

**Environmental Energy Localization Initiatives**

*Promoting Decarbonization:*

From an environmental and decarbonization perspective, stakeholders hold contradictory perspectives on whether Iberdrola promotes energy localization among its wind farms effectively. The UBU professor highlights how Burgos citizens, like other people in Spain and across the EU, increasingly demand that their electricity comes from clean energy sources. By helping to decarbonize the Burgos energy sector, Iberdrola is helping satisfy the province's demand for energy that is less polluting and more sustainable for local environments. The UBU professor noted, "In Spain and in Europe in general, we are very conscious, very aware of the environment. Therefore, people are increasingly demanding the use of clean energy… and so citizens increasingly want the electricity companies that supply them with energy to prove that it is clean energy. And in fact, Iberdrola today is. It can be said that it is a leader, it is or is one of the outstanding leaders in this sector, and Iberdrola also guarantees you… when you buy energy,

[32] According to Law Insider, binding site planning refers to "drawing to a scale specified by local ordinance which: (a) Identifies and shows the areas and locations of all streets, roads, improvements, utilities, open spaces, and any other matters specified by local regulations; (b) contains inscriptions or attachments setting forth such appropriate limitations and conditions for the use of the land as are established by the local government body having authority to approve the site plan; and (c) contains provisions making any development be in conformity with the site plan" (Law Insider, 2024).

the energy you are being sold is energy that comes from sustainable sources—or solar, but mainly wind. I would like to say that the citizens of Burgos and the community of Burgos are grateful for this, and because, I insist, there is also a growing demand for sustainable energy" (UBU conversation). The UBU professor further elaborates how wind energy contributes to the conservation of the environment: "The relationship is positive [between Iberdrola and Burgos citizens] from the business point of view and from the point of view that citizens appreciate the effort Iberdrola is making to conserve and maintain the environment through sustainable energy, specifically and fundamentally through wind energy" (UBU conversation). They additionally note that Iberdrola has been one of the "first energy companies that have been concerned about obtaining energy that is not harmful to the environment and trying to replace fossil fuels" (UBU conversation). In this sense, Iberdrola's decarbonization through wind energy has helped improve fossil-fuel sourced pollution and reduce GHG output in Burgos, which are benefits local communities experience within the province.

Alternatively, other stakeholders note that decarbonization benefits are undermined by the harm that wind farms cause to local ecosystems, such as through forest degradation (Ábrego conversation). The individual from Valmayor indicated that many people think solar panels and wind turbines, as forms of green energy, are good for the environment, yet they emphasized how people "don't even think about all the [environmental] destruction that is going to cause" (Ábrego conversation). The second Ábrego representative highlights how decarbonization benefits are surpassed by large companies' failure to consider the environmental needs of local communities: "New generation funds coming from Europe are serving these companies to not even substitute, but to transform most of their production from non-renewable to renewable sources. But, these big companies by fundamentals, don't take into consideration what the territory needs, what people need. They just produce green energy and renewable energy, but they don't care if the territory has these needs or what are the problems that come after the projects" (Ábrego conversation).

Additionally, due to the saturation of wind energy in the province, decarbonization benefits come at the expense of local environments and visual landscape impacts: "I think [Iberdrola] has a very important position in the Spanish map because it has positioned all the projects and the generation it has, but I think it has reached a point where these types of facilities are still being promoted, and there are people who say no, this is already being done… It is being

exceeded because [of] the impact, the visual impact" (FCB conversation). The first representative from Mesa Eólica further notes how environmental benefits from renewable energy generation are overshadowed by harms generated to the local landscape: "My personal consideration on the implementation of renewable energy sources, of the exploitation of renewable energy sources in the region, seems to me to be a real mess, a real disaster… Large companies that extract energy from natural resources—the wind, the sun, the water, the rivers—that is, they extract energy from natural resources… and leave absolutely nothing good. They leave something very, very negative in the region, which is a perception that the region is under overuse for energy production, and its biodiversity, its environment, its landscape characteristics, and so on, are spoiled" (Mesa Eólica conversation 1). Despite that some stakeholders note the provincial-wide decarbonization benefits of Iberdrola's wind systems through lowering pollution, abating GHGs, phasing out fossil fuels, and fueling the demand for clean energy, other stakeholders emphasize that decarbonization benefits are obscured by environmental damage caused by the systems.

*Safeguarding Biodiversity, Nature, and Landscapes:*

A component of biodiversity protection through Iberdrola's wind farms is carried out through regulatory compliance. EREN representatives note that special protected areas (SPAs) are geographical areas that have legal measures of protection that limit industrial impacts (EREN conversation). In relation to Iberdrola's Burgos wind farms, the second EREN representative notes that SPAs notably help protect birdlife (EREN conversation). Additionally, the first representative notes how the EIA process helps safeguard and protect biodiversity, particularly as the EIA might enforce the relocation or reduction of wind turbines in the project to better reduce its impact on bird species (EREN conversation). The UBU professor further notes that Iberdrola is "one of the first energy companies [in Spain] that has been involved in environmental protection" (UBU conversation).

Conversely, several stakeholder groups expressed issues that arose resulting from Iberdrola's wind farms' impacts on biodiversity and the environment. The UBU professor highlights that at times, clashes arise between Iberdrola and local towns when environmental groups and citizens within the communities do not approve of the siting location of the wind farm, despite that local administrators give permission (UBU conversation); this likely alludes to

the negative environmental impact these facilities are predicted to have on surrounding ecosystems. Individuals from Mesa Eólica primarily highlight how Iberdrola's wind farms in Burgos have been detrimental to birds and the landscape. The second representative from Mesa Eólica is an ornithologist and emphasizes how wind energy is exacerbating the decline of endangered birds, particularly the griffon vultures, peregrine falcons, and the red kite: "I have been publishing and studying the birds of this province for many years and in the allegations that we present, we give the official data of the censuses that are carried out, of the most endangered species in danger of extinction, and they are getting worse and worse. We have mortality data that is absolutely frightening" (Mesa Eólica conversation 2). This individual directly attributes wind farms, including those promoted by Iberdrola, to the increase in bird species mortality.

While devastation is occurring to bird populations, such as over 1,200 griffon vulture deaths in Burgos until 2020, "the promoters are presenting data that do not conform to reality" (Mesa Eólica conversation 2). This second representative indicates that the bird mortality data that these large energy companies, including Iberdrola, report is biased, not accurate, and does not account for how wind power plants are causing bird population deaths based on the official census data (Mesa Eólica conversation 2). Furthermore, this individual highlights that the wind farms have destroyed, in their opinion, the most valuable part of Burgos, being the natural environment: "The result of all this implementation has been a destruction of the most significant thing that our province had, that our towns had, which is the landscape, right? Yes, the landscape was our hallmark. Right now, we don't have that hallmark, or it is very deteriorated. We have here a whopping 100 [or so] wind power plants. We have practically three-fourths of the province flooded. It is almost impossible to take a photo of the horizon in this wonderful province [with] no wind turbines or power lines [that] appear on your horizon" (Mesa Eólica conversation 2). The resident from Valmayor supports this statement, highlighting how Iberdrola is exploiting green energy at the expense of the landscape: "Let's put [wind energy] in a green place and let's call it green energy while the only green thing that we already have, it's [the landscape]" (Ábrego conversation). This individual further highlights how wind energy in the region of Merindades is causing visual contamination, destroying forests, and harming vegetation diversity, which is very rich in this region (Ábrego conversation). Meanwhile, at the expense of the environment, more affluent cities are consuming this green energy: "[They] are telling the population in the cities. Wow, this energy that you are consuming right now is green

because it's been provided by the wind [turbines], but what you are not telling the population is look, the only green thing that we had were these forests… Mass lands are being destroyed" (Ábrego conversation).

Furthermore, the second Mesa Eólica representative highlights their perspective that Iberdrola is greenwashing its environmental benefits through partnerships and the media: "Iberdrola is penetrating through all the capital they have, to finance conservationist organizations in defense of birds such as BirdLife and the Spanish Ornithological Society… and then what is happening is that they are taking anything goes here in Burgos. The press… [publishes] articles from Iberdrola financed by Iberdrola. That is, they are not independent articles of the newspaper, they are articles that Iberdrola sends to the newspaper to be published and they give them a journalistic format as if they were independent journalistic" (Mesa Eólica conversation 2). To further echo these sentiments, the first individual from Mesa Eólica, in relation to Iberdrola's greenwashing advertising, emphasizes how "it seems like a joke to [them]" as "it is very nice to disguise or dress up as an environmentalist when your facts prove otherwise" (Mesa Eólica conversation 1). These perspectives, mainly from Mesa Eólica and Asociación Ábrego, indicate that Iberdrola is underperforming in localized biodiversity conservation mechanisms.

**Social Energy Localization Initiatives**

*Consultation with and Representation of Local Communities:*

Regarding Iberdrola's implementation of a procedural approach to energy localization, there is contradictory evidence regarding the degree to which Iberdrola consults local communities and represents their perspectives through the wind project development process. Particularly through Apecyl's collaboration with Iberdrola in implementing the Buniel Wind farm, a representative from Apecyl highlighted how they engaged with local people in the municipalities and provided adequate time for individuals to express their concerns: "The one who could have said something and the one who had wanted to have said something, he had his time to be able to do so" (Apecyl conversation). Despite acknowledging that they are not super familiar with Iberdrola consultation processes with local communities, the individual from the FCB also noted that projects should be well studied and advanced when they arrive at local communities, and this process would include previous public consultation with information

sharing (FCB conversation). Additionally, the UBU professor highlights Iberdrola's ability to understand and respect local community's needs and perspectives regarding its wind energy projects in Burgos: "I believe that Iberdrola does have a close relationship with the citizens, both in the sense of knowing what the citizens want, what the citizens demand, as well as when it comes to the location and construction of a wind farm… I believe that both when it comes to transmitting energy, to procure energy, and when it comes to building these wind farms that provide energy, I believe that Iberdrola does it very well and is in contact with the community, that is, it is not far from reality, it is very close to the community, knowing what it thinks, how it feels, what it needs, what it demands and then when it wants to build, where it can build, and what it has to give in exchange" (UBU conversation).

Several stakeholders note Iberdrola's implementation of social energy localization through compliance mechanisms. The second individual from EREN elaborates on the consultation process more through the legal imperative required by EIAs. Within the procedure of these assessments, one phase is sharing information with and allowing for input from the public. At this point, stakeholders can contribute positively or negatively with their opinions regarding the wind energy project (EREN conversation). Furthermore, The UBU professor notes that Iberdrola's industry experience, along with its favorable legal and marketing department, ensures that the company is compliant with regulations: "Iberdrola is always operating within the law, it fully complies with environmental regulations, as it cannot be otherwise, and it does so consciously" (UBU conversation). They note that this compliance helps form positive relationships with local communities. Apecyl additionally indicates how Iberdrola is supervised by the regional energy administration, different departments, and the territorial delegations of industry, environment, and heritage. They indicate that these groups "have interacted with the project so that the project is suitable for all stakeholders" (Apecyl conversation). These three stakeholders—the UBU Professor, EREN, and Apecyl—suggested that Iberdrola could not implement any more measures to engage more effectively with the community.

In contrast, while Ribering acknowledged that consultation mechanisms vary based on different large-scale companies, the other stakeholders affirm that there is usually a lack of transparency regarding Iberdrola's consultation mechanisms. A community member from the Ribering presentation notes that the success and degree of consultation processes with local communities depends on company initiatives. They claim, "It depends on the companies, on how

they manage [consultation], because there are companies that do meet with the neighbors beforehand or give talks or explain things, and there are others that do not, that obviously do nothing and do not provide information" (Ribering conversation). The first representative from Guzmán Renovable states that usually among wind farm projects in Burgos, there is a lack of transparency and communication between the promoters and local communities: "Many times what I see in large wind projects is the lack of transparency of the companies that install them with the users that arrive" (Ribering conversation). For example, regarding a wind farm set to be installed in the Burgos locality of Tórtoles de Esgueva, this individual highlighted how community members "found out that their land was going to have a wind [turbine] by reading the press and looking at the project, [and] they had not been warned that there was going to be a wind [turbine] on their land" (Ribering conversation). While the promoter of this company was Alfanar, not Iberdrola, this example highlights how energy companies in Burgos have failed to implement prior consultation with local communities through their wind projects. Specifically in relation to Iberdrola, the citizen from Valmayor emphasizes that Iberdrola does not engage with community members and does not strive to make collective decisions surrounding its wind farms: "We never contact Iberdrola, and maybe we are never going to reach anyone because they are like goats right now. They don't speak with people. They don't go to the villages and say, is it okay for you?... Let's make an agreement, and let's decide together?" (Ábrego conversation).

Additionally, the individual from Valmayor highlighted how in the case of the Pico de Iglesias wind farm, promoted by Alfanar, the company sent the town a 1,000-page document highlighting its projection for the project. However, they describe that once this project is approved by the regional government, this company will sell the proposal to an engineering company, who will build the project. Once the project is built, it will be resold to another company who will maintain it, so the individual describes this process "a whole cycle [that will] never… be in any one phase" (Ábrego conversation). This highlights the complicated nature of community consultation. Is it the initial promoter's job to consult with communities, or is it the responsibility of the overall company who plans to purchase the project to ensure that adequate consultation occurs? When asked about their perspectives on whether Iberdrola's ESG targets are performative or genuine on the local level, the first representative from Ábrego highlighted how Iberdrola's community consultation mechanisms are a complete performance. They question

how Iberdrola involves the local population, and they assume that Iberdrola does not know perspectives of local individuals like the individual from Valmayor (Ábrego conversation).

While these stakeholders express Iberdrola's inability to consult community members, there is a degree of contact at the town-hall level. However, the resident from Valmayor highlights how this process may be corrupt: "[Iberdrola is in] contact with the town halls or the certain entities that are in the land running the land where they're going to build [the wind park] later on. But, the thing is that, who's deciding? Are the mayors deciding with their population, or [are they] deciding by themselves because they're going to receive money from behind them" (Ábrego conversation). When asked if it is Iberdrola's fault that town hall corruption may be occurring or if it is the town hall's fault, the Valmayor citizen highlights how "there is always a bigger fish to fry" (Ábrego conversation). This indicates that between Iberdrola and municipalities, there is a clear power imbalance, which may result in towns' improper use of money. In this way, due to its dominant role, Iberdrola could establish measures or contracts with town halls to reduce corruption and help ensure that money is fairly distributed in towns.

The first representative from Ábrego echoes the sentiments that Iberdrola is not directly consulting local townspeople. Instead, there are a select few individuals, not from the local communities where the wind farms are located, that are being consulted and making decisions for the local people regarding the wind project. They highlight how this problem extends beyond Iberdrola and the wind energy industry: "For me, the problem is not just Iberdrola, it is whenever a decision has to be made that affects a territory. The people of that territory are not taken into account. It also happens in the neighborhoods, not in the city where they go to City Hall for everything in the city. But what happens in your neighborhood, they don't ask the neighbors or any neighborhood association or you know, they ask the people who are four or five and who decide for others. These people are usually in the city of Burgos, so there is someone in the city of Burgos who is deciding what happens in Valmayor" (Ábrego conversation). Furthermore, this individual highlights how town councils and regional governments often say that they cannot do anything to combat Iberdrola's imposition of wind energy: "It is always an imposition of the big fish on the small one. When we go to the administrations or institutions of the province of Burgos and even the Junta de Castilla y León, which is a larger territory, they always say that 'I can't do anything. It's not my decision. It's coming on the other [side]. I'm sorry.' Then, there comes a time when [local communities] can't really do anything. Your opinion doesn't matter.

Your reality doesn't matter. It doesn't matter that you lose the little you have because no one cares and because everyone is going to tell you, 'Ah, I'm sorry, but I can't do more'" (Ábrego conversation).

Concerning Iberdrola, the first representative from Mesa Eólica expresses that while there are interactions between Iberdrola and national-level groups, such as SEO/BirdLife, there are no consultations with local groups, besides the allegations that relevant stakeholders may pursue. They stated, "On a day-to-day basis and on the ground, there is no communication whatsoever" (Mesa Eólica conversation 1). Additionally, the representative from the FCB expressed that because Iberdrola is such a big company, it makes it difficult for them to truly connect with and understand the community's needs. They expressed the sentiment that there appears to be lots of separation between Iberdrola and the community: "I think that there is a great distance between the local level and if in that part, well, that many times the interests of the neighbors, of the local people, are seen a little bit." (FCB conversation). The first member from Mesa Eólica further emphasized how Iberdrola's sheer size hinders its ability to understand the local community context and needs regarding wind energy. When asked what ways Iberdrola could engage more effectively with local groups and communities, this individual responded, "I sincerely believe that the volume, that is to say, the size of Iberdrola is such, is such that… I consider it to have as much power as the national government itself. So, uh, it could, but I don't think that a company of that, of that caliber, of that size… would be sensitive to interacting with small local groups that could give a very different view of what is going on" (Mesa Eólica conversation 1). Because Iberdrola is such a large company, it assumes responsibility for all the contracting and subsidiary companies it collaborates with. In this regard, the first representative from Guzmán Renovable acknowledges that because Iberdrola is the face of all projects, despite working with other smaller subsidiaries, engineering companies, and more, they face more scrutiny from society when procedures are not done well and when there is a lack of transparency and communication with users and local communities (Ribering conversation). As such, Iberdrola is accountable for the actions of all the companies involved in the development stages of their wind farms in Burgos, and they must ensure that a proper procedural approach is followed with relevant local people and groups.

Furthermore, the second representative from Mesa Eólica highlights that the promoters have deliberately chosen the most depopulated areas of Spain because they know there will be

less mobilization around pushback, and these rural Burgos communities could end up with the expropriation of their land: "The promoters have usually gone to choose the most depopulated areas of Spain, the emptied Spain… So, knowing and being aware that in these areas they were not going to find opposition because there are no people, yes, because there are young people and that is not, and then in such a way that in the end the owners are forced to offer their land because they know that at the end of the procedure they are going to find themselves with the expropriation of their land" (Mesa Eólica conversation 2). Despite that individuals may not want to give up their land, it can be expropriated by Iberdrola because the wind parks are classified as a project of community interest (Ribering conversation). The second Mesa Eólica representative raises concerns that Iberdrola is targeting these disadvantaged communities, not providing proper consultation processes, and ultimately, inhabitants are faced with no choice but to give up their land.

*Implementation of Social Services and Programs:*

Regarding the implementation of social energy localization initiatives within local communities, Apecyl highlighted Iberdrola's ability to engage with and adapt to what communities need regarding social programs. Regarding their collaboration with Iberdrola on implementing the Buniel wind farm, they said, "What we do is to make things concrete. In each wind farm, a series of interventions with local people can take place. There are a number of villages in Buniel Park, and the interaction with each village has been in a different way. We have been adjusting to what each town needs. For example, one town had a heritage tower, so we have collaborated in the maintenance, [and] in another town, we have collaborated in the acquisition of land for a soccer field. Each village has had a different interaction. You have to adapt to what each population needs if there is no common rule" (Apecyl conversation). In this way, Apecyl collaborates with Iberdrola to understand local communities' needs and provides programs and services to help improve local livelihoods that are impacted by the Buniel Wind farm.

Concerning the implementation of social services and programs that adhere to the local community context, representative one from Guzmán Renovable highlights the integral role the town council plays in managing the money that comes from Iberdrola's wind parks: "In the towns that have wind [turbines], there are towns that have managed those monies very well… In

a town with a wind farm, you receive a lot of money if you have land from the Town Hall where they install windmills. Besides, money is received for the work itself, so there are municipalities that have been able to manage these funds very well and encourage people to live in the town and to have very good services in the town. But, there are also others who have squandered those monies in one way, if not orchestras" (Ribering conversation). This representative further describes the town of Hornillos, which received many social benefits from the wind farms because their town leadership favorably managed the money for the town: "I went there, there were a lot of people in the town, the town had great municipal facilities, they had a sports center, they had swimming pools, they had a great park area, everything was very well arranged. It was a town that is surrounded by windmills, but the town was very well arranged, and you could see that it was a town that had managed to manage those funds, which had [been] received from a very large facility around it… So, you have to know how to manage it. There are times when the governments of such small municipalities depend on who they catch. Just whoever is at City Hall changes a lot" (Ribering conversation). In this sense, town councils play a super beneficial role in helping implement social energy localization initiatives in the municipality in which the townspeople can receive and appreciate the benefits associated with the wealth that the wind farms are generating.[33]

Alternatively, the representatives from Mesa Eólica highlighted that Iberdrola does not implement social services in the local communities that house their wind farms. Representative two particularly highlights that despite that Iberdrola's projects are subject to EIAs, and the company is required to contact landowners, the projects have never been accompanied by local actor participation, negotiation, or development of local services in the community (Mesa Eólica conversation 2). They further claim that if Iberdrola had implemented funding and social services, as they claim to be consistently doing through their energy projects, "surely they would have changed the depopulation results," yet "human population in all those localities has decreased terribly and people have left" (Mesa Eólica conversation 2). This individual indicates that Iberdrola is greenwashing through their implementation of social services to community

[33] When engaging in stakeholder outreach, I emailed all the town councils of the municipalities that reside within the Buniel wind farm. However, I got no response from any of them. I find this interesting as town councils have to appeal both to community members but also to Iberdrola as they are often the ones that are consulted regarding wind project development. I hypothesize that this intermediary, "middle-man" role made the town halls less inclined to offer their perspectives on wind energy localization.

members since it claims that these programs do not exist and meanwhile, rural depopulation in Burgos is worsening. The first representative from Mesa Eólica further affirms that the towns where Iberdrola's wind farms are implemented are not generating wealth or providing services for community members: "All these towns are losing population and lacking infrastructure… They lack services, and they are increasingly deteriorating and detrimental to health services, educational services, and here a lot goes out, a lot of wealth, but none comes in" (Mesa Eólica conversation 1). Overall, this organization emphasizes Iberdrola's failure to implement energy localization by providing social benefits through their wind farm projects in Burgos.

**Economic Energy Localization Initiatives**

*Providing Local Employment and Procurement:*

Several stakeholders indicated that Iberdrola implements energy localization through its Burgos wind farms by providing various economic incentives, notably local employment and procurement opportunities. When asked what are the most important factors that are prioritized in the local energy context in Burgos, the representative from Apecyl highlighted that the most important element is the creation of local employment (Apecyl conversation). There are both direct employment opportunities offered through the wind farms, regarding construction and maintenance, as well as indirect job opportunities, regarding the hotel and catering/restaurant industries (FCB conversation). EREN representative one additionally noted that providing employment opportunities helps reduce social problems among the village since it helps generate economic growth in local communities: "Generally we have not encountered social problems of people in the villages being against doing the facilities, basically because they receive a certain amount of money… In those areas where there was no economic activity before, wind farms start to be a present economic activity" (EREN conversation). Upon generating new employment opportunities, Apecyl noted that wind farms haven't affected previous agricultural activities and thus, haven't resulted in a loss of economic livelihoods. Regarding farming, the representative from Apecyl highlighted that wind energy is very compatible with Burgos communities since farmers can continue to cultivate the land (Apecyl conversation). Additionally, after the implementation of wind farms, they highlight that there is still "the same volume of arable land as before, so farmers have never seen their work capacity diminished (Apecyl conversation).

While maintaining agricultural employment, EREN claims that the employment opportunities created by the wind farms additionally help reduce depopulation in Burgos. When asked the most important social, economic, and environmental benefit Iberdrola has implemented through its wind projects for Burgos communities, the first EREN representative highlighted that the most important factor is that wind energy has generated many jobs in areas that are practically inhabited, bringing "a source of employment [that is] not spectacular, but relevant in these areas" (EREN conversation). The second EREN representative highlights that this employment generation in these semi-uninhabited areas "[makes] it possible to retain some of the young population," thus helping to reduce depopulation in the province (EREN conversation). A Ribering community member highlighted that due to these population constraints, Iberdrola tends to provide employment opportunities to local people, which contributes to a more favorable image of Iberdrola: "At the end of the day, those who speak can speak well of them [are] the people who [Iberdrola] hires directly, because when… wind farms are set up in rural areas, which here in Spain there are many depressed areas and at the end of the day, [Iberdrola] tends to hire local people and that is what gives a good image of these companies" (Ribering conversation).

Alternatively, conflicting perspectives assert that Iberdrola economic initiatives through its wind projects are not contributing to energy localization in Burgos. While there is employment creation, the majority of these jobs are during the construction phase of the wind farm, which is temporary. One Ribering community member emphasizes this sentiment: "It's not that much labor either, you know? Initially, there are a lot of people working in the civil works, but then when it goes to service maintenance, there are not many people from a positive point of view" (Ribering community). The individual from Valmayor supports the notion that employment leaves insignificant economic impacts since there are only a few people working in maintenance, and construction workers are only employed for a period of three to four months and then leave the region (Ábrego conversation).

Additionally, one community individual highlighted that people involved in wind farm employment, such as maintenance jobs, usually come from the city center of Burgos or Aranda de Duero and are not actually from the local communities where the wind farms are located (Ribering conversation). As such, while the labor is localized within the Burgos province, at times, the individuals that are members of the local communities most directly impacted by the

projects are not receiving the economic, employment benefits. While these projects also buy supplies and procure goods from local companies, two community members affirmed that these local procurement efforts do not leave a very noticeable impact (Ribering conversation). Despite that local communities may not be directly receiving these economic benefits, the resident from Valmayor additionally highlighted how rural communities do not care as much about economic benefits. They claim that Iberdrola is placing pressure on these rural communities to join the collective effort in climate change mitigation, yet this is at the expense of the rural communities where economic benefits are not enough to compensate for the environmental damage that is occurring: "[Iberdrola says that] everyone has to make an effort because… we are all making an effort… and everyone has to give something. No, but we are. We are giving the nature of our environments to certain companies or people that are only getting rich, and… the money is never going to be enough to pay the destruction back" (Ábrego conversation).

The degree of saturation of wind energy in the province also is hindering other forms of local economic and tourism opportunities, claimed the FCB representative. They note that wind energy in Burgos is still being promoted, yet some people claim that this has already been done and that this excessive wind energy development is detracting from other economic opportunities: "Municipalities [have] other types of approaches, other types of projects, more natural projects… They want to promote natural tourism, so they see [these wind projects] as an impediment for the development in another sense of their territory" (FCB conversation).

*Issuing Taxation and Compensation to Landowners:*

Another direct economic benefit stakeholder groups emphasize local communities receive from Iberdrola's wind farms in Burgos are monetary benefits through taxes and payments for land. Apecyl highlights how wind energy generates wealth through taxes and land occupation, along with improvements to local transportation infrastructure and territory improvements (Apecyl conversation). While individuals are receiving payments for their land, some energy companies have established agreements with farmers that allow them to continue to farm their land. This could help agricultural workers generate additional income for their families, as well as maintain their role as a farmer. One Ribering community member highlighted how integral farmers' ability to maintain land cultivation is to their personal identity: "Normally the promoter of the wind farm buys, rents the land on a monthly basis, pays the owner [x-

amount] and there are some areas where an agreement is reached with the farmer who already had farmland so that he can continue to farm that land. In other words, the land where the wind farm is located is still being farmed. I have met very little but talking to some of the people who were there, [they] said, 'If I lost the land, I would lose part of me, no matter how much they are paying me, I am not really covering it.' So, there are certain companies, and I don't know which one because I don't remember which one, that are reaching agreements with the owners of those lands so that they can continue working those lands with minimum safety distances" (Ribering conversation). While wind energy presents the opportunity to continue agricultural practices on the land, it is important that promoter companies, including Iberdrola, establish agreements with farmers that allow them to continue to farm, generate economic income, and maintain this integral part of their livelihood. The promoters should assist farmers with any transition process required to adapt to the wind facilities on their property.

Municipalities also can benefit from bringing in more tax money. An increase in tax revenue for the town increases the income that it receives; this could provide the town with more financial and social opportunities. The representative from FCB notes how some municipalities use tax revenue to provide social services that weren't previously financially feasible: "Where they have wind farms, in the end they have certain taxes… A wind turbine is installed because it has an economic benefit. So, in municipalities like Castrojeriz, in many, [and] in many municipalities where they have wind farms in their territory, well in the end, there are also indirectly other social benefits that derive from there, because in the end if the municipality has higher income, it will be able to offer its neighbors services like a swimming pool… otherwise it would not be possible to develop them" (FCB conversation).

However, the stakeholder perspectives additionally highlight how this taxation and payments may not positively contribute to the local communities and add localized benefits. Among communities, Apecyl noted that there are concerns that "the presence of a wind farm will leave wealth" (Apecyl conversation). Additionally, if farmers are not allowed to continue to cultivate their land, even though these individuals are receiving economic benefits via land payments from the wind farms, these agreements could exacerbate depopulation. Representative one from Guzmán Renovable illustrates this situation: "It is also the case that if you install a wind farm in an area where there is farmland… if you leave those lands without agriculture, the people who live from that agriculture are [given] the money from the wind turbines, but they

don’t have a developed activity on that land, and then, people may leave the villages, which can also be a cause that favors depopulation because in the end, if they give you money for those wind turbines, but you have nothing to do in that town, well, if you can live in the town, or you can go to live somewhere else, as you are generating the rent that they pay you for your plot, well, in the end it is also a cause that can cause depopulation” (Ribering conversation). Although farmers would receive compensation and rent for their land, if they can no longer farm, they may decide to leave their land in search of agricultural work elsewhere. In this way, the economic benefits from land rent would not remain localized, as people will take this money elsewhere, and it would not contribute to the development of the local community’s socioeconomic well-being. Further concerning depopulation, the individual from Valmayor highlights that while taxation and land payments are a beneficial outcome of Iberdrola’s wind energy efforts in Burgos, the wind turbines are driving people to leave the province. If the province ends up completely depopulated, then there will be no human capital to generate economic benefits from the wind farms. The resident notes, “Burgos… may have something to say no to protect their land. They could be more protective, but it's all about money…. and everyone is leaving. They’re all going away to other regions, [so then], where are you going to get the money from?” (Ábrego conversation).

Other stakeholder groups find that the economic benefits are not enough. Representative two from Mesa Eólica compared Iberdrola’s land payments for wind turbines to breadcrumbs, stating, “Compared to its substantial investment, which represents an investment of a wind power plant, the land lease is insignificant” (Mesa Eólica conversation 2). The Valmayor resident affirms this, claiming that while landowners may be given EUR 6,000 every year, one wind turbine is producing EUR 1 million (Ábrego conversation). Additionally, they note that people in the town—the ones negatively directly affected by the wind energy—are not directly receiving any compensation since all the money is going to the town halls (Ábrego conversation). Meanwhile, the second individual from Mesa Eólica highlights that Iberdrola’s wind farms have caused everything in the rural towns—the property, the profitability of housing buildings, the farmland—to lose value (Mesa Eólica conversation 2). They further highlight that other than the obligatory payments of leases and rents, Iberdrola hasn’t contributed anything positive to the communities in the Merindades Region (Mesa Eólica conversation 2). From this individual’s perspective, as a result of Iberdrola’s tax and payment benefits through their wind

farms in Burgos, the company has not contributed enough monetarily, has decreased the value of other town infrastructures, and has contributed no economic benefits other than what is legally required. In this sense, energy localization through economic benefits is not sufficient.

Furthermore, the second individual from Ábrego noted that the money generated from wind energy goes to the towns, which is a private benefit. This can cause social issues among various neighboring towns and between local landowners who receive money from the wind parks and those who do not: "There's a situation also with these big companies because they do give back money to territories… This is actually causing more social problems than benefits because it's a private benefit that one person or one local entity receives that generates a lot of envies… For example, there's a problem in my village area. It's a… natural park regarding birds, so legislation prohibits… wind production. What happens [is] all the territories around this area [are] putting generators… [but my territory] cannot get the money from the electric companies because the environmental legislation is actually protecting the ecological value inside, and the other territories are getting money. This is between local entities, but even between neighbors this happens… Okay, I'm getting a lot of money for the [wind turbines] and he's not getting [any]. It creates tension and segregation among these [local communities], so it's not that beautiful the money that comes back" (Ábrego conversation). This perspective indicates that the economic benefits deriving from the wind farms could generate more social problems than economic advantages.

*Reducing Energy Dependence:*

Another economic benefit wind energy contributes to is the economic freedom of energy independence. A Ribering community member highlighted that Iberdrola's wind energy helps to reduce external energy consumption by an estimated 45 percent, which a large share—they estimated 30 to 40 percent—comes from fossil fuel-sourced energy (Ribering conversation). Apecyl additionally argued that the development of wind energy in Burgos helps the province and this particular region of Spain gain energy autonomy: "We want more energy independence so that we do not have to bring in shale gas from the United States, for example. I believe that here there is energy independence at the European level, more specifically at the Spanish level, and more specifically at the Castilla y León level, which is what prevails. That is more of a

priority than the price of electricity. If this means having enough electricity of your own, it gives you economic freedom, and you have industrial freedom" (Apecyl conversation).

The conversations also revealed that the province is producing more energy than it consumes (FCB conversation). EREN representative one noted, "Twenty years ago there was hardly any [wind energy]. There were wind farms, there were hardly any installations. Then, people did not have such a problem. But as you see more installations, people become saturated. People have already said, 'I've come this far, I can't explain it anymore'" (EREN conversation). The individual from Valmayor affirms the issue of greater generation than consumption: "The big problem is that…. in Burgos, we are already providing to the electrical network more than we consume, right? We have many more wind [turbines] that were projected long ago, and they've already over-spread the land" (Ábrego conversation). While an abundance of wind infrastructure promotes energy independence within the province, stakeholders are frustrated by the high degree of saturation and lack of socioeconomic benefits the presence of wind energy leaves. The first Mesa Eólica representative highlighted, while "the country's energy production has multiplied by many, many zeros," "evidently the region continues in a clear process of depopulation, of socioeconomic decline, of lack of infrastructures and industries" (Mesa Eólica conversation 1). The resident from Valmayor further expressed how generation exceeds consumption, while the only beneficiaries of this wind energy are people living in the cities: "There are too many [wind farms], and what is happening… in Spain? All the energy is being poured to the big cities in Madrid, Barcelona, Bilbao… the case of Madrid is very… remarkable because they have [not] one windmill in the whole province… while the other regions around which are more depressed in population and everything. They have… overbuilt these items" (Ábrego conversation).

While the province continues to overproduce wind energy, not all energy is locally consumed. Through Iberdrola's wind facilities, the UBU professor highlights that "in general, the first thing [Iberdrola does] is to supply the nearest local entities with which they have reached an agreement to establish this wind farm" (UBU conversation). However, other stakeholders emphasize that often this energy is exported out of the province since "in many cases, production is not located where consumption is" (FCB conversation). Additionally, the first individual from Mesa Eólica emphasizes that while the primary consumers of energy are in the large Spanish cities outside of Burgos, the rural Burgos towns are providing the generation of wind energy:

"The energy sinks in Spain, as Madrid, Catalonia and the Basque Country are the places with the least renewable energy deployments. On the other hand, renewables are placed in rural areas, in unpopulated areas, where there is little social response because there are no people to complain, and that also means some complicated and very long means of transporting that energy with power lines that cross and crucify the entire landscape" (Mesa Eólica conversation 1).

EREN provides empirical, quantitative evidence that production is greater than consumption in the province. EREN's Annual Summary in 2022 shows the gross production of electrical energy (MWh) and electrical energy consumption (MWh) in Burgos (EREN, 2022). The data highlights that Burgos produced a total of 5,475,682 MWh of electrical energy, of which 4,609,093 MWh derived from wind energy generation. However, regarding consumption, the province only consumed a total of 2,327,436 MWh—392,142 MWh for domestic use, 1,934,910 MWh for industrial use, and 384 MWh for other uses. Thus, when comparing Burgos's total energy consumption (2,327,436 MWh) to total energy production (5,475,682 MWh) and wind energy production (4,609,093 MWh), the province only consumed 42.5 and 50.5 percent of total energy and total wind energy generated, respectively. On the domestic level, households only consumed 7.2 and 8.5 percent of total energy and wind energy produced by the province, respectively. This data indicates that a large portion of Iberdrola's total energy and wind energy generation is exported out of the province.

Alternative to large-scale models, community energy systems can offer greater energy independence and improve economic opportunities (Ribering conversation). The Guzmán Renovable representative one highlighted that when the Ukraine war began, and energy prices rose sharply, this provided them with an incentive to develop the energy community and produce their own energy (Ribering conversation). They highlight how the Guzmán Renovable solar facility—once its industrial audit is approved—will allow the town hall, companies, and people to have cheaper energy. It will provide the town hall with extra money to improve town buildings, fix streets, and implement activities, ultimately "investing in the people environmentally" (Ribering conversation). This Guzmán Renovable representative further elaborates on how the expansion of energy communities can create communities of independence and resilience to modern system, as well as promote energy efficiency: "We have gone to other towns in the area to inform about energy communities and how an energy community can be created so that whoever wants to can be part of it [and to] promote the

implementation of other electricity generation facilities to improve the efficiency of homes and businesses. That is, if suddenly we are all together in the energy community, we see that there is somehow that all homes in Guzmán have a deficiency of insulation, then we can see if through a group purchase of insulation, we can improve the energy efficiency of buildings in Guzmán" (Ribering conversation). Energy communities also allow towns to generate money from selling excess electricity to the national networks, noted by the second Ábrego representative (Ábrego conversation). In this way, energy communities can promote energy independence on a smaller scale.

Concerning impeding other forms of development, stakeholder groups additionally emphasize how Iberdrola involvement in the large-scale energy capitalist model hinders smaller scale, energy community models of electricity consumption, thus impacting energy independence on a local scale. Representative one from Guzmán Renovable highlights how Iberdrola has made the implementation of their solar renewable energy community in Guzmán, Burgos more difficult because these communities are reliant upon Iberdrola to establish a grid connection: "The [solar] plant is not yet in place. There are plates there and the inverters and everything, but we don't have the grid connection yet because Iberdrola doesn't have to provide that… They have to give us the discharge permit to be able to feed energy into the grid. You need a permit… [and] you have to verify that the installation is correct and that you can see the network. So, we are waiting for the processing of industry, and then Iberdrola also has to connect the wires of the meters to start consuming because if it were not an energy community, you can install the plates and the first day consume directly, but we need to pour the network to self-consume. Then, we need permits for connection to the network, which is [where] we are right now" (Ribering conversation). In this way, Iberdrola has the responsibility to grant permits to authorize smaller energy projects' connection to the grid. This indicates that Iberdrola plays a pivotal role in how quickly the energy community model can come into fruition.

Furthermore, self-consumption community models, including energy communities like Guzmán Renovable, would remove these consumers out of the normal energy grid; these local communities would consume the electricity they generate through their energy community and would only rely on the grid when there is a shortage or excess of electricity, of which they could profit. A greater number of energy communities means Iberdrola would lose customers that it is supplying its electricity to and would have less involvement in the implementation of these

projects, which would also decrease their business. The representative from FCB notes, “I think that in this part companies like Iberdrola do not have as much acceptance [for energy communities]… because these projects are ultimately designed more for the user to be the manager himself” (FCB conversation). Thus, economically, it is in the best interest of Iberdrola to slow down the development of self-consumption projects. EREN’s first representative notes some of the difficulties they have had from collaborating with Iberdrola because Iberdrola has needed to move more quickly when granting permits for self-consumption: “There are times when Iberdrola has had some arguments with [EREN] on the distribution side because sometimes they had to be more agile when it came to granting permits to companies or individuals to install PV plants for self-consumption” (EREN conversation). Additionally, the first individual from Ábrego notes how Iberdrola cares less about developing small-scale community projects because it generates less money for the company: “There are groups that do work for sustainable energies located in a territory, but they are small, and that does not generate economic resources. It does not generate money, so large companies are not interested in connecting… not really because they are interested in working with them and giving a huge amount of money to the local area, to the people who are working on it who know the reality of their territory. They do know that a river passes through there under the water or that here, there is a species of bird protected because it is in danger of extinction. That does not matter” (Ábrego conversation). While these stakeholders emphasize that energy communities are better at implementing energy independence and promoting localized benefits than larger-scale initiatives promoted by corporate companies, these projects can be hindered by various regulatory and permitting issues.

Overall, the stakeholder qualitative evidence presents contradictory opinions regarding Iberdrola’s ability to implement wind energy localization in Burgos. The next chapter seeks to compare and critically analyze stakeholder perspectives with Iberdrola evidence, situated within the literature.

## Chapter 6: Critical Analysis

In this section, I compare and analyze both Iberdrola's and the stakeholders' qualitative perspectives to answer my research question: To what degree does Iberdrola implement energy localization initiatives through wind energy projects in Burgos, Spain? I also aim to determine the validity of my hypothesis: The greater implementation of relevant environmental, social, and economic initiatives and the incorporation of local actors through a procedural approach by Iberdrola will be positively associated with higher levels of stakeholder acceptance of wind farms. First, I provide a brief overview summary of both Iberdrola's and the stakeholder groups' qualitative data. To connect the qualitative findings to the literature, I highlight an overview of the energy localization literature and then integrate these concepts with the Iberdrola and stakeholder group claims through a critical analysis. Throughout my analysis, I evaluate the different components of energy localization based on my four-point scale and criteria, ranging from strong positive to strong negative.[34]

### Summary of Main Arguments

*Iberdrola's Qualitative Evidence:*

Iberdrola's public documents showcase its corporate framework for establishing energy localization in Burgos. Environmentally, Iberdrola's Environmental Policy and 2023 Sustainability Report establish the framework to integrate the protection of the environment and nature along with the company's strategy, operations, and investment, all to promote a sustainable development model (Iberdrola, 2024o). Embedded into Iberdrola's company purpose and values, decarbonization is a key component of Iberdrola's Climate Action Plan, Net Zero 2040 target, and business model through Iberdrola's 2024-26 Strategic Plan. In Burgos, Iberdrola's wind farms promote energy localization through decarbonization, particularly as these systems help to reduce pollution, abate CO2, and mitigate climate change for the province of Burgos. As towns located within the province, local communities can experience this collective benefit. Concerning the natural environment, Iberdrola's 2022 Biodiversity Plan outlines its corporate commitment to achieving net positive impact on biodiversity by 2030. Iberdrola further aims to protect the environment through initial environmental analysis and the formal EIA process that determines relevant protection measures (Iberdrola director conversation

[34] Refer to Chapter 3 for more information about the four-point scale utilized to evaluate energy localization.

1). This is present through Burgos wind energy systems through the addition of bird-deterrent vinyl eyes on wind turbines, as well as establishing a novel bird detection and census monitoring technology (Iberdrola director conversation 1). To further support birdlife, Iberdrola implemented a wetland corridor in the Páramos region of Burgos to provide a refuge for birds to rest and breed. Iberdrola additionally built underground distribution lines in Haza, Burgos, which is an area of nesting grounds for birds, which are particularly vulnerable to these infrastructures. On a general level, Iberdrola emphasizes the symbioses created between wind turbines and natural environments, such as by continuing livestock cultivation.

Regarding social energy localization, Iberdrola outlines its corporate commitment to stakeholder engagement through its sustainable development policy. Its main objective is to foster sustainable value creation for all stakeholders and equitably contribute to all groups that add to Iberdrola's success through all its operations and activities (Iberdrola, 2023a). Iberdrola's social dividend, outlined in in Article 7.2 of the By-Laws, further outlines Iberdrola's commitment to create value for stakeholders, adhere to the SDGs, and promote a just energy transition (Iberdrola, 2024m). Its human rights policy codifies Iberdrola's obligation to respect communities it operates in, considering their expectations and needs (Iberdrola, 2023c). To ensure proper consultation with stakeholders, Iberdrola utilizes its Stakeholder Engagement Model to deepen the company's understanding of and communication with its stakeholders. The 2023 Sustainability Report highlights, "Almost 100% of the company's main locations of operation are thus subject to these types of activities, focused on meeting the needs of its stakeholders, especially in local communities" (Iberdrola, 2023a). Iberdrola's director one indicates that Iberdrola consults various management authorities, ranging from national to local levels, along with organizations, landowners, and competing companies concerning its Burgos wind projects (Iberdrola director conversation 1). On the local community level, the town councils are the primary body that is consulted, and dialogues occur in various mediums (in-person, email, etc.) depending on the stakeholder. To implement its social energy localization strategy, Iberdrola has launched various social initiatives, including the Convive program, the Citizens Innovation Platform, and the Iberdrola Spanish Foundation. Although not directly implemented through a wind energy project, the Revilla Vallejera Convive PV project coincided with community participation and biodiversity solutions through mushroom cultivation (Diario de Burgos, 2023). Concerning its wind parks in Burgos, Iberdrola states its contribution to

combating rural depopulation, particularly through revitalization of local economies and its partnership with the Vente a Vivir a Un Pueblo platform. Iberdrola has also provided educational opportunities through site visits for UBU at its BaCa wind farm complex.

To implement economic energy localization, Iberdrola frames its commitment to promote a sustainable and just transition through its 2024-2026 Strategic Plan, a 41-billion-euro investment. This plan will allocate an estimated 30 percent of EURO 15.5 billion to onshore wind development (Iberdrola, 2024k). Iberdrola outlines the various localized economic initiatives that result from its facilities: "The positive effects at the local level include, among others, the improvement of the economy and employment (direct and indirect), the revitalization and repopulation of depopulated rural areas, the generation of fees, levies and taxes at different times and in different areas of activity, the training of professionals, [and] the support of local communities through different forms of sponsorship" (Iberdrola, 2023a). Globally, Iberdrola implemented EUR 33,083 thousand in community investment in 2023, and its overall community contributions in 2023 were equal to 1.1 percent of net global profits for the year. Concerning local procurement, 91.1 percent of procurement or equipment, contracting materials, works, and services in Spain in 2023 came from local suppliers (Iberdrola, 2023a). Iberdrola also seeks to promote local employment by leading training initiatives, such as the R4E project, which has provided local training and work opportunities for over 1,000 local individuals in the energy sector. Iberdrola's social programs and its Spain Foundation additionally promote socioeconomic development. In Burgos, Iberdrola implements economic wind energy localization through local employment and procurement. For example, the Buniel wind farm hired Burgos-based Copsa, sourced wind turbine gearboxes from Lerma, and aimed to employ 200 professionals (Iberdrola España, 2023d). Iberdrola's director one indicates that generation of direct and indirect work opportunities related to the wind farms in Burgos is notable (Iberdrola director conversation 1).

Local taxation and payments are carried out through the construction, facilities, and works tax (2 to 4 percent of project budget), land occupation payments, the IBI tax, and IAE taxes, the latter three of which are paid yearly (Iberdrola director conversation 1). Iberdrola's first director notes how these economic benefits help increase social support of the wind farms. Concerning energy independence, Iberdrola's sustainability report outlines that energy independence, driven by renewable energy deployment, is an integral component to its business

model (Iberdrola, 2023a). Within Burgos, Iberdrola's 25 onshore wind farms—amounting to 749 MW—helps to reduce dependence on imported fossil fuels. These wind systems help reduce costs and stabilize risks associated with price fluctuations and supply chain complications, ultimately providing a more secure source of energy for consumers (Iberdrola España, 2024a). Iberdrola's commercialization business's promotion of local consumption through contracts and PPAs also help localize energy independence benefits from wind energy (Iberdrola director conversation 1).

*Stakeholders' Qualitative Evidence:*

Concerning the local context of the energy sector in Burgos, the province has historically been a large supplier of energy through the Garoña nuclear power plant (416 MW) (Mesa Eólica conversation 1). In recent years, wind energy has emerged as a new focus (Ribering conversation), and Burgos is a leading producer of wind energy in Spain (FCB conversation). Wind energy development is favorable and strategic in Burgos due to the mountainous terrain and landscape (FCB conversation; EREN conversation), and farmers can continue to cultivate their land (Apecyl conversation). The commercialization of wind energy is also more optimal for widespread, commercial use across Burgos, in comparison to solar energy, which is geared more toward self-consumption (UBU conversation). An interesting dynamic in the province is that some people believe wind energy is saturated (EREN conversation; Ribering conversation) and that Burgos's generation of electricity exceeds consumption (FCB conversation; Ábrego conversation; Ribering conversation). Another notable component of wind energy is that the rural communities of Burgos, not the urban areas, are the most impacted by the facilities (EREN conversation). Thus, it is important to place more emphasis on the perceptions of local communities as they are disproportionately impacted by the wind farms.

Regarding the degree to which Iberdrola promotes energy localization through its wind energy projects through environmental initiatives, there is contradictory and conflicting evidence among stakeholder groups. Regarding environmental initiatives and specifically decarbonization, the UBU professor highlights that Iberdrola's wind energy helps the province's demand for energy that is less polluting and more sustainable for local environments (UBU conversation). They additionally note how Iberdrola prioritizes environmental protection and conservation through wind energy development, while also phasing out fossil fuels and providing

decarbonization benefits (UBU conversation). However, other stakeholders note that decarbonization benefits are undermined by the harm that wind farms cause to local ecosystems, such as through forest destruction and Iberdrola's failure to consider the needs of the local territory (Ábrego conversation). Additionally, due to the saturation of wind energy in the province, decarbonization benefits come at the expense of local environments and visual landscape impacts (FCB conversation), as well as biodiversity and environmental damage (Mesa Eólica conversation 1).

Regarding biodiversity, EREN noted how biodiversity protection—with a focus on bird species—is legally mandated through SPAs and the EIA (EREN conversation). The UBU professor claimed that Iberdrola is one of the first Spanish energy companies to be involved in and prioritize environmental protection through its operations (UBU conversation). However, the representatives from Mesa Eólica emphasized Iberdrola's failure to implement environmental energy localization. Representative two claimed that Iberdrola presents inaccurate data that does not account for wind-energy-caused bird mortalities, based on the official census data (Mesa Eólica conversation 2). They also highlighted that the wind turbines have destroyed the landscape, which is Burgos's hallmark and the most significant thing that their province had (Mesa Eólica conversation 2). Through Iberdrola's partnerships with Birdlife International, the Spanish Ornithological Society, and the Spanish press, Mesa Eólica indicates that Iberdrola is greenwashing.

In the social realm of Iberdrola's implementation of wind energy localization, there are additionally oppositional viewpoints arising from the stakeholder groups. Regarding consultation with local communities, Apecyl indicates Iberdrola successfully carries this out. Through Apecyl's partnership with Iberdrola to implement the Buniel wind farm, the representative highlights they engaged with local people and provided adequate time for individuals to express their concerns (Apecyl conversation). Legally, EREN and the UBU Professor note how regulatory standards require local community consultation, through mechanisms such as the EIA and supervision by regional energy administrations (UBU conversation; EREN conversation). FCB further notes that projects should be well studied with processes that include previous public consultation and information sharing (FCB conversation). The UBU professor additionally affirms their belief that Iberdrola has close contact with the community (UBU conversation). However, each company's consultation methods vary (Ribering conversation),

with representative one from Guzmán Renovable noting a common theme that there is a lack of transparency and communication between the promoters and local communities (Ribering conversation). Mesa Eólica representative one highlights that while there are interactions between Iberdrola and national-level groups, such as SEO/Birdlife, there are no consultations with local groups (Mesa Eólica conversation one). Both this representative and the individual from FCB note how Iberdrola's great size hinders its ability to understand and interact with local communities (FCB conversation). Additionally, the second individual from Mesa Eólica claims Iberdrola chooses the most depopulated areas of Spain because they know there will be less mobilization around pushback (Mesa Eólica conversation 2); this places individuals at the face of land expropriation (Ribering conversation).

The extent to which Iberdrola implements meaningful social programs is also contradictory. Apecyl highlighted Iberdrola's ability to engage with and adapt to what communities needed regarding social programs (Apecyl conversation). The first Guzmán Renovable individual notes the integral role the town council plays in managing the money that comes from Iberdrola's wind parks; this could determine whether municipalities feel the social benefits from wind farms (Ribering conversation). Alternatively, local community members do not consider the bare minimum consultation avenues provided through the EIA to constitute genuine consultation. Mesa Eólica representative two indicates that despite legally required actions (i.e., conducting EIAs and contacting landowners), Iberdrola's projects have never been accompanied by local actor participation, negotiation, or development of local services in the community (Mesa Eólica conversation 2). The other representative from Mesa Eólica further claims that Iberdrola is not generating wealth or providing any services for community members (Mesa Eólica conversation 1). In this way, Iberdrola's ability to engage with community stakeholders is inconsistent, sometimes providing local benefits and sometimes not. They do not consistently provide local consultation and services through their projects, beyond mandatory requirements.

Economically, stakeholders emphasized that Iberdrola provides wind energy localization benefits through the creation of new economic activity in rural areas (EREN conversation). The generation of direct construction and maintenance employment opportunities (Apecyl conversation) and indirect jobs within the hotel and catering/restaurant industries (FCB conversation) help reduce rural depopulation (EREN conversation). Alternatively, Ribering

community members note that local employment and procurement is not significant enough to generate a notable localized impact (Ribering conversation), particularly since job opportunities are temporary. Often, individuals employed are also not actually from the local communities but from urban cities in Burgos (Ribering conversation). Wind energy development could additionally deter other forms of natural tourism in the province (FCB conversation), which could impede this form of economic development.

Taxation and land compensation is another economic energy localization benefit Iberdrola provides through the Burgos wind farms (Apecyl conversation). Energy companies that permit land cultivation allow these farmers to continue generating income for their families in addition to receiving land payments, as well as maintaining their identity as a farmer (Ribering conversation). With respect to Iberdrola, Apecyl notes that farmers can continue to cultivate and generate revenue from their land, which does not diminish in capacity after the implementation of wind farms (Apecyl conversation). The additional revenue generated by wind farm taxation can help towns implement social services that weren't previously financially feasible, such as a swimming pool (FCB conversation). However, communities are sometimes skeptical that the presence of a wind farm will leave wealth (Apecyl conversation). Representative two from Mesa Eólica highlighted how compared to Iberdrola's investment in the wind power plant, the land lease payments are insignificant (Mesa Eólica conversation 2). They stated that Iberdrola hasn't contributed any economic benefits other than obligatory payments of leases and rents. Meanwhile, they assert, everything in the rural towns has lost profitability (Mesa Eólica conversation 2). Additionally, the first Guzmán representative highlights how farmland occupation could further promote depopulation since farmers may decide to purchase property and cultivate land elsewhere since they are already receiving money from Iberdrola for their land (Ribering conversation). While it is clear Iberdrola implements economic benefits, it is unclear the strength or impact that these have on benefiting local communities.

Furthermore, stakeholders note that Iberdrola's wind energy systems help reduce external energy dependence within Burgos, Castilla y León, and Spain, which helps to promote economic and industrial freedom within the province (Apecyl conversation). By reducing dependence on external sources that include fossil-fuel generation, Burgos communities can consume more sustainable energy (Ribering conversation). The UBU professor notes that this energy is supplied to local communities (UBU conversation). However, other stakeholders claim that people feel

that wind energy is oversaturated in the province (FCB conversation; Mesa Eólica conversations 1 & 2; EREN conversation; Ábrego conversation). Meanwhile, the province is only consuming roughly 50 percent of wind energy produced (EREN, 2022), and a lot of wind energy is exported out of the province, often to urban areas (FCB conversation; Mesa Eólica conversation; Ábrego conversation). Alternative to the large-scale wind model, energy communities promote energy independence on a local level as communities are producing and in control of their own energy sources (Ribering conversation). Guzmán Renovable representative one highlighted how their energy community produces cheaper electricity, which provides the town with additional funds to implement more social services in the town and "[invest] in the people environmentally" (Ribering conversation). Energy communities can further promote energy efficiency, as well as create community clusters of independence and resilience to the commercial energy system (Ribering conversation). However, stakeholder groups emphasize that Iberdrola's involvement in the large-scale energy capitalist model hinders smaller-scale, energy community consumption because of permitting and regulatory challenges (Ribering conversation). This can slow the process of grid connection (EREN conversation). Iberdrola may also not favor these systems as they would lose customers and have less involvement in the implementation of these projects (FCB conversation).

**Connecting My Field Data to the Energy Localization Literature**

As discussed in Chapter 3, in the literature on energy localization, del Río and Burguillo (2008) provide a foundational, conceptual framework, utilizing both a substantive and procedural approach to assess the impact of renewable energy systems. The substantive approach evaluates a renewable energy project on the three dimensions of sustainability, evaluating the economic, social, and environmental benefits of the project, which contribute to the welfare of local communities. Other scholars recognize the importance of substantive impacts when evaluating community benefits of renewable projects (Centre for Sustainable Energy, 2007; Heinbach et al., 2014; Msigwa et al., 2022; Sovacool, n.d.; Stigka et al., 2014; Timón Iglesias, 2023). In addition to focusing on substantive impacts, the procedural approach refers to engaging in a participatory, social process that considers the interests and opinions of all stakeholders through these systems. Other scholars emphasize the importance of a procedural approach to implement energy localization and promote social acceptance of renewable energy projects (Duarte et al., 2022;

Klok et al., 2023; Martínez-Mendoza et al., 2020; Musall and Kuik, 2011; Timón Iglesias, 2023). Overall, del Río and Burguillo's (2008) research revealed that it is important to focus both on substantive and procedural approaches when evaluating positive outcomes and community acceptance of renewable energy systems. Table 6.1 previews the rating of the environmental, social, and economic energy localization categories based on the four-point scale. Additionally, Figure 6.1 previews stakeholders' consensus on Iberdrola's ability to implement wind energy localization in the province. I will now turn to employ this framework to evaluate the perspectives that were just presented of Iberdrola and the Burgos stakeholders.

**Table 6.1:** Iberdrola's implementation of wind energy localization rated overall positive in the economic components (weakly positive in all categories), neutral in the environmental components (weakly positive and negative in the categories), and negative in the social components (strongly and weakly negative in the categories).

| **Energy localization components** | **Energy localization categories** | **Scale rating** | **Relevant literature** |
|---|---|---|---|
| Environmental **substantive** initiatives | Promoting decarbonization | Weak positive | Del Río and Burguillo (2008)<br>Stigka et al. (2014)<br>Msigwa et al. (2022)<br>Sovacool (n.d.) |
| | Safeguarding biodiversity, nature, and landscapes | Weak negative | |
| Social **substantive** and **procedural** initiatives | Implementation of social services and programs | Strong negative | Centre for Sustainable Energy (2007)<br>Del Río and Burguillo (2008)<br>Duarte et al. (2022)<br>Klok et al. (2023)<br>Martínez-Mendoza et al. (2020)<br>Musall and Kuik (2011)<br>Timón Iglesias (2023) |
| | Consultation with and representation of local communities | Weak negative | |
| Economic **substantive** initiatives | Providing local employment and procurement | Weak positive | Centre for Sustainable Energy (2007)<br>Del Río and Burguillo (2008)<br>Heinbach et al. (2014)<br>Msigwa et al. (2022)<br>Stigka et al. (2014) |
| | Issuing taxation and compensation to landowners | Weak positive | |
| | Reducing energy dependence | Weak positive | |


**Figure 6.1:** The eight stakeholder groups had polarizing opinions regarding Iberdrola's successful implementation of wind energy localization in Burgos, four of which expressed a low degree of localization, one with mixed perspectives, and three with high degree.[35]

**Environmental Energy Localization Analysis**

*Promoting Decarbonization:*

A key component of promoting substantive energy localization through environmental impacts is reducing dependence on fossil fuels (Msigwa et al., 2022), reducing local pollution, and promoting long-term ecosystem resilience (del Río & Burguillo, 2008). Sovacool (n.d.) indicates that industrial decarbonization provides environmental benefits to local communities by promoting lower air pollution and improved air quality and health, among other environmental benefits. Through decarbonization, wind energy systems help achieve these goals by generating a source of pollution-free, renewable energy for local communities that improve long-term ecosystem resilience. As a form of renewable energy, wind energy projects reduce CO2 and GHG emissions in the energy mix of the region and country that they are located in. This promotes decarbonization locally, nationally, and globally. As such, wind energy contributes to national decarbonization targets and helps efforts to mitigate global warming and climate change. Decarbonization serves as a primary environmental substantive benefit in the case of Iberdrola's wind energy localization initiatives in Burgos because of its ability to reduce GHG

[35] The in-text citations for the images are as follows: (Ábrego, 2024; Apecyl, 2024; Ayuntamiento de Burgos, 2024; FCB, 2013; Guzmán Renovable, 2023; Impart, 2024; Mesa Eólica, 2024; Ribering, 2024).

emissions. This improves long-term climate change resilience for local communities, reduces local pollution generated from fossil fuel energy infrastructures, and allows consumers of this energy to directly reap the benefits of clean energy generation.

From Iberdrola's data, Iberdrola's 2023 sustainability report outlines its commitment to contributing to a fully decarbonized energy transition and economy. Decarbonization through renewable energy generation is embedded in the company's purpose and values, sustainable business model, and Net Zero 2040 emissions target. Decarbonization is also fueled financially by the 2024-2026 Strategic Plan. In Burgos, Iberdrola's 749 MW of wind energy systems contribute to the decarbonization of the Spanish electricity sector. Through its public outreach website articles, Iberdrola specifically notes CO2 abatement from its wind farm projects in Burgos. Concerning stakeholder perspectives, the UBU professor highlighted that Iberdrola's wind energy has helped to decarbonize the energy sector in the province and fill the demand for sustainable energy generation that conserves the local environment (UBU conversation). Wind energy has also replaced fossil fuel generation (UBU conversation), which has been more favorable to the environment and likely helped reduce provincial pollution. In this way, Iberdrola's decarbonization through wind energy is an evident substantive benefit; it contributes to local community well-being resulting from a reduction in fossil-fuel-generated pollution, combating climate change through CO2 abatement, and providing a source of clean energy.

From the perspectives of other stakeholders, however, Iberdrola's commitment to decarbonization actually has adverse environmental effects, which outweigh decarbonization benefits. The Valmayor resident questions how this energy can be called 'green' when it is destroying forests and causing other forms of environmental destruction (Ábrego conversation). The FCB representative further notes the saturation of wind energy—indicating the presence of excessive decarbonization benefits—is at the expense of visual landscape contamination (FCB conversation). The second Ábrego representative additionally emphasizes that companies produce renewable energy without considering the local territory and social impacts (Ábrego conversation). Lastly, the first Mesa Eólica representative indicates that wind energy generation in the province has been a disaster because of the harm to biodiversity, the environment, and the landscape (Mesa Eólica conversation 1). These stakeholders emphasized that environmental damage outweighed decarbonization benefits promoted by these renewable energy systems, thus not recognizing localized impacts of decarbonization.

While the environmental impacts of decarbonization in Burgos help improve air quality and lower climate change contribution through lower GHG output, a key finding from my research is that decarbonization benefits are more collective and harder to localize. Even though fossil fuels are being phased out provincially by wind energy, many of Iberdrola's wind farms are not actually replacing existing fossil-fuel infrastructures located in the rural communities but are establishing new generation sources. In this way, wind farms may not directly improve energy-sourced pollution that impacts communities. Despite these considerations, local communities in the province still can reap the environmental benefits of decarbonization. Thus, I argue energy localization is ***weakly positive*** through decarbonization efforts.

*Safeguarding Biodiversity, Nature, and Landscapes:*

Another component of energy localization through the provision of substantive environmental impacts relates to biodiversity and the preservation of the natural environment. To fulfill this component of energy localization, it is important that Iberdrola's implementation of wind farms coincides with measures that help to safeguard ecosystem stability and integrity (del Río & Burguillo, 2008). To protect the environment, it is also necessary that Iberdrola engages in proper siting of the wind farms to evoke the least harm to flora and fauna (Msigwa et al., 2022). Iberdrola emphasizes its commitment to positively impact biodiversity and nature at all its facilities through its positive net biodiversity by 2030 target and through its mitigation hierarchy (Iberdrola, 2022a). The company additionally carries out initial environmental analyses before a formal EIA process to properly site wind farms and remediate its impacts on nature (Iberdrola director conversation 1). In Burgos, Iberdrola has showcased this commitment by installing bird-deterrent vinyl eyes on turbines in the BaCa and Fuente Blanca parks, among others (Iberdrola, 2021), and bird detection and census monitoring technology through several wind energy systems (Iberdrola, 2022a; Iberdrola director conversation 1). Iberdrola also constructed underground transmission lines in Haza for bird protection (Iberdrola España, 2022b). Additionally, Iberdrola implemented a wetland corridor in the Páramos region of Burgos to provide a refuge for birds to rest and breed, along with a tree and vegetation shelter for a variety of animals (Iberdrola España, 2018). More generally, Iberdrola indicates that wind energy's ability to allow for livestock cultivation further emphasizes the symbioses created between wind turbines and the environment (Iberdrola España, 2023a). Through these perspectives, Iberdrola

shows its commitment to mitigating harm to birds and promoting cohesion between farmers, livestock, the wind parks, and the natural environment in relation to its Burgos wind farms.

Shifting to the stakeholder perspectives, the UBU professor noted Iberdrola's focus on environmental protection through its wind facilities (UBU conversation), and both EREN representatives noted the regulatory compliance Iberdrola must adhere to through SPAs and the EIA regarding biodiversity protection (EREN conversation). These viewpoints indicate that Iberdrola is implementing energy localization as a result of regulatory environmental compliance standards. However, other stakeholders expressed their viewpoints that the wind farms have had extremely detrimental impacts on biodiversity and the environment in Burgos. The wind parks have resulted in increasing levels of bird mortalities, leading to declining bird populations (Mesa Eólica conversation 2), and have exploited the landscape through destroying forests, harming vegetation diversity (Ábrego conversation), visual contamination, and deterioration (Mesa Eólica conversation 2; Ábrego conversation). After understanding both Iberdrola's, Mesa Eólica, and the Valmayor resident's perspectives, Iberdrola is not implementing enough biodiversity protection measures consistently across its Burgos systems that go beyond mandated regulatory compliance. Iberdrola's biodiversity protection through the SPAs and EIA are not generating additional environmental value, as they fail to showcase Iberdrola's true commitment to environmental protection initiatives, beyond regulatory standards. Additionally, other than the select wind parks Iberdrola notes as receiving these bird deterrent mechanisms and its plans to expand these initiatives, it is not clear if these methods are happening universally at all facilities. Despite outlining corporate-led initiatives and the sole wildlife refuge in Páramos, Iberdrola provides a general lack of adherence to and provision of benefits for other flora and fauna, irrespective of birdlife, that are negatively impacted by Iberdrola's Burgos wind systems.

Again, Iberdrola employs a lack of specificity, using broad language to describe the environmental benefits it implements. As previously mentioned, an article about the Magdalena wind farm states, "renewables form a symbiosis with nature and bring life to the rural world, as in this wind farm, which produces clean energy in a unique natural environment" (Iberdrola España, 2023a). However, what are these symbioses, and exactly how do they revitalize rural communities? Iberdrola utilizes these blanket statements to describe its environmental substantive benefits, which are not helpful for determining the reality and authenticity of the company's efforts.

However, despite Iberdrola's ability to implement protection measures, it is unquestionable that there will continue to be bird mortalities as a result of wind infrastructures. Wind turbines' impacts on local wildlife remains a critique and an unavoidable, negative environmental consequence of these infrastructures (DOE Wind Energy Technologies Office, 2024). There are also other large-scale energy promoters in Burgos that may or may not be implementing protective measures for birds that are likely contributing to mortality trends as well. The census bird mortality data Mesa Eólica alludes to is likely a culmination of both of these factors. By installing these wind energy systems in Burgos, though, Iberdrola must be aware of the detrimental effects they have on birdlife and must consistently install protective measures throughout all of its systems. Regarding landscape contamination, people's negative visual perception of these structures is an impact that Iberdrola cannot realistically fully remediate. However, Iberdrola could attempt to compensate for this detrimental impact by implementing other natural, ecosystem revitalizing approaches, such as the reforestation of native flora, green wall barriers, and the creation of more habitat reserves to provide refuge for fauna impacted by the wind systems. Overall, I see Iberdrola's energy localization initiatives concerning biodiversity, nature, and ecosystems at ***weakly negative*** due to the inconsistent application of preventative measures across all wind farm systems in Burgos and for failing to provide a wider range of solutions beyond regulatory compliance that target a more diverse group of flora and fauna within the environment.

**Social Energy Localization Analysis**

*Consultation with and Representation of Local Communities:*

Evaluating the social aspect of energy localization involves analyzing both the procedural and substantive impacts that result from Iberdrola's construction of wind farms in Burgos. Iberdrola's ability to engage with local communities through a procedural approach is integral to promoting localized impacts of the wind farm, particularly through the concept of community consultation. Early and adequate consultation with local communities will help ensure that stakeholders opinions and interests are represented, which is an integral part of a procedural approach (Del Río & Burguillo, 2008). Community consultation also helps foster a bottom-up, participatory approach where communities are involved in the process of implementing the wind farms; this can foster a more transparent process and open dialogue (Duarte et al., 2022), which

can build trust between Iberdrola and local communities. High levels of consultation with community members could additionally materialize through alternative development models, such as a cooperative, shared ownership of wind projects between Iberdrola and the community, which is found to increase community acceptance of the wind farm (Musall & Kuik, 2011).

While Iberdrola states its commitment to consult stakeholders through its Stakeholder Engagement Model, the company's accounts do not provide specific examples of value-added dialogue with relevant groups through its Burgos wind farms, beyond mandatory compliance. Iberdrola claims that it utilizes its Stakeholder Engagement Model to deepen understanding and promote communication with its stakeholders. This model showcases Iberdrola's commitment to fostering a transparent process of open communication with communities (Duarte et al., 2022); this is an integral part of the procedural approach. However, the processes by which the communities are consulted or involved in decision-making processes are not clearly portrayed or explored in any of Iberdrola's evidence regarding their wind farms in Burgos. Iberdrola's director one provides deeper insight into general consultation strategy, indicating that conversations are carried out through various mediums (in-person and online) and with different management authorities. These groups ranging from national to local levels, including organizations, landowners, and competing companies, and town councils are often Iberdrola's first line of consultation (Iberdrola director conversation 1). While Iberdrola carries out a procedural approach through its Revilla Vallejera PV project, which was sited and implemented with community involvement and participation, Iberdrola provides no explicit examples of the Stakeholder Engagement Model or community consultation occurring through its wind projects.

The stakeholder groups hold conflicting opinions regarding Iberdrola's consultation mechanisms with relevant local communities and groups. Several stakeholders emphasize Iberdrola's proper community consultation mechanisms (Apecyl, UBU professor, and EREN) as Iberdrola does engage closely with community stakeholders (UBU conversation), allowing enough time for proper consultation to occur and for concerns to be expressed (Apecyl conversation). This usually happens through the EIA process, which mandates periods of community consultation (EREN conversation). Regional energy administration procedures also ensure that projects are suitable for stakeholders' perspectives (EREN conversation). The UBU Professor claims how Iberdrola's ability to follow regulatory standards allows it to build a favorable relationship with communities (UBU conversation). These stakeholders indicate a

procedural approach is occurring, allowing communities to feel represented in the wind farm development process.

Alternatively, other organizations note inadequate consultation measures (Guzmán Renovable, Mesa Eólica, and Ábrego). They describe Iberdrola's outright inability to consult communities (Mesa Eólica conversation 1; Ábrego conversation) or to implement a transparent, communicative process with local communities (Ribering conversation). At times, town halls may be consulted by Iberdrola, but the Valmayor citizen and Ábrego representative one highlight that these councils may not engage in a representative process where neighbors' perspectives are considered (Ábrego conversation). Despite mandated periods of consultation and supervision to ensure stakeholders are included throughout the process, communities do not feel represented through wind project development. Iberdrola's engagement in mandatory consultation mechanisms is not enough to promote a procedural approach through their wind farms.

Furthermore, while Iberdrola aims to install wind farms in depopulated rural areas to prevent noise pollution for urban centers (Iberdrola, 2024i), the company's analysis is purely cost benefit. Even though the majority of the urban population will receive benefits from less noise pollution, Iberdrola's wind farm siting strategy fails to prioritize the perspectives of the individuals who live in the depopulated areas. Mesa Eólica representative two additionally asserts that Iberdrola chooses the most depopulated areas of Spain due to less pushback from these small, rural communities (Mesa Eólica conversation 2). As such, these local municipalities are reaping these costs of the wind facilities while urban communities are benefiting. Despite Iberdrola's limited consultation methods, communities could still have their land seized (Ribering conversation), placing communities at the disposition of Iberdrola wind systems. Overall, stakeholder perspectives (Mesa Eólica, Ábrego, Ribering, and Guzmán Renovable) indicate that there is a lack of transparency and information regarding wind farms, along with a lack of inclusion of communities and local stakeholders in the decision-making process. Martínez-Mendoza et al. (2020) specifically found that inadequate consultation procedures decrease social acceptance of wind farms. This is evident through these local Burgos communities who are not properly consulted, and similarly, do not accept the wind farms.

A primary discrepancy regarding consultation is the question of who is consulted and the communication practices that make communities aware of this dialogue. Legally, Iberdrola must allow for community consultation, as this process is required by law. Additionally, Iberdrola's

director one highlights the various local channels through which consultation should be conducted. However, even though regulations are in place, there are community members, such as the representatives from Mesa Eólica and the Valmayor resident, that claim no consultation is occurring. This raises a clear discrepancy—if there are open periods of community consultation that are required, why are community members not aware of these avenues? Is Iberdrola only consulting town councils? As the wind farm promoter, Iberdrola has a responsibility to not just carry out regulatory compliance through implementation of a mandatory consultation period but to also ensure that relevant stakeholders and community members are aware of this process. Iberdrola must do more than the bare minimum through the EIA process to promote quality, transparent communication with communities.

It is interesting to note that the representatives of organizations who claimed that Iberdrola has successful local community consultation mechanisms are not direct receivers of Iberdrola's communication because they do not live in these local, rural communities (EREN, Apecyl, and the UBU professor). Alternatively, the individuals who are directly living in rural communities and regions impacted by Iberdrola's wind energy projects (Mesa Eólica and Asociación Ábrego), and more broadly live in Burgos's rural environment (Ribering and Guzmán Renovable), uniformly attest to Iberdrola's inadequate consultation mechanisms. Thus, I argue that individuals living in the local and rural towns themselves portray a more accurate reality of the presence or lack of communication between their communities and Iberdrola. Overall, I rate Iberdrola's ability to implement procedural energy localization through community consultation as ***strongly negative***. Iberdrola's inability to follow its Stakeholder Engagement Model consistently and uniformly and only provide the bare minimum consultation where community members are not always aware of or involved in these communication avenues hinders the localization of positive procedural positive effects from wind energy.

*Implementation of Social Services and Programs:*

Along with promoting a procedural approach through community consultation, the implementation of substantive social benefits can improve community acceptance through renewable energy systems (del Río & Burguillo, 2008). These social initiatives are rooted in providing social programs for towns (Timón Iglesias, 2023), which can include providing tourism facilities, visitor centers, education visits, and school support (Centre for Sustainable

Energy, 2007). To best support social services a town needs, the issuer of these programs must understand the local context and needs of the community. As mentioned previously, this process is reliant upon an adequate procedural approach. Part of the local context in Burgos is understanding a prevalent issue facing many municipalities in rural Spain, which is depopulation. As younger individuals grow up, they are increasingly moving out, which decreases population levels in rural areas. To best promote localized social services for these rural Burgos communities where the wind farms are located, Iberdrola must acknowledge the impact of rural depopulation on communities while implementing programs to combat the issue.

On a general level, Iberdrola's public documents provide limited examples of social energy localization initiatives in the rural communities where its Burgos wind farms are sited. Its partnership with the Vente a Vivir a Un Pueblo platform serves as a positive social energy localization initiative as it helps to provide tools to attract people to live in these towns. However, this initiative is only present in four towns and awarded these towns for their personal and successful efforts to combat depopulation. As such, towns that need help kick-starting depopulation efforts are not included in these awards and are not receiving the support they need. Additionally, while Iberdrola's website articles claim that it is improving provincial population dynamics through its wind energy, these assertions are vague and lack empirical evidence. Iberdrola asserts that the Burgos wind projects are improving the depopulation crisis by providing local jobs, but Iberdrola has not investigated net contributions their wind farms have had on the specific population dynamics of local municipalities. It is also unclear whether the wind farms are generating meaningful employment to improve population dynamics. Despite Iberdrola's partnership with the Vente a Vivir a Un Pueblo platform, Iberdrola's claims are aspirational regarding wind energy's ability to help improve depopulation.

Furthermore, while many of Iberdrola's articles mentioned local economic initiatives, such as local employment that the wind farms provide, Iberdrola describes limited examples of specific social localization benefits that it implements in rural Burgos communities. While the Revilla Vallejera solar project was implemented to hybridize the existing BaCa wind farm, this initiative has no clear connection to the BaCa plant in terms of energy localization. Iberdrola's outreach indicates that it did not implement this project in conjunction with or as compensation for any damages caused by the BaCa wind farm. While this plant hybridized the existing BaCa wind farm, I argue that it is an isolated solar initiative that cannot be considered wind energy

localization. Overall, Iberdrola's lack of wind-specific energy localization efforts in Burgos is clear through their public accounts, along with the stakeholder evidence.

However, it is important to acknowledge that the implementation of solar energy localization initiatives is notably different from wind localized efforts. For example, as seen in the Revilla Vallejera case, the PV panels created shady conditions which allowed for an optimal growing environment for mushrooms (Diario de Burgos, 2023). This helped facilitate the growth of this crop and the participation of local community members through this project, thus providing a localized food source—a clear environmental and social benefit from the energy system. Alternatively, wind farms do not provide the same environmental conditions, so this biodiversity-promoting solution would not be feasible at a wind farm. Thus, energy localization is not a one-size-fits-all approach, and Iberdrola must account for the specific needs of different communities, as well as the different challenges and opportunities varying renewable energy technologies provide.

Regarding stakeholder perspectives, many stakeholders did not mention social substantive impacts of Iberdrola's wind farms in Burgos. However, Apecyl advocates for Iberdrola's ability to engage with and adapt to community needs regarding implementing social programs (Apecyl conversation). Alternatively, Mesa Eólica notes that Iberdrola has not implemented local services in communities or generated any wealth (Mesa Eólica conversation 1; Mesa Eólica conversation 2). Since Apecyl operates as a partner of Iberdrola, its support of Iberdrola's ability to implement social programs is consistent with Iberdrola's perspective. However, the receivers of these benefits (i.e., Mesa Eólica) strongly attest to the fact that there are no social services implemented by Iberdrola through these systems. While Iberdrola broadcasts its ability to provide social benefits for communities through its facilities, evidence from Iberdrola and stakeholders indicate that this component is lacking in Burgos. Alternatively, the real issue may lie in Iberdrola's transparency efforts: The degree to which Iberdrola adequately communicates their social efforts with the community and the broader public is insufficient.

While the Iberdrola's first director indicated that the town councils of the municipalities impacted by wind farm generation are the first groups to be consulted (Iberdrola director conversation 1), the stakeholder conversations additionally revealed the integral role town councils play in responsibly managing the municipal money generated by Iberdrola's wind

energy systems. The first representative from Guzmán Renovable highlights how towns that are able to properly manage money and provide social services are able to attract more people to the municipality (Ribering conversation). This not only helps combat depopulation but helps community members appreciate the wind farms because they value the social benefits that come into fruition because of these systems. The proper management of town money additionally allows community members to directly connect these social benefits with the presence of wind energy, which improves social acceptance of the systems. Timón Iglesias's (2023) study supports this notion, as they find that the greatest impact on local people's livelihoods as a result of Iberdrola's solar plant in western Spain depended on local authorities' ability to implement relevant social town-wide initiatives.

To an extent, it is out of Iberdrola's control whether towns properly manage money and whether social energy localization materializes. However, these social initiatives implemented by the town derive from the money the municipality receives from the wind systems that Iberdrola is required to pay, and these programs are not implemented by Iberdrola themselves. Beyond legal compliance, for Iberdrola to deepen the positive effects of localization, it cannot solely rely on town halls to implement social services. Iberdrola must facilitate additional social programs to create value and promote localized impacts within the rural environment. Because there are limited social initiatives through Burgos wind energy parks that either exist or are explicitly clear to local communities or the public, both from Iberdrola and stakeholder evidence, Iberdrola is not uniformly or adequately implementing social substantive energy localization. Although their Vente a Vivir a un Pueblo platform serves as a social localization example, there could be efforts to target more towns that are struggling, not succeeding with depopulation. As a result, I rate Iberdrola's efforts to implement energy localization in this regard as ***weakly negative.***

**Economic Energy Localization Analysis**

*Providing Local Employment and Procurement:*

Within the literature of the economic component of energy localization, local employment and procurement opportunities, affirmed by del Río and Burguillo (2008) and the Center for Sustainable Energy (2007) are initiatives that help promote energy localization and social acceptance of renewable energy systems. It is common for scholars in the literature of energy localization to note economic benefits of systems, showcased through Heinbach et al.

(2014), who focused solely on economic benefits regarding the value-added impact of renewable energy. This may be because economic benefits are extremely tangible and noticeable initiatives. However, economic benefits are not always relevant, localized benefits for communities. Martínez-Mendoza et al. (2020) found that individuals did not consider that the wind energy systems were increasing economic opportunities in the communities of Isthmus of Tehuantepec, Mexico. In this case, Martínez-Mendoza et al. (2020) emphasized how economic output did not improve community acceptance of wind energy.

Iberdrola's public accounts of economic energy localization impacts in Burgos showcase local employment and procurement opportunities as notable initiatives implemented through their wind energy systems. Through these economic provisions, it is evident that Iberdrola is contributing a level of benefits to local communities and economies. However, the degree to which local employment and procurement are substantial enough to make a meaningful economic impact is unclear. Also, it is not clear how Iberdrola defines 'local.' Are the community members who live in the towns where the wind farms are located the ones employed, or are the employed individuals coming from the city center of Burgos or larger cities? Regarding local procurement, are these initiatives substantial enough to stimulate local-level impacts?

Stakeholder groups affirm Iberdrola's implementation of energy localization through provision of local employment and procurement opportunities, but some organizations question the value that these efforts have for local communities. Several groups affirm that Iberdrola's wind energy efforts have stimulated new economic activity through direct and indirect jobs (EREN conversation; Apecyl conversation; FCB conversation). These efforts overall help to reduce rural depopulation (EREN conversation). However, despite that Iberdrola provides local economic opportunities, some organizations note that local employment and procurement is not significant enough to generate a notable localized impact (Ribering conversation; Ábrego conversation). Often, individuals employed are not actually from the local communities but from urban cities in Burgos (Ribering conversation). If these initiatives are not economically stimulating the economics of the local towns but instead benefiting urban individuals, Iberdrola's impact is not truly localized. Additionally, the wind energy sector economic opportunities may deter other forms of natural tourism in the province (FCB conversation). As a province that prides itself on its beautiful landscape and cultural heritage, reducing tourism and other nature-

related economic opportunities could negatively impact the economies of these local Burgos towns.

By comparing energy Iberdrola's and stakeholder group's perspectives on energy localization through economic development, there is common ground that Iberdrola implements local employment and procurement opportunities. These economic initiatives are tangible benefits that are easy to communicate from Iberdrola's perspective and clearer whether they are occurring and aiding local communities in comparison to other environmental and social localization initiatives. However, there is a disconnect in Iberdrola's intended efforts and the outcomes local communities face. Despite that 'local' employment and procurement opportunities are implemented through Iberdrola's wind farms, if urban individuals are being employed instead of local individuals, employment opportunities are not truly localized. Additionally, if the majority of these jobs are temporary as they occur during the construction phase of wind farm development, these opportunities are not generating long-term value for the communities. Even though these economic opportunities could be better localized to the rural communities sited by the wind farms, they still to some extent exist and benefit local communities. Thus, I rate Iberdrola's economic wind energy localization efforts through employment and procurement as ***weakly positive.***

*Issuing Taxation and Compensation to Landowners:*

Another integral component of economic energy localization is the renting of land to local landowners (Centre for Sustainable Energy, 2007). Legally, Iberdrola must pay taxes and compensate local landowners for the territory that they occupy for the wind farms. These are direct monetary benefits that local towns and landowners will receive. Iberdrola's first director notes that local taxation and payments are significant. They consist of construction, facilities, and works tax (2 to 4 percent of project budget), land occupation payments, the IBI tax, and IAE taxes, the latter three of which are paid yearly (Iberdrola director conversation 1). Apecyl affirmed Iberdrola's ability to provide taxation and land payment benefits through its Burgos wind energy systems (Apecyl conversation). Economic benefits from taxation can be realized through the provision of new social services for the town that were not previously financially feasible, such as a swimming pool (FCB conversation). Despite that Iberdrola occupies local land for its projects, the Iberdrola director one notes how its actions do not impede farmers

ability to cultivate the land (Iberdrola director conversation 1), which allows agricultural workers to generate additional income for their families, as well as maintain their identity as a farmer (Ribering conversation).

While it is clear that Iberdrola pays taxes to local municipalities and must purchase property from the landowners—both of which are required by law—it is unclear whether this compensation is enough to generate economic value for local communities. For example, is the land lost underneath the wind turbines fairly compensated for, as farmers lose this land cultivation area due to the imposition of the project? Mesa Eólica's second representative determined that Iberdrola is not paying a sufficient amount. They claimed that compared to Iberdrola's investment in the wind power plant, the land lease payments are insignificant (Mesa Eólica conversation 2). These payments are also private benefits that certain towns experience, which can cause social issues among neighboring towns and between those who receive money and who do not (Ábrego conversation). There is also a lack of transparency regarding Iberdrola's purchase of the land from Burgos landowners—are these processes voluntary, what are the streams of communication like, how are prices determined, and are the negotiations fair? If land can be expropriated, as the representative from Guzmán Renovable mentioned, do community members have enough leveraging power to ensure they are adequately compensated for their land even if they do not want their land seized for wind energy? Furthermore, while farmers have the opportunity to still cultivate their land, farmers may instead purchase other property and establish themselves elsewhere since they are already receiving money from Iberdrola for their land (Ribering conversation). This perspective from the Guzmán Renovable representative suggests that Iberdrola wind efforts through land lease could drive people out of the province instead of bringing in more economic opportunity, which could further catalyze rural depopulation.

Additionally, is Iberdrola solely compensating local towns for mandatory taxes and land payments or providing additional economic benefits? The Mesa Eólica second representative noted that Iberdrola additionally hasn't contributed any economic benefits other than obligatory payments of leases and rents, and meanwhile, everything in the rural towns has lost profitability (Mesa Eólica conversation 2). Based on Mesa Eólica's perspective, localized economic initiatives through improving local communities, noted by the Centre for Sustainable Energy (2007), are not occurring. Town council's management of the money from local taxes is

additionally a factor. As previously mentioned by the Guzmán representative, improper management of this tax-generated revenue by the town halls could reduce the way in which these monetary benefits are locally materialized in the municipality.

While economic impacts are one of the primary impacts several organizations note that local communities seek through the implementation of wind farms (EREN and the UBU professor), Martínez-Mendoza et al. (2020) indicates that local communities do not consider economic opportunities as integral to acceptance of the wind farms. Mesa Eólica and the individual from Valmayor affirmed that economic impacts could not compensate for environmental damage. The Valmayor resident commented that the landscape is the most meaningful part of Burgos, and it's being destroyed by wind energy (Ábrego conversation). Because these rural stakeholders care more about landscape and environmental impacts than land payments benefits, this indicates that economic benefits are not as important or enough to truly promote a high degree of localization. After analyzing both Iberdrola's and the stakeholder groups' data sets, land payments and tax benefits do not in all cases seem to be fair contributions or significant enough to leave noticeable, localized impacts. However, it is evident that these impacts are explicitly and legally mandated monetary benefits received by local communities. Thus, I rate Iberdrola's economic energy localization impacts through land compensation and tax provision as ***weakly positive***.

*Reducing Energy Dependence:*

An integral component of achieving energy localization through economic contributions is reducing energy dependence (del Río & Burguillo, 2008) and reliance on fossil fuels (Stigka et al., 2014). Wind energy promotes industrial decarbonization, which can result in various economic benefits that reduce energy dependence, such as promoting innovation, job security, investment, lower energy costs, and energy security (Sovacool, n.d.). A region's ability to produce its own energy provides it with autonomy and resilience to external shocks that could increase electricity prices and pose other harm to consumers. Within Spain, Castilla y León, and Burgos, it is evident that Iberdrola's implementation of its 25 wind energy systems helps promote energy independence and reduces external dependence on fossil fuels. For example, the Buniel wind farm contributes to the EU's REPowerEU Plan to reduce fossil fuel imports from Russia, and it also contributes to Spain's INECP 42 percent renewable target by 2030 (Iberdrola

España, 2023b). Apecyl affirms that Iberdrola's wind energy efforts have promoted energy independence in Burgos and contributed to greater economic and industrial freedom of the region (Apecyl conversation). However, this is on the macro-level, meaning that the entire province of Burgos is holistically more independent based on the province's Iberdrola-sourced wind energy generation. When placing energy independence in the context of energy localization, this means that local communities are reaping the benefits of reducing energy dependence. While provincial-wide energy independence may allow local community consumers to receive lower- and stable-priced electricity from Iberdrola's wind farms, local communities that are not consuming this electricity would largely not benefit from energy independence.

The oversaturation of wind energy in Burgos reduces benefits realized via energy independence from Iberdrola's facilities as the provincial communities are not consuming all of this energy. The stakeholder perspectives reveal how people believe wind energy is saturated in the province (EREN, Ribering). While Burgos is producing more energy than it consumes (FCB, Ábrego), stakeholders emphasize how this energy is exported to large Spanish cities, such as Madrid, Barcelona, Bilbao (Ábrego conversation; Mesa Eólica conversation 1). Exporting this energy reduces energy independence of the province. The UBU professor claims that Iberdrola supplies electricity to local communities within the province (UBU conversation), and the Iberdrola director notes that local consumption of wind energy can occur through specific contracts and PPAs with Iberdrola's commercialization business (Iberdrola director conversation 1). However, other groups emphasize how production is not located where electricity consumption is (FCB, Ábrego, and Mesa Eólica). EREN's annual summary data supports that wind energy production exceeds consumption in Burgos: Total energy consumption, not specific to wind energy, accounted for 50.5 percent of wind energy produced (EREN, 2022). While this data includes production from all Burgos wind energy generators and is not Iberdrola specific, it still indicates that a large portion of wind energy, including Iberdrola's, is exported. Although contracts and PPAs could help localize energy independence benefits from wind energy by ensuring energy consumption, exporting energy fails to localize these benefits for rural and provincial municipalities.

Energy independence can be better localized through small-scale autonomy and independence over energy generation, evident through energy communities. Concerning Guzmán Renovable's solar plant, the first representative from Guzmán Renovable highlights how their

energy community provides them with cheaper electricity, which allows the town to implement more services with the extra money (Ribering conversation). Since local townspeople are directly consuming the electricity generated from energy communities, these systems help promote energy independence on a micro level. However, Iberdrola's involvement in the permit process and regulatory challenges can slow processes for energy community establishments (Ribering conversation; EREN conversation). Evident through stakeholder perspectives, community renewable energy systems arguably provide more localized impacts than large-scale, corporate actors. Therefore, Iberdrola's presence as a bottleneck through permit approval slows down grid-connection, thus reducing energy independence at the community level.

Overall, the increase of wind energy production in Burgos contributes to economic energy independence of Burgos, Castilla y León, and Spain as a whole, helping realize regional and national economic, energy independence goals and allowing these markets to be more resilient to external influences moving forward. Even though wind energy is exported out of the province, a portion of this energy still remains domestic, helping to maintain energy independence of the province. Furthermore, while Iberdrola's involvement in the network system has hindered the establishment of smaller-scale initiatives, communities that are a part of the grid do receive more stable, secure, and cheap energy. Thus, I rate Iberdrola's economic energy localization impacts through energy independence as ***weakly positive.***

**Concluding Thoughts**

My critical analysis of the environmental, social/procedural, and economic components of Iberdrola's implementation of wind energy localization affirm my hypothesis: The greater implementation of relevant environmental, social, and economic initiatives and the incorporation of local actors through a procedural approach by Iberdrola will be positively associated with higher levels of stakeholder acceptance of the wind farm. In areas where Iberdrola implemented clearer localization initiatives, such as through the economic components, these efforts garnered greater stakeholder support. The results showcase that Iberdrola's promotion of energy localization is inconsistent across these components and not universally applied across all of its wind facilities in Burgos. Iberdrola implements environmental initiatives (e.g., through bird mitigation technology through the BaCa wind farm) and economic initiatives via local economic development, compensations, and energy dependence reduction through its wind farms in

Burgos. However, the social and procedural components of energy localization are lacking. Iberdrola contributes limited evidence of social initiatives that it implements through its wind farms. Despite providing a legally required window of consultation through EIA compliance, the community individuals I spoke to did not feel that they were adequately consulted. The overall results highlight that Iberdrola implements energy localization the best in the economic component, rating weakly positive in all categories. However, Iberdrola environmental efforts have mixed results, rating weakly positive in decarbonization and weakly negative in biodiversity, nature, and landscape. Regarding social, procedural components, this area is lacking and needs the most improvement as Iberdrola's efforts rated negative (strongly and weakly, respectively) in both consultation and social service provision.

# Chapter 7: Conclusions & Recommendations

## Summary of Main Findings and Key Takeaways

My research investigated Iberdrola's wind energy localization initiatives in Burgos, Spain. My analysis indicates that Iberdrola positively contributes to aspects of environmental and economic energy localization through decarbonization, local economic development, taxes, land payments, and energy dependence reduction. However, Iberdrola is underperforming in the environmental component concerning biodiversity. The company is also strongly underachieving in the social/procedural aspects of energy localization, particularly through its inadequate consultation methods and limited examples of social program implementation in communities.

Beyond Iberdrola's impacts, there were several key takeaways regarding the local wind energy context and perspectives. A significant finding emerging from my research was the degree of polarization that was present among the various stakeholder groups I interviewed. There was also significant divergence between Iberdrola's perspectives and that of community members. While some groups felt very strongly that Iberdrola was positively contributing to energy localization in all substantive and procedural aspects (EREN, Apecyl, and the UBU professor), others very strongly felt that Iberdrola was failing in all aspects of energy localization (Ábrego and Mesa Eólica). There were additionally several moments of contradiction of viewpoints—for example, different stakeholder groups would simultaneously emphasize how beneficial and inadequate Iberdrola's local community consultation was. This complicated my process of fairly analyzing the energy localization initiatives. However, each group's positionality concerning Iberdrola was integral to disseminating these complicated and sometimes contradictory findings. For example, organizations that partner with Iberdrola, such as EREN, are more likely to have insight into Iberdrola's processes and present a favorable view of the company. On the other hand, organizations or individuals that are directly involved in local community impacts of wind energy or live in the municipalities where Iberdrola's wind farms are located (Ribering, Guzmán Renovable, Asociación Ábrego, Mesa Eólica) are more likely to be in tune with and representative of the local community's viewpoints in relation to these wind systems.

Geographically, where these organizations were located and their scope of influence also impacted their viewpoint of energy localization. This brings up another main takeaway from my research: the differences between rural and urban Burgos and how to define what is 'local.'

While all the interviewees I conversed with were from Burgos or neighboring provinces of León and Soria,[36] some individuals lived in urban centers, and others lived in rural towns, some of which were directly impacted by wind energy systems. The individuals who were directly affected by wind energy (those from Mesa Eólica and the individual from Valmayor) unanimously shared the viewpoints that Iberdrola has inadequately implemented wind energy localization in their local communities and across the province. I argue that the perspectives of these individuals who are most directly impacted by wind energy systems carry more weight regarding Iberdrola's meaningful energy localization implementation.

The concept of what is 'local' also arose through different aspects of my research. While Iberdrola provided local employment and procurement opportunities as well as generated clean energy for the province of Burgos, some stakeholder groups highlighted how often urban residents or companies were employed through these economic opportunities and that energy consumption was not localized (i.e., consumed locally by the rural communities where Iberdrola's wind farms are located). My research attempted to evaluate energy localization on a macro level within Burgos, considering holistically the impacts of all of Iberdrola's wind systems while pulling on specific examples. Methodologically, this made the most sense as I was able to pull on a wider range of qualitative experiences versus relying on limited examples that focus on the communities surrounding one wind farm. However, my research revealed that energy localization should be evaluated on a local, community level—the communities most directly impacted by the wind energy systems should be the ones experiencing the greatest degree of environmental, social, procedural, and economic benefits generated from the wind farms. These local impacts should be the ones evaluated to determine if energy localization is occurring. As such, Iberdrola's provision of substantive and procedural initiatives directly in the communities that locate its wind farms are the most effective way to implement energy localization.

The issue of differing experiences in the rural and urban Burgos communities plays out through depopulation. An emerging theme in my research was the degree to which Burgos, among other places in central, rural Spain face the issue of depopulation. As younger people grow up, they frequently attend universities outside their local communities and migrate to cities

[36] The representatives from León and Soria worked for Apecyl or EREN, both organizations that operate in the province of Burgos.

to find more ample opportunities. The result is that the populations of these small Burgos communities are increasingly composed of older individuals and are decreasing in overall numbers. While stakeholders emphasized that wind energy contributes to rural depopulation by ruining the natural environment, others claim that Iberdrola's wind parks help the population crisis by providing jobs for younger generations. It is important to recognize that if individuals from the city center of Burgos are receiving these employment opportunities, then this employment provision is not helping retain populations within the rural towns.

Another major takeaway was the degree of separation between the community members and Iberdrola. Several of the stakeholders noted the challenge that Iberdrola, as such a large company, faces with truly connecting with and understanding the local context of the communities in which it operates. Iberdrola's public documents demonstrated their commitment to connecting with communities through in-person communication and their willingness to truly understand community-specific priorities to best implement a just energy transition. Meanwhile, the groups directly experiencing Iberdrola's wind energy systems (the individual from Valmayor and Mesa Eólica) emphasized that Iberdrola fails to consult local communities. These contradicting perspectives emphasize the clear disconnect between Iberdrola's energy localization intention, what the company is committed to implement through its corporate ESG strategy, and the outcomes of its actions—what is actually occurring on the ground, at the community level. One example of this disconnect is evident through the way that Iberdrola continuously mentions the importance of local employment and procurement of its Burgos wind farms, yet some of the stakeholder groups emphasized how the economic impacts were minimal and that they value environmental benefits and preservation over these monetary benefits. A component of being out of touch with local communities manifests through inadequate communication. Iberdrola may have several more energy localization initiatives that it has implemented through its Burgos wind farms, but if local communities and the members of the global public (like myself) are not able to experience or learn about these initiatives through Iberdrola's outreach, then skepticism and accusations of greenwashing will prevail.

My research additionally highlighted the key role city mayors and town councils have regarding the management of the funds generated from Iberdrola's wind farms. If the town council can properly use the money by providing various town services, amenities, activities, and more, this will generate more local benefits for the town. Town residents will be more likely to

accept Iberdrola's wind energy systems if they experience positive impacts from services implemented because of money from the wind project. However, if the town improperly manages the money and does not use it in ways that are beneficial for town members, the community will not feel the economic benefits from wind farms. Thus, the degree to which this compensation is localized and materialized into town-wide initiatives or benefits depends on who works for the town council. While this localization may be out of Iberdrola's hands, it is under Iberdrola's jurisdiction. Iberdrola could ensure that the town responsibly manages the money through contracts, for example, or instead better promote their own social initiatives irrespective of the town council.

**Remaining Puzzles and Considerations**

A lingering question of my research still prevails—if Iberdrola has invested so much in wind energy in Burgos, why are they not implementing more energy localization initiatives? Since Burgos is one of Iberdrola's main generators of wind energy in Spain, it makes intuitive sense—both in economic and reputational terms—that Iberdrola would prioritize energy localization initiatives in this province. I hypothesize that part of the predicament stems from the high level of regulation in the EU and the push to achieve the "E" (environmental) targets over the next decade, notably decarbonization goals. Legally, Iberdrola must remain in compliance with EU regulation and domestic laws. As such, they will always provide some degree of energy localization through the implementation of an EIA, the provision of taxes and land payments, and their adherence to EU and national decarbonization objectives. The structure of sustainability reporting is additionally guiding Iberdrola toward key performance indicators (KPIs) that are demonstrable. Notably, these are primarily environmental goals through decarbonization, as these address the EU pressures to decarbonize the economy. However, the social aspects and challenges are not as readily addressed because these are not prioritized (or directly observed) by market investors like the "E" goals. While a focus on large-scale environmental objectives helps quicken the energy transition and reduce climate change impacts, these regulations incentivize company behavior to invest less in the social aspects, which ends up leaving local communities behind.

A Lack of adherence to social objectives is compounded by the fact that the social components of energy localization lack standardization metrics; they vary on a case-by-case

basis depending on the impacted communities, and because of this, they are less tangible for companies to implement and also for investors to look for in company sustainability performance. This top-down pressure has incentivized companies like Iberdrola to focus more heavily on environmental targets, as these are legal imperatives, while social components, despite creating value for communities, are not as quantifiable and thus harder to achieve. In the future, the extent to which Iberdrola surpasses the legal "E" requirements and implements additional localized benefits will continue to determine community acceptance of these systems. The degree to which communities are consulted and represented in the process of renewable energy development as well as the degree to which Iberdrola invests in the community through socially sustainable outcomes can significantly improve community acceptance and localization of these projects. In this way, the social aspects of energy localization provide a unique opportunity for Iberdrola to truly improve its energy localization efforts.

The challenges in deepening localization are also embedded in systemic considerations. Many stakeholders (Mesa Eólica, Ábrego, Ribering, and Guzmán Renovable) noted that the complications of energy localization are not solely driven by Iberdrola but instead produced by the entire system. The issue is generated by all the large-scale, profit-seeking electric utilities operating within the capitalist, energy industry. Szeman and Boyer (2017) echo this sentiment through their concept of a defensive energy transition: "Just as energy is essential to a fuller understanding of modernity, its critical role in shaping existing social structures, lived and material infrastructures, and even cultural practices points to those sites in which changes will have to take place if we are to address global warming. Even if [the energy transition] envisions difficult, large-scale shifts in the dominant source of energy, the existing language of energy transition is most often *defensive*, insisting on changes in input to preserve global capitalism and its systems of property and profit" (Szeman & Boyer, 2017). Szeman's concept of a defensive energy transition indicates that if we only change the energy inputs—for example, switching oil with wind energy—we continue to preserve the same capitalized energy model that hinders energy localization. In this sense, Iberdrola helps promote a defensive energy transition that operates within the profit-seeking, capitalist system and fails to engage in legitimate social transformation necessary for a just transition.

While the current capitalist energy model is not as conducive to energy localization as smaller energy initiatives, proposing and facilitating energy sector systemic change would

require large-scale policy implementation, coordination among various stakeholders, and a complete restructuring of the economy, all of which there may not be time for with the existential threat of climate change. Because large-scale energy sector systemic change is unlikely to occur quick enough to tackle the climate crisis, it is critical to devise current solutions to improve energy localization outcomes. Martin (2002's) virtue matrix provides a framework for doing so.

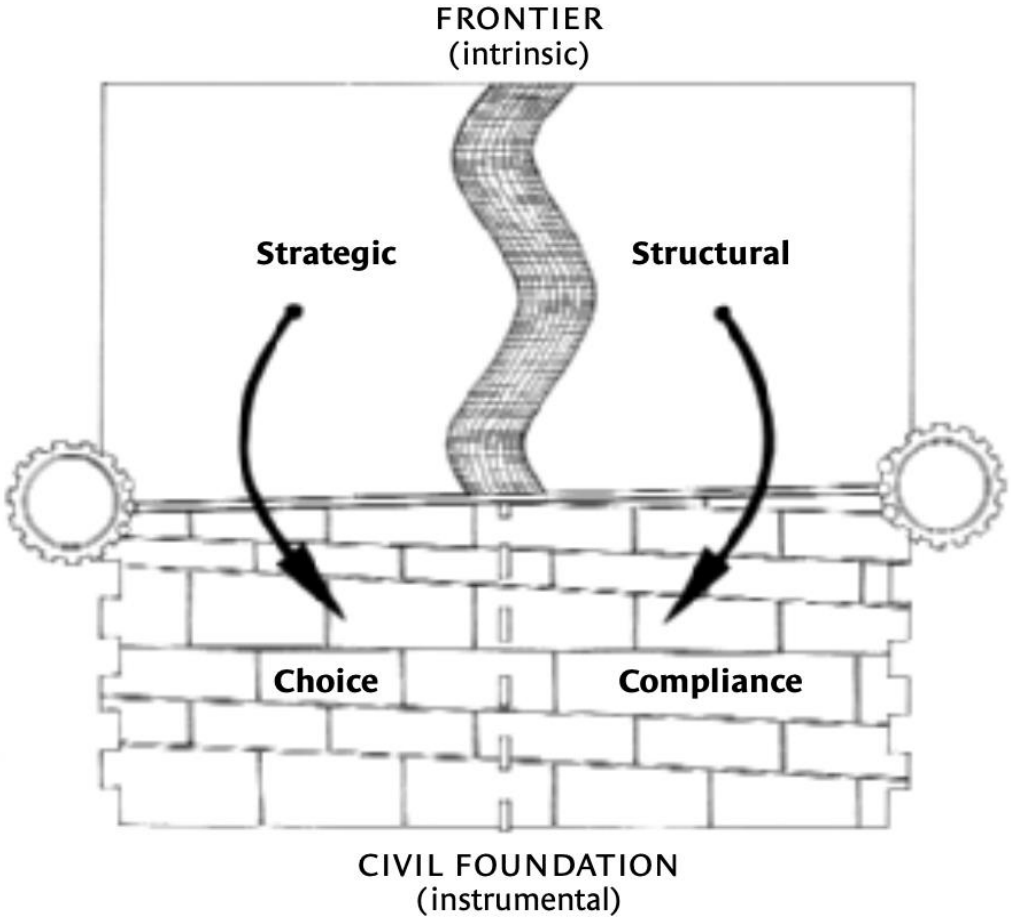


**Figure 7.1:** The virtue matrix, created by Roger L. Martin and colleagues, provides a conceptual framework to aid companies in their pursuit of socially responsible behavior (Martin, 2002).

Emerging out of Aspen Institute's Initiative for Social Innovation through Business in 2002 was the concept of the virtue matrix (Martin, 2002). The virtue matrix, shown in Figure 7.1, is a tool that allows companies to assess socially responsible behavior and enrich both society and shareholders as it "depicts the forces that generate corporate social responsibility." The virtue matrix is built on a strong civil foundation, which is "an accumulation of customs, norms, laws, and regulations" that "promotes conduct that is socially responsible and enhances

shareholder value" (Martin, 2002). Companies can engage in conduct by *choice*, in accordance with customs and norms, or by *compliance*, carrying out conduct mandated by regulation and law. Behavior in the civil foundation is described as *instrumental* since it only meets society's minimum expectations and aims to maintain or enhance shareholder value. The boundary between these two sides is fluid, as some activities that begin as a choice can be later codified into laws. The upper two quadrants reveal the *strategic* and *structural frontiers*, which "encompass activities whose motivation tends to be intrinsic and whose value to shareholders is either clearly negative or not immediately apparent" (Martin, 2002). The strategic frontier refers to "behavior that both benefits shareholders and adds to the supply of social responsibility" as "it is intrinsically motivated behavior that coincidentally advances the corporation's strategy." Alternatively, the structural frontier includes actions that "benefit society but not shareholders, creating a structural barrier to corporate action." The behavior in both frontiers can migrate to the civil foundation, which can increase and fortify the civil foundation through good practices or decrease it through abandonment of socially responsible actions.

Given a high level of regulatory pressures in Europe, companies like Iberdrola implement more civil compliance than strategy. In relation to Iberdrola's wind energy localization initiatives in Burgos, Iberdrola has built a civil foundation based on compliance, through EIA procedures and taxes, for example. The company has also built the foundation on choice, such as through implementation of bird deterrent technology. While Iberdrola's actions in the civil foundation are evident, in which Iberdrola's provision of socially responsible energy localization actions align with their corporate ESG strategy, they face challenges in the strategic and structural frontiers—benefits are not as apparent to shareholders or may initially appear contradictory to their business model. These upper quadrants are where society may benefit from actions that consequently may detract from Iberdrola's business model in the short-term but would help foster long-term value creation. For example, Iberdrola's ability to consult a broader range of local stakeholders in Burgos, including normal residents of the town, would be more economically disadvantageous for the company in the short term as it would require more capital expenditure. However, this strategic social investment could increase the procedural approach, lead to better community negotiations, and ultimately improve social acceptance of these systems. Significant contributions to a just transition would require that Iberdrola engage in better practices—explored in the next section—to bolster the strategic and structural frontiers, helping to fortify

their civil foundation and garner greater public support regarding their energy localization initiatives. This could help improve long-term added value of their wind farms.

**Recommendations for Iberdrola to Improve Energy Localization Efforts**

My analysis revealed that Iberdrola is overall underperforming in its ability to implement energy localization through its wind energy facilities in Burgos, notably in the social and procedural aspects. In this concluding section, I propose several suggestions for how Iberdrola could improve its energy localization impacts, particularly through the social/procedural aspects, to improve communities' perceptions and the effectiveness of its efforts.

*Suggestion 1: The improvement of communication and transparency to bridge the gap between Iberdrola and local communities.*

Iberdrola's improvement of communication, transparency, and outreach with local communities concerning its wind energy localization initiatives in Burgos would help increase community acceptance of these projects. Many stakeholders acknowledged the disconnect between local communities and Iberdrola, and others noted how Iberdrola's consultation mechanisms are not adequate. In this sense, part of the issue with ESG reporting is that these sustainability targets are corporate led while the effects are mainly felt at the local level. Thus, a disconnect between Iberdrola and local communities poses challenges for adequate localization and materialization of these sustainability targets. To improve communication and transparency, Iberdrola could invest in establishing a broader team of local contacts that can connect with the rural towns in Burgos to ensure that local towns have a representative that they know on a personal basis to reach out to if there are concerns. Also, these representatives could work with local authorities and the press to inform local communities of the period of consultation available and required through the EIA, so communities are aware that they can express their concerns regarding the wind energy projects. This could increase energy localization by improving the procedural approach through better community consultation and involvement regarding wind energy development. Additionally, an investment in better communication methods will help Iberdrola increase the transparency of energy localization efforts that are occurring through its Burgos wind systems. In this way, individuals in the broader public, critics of Iberdrola, and researchers will understand better where positive impacts materialize. One way Iberdrola could implement this is by revealing more data about each wind farm facility on its website. The

company could present not solely the MW output or predicted local employment and CO2 abatement of its wind farms, but Iberdrola could specifically highlight how its corporate ESG commitments (e.g., net positive on biodiversity by 2030) play out through different biodiversity mechanisms, social programs, and other energy localization initiatives. Highlighting more specific and concrete examples of energy localization on its website will better localize ESG reporting and help the greater public more clearly connect Iberdrola's ESG strategy to what is actually happening in local communities.

*Suggestion 2: The promotion of smaller-scale, energy community or self-consumption projects that are more conducive to energy localization.*

A finding of my research is that the technology, design, and widespread commercialization of wind energy systems, in comparison to solar energy for example, does not appear to be as conducive to energy localization. While it may be harder to localize the benefits of large, capital-intensive wind farms, coinciding the implementation of these large-scale facilities with smaller wind or solar projects could work to increase energy localization. Iberdrola could fund smaller-scale or self-consumption projects, in conjunction with their large-scale wind projects, to compensate local communities for sacrificing part of their livelihoods and land for the wind parks. This way, Iberdrola's large scale-wind efforts could coincide with the implementation of smaller-scale community facilities that will provide a more localized, smaller-scale energy model while improving rural community energy access and security. Establishing these systems would concretely allow Iberdrola to supply local communities with the electricity generated from the systems located in their towns. A representative from Guzmán Renovable elaborates on the positive localized impacts of energy communities: "At the [small-scale] level, it is easier to manage the different households. Guzmán Renovable aims to contribute to energy sustainability, empower the neighbors, give them knowledge, and let them see how energy is really produced, where the energy is produced, the cost of producing the energy, and promote awareness of the culture of energy sustainability, education, and environmental awareness" (Ribering conversation). However, many of these small-scale projects cannot be implemented due to financial constraints. The representative from FCB highlighted that "the economic part of the energy communities is often a handicap and is the first obstacle that they encounter for the development of projects" (FCB conversation). Therefore, Iberdrola's ability to fund and establish

these projects would help local communities overcome the initial investment hurdle and establish these localized energy systems.

For example, in the town of Valmayor, where the local resident I interviewed was from and the promoter Alfanar is proposing to build the Pico de Iglesias wind farm, there is a GoFundMe to install a small-scale 1,500W wind turbine project (Valmayor De Cuesta Urria, 2023). This small-scale energy system would help revitalize and grow their five-person community. The project only costs EUR 4,500, which is a very small amount compared to the initial investment and profit that a large-scale wind project requires and generates. Iberdrola could seek to promote and fund small-scale projects like this one in Valmayor within the towns with which its wind projects operate. This would help the company promote community development and involvement in energy systems, as well as provide more localized benefits.

*Suggestion 3: The implementation of educational and training opportunities to promote capacity-building at the local level.*

At the local level, Iberdrola could promote more educational and training opportunities to implement capacity building through its wind energy systems. The United Nations defines capacity building as "the process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in a fast-changing world" (United Nations, 2024a). By organizing meetings, workshops, and local action groups that help train unemployed people and educate the public about renewable energy and the EIA process, Iberdrola would engage in capacity building and help strengthen local communities' resilience to the energy transition. These activities could be led by Iberdrola representatives, who can then interact with, connect with, and start to understand local communities' perspectives on wind energy systems. This could improve the ability of these rural communities to participate in local employment opportunities generated from the wind farms and understand the benefits associated with renewable energy development. It could further increase Iberdrola's implementation of the procedural approach, along with representation of and communication with local communities regarding the wind farm development process. Having local Iberdrola contacts facilitating this capacity-building process—likely in conjunction with other local organizations—would put a face to the large company and help close the distance between Iberdrola and the community. This capacity building process could help communities

feel more consulted in the development of wind farms while also providing substantive benefits, overall helping to implement better energy localization.

*Suggestion 4: The partnership of Iberdrola with local organizations to better understand the local community context, implement relevant social services, and improve community negotiation.*

As Iberdrola highlights through its stakeholder engagement policy, understanding the local context is not a one-size-fits-all approach and should adhere to the needs of each local municipality. One way Iberdrola could improve its ability to both understand and connect with local communities is through partnerships with local organizations that are working to combat environmental and socioeconomic challenges and already have established trusting relationships with the rural Burgos towns. By working with these local organizations, Iberdrola could better understand issues facing these communities while simultaneously improving its ability to provide relevant social benefits and programs that coincide with its wind energy systems. As previously mentioned, a key problem facing local communities in Burgos is rural depopulation. One way Iberdrola could improve its energy localization initiatives could be to partner with or monetarily fund a local NGO aiming to combat rural depopulation in the province, such as Ábrego. FCB noted that some of the social services Iberdrola could implement—in partnership with or by funding local organizations—to help with depopulation are establishing nursing homes, providing assistance services for the elderly, and offering physiotherapy services (FCB conversation). Providing monetary support and partnering with local organizations to address socioeconomic challenges facing rural Burgos communities will help improve local communities' livelihoods and increase their acceptance of Iberdrola's efforts, helping to improve localized impacts of its wind energy systems.

Additionally, Iberdrola could seek to connect local communities with the companies that are familiar with and knowledgeable about the EIA process. One example of an organization is GEOCyL, which is a consultant based out of Valladolid, Spain that operates within Burgos among other provinces to develop various environmental reports, evaluations, and strategic plans in the environment (GEOCyL, 2024). Although Iberdrola must allow for a mandatory period of community consultation through the EIA process, these documents are often extremely technical and lengthy, causing communities to endure the difficult challenge of comprehending the

information in addition to advocating for their specific municipality needs. If Iberdrola hired a nearby organization involved in the EIA process to act as an intermediary between local communities and the company, this could help increase local communities' leveraging power and give them greater representation, allowing for a more equitable process of consultation and negotiation with Iberdrola. This would improve the social and procedural aspects of energy localization, as well as promote greater understanding of the environmental risks and preventative measures implemented through Iberdrola's wind energy projects.

**Moving Forward**

Energy localization through wind farms is extremely important as the world engages in a renewable energy transition. This concept aims to promote an energy transition that is fair and equitable, particularly for the local communities that are most directly affected by the energy facilities that are driving this transformation. From a global perspective, it is valuable that companies like Iberdrola help reduce large-scale fossil fuel consumption and provide more green energy sources. However, the energy transition cannot be deemed sustainable if it is solely focused on environmental, decarbonization targets. Based on Martin's (2002) virtue matrix and Szemen & Boyer (2017) concept of a defensive energy transition, Iberdrola's energy localization initiatives are largely compliant and defensive, acting within the system of profit and capitalism, and not transformative, implying a true just transition. While reimagining a new system to facilitate a just energy transition better remains a collective challenge among global and local actors, the recommendations outlined in this chapter serve as short-term, tangible ways that companies within the system can implement to improve the strategic and structural frontiers, seeking to enhance sustainability performance and positively impact local communities.[37]

Looking ahead, the energy transition can only be truly sustainable if it considers and recognizes the social challenges that result from this shift. Impacts to local communities that are most disadvantaged and negatively impacted by these systems must be redressed, and companies must provide compensatory solutions to improve the lived experiences of these people. Providing energy localization initiatives through all energy systems moving forward will never be able to fully compensate for or solve the damages wrought and challenges posed by large-

[37] Note the concept of the strategic and structural frontiers from the virtue matrix earlier in this chapter (Martin, 2002).

scale energy companies and systems. However, private actors' ability to implement energy localization initiatives would help to acknowledge the damages, reconcile with local communities, and aim to improve equitable outcomes in the energy sphere. While energy localization implementation remains a daunting task for many large-scale energy companies like Iberdrola that are involved in promoting a just energy transition, I am optimistic that adhering to these energy localization insights and recommendations could help positively impact communities reaping the consequences of these energy systems moving forward. Iberdrola can find that distinguishing itself from other competitors through deep and voluntary localization could generate reputational value for the firm while best delivering a just transition to sustainable energy.

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## Appendix A: Interviews and Email Exchanges

Ábrego conversation
Apecyl conversation
EREN conversation
FCB conversation
Iberdrola director conversation 1
Iberdrola director conversation 2
Mesa Eólica conversation 1
Mesa Eólica conversation 2
Ribering conversation
UBU conversation

Note: To confirm with the General Data Protection Regulation (GDPR), full names are omitted.