



**atelier**  
Positive Energy Districts

**AmsTERdam BiLbao ciTizen drivEn smaRt cities**

## **Deliverable 7.1: Citizen and stakeholder engagement plans**

### **WP7, Task 7.1**

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## Abbreviations and acronyms

Acronym	Description
AFC	Age-Friendly Cities
AUAS	Amsterdam University of Applied Sciences
COB	City of Bilbao
DPIA	Data Privacy Impact Analysis
DUSI	Sustainable and Integrated Urban Development
IED	Instituto Europeo di Design
KIBS	Knowledge Intensive Business Services
KPI	Key Performance Indicator
NGO	Non-governmental organisation
RES	Renewable Energy Resources
SDG	Sustainable Development Goal
SEAP	Sustainable Energy Action Plan
WHO	World Health Organisation
ZAWP	Zorrotzaurre Art Work in Progress

## Executive summary

This report, the first deliverable of Work Package 7 of the ATELIER project, presents citizen and stakeholder engagement plans for the project's two Lighthouse Cities of Amsterdam and Bilbao. It sketches a theoretical framework on participation and engagement in the energy community, including the relevance of energy citizenship and energy communities as concepts. This context is then applied to the context of PED developments in Amsterdam and Bilbao. The document describes the geographical, demographic and social contexts of both cities, especially focusing on the PED demo sites of Buiksloterham and Zorrotzaurre. It thereby presents the results of the social analyses conducted in both areas, mapping local stakeholders and communities based on desk research and through real-life dialogues with key actors in the area. What drives current and future residents in their energy-related behaviour (or lack thereof)? What topics have their priority, and where do their needs lie? In particular, what is their involvement – if any – in the energy transition?

The document sketches on-going projects, communication channels, physical locations (e.g., community centres), etc. that can be of relevance to the citizen engagement process in Buiksloterham and Zorrotzaurre respectively, complemented with citizens' and stakeholders' current views regarding the energy transition specifically. It brings these findings into the implementation process of ATELIER's demonstrators, both on the level of PED technologies and the broader local energy transition. The social analyses result in concrete engagement activities and interventions to be conducted during the course of the project. These interventions will then reinforce a bold energy vision at city level and seek to spread and scale the citizen-driven PED concept to other contexts.



## 0. Introduction

This deliverable sets out the approach for citizen and stakeholder engagement within the ATELIER project. As a project, ATELIER wants to achieve significant ecological and social impact by establishing ‘**Positive Energy Districts**’, i.e., districts in which building blocks together produce more energy than they consume, supported by the people that inhabit these buildings. ATELIER does so in neighbourhoods in eight different European cities.

In ATELIER, we understand citizen and stakeholder engagement as an interactive and reiterative process, brought to life by practices of co-creation and participation. This holistic approach is reflected in the current deliverable, in which the specific engagement plans for the PEDs in Bilbao and Amsterdam are based in a broader and dynamic contextual understanding of the energy transition, whilst firmly rooting in the pre-established project goals.

In the remainder of this chapter, the aim and scope of the ATELIER project are summarised (Sections 1.1-1.3). Chapter 2 provides the theoretical and strategic framework for citizen and stakeholder engagement. This springs from *the social understanding of the energy transition* ATELIER maintains, i.e., as a multi-level phenomenon in which social dynamics play a key role and where ‘energy citizenship’ and ‘energy communities’ are normative objectives. This is discussed in Chapter 2, ‘Overall approach’, where we set out the high-level conceptualisation of citizen and stakeholder engagement in ATELIER.

The ATELIER Lighthouse Cities are presented at length in Chapter 3 and Chapter 4. These chapters include the social analyses and resulting strategies for engagement and participation for Amsterdam and Bilbao respectively. Chapter 5 then provides summarising and concluding remarks, with Chapter 6 transforming these into recommendations for Fellow Cities. Chapter 7 mentions deviations to the plan, and the report finalises with Chapter 8, possible outputs for other Work Packages.

### 1.1. The ATELIER project

ATELIER, part of the European Commission’s Horizon 2020 Smart Cities and Communities group of projects, will develop Positive Energy Districts (PEDs) in eight European cities. Coordinated by the City of Amsterdam, the project officially runs from 2019 until 2024 and is a collaboration of thirty partners in eleven countries in Europe. Amsterdam and Bilbao are ATELIER’s two Lighthouse Cities that have committed to setting up PEDs, or districts that have a net higher energy production than consumption, integrated into local energy communities and with enormous carbon emission cuts as one main outcome. Bratislava, Budapest, Copenhagen, Krakow, Matosinhos, and Riga are the Fellow Cities that will replicate successful solutions and test PED implementations for feasibility. Together with district users, ATELIER will showcase innovative solutions that integrate buildings with smart mobility and energy technologies to create a surplus of energy and balance the local energy system.

ATELIER aims to put citizens at the centre of its activities in order to create true citizen-driven PEDs. This report focuses on stakeholder and community engagement in the two Lighthouse Cities. Furthermore, the project’s Innovation Ateliers are explicitly dedicated to strengthening the local innovation ecosystem and thus catalysing conversation between stakeholders at different levels, ranging from industry and investors to local companies and residents. The project thereby considers the particular geographic, economic, cultural, and social contexts

that enhance the development of PEDs in varying districts and cities. ATELIER's ultimate aim is for more 'positive' cities to arise all over Europe, highlighting the potential of citizens and communities as active players in the energy system (as 'energy citizens' and 'energy communities').

## 1.2. ATELIER's Lighthouse Cities

Within ATELIER, Amsterdam and Bilbao as Lighthouse Cities have a role model function. They have committed to generate a total energy surplus of 1,340 MWh of primary energy, prevent 1.7 kilotons of CO<sub>2</sub>-emissions, and invest EUR 156 million (EUR 86 million and EUR 70 million respectively) to realise their PED goals. Both cities have strong ambitions regarding carbon emissions reduction, and ATELIER can contribute to these ambitions by developing PED solutions and consequently expanding on this experience. The designated areas in Amsterdam and Bilbao, Buiksloterham and Zorrotzaurre respectively, share certain characteristics. Both are former industrial and harbour areas that are recently seeing urban renewal after years of gradual degeneration. Their mix of experimental economic and cultural activities attracts new resident groups, whilst industrial heritage remains an active part of the neighbourhoods' character. The chapters on each Lighthouse City will provide more detail on both Buiksloterham and Zorrotzaurre.

## 1.3. WP7 and its links with other work packages

Work Package 7 'Citizen and Stakeholder Engagement' (WP7) organises citizen and stakeholder engagement across the project. With the citizen and stakeholder engagement plans, formulated in this document, partners in both Amsterdam and Bilbao aim to increase energy awareness and to empower residents as active players in their local energy system, thus addressing the social dimension of the energy transition upfront.

WP 7 consists of several tasks. The current report is a result of the first task (T7.1) of WP7, in particular subtasks 7.1.2 and 7.1.3: the social analysis of the demonstrator areas and the engagement with local stakeholders.

The activities in WP7 link with most other WPs in the project. The closest strategic and operational links are with WP3 (Innovation Ateliers) and WP10 (Dissemination, Communication & Exploitation). Other evident links are with the demonstrator work packages (WP4 and WP5) and the Fellow Cities (WP6). Through the monthly Steering Committee meetings, WP7 coordinates its activities throughout the project, ensuring collaboration with the remaining WPs.

The following table **Fout! Verwijzingsbron niet gevonden.** lists relevant project partners to WP7 and depicts the main contributions from project partners in the development of this deliverable.

**Table 1. Contributions of Partners**

Partner name	Role	Contributions to this deliverable
Waag	Lead of WP7	Main author
DEUSTO University	Main partner representing Bilbao. Lead of Task 7.4 'Citizen science'	Co-author. Responsible for Chapter 4: Lighthouse City Bilbao
Amsterdam University of Applied Sciences	Lead of Task 7.3 'Behavioural aspects and energy citizenship'	Contributor
Chief Technology Officer (City of Amsterdam)	Lead of WP3 'Innovation Ateliers'	Informal reviewer
City of Amsterdam	Project coordinator	Informal reviewer
City of Bilbao	Lead of WP5 'Bilbao demonstrator' including Task 5.8 'Co-innovation processes'	Informal reviewer
Bilbao Ekintza (third party of COB)	Collaborating with COB and DEU in the definition of the participatory mechanisms	Informal reviewer
Steinbeis-Europa-Zentrum	Lead of WP 10 'Communication, dissemination and exploitation'	Formal reviewer
City of Copenhagen	Fellow city	Formal reviewer

#### 1.4. Purpose and target group of this deliverable

The purpose of this deliverable is to provide an understanding of the local contexts in both Lighthouse Cities' demonstrator areas and to lay out an initial engagement strategy with likely interventions to actively involve these residents. This deliverable is aimed both at project partners and project stakeholders, such as municipal staff and stakeholders within the PED pilot areas. Within the project, it will serve as a basis for several WP7 trajectories and will thus be spread and its contents evolved internally.



## 2. Overall approach:

### A social appreciation of citizen and stakeholder engagement in PED development

The energy transition implies a societal transition that changes the way we live, play, work, consume and move. For example, citizens become ‘prosumers’ when they trade their surplus energy to the grid, assisted by digital technologies. Energy prices may start oscillating as the transition towards distributed energy generation progresses. The deployment of renewable, distributed energy technologies such as photovoltaics, heat systems and wind turbines in the residential environment raises questions of acceptance and ownership. Some technologies are minute and unobtrusive, others are very visible and have considerable impact on our lives. At least as much as this is a challenge, it is an opportunity. ATELIER partners are convinced the deployment of PEDs, and the energy transition in general, could ‘empower’ people to become ‘energy citizens’ within ‘energy communities’. In this social reading of the energy transition, citizen and stakeholder participation are key.

This chapter serves to provide an understanding of, and a rationale and framework for, citizen and stakeholder participation within the positive energy ambitions of ATELIER. **Section 2.1** first sets out the overall objectives and rationale for citizen participation and stakeholder engagement in ATELIER. **Section 2.2** introduces the top-level (research) questions that the WP7 partners have identified to drive the citizen and stakeholder participation in ATELIER, **Section 2.3** moves on to discuss the Participation Ladder as main heuristic for (citizen) participation. **Section 2.4** then moves from ambition and strategy to ‘tactics’: it presents a scaffolding for the practical side of participation in the project. Lastly, **section 2.5** discusses monitoring and evaluation, linking to the dedicated WP 9.

#### 2.1. Main objectives of participation and engagement in ATELIER

WP7 focuses on citizens and local stakeholders as active or passive participants in the energy transition. It considers them as potential users of ‘smart’ urban solutions and technological innovations, in particular considering the way these solutions fit into the existing social fabric of the neighbourhood. The success of implementing PEDs will not only depend on the availability of technical solutions but also on social, political, legal and business advances. In particular, research and practice tell us that the energy transition is a multi-level phenomenon, involving cultural and societal aspects alongside planning and finance, for example. The transition to a PED unavoidably involves a new role for local residents, the details of which are yet to emerge.

Therefore, WP7 firstly aims at **facilitating participation in the deployment of PED services and technologies**, aligning them with the needs and realities of the users. How do residents envision their local (positive) energy system going forward, and what challenges play a role with respect to usability, control and governance? Through co-creation processes and citizen science methods, ATELIER ensures that a citizen- and community-centred perspective is included in interventions and actions implemented in the project.



WP7 secondly aims to **develop general insights on effective and transformative citizen participation and stakeholder engagement** in the development of PED technologies and other municipal energy transition interventions. This contributes to an understanding of citizen and stakeholder participation in the energy transition more broadly as well as to the replication of PED services and technologies in other cities and countries, where the social context will be different from that of Amsterdam or Bilbao. The main lenses that will be used here are the notions of ‘energy citizenship’ and ‘energy communities’ (see Box below), which herald empowerment of those citizens and communities as co-designers of the energy transition (predominantly in their private and local contexts, but also at larger scales).

Of course, both objectives are intertwined: the first objective could be regarded as the applied version of the second, reflective one. In the next section, we translate these connected aims into research questions.

### Definitions of energy citizenship and energy communities

*In the context of ATELIER, **energy citizenship** is defined according to a definition formulated by human geography professor Patrick Devine Wright in 2007. He describes energy citizenship as “a view of the public that emphasizes awareness of responsibility for climate change, equity and justice [...] and the potential for (collective) energy actions”.<sup>1</sup> ATELIER partners are currently further elaborating the concept of energy citizenship in order to make the terms better tailored to the project’s purposes.<sup>2</sup>*

*Vernay & Sebi (2020) define ‘**energy communities**’ as “groups of citizens, social entrepreneurs and public authorities who jointly invest in producing, selling and managing renewable energy”.<sup>3</sup> In ATELIER, we are also invoking the social and cultural aspects of communality in the notion, involving ‘software’ as much as ‘hardware’.*

## 2.2. Guiding questions

There are a number of research questions that guide the formulation of our methodology and our participation and engagement plans. As ATELIER aims to empower residents as active players in their local energy system, the main research question driving the participation activities is presently formulated as:

<sup>1</sup> Devine-Wright, P. (2007) ‘Energy Citizenship: Psychological Aspects of Evolution in Sustainable Energy Technologies’ in Devine-Wright, P. *Governing Technology for Sustainability*. Routledge.

<sup>2</sup> Olivadese, R., Alpagut, B., Pineda Revilla, B., Brouwer, J., Georgiadou, V., Woestenburg, A., & van Wees, M. (2020). ‘Towards Energy Citizenship for a Just and Inclusive Transition: Lessons Learned on Collaborative Approach of Positive Energy Districts for the EU Horizon2020 Smart Cities and Communities Projects.’ *Proceedings*, 65(1).

<sup>3</sup> See Vernay, A. & Sebi, C. (2020). ‘Energy communities and their ecosystems: A comparison of France and the Netherlands.’ *Technological Forecasting and Social Change*, 158(10).

*How can citizen participation and stakeholder engagement in a smart city / PED context be shaped so that these processes add to citizens' and stakeholders' empowerment as energy citizens and communities?<sup>4</sup>*

This overarching topic will be addressed by working from applied research questions, such as the following:

- What different points of view with regard to energy transition are present in the neighbourhood and how are these individuals, stakeholders or communities represented?
- What level of participation do project partners and citizen communities define as preferred for various stages and parts of the PED development?
- How is emancipatory citizen engagement and participation organised effectively on a neighbourhood level?
- What do citizens and local communities surrounding the PED demo sites need in order to be capable of either participating in the development of a PED, replicating its approaches and technologies, or benefiting from the ripple effects?
- How can an urban development plan that is in an advanced stage respect and incorporate the energy needs and wishes of (future) residents?
- How can the design of PED technologies be aligned with previous existing community activities and needs in the area surrounding the PED demo sites? How does it contribute to these areas/communities?

Fully answering these questions requires continued learning and reflection over the coming years. Here, they serve to explain the WP7 ambition and as a starting point for the activities we outline in this document. It also requires intricate collaboration between partners, both within WP7 and with other work packages. This will be outlined in detail within the chapters for both Lighthouse Cities.

### **2.3. Participation as method in achieving a sustainable energy transition**

Citizen participation refers to the act of taking part in issues of public concern. It involves a wide range of different actors that shape the public sphere. Within the context of ATELIER, we refer to the participation ladder<sup>5</sup> as used by the 'Overlegorgaan Fysieke Leefomgeving',<sup>6</sup> which is based on a handbook of Danny Burns and colleagues, whose research focuses on participatory learning for social change.<sup>7</sup>

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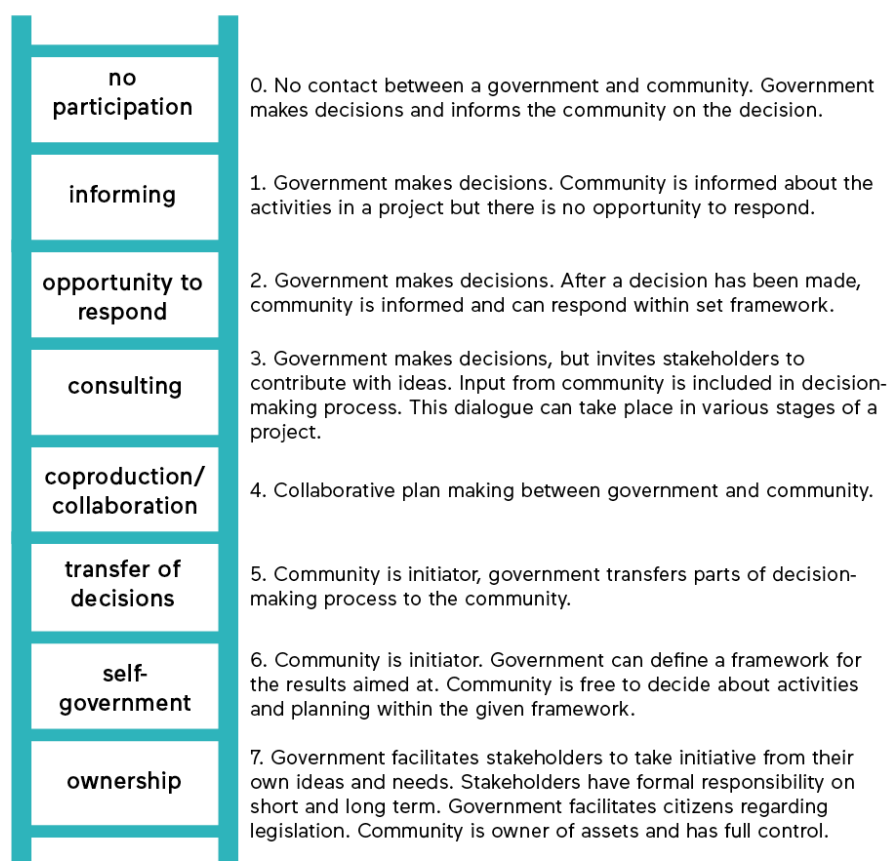
<sup>4</sup> In using energy citizenship as a lense, we seek to foreground the energy dimension of citizenship, but do not limit our inquiries to energy-savvy citizens.

<sup>5</sup> In 1969 Sherry Arnstein created a hierarchical ladder system of eight rungs to illustrate levels of citizen participation. The participation ladder of Burns e.a. is based on Arnsteins ladder.

<sup>6</sup> Overlegorgaan Fysieke Leefomgeving (2021). *Empowerment Raamwerk voor participatie*.

<sup>7</sup> Burns, D., & Heywood, F. (2004). *Making community participation meaningful: a handbook for development and assessment*. Policy Press.

The ladder in Figure 1 describes the different levels of participation in policy making or a project and usually implies cooperation between a government and communities. The ladder is also useful to guide stakeholder engagement.



**Figure 1. Participation ladder<sup>8</sup>**

In the context of ATELIER, we regard the ATELIER project partners as representing the former role ('government') and the local communities of citizens and organisations in the PED districts as representing the latter role ('community'). Nonetheless, reality is more complex, as is illustrated in the social analyses presented in the following chapters.

The above participation ladder acknowledges the following two points which are relevant for ATELIER, as these make participation and engagement truly meaningful for all parties:

1. Participation does not always mean that a government is initiator and communities are participants. It can be the other way around and often both are happening at the same time. This is also true for the PED districts, where municipalities and developers take the lead in developing PED technologies, but citizen communities take their own initiatives or are represented in energy cooperatives with pre-existing agendas.

<sup>8</sup> Ladder adapted from Overlegorgaan Fysieke Leefomgeving and edited by Waag. Source: Overlegorgaan Fysieke Leefomgeving (2021). 'Empowerment Raamwerk voor participatie. Toepassing in de context van het aardgasvrij maken van wijken.'

2. The type of cooperation can change over time and vary for different stages and different parts of a project. This will be the case in ATELIER, as some aspects of the energy transition require more decision-making from a government or technical developer whilst other developments will benefit from close cooperation with citizen communities and other stakeholders.

Participation initiators will have to consider at each stage of development which level of participation of which actors suits the question at stake.<sup>9</sup> The following paragraph discusses how the nature of the question at stake provides insight in what type of participation is suited. When the relevant kind of participation for the matter at stake has been confirmed – this can range from no participation, to informing to ownership by the community – involved parties consider whether they can and want to fulfil the roles identified with that type of participation. If certain knowledge or other resources are lacking to fulfil a role that an actor wants to fulfil, that is a problem which needs to be addressed. Take for example a lack of knowledge or time resources with certain stakeholders to formulate their needs whereas their perspective is needed to design a relevant solution.

By taking these steps into account in the citizen participation and engagement plans, we aim to ensure that the PED development is an empowering, meaningful process. Thereby, ATELIER is an opportunity to place citizens at the core of the energy transition, be it through a combination of both community- and government-facilitated activity. As such, residents can take on a more active role, co-managing with government, relevant stakeholders and third parties.

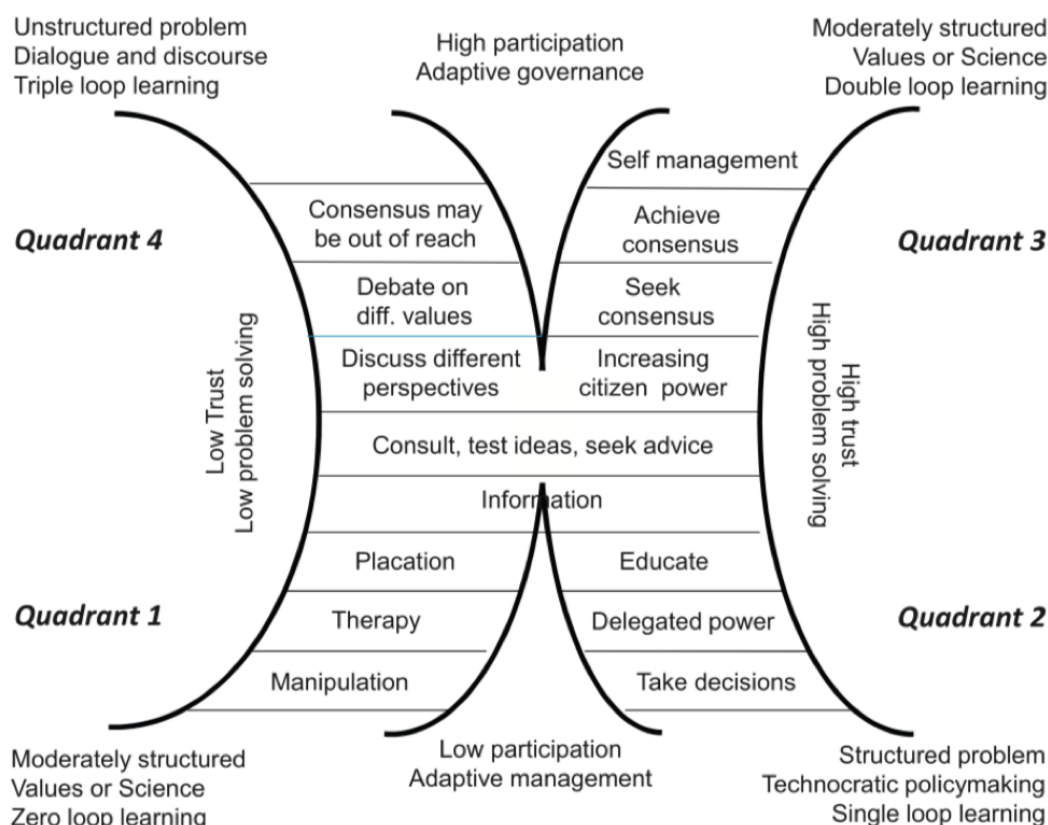
### ***Problem solving and participation on the appropriate level***

In 2015, Hurlbert and Gupta proposed a ‘split ladder of participation’ to conceptualise the relevance and impacts of participation for different types of problems.<sup>10</sup> The main goal of their tool is to assess when participation is necessary and to what extent. In contrast to Arnstein’s linear ladder, they argue that *different levels of engagement will be appropriate* in different contexts. This depends on the *nature of the policy problem* that wants to be tackled, the *type of governance* required, and the *nature of the learning* needed. In all, participation levels seldomly behave like points along a linear axis but gravitate towards different patterns according to the variables just mentioned (Figure 2).

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<sup>9</sup> Which level of participation *suits* the question at stake is separate from the level of participation that is legally mandatory (such as public hearings) e.g., in building development.

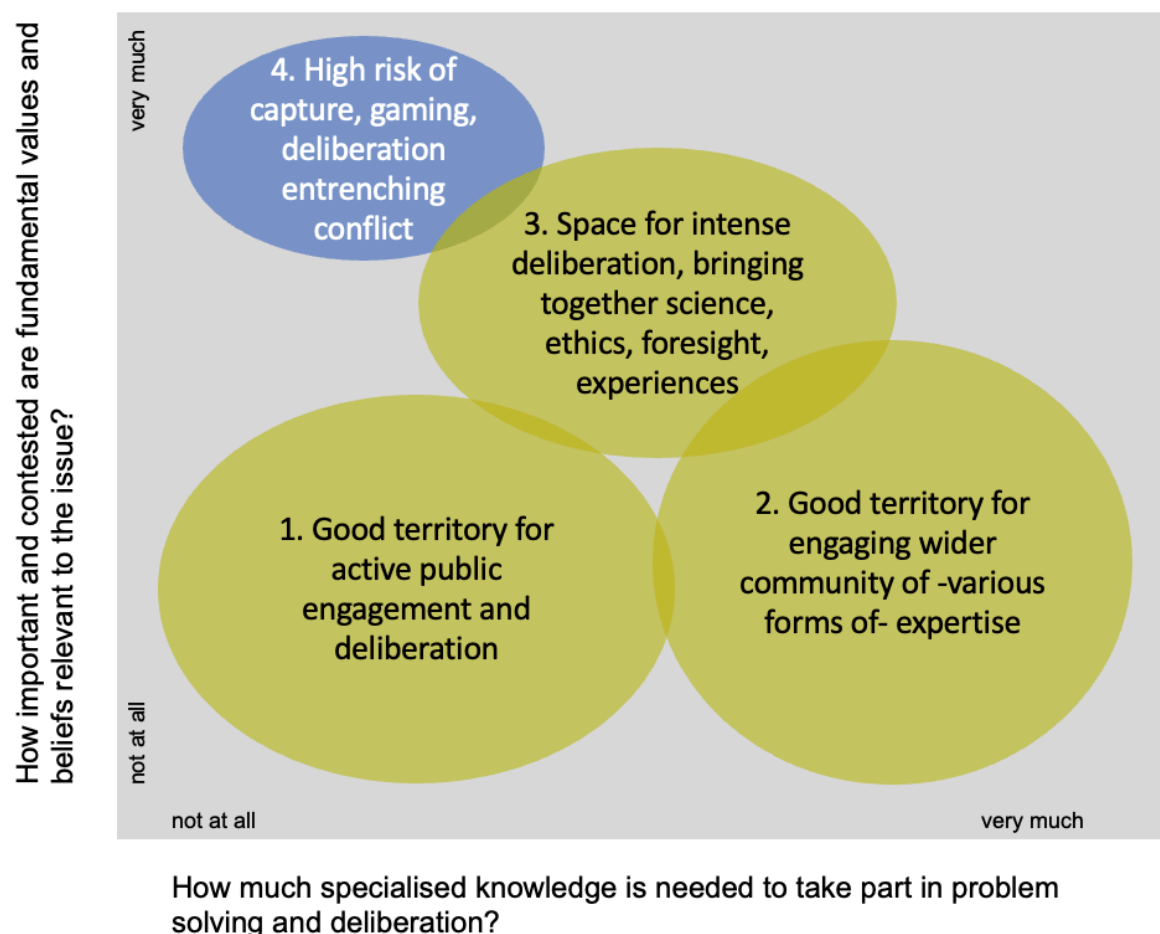
<sup>10</sup> Hurlbert, M., and Gupta, J. (2015). ‘The split ladder of participation: A diagnostic, strategic, and evaluation tool to assess when participation is necessary’. *Environmental Science & Policy* 50.



**Figure 2. The split ladder of participation by Hurlbert & Gupta. Replicated with permission by the authors). Note that the order of participation levels is reversed compared to Figure 1.**

The four quadrants correspond with varying levels of stakeholder agreement on the values at stake and with varying levels of expert knowledge that is needed for people to take part in problem solving - or stated differently, high or low levels of shared knowledge. Problems in the top left quadrant correspond with a low level of shared knowledge and a low level of agreement of the values that are at stake in the problem. A typical example of this type of problem is a 'wicked problem' like climate change.

The split ladder of participation translates into varying types of participation and deliberation that suit a problem, as illustrated in Figure 3.



**Figure 3. Belief and knowledge spaces<sup>11</sup>**

Designing and developing a PED is a complex undertaking that consists of many questions and challenges. Isolated questions within ATELIER may well reflect policy and innovation problems that are relatively easy to govern, and where light forms of participation and deliberation are relevant (e.g., bubbles 1 and 2 in Figure 3).<sup>12</sup> At the same time, the deployment of PEDs is situated within the larger debate on energy transitions, which is non-linear and contested. Some questions within ATELIER require participation of different stakeholders and perspectives. Think for example of the question what the role of energy communities is in PED developments and the energy transition more broadly. This corresponds to the type of deliberation and participation described in bubble 3.<sup>13</sup>

<sup>11</sup> Edited by Waag, adapted from Mulgan, G. (2015). 'Designing digital democracy: a short guide', Nesta. Available at [www.nesta.org.uk/designing-digital-democracy-a-short-guide/](http://www.nesta.org.uk/designing-digital-democracy-a-short-guide/)

<sup>12</sup> The Innovation Ateliers coordinated by Work Package 3 are examples of 'bubble 2' engagement.

<sup>13</sup> Here, the degree of empowerment of any stakeholder depends more strongly on how early in the development process they are allowed to participate, the degrees of freedom they have, and whether they are equipped with the means to do so. For example, are these stakeholders invited to shape the ambition levels and direction? Can there be more than one direction? Are they invited to suggest problems/needs to be solved/met? Are they invited to test solutions developed by others? Or are they



WP7 makes sure engagement activities acknowledge the nature of different problems at hand in ATELIER and link these to the appropriate levels and types of engagement. Since the scope of ATELIER is limited in time, we mostly focus on the problems that require a type of participation of the three yellow bubbles. These correspond approximately to three engagement levels, elaborated in the following paragraph.

## 2.4. Towards concrete engagement interventions

The objectives, questions and methodological underpinning discussed above require translation into concrete *engagement interventions*. These interventions are composed of attributes, which will all be tailored to the locations and contexts in which we are working (see **Fout! Verwijzingsbron niet gevonden.** and **Fout! Verwijzingsbron niet gevonden.**). This report is structured according to these three steps: Amsterdam and Bilbao in their chapters present their initial hypotheses and questions (based on guiding questions in 2.2), describe the main target groups and propositions from the social analyses, and suggest accordingly types of engagement activities and interventions.

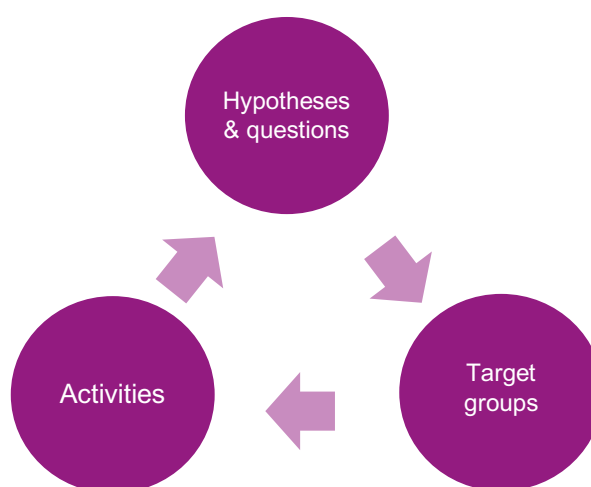
**Table 2. General attributes of engagement interventions.**

A	<b>Hypotheses and questions</b> to be tested/answered, informed by (previous) research and input from partners and stakeholders. Guiding questions were formulated in section 2.2.
B	<b>Target groups</b> for the engagement interventions, as mapped through <b>social analyses</b> in both cities. These may include local entrepreneurs, real estate owners, residents, local collectives and networks, and citizens in general.
C	<b>Activities</b> such as webinars, citizen dialogues, surveys, workshops, adhering to the appropriate <b>engagement level</b> (see Table 3).

Formulating each is an iterative process (Figure 4). The current deliverable is therefore to be seen as a snapshot, with questions, audiences and activities being subject to further definition and clarification.

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just asked whether they will accept a smart meter in their home and give access to their consumption data for others to use?



**Figure 4. General attributes of engagement interventions.**

In planning the **activities**, we distinguish three levels of engagement activities, which are related to the different participation levels discussed in the previous section. Depending on the problem/question at hand, one of these levels is most relevant.

**Table 3. Engagement levels in ATELIER.**

*Corresponding to ‘belief and knowledge spaces’ 1-3 in Figure 3 and to different levels of the participation ladder*

I	<b>Low-barrier engagement:</b> walk-in events for residents, neighbours, local entrepreneurs; or a street festival on the energy transition. These activities correlate with level 1 and 2 on the participation ladder (section 2.2), although we seek co-production by local stakeholders (level 4) to drive these events.
II	<b>Participatory events and interventions:</b> those events that feature light forms of co-creation, such as community evenings, one-day competitions such as hackathons, singular Innovation Atelier events, and light-weight citizen science. Participation is more substantial than above, but probably lasts for one session only. These activities correlate with participation level 2 and 3 of the participation ladder (section 2.2).
III	<b>Co-creation and co-design trajectories:</b> in-depth, longer duration participation where users are designers and many disciplines and stakeholder types are present or represented. These activities correlate with participation level 3 and 4 of the participation ladder (section 2.2).

The engagement topics and activities are further defined for Amsterdam and Bilbao in Chapters 3 and 4 and will continue to be developed throughout the project.



## 2.5. Monitoring and evaluation

In ATELIER, we build on best practices to develop an innovative approach to monitoring using a mix of quantitative indicators and qualitative dynamic evaluation methods.

Participation is not a goal in itself, but a means to engage stakeholders and give them insights and agency while living in, and contributing to a PED. It is important to monitor participation and engagement, as an important means to reach the overall goals of the project. But it can be an elusive factor to measure. Nonetheless, it is important to set and communicate clear goals, demonstrate outcomes, and assess our activities related to participation, engagement, and co-creation in ATELIER. Therefore, we introduce static as well as dynamic KPIs (Key Performance Indicators) for this work package. Focus is on measuring three main factors related to participation in ATELIER. These include:

1. Technical community indicators (quantitative research)
2. Vision and impact (mix of qualitative and quantitative research)
3. The pulse, feeling, and reaction (qualitative research)

In ATELIER, as part of WP9, we are in the process of defining four performance indicators to monitor the social impact and citizen engagement:

- Improvement of quality of life for the PED inhabitants
- Progress towards energy citizenship and energy communities
- Impact on habits and lifestyle
- Impact on residents' awareness of, and involvement with ATELIER: 'feeling the pulse'.

Research methods (interviews, Q-sort, surveys) to gather data to monitor these performance indicators will throughout the project interact with the citizen and stakeholder participation activities.



### 3. Lighthouse City Amsterdam

#### 3.1. General area description

Amsterdam, the well-known capital of the Netherlands, has committed to climate neutral developments for the past decade. This is operationalised through a pledge to sustainable energy action by the Covenant of Mayors in 2015 and through the city's recent Regional Energy Strategy (RES) and Roadmap Amsterdam Climate Neutral 2050. In addition, Amsterdam's recent Circular Strategy 2020-2025 bases itself largely on the Amsterdam City Doughnut as proposed by Kate Raworth, a model for economic development within the ecological and social limits of our planet and society.

Buiksloterham is one of the pioneering neighbourhoods in Amsterdam's energy and circular transformations. It is situated in the north of Amsterdam and specifically in the 'Old North' district ('Oud-Noord'), a formerly working-class and industrial area that is now rapidly redeveloping. The district comprises five old neighbourhoods, three demarcated areas for yet-to-be developed neighbourhoods, and the new neighbourhoods of Overhoeks, NDSM and Buiksloterham.<sup>14</sup> These latter three are termed the North bank of the IJ river ('Noordelijke IJ-oever') transitioning area, previously known for its ship-building industry. In 2003, the municipality set up a 'Masterplan Noordelijke IJ-oever', mainly proposing the construction of a large number of homes to meet the considerable housing shortage in the city and outlining the redevelopment of the area. Figure 5 is a depiction of the North bank of the IJ area. Other bordering neighbourhoods have similarly been designated as redevelopment area by the municipality, including the Volewijk neighbourhood with its Van der Pekbuurt. The latter is one of the first Dutch urban districts to transition towards heating and cooking free of natural gas, a lengthy and challenging citizen engagement process that is still running. Recently, the North



Figure 5. North bank of the IJ river.  
(source: Masterplan, 2003)



Figure 6. Buiksloterham area on an aerial photo of Amsterdam

<sup>14</sup> <https://www.amsterdam.nl/bestuur-organisatie/stadsdelen/gebiedsgericht-werken/gebiedsplannen-2021/noord/oud-noord/>

district also published its newest Old North development plan for urban renewal.<sup>15</sup> Figure 6 shows the Buiksloterham area demarcated on an aerial photo of Amsterdam. The area officially comprises two smaller neighbourhoods that have now practically been merged under the umbrella of (larger) Buiksloterham: the part to the south of the canal is Buiksloterham, and the part to the north is Papaverweg.

The above is thus the context within which Buiksloterham is situated. With its high municipal ambitions for housing, the entire Amsterdam North district is quickly evolving. Buiksloterham itself is an area that has traditionally known an abundance of industrial activity. After the dismantling of large-scale heavy industry in the 1970s and 1980s, formerly industrial sites were in part filled up with new, lighter forms of economic activity. From the 1990s on, Buiksloterham gradually becomes of interest within the creative sector, as artists and companies such as architecture firms establish themselves within the area. From 2003 onwards it becomes explicitly distinguished as area to meet the large housing demands, mounting into a construction ambition of 8,575 residences by 2030. The former brownfield is additionally labelled as highly promising as business incubation area in the Amsterdam Old North urban renewal plan (2019).

As a result, Buiksloterham is progressing from an industrial, non-residential area to a neighbourhood bustling with residential and commercial activity. In 2010, the first self-build lots are put up for sale<sup>16</sup>; currently there are about 1,900 residences in the area. The abundance of creative and cultural activity contributes to Buiksloterham's discourse of renewal. The focus on the value of creative industry is furthermore formalised on a municipal level, such as in the '*Clusterstrategie Creatieve Industrie 2014-2020*' policy (Amsterdam Economic Board, 2014). Simultaneously, there is a growing group of pioneering sustainability initiatives that has settled in the area alongside the creative industry, including innovation bureaus like Metabolic and a handful of architects that focus on sustainable and circular building. Increasingly, the

neighbourhood leads by setting up circularity initiatives, a reputation that it is also confirmed top-down. This culminates in the 2015 Manifesto Circular Buiksloterham, signed by the municipality housing corporation De Alliantie, water company Waternet and over twenty local parties. The manifesto describes Buiksloterham as a 'living lab' for experiment and research for the circular economy, aiming to eventually create a self-sustaining, circular and socially coherent neighbourhood. Buiksloterham is thus both presented as a creative hub and



Figure 7. Manifesto 'Circular Buiksloterham', cover page.

<sup>15</sup> To be downloaded (in Dutch) through <https://www.amsterdam.nl/bestuur-organisatie/stadsdelen/gebiedsgericht-werken/gebiedsplannen-2019/gebiedsplannen-noord/oud-noord/>

<sup>16</sup> This process runs through the municipality; self-build projects submit a form that details their plans and specifically focuses on the extent of sustainability and circularity, and the City then selects individual projects. Projects in Buiksloterham include both individual self-builders ('particulier opdrachtgeverschap', PO) and self-builders that have joined in a collective ('collectief particulier opdrachtgeverschap', CPO).

as an urban ‘playground’ for sustainability and circularity innovation, while simultaneously aiming to maintain its original industrial character.<sup>17</sup> In recent years, however, Buiksloterham shows to be maturing into a district with a more conventional housing stock and a more conventional socio-cultural profile. Some of the former pioneer vibe is giving way to the mundane dynamic of mass real estate development and commercial service delivery. In conjunction with the metamorphosis of larger Oud-Noord (from heavily working-class to mixed demographics, and with rising house prices to boot), Buiksloterham finds itself in the midst of a debate about transformative urban area development and different values and interests to take into account. Future residents of ATELIER blocks Republica and Poppies will need to find a way to manoeuvre this social landscape – a process that ATELIER can play an active role in. It is thereby interesting to consider the different framings of these blocks: where Poppies markets their apartments for their energy resilient, climate adaptive and circular character, Republica rather emphasizes its urban aesthetic – albeit enhanced by the circular building materials.<sup>18</sup>

### 3.2. ATELIER ambition

Within Buiksloterham, Amsterdam’s PED will consist of six demo sites, including two newly constructed, mixed-use blocks: Republica and Poppies (16,000 m<sup>2</sup> and 6,000 m<sup>2</sup> respectively). These building blocks will deploy a number of PED solutions, such as smart microgrids (to be eventually connected to other existing nearby microgrids), an e-mobility hub, and large-scale solar PV. Other locations in Buiksloterham that will most likely be part of the energy market platform are creative workplace De Ceudel, residential community Schoonschip, Waternet’s (energy and resource) recovery station, and energy cooperative PEK Ecostrum. An Energy Market Platform will enable residents to trade energy peer-to-peer or community-to-community, eventually combining existing initiatives and new blocks to form one larger Buiksloterham ‘energy community’ in which surplus energy is optimally traded. These innovations are facilitated through a special derogation from the Dutch energy law, through which the PED is exempted from legal obstacles that could hamper the experimentation with a like energy system (the foremost obstacle being the obligation that every household be separately connected to the municipal energy grid, which encumbers local smart grid operations). This derogation applies to Schoonschip and Republica; Poppies will implement PED technologies without featuring a single connection to the grid.

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<sup>17</sup> Consult for an in-depth analysis of the mixed urban renewal of Buiksloterham: *The heritagisation of post-industrial redevelopment and social inclusion in Amsterdam* (Van de Kamp, 2019) or *Recreative City: Amsterdam, Vehicular Ideas and the Adaptive Spaces of Creativity Policy* (Peck, 2012).

<sup>18</sup> Also see their respective websites: <https://superlofts.co/project/poppies-buiksloterham/> and <https://www.republica.amsterdam/>.





Figure 8. Map of all allocated lots in Buiksloterham shows Poppies (lot 3d, left circle) and Republica (lot 14, right circle). (Source: [amsterdam.nl/buiksloterham](https://amsterdam.nl/buiksloterham))



Figure 9. Map of the six PED pilot locations in Buiksloterham.

Regarding WP7, the main goal is to engage existing communities and future residents of Buiksloterham with the PED developments in their neighbourhood, in order to eventually co-deliver the energy solutions with them. Buiksloterham-based organisation Spectral plays a key role in the technical development of the specific PED solutions in the area, for which they are also in contact with local residents. This makes them a crucial project partner for the citizen engagement process.

Furthermore, WP7 includes a sub-task on energy behaviour (T7.3), which seeks...

- 1) ... to identify the different levels of 'energy citizenship' among different groups in the area, regarding energy citizenship as a combination of awareness and action (participation) in accordance with the definition given in Section 2.2.
- 2) ... to understand how and to what extent energy-related behaviours of new residents are influenced by moving to a PED (a housing block with sustainable technologies) and to an area with a sustainable reputation/identity such as Buiksloterham.

The Amsterdam University of Applied Sciences (AUAS) is in the lead for Task 7.3, which builds on the rest of WP7.

The operationalisation of Task 7.1 (the mapping, engaging and empowering of local stakeholders and communities), most pertinent to the current report, is twofold. Ideas on citizen engagement were initially defined at the beginning of 2020 through a communication plan that outlined content dissemination and activities regarding the project. Subsequently, the social analysis of Buiksloterham was performed. The analysis aimed at mapping PED stakeholders, their interests and their interrelationships. A number of questions thereby serve as guide, building on the proposed research questions under General Approach: what is the current form of citizen/community engagement? Additionally, what is the prevalence specifically of energy transition-related participation activities? These questions lean on the observation that Buiksloterham is an area with several active pioneer groups that have shaped it over the past years. We seek to align the ATELIER developments in Buiksloterham with these ongoing activities. In line with the guiding questions for the community engagement and participation activities, the aim is to understand the perspective for action that (future) residents have in the development of PED technologies (such as PV installations and smart grids). This fits within the more general ambition of understanding how participation in the energy transition can contribute to empowerment of local residents and energy citizenship. Understanding individual agency goes hand in hand with the perspective for action on behalf of project-developers and technology-developers to align these PED technologies with the actual needs and wishes of (future) residents.

The joint aim of the communication plan and social analysis are to discern the main communities and entrance points for stakeholder and citizen engagement processes in Buiksloterham, and to build a support network for upcoming ATELIER (-linked) events and activities.

### 3.3. Project progress since kick-off

As of June 2021, WP7 partners in Amsterdam have taken a number of steps towards citizen and community engagement in Buiksloterham.

In addition to the social analysis described above, for which students from AUAS provided valuable input by creating an initial categorisation of the area, Amsterdam leads have been active in organising events related to the goals of WP7 both with ATELIER partners and with other smart city projects. During the first months of the project (late 2019 - early 2020), these were especially aimed at creating awareness amongst the wider public on the energy transition and the ATELIER project, thus placing the project within broader research on the energy transition and energy citizenship. Some examples are:

- Two sub-sessions in the Smart City Dilemma Session on 'Energy Citizenship' organised by AUAS Smart City Academy and led by two AUAS researchers involved in the ATELIER project: 1) "Is energy citizenship a real driver for sustainable behaviour in the private sphere?" and 2) "Does the reliance on expensive technologies geared towards tackling the energy transition lead to unequal and exclusionary citizen participation processes?" Participants were mostly other researchers interested in learning about the concept of "energy citizenship".
- Waag organised three online public programmes; 'What can citizens do?', 'How do we keep the energy transition open, fair and inclusive?' and 'The downsides to renewable energy'.
- Waag organised an interactive workshop at energy transition network organisation 02025, 'Fair technology in the energy transition', focusing on the concept of energy communities and the digital aspects that these bring along.

Moreover, project partners organised the workshop 'Accomplishing the energy transition with citizens', an internal ATELIER workshop on participation and stakeholder engagement. The input gathered during this interactive workshop is used for the stakeholder engagement plan.

Through a co-creation brainstorm with Dutch partners the first steps were taken in mapping and engaging stakeholders in the Buiksloterham area, and possible interventions and activities to be organised in the neighbourhood were defined. As briefly described above, the process was as follows: through initial desk research we formed a comprehensive longlist of organisations, communities and other stakeholders in Buiksloterham. We then established what we termed 'linking pins' in the neighbourhood, a shortlist of most relevant actors regarding engagement. We subsequently conducted informal interviews with these actors, which can be classified along two levels: (1) the municipal level, in order to understand decision-making and prioritisation processes on a local level; here we spoke to employees both from the temporary (10 to 15-year) project development organisation as well as the permanent management organisation on a district level; and (2) non-governmental (Buiksloterham-based) organisations, including energy transition acceleration network '02025', social housing corporation de Alliantie and social care organisation Philadelphia. This led to a snowball-effect and brought us to a number of other contacts in Buiksloterham, as well as helping to position the ATELIER project on the local (municipal) agenda and building up a support network for engagement activities in the area. The conversations also helped us formulate specific propositions on the social functioning of Buiksloterham and possible entry points for concrete interventions, as formulated in the section below.



Throughout the project, WP7 has been in close coordination with other work packages. One work package that we have been especially involved with as Amsterdam WP7 leading partners is the Innovation Ateliers (WP3). As these ateliers (will) provide a space for local residents and stakeholders to jointly brainstorm on specific propositions and challenges that come up, WP7 is key in providing input both through our local network and on the actual needs and wishes of residents in Buiksloterham. Similarly, Waag attends monthly WP4 meetings to stay updated on the (technical) project development on the demo site, as well as at WP6 meetings for alignment with the Fellow Cities and WP10 meetings for communication and dissemination activities. We furthermore have regular internal WP7 meetings, both on a lead-level as with all involved partners.

### 3.4. Demographic data

As showcased previously, Buiksloterham is a rapidly transitioning area that has only in recent years seen a growing influx of permanent residents. To illustrate: where the area consisted almost exclusively of economic activity (around 300,000 m<sup>2</sup>) and hardly any inhabitants in 2009, currently around 200,000 m<sup>2</sup> of the neighbourhood has been realised as housing and economic activity has decreased to 200,000 m<sup>2</sup>, with especially industry being closed down in the area. Nonetheless, this section aims to sketch Buiksloterham in broad demographic terms regarding property usage and population.

#### Property usage and housing

As mentioned previously and elaborated in upcoming sections of this report, Buiksloterham is a mixed-use area. A large majority of the sites serve as housing (around 60% and 70% in the northern and southern areas respectively). On the other hand, some of the property (around 10%) maintains an industrial function, especially in the northern Papaverweg area. A similar proportion serves as office space, with shops and to a minor extent educational buildings and other amenities making up the small remaining proportion of area use.<sup>19</sup> The current property distribution is in stark contrast to the historical character of the neighbourhood: where the northern area (specifically the industrial terrain between the Distelweg and Asterweg) used to consist almost exclusively of factories, nowadays only two factories remain and housing and office blocks instead dominate. This is in line with the city-wide trend of converting industrial spaces to residential area: the coming years, 500 hectares of industrial area will be turned into housing.<sup>20</sup>

Much of the property is thus for housing purposes. As of 2020, just over 1,900 residential homes have been built or contracted. Considering its history as industrial, non-residential area, developments of the housing stock in Buiksloterham are best described by the increasing construction ambitions for residences according to the municipal plans for the renewal of the North district. Whereas the 2007 Investment Plan contained a figure of a maximum of 4,000

<sup>19</sup> See <https://allecijfers.nl/buurt/papaverweg-en-omgeving-amsterdam/> and <https://allecijfers.nl/buurt/buiksloterham-amsterdam/> for more details on plot distribution in Papaverweg and Buiksloterham areas.

<sup>20</sup> Het Parool (January 3<sup>rd</sup>, 2020). “Tussen de bakfietsen: de laatste fabrieken van de Buiksloterham”. <https://www.parool.nl/nieuws/tussen-de-bakfietsen-de-laatste-fabrieken-van-de-buiksloterham~b908deca/?referrer=https%3A%2F%2Fwww.ecosia.org%2F>.



residences to be built, the 2020 Recalibrated Investment Plan ('Herijkt Investeringsbesluit') has raised the bar to a maximum of 8,575 homes.<sup>21</sup> Of existing homes (built between 2009 and 2020), 23% is social housing, and 77% free sector housing, largely in the form of collectively, privately commissioned 'self-built' housing.<sup>22</sup> The future aim is a segmentation of 40% social housing, 40% middle-segment rental housing and 20% free sector sales.<sup>23</sup> This is in line with the recent municipal aim of a 40-40-20 distribution for city-wide housing.<sup>24</sup> Noteworthy, the housing stock of neighbouring Volewijck (including Van der Pek neighbourhood) is heavily lopsided: over three quarters is social housing, with only 6%<sup>25</sup> of houses being in the expensive (including mortgage-owned) bracket.

Figure 10 shows the municipal housing plans, categorised according to varying degrees of planning and construction. The figure is showing (what is projected to be) 2041, taken from a time lapse,<sup>26</sup> that details construction plans and different types of housing per plot. The image highlights the huge projected residential growth in and around Buiksloterham.

## Population

Because of its rapidly changing character, it is difficult to make set statements on the demographic data of Buiksloterham and different sources provide slightly diverging data. This is an approximate description of the current situation:<sup>27</sup>

- 2010 inhabitants
- around 4,500 people working in the district
- > 50% of population has non-migratory background
- 25% of population has non-Western background
- population is relatively young, a quarter being under 18
- population is generally highly educated

<sup>21</sup> As described under section 3.1, there is already a visible increase in housing stock in both the northern Papaverweg and the southern Buiksloterham areas. To illustrate: the Papaverweg area housing stock in 2017 was four times as large as in 2016; and the Buiksloterham area saw a 600% increase in residences between 2018 and 2017.

<sup>22</sup> There are some differences between the northern Papaverweg area and the southern original Buiksloterham area, with the latter consisting of more social housing.

<sup>23</sup> This ratio can move towards a larger proportion of free sector sales if social housing is provided by corporations (which is currently largely the case in Buiksloterham).

<sup>24</sup> See the 'Woonagenda 2025' through <https://www.amsterdam.nl/bestuur-organisatie/volg-beleid/ontwikkeling/wonen/>.

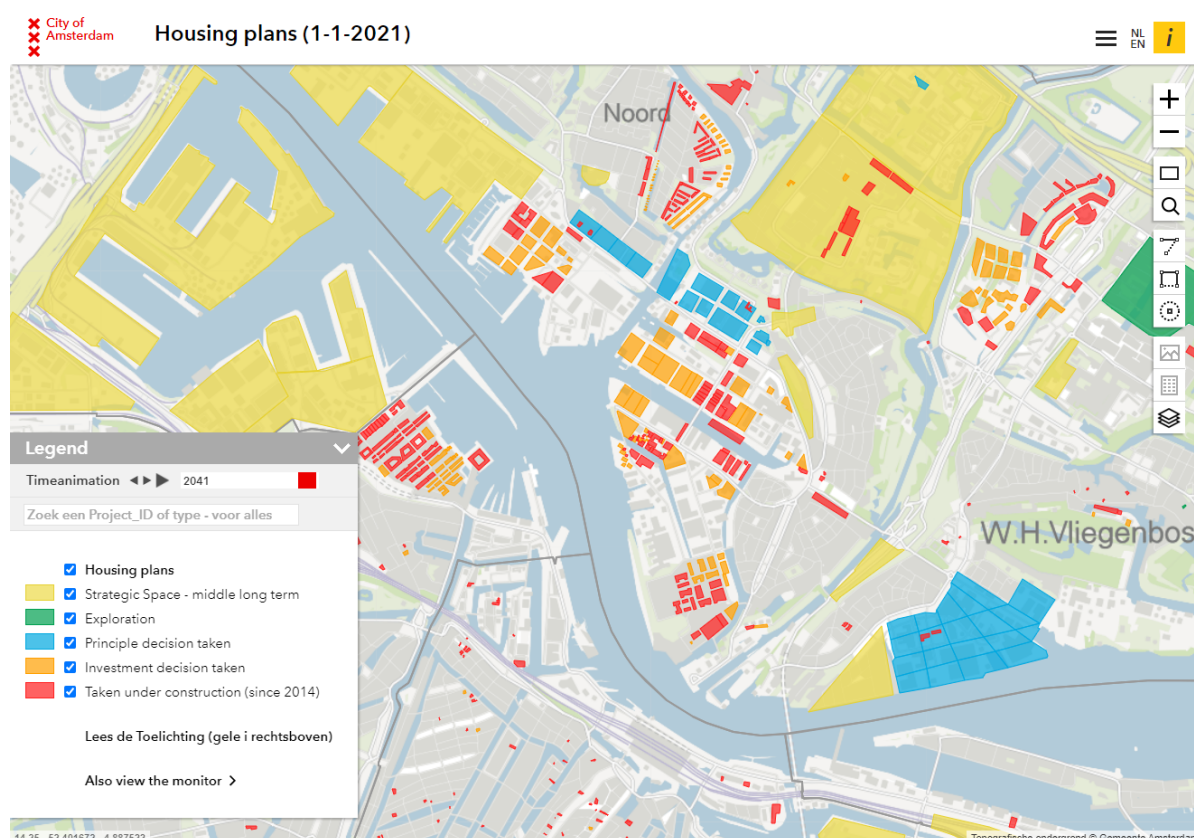
<sup>25</sup> Although this figure is now rapidly increasing, with many houses being refurbished and re-sold in the free market.

<sup>26</sup> See the full map and its time-animation through <https://maps.amsterdam.nl/woningbouwplannen/?LANG=en>.

<sup>27</sup> Municipal district datasets of Papaverweg (northern area) and Buiksloterham (southern area), January 1st 2021; resp.

<https://gebiedinbeeld.amsterdam.nl/#/dashboard?gebied=DX18&wijk=N71&buurt=N71c&thema=Gebied%20in%20het%20kort> and

<https://gebiedinbeeld.amsterdam.nl/#/dashboard?gebied=DX18&wijk=N71&buurt=N71g&thema=Gebied%20in%20het%20kort>



**Figure 10. Buiksloterham housing plans.**  
 Source: Interactive Maps, Gemeente Amsterdam, 2021

### 3.5. Local assets and networks

As repeatedly highlighted, Buiksloterham is a rapidly developing area that has only recently opened up to housing and residency opportunities. With its appeal to pioneers in the creative industry and on the sustainability front, Buiksloterham has a number of strong community networks in different areas. The first inhabitants were a relatively tight-knit community of self-builders, makers and other early inhabitants. Now, a larger, more 'mainstream' population of new residents is moving into the area. Some fear that Buiksloterham's developments add to the gentrification of Amsterdam North already observed - a process strengthened by the neighbourhood's framing as innovative, high-end sustainable neighbourhood. Still, Buiksloterham maintains its community character in several ways. This section illustrates the results from our social analysis, a combination of preliminary desk research and informal interviews with local stakeholders.

We will first provide a general overview of organisations and other stakeholders in Buiksloterham that are noteworthy in light of citizen and community engagement:<sup>28</sup>

<sup>28</sup> More details on some of the projects in Buiksloterham can be found by clicking on the respective plot on the map on <https://www.amsterdam.nl/projecten/buiksloterham/>.

- Two primary schools (OBS Overhoeks and Dalton school De IJsbreker), in addition to schools Innoord and Klein Amsterdam in neighbouring areas
- Secondary school Hyperion in Overhoeks neighbourhood<sup>29</sup>
- Vocational training institute (ROC) TOP Events & Hospitality in NDSM neighbourhood
- Hotels, cafés and other companies in the hospitality sector
- Wide variety of architects and developers
- Various amenities, smaller and larger stores located in old industrial buildings (including thrift store De Lokatie, Neef Louis, and several garages)
- Sports clubs (including fitness, yoga and capoeira)
- Media art Nxt Museum

During our social analysis, we initially considered three geographical subdivisions for Buiksloterham:

1. the newly constructed plots to the south of the Johan van Hasselt canal that mainly consist of privately- and corporation-owned apartment buildings – some with explicitly ‘circular’ or climate-neutral ambitions (such as luxurious lofts Top-Up and Patch 22);
2. the area in the centre that includes innovation-driven projects with high ambitions regarding sustainability such as Schoonschip and de Ceuveld (especially the former is involved in ATELIER);
3. the area to the north of the Papaverweg where most of the self-built homes are located. PED pilot locations Republica and Poppies are also being constructed in this area.

In practice, the three areas increasingly overlap. It is nonetheless helpful to make a broad categorisation, as the areas are in different ways involved with the energy transition and circularity and can thus require diverging participation and engagement strategies.

In light of this geographical divisioning and complementing the overview of relevant local organisations, there are a number of physical spaces in Buiksloterham that serve as hubs or meeting spaces.<sup>30</sup> These spaces are important social assets, and could additionally be useful in organising engagement activities regarding ATELIER:

- Working place Papaver, the Stadslab headquarters located on the Papaverweg. Serves as neighbourhood centre, location for activities, office space, vegetable garden, amongst others.
- Café de Ceuveld
- One boat in Schoonschip to be rented as meeting space
- De ‘wasbar’ (shared washing machines) and bike repair workshop at De Bolder, part of De Alliantie housing corporation
- Casco, café and event location located on the Asterweg
- De Verkeerstoren (‘the traffic tower’), a cooperative space on the Distelweg that houses several creative enterprises
- Papaverpark, a green space collaboratively set up by residents through a series of workshops and currently run by a group of self-builders on the Monnikskapstraat
- Palais Recup, multi-function self-built house on the Monnikskapstraat that can be rented for events

<sup>29</sup> This school is involved in Waag’s Hollandse Luchten citizen sensing project.

<sup>30</sup> To view these and more initiatives on a map, refer to <https://buiksloterham.nl/locaties?view=map>.

- Waargenoegen, an organic café and supermarket
- New Energy Docks, co-working space for sustainability-oriented enterprises and meeting space (for instance for a series of workshops in 2016 on the 'BIES', Buiksloterham Integral Energy System)
- Klaproos, 'pop-up' pizzeria and café.

Having outlined the general local assets and thus having sketched the general context, it is fruitful for the ATELIER project to delve into some sustainability-oriented initiatives in particular (a few of which we have interviewed during the research phase to date). One group that brings together neighbourhood residents on an institutional level is **Ronduit Buiksloterham**. This collaboration of Stadslab Buiksloterham Circulair, housing corporation De Alliantie, Waternet, and the City of Amsterdam - with additional collaboration of care provider Philadelphia, circular economy organisation Metabolic (of which Spectral is a spin-off) and sustainable energy company Om Energie - was the driving force behind the Manifesto Circular Buiksloterham.<sup>31</sup> It aims to foster Buiksloterham as an inclusive, circular neighbourhood for living and working. They do this both physically, by for example organising neighbourhood tours and providing new residents of the neighbourhood with a 'welcome box' with an overview of local organisations, as well as digitally, through their online collaborative platform (buiksloterham.nl). The latter has become a digital meeting space, where current and future residents share their thoughts and advertise events. Ronduit Buiksloterham is also on social media.<sup>32</sup>

The parties behind Ronduit Buiksloterham all have their individual networks as well. **Stadslab Buiksloterham Circulair** is the operationalisation of Buiksloterham as 'city lab'. It facilitates urban experiments and innovative research by serving as physical meeting space for entrepreneurs in the area, including organising monthly meetups and renting out office space to local enterprises. **De Alliantie** is a nation-wide housing corporation. In their Buiksloterham location they have a specific focus on social circularity and try to actively build up a community amongst their residents and establish a connection with the rest of the area. They are in close collaboration with social care organisation **Philadelphia**, with part of the social housing block reserved for residents who require assisted living. Last but not least, **Waternet** has ambitions in terms of resource and energy recovery from waste, simultaneously forming one of the pilot locations of the Amsterdam PED.

Previously mentioned **Schoonschip**, also part of the PED-to-be, is a group of houseboats that aim to be a completely circular floating residential area, set up by a tight-knit group of 100 residents that are passionate about sustainability. **De Ceudel**, likewise co-initiated by Spectral, is a multi-purpose urban space that experiments with circularity innovations on a former shipyard. Another relevant organisation is neighbourhood group **Door de Buurt**, collaboratively set up by residents and architects. They were active during the process of the Herijkt Investeringsbesluit Buiksloterham (HIB) in 2018 and 2019, a revisioning of the municipal budgetary and physical development plans for Buiksloterham. Door de Buurt gathered and presented a compilation of resident concerns in their 2018 '*Buiksloterham Buurtvisies door de buurt*', a valuable summary of resident input on a wide range of themes.<sup>33</sup>

<sup>31</sup> At the time of signing, Ronduit Buiksloterham did not exist as such. It is the operationalization of the group of organizations behind the manifesto.

<sup>32</sup> <https://buiksloterham.nl/webpagina/818/ronduit-buiksloterham> [page in Dutch]

<sup>33</sup> To be viewed in Dutch via:

[https://buiksloterham.nl/engine/download/blob/gebiedsplatform/69870/2019/11/Buiksloterham\\_buurtvisies\\_door\\_de\\_buurt.pdf?app=gebiedsplatform&class=9096&id=1705&field=69870](https://buiksloterham.nl/engine/download/blob/gebiedsplatform/69870/2019/11/Buiksloterham_buurtvisies_door_de_buurt.pdf?app=gebiedsplatform&class=9096&id=1705&field=69870)





Figure 11. Republica building site (photo June 2021)

### 3.6. Citizen and stakeholder engagement context

Having described the local assets and networks discerned through the social analysis, we can now analyse what the social context of Buiksloterham entails for further steps in citizen and stakeholder engagement in the area. We will do so by making several working propositions: statements which capture what we think are important avenues for structuring local engagement activities.

#### ***Current participation and engagement context***

Buiksloterham is currently in a development phase and only in 2030 will the bulk of infrastructural project developments have been completed. Even so, there is at present a lot of activity, partly because of the early influx of creative industries and fuelled by Amsterdam's high housing and circularity ambitions for the area. As previously outlined under *Local assets and networks*, there are a number of resident groups and organised communities that are currently active in Buiksloterham. These work to strengthen the social cohesion in the neighbourhood, oftentimes coupled to a specific theme. Digital platforms such as buiksloterham.nl, WhatsApp groups on block- or street-scale and Facebook pages, as well as physical meetings spaces such as those listed above facilitate contact amongst residents and citizens from neighbouring areas. Some of the organisations focus explicitly on energy-related themes, including Schoonschip. Others fit closer with the circular economy discourse, such as De Ceuvel. De Alliantie's social housing block, that they run with Philadelphia (named 'The

Boulder’), uses the frame of ‘social circularity’, using sharing systems such as shared laundromats and vehicles to combine ecological and social aspects. These are spaces that could potentially serve as settings for engagement activities.

Many of these organisations and initiatives were able to arise specifically because of the social and historical context of the area. Historically, Buiksloterham is a neighbourhood in which there was the flexibility and space for individual and collective resident activity, reinforced during the economic recession after 2008. This is illustrated, for instance, by the groups of self-builders in the northern part and Schoonschip in the centre. These initiatives are generally set up by groups of people with sufficient social and economic capital to go through such a trajectory. Municipal housing demands for Buiksloterham have turned it into a more mainstream area with set targets and frames (and thus less flexibility) and have resulted in the diversification of residents’ influx. Buiksloterham has (among some other areas) become a location for the city’s urban experiment in the transition towards a Doughnut Economy<sup>34</sup> and towards climate neutrality. One of the inhabitants commented that many new developments in the area do not actually stand out in terms of circularity, sustainability or energy neutrality. That said, Buiksloterham is bestowed with a number of iconic projects, and is on its way to host Republica and Poppies as innovative PED blocks.

### **Controversy**

The shift from pioneer-led to top-down development has led to some contention, repeatedly highlighted during conversations with stakeholders. One recurring theme is the quality and quantity of green public spaces (‘green’ is mostly planned towards the end of the area development). This fits within the broader discussion on the prevailing discourse of Buiksloterham as a dynamic, lively, sustainable neighbourhood vis-a-vis the actual physical and social reality. The ‘social’ aspect of urban development is experienced by some residents to be falling short, the rush to realise a large housing stock seeming to trump other concerns. Another controversy is participation in itself. During the process surrounding the ‘Herijkt Investeringsbesluit’ (the revision of the municipal budgetary plan for Buiksloterham), residents and neighbourhood organisations were repeatedly consulted for input. This culminated in general dissatisfaction because of the lack of tangible consequences of residents’ input, and subsequently to a general feeling of ‘over-participation’ on behalf of some key organisations, in the sense that they feel over-asked while results are experienced to disappoint. Increasingly, the pioneering advocates of sustainability in Buiksloterham feel excluded from or opposed to the development process of what was once ‘their’ neighbourhood.<sup>35</sup>

In summary, Buiksloterham is a neighbourhood with a variety of active resident groups and stakeholders that are keen to organize and connect, but there simultaneously are cases of lack of faith in what participation organised by governments and other institutions may deliver. What complicates the situation is the diversity of resident groups in the area, ranging from well-organised, financially-strong initiatives that are drawn to the innovation and sustainability ideals of Buiksloterham, to social housing residents that seem not mainly attracted by those ideals. The energy transition does ‘live’ in Buiksloterham to some extent, but in practice, not all groups embrace the discourse of circular, sustainable neighbourhood and there is among some

<sup>34</sup> <https://www.amsterdam.nl/bestuur-organisatie/volg-beleid/coalitieakkoord-uitvoeringsagenda/gezonde-duurzame-stad/amsterdam-circulair-2020-2025/>

<sup>35</sup> See for example Verdedig Noord (in Dutch) on: <https://www.verdedignoord.nl/>

groups a lack of trust in top-down participation processes previously organised (e.g. regarding the HIB). This context is determinant for the kind of engagement that a project such as ATELIER can organize. It is key to avoid false promises and expectations during the participatory process of the project and to collaborate with local partners that have built trust-based networks within the community.

### 3.7. ATELIER participatory methodology

As described under Chapter 2 *Overall approach*, the WP7 partners work according to a three-step methodology for participation (*Hypotheses and questions > Target groups > Activities*).

The **research questions** for the Amsterdam pilot are as outlined in the general section, fitted to the context of Buiksloterham. The specified questions are given in the next section.

In the ATELIER project, the aim is to truly develop PED technologies *with* (instead of *for*) Buiksloterham – the target group is thus in principle all current and future residents of the neighbourhood. The **target groups**, or communities, relevant to the ATELIER ambition can be further categorised as follows:

- Energy and/or circular economy pioneers (especially situated in the centre and northern areas described under Section 3.4 *Local assets and networks*). These include Schoonschip, De Ceuvel and the self-builders, but also commercial organisations such as Spectral and Metabolic. They are generally well-organised with a lot of tacit knowledge and connections, innovation- and community-driven. However, there is a risk of feeling asked for input too often and without tangible returns.
- Creative industry pioneers – originally dominated Buiksloterham, but risk of exclusion from current circular economy framing and of being pushed out due to decreasing affordability.
- New residents for higher-range rental housing or purchased housing (especially in the southern and centre areas) – may be attracted to Buiksloterham's image of innovative and sustainable, risk of disconnection with more established groups in the neighbourhood.
- New residents for lower-range rental housing – currently may not necessarily feel connected to the energy transition, risk of exclusion from the conversation (because of other priorities or no way to join).
- Residents of neighbouring areas who would like to participate.

The **interventions** that result from the social analysis and concrete ways to engage these various target groups will be described in the final section.

### 3.8. Suggested activities and general action plan

#### *Specific propositions and questions*

As discussed in section 2.2, the aim of citizen participation and stakeholder engagement in ATELIER is to address the social dimension of the energy transition upfront in developing PEDs. We have broken down the general sub-questions (as outlined under section 2.2 *Guiding*



*questions*) into more specific research questions that currently guide the participation and engagement plans in Buiksloterham in Amsterdam North. This is likely to still evolve over the course of the coming years.

- What level of participation do project partners such as the municipality of Amsterdam, Spectral, TNO, Waternet and Waag define as preferred for ...
  - o ... the development of the local energy market,
  - o ... the development of energy communities,
  - o ... the development of the smart grids,
  - o ... the development of the e-mobility hub,
  - o ... PED-technologies that might provide less space for citizen engagement, such as the energy recovery system?
- What level of participation do (future) residents and citizen communities define as preferred for the above interventions? Are there aspects of the PED development that they wish to be involved in to a greater or to a lesser extent?
- In line with the previous question, how and in what roles do (future) residents and local stakeholders in Buiksloterham *want to* participate in the energy transition?
- What do residents and other stakeholders in Buiksloterham need to *be capable of* participating in energy-related interventions, including the development of the energy communities and the local energy market? How can ATELIER contribute to these community needs?
- How can ATELIER contribute to community building and social integration in Buiksloterham? And vice versa, how can the social context of Buiksloterham function as a vehicle in realising the PED?
- How can ATELIER strengthen community initiatives in Buiksloterham and Amsterdam North (related to the energy transition)?
- How can ATELIER contribute to knowledge development of the (technical) developments that are taking place in Buiksloterham as part of ATELIER and in the energy transition more broadly?

### ***Participation levels***

As indicated in section 2.1, the engagement activities for ATELIER aim to contribute to awareness, intentions and abilities of residents and stakeholders in development of the PED and more broadly the energy transition. The activities align with levels 1-4 of the participation ladder in Figure 1, as ATELIER for now only plans out participation of which the project partners are initiators. As stated in Section 3.5, the shift from pioneer-led to top-down development has led to some contention, repeatedly highlighted during conversations with stakeholders. It is an important challenge for the citizen participation and engagement ambition of ATELIER to acknowledge and relate to citizen participation in the energy transition that predated ATELIER and was based on community-initiative, instead of government-facilitated.



### ***On-site activities***

The aim is to organise the following activities, co-delivered with local organisations that we have been in contact with as ‘linking pins’. Initial ideas, aligning with the different engagement levels, include:

#### **‘Walking’ as a research tool - first level of engagement**

All target groups can be involved; especially targeted at (future) residents and other citizens interested in the development of Buiksloterham and/or with a specific interest in energy transition. These activities focus on what is visibly or invisibly changing in the area regarding energy and the energy transition and how residents relate to that. It is both an open space to get informed ways in which residents and current organisations are (sometimes implicitly) already involved with the energy transition, as well as a way to inform residents on the (technological) implications of ATELIER. Furthermore, it helps to position the project within the existing context. The walks will be done in two phases:

1. Exploratory walks in Buiksloterham in which Waag team holds informal conversations with local residents on their wishes, needs and views on the future of their neighbourhood and on their possible relation to the energy transition (not yet explicitly coupled to ATELIER). One such exploratory, low-threshold walk will also involve future residents of the Republica block contacted through their monthly newsletter.
2. Based on these first walks, guided thematic walks in several (3) tracks according to interests that have been mentioned by citizens and stakeholders.: e.g., 1) the ‘technical walk’, visits to (visible) PED solutions; 2) the ‘circularity walk’, explanation of circular economy solutions; 3) the ‘energy walk’, visits to organisations and individuals that are in some way active with the energy transition.

The walks can inform Waag and other project partners of questions that residents have and interests they communicate. It might offer the possibility to learn about (more) community initiatives in the energy transition and learn about preferred participation roles of various actors.

#### **An ‘energy festival’ - first level of engagement**

An easily accessible, highly visible event in Buiksloterham that serves as space for various target groups to connect and that provides practical information and contributes to knowledge development on the energy transition and on specific innovations in the neighbourhood. It makes ‘energy’ tangible through playful, hands-on activities. The festival could involve different kinds of stakeholders (beyond the strictly energy-related target groups), such as collaborating with local schools to set up activities catered to children. The event would take place at one location or spread over various locations in Buiksloterham.

#### **Artistic intervention - first level of engagement**

Task 2 of WP7 calls for an ‘artistic intervention’ in Buiksloterham. The aim of contributing to an artistic intervention is to add a different perspective to ongoing discussions in the energy transition and its meaning to everyday life of citizens. It is an opportunity for the ATELIER consortium to give space to imaginations of a future of an ‘energy positive’ future and it is a way to translate the complex matters surrounding the energy transition – such as prominent in the ATELIER project - to an easily understandable and narrating format. Moreover, the aim is

to set up the artistic intervention in close collaboration with local stakeholders and let the outcomes be guided by community needs and foster community building.

### **Co-creation sessions - second/third level of engagement**

If the COVID-19 pandemic situation allows, several co-creation sessions are to be organised, using tools such as Co-Creation Navigator and ‘Smart Citizens Lab master document’ of Waag. These sessions can in format both be in larger groups and on general topics, as well as with specific target groups on delimited themes. Ideas are:

- On defining energy data commons. Targeted at more technical stakeholders; include amongst others Spectral, Schoonschip, de Ceuvel.
- On defining and developing energy communities: what are they (technically, legally, socially and financially) and what can be the implications of being a member of an energy community? Targeted at technical partners; (future) residents of Republica, Poppies; residents in Buiksloterham and Van der Pek neighbourhood (especially members of Pek Ekostroom), and members of already existing energy communities.
- On defining and developing a local energy market. Targeted at more technical stakeholders; include amongst others Spectral, Schoonschip, de Ceuvel.

### **ATELIER's participation in community activities**

In order for ATELIER project partners to further our understanding of community needs and questions of residents regarding ATELIER and the energy transition, we will participate in some community initiatives such as seminars on developments at Waag and the Amsterdam University of Applied Sciences use ethnographic methods throughout the project to continue our social analysis.

### **Communication activities**

Alongside these physical activities, WP7 works with a communication strategy to foster content creation and dissemination. Content can both be spread within Buiksloterham in order to advance public awareness on the energy transition and specific PED solutions, and within the larger ATELIER project team to inspire and facilitate replication strategies in Fellow Cities. Ideas for content creation are:

- “Energy heroes” (working title): a portrait series of local residents and organisations that are currently actively involved with the energy transition. Can be coupled to the walking activities or to the energy festival.
- Blogs and articles on specific ATELIER progress and generally informative on energy transition, to be shared through the ATELIER website, Waag’s channels and those of partners. Topics can include: the relation between energy transition and circular economy, potentially through the Donut Economy framework; energy citizenship [collaboration with AUAS]; data commons in the energy transition; and so on.
- Collaboration with other smart city projects in the Netherlands and/or Europe to showcase ‘successful’ PED projects.

Dissemination happens through:

- the monthly Republica and Poppies newsletters to reach future PED inhabitants directly;
- local stakeholders in Buiksloterham and their networks ('linking pins');
- City of Amsterdam channels, such as the monthly Amsterdam North district newspaper or the local municipal contact in Buiksloterham;
- the networks of (non-energy related) local assets, such as educational institutions;
- active digital platforms and social media pages, both Buiksloterham-based and city-wide (including buiksloterham.nl);
- the ATELIER network, both Amsterdam-based and the broader consortium.

### **Conclusions**

For the Amsterdam pilot to answer the research questions by the end of the project, we have outlined a number of participation and engagement activities. These activities simultaneously contribute to engagement of citizens and stakeholders according to various levels of engagement (from informing to consulting and cocreating) with questions that play a role in the development of ATELIER – such as how to develop a local energy market. Moreover, the outlined activities provide a way for the ATELIER partners to study how citizen participation in the energy transition can be organised in such a way that it is emancipatory for the various partners, first and foremost citizens. Residents in their capacity as energy citizens and consolidated as energy communities are a necessary and promising component of the energy transition, especially in light of increasing flexibility of the energy market. Therefore, participation of project partners<sup>36</sup> in local community initiatives is part of our participation and engagement strategy. By taking part in community initiatives, we learn about the needs and wishes of residents. These are building blocks in understanding how participation in the energy transition can be organised in an emancipatory manner, which will culminate both into the participation activities organised as part of ATELIER, as well as into general lessons on emancipatory participation of citizens in the energy transition.

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<sup>36</sup> Such as Waag and the Amsterdam University of Applied Sciences

## 4. Lighthouse City Bilbao

### 4.1. General area description

Bilbao is a clear example of urban regeneration. During the last century Bilbao has transformed its economic model from being based on industry to be based on services. This process has been accompanied by a landscape transformation where the city environment has been considered the main asset. The urban transformation of the city has received multiple awards<sup>37</sup> and has considerably improved the quality of life of the citizens (bilbaínos). The island Zorrotzaurre has been an area in continuous decline (both industrial and social) since the 1980s; nowadays the landscape shows a semi-abandoned island in the middle of a modern city with less than half a thousand residents. The regeneration of Zorrotzaurre supposes the last important urban regeneration in the city, that is, at neighbourhood scale.

Zorrotzaurre is the urban area that comprises the lower zone of the riverbank of Deusto. The name of Zorrotzaurre, in Basque, refers to the space situated in front of Zorrotza, on the opposite bank of the estuary. This area experienced an era of industrial strength in the mid-sixties that was boosted by the opening of the Deusto Canal through the Port of Bilbao. In the old times, various industrial activities related to the port were taking place on both sides of the canal, while other productive activities were established along Deusto riverbank. However, the economic crisis significantly affected this industrial network, and a progressive decline led to the deterioration of the area and the quality of life. Annex 0 provides a complete perspective of the industrial background with an explanation and pictures about most important activities in the island.

The General Plan for Urban Development of Bilbao, approved in 1995, will facilitate the transformation of the former industrial activity of Zorrotzaurre into an urban residential area. The Master Plan of the project was designed by the prestigious Anglo-Iraqi architect Zaha Hadid. This Master Plan, elaborated in 2004 and reviewed in 2007, incorporates the complete opening of the Deusto Canal, which implies the transformation of the former Zorrotzaurre peninsula into an island. This is an important adaptation measure for climate change that increases the flow of the river reducing the risk of suffering flood events.

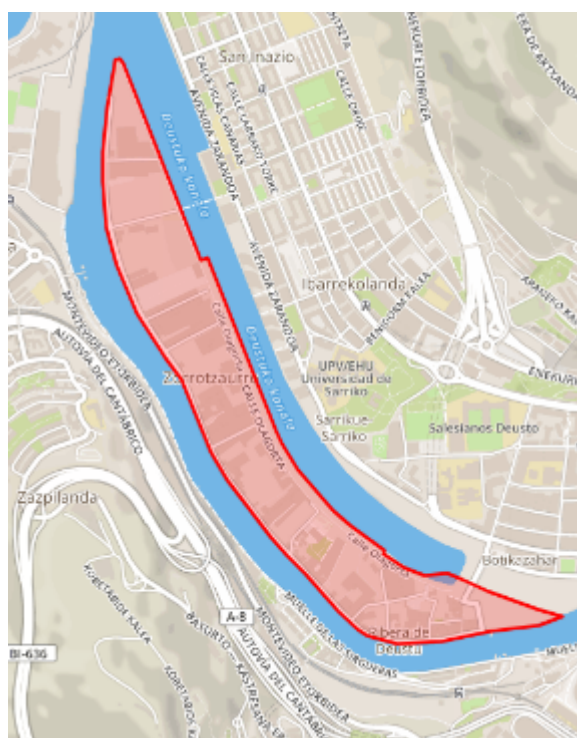


Figure 12. Zorrotzaurre map

As a whole, the regeneration of Zorrotzaurre represents an integral and balanced project, defined under criteria of sustainability, which recovers a space that is currently degraded in

<sup>37</sup> <https://www.bilbaoria2000.org/en/bilbao-ria-2000/awards-and-acknowledgements/>



order to convert it into a new and innovative neighbourhood of Bilbao that is well connected to the rest of the city, equipped with affordable housing, non-polluting business and technological development areas, numerous social and cultural facilities, as well as large open areas for enjoyment.

## 4.2. ATELIER ambition

The Paris Agreement of 2015 requires a transition towards a carbon neutral society. In ATELIER, we propose to realise Positive Energy Districts in Bilbao that save 0,5 kton CO<sub>2</sub> emissions. This is not only a technological challenge but will require deep changes in our economic systems, institutions, governance structures, social networks and human behaviour.

ATELIER implements a Living Lab approach that orchestrates transition processes and interactions with citizens. In this sense, the urban development of Zorrotzaurre represents a fantastic opportunity for Bilbao, since this area represents an entire neighbourhood where innovative urban solutions are to be tested (WP5) in a controlled and effective form, monitored and evaluated (WP9) before being upscaled and replicated to the entire city (WP6) according to a well-defined and consolidated bold city plan (WP2). All the actions and smart solutions to be deployed in Zorrotzaurre can be summarised as *seven strategic interventions*. The first three refer to the deployment of the North, Centre and South areas of Zorrotzaurre which represents the Positive Energy District (PED). The last four apply to the entire neighbourhood of Zorrotzaurre (the island) providing the connectivity and integration of the operational strategies to be tested in the PED. In this sense, the deployment of the 5th generation of district heating network, based in geothermal energy, the inclusion of renewable energy sources, the advanced operation of the smart-grid, the electro-mobility, and deployment of smart street furniture bring an important added-value to the Zorrotzaurre neighbourhood (see Figure 11). This approach presents a PED proposal that is born in the ambition of being easily upscaled to the entire island.



Figure 13. The implementation of the PED in Zorrotzaurre is composed of development of the North, Centre and South areas of the island (source: COB)

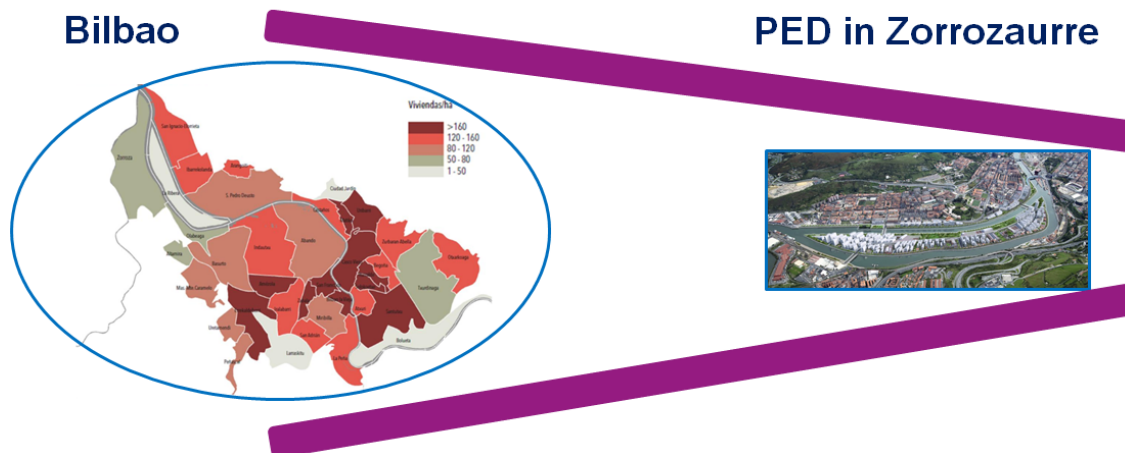


ATELIER is a citizen-driven smart city project, and therefore, citizens and WP7 are key to achieve the project scope and objectives. WP7 is aimed at enhancing the active role of citizens and stakeholders by activating a continuous collaboration and dialogue between the residents and local communities, local entrepreneurs, developers, utilities, civil servants, etc. For doing so, this section presents the current situation in Bilbao, identifies main local actors and stakeholders, provides the attributes for engagement with the residents, and finally defines some specific proposals.

The City of Bilbao has a clear ambition with respect to any participatory process articulated with the citizens and the stakeholders, and that is about the commitment of getting feedback from them and the commitment of implementing (all or most of) the proposals. The neighbours should not have the feeling that they are not listened to or that the participatory mechanisms are not useful. On this vision, the ATELIER Bilbao consortium, together with the City of Bilbao (COB), defines a number of starting points and co-related ambitions:

- Zorrotzaurre is at an initial stage of a community building process and therefore ATELIER project is a fantastic opportunity to understand citizen perspectives and stakeholder requirements, and articulate appropriate channels of communication and co-creation.
- There are well established bridges between the COB and neighbourhood associations as well as with an ecosystem of stakeholders which are to be further exploited. In a complementary manner, ATELIER has the ambition to establish other bridges or mechanisms that will facilitate the direct participation of a broader scope of actors: citizens, companies, NGOs, ESCOs, etc.
- The actual residents of Zorrotzaurre are only about 3% of the total expected population. However, engaging with them can be very important as they will be hosting the new neighbours and can promote a leading role in *energy transition* and *energy citizenship* in open spaces, associations, schools and in sum, in the new neighbourhood.

In parallel, the ambition of the ATELIER Bilbao consortium is to articulate a participative proposal that works simultaneously at two levels: Zorrotzaurre and Bilbao. The COB and the ATELIER stakeholders have co-designed a double purpose participatory mechanism, see Figure 14. On the one hand, the participatory mechanisms will work on questions of general purpose at Bilbao level on the general motto of connecting citizens with the requirements of energy transition and Bilbao Bold City Vision (WP2). For that aim, we count with all the relevant stakeholders of the region and Bilbao's neighbours. On the other hand, we will prepare specific participatory mechanisms to work on the acceptance of PED solutions (WP5), together with the neighbours of Zorrotzaurre, their associations and clusters, as well as any other required actor. In this case, it is particularly important to explain to them the general purpose of the interventions, the relevance of citizen participation in the generation of new energy models and markets, the details of the specific solutions, etc.



**Figure 14. Double purpose participatory mechanism**

ATELIER is a new step forward in the city's ambition. Annex 02 presents the most important projects and initiatives of COB in terms of energy transition, city sustainability, city cohesion, participation programs, etc. This also constitutes an important context for the co-design of the ATELIER participatory approach.

### 4.3. Project progress since kick-off

#### Co-creation process to define the 'citizen and stakeholder engagement plan' in Bilbao

The ATELIER Bilbao participatory strategy has been co-designed with the City of Bilbao and ATELIER Bilbao local stakeholders. The main conclusions of this process are:

- The Citizen Participation Department of the COB (CPD-COB) will be aware about all participatory processes organised in the context of ATELIER. The specific interventions or mechanisms designed will, if possible, get embedded into already ongoing municipal programs and participatory mechanisms.
- The 'key performance indicators' designed in ATELIER to assess social activation can be quantitative or qualitative, reflexive monitoring is defined as a good approach. The Citizen Participation Department of the COB is interested in connecting the ATELIER social indicators with the UN Sustainable Development Goals. ATELIER Bilbao partners will work in this direction.
- The associations of neighbours will facilitate the participatory interventions as they are a very valid instrument to get to the neighbours of Bilbao and Zorrozaurre. However, this should be accompanied by other activities where citizens (or residents) are approached directly and not through the associations. This is explicitly recommended by the responsible for urban planning of the COB and former responsible of the 'Consejo de Distrito de Deusto'.

- The COB has been working with DEUSTO Smart City Lab for more than ten years, and specific participatory mechanisms about complicated issues have been organised. The responsible of Deusto Smart City Lab is aware about ATELIER and their specific challenges and will collaborate with ATELIER Bilbao consortium sharing their methodologies and experience.
- As a consequence of this process, the ATELIER-Bilbao consortium (and more specifically DEU and COB) agree about working in two dimensions with respect to citizen participation and engagement: a) explore general perspective dimensions of energy transition at city-level, and b) analyse specific concepts and interventions at neighbourhood level (Zorrotzaurre demo).

### Building ATELIER Stakeholder Map of Zorrotzaurre and Bilbao

The ATELIER social context builds on enormous amounts of information that has been reported by previous and active projects (see Annex 02), participative mechanisms of associations, and open data services. This includes: composition of housing stock, buildings' and dwelling registry, distribution of population in terms of age, sex, academic background, origin, etc. The social context also builds on specific characteristics of the island in terms of cultural associations, organisation of events, groups or individuals that might have a special capacity for motivation and engagement, etc. As result, the most relevant information of the Zorrotzaurre Island and the demo-economic data comparison with Deusto district and Bilbao has been compiled in an open data file<sup>38</sup> shared at ZENODO open repository (see also Annex 06):

#### ATELIER STAKEHOLDER MAP ZORROZAURRE

DOI: 10.5281/zenodo.4630792

Repository Link: <https://zenodo.org/record/4630792#.YFr6Ya9Ki70>

Title: ATELIER STAKEHOLDER MAP ZORROZAURRE

Is the dataset accessible? Yes

Is the dataset reusable? Yes

Figure 15. Open Data file 'Atelier Stakeholder Map Zorrotzaurre' available at Zenodo

### ATELIER breakout session with experts in Social Science and Humanities (SSH)

ATELIER Bilbao consortium organised a round table to discuss about the role that ICT tools and AI (artificial intelligence) should have in the context of the energy transition. The discussion was facilitated by experts in the field that have participated in the project [Shape-ID H2020](#) where the inter-disciplinarity and trans-disciplinarity impact on the successful deployment of technological projects are the main focus of the project.

The round table of ATELIER was compounded by:

- City of Bilbao presented the ATELIER project and actuations in Zorrotzaurre,

<sup>38</sup> <https://zenodo.org/record/4630792#.YF3Mug9Kh9N>

- University of Deusto presented the ICT tools to be developed and tested in ATELIER,
- Goienere Civil Society explained the importance of building community when talking about energy transition,
- GAIA cluster: represented the evolution of digital and high-technological companies in the Basque Country and their relevance in terms of communication,
- Bilbao Urban Design: provide perspective about urban development in Bilbao and the transformation of the city around Nervion River.

The discussion was facilitated by experts in social science and humanities coming from the Royal Netherlands Academy of Arts and Sciences (KNAW), history department of the Trinity College of Dublin, National Science Foundation and University of Maryland and the techno-philosophy department of the Trinity College Dublin.

The conversation was very fruitful and indeed provided perspective and a different dimension to specific ATELIER challenges. Some of the main conclusions were related to the opportunities that ICT tools provide in terms of breaking barriers, facilitating open dialogue, commitment and engagement that citizens, etc. However, some remarks were also done in terms of the necessity of implementing tools that were close to local environment and social context, the risk that technological barriers may have to some social strata or the legitimate use of information when conflict of interests arise.

#### 4.4. Demographic data

The demographic data is shown and explained at three scales: Zorrotzaurre neighbourhood, Deusto district, and Bilbao (city). In terms of municipal administration, Bilbao is divided into eight districts which are again divided into several neighbourhoods. The districts are especially relevant in terms of participation and active governance since they count with a formal representation (see *Consejos de Distrito* on page 056). This section makes a brief comparative analysis of open information related to demographic data in Zorrotzaurre, Deusto and Bilbao. The complete explanation with the figures, tables and graphs is provided in Annex 03.

##### Neighbourhood character and population

Zorrotzaurre is nowadays a degraded area that contrasts with the overall city atmosphere and adjacent neighbourhoods. The current population is only 403 people (206 women and 197 men) which represents a population density of 479 inhabitants/km<sup>2</sup> which is only about 17% of the density of Bilbao (8,500 inhabitants/km<sup>2</sup>). The Per Capita Income (PCI) or average income of a person living in Zorrotzaurre is 31,782 € where 21,653 correspond to the gross salary which is on the average of the entire city (43,329 € PCI with gross salary of 25,377 €). The current post-industrial environment of the neighbourhood has facilitated an alternative character to the neighbourhood. Indeed, the island has become a centre of culture and alternative arts. Old, abandoned buildings have become open facilities with plenty of activities for entertainment, entrepreneurship, scenic arts, etc. Some examples are associations of circus, spaces of co-working, recurrent expositions and festivals, open markets, etc. This process has been taking part spontaneously during the last years; however, it is not clear how the ongoing urbanisation of the area will affect these associations and spontaneous initiatives. During ATELIER project, Zorrotzaurre is expected to undergo substantial demographic changes where the ratios of education, professional background of residents, type of property of housing, etc. might change. It will be certainly curious to monitor yearly the numbers that we

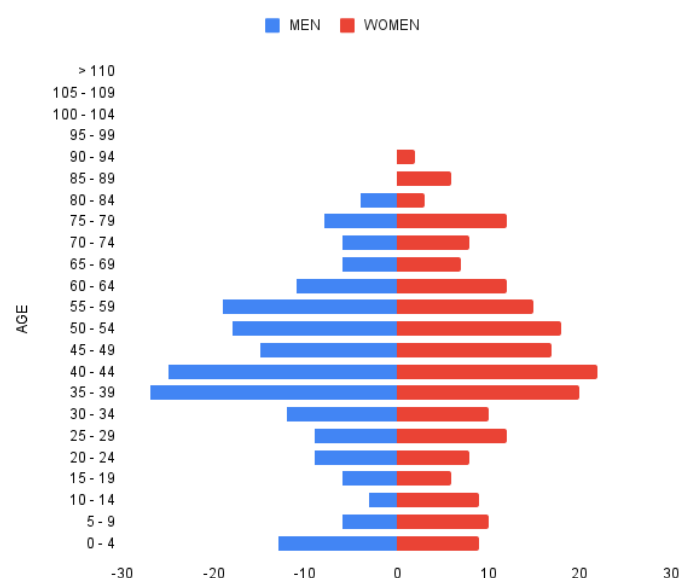
present under this section (see also Annex 03). As a first insight, it seems that the population of the island is expected to reach about 15,000 people in the near future.

**Table 4. Population size of Zorrotzaurre, Deusto and Bilbao**  
*(Bilbao Open data, 2019)*

	Zorrotzaurre	Deusto	Bilbao
<b>Women</b>	206	26,243	183,461
<b>Men</b>	197	22,950	163,622
<b>Total population</b>	403	49,193	347,083
<b>Surface area (km<sup>2</sup>)</b>	0.84	4.96	40.59
<b>Density (inhab./km<sup>2</sup>)</b>	479	9,917	8,551

With respect to population age (see Figure 16), Zorrotzaurre represents an old neighbourhood where most of the residents are probably workers of the former industries. The modal age ranges between 35-44, with most of the population being above 40. Lately, there has been an increase in the number of babies which might be a signal of a tendency shift. With respect to gender, there are more women specially with increasing age.

Zorrotzaurre



**Figure 16. Age pyramid of Zorrotzaurre neighbourhood**

Bilbao is a densely populated city where the residential space is physically limited by the surrounding mountains. Deusto, for example, has a population density similar to Bilbao, about



9,000 inhabitants/km<sup>2</sup>. In contrast, the population density of Zorrotzaurre is below 500 inhabitants per km<sup>2</sup>. And, indeed, the population accumulates in a very small downtown in the south of the island, in a few houses along the riverbed. Our twin Lighthouse City Amsterdam has a population density of 4,400 inhabitants per km<sup>2</sup>.

The ratio of immigrants in Bilbao is about 10% (7% in Deusto and 9% in Zorrotzaurre). The origin of the immigrants in Bilbao and Deusto is mainly America, while in Zorrotzaurre, fifty per cent of immigrants are from European countries. However, given the fact that only 403 inhabitants were registered in the latest accessible census, the future cultural composition of the island's residents may develop significantly.

### Housing profile

With respect to the housing stock, Zorrotzaurre is nowadays an area with few houses and little space habilitated as residential areas. There are only 265 houses distributed in a small urban epicentrum in the southern part of the island and some houses scattered along the riverbank. They were retrofitted during a ten-year period (2009-2020). The interventions were centred in security and accessibility with no specific action in energy efficiency. The data related to the ownership (Figure 17) indicate that only 1.6% are corporate housing, while the number of private housing units reaches 80% (84% in Bilbao). The percentage of rental housing reaches 17.8%, considerably higher than in Bilbao (13.6%, see annex 03).

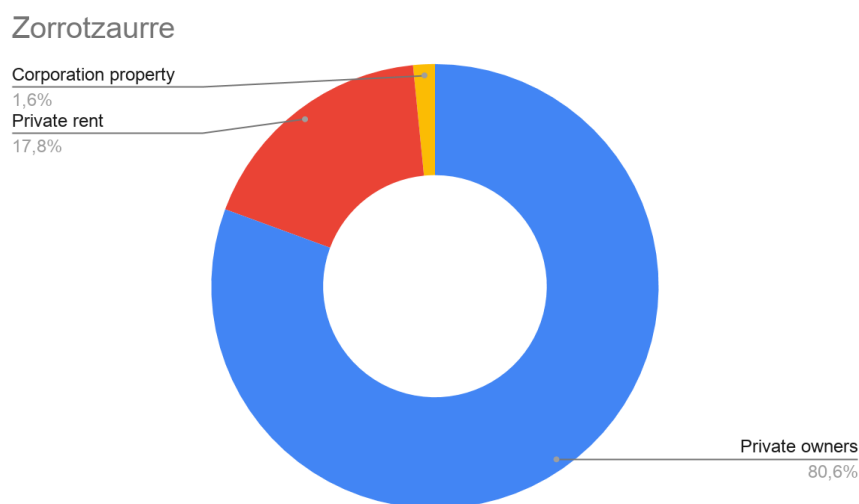
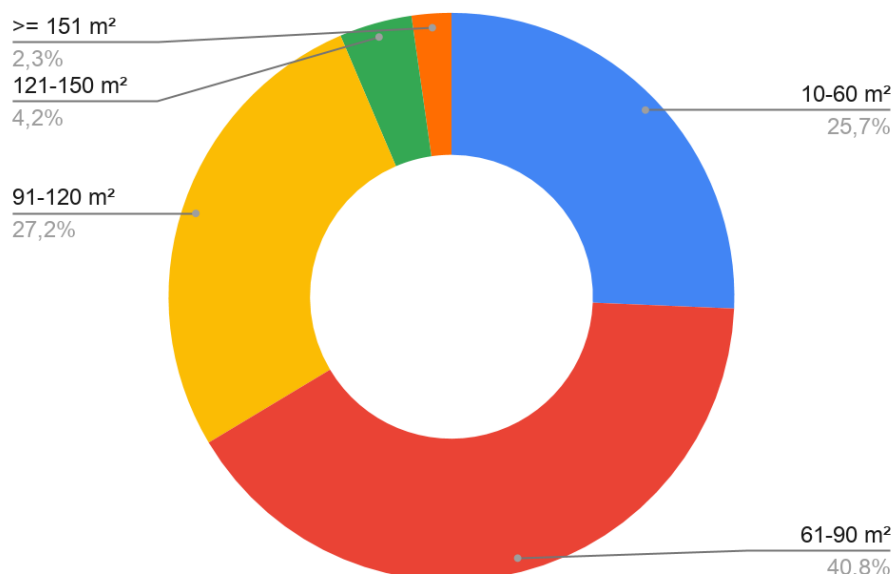


Figure 17. Distribution of home ownership in Zorrotzaurre (Eustat, 2016)

### Zorrotzaurre



**Figure 18. Size of dwellings in Zorrotzaurre (Eustat, 2016)**

Zorrotzaurre also differs from both the city and its district (Deusto) in the size of the dwellings (Figure 18). On the one hand, the percentage of small-sized housing (10 to 60 m<sup>2</sup>) is about 25.7% (16.5 in Deusto and 23.6 in Bilbao). The same effect occurs with the number of large-sized dwellings (flats larger than 90 m<sup>2</sup>) which is much higher in Zorrotzaurre (33.5%) than in Deusto (27.4%) or Bilbao (24.8%). This is compensated with the number of medium-sized dwellings which is significantly lower in Zorrotzaurre (40%) than in Bilbao (52%). In comparison with Deusto and Bilbao, Zorrotzaurre presents an important percentage of ‘very small’ and ‘very big’ houses, which might be related with the stratified society of the old industrial times.

### Education and professional background of residents

The next step is to study the educational level of the population (see Figure 19). In Zorrotzaurre there are no cases of illiteracy, and the percentage of uneducated people (without primary studies) is lower than in Bilbao (0.8% of cases). The number of people with only primary education, up to 12 years, (26.9%) is lower than that of the entire city. However, Zorrotzaurre has less population with only secondary education, up to 16 years, (19.6%) when comparing with Bilbao (and with Deusto). This fact, together with the high percentage of vocational training (20.7%) might be explained by the industrial past. Finally, the percentage of people with university studies (graduate and post-graduate) (31.9%) is similar to the one in Bilbao and slightly lower than in Deusto. With respect to parity, women with graduate and post-graduate studies present higher percentage (than men) in Zorrotzaurre (Deusto and Bilbao) while the percentages go on the opposite with respect to vocational training.

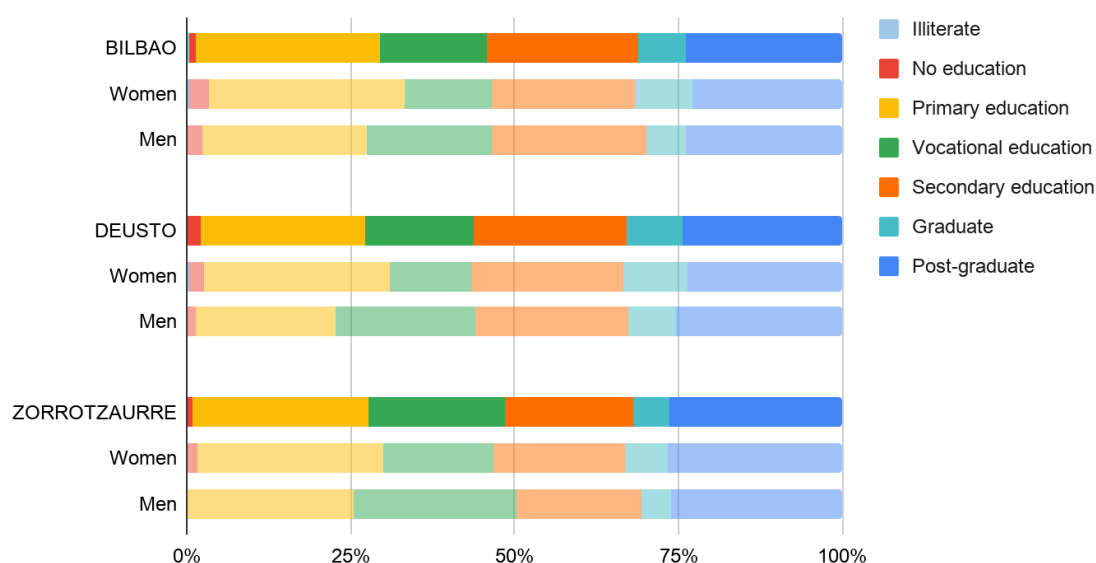


Figure 19. Level of education of men and women in Zorrotzaurre (Eustat, 2019)

Another important point to analyse is the labour force ratio (see Figure 20). The percentage of the inactive population (children, retired people, people who are not looking for a job, etc.) represents 45% in Zorrotzaurre, while it is about 52.3% in Bilbao (and 54.2% in Deusto). The proportions remain stable with respect to gender (in Zorrotzaurre, Deusto and Bilbao), with an increase in the inactive population among women.

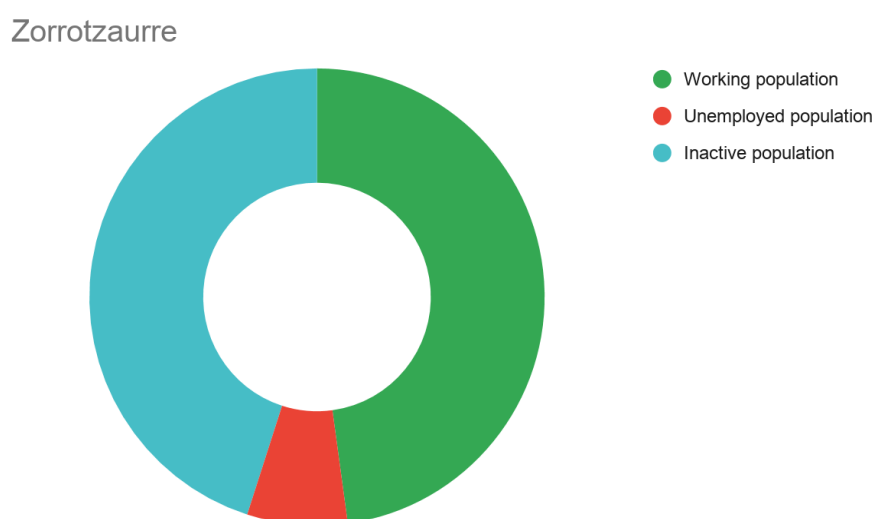


Figure 20. Active population status in Zorrotzaurre (Eustat, 2019)

Analysing the distribution of the working population by sector of activity, it can be seen (Figure 21) that Bilbao presents an employment profile mainly focused on the service sector: 83.7% in Bilbao, 84.2% in Deusto and 84.4% in Zorrotzaurre. These percentages increase notably if only analysing the jobs of women (93.6% in Bilbao and 93.3% in Zorrotzaurre).

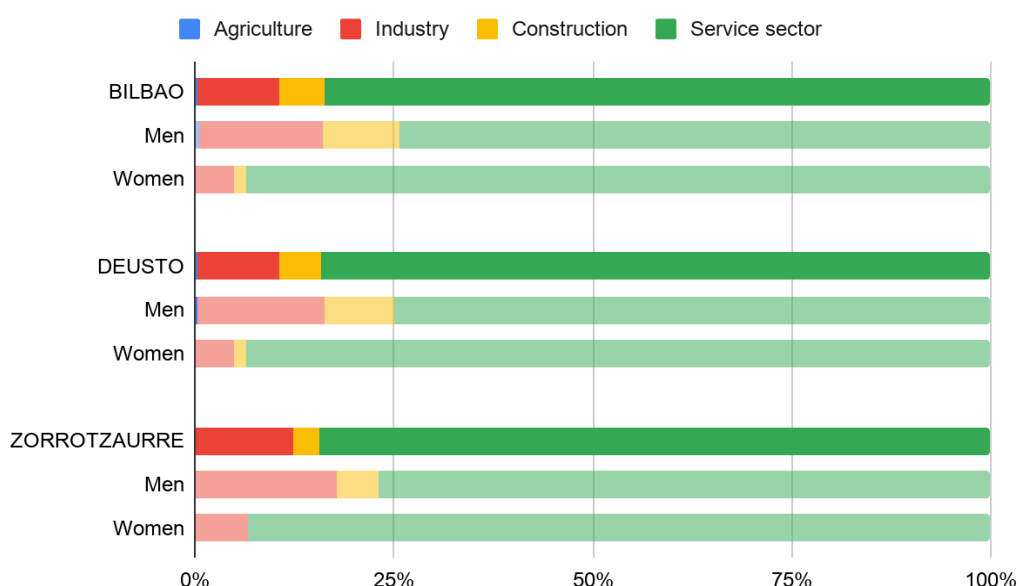


Figure 21. Activity sectors in Bilbao, Deusto and Zorrotzaurre (Eustat, 2016)

The second most important sector is the industry that accounts only for 10.3% of jobs (12.4% in Zorrotzaurre). The third sector is nowadays construction, with 5.7% of jobs (decreasing in Zorrotzaurre to 3.2%). Both sectors are clearly masculine, increasing nearly 5 percentage points when comparing with women sectors.

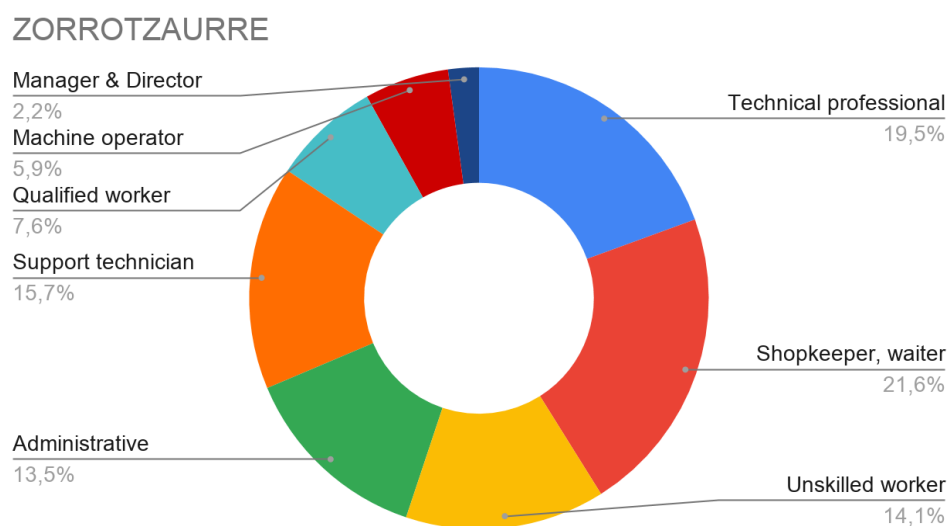


Figure 22. Groups of professions in Zorrotzaurre (Eustat, 2016)

If looking to specific professional groups' percentages in Zorrotzaurre (Figure 22) there is a wide selection of professionals: the waiters and shop assistants (21.6%), technical professionals (19.5%), support technicians (15.7%), unskilled workers (14.1%), administrative

and office jobs (13.5%), skilled workers (7.6%), machine operators (5.9%), directors and managers (2.2%). Groups of farmers and fishermen, and the military have no presence.

#### 4.5. Local assets and networks



Figure 23. Interesting cultural venues, universities and social groups

The industrial decline of Zorrotzaurre with many abandoned buildings and old factories has been the breeding ground for alternative associations that are giving rise to a flourishing space of socio-cultural activity. This is positively affecting the entire city. Two main associations are the ones that bring together this activity in the old Zorrotzaurre peninsula: *ZAWP* and *Espacio Open*. Full explanation of the organisations and socio-cultural activities in Zorrotzaurre is provided in Annex 04.



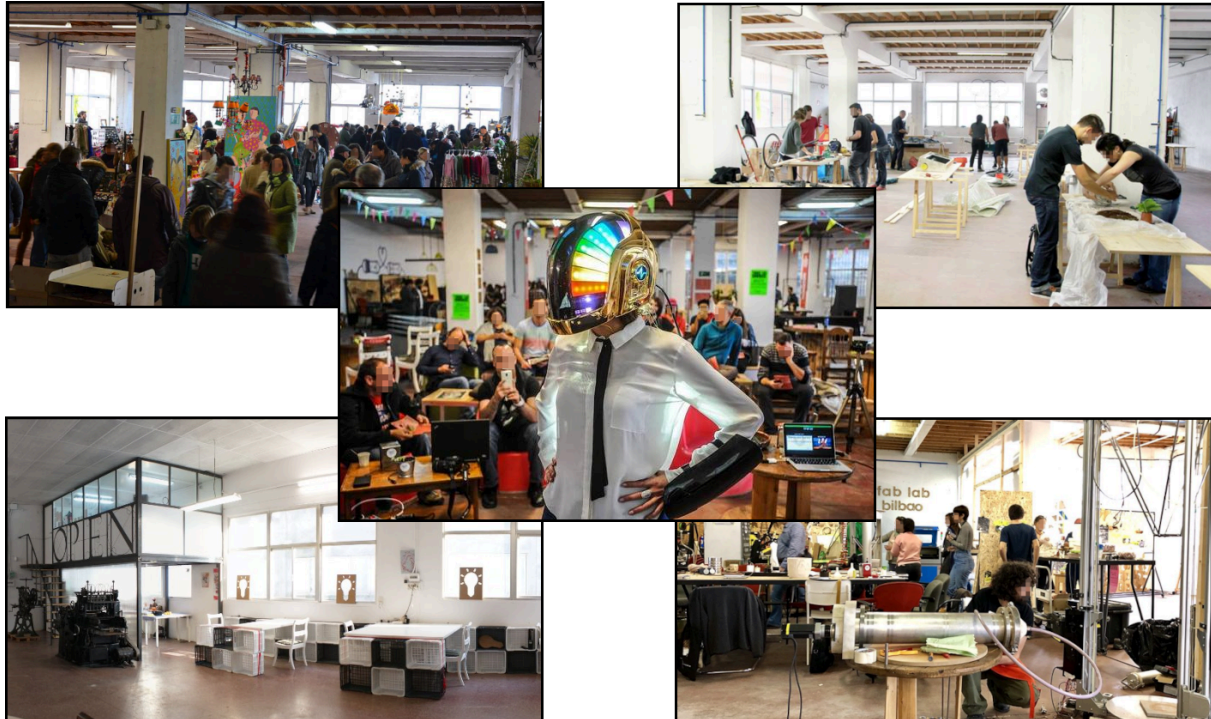


Figure 24. ZAWP initiatives and facilities (Pabellón 6, La Nave Va and La Terminal)

**ZAWP** (Figure 24), Zorrotzaurre Art Work in Progress, is a project initiated by the *Haceria Arteak* Cultural Association that was born in 2008 to address the meanwhile approved urban plan for the neighbourhoods of Ribera de Deusto and Zorrotzaurre. ZAWP is today a consolidated movement of many people who work in the social, economic and cultural revitalisation of the neighbourhood through the creation, intervention and enhancement of memory. Since its foundation, they have been responsible for a large number of socio-cultural activities:

- **Sala Hacería**, a group of students at a school of performing arts founded in 1998 the association *Haceria Arteak*, and transformed a former sawmill into a meeting place for groups, performance schools, students of Fine Arts and academics and artists of all kinds.
- **Pabellón Nº 6**, a former industrial pavilion rehabilitated in 2011 and recovered as a place of creation within the framework of ZAWP, it is now independently promoted by the Association of creators of performing arts, composed of 13 multifaceted creators with a different view of the performing arts.
- **Garabia Zarabia Aretoa**, former workshop transformed into an exhibition space, it is a multidisciplinary room hosting a wide range of activities by the hand of many creators and artists. At the end of 2019, it became part of *Pabellón Nº 6* project.
- **LA TERMINAL** is an exhibition area of more than 2,500 m<sup>2</sup>. It was an old factory reconverted into a place for the exhibition and the celebration of events, markets, urban festivals, etc. It is a place to exhibit and to commercialise ideas and/or projects.
- **LA NAVE VA**, current ZAWP's headquarters, is a coworking/coliving space of expression and growth. An ideal framework to support and encourage creation by mixing emerging projects with consolidated projects and professionals. A place to

promote ideas and projects, as well as to carry out events, meetings, presentations, etc.



**Figure 25. Espacio Open: Open your Ganbara, Maker Faire & Fab Lab Bilbao**

**Espacio Open** (Figure 25) is one of the cultural initiatives that gives life to La Ribera de Deusto/Zorrotzaurre. It is located in the Artiach building, giving a new use to part of the building that was for many years the Biscuit Factory of Bilbao (Artiach). Espacio Open uses the Artiach old facilities to organise and host a diversity of projects:

- **Open Your Ganbara** is a different type of market based on the idea of Flea Markets. It is a covered market of 2,000 m<sup>2</sup> where you can spend a different Sunday in a special atmosphere. There are four spaces clearly differentiated for amateurs and professionals. A good ambiguous-relax area where you can get to breakfast, brunch or the last of the day with the daily press, free Wi-Fi and splendid conversations about the divine and the human. Open Your Ganbara also works as a meeting point for the community that shares the love for 3R culture (reuse, reduce, recycle) and objects made to last and be used by several generations.
- **Fab Lab Bilbao** operates as a school of creative technology that offers tools, knowledge and professional support to carry out all types of technology-based projects (from 3D printing and digital manufacturing to robotics, creative programming or wearables). It is open to all audiences, with special emphasis on communities in the world of contemporary art and culture and young people.
- **Maker Faire** is a fair of inventors and creators, a showcase of inventions, creativity and ingenuity designed for all audiences, as well as a celebration of the Maker



movement. It is a place where people show the world their creations and share their knowledge with those who want to learn. Among the Makers there are all kinds of people, with all kinds of ages and origins: fans of technology, craftsmen, scientists or garage inventors, along with organisations, companies or centres of creation and digital manufacturing. It is the main event of public concurrence of Zorrotzaurre.



Figure 26. Mondragón Unibertsitatea, IED Kunsthal & DigiPen

In recent years, several centres of higher education have settled on the island in refurbished industrial buildings, as part of the strategic plan of betting on Zorrotzaurre as a technological and knowledge centre. Particularly noteworthy are the following institutions:

- **DigiPen**, popularly known as "the American university of video games", began the 2018-2019 academic year in its new location in Zorrotzaurre. The centre, which has moved from its previous facilities in Zierbena, where DigiPen has provided specialised training for eight years, begins the new course with a student body of 200 from fourteen countries that will take the two university degrees taught. DigiPen's graduates are 100% employed and the centre's objective is to grow in its new location by 75% within the following three years.
- **Mondragón Unibertsitatea** (University of Mondragón) will reinforce its academic offer in Bilbao for the 2020-21 academic year. To this end, a new space will be opened in Zorrotzaurre and a total of 25 undergraduate and postgraduate degrees will be taught in Bilbao.
- **IED** (Istituto Europeo di Design) **Kunsthal**, the school of higher design studies is established in Zorrotzaurre with the intention of becoming a creative and cultural meeting point for the region, giving an educational boost to the community and promoting Basque design in the world. The headquarters are located in the facilities of the La Papelera building (former paper mill).

- **La Fundación Metrópoli**, is a firm of international prestige in the field of urban planning, that will open a branch in this building to develop its activities in connection with the city. This foundation researches on the future of cities and applies innovation and the principles of sustainable development to the field of architecture.

There are also smaller associations that, in the post-industrial context of Zorrotzaurre, have emerged as schools of street artists (there are two **circus** groups, Zirkozaurre and Karola Zirko Espacio, coexisting in the neighbourhood), associations dedicated to **alternative sports** (*Piugaz* in climbing or *Guretxoko*, a skateboarding school), or even neighbours who have decided to self-manage old industrial buildings to carry out their social activities (*Bizinahi*).

Zorrotzaurre has been designed as an area for innovation and entrepreneurship, and indeed, the presence of cultural hubs, educational institutions, and open spaces and initiatives for entrepreneurship is notorious. The urban development of the neighbourhood is probably having some impact in the rhythm and the way they will evolve. We expect those to be especially relevant stakeholders, or *linking pins*, that will facilitate the engagement and participation.

## 4.6. Citizen and stakeholder engagement context

### The social context and ecosystem of actors in Bilbao

The City of Bilbao (and Bilbao metropolitan area) has suffered important economic crises which in the last term has resulted into a very well-connected network of stakeholders that keep a continuous and transparent communication among the governmental institutions, enterprises, clusters, associations, knowledge institutions, etc. This network builds up on the idea that competitiveness ultimately depends on capacity building and this follows a two-way mechanism where governmental institutions need to connect with neighbours (and neighbourhoods) and citizens need to participate in the decision-making process. As a consequence, forums and workshops are periodically organised, strategic technology plans are continually reviewed, new financing structures and business models are promoted and continually evaluated, etc.

With respect to ATELIER, Annex 05 shows a complete list of institutions that have a significant role with respect to energy transition and operate at different administration levels (Bilbao, Bizkaia, Basque Country). The list includes:

- **Governmental agencies and public bodies** in charge of guaranteeing the public services, facilitating financing mechanisms, and/or designing policies and strategic plans.
- **Clusters and associations** that represent the interests of the industry at different sectors (CoE at energy sector, ACLIMA at environmental sector, GAIA for digitalisation, etc.). They provide market surveillance and strategic analysis, and work as bridges between industries and public administrations.
- **Industries and consultancy firms** that promote energy transition (i.e.: Jaureguizar, Iberdrola, Factor CO2) from different angles: promoting energy efficiency in buildings, facilitating the deployment of smart grids, making possible new carbon markets, etc.

- **Research Centres and Universities** (TECNALIA, Mondragon University, Digipen) that provide innovative solutions and methodologies, and that represent knowledge hubs where entrepreneurs, students and neighbours will shape the future of the island.
- **NGOs and civil organisations** that build new energy paradigms (i.e., Energía Justa), provide cultural and entertaining spaces (i.e. Zorrotzaurre Art Work in Progress) or provide channels for neighbourhood participation (i.e. Asociación de Vecinos de la Ribera).
- **Others:** locals and service providers in Zorrotzaurre (pubs, hostels, sport centres, etc.).

The capacity building potential of the Bilbao ecosystem has been enlarged by innovative projects that have accelerated the mechanisms of social participation and activated the drivers for energy transition. Annex 06 shows the most important ones.

### The social context of Zorrotzaurre and connectivity with other neighbourhoods

Main relevant local assets and networks are already identified (section 5.4). Their influence might grow with the urban transformation of the island and will probably help to involve resident groups that might readily engage with the PED thematic.

Other important *linking pins* are the neighbourhood associations on Zorrotzaurre island, which play an important role in citizen activation. They have a structured manner of participation and they keep well connected to the governmental entities, that is, to the COB. Bilbao is organised in eight districts that have a formal representation in the form of ‘Consejos de Distrito’ (see Figure 27). They have an official recognition and their structure and functions are published at *Boletín Oficial de Bizkaia*. Each ‘Consejo de Distrito’ has assigned a public building where the meetings take place every month.

The association ‘Federación de Asociaciones Vecinales de Bilbao’<sup>39</sup> represents an alternative to the ‘very official’ representation of Consejos de Distrito. Although theoretically they represent the neighbours of the city, the reality is that they have a strong political character. They are very active in terms of press publications, generation of documents, organisation of protests, etc. They have physical presence in many neighbourhoods, and virtual representation of all of them.<sup>40</sup> The technical secretary is well connected with the COB.

The island of Zorrotzaurre has traditionally been a very active and cohesive neighbourhood. Their neighbours’ association is called ‘Asociación de Vecinos de la Ribera de Deusto’. They meet regularly and are well connected to the COB. This makes sure the participative mechanisms of Zorrotzaurre and decision-making are situated at the neighbourhood level. As the official implementation is in the hands of the ‘Consejo de Distrito de DEUSTO’, they report and communicate about the discussions and decisions to them.

In summary, ‘Asociacion de Vecinos de la Ribera de Deusto’ is the local neighbour association of Zorrotzaurre, they have been very active and participative about the urban transformation process, and although currently, they are feeling a little bit tired about the civil works, we expect

<sup>39</sup> <http://www.bakarra.net/cms/index.php>

<sup>40</sup> [http://www.bakarra.net/cms/index.php?option=com\\_content&task=view&id=72&Itemid=29-sangabriel](http://www.bakarra.net/cms/index.php?option=com_content&task=view&id=72&Itemid=29-sangabriel)



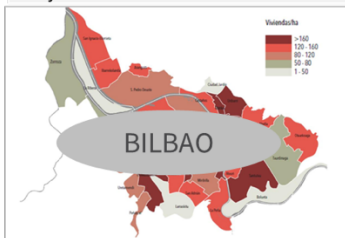
to rapidly connect with them and get their support as linking-pins. The impression is that they will be positive about the PED development, and about all that had to do with the energy transition (insertion of renewable energies, deployment of smart grid, etc.). When organising participatory processes for the entire city, either *Consejos de Distrito* or *Federación de Asociaciones Vecinales* can be a suitable channel to connect with all citizens.

#### FEDERACIÓN DE ASOCIACIONES VECINALES DE BILBAO

Strong political character

Technical secretary may facilitate the contact with the association

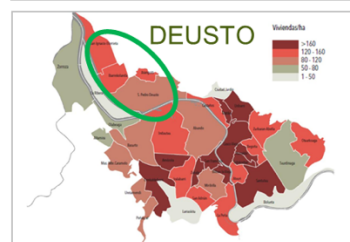
They will receive well all the solutions related to green energy transition



#### CONSEJO DE DISTRITO DE DEUSTO

All the districts are represented and the messages get directly to the city hall

They meet once a month which facilitates a well structured participation



#### ASOCIACIÓN DE VECINOS DE RIBERA DE DEUSTO

Composed by local neighbours

They have suffered civil works and feel a little bit tired about

The communication with the City Hall is good



ZORROZAURRE

Keep informed!

Figure 27. Associations of neighbourhoods and their geographical scope

### ATELIER participatory methodology

As described under Chapter 2 *Overall approach*, the WP7 partners work according to a three-step methodology for participation (*Hypotheses and questions* > *Target groups* > *Activities*).

#### Research questions

We will define research questions in a continuous reflexive process where stakeholders related to ATELIER identify the key points to gain advantage into the energy citizenship. In general terms, and in relation to the project lifetime, we will start with more general research questions (relation between energy transition and climate change, energy profile of the COB, challenges and opportunities of energy transition, new social and economic perspectives, etc.) and keep evolving towards more specific ones (electric vehicles, renewable energies in Zorrozaurre, energy markets, smart grid, dynamic management of demand, etc.).

#### Target groups

Depending on the research questions, we might need to involve different stakeholders related to the energy transition model of the COB or/and the specific interventions in Zorrozaurre. In this sense, we will involve:

- *Companies and clusters*: they will provide advanced solutions and technological developments that might open new possibilities.

- *Governmental entities*: we will mainly involve public administrations connected to the COB and to the Basque Government. Other institutional levels as the province of Biscay or the Spanish government are not so well connected to the ambitions of the project.
- *Research centres and universities*: we will connect with all the universities and research centres in ATELIER consortium and with those settled in the Zorrotzaurre island. Other collaborations might also be suitable.
- *Cooperatives and end-user associations*: other energy models where energy providers and energy consumers are directly connected are becoming more and more relevant. ATELIER will approach both cooperatives and end-users associations.
- *Citizens & neighbours*: the citizens of Bilbao are represented by several neighbour associations that are organised according to the districts and neighbourhoods of the city. Also, directly, or helped by other associations in the island (see section 5.4), we will articulate participative mechanisms with the residents of Zorrotzaurre.

## Interventions

The ATELIER project includes multiple interventions that are defined not only in WP7 but all along the project workflow. The interventions related to WP7 are defined in section 5.7, those will also be accompanied by the organisation of competitions (WP5) and specific workshops (WP3).

## 4.7. Suggested activities and high-level action plan

As discussed in section 2.4, the engagement activities of ATELIER take place at three different levels, which are interpreted in the Bilbao demo as follows:

1. Low-level engagement: citizens are engaged by using artistic creations, or other general communication and dissemination activities (see below). The Bilbao ATELIER consortium does not expect any output or delivery from participants, but these activities nevertheless provide opportunities for the consortium to meet people and stimulate participation in activities in the medium and 'high' engagement levels (below).
2. Medium-level engagement: the space of dialogue is created in an easy and relaxed environment. The conversation might be stimulated by experts in the field or simply articulated among agents. The perspectives, ideas and feelings are translated to the ATELIER Bilbao consortium and specially to the COB.
3. Co-creation and co-design trajectories: the participants join the entire research cycle, from the presentation of the research questions, to the analysis of results. The co-creation and co-implementation of solutions is an ambition shared by all the participants and the ATELIER Bilbao consortium.

## On-site activities

Depending on the research question and the stakeholders involved, we will design:

- *Artistic creations*: artistic, creative and deliberative methods to approach and grasp the future of energy. This method will make possible to approach the feelings of energy citizenships.
- *Seminars and workshops*: specific topics might be approached in a different manner by articulating dialogue with experts. An ex-ante communication without any calibration might facilitate the understanding of technical details or social issues
- *Interviews & forums*: structured, semi-structured and unstructured conversations where stakeholders and citizens are invited to expose their ideas and experience. They might work individually or in small groups.
- *Citizen science*: citizen science activities will be organised according to a methodology<sup>41</sup> that includes citizens along all the research steps from the conceptualisation of the research activities, the collection of data and the final assessment of results.

## Communication activities

Alongside these activities, WP7 works with a communication strategy to foster content creation and dissemination. Content can both be spread within Zorrotzaurre and Bilbao in order to advance public awareness on the energy transition and specific PED solutions, and within the larger ATELIER project team to inspire and facilitate replication strategies in Fellow Cities. Ideas for content creation are:

- *Energy Champions*: a portrait series of local residents and organisations that are currently actively involved with the energy transition. Can be coupled to the citizen science activities, artistic creations, or forums.
- *Blogs and articles* on specific ATELIER progress and generally informative on energy transition, to be shared through the ATELIER website, University of Deusto website, Bilbao website and other channels. Topics can include: the relation between energy transition and circular economy; energy citizenship; data commons in the energy transition; and so on.
- *Collaboration* with other smart city projects in Spain and/or Europe to showcase ‘successful’ PED projects.

Dissemination happens through:

- City of Bilbao and University of Deusto webpages and forums;
- City of Bilbao publications: InfoBilbao, Periódico Bilbao, Relatos de Bilbao, etc.;
- Local stakeholders in Zorrotzaurre and Deusto and their networks (‘linking pins’);
- The networks of (non-energy related) local assets, such as universities, non-governmental associations, neighbourhood associations, etc;

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<sup>41</sup> Haklay, Muki (2012) in Citizen Science and Volunteered Geographic Information: Overview and Typology of Participation. Crowdsourcing Geographic Knowledge. 2013, pp. 105–122.

- Active digital platforms and social media pages, both Zorrotzaurre-based and city-wide;
- The suite of ATELIER channels, both Bilbao-based and the broader consortium.

## Conclusions

In order for the Bilbao participatory strategy to answer the research questions by the end of the project, we have outlined a number of participation and engagement activities. These activities will be organised according to two ambition levels: one related to paving the way towards Bilbao Bold City Vision which will work at city level; and a second one that works on the acceptance and the co-creation of the PED solutions to be deployed in Zorrotzaurre. Simultaneously, the research questions contribute to the engagement of citizens and stakeholders according to various levels of engagement (see above). With this perspective, the COB aims to strengthen a bottom-up citizen-centred perspective where residents increase their capacity as energy citizens and advance in generating energy communities as a necessary and promising component of the energy transition. Helped by the linking-pins and ATELIER Bilbao partnership, this flexible participatory proposal facilitates the dialogue, contributes to the generation of knowledge and interaction among multiple axes.

The engagement framework does also strengthen the communication among all energy-related stakeholders (Annex 05), setting up a participatory framework that amplifies the possibilities of generating the tools and instruments (educational systems, collaboration agreements, business models) that reinforce the implementation of new energy models facilitated by the deployment of RES, innovative storage systems, smart grids, interaction tools, etc. By taking part in community initiatives, we learn about the needs and wishes of residents, connect with linking pins and get to know about the possibilities of the local stakeholder network. These are building blocks in understanding how participation in the energy transition can be organised in an emancipatory manner, where PED residents and Bilbao citizens advance towards more independent, cleaner and safer energy communities.



## 5. Concluding remarks

This document has sought to map out the questions and theoretical foundations that are guiding the citizen participation and stakeholder engagement activities in Amsterdam and Bilbao as part of ATELIER. The framework for citizen and stakeholder participation highlights the multi-layered nature of participation, especially in a domain as complex as the energy transition, implying the importance of tailored levels of participation depending on various questions in ATELIER within both Lighthouse City contexts. In organising citizen participation and stakeholder engagement, the participation ladders of Burns *et al.* (2004) and Hulbert & Gupta (2015) assist the project partners in defining the right level of participation as well as the relevant type of participation - light, one-way or intensive, two-way - that suits the problems at hand.

This report is not a definite, finalised plan on citizen engagement; it instead provides the basis for an iterative process. Due to the complex nature of ATELIER and the amount of parties working on various parts of this energy transition project, the development of specific participation activities in time, place and targeted at different stakeholder groups is an ongoing effort and requires collaboration with all consortium partners. Periodic meetings with WAAG and DEU where ideas and progress are discussed, assist these partners in planning and organising the activities with project partners, relevant stakeholders and citizen groups. This fruitful collaboration culminates in participation and engagement plans that are articulated in the two Lighthouse Cities, while guaranteeing the specific characteristics and societal structure of each Lighthouse City. Updates on the specific participation plans and activities will be developed and communicated with other consortium partners in order to integrate the WP7 activities with tasks in other work packages.

The participation activities are aimed at effectuating the ambitions of ATELIER in such a way that it addresses the social dimension of the energy transition upfront. Therefore, ATELIER is compelled to adhere to the social structures present at both demo sites. This deliverable underlines the similarities between the two PED demo areas at hand. As we have laid out, both Buiksloterham and Zorrotzaurre are former industrial areas in respectively Amsterdam and Bilbao, where building developments heavily impact on the socio-economic character of the area. The social analyses of Zorrotzaurre and Buiksloterham constitute a starting point to involve residents and other stakeholders in the ongoing development of the Positive Energy Districts.

This document also makes apparent some differences in the approach of both Lighthouse Cities: where Bilbao uses a funnel method and considers the PED developments in Zorrotzaurre firstly (or Zorrotzaurre as a City Lab) from a city-wide perspective, Buiksloterham in Amsterdam has been regarded as a 'circular hub' already for a couple of years and the focus for participation and engagement is in this area specifically.

Over the course of the ATELIER project, the activities organised by all WP7 partners will contribute to finding *some* answers to the guiding questions formulated in chapter 2. Thereby we are adding pieces of the puzzle on the question of how citizen participation and stakeholder engagement can be organised so that it contributes to empowerment of citizens, stakeholders and communities in the energy transition. However, answering all the guiding questions will be out of the scope of ATELIER alone. This will require continued efforts through various developments contributing to the energy transition.



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Annex 02: Most important initiatives and projects of the COB

Annex 03: Socio-economic context of Zorrotzaurre

Annex 04: Socio-cultural activities and organisations in Zorrotzaurre

Annex 05: Stakeholder map of Zorrotzaurre

Annex 06: Statistical context of Zorrotzaurre, Deusto and Bilbao



## D7.1 - Annex 01

Industrial Heritage of Zorrotzaurre



AmsTERdam BiLbao ciTizen drivEN smaRT cities



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# Industrial Heritage

The old peninsula of Zorrotzaurre was an important centre of industrial activities in the city. Some of the old industrial buildings will be preserved in the re-planning of the new island, as examples of industrial architecture of the time that will serve as a remnant of its industrial past.

## 1 Termoeléctrica Consonni



Figure 1: Termoeléctrica Consonni (Credits: ZAWP)

The Consonni Thermoelectricity building (Figure 1) was built in 1957. It was named after the corporation that produced electrical resistances for decades in this building.

In recent years the pavilion has served as a warehouse for different types of old industrial machinery, so in 2013 it was opened as a "Heritage Centre for the Culture of Industrial Work", changing its original name to Konsoni Lantegia (see Figure 2).





Figure 2: Konsoni Lantegia (Credits: COR)

This is one of the industrial buildings that will still be standing after the reconversion of the districts of Ribera de Deusto and Zorrozaurre through the urban plan.

## 2 Tarabusi factory

The Tarabusi, S.A. factory was dedicated from 1945 to 1978 to the production of aluminum alloy pistons and special steel rings and liners for them. Since 1995 the old industrial site houses the municipal vehicle depot of the crane of the Bilbao City Council being totally asphalted and/or concreted. Only one building remains, in good condition, of those that belonged to Tarabusi, located at the northeast of the site.

The Tarabusi building (Figure 3) is another of the buildings that will be maintained in the urban plan for the refurbishment of the Zorrotzaurre neighbourhood.



Figure 3: Tarabusy Factory (Credits: COB)

La Fundación Metrópoli<sup>1</sup>, which was established in 1997 and is a firm of international prestige in the field of urban planning, will open a branch in this building to develop its activities in connection with the city. This foundation researches on the future of cities and applies innovation and the principles of sustainable development to the field of architecture.

According to this foundation, the project of reconditioning the building aims to retrofit the building and adapt it to co-working space. The strategy aims to plug in the circulation and common areas as new volumes whilst leaving the existing building as large open plan working space. This would allow for flexibility in the work areas and encourage interaction in the shared areas. A top floor is added to the building to increase its density.

<sup>1</sup><https://www.fmetropoli.org/en/urban-solutions/>





Figure 4: Future of Tarabusi Building (Credits: Fundación Metrópoli)

The envelope of the new volumes responds to their orientation: the sides that face south become solar façades, the ones where view is required become transparent façades and the others become wind façades. The proportion and window pattern is interpreted into the rhythms of the new modules of all the new facades even if they differ materiality to integrate the presence of the old and the new.

### 3 LANCOR

The LANCOR building (Figure 5), or what is left of it, is one of the few that will remain standing after the intervention of the Urban Plan.

The full name of the company is Elorriaga Industria Eléctrica, S.A. "Lancor" and it was founded in Bilbao in 1943. Since its beginnings, Lancor has directed all its efforts towards the supply of high quality electrical machines, later specializing in the sector of electrical motors for elevators. At the turn of the century, Lancor 2000, S.L. moved to modern facilities located in another town in Bizkaia.

Workers from the company remember that, while they were in Zorrozaurre, many of them used the boats to reach what was the peninsula and talked about the queues that were formed there due to the number of people working in the workshops in the area.



Figure 5: LANCOR Building (Credits: COB)

Despite the fact that the demolition work was planned for 2010, the Zorrotzaurre Management Committee and the Right Bank Real Estate Development Society decided to bring forward these actions due to the danger of ruin. In October 2008, three buildings where the company Elorriaga Industrias Eléctricas S.A. (Lancor) was located, were demolished.



Currently, only the office building remains in the 14,025 square meters belonging to Lancor, which will be refurbished and will host companies compatible with the new urban development.

## 4 Lonas y Toldos Bilbao Goyoaga



Figure 6: Lonas y Toldos Bilbao Goyoaga (Credits: ZAWP)

In the place where the factory of Lonas y Toldos Bilbao Goyoaga (Figure 6) was located before a tide mill. Later, the Lemonauría farmhouse was built on it when the land was dried out.

In 1833 Juan Bilbao-Goyoaga built a factory of canvases, ropes and sails of ships in the same location that supplied the ships built in the estuary or berthed in the port. In 1911, a fire destroyed its facilities and the Goyoaga's residence, so they were forced to build new pavilions.

When the shipyards disappeared, they adapted their activity and specialized in the manufacture of awnings for facades or to protect themselves from the sun. This new productive activity was a success until the end of the nineties, when the company suffered a great crisis and was forced to get rid of the staff and sell the factory in Ribera de Deusto to the Bilbao City Council.

The building disappeared in 2005 although a tile panel from 1912 was preserved from its old façade.



## 5 Astilleros Pilpilka



Figure 7: Astilleros Pilpilka

Until 2013 there was still a company dedicated to the construction of boats in La Ribera de Deusto. Pilpilka (see ), and its owner Pedro Murelaga, have accompanied the neighborhood for years from its premises in Sagardui Street next to the premises of Vicinay Cadenas.

## 6 Praxair



Figure 8: Praxair (Credits: ZAWP)

The Praxair (National Oxygen Company) building (Figure 8), located in the private street of Olagorta, was owned by Constructora Jaureguizar. For years the building remained in a state of ruin, giving shelter to dozens of people without a place to live. In June 2014 the buildings that made up the Praxair complex were demolished.

Praxair Spain moved to Barakaldo and became Nippon Gases, part of Taiyo Nippon Sanso Corporation.

## 7 Papelera del Nervión



Figure 9: Papelera building before being refurbished (Credits: ZAWP)

The building now known as Papelera (see Figure 9) was built in 1958 by Taibo Industries. The company, dedicated to iron, moved to this building in Ribera de Deusto probably after its primitive factory was affected by the works of the Canal. After Industrias Taibo it occupied the Nervión Paper Mill building, owned by the Arzoz family. This was the last company to make use of the building, after which it remained empty for years.

The cultural association ZAWP (Zorrotzaurre Art Work in Progress) began conversations with the owners of the space and with institutions to try to find a way to preserve and recover it, since it was out of order.

In 2012, as a result of the work carried out in collaboration with the Basque Association of Industrial Heritage<sup>2</sup>, the building was classified as a public facility within the Zorrozaurre Special Plan<sup>3</sup>. In 2018 its use as the headquarters of the Kunsthal Superior Design Center<sup>4</sup> was made public (see Figure 10).

<sup>2</sup><http://www.patrimonioindustrialvasco.com/>





Figure 10: Papelera building refurbished into IED Kuntshal (Credits: IED Kuntshal)

The former Papelera del Nervión building is one of 17 industrial buildings that are to be maintained under the Special Plan. It is the only domed building on Zorrotzaurre and one of the few that exist in the province of Bizkaia.

## 8 Artiach

This building (Figure 11) was the first conceived and built to house a cookie factory in Spain. Its designer was the engineer of the same family José Artiach Gárate. It has an important reinforced concrete facade that combines two very different construction languages. The first two floors, resolved with a classicist language, contrast with the austere and conventional modern style of the upper floors. It is protected and separated from the adjacent buildings by molded fins that form a small square in front of the factory entrance.

Attached to this building is the large Duquesa María pavilion that stretches from one end of the Zorrozaurre peninsula to the other. It is an enclosed pavilion with almost blind walls on which the company name, ARTIACH, stands out on the side wall and Duquesa María on the façade. On the other side of the main building, the more recently built pavilion, covered with facing brick, is designed according to the new ways of understanding industrial architecture, stripped of all artifice and ornamentation. Only the blind tower supporting the company logo breaks the homogeneity of the building.

<sup>3</sup><https://www.zorrotzaurre.com/planeamiento/documentacion-completa-del-plan-especial-de-ordenacion-urbana-de-zorrotzaurre/>

<sup>4</sup><https://www.kunthal.es/>





Figure 11: Artiach building (Credits: COB)

In 1923 the factory had 67 people on staff, 55 of them women, who earned between 3 and 9 pesetas per day (~3 cents of euro) of work depending on their specialization. In 1924, with 88 workers (63 women), they established a system of shifts with which 18 tons were manufactured per day, twice as much as up to that date. In the 40's there were 600 people working in Artiach. In the 70's the factory lived a period of splendour in the plant of Ribera de Deusto, getting to agglutinate up to 800 people. The manufacture, although industrial, needed a lot of manpower. Later Artiach was divided in different premises being occupied by different owners as Comercil Férrica S.A.



Figure 12: Facade of Artiach building (Credits: COB)



Figure 13: Open your Ganbara (Credits: Espacio Open)

Since 2012 the building hosts several cultural projects such as the “Open your Ganbara”<sup>5</sup> (Figure 13), a flea market (see Figure 14) open to all audiences, and DIY Festival Maker Faire Bilbao<sup>6</sup>. The Urban Plan of Zorrozaurre<sup>7</sup> contemplates the conservation of part of this industrial building.



Figure 14: Flea market in Artiach (Credits: Espacio Open)

<sup>5</sup><https://espacioopen.com/openyourganbara/>

<sup>6</sup><https://espacioopen.com/maker-faire-bilbao/>

<sup>7</sup><https://www.zorrotzaurre.com/planeamiento/documentacion-completa-del-plan-especial-de-ordenacion-urbana-de-zorrotzaurre/>



## 9 Beta



*Figure 15: BETA factory (Credits: COB)*

Beta (see Figure 15) is a building from the early 1950s that was occupied by a screw manufacturing company (Beta S. A.) until it was moved to another location in Bizkaia.

Beta is currently known in two parts: Beta I (front) and Beta II (back). The building is one of the 19 industrial constructions that the Zorrozaurre regeneration project will keep standing because of its industrial architectural value.

### 9.1 Beta I

Beta I (Figure 16) is owned by the Bilbao City Council and since the end of 2018 it houses DigiPen, the University of the video game (see Figure 17). Before this space was used for the construction and storage of floats and for other uses of municipal character.



Figure 16: Beta I (Credits: COB)



Figure 17: Beta I refurbished as DigiPen Institute of Technology Europe Bilbao (Credits: DigiPen)



## 9.2 Beta II



Figure 18: Beta II building (Credits: COB)

The building behind it has been known since the beginning of the urban plan as Beta II (see Figure 18). It belongs to the original factory and is the one that can be seen in most of the following photographs (except for those of the spaces painted green). This space came to have an impressive garden on its roof.

Within the urban plan, a new use is established for this building: As Fabrik, Factory of advanced services and industry 4.0<sup>8</sup>. This municipal project has been granted with European funds from Urban Innovation Actions initiative<sup>9</sup>.

AS Fabrik Bilbao aims to improve the competitiveness of local companies and to consolidate Zorrotzaurre as an innovative and reference ecosystem in the field of advanced services for industry 4.0 and the digital economy.

<sup>8</sup><https://www.uia-initiative.eu/en/uia-cities/bilbao>

<sup>9</sup><https://uia-initiative.eu/en>



Figure 19: Beta II refurbished as Mondragón Unibertsitatea (Credits: COB)

To this end, the project will have as its epicenter a public building located in Zorrotzaurre with an industrial past, which will be conditioned as a reference center for the project and a meeting point for the planned activities. From this building four key actions will be coordinated, to be developed in the next three years, and which aim to contribute to the consolidation of a new production model:

- Training programs aimed at university students, entrepreneurs and professionals, designed to address the challenges of the 4.0 industry in the digital economy.
- Networking actions between the main agents or interest groups in the public and private sphere to coordinate a single strategy, which is effective and efficient in meeting the current and future needs of the industrial sector.
- Proposals that stimulate and favour the launch of start-ups based in Bilbao, related to the technology, specialisation and intelligence required by the 4.0 industry to position itself internationally.
- The setting up of an observatory and laboratory of ideas, where trends in the fields of technology, industry 4.0 and digital economy will be analysed, in order to identify the challenges faced by local companies and to propose innovative solutions to these challenges.

Thus, an ecosystem of talent and innovation is created in Bilbao, which will contribute to the development of local companies in knowledge-intensive services and to the promotion of the industrial sector, which must be actively involved in a process of intelligent transformation in order to ensure its future.



## 10 Consonni Electromecánica



Figure 20: Consonni Electromecánica (Credits: COB)

Electromecánica Consonni (Consonni Electromechanics) was born in 1953 from a company that joined this and Termoeléctricas Consonni, also located in Ribera de Deusto for years.



In 1976-1977 the company moved its activity to Zorrotzaurre, occupying a building (see Figure 20) previously used by a glass tube company. Even today, Electromecánicas Consonni produces low and medium voltage electrical panels in the neighbourhood.

## 11 Productos Vulcanizados



Figure 21: Productos Vulcanizados (Credits: COB)

Productos Vulcanizados S.A., dedicated to the manufacture of electrical conductors, was created in 1956. It is an expert in the design and manufacture of all types of low voltage energy cables.

In 2009, the Vulcanized Products group presented Propol Hoist, a polyurethane coated cable used in the hoists of works that are attached to the outside of the building and that allow working at heights of up to 150 meters and temperatures of up to -20°C.

This building (see Figure 21) was built where the street leaves the name Ribera de Deusto to become Ribera de Zorrotzaurre.

## 12 Mármoles Arteaga



Figure 22: Mármoles Arteaga (Credits: ZAWP)

Mármoles Arteaga (Figure 22) was founded in 2005. Since then it has been dedicated to manipulation processes related to natural stones such as marble or granite. This limited company was liquidated as such in 2012, although it is still possible to see some of its materials and creations in this space in La Ribera.

## 13 Chromoduro



Figure 23: Chromoduro (Credits: ZAWP)



Cromoduro (Figure 23) has its origin in the family business Aplicaciones Industriales del Cromo Duro S.A., founded in 1953 by Juan Retolaza and its main area of activity was the automotive industry.

The demolition of the 6 buildings of the former company Cromoduro, located on the Zorrotzaurre riverbank, began in 2014. The remaining two buildings will survive as indicated in the Special Plan for rehabilitation and assigning to service uses.

## 14 MAFESA – Metalduro



Figure 24: MAFESA - Metalduro (Credits: ZAWP)

The company, whose origin dates back to approximately 1930, was installed in Bilbao in 1949 (see Figure 24).

In 1994 Metalúrgica y Ferroaleaciones Especiales Sociedad Anónima (MEFESA) was renamed Fabricación de Metales Duros - FMD Carbide. The company is dedicated to the manufacture of hard metal parts, a mixed material composed of Tungsten Carbide and Cobalt. It is a material of great hardness and with a good mechanical behavior, used for the manufacture of tools that require extreme quality in their production processes. Although it developed its activity in Zorrotzaurre for a long time, the company moved to Basauri around 2016.

## 15 Relax



Figure 25: Relax building (Credits: ZAWP)

In 1960, only 2 years after its foundation, Colchón Relax moved from Castrejana to Ribera de Deusto to occupy this old hardware store (Figure 25). Colchón Relax, belonging to Industrias Relax Zaragoza, developed its activity building mattresses in number 86 of Ribera de Deusto until 2011. The building is currently occupied by the company Airlan. Nowadays, Airlan produces....



This building, together with one of the cranes, is the reference for the division between Ribera de Deusto and Ribera de Zorrotzaurre.



## 16 Matricería Nervión



Figure 26: Matricería Nervión (Credits: ZAWP)

Matricería Nervión (Nervión Tooling) was created in 1981 to manufacture all types of metalworking tools (molds, matrixes and dies), mainly for the automotive sector, but later also for the aeronautical sector. The building (see Figure 26) that the company occupied was demolished in 2018.

## 17 Talleres Molsa

When the Fernández Sawmill ceased its activity, the large space in which it was being developed was divided, giving rise to smaller workshops. At that time, Taller Molsa occupied one of them, which later became known as Garabia Aretoa.

Talleres Molsa (Mol S.L.) built brakes, slip-ring collectors and other parts for port cranes in La Ribera de Deusto until it moved to Asua (a municipality that belongs to the metropolitan area of Bilbao).

A former worker in the workshop, says that at that time they used the crane that gave its name to the later cultural space (Garabia) to go up to the roof. This is one of the industrial buildings that is preserved within the Master Plan as a public facility for cultural use.



## 18 Serrería Fernández



Figure 27: Serrería Fernández (Credits: ZAWP)

In the 40's, a grandfather of the still neighbors of La Ribera de Deusto founded a small carpentry workshop (see Figure 27) with his 3 children and some workers. Years later he established the first sawmill at number 47 in La Ribera de Deusto.

For years the company imported wood from Guinea and other countries to cut it and generate different products. The hard wood is cut to make planks and the soft wood is used to make plywood. Later this is used to make furniture and barrels as well as ship partitions. After plywood is imported, the sawmill starts to work the chipboard, which is created by compacting sawdust.

Over time, new products are generated in the market, so the demand for wood declines and the sawmill is forced to market many products to continue competing with foreign companies. The production declines and the sawmill closes around 93.

After the closing of the company, the large space occupied by the Sawmill is divided, giving rise to several smaller pavilions that are rented to mechanical workshops, carpentries, or blacksmiths among others.

Several of these buildings disappeared in 2019 due to the progress of the urban plan. However, from 2010 onwards, the Haceria Association started to use several of these pavilions for cultural related projects (see Annex 03: Socio-cultural activities in Zorrotzaurre).

## 19 Papeles Nervión



Figure 28: Papeles Nervión (Credits: ZAWP)

Papeles Nervión S.L. was established in 1980 and was for years at number 45 in Ribera de Zorrozaurre. The company was dedicated to the recycling, recovery and packaging of paper and cardboard and in addition to the Ribera, also had centers in Amorebieta and Cantabria.

In 2008 the integrated waste management company Despanorsa (Desperdicios de papel del Norte, S.L.) absorbed Papeles Nervión. The 100-150 people who made up the Papeles Nervión workforce remained after the merger operation, and the group now manages around 500,000 tonnes a year.

The building used for years by Papeles Nervión (see Figure 28), built in 1950, was demolished in 2018.



## 20 Vicinay Cadenas



Figure 29: Vicinay Cadenas headquarters (Credits ZAWP)

Vicinay Cadenas S.A. is a family business born in Otxandio (Bizkaia) more than 200 years ago. In 1929, almost from the beginning of its existence, it was installed in La Ribera de Deusto (see Figure 29), and over the years it has become the largest industrial space in the area, consisting of several pavilions.

In 1957 the company began to set up in European countries such as the United Kingdom and Norway, and began to export to the United States, Brazil, China, Singapore and Malaysia, among others. Since the mid-90s Vicinay has been at the forefront of the world in the manufacture of chains for the oil industry. The chain that Vicinay manufactures is continuous, so there are no cracks or cuts between the links, but rather they are hot-joined so that separation or breakage of these is impossible.

In approximately 2014 Vicinay Cadenas begins its progressive move, opening several new locations and moving its production center to a new plant in Sestao. Most of the pavilions that made up the space occupied by the company were demolished in 2018. That same year, the neighboring companies began to use the company's office building as a socio-cultural space under the name Bizinahi (Want to live, in Basque, and it uses the same pronunciation as Vicinay). This is one of the buildings preserved within the Master Plan, and destined to be the headquarters of Tknika, a research and applied innovation center for professional training.

Vicinay Cadenas is still present in La Ribera de Deusto, occupying the Coromina building.

## 21 Abet Laminati



Figure 30: Abet Laminati (Credits ZAWP)

The oldest industrial building in the area was the Abet Laminati (see Figure 30), built in 1907.

This building linked to the naval industry even had its own crane and small dock. As time went by, the owners changed and in that process Abet Laminati was the last company to occupy the building. In recent years the company moved its headquarters from Bilbao to another space and the place became empty as part of the riverside landscape.

After more than 100 years the building was demolished in November 2016, the new urban plan has brought about the disappearance of the oldest industrial building on the island.



## 22 Talleres Zar



Figure 31: Talleres Zar (Credits ZAWP)

Until its transfer to Zorrozaurre in 1954, this company dedicated to the manufacture of tubes, was located in Villabaso Street, near the Termibus bus station.

## D7.2 - Annex 02

COB most important initiatives and projects



**AmsTERdam BiLbao ciTizen drivEn smaRt cities**

BILBAO has a Sustainable Energy Action Plan for 2020 (SEAP), developed through a participatory process in September 2012. The Covenant of Mayors<sup>1</sup> approved this Action Plan in October 2013, bringing together the ambitions that have been developed by the City Council on different topics like stimulating energy efficiency, supporting public transport, cycling and electrification of vehicles, or promoting production of Renewable Energy Sources (RES). We mention here a list of projects that provide important pulse to Bilbao ambition.

- **EuroPACE project** (H2020 project<sup>2</sup>)  
EuroPACE will develop a scalable on-tax financing mechanism to unlock the huge potential for deployment of energy saving and generation technologies to European households. The scheme is inspired by the successful US PACE scheme, which was invented in California in 2008.
- **OpenGela** (local name of HIROSS4ALL H2020 project<sup>3</sup>)  
Opengela is a project that seeks to extend urban regeneration in the Basque Country and uses as its main instrument the creation of offices at street level that act as a one-stop shop to serve the neighborhood in all the processes to improve the energy efficiency in buildings.
- **Decarb City Pipes 2050** (H2020 project<sup>4</sup>)  
This project aims to equip seven European cities with skills and knowledge to decarbonise heating and cooling in buildings by 2050, with a special focus on phasing out natural gas in heating. The cities will develop transition roadmaps for the heating and cooling sector in cooperation with their local utilities, reinforcing trust and commitment for its implementation.
- **POSIDON: Polluted Site Decontamination** (H2020 project<sup>5</sup>)  
The challenge faced is identifying a new, life-cycle cost-effective technology for soil and groundwater remediation, capable of decontaminating heterogeneous anthropic soils in brownfields with a mixture of industrial waste and soils consisting of clays and sands of marine origin, highly polluted by petroleum hydrocarbons and heavy metals.
- **URBANITE** (H2020 project<sup>6</sup>)  
The project aims to develop a solution that collects and analyses data with AI, that can assist administrations in policy-related decisions concerning urban transformation caused by new transportation and business models. It focuses also on social aspects, by analyzing stakeholders' trust in technologies aiding decision-making.
- **T-Factor** (H2020 project<sup>7</sup>)  
The project challenges the waiting time in urban regeneration (the time between an intervention request and its actual realization) to demonstrate how culture, creative

<sup>1</sup><https://www.globalcovenantofmayors.org/cities/bilbao/>

<sup>2</sup><https://cordis.europa.eu/project/id/785057>

<sup>3</sup><https://cordis.europa.eu/project/id/846707>

<sup>4</sup><https://cordis.europa.eu/project/id/893509>

<sup>5</sup><https://cordis.europa.eu/project/id/776838>

<sup>6</sup><https://cordis.europa.eu/project/id/870338>

<sup>7</sup><https://cordis.europa.eu/project/id/868887>



collaboration and stakeholder engagement can release vigorous urban centres of inclusive urban (re)generation, social innovation and business.

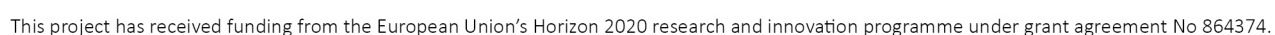
- **AS-Fabrik** (Urban Innovation Action<sup>8</sup>)  
The overall objective of AS-Fabrik project is to increase the competitiveness of the Knowledge Intensive Business Services (KIBS) sector of Bilbao through a capacity building collaborative process that will prepare them to answer to the challenges of the digital transformation to industry 4.0 that the manufacturing sector must face in a very near future.

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<sup>8</sup><https://www.uia-initiative.eu/en/uia-cities/bilbao>



## Socio-economic context of Zorrotzaurre



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# Socio-economic context

This annex shows the comparative data of La Ribera neighborhood (which is formed by the island of Zorrotzaurre) with the city of Bilbao and with Deusto, the district to which it belongs. In this way, it will be possible to see what the current situation of this neighborhood is and to what extent its current social situation is similar or different from that of the rest of the district and the city.

It should be noted that the current population of Zorrotzaurre is very small, consisting of only 403 people (206 women and 197 men). Being a very small population, it is not surprising that the results differ greatly from those of the district or the city as a whole. However, the current complex conditions on the island are highly conducive to such discrepancies.

The current post-industrial environment of the neighborhood has fostered this situation, being a center of culture and alternative arts of the city taking advantage of old abandoned buildings to develop activities of circus, theater and alternative markets. The process of change that Zorrotzaurre will undergo during the duration of the project will most likely result in substantial demographic changes and the adaptation of the current activities of the island.

## 1. Demographics: size, structure, and origin of the population

First of all, the size of the populations in the three study areas should be taken into account. Bilbao is an average city, the tenth largest in Spain in terms of population, with close to 350,000 residents. Deusto, on the other hand, is one of the most populated districts of the city, with a percentage close to 15% of the city. Zorrotzaurre, on the other hand, consists of a very small sample of the total population of Deusto.

Table 1: Population size of Zorrotzaurre, Deusto and Bilbao (Bilbao Opendata, 2019)

	Zorrotzaurre	Deusto	Bilbao
<b>Women</b>	206	26,243	183,461
<b>Men</b>	197	22,950	163,622
<b>Total population</b>	403	49,193	347,083
<b>Surface area (km<sup>2</sup>)</b>	0.84	4.96	40.59
<b>Density (inhab./km<sup>2</sup>)</b>	479	9,917	8,551

This data is reflected in the population density of each of these areas. Bilbao is a densely populated city in the available residential space (a very important part of the surface of the city is surrounding mountains). Deusto, on the other hand, has a density similar to that of Bilbao, but much lower than the most populated district of Bilbao (Begoña, with a density of 24,310 inhabitants per square kilometer). In contrast, Zorrotzaurre, despite being a relatively large area within Bilbao, has a very low density. This is also a reflection of the island's past,

dedicated mainly to industrial activities, while the population center is very small in an old town in the south of the island and a few houses along the coast.

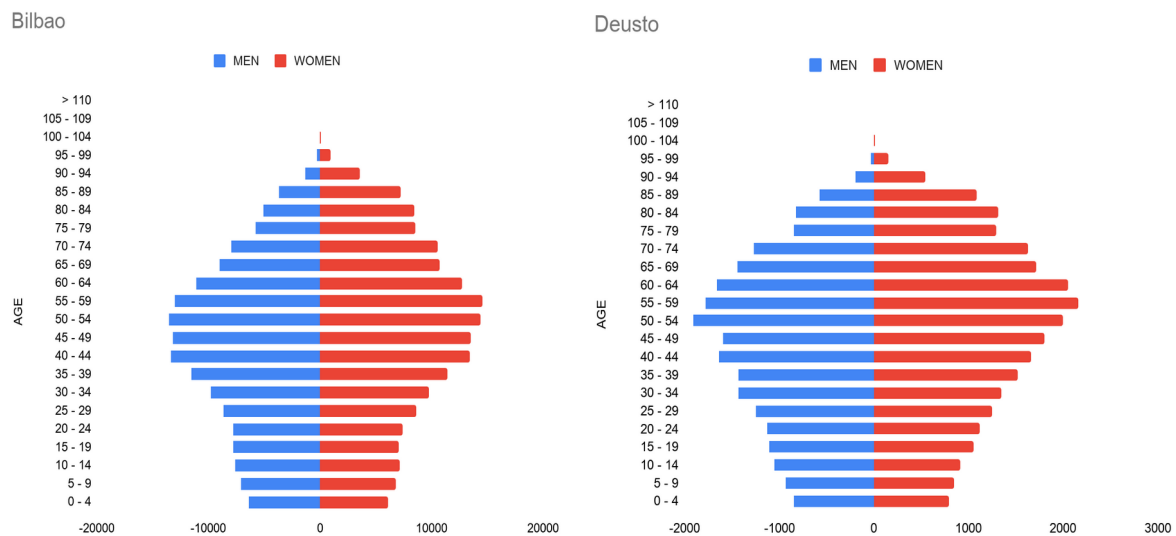


Figure 1: Population pyramids of Bilbao and Deusto (Bilbao Opendata, 2019)

Next, the distribution of the population in age groups is analyzed. The population pyramids of Bilbao and Deusto (see Figure 1) are quite similar and serve as examples of aging populations, typical of industrialized countries, showing a very low birth rate.

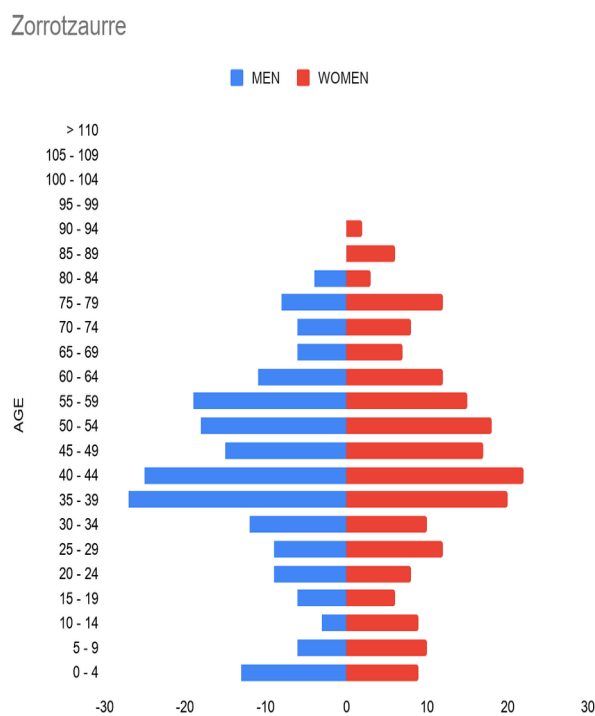


Figure 2: Population pyramid of Zorrotzaurre (Bilbao Opendata, 2019)

On the other hand, the population pyramid of Zorrotzaurre (Figure 2) shows a very unbalanced figure. As we have already seen, the small population of the island does not help to show a slender graph. Nevertheless, the graph allows us to appreciate some distinctive features of the population group residing in the neighborhood.

The strong increase in the working age population stands out, especially in the case of men. This is partly due to the settlement of different groups of immigrants. Also noteworthy is the lack of children and young people, although there is a strong increase in the birth rate, probably also derived from the immigrant population.



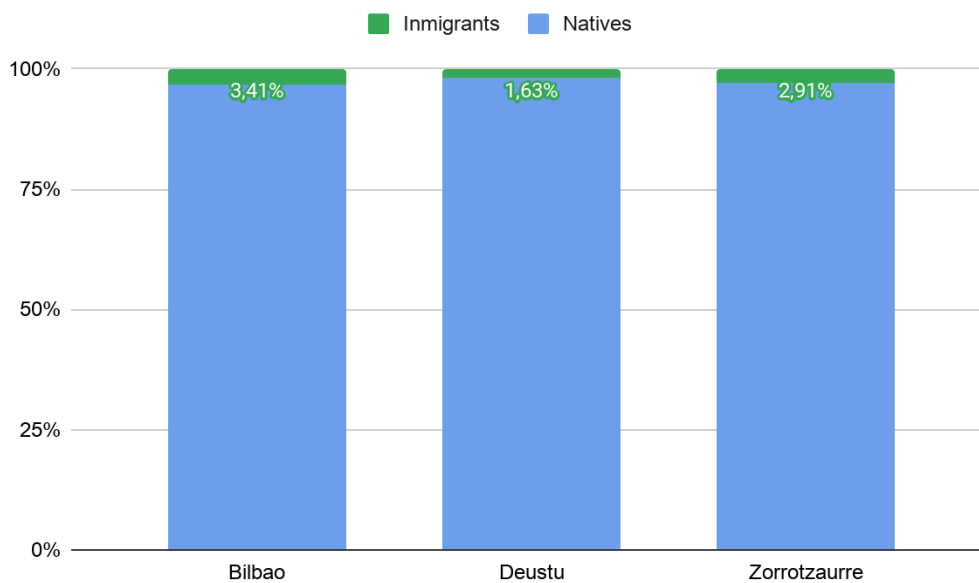


Figure 3: Immigrant population in Bilbao, Deusto and Zorrotzaurre (Bilbao Opendata, 2019)

In any case, immigration is not particularly high in Bilbao (as can be seen in Figure 3). The city did experience a period of high immigration during industrialization. The immigrant population came from different rural areas of Spain, mainly in the middle of the 20th century, due to the prominent industry, but today they are fully integrated and considered native citizens of Bilbao, where many of its neighborhoods arose due to the huge influx of immigration from other territories. As for the foreign population, the percentages are low and quite similar in the three areas studied.

Instead, the origin of foreign immigration presents notable differences (as can be seen in the three graphs of the Figure 4). The highest percentage of origin in Bilbao comes from the American continent, especially from South and Central American countries. Nearly one out of every two immigrants is of American origin. This is a natural phenomenon that also occurs in other regions of Spain, as most of these countries are Spanish-speaking regions whose integration is much easier. Africa also represents a significant volume, accounting for a quarter of the origins.

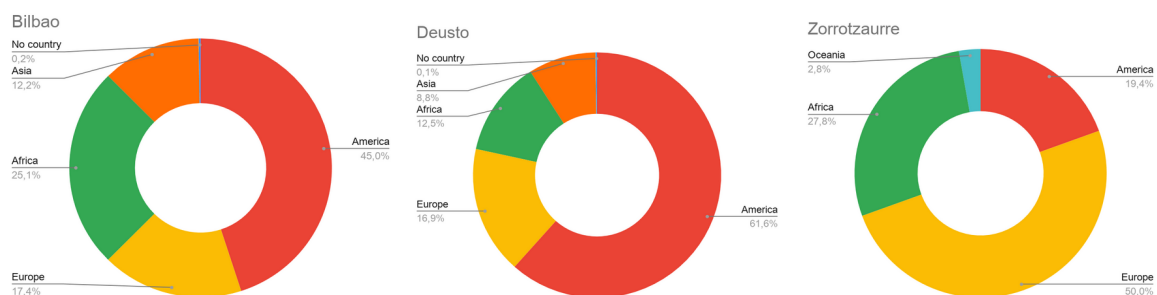


Figure 4: Region of origin in Bilbao, Deusto and Zorrotzaurre (Bilbao Opendata, 2019)

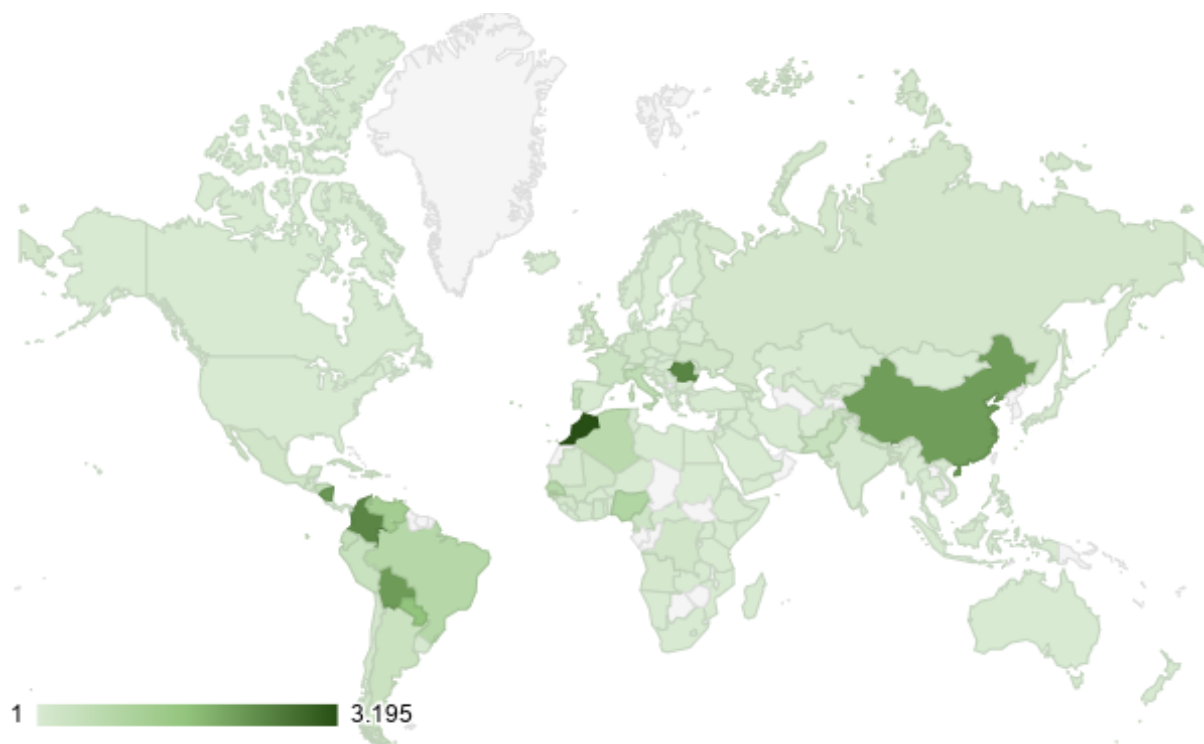


Figure 5: Immigration by country in Bilbao (Bilbao Opendata, 2019)

The breakdown by country shows (shown in Figure 5) that the main origins of population are Colombia, Bolivia, Nicaragua, Paraguay and Venezuela. This is followed by the African continent, where Morocco (the main source of origin in Bilbao) stands out, followed at a greater distance by Nigeria, Senegal and Algeria. Then comes the rest of Europe, where the population of Romanian origin is prominent, and Asia, with China as the main source of origin.

In the Deusto district, the population of American origin is predominant, reaching slightly more than 60% of the immigrants, a 15% more than in the rest of Bilbao. The countries of origin remain stable, but Nicaraguans stand out as the most popular population of foreign origin in Deusto. European immigrants maintain their proportion, but are in second place. On the other hand, the African population sees a sharp decline in this district, half as much as in the case of the whole city. The percentage of Asians also declines, but not significantly.

Both Bilbao and Deusto show relatively homogeneous values (apart from the significant increase in the American population in Deusto to the detriment of the African population). In Zorrotzaurre, on the other hand, the trends vary in a particularly remarkable way (see Figure 6). Fifty percent of the immigrant population is of European origin, almost 30% come from Africa and almost 20% are American. On the other hand, there is no population of Asian origin, while there is greater representation from Oceania than in the rest of the areas. The main countries of origin are also striking, with Guinea-Bissau, Italy, Romania, Venezuela and Portugal standing out.

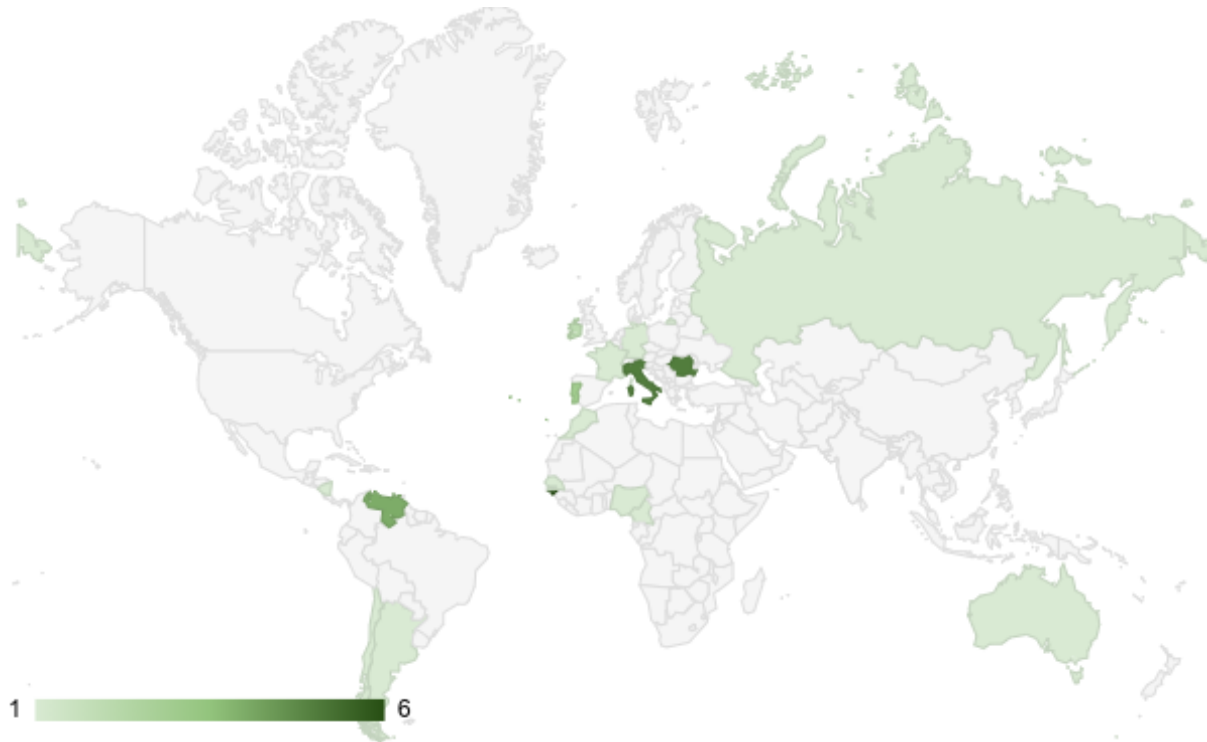


Figure 6: Immigration by country in Zorrotzaurre (Bilbao Opendata, 2019)

It is worth noting that, despite the current degradation of the Zorrotzaurre area, there is an important colony of young Europeans or young people from first world countries attracted by the post-industrial and culturally enriched atmosphere of the neighborhood. Italy, France, Germany, Portugal, Ireland, Australia, Argentina and Russia are all represented in this cosmopolitan neighborhood.

## 2. Housing and economic status

The following section is a review of data related to socioeconomic status in the three study areas (Bilbao, Deusto and Zorrotzaurre). Variables related to housing, employment, and economic and business activity in each area will be studied, in order to better understand the specific reality of the current neighbors of Zorrotzaurre.

According to 2019 data (see Table 2), there is a housing stock of 164,165 homes in Bilbao, giving a ratio of 2.11 inhabitants per home. The average value per square meter of housing is 2,807.76 € (2,735.92 €/m<sup>2</sup> for used housing and 3,312.46 €/m<sup>2</sup> for new housing). But this average value suffers significant variations between zones, ranging from 1,992.63 €/m<sup>2</sup> in the neighbourhoods of Otxarkoaga, Bolueta or Zurbaran (suburbs) to 3,780.81 €/m<sup>2</sup> in Abando or Indautxu (centre of the city).

Table 2: Housing indicators in Bilbao, Deusto and Zorrotzaurre (Bilbao Opendata, 2019)

	Zorrotzaurre	Deusto	Bilbao
<b>Households</b>	265	22,819	164,165
<b>Value per m<sup>2</sup></b>	787.89	2,710.57	2,807.76

The Deusto district has a total of 22,819 dwellings, which means a ratio of 2.15 inhabitants per dwelling, practically identical to that of Bilbao. In contrast, the value of land is slightly lower than the city average, being 2,710.57 €/m<sup>2</sup>. In general, it can be said that Deusto is one of the neighborhoods that best represents the average Bilbao.

The situation in Zorrotzaurre is quite different. It has only 265 houses, distributed in a small urban center in the southern part of the island and some houses scattered along the riverbank. The ratio is lower than in Bilbao or Deusto, with a total of 1.52 inhabitants per dwelling. The value of the land is only 787.89 € per square meter, well below the average for the district. These data reflect the current situation of the island, being a degraded area of Bilbao, with very little space for housing as it is mostly industrial land. It is a panorama that will change drastically with the new urban plan approved.

Another important aspect to evaluate, although relatively associated with the demographic issue, is the percentage of people living alone in their homes, and the percentage of families with children (Figure 7). As can be seen in the table, the percentage of houses where people live alone is around 30% in both Bilbao and Deusto. However, this value rises to almost 40% in Zorrotzaurre. The percentage of homes with children is also very similar in Deusto (38.88%) and Bilbao (38.04%), but this value decreases in Zorrotzaurre to 35.16% of the homes.

## Households

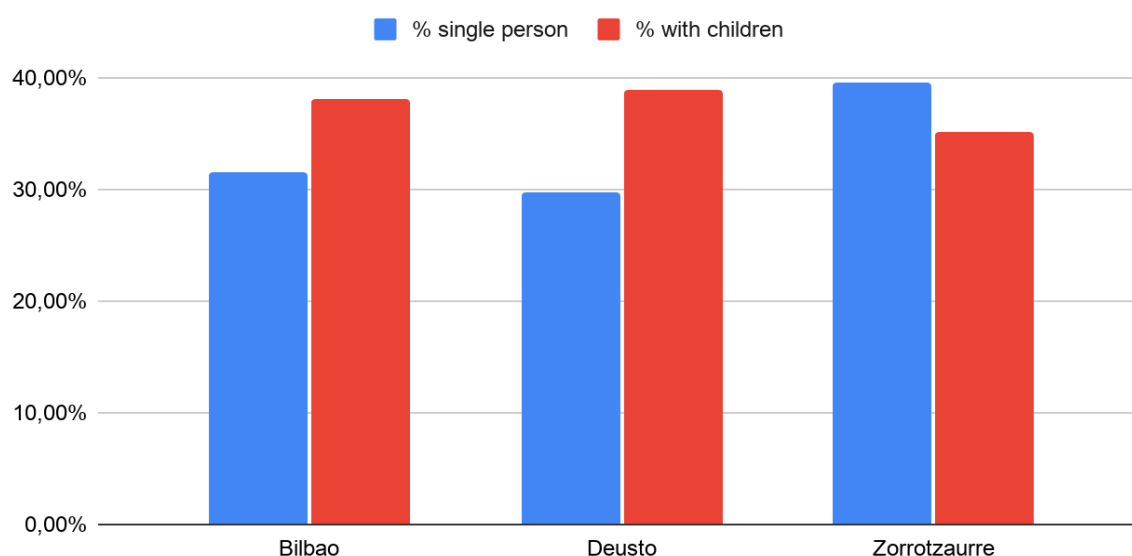


Figure 7: Comparison of one-person households and households with children (Eustat, 2019)



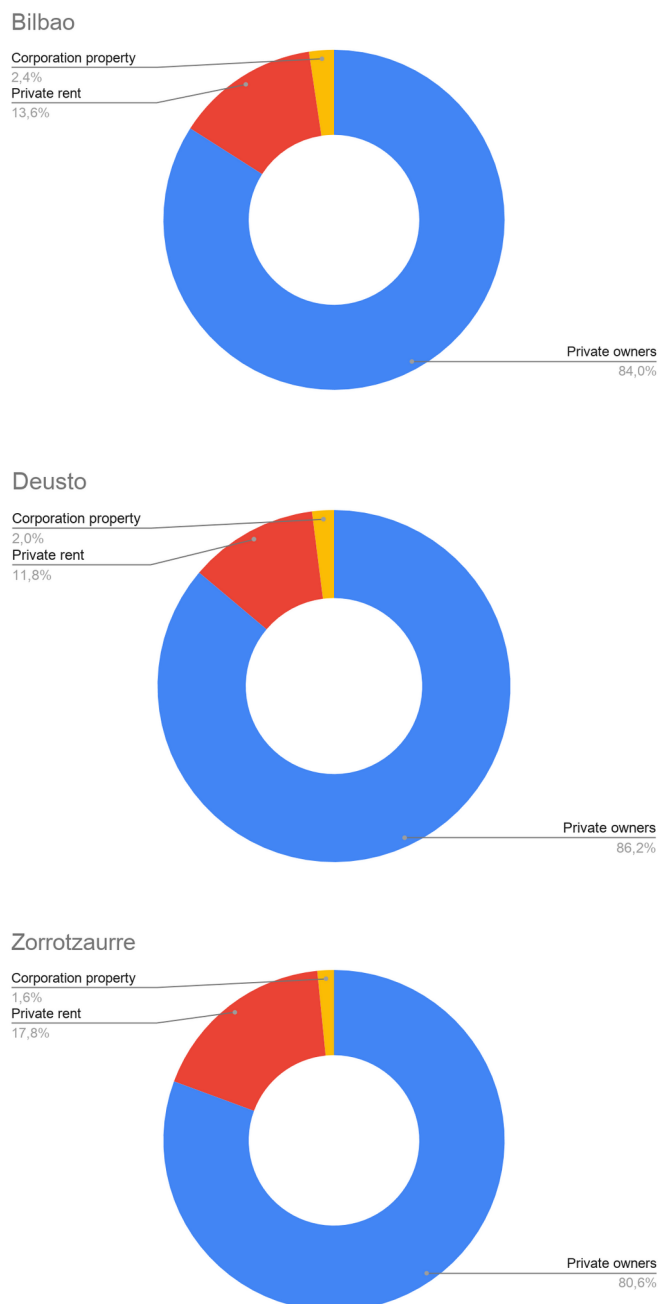


Figure 8: Distribution of home ownership in Bilbao, Deusto and Zorrotzaurre (Eustat, 2016)

Another relevant aspect when studying the issue of housing is its ownership regime (Figure 8). Unlike in northern Europe, where renting is more common, either from small owners or large corporations, in southern Europe renting is less common and it is more common to live in a owned house.

In the case of Bilbao, this trend is maintained or even accentuated, with the percentage of home ownership being 84%, ten points higher than the state average. Some 13.6% of the housing stock is privately rented, while only 2.4% corresponds to corporate housing.

Deusto's numbers are relatively similar to those of Bilbao. The proportion of business housing is maintained at 2%. The reduction in the percentage of rental housing to 11.8% is noteworthy, despite the fact that Deusto is the city's university district. Therefore, the number of homes in ownership reaches 88.2% of the district's total housing stock.

The biggest difference can be seen in Zorrotzaurre, although this is something that occurs in the different indicators that have been seen so far. On the one hand, the percentage of company housing is reduced to only 1.6%. The number of private housing units is also reduced to 80% (although it is still higher than the state average). On the other hand, there is a notable increase in rental housing, which now accounts for 17.8% of the total number of dwellings on the island.

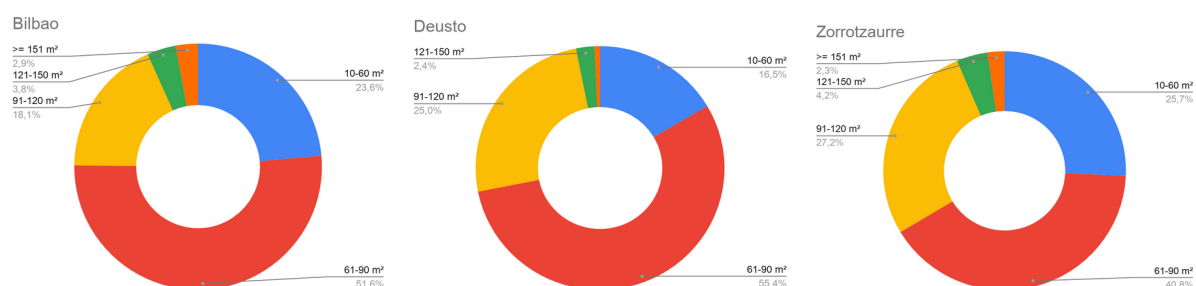


Figure 9: Size of dwellings in Bilbao, Deusto and Zorrotzaurre (Eustat, 2019)

Finally, in order to conclude with the aspects related to housing, it is necessary to analyze the aspects related to the structural characteristics of the dwelling. In particular, we will focus on the surface area in usable square meters of the dwellings in each of the areas under study (graphs in Figure 9 and data in Table 3).

In Bilbao, nearly a quarter of households (23.6%) do not exceed 60 square meters in area, which would be considered small dwellings. The bulk of households, more than half of the city's housing stock, are among the medium-sized dwellings, between 60 and 90 m². Practically, a quarter of the households reach the category of medium-high size dwellings (above 90 m²). With 3.8% of large-sized homes (120-150 m²) and 2.9% of homes over 150 m², a higher percentage than both the Deusto district and Zorrotzaurre, with other areas of the city having the highest number of this type of housing.

Deusto's data contrasts with Bilbao's indicating a higher number of middle class people living in the district. Small dwellings represent only 16.5% of the cases. Up to 55.4% of the cases are medium size dwellings (60-90 m²) and there is a fairly high percentage of medium-high size dwellings (90-120 m²), one out of every four dwellings belongs to this category. On the other hand, the number of large homes is decreasing, those between 120 and 150 m² only account for 2.4% of the total, and those larger than 150 m² is only 0.7%, which is practically negligible.

Table 3: Size of dwellings in Bilbao, Deusto and Zorrotzaurre (Eustat, 2019)

	Zorrotzaurre	Deusto	Bilbao
<b>10 - 60 m²</b>	68	3,771	38,669
<b>61 - 90 m²</b>	108	12,633	84,707
<b>91 - 120 m²</b>	72	5,703	29,778
<b>121 - 150 m²</b>	11	545	6,177
<b>&gt;= 150 m²</b>	6	167	4,804
<b>Total dwellings</b>	<b>265</b>	<b>22,819</b>	<b>164,165</b>

The case of Zorrotzaurre also differs from both the city and its district, standing out precisely because of both extremes. On the one hand, the percentage of small-sized housing is the highest of the three areas, up to 25.7% of the total housing stock on the island. On the other hand, the number of medium-sized dwellings is drastically reduced. It is only 40.8% of the total housing stock. But, curiously, the number of large-sized dwellings increases compared to the rest of the areas. Those between 90 and 120 m<sup>2</sup> account for 27.2% of the total, those between 120 and 150 m<sup>2</sup> represent an impressive 4.2% and the number of dwellings of more than 150 square meters is remarkable, 2.3% of the total. The contrast is striking, but you can find both more affordable housing designed for workers of the many industries in the area, as well as houses belonging to the aristocracy that owned these factories.

### 3. Employment and education level

Other important aspects to take into account in a socio-economic study are the level of employment of the population, the level of education of its inhabitants, the sectors in which they work, and the jobs they hold.

First, let's look at the employment rate (Figure 10). Both Deusto and Bilbao present a similar employment level, with just over 400 people employed per 1000 inhabitants (408 and 413 respectively). Interestingly, Zorrotzaurre stands out over the city and over the district, reaching a rate of 478, notably higher than both areas.

Employed persons per 1,000 inhabitants

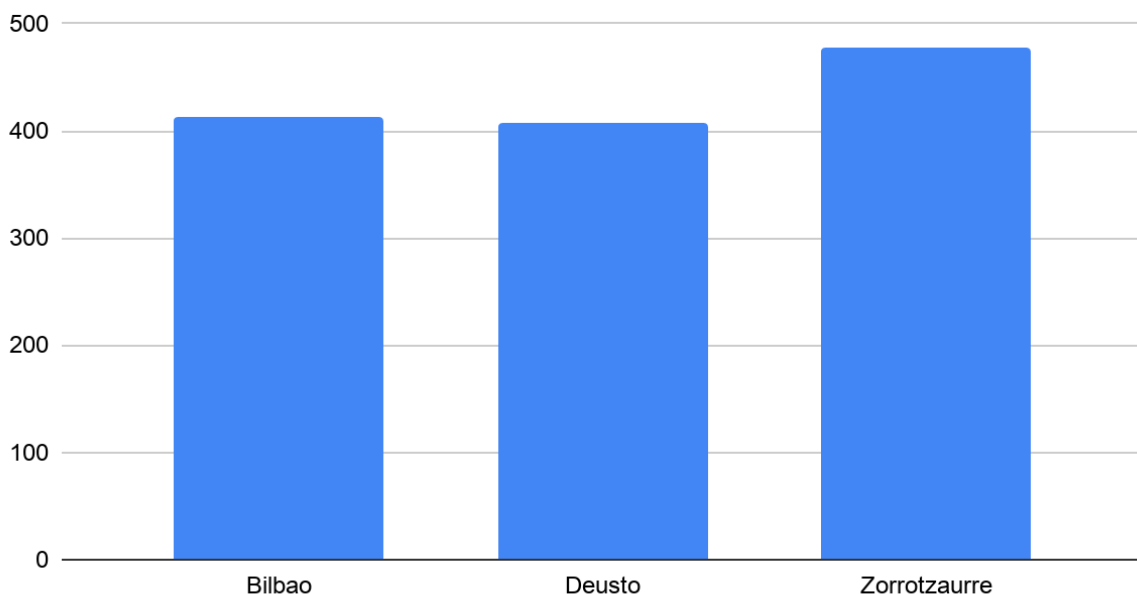


Figure 10: Employed persons per 1,000 inhabitants in Bilbao, Deusto and Zorrotzaurre (Eustat, 2019)

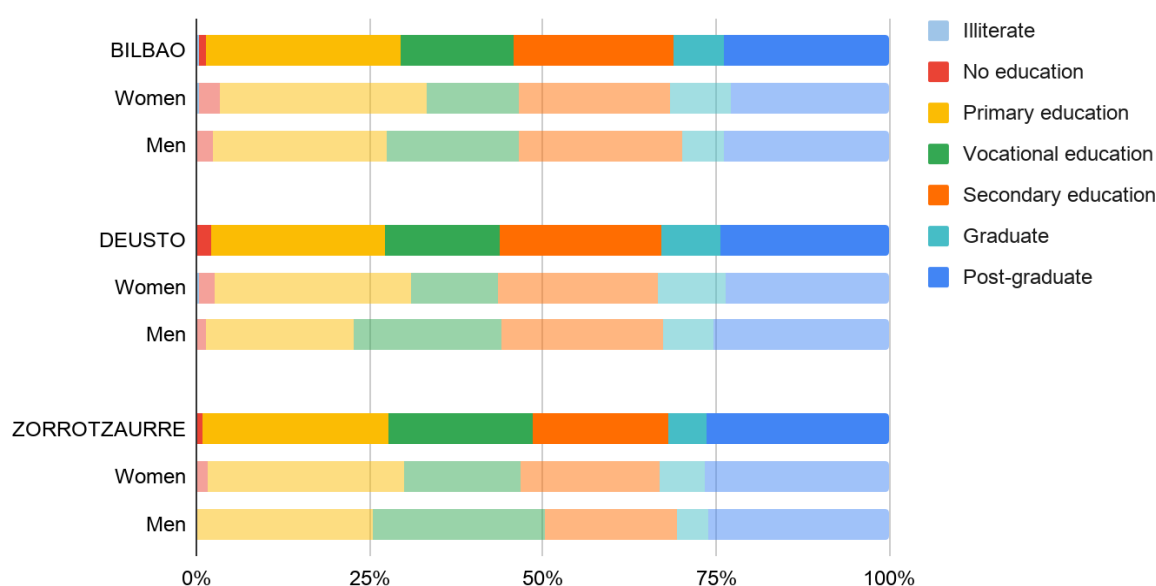


Figure 11: Level of education of men and women (Eustat, 2019)

The next step is to study the educational level of the population (Figure 11). In Bilbao, the number of illiterate people is negligible, only 0.3%. The number of uneducated people is slightly higher, but only 1.1%. People with only primary education account for 28.1% of the total, although this rises to 30.7% in the case of women. The opposite happens with vocational training, 16.2% of the total, but representing 19% of men. The level of people with up to secondary education is 23.1% and stable in both genders, while university education accounts for 31.8% of the total (up to 32.5% in the case of women).

As can be seen, in all three areas the percentage of graduate studies is much higher than that of undergraduate studies. There is an explanation for this phenomenon and it is that in Spain until not so long ago, studies in some disciplines such as engineering, architecture, medicine, law, etc. had a career plan with a greater number of years of study, so those who have studied under the old studies plans are statistically considered as higher studies (post-graduates). Today it would be the equivalent of a bachelor's and master's degree, therefore they fall into the postgraduate category.

Regarding Deusto, the data are quite similar to those of Bilbao. The percentage of illiterates is negligible, although it is surprising that the 60 existing cases are exclusively women. The percentage of uneducated people is higher than that of the city, reaching 2%, but it is also higher in the case of women, up to 2.4% of the total (changing the trend with respect to the city). On the other hand, the number of people with only primary education is reduced (one out of four people), while those with only secondary education remain the same in terms of proportion. The case of people with vocational training is also similar, but there is a large disproportion between the two genders (12.7% of women compared to 21.2% of men). In Deusto, one out of every three people has university studies, slightly higher than in Bilbao.



In Zorrotzaurre there are no cases of illiteracy, and the percentage of uneducated people is lower than in the city (0.8% of cases), although the trend in Deusto is maintained and there are more uneducated women than men (unlike Bilbao). The number of people with only primary education (26.9%) is lower than that of the city but slightly higher than that of the district to which it belongs. On the other hand, it is the area with the lowest number of people with only secondary education (19.6% of the total population of the island). On the other hand, as might be expected due to its industrial past, the percentage of vocational training reaches 20.7%. It is still higher in the case of men (one in four has this level of studies) but the disproportion is not so great compared to what happened in Deusto. The level of people with university studies (31.9%) is slightly lower than in the district but similar to the average for the city.

It is interesting to analyze the level of education, which so far we have been able to contrast at the gender level and study how it is distributed among the different age groups of the population. This will help us to assess how society has changed over the last seventy years. This information is shown in Figure 12.

It should be noted that, statistically speaking, for those ages that have not yet completed their studies, they will be considered within the category of the level of studies they are currently pursuing.

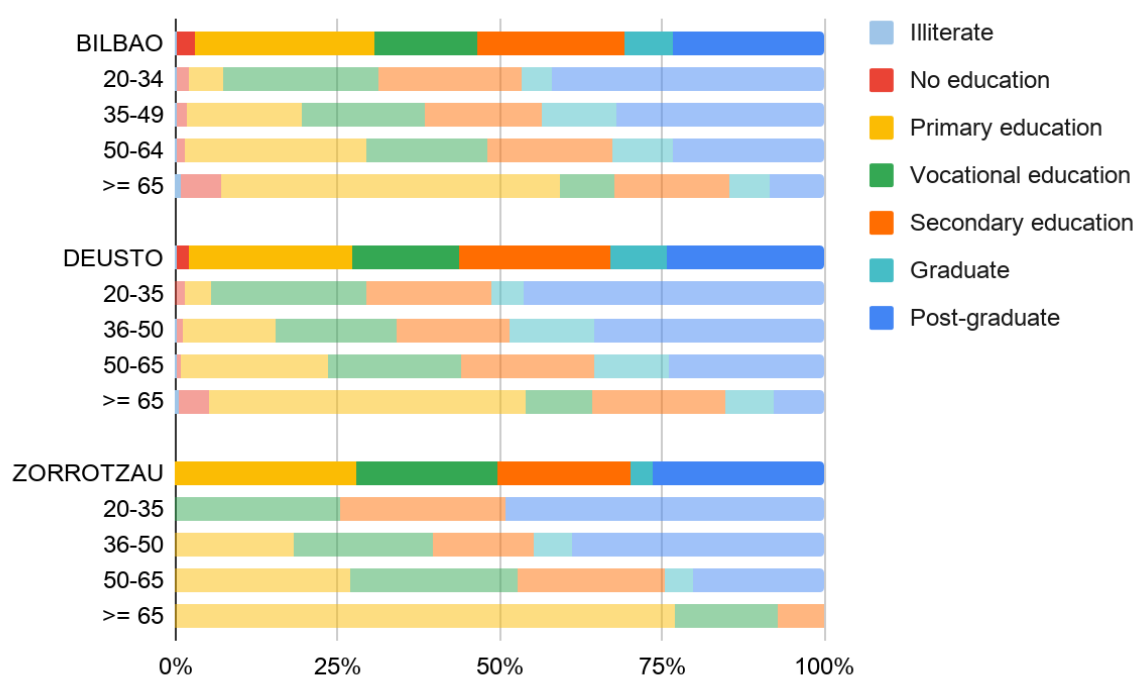


Figure 12: Level of education by age range (Eustat, 2019)

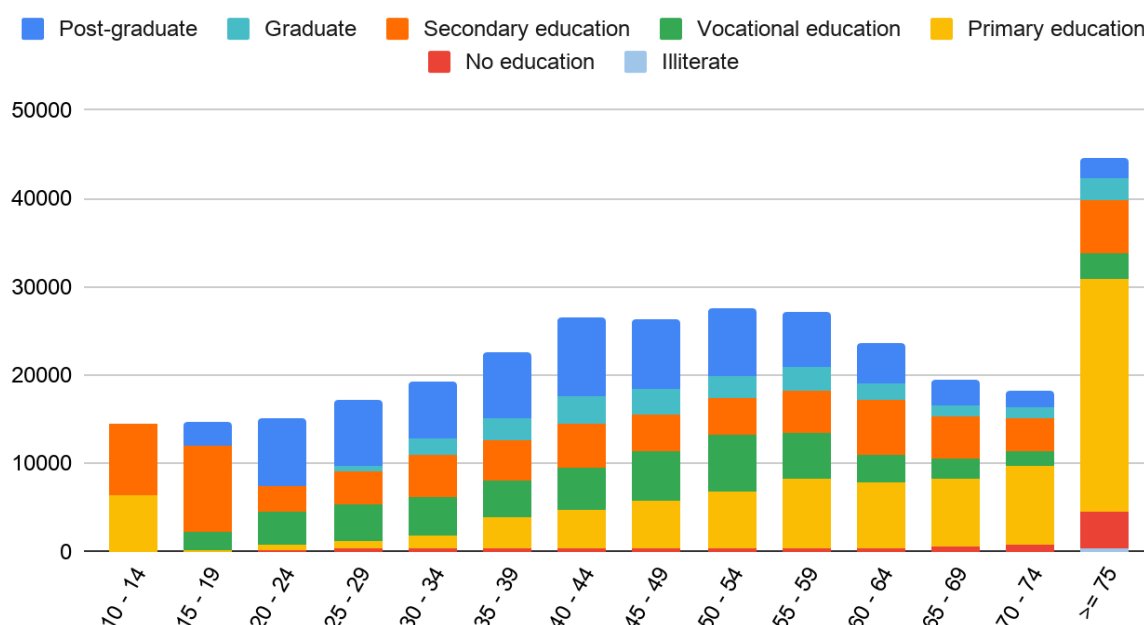


Figure 13: Level of education by age range in Bilbao (Eustat, 2019)

In the three areas of this study, there are notable differences in the level of education of their inhabitants as the age range of the population shifts (This data is shown in Figure 13, Figure 14, and Figure 15). As expected, due to the small population sample in Zorrotzaurre, the results vary considerably from those of the city and the district of Deusto.

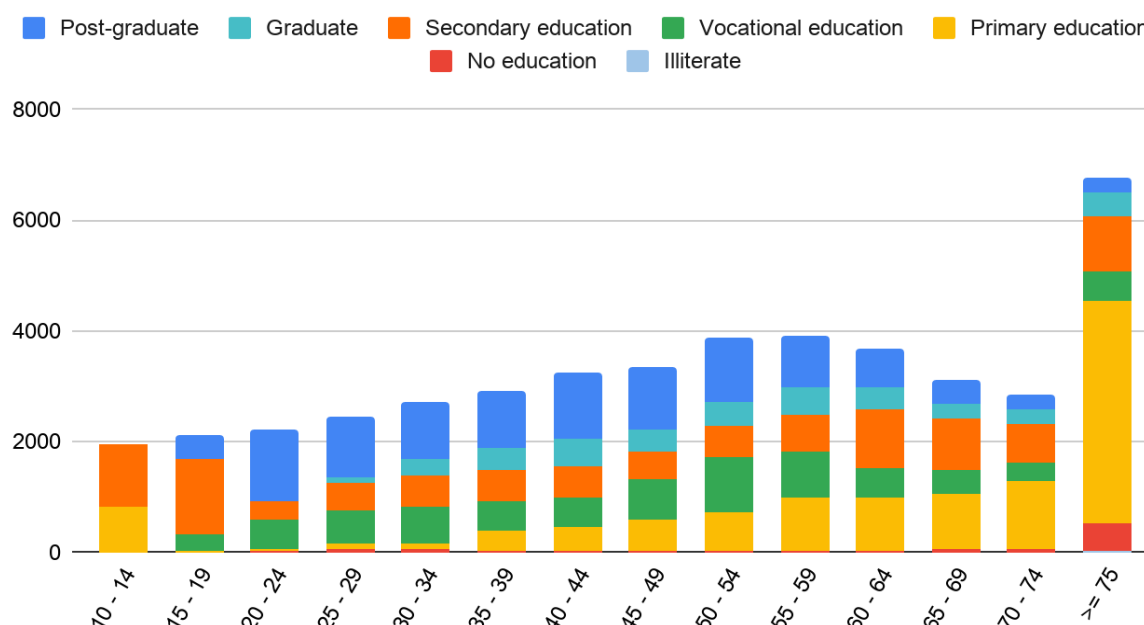


Figure 14: Level of education by age range in Deusto (Eustat, 2019)

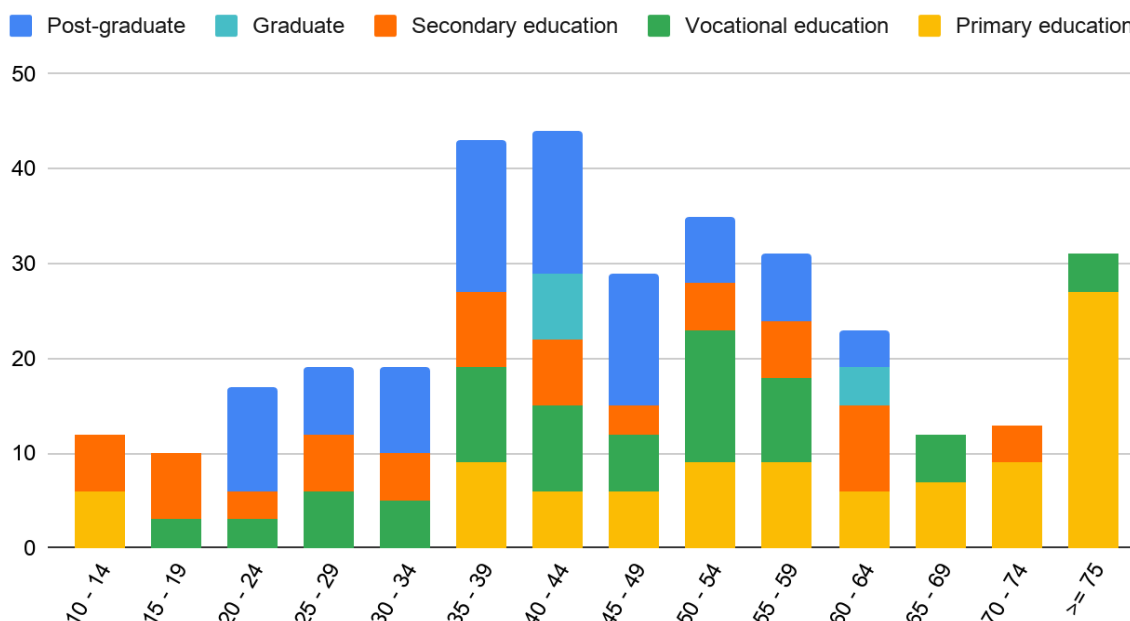


Figure 15: Level of education by age range in Zorrotzaurre (Eustat, 2019)

As might be expected, the bulk of both the illiterate and the uneducated are in the age range above 75 years of age (52.3% and 48.4% respectively). The same trend can be seen with people who have only primary education (59.3% of the total in this age group). On the other hand, university studies only represent 10% of the total of this group. This is not surprising if we take into account that the highest percentage of people in this age group are former immigrants who came to Bilbao in search of a job and a future, as it was a highly industrialized area.

The values for people with no education and only primary education decrease as the age range decreases. In the 25 to 29 age range, they represent only 2.2% and 4.5% of the population of that age, respectively. Those with only secondary education represent 22.3%, and those with professional training represent 24.4%. Practically half of the population in this age group has a university degree (46.6%).

There are no particularly significant differences between the population of Deusto and Bilbao with respect to the level of education by age group. Perhaps the most noteworthy aspect is the higher level of university studies in all age groups, being especially notable in young people under 25 years of age who have completed their studies or are still in college (27.4% compared to 23.5% in Bilbao).

Finally, in Zorrotzaurre the absence of uneducated people in any of the age brackets stands out, as well as the complete absence of people with university level education in the over 65 age bracket. On the other hand, the youth maintains proportions similar to those of the district or the city.

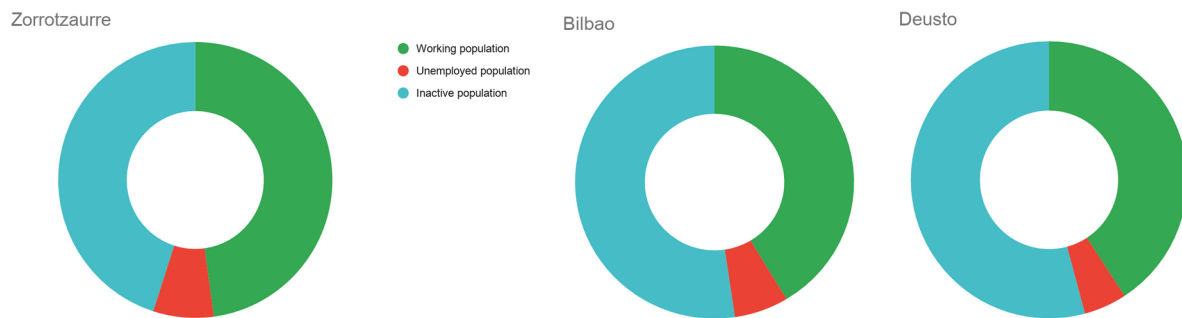


Figure 16: Active population status in Bilbao, Deusto and Zorrotzaurre (Eustat, 2019)

Another important point to study is the labor force ratio (graphs in Figure 16). The first point to highlight is the percentage of the inactive population (children, retired people, people who are not looking for a job, etc.). While in Bilbao it exceeds half of the population (52.3%) and in Deusto even increases that percentage (54.2%), in Zorrotzaurre it drops drastically to 45% of the total population. The proportions remain stable if a study is made by gender, with an increase in the inactive population among women.

The active population remains above 40 percent in both Bilbao and Deusto (41.4 and 40.8 percent, respectively). On the other hand, the active population of Zorrotzaurre represents 47.8% of the population. Contrary to what happened before, in this case women are 6 percentage points below men in both Bilbao and Deusto. In Zorrotzaurre, although the percentage is lower, there is not such a difference (less than three percentage points).

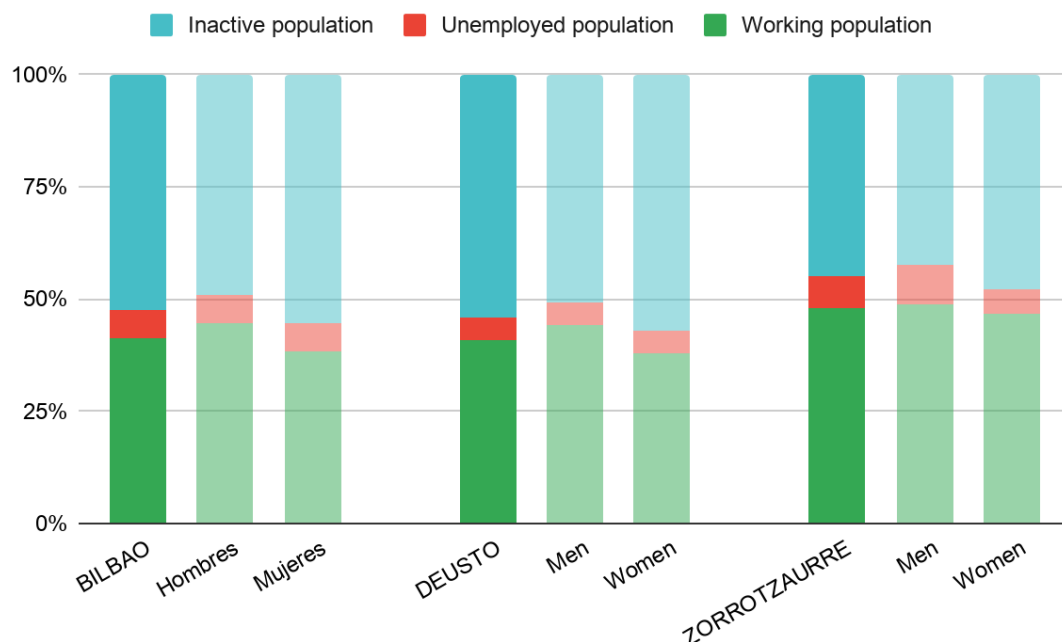


Figure 17: Gender distribution of the working population (Eustat, 2019)



The percentages of the unemployed population are very similar both between areas and between genders (see ). It is around 6.3% in Bilbao and 5% in Deusto. In Zorrotzaurre the percentage remains at the average of 5.5%. However, in the case of men up to 8.9%. Therefore, it can be determined that on the island there is a higher percentage of working age population, with notable increases in both the active population and unemployment compared to what happens in the rest of the district or in the city.

Analyzing the distribution of the working population by sector of activity, it can be seen how Bilbao (as well as its neighborhoods as a whole) has shifted towards employment focused mainly on the service sector. 83.7% of the people work in a profession in this sector (84.2% in Deusto and 84.4% in Zorrotzaurre). These percentages increase notably if we only analyze the jobs in the female sector, where they correspond to 93.6% of the population (93.3% in Zorrotzaurre).

The second most important sector is industry, once dominant in Bilbao, but which today accounts for only 10.3% of jobs (rising slightly in Zorrotzaurre, which has a strong industrial past, to 12.4%). The third sector is now construction, with 5.7% of jobs (decreasing in Deusto and Zorrotzaurre to 5.2% and 3.2% respectively). Both sectors are clearly masculine, increasing in men by five percentage points in the case of industry (15.6%), while construction is at 9.6%, 8.8% and 5.3% in each of the three areas. Finally, as can be expected in a city, agriculture is a marginal sector, representing 0.3% of jobs in both Bilbao and Deusto, and disappearing completely in Zorrotzaurre.

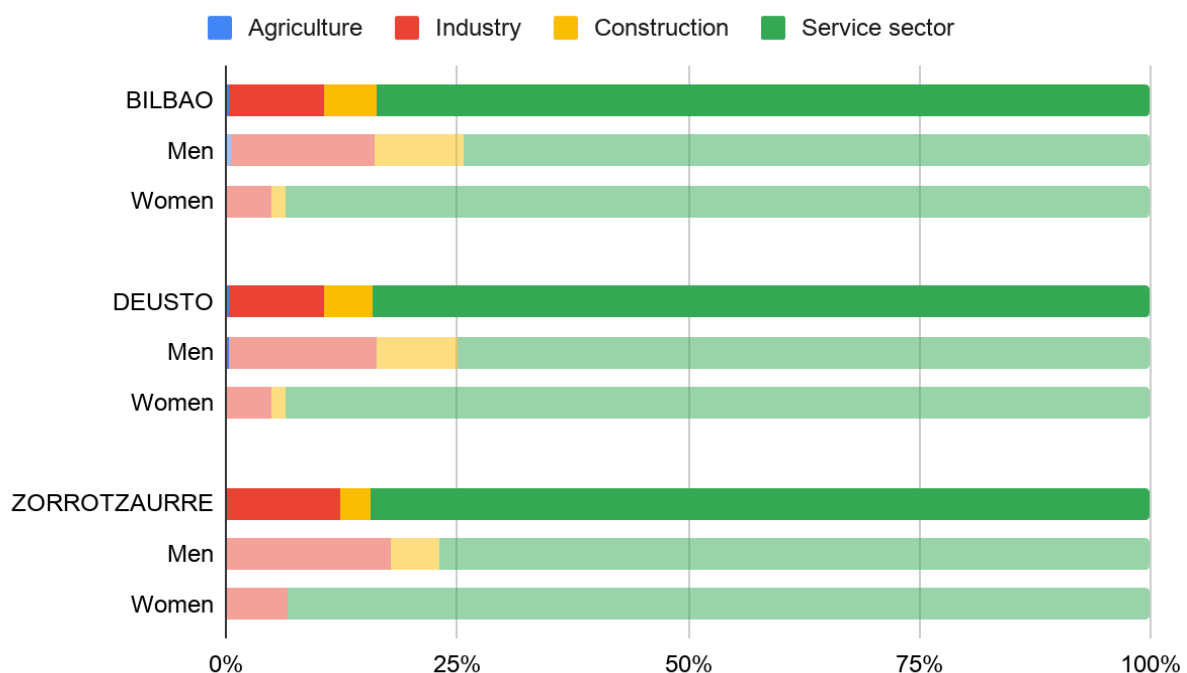


Figure 18: Distribution by activity sectors in Bilbao, Deusto and Zorrotzaurre (Eustat, 2016)

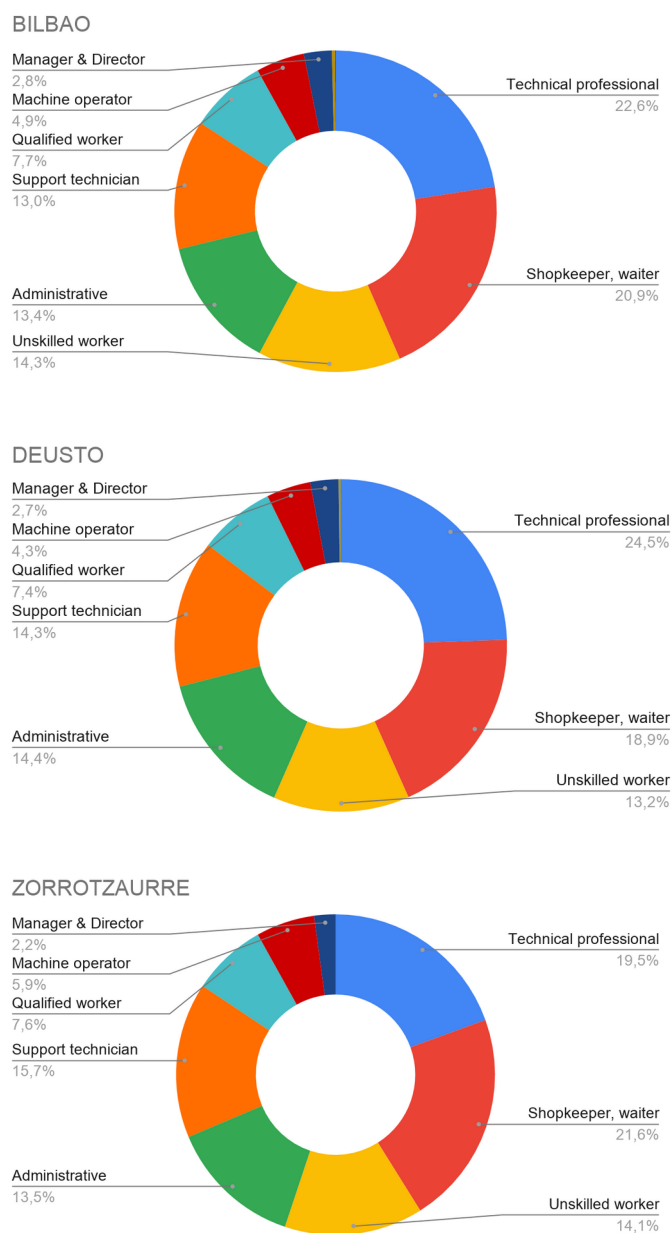


Figure 19: Groups of professions in Bilbao, Deusto and Zorrotzaurre (Eustat, 2016)

Finally, in order to better study the employment situation in the different areas, a study is made of the distribution of the population by professional groups (graphs in Figure 19).

The groups, in order of importance, are: technical professionals (22.6%), waiters and shop assistants (20.9%), unskilled workers (14.3%), administrative and staff workers (13.4%), support technicians (13%), skilled workers (7.7%), machine operators (4.9%), directors and managers (2.8%). Finally, marginally, there is the group of farmers and fishermen (0.3%), and the military (0.1%).

These percentages remain fairly stable across the three areas. As always, Zorrotzaurre is where the biggest differences can be found. In this case, the percentage of technical professionals has fallen slightly to 19.5%, while the groups of shop assistants and waiters (21.6%), support technicians (15.7%) and machine operators (5.9%) have risen.

The differences are even greater if this distribution is analysed by gender (Figure 20). In the case of women in Bilbao, one out of every two women falls into the group of waitresses and shop assistants (25.9%), or technical professionals (25.3%). In Deusto and Zorrotzaurre these percentages are 22.9% and 27.3%, and 26.4% and 27.6% respectively.

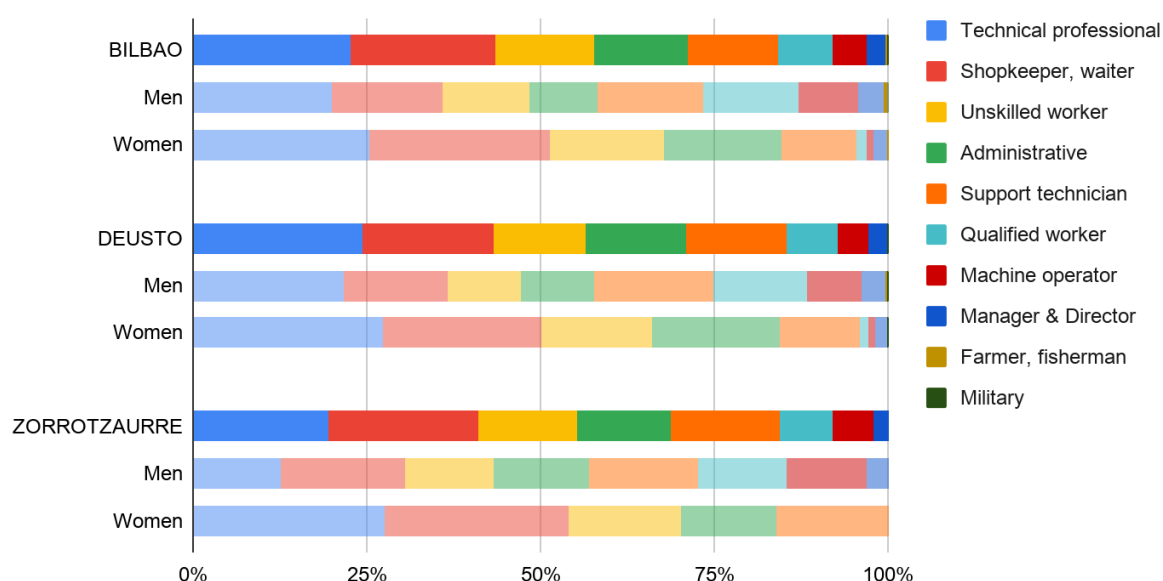


Figure 20: Distribution of professions in Bilbao, Deusto and Zorrotzaurre (Eustat, 2016)

In Bilbao and Deusto, women occupy administrative positions as the third most important group (16.9% and 18.3%). On the other hand, in Zorrotzaurre, the third position is shared by the groups of unskilled workers and support technicians (both with 16.1%). These groups represent 16.4% and 10.9% in Bilbao, and 15.9% and 11.4% in Deusto.

The vast majority of women work in one of these five groups, 95.4% in the case of Bilbao and 95.8% in the case of Deusto. In Zorrotzaurre, these groups represent 100% of the female population. On the other hand, the reduction in the groups of qualified female workers (1.5%) and machine operators (1%) in Bilbao and Deusto (a tenth of a percentage point lower), while in Zorrotzaurre, both groups are non-existent.

For men, the groups are more balanced: technical professionals (19.9%), shop assistants and waiters (16%), support technicians (15.1%), skilled (13.8%) and unskilled (12.4%) workers, administrative jobs (10%), machine operators (8.6%), and directors and managers (3.7%). In Deusto, the percentages are relatively similar, mainly highlighting the increase in support technicians to 17.2% of the total number of men in this district (second largest group) and the fall to 10.6% of unqualified professionals (fifth group, tied with the administrative group).

Finally, in Zorrotzaurre, men occupy the positions of employees and dependents (17.9%), support technicians (15.8%) and administrative staff (13.7%). There are then three groups that represent the same percentage (12.6%): technical professionals, skilled workers and unskilled workers. This is followed by machine operators, where up to 11.6 percent of men find employment (an outstanding percentage compared to the district or city). Finally, directors and managers maintain a similar ratio with 3.2% (five tenths of a point lower than Deusto or Bilbao).

## D7.1 - Annex 04

Socio-cultural activities and organizations of Zorrotzaurre



**AmsTERdam BiLbao ciTizen drivEN smaRT cities**



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# Socio-cultural island

The industrial decline of Zorrotzaurre with many abandoned buildings and old factories disappearing, defined the social situation of Zorrotzaurre for many years. Several large factory facilities were divided to accommodate new workshops and smaller companies. But finally the abandoned situation of many buildings was the breeding ground for neighbors of the area, as well as alternative associations of Bilbao to take advantage of them to give rise to a flourishing space of socio-cultural activity.

Two main associations are the ones that bring together this activity in the old Zorrotzaurre peninsula. On the one hand, the cultural association Haceria, which was the germ of the ZAWP project, whose objective was the social and cultural revitalization of the neighborhood, and which manages, facilitates and advises small cultural organizations and/or projects that want to settle in the neighborhood. On the other hand, Espacio Open, who try to promote free culture, are committed to reuse and recycling, and found Zorrotzaurre as the idyllic space to carry out their proposal.

There are also smaller associations, either of the neighborhood residents themselves who have decided to self-manage old buildings to carry out their activities, or of groups and schools of street artists (two circus groups coexist peacefully in the neighborhood), or dedicated to more alternative sports such as climbing and skateboarding.

In this context, many old industrial buildings in La Ribera have resurfaced after the decline as places for art and culture; a second life through dance, photography or theater. A new narrative to continue an old story. Some of these buildings have been or will be demolished in a near future due to the needs of the urban plan. But up to 20 buildings with an industrial past are in the process of being refurbished. In some cases to accommodate new uses, in others to maintain the new cultural activities they were hosting until now.

Until now there has been enough space for activities to arise spontaneously, or to host activities that had to migrate from other more consolidated urban environments. However, it remains to be seen how the socio-cultural situation of the neighborhood evolves and is integrated into the urban plan of the island.

## 1. ZAWP, Zorrotzaurre Art Work in Progress

ZAWP is a project initiated by the Haceria Arteak Cultural Association that was born in 2008 to address the meanwhile approved urban plan for the neighborhoods of Ribera de Deusto and Zorrotzaurre. ZAWP is already today a consolidated movement of many people who work in the social, economic and cultural revitalization of the neighborhood through the creation, intervention and enhancement of memory.

It also has different spaces and facilities on the island of Zorrotzaurre, such as the store, the laboratory, the loft and the exhibition hall Garabia.

### 1.1. Garabia ZAWP Aretoa

Before **Garabia ZAWP aretoa** (Figure 1) was an exhibition space, it was the home of Taller Molsa, which in turn arose from the reparcelling of the former Serrería Fernández (see annex 01: Industrial Heritage of Zorrotzaurre).



Figure 1: ZAWP Garabia Aretoa (Credits: ZAWP)

Since its recovery as a multidisciplinary room in 2011, Garabia has hosted many activities by the hand of many creators and artists. During this period, Garabia is a place to promote and increase the possibility of exhibiting cultural activities, which in addition to hosting an audience serves as a space for artists to develop their work during their stay at ZAWP.



At the end of 2019, and with the progress of the urban plan and the transfer of the Association Haceria Arteak, Garabia becomes part of Pabellón N° 6 (see section 3.).

## 1.2. ZAWP Denda

**ZAWP DENDA** (Figure 2) is a store where the products of traditional grocery stores are mixed with creativity and art, a space is reserved for different creators to show and sell their designs and/or creations on a temporary basis. This space is the pop-up area that will serve to publicize new products or product lines, to attract the attention of new potential customers or to bring the customer a product that is already sold on the Internet.



Figure 2: ZAWP Denda (Credits: ZAWP)

### 1.3. ZAWPLab



Figure 3: Former facilities of ZAWPLab (Credits: ZAWP)

**ZAWP LAB** is a place of creation born to give a second life to a part of the former Serrería Fernández after its reparcelization. Since 2011, many creators have been coming to this space. ZAWPLab is conceived not only as a place to work, but also as a place to live. Here, artists and creators in residence live together with entrepreneurs who start their projects. Since its opening this space sees the birth and growth of numerous initiatives, until in 2019, with the progress of the urban plan and the transfer of the Association Hacería Arteak to its new facilities.



## 1.4. ZAWP Loft



4: ZAWP Loft, former headquarters of ZAWP (Credits: ZAWP)

Under the name **ZAWP Loft**, a former workshop that was previously part of the Serrería Fernández facility, becomes ZAWP's headquarters in 2011. In addition to the offices of Hacería Arteak, it serves as a shared work space for creators and managers who do not need a large space to start their projects.

At the beginning of 2019, this space will see the demolition of the adjacent buildings. At the end of the same year the building disappears and the Hacería Arteak association moves to its new premises in Zorrotzaurre, the **Nave VA**.

## 1.5. La Nave Va



Figure 5: Co-working spaces at La Nave Va (Credits: ZAWP)

ZAWP's new headquarters, **LA NAVE VA**, is a coworking/coliving space of expression and growth. An ideal framework to support and encourage creation by mixing emerging projects with consolidated projects and professionals. A place to promote ideas and projects, as well as to carry out events, meetings, presentations, etc.



Figure 6: Some facilities at La Nave Va (Credits: ZAWP)

In this space are available coworking tables, work cabins, workshop cabins and containers. In addition, it offers training and workshop services with experts, meeting rooms, specific accompaniment for resident projects, package reception and activities such as yoga or languages.



## 1.6. La Terminal



Figure 7: La Terminal (Credits: ZAWP)

**LA TERMINAL** is an exhibition area of more than 2500 m<sup>2</sup>. An old factory of "Estampaciones y Calderería" located in the street Pintor Ignacio Zuloaga, reconverted in a place for the exhibition and the celebration of events, markets, urban festivals... A place where to exhibit and to commercialize ideas and/or projects. Divided into 4 buildings or pavilions, LA TERMINAL consists of different multipurpose spaces to adapt to the event or celebration in question.

## 2. Espacio Open

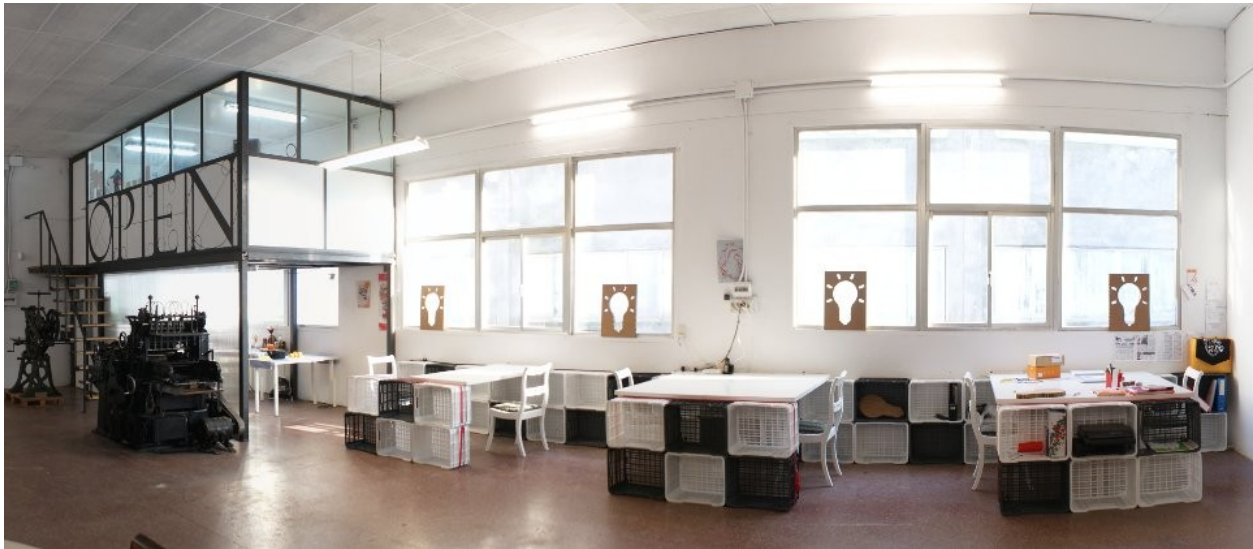


Figure 8: Headquarters of Espacio Open (Credits: Espacio Open)

Espacio Open is one of the cultural initiatives that gives life to La Ribera de Deusto/Zorrotzaurre. It is located in the Artiach building, giving a new use to part of the building that was for years the Biscuit Factory of Bilbao (see annex 01: Industrial Heritage in Zorrotzaurre).

Espacio Open uses the Artiach old facilities to organise and host a diversity of projects like the Open Your Ganbara market, the Maker Faire technology festival or the Fab Lab Bilbao technology school.

### 2.1. Open Your Ganbara

**Open Your Ganbara** is a different kind of market, based on the culture of Flea Markets. It is a covered market of 2.000 m<sup>2</sup> where you can spend a different Sunday in a special atmosphere, we have 4 spaces clearly differentiated for amateurs and professionals. A good ambiguous-relax area where you can get to breakfast, brunch or the last of the day with the daily press, free wifi and splendid conversations about the divine and the human. Open Your Ganbara also functions as a meeting point for the community that shares the love for 3R culture (reuse, reduce, recycle) and objects made to last and be used by several generations.



Figure 9: 'Open Your Ganbara' flea market (Credits: Espacio Open)

## 2.2. Fab Lab Bilbao

**Fab Lab Bilbao** is a centre for digital creation and fabrication managed by Espacio Open in the facilities of the former Artiach biscuit factory in Zorrotzaurre. It has three main lines: the learning line, the creation line and the dissemination line. The latter focuses mainly on the Makers Faire Bilbao.

In the learning line, it operates as a school of creative technology that offers tools, knowledge and professional support to carry out all types of technology-based projects (from 3D printing and digital manufacturing to robotics, creative programming or wearables).

It is open to all audiences, with special emphasis on communities in the world of contemporary art and culture and young people. At Fab Lab, we design educational programs and experiences that allow us to understand science and technology through experience and exploration.

The Creation line has two programmes: Residency Programme and Accompaniment Programme. The residency programme started in 2017 with 4 artists whose works have been exhibited in public centres such as Laboratorio Arte Alameda (Mexico DF, Mexico) and Centre Civic Convent Sant Agusti (Barcelona), as well as Maker Faire Bilbao.





Figure 10: People working on their projects at Fab Lab Bilbao (Credits: Espacio Open)

Fab Lab Bilbao seeks to facilitate understanding of the change in the technological cycle for all types of audiences. The aim is to extend reflection and the use of tools that allow us to process and understand how things work to other groups. It supports creators who make significant contributions to technological knowledge and who emphasise the social, political and economic issues behind the growing omnipresence of a world of algorithms.



Figure 11: Industrial facilities at Fab Lab Bilbao (Credits: Espacio Open)



### 2.3. Maker Faire Bilbao



*Figure 12: Showcasing new creations at Maker Faire Bilbao (Credits: Espacio Open)*

**Maker Faire** is a fair of inventors and creators, a showcase of inventions, creativity and ingenuity designed for all audiences, as well as a celebration of the Maker movement. It is a place where people show the world their creations and share their knowledge with those who want to learn. Among the Makers there are all kinds of people, with all kinds of ages and origins: fans of technology, craftsmen, scientists or garage inventors, along with organizations, companies or centers of creation and digital manufacturing.

Maker Faire Bilbao is the main event of public concurrence of Zorrotzaurre. In 2017 it got to lodge 12,124 visitors and it takes place in the ships of Espacio Open in the old factory of biscuits of Bilbao (Artiach Factory) next to other collaborating spaces like the old facilities of the Vicinay Cadenas factory.

### 3. Pabellón N° 6



Figure 13: Inauguration of facilities of Pabellón N°6 (Credits: ZAWP)

Industrial pavilion recovered as a place of creation that houses the project Pabellón No. 6, promoted by the Association of creators of performing arts composed of 13 multifaceted creators with a different view of the performing arts. This space, rehabilitated in 2011 within the framework of ZAWP (see Figure 13), allowed the consolidation of the Pabellón No. 6 project that, since 2015, has been developed independently from the ZAWP movement, but in close collaboration.

The project is driven by 13 multifaceted creators from the world of performing arts, dance and theater, to encourage the generation of synergies. The project has a young company, own productions and a short theater festival among others.



## 4. Sala Hacería



Figure 14: Sala Hacería (Credits: ZAWP)

The Sala Hacería was founded in 1998 by students from the now defunct Juan Antxieta School of Performing Arts, Dance and Music. After creating the association Hacería Arteak they transformed a place that was part of Serrería Fernández to create a meeting place for groups, performance schools, students of Fine Arts and academies and artists of all kinds.

In this room occur film and television shoots, radio programs, events, dance and theater performances and a host of concerts. It is one of the first cultural spaces born in La Ribera de Deusto through the reconversion of a space with an industrial past.

At the end of 2019, and due to the progress of the urban plan, the building that houses the Sala Hacería disappears.

## 5. Bizinahi



Figure 15: Bizinahi association (Credits: Bizinahi)

This old building, the headquarters of Vicinay Cadenas, was left empty at the beginning of 2018. In a short period of time it suffers several lootings so the neighbors of the Deusto riverbank decide to give it a second life, turning it into Bizinahi, a self-managed social and cultural space of the neighborhood.





Figure 16: Delivering a seminar at Bizinahi's premises (Credits: Bizinahi)

The name Bizinahi has the same pronunciation (or really close) as the old company that was based in this building, Vicinay. Bizinahi means “wanting to live” in Basque, as it is part of the motto: Erriberak bizi nahi du (La Ribera wants to live).

## 6. Karola Zirko Espazio



Figure 17: Karola Zirko Espazio (Credits: ZAWP)

The building that was once the headquarters of Maderas Deusto, becomes in 2012 a space for circus and street arts (see Figure 17).

After the closure of the gaztetxe Kukutza (Self-managed space in Rekalde), groups that had been located there turn to ZAWP for support in finding a suitable space. Thus was born Karola Zirko Espazio in Zorrotzaurre, a space of circus and street theater where the companies can develop all their areas, in order to help the artistic diffusion of the circus and the scenic arts in Bilbao.

Karola Zirko Espazioa aims to be a space for circus and street theater where professional companies from the Basque Country and specifically Bizkaia can

develop all their areas in a space designed according to their needs: rehearsal and training rooms, warehouse, offices, workshop, exhibition, etc. All of this is carried out by an association open to new incorporations and with two main objectives: to disseminate the circus and street theater and to offer a space designed by and for the companies.

Karola Zirko Espazioa is open to new incorporations, although at this moment we are formed by the circus companies Malas Kompanias Zirko Taldea, ZirKale, Cia Disparate and La Glo Circo.



Figure 18: Training at Karola Zirko Espacio's facilities (Credits: ZAWP)



## 7. Zirkozaurre

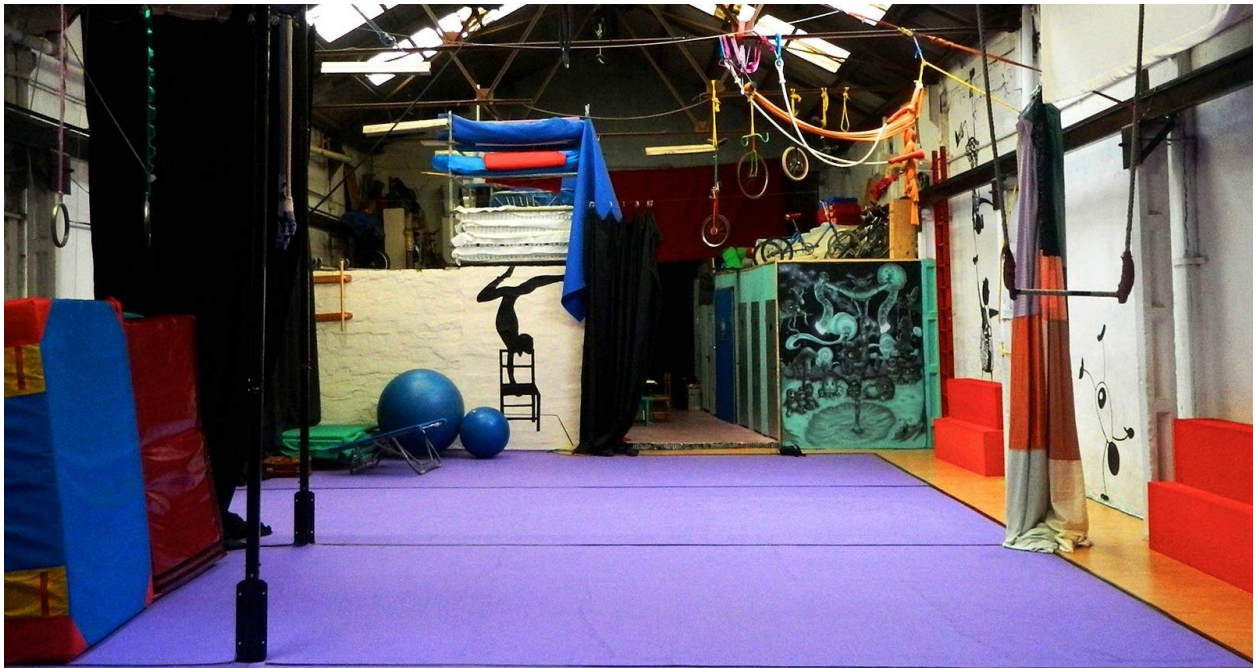


Figure 19: Zirkozaurre facilities (Credits: ZAWP)

Zirkozaurre (Figure 19) is a center of creation and exhibition of circus and performing arts that in 2012 will occupy part of the Artiach building. It has the objective of sharing the different disciplines related to the circus, integrating them in the neighborhood so that both can be promoted and projected.

The Association, with origin in the disappeared gaztetxe of Kukutza (Self-managed space in Rekalde), is created to look for the professionalization of the circus sector, with special attention to the formation, creation and mediation.

It is a new center of creation and exhibition of circus and performative arts, thought to coexist and to share the different disciplines related to the circus, integrating these disciplines in the neighbourhood so that both can be promoted and projected to the Villa of Bilbao and the territory of the Basque Autonomous Community.

Zirkozaurre means creation, formation, and sample of circus arts and street theater. It is a project that is sustained on the basis of the School of formation and the artistic Residences.

## 8. Guretxoko skateskola



Figure 20: Guretxo Skateskola (Credits: ZAWP)

Guretxoko is the first skate school in Bilbao. It was established in 2006 in a space (see Figure 20) in disuse making a transformation of the space through which a covered skatepark was created for the promotion of skateboarding (see Figure 21).

Guretxoko is a non-profit sports club created in Bilbao for the promotion of skateboarding and therefore we are dedicated to produce and carry out all kinds of actions related to the promotion of this sport discipline.

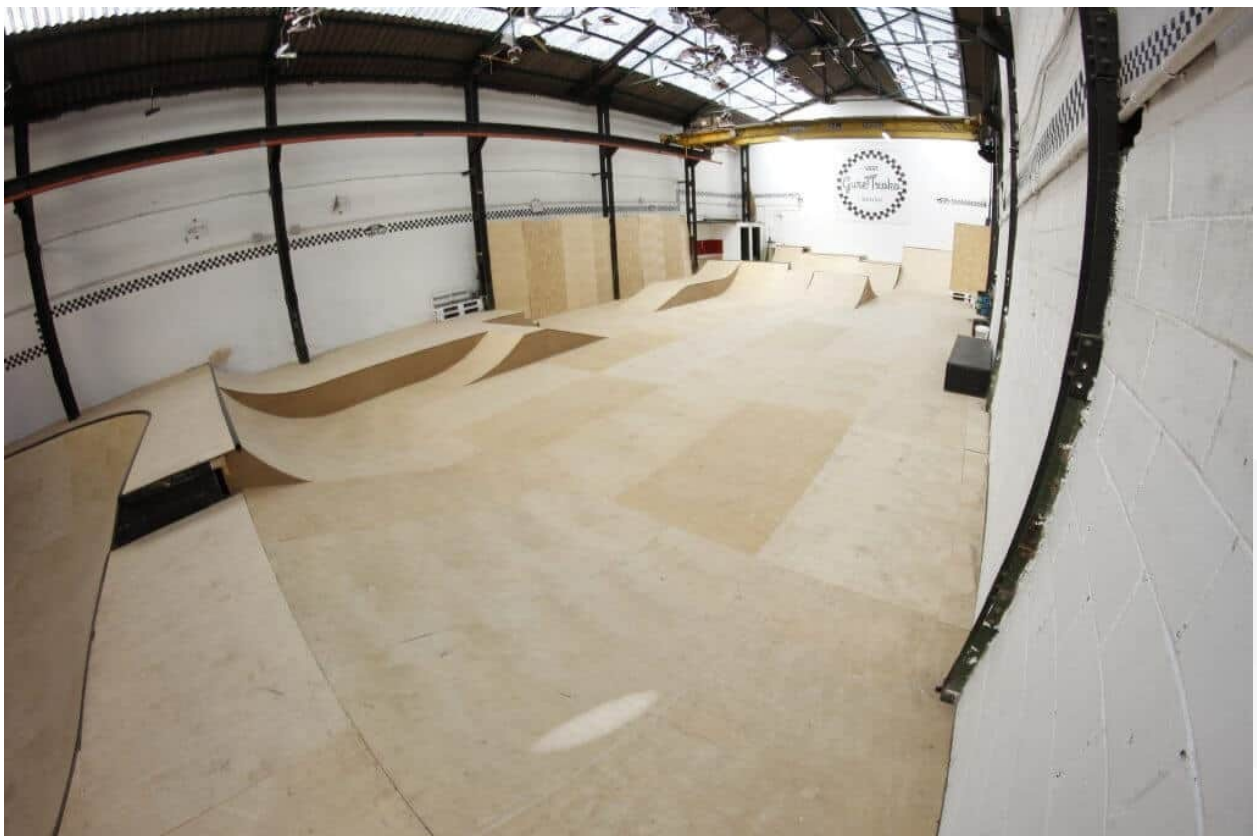


Figure 21: Skateboarding facilities of Guretxo skatekola (Credits: Guretxoko)

This association, formed by skaters of Biscay with more than 25 years of experience, organizes championships, exhibitions, initiation workshops, courses, camps, private lessons, extracurricular activities, rental and construction of tracks, advice to city councils, etc.



## 9. Piugaz Bilbao



Figure 22: Piugaz Bilbao (Credits: ZAWP)

An empty building after deindustrialization will become Piugaz in 2015, a space for climbing and sport. ASD Gaz, an Italian collective, decided to look for a place to reconvert into a climbing space in Bilbao after a decade of managing a similar project in Florence. Interested in La Ribera, they contacted ZAWP, who collaborated in the search for disused spaces. Finally, the group took over a space of about 2,000 square meters located in the second phase of the Strategic Urban Plan, giving shape to Piugaz Bilbao. Since then, Piugaz has become a benchmark for the best climbing park in Europe.

## 10. Deusto Arraun Taldea

The club was founded in 1981 in a fish market in the Ribera de Zorrozaurre, defends the red tomato colors (the people of Deusto are popularly known as tomareros) and is the only rowing club in Bilbao. During the following years, the club moved its location a couple of times to different places in Deusto. In 1984 the current municipal pavilion was inaugurated in Ribera de Deusto nº 10.

With the new plan of rehabilitation of the island, the locations have been moved to a rehabilitated warehouse of the former Agemasa company, new facilities that have more than 1,500 square meters, on one floor, and house a hangar for boats, a training pit, workshop-warehouse, gym, changing rooms and adapted toilets. The new rowing pavilion also has space for the medical office, an administration area and a meeting room.

The new facilities are located opposite its former location, on the other side of the Deusto canal. The old pavilion, which was built in 1984, will be demolished as part of the Zorrotzaurre urbanization plan.

## 11. DigiPen Institute of Technology



*Figure 23: Facilities of DigiPen Institute of Technology in Zorrotzaurre (Credits: COB)*

DigiPen, popularly known as "the university of video games", began the 2018-2019 academic year in its new location in Zorrotzaurre.

The center, which has moved from its previous facilities in Zierbena where it has provided specialized training for eight years, begins the new course with a student body of 200 from fourteen countries who will take the two university degrees taught. DigiPen's graduates are 100% employed and the center's objective is to grow, in its new location, by 75% during the first three years.

DigiPen is located for rent in the old Beta 1 building in Zorrotzaurre, a building that has been rehabilitated by the Bilbao City Council at a cost of 2.3 million Euros. Beta 1, located at number 2 in Ribera de Zorrotzaurre, is one of the 19 industrial buildings that are being maintained in the Zorrotzaurre regeneration project. Built in 1951, its design was made by the industrial engineer Juan José Abrisqueta.



## 12. Mondragón Unibertsitatea



Figure 24: Facilities of Mondragón Unibertsitatea in Zorrotzaurre  
(Credits: COB)

Mondragón Unibertsitatea (University of Mondragon) will reinforce its academic offer in Bilbao for the 2020-21 academic year. To this end, a new space will be opened in Zorrotzaurre and a total of 25 undergraduate and postgraduate degrees will be taught in Bilbao.

The facilities are located in the building owned by the municipality Beta II. This building, which belongs to the former company Beta S.A., had already undergone a series of structural improvements in the first phase (see Figure 24). Work has been undertaken to adapt the ground, mezzanine and first floors.

Mondragón Unibertsitatea is the first tenant of Beta II within the As Fabrik project, which aims to improve the competitiveness of local companies and consolidate Zorrotzaurre as an innovative ecosystem and a reference in the field of advanced services for industry 4.0 and the digital economy.



## Stakeholder map of Zorrotzaurre





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## 1. Stakeholder map of Zorrotzaurre

The following is a map of the stakeholders that have been recognized in the Zorrotzaurre area, either because they are located on the island or because they have interests in this neighborhood:

- **Ayuntamiento de Bilbao**  
*Public government agencies working in the area, Bilbao*  
Bilbao city council.  
[www.bilbao.eus](http://www.bilbao.eus)
- **EVE, Ente Vasco de la Energía**  
*Public government agencies working in the area, Euskadi*  
Energy Agency of the Basque Government.  
[eve.eus](http://eve.eus)
- **Consortio de transportes de Bizkaia**  
*Public government agencies working in the area, Bizkaia*  
Biscay Transport Consortium.  
[www.ctb.eus](http://www.ctb.eus)
- **Metro Bilbao**  
*Public government agencies working in the area, Bizkaia*  
Great Bilbao Subway.  
[www.metrobilbao.eus](http://www.metrobilbao.eus)
- **Euskotren**  
*Public government agencies working in the area, Euskadi*  
Public transport operator in Basque Country (train, tram, bus and transport of goods).  
[www.euskotren.eus](http://www.euskotren.eus)
- **Bilbao Etxebizitzak / Viviendas Municipales**  
*Public government agencies working in the area, Bilbao*  
Municipal Housing in Bilbao.  
[www.bilbao.eus/viviendas](http://www.bilbao.eus/viviendas)
- **Surbisa**  
*Public government agencies working in the area, Bilbao*  
Public company to encourage urban rehabilitation in Bilbao.  
[www.bilbao.eus/surbisa](http://www.bilbao.eus/surbisa)
- **Visesa**  
*Public government agencies working in the area, Euskadi*  
Public company dependent on the Basque Government for the development of its territorial housing policy.  
[www.visesa.eus](http://www.visesa.eus)

- **Alokabide**

*Public government agencies working in the area, Euskadi*

Public company dependent on the Basque Government for the development of the social function of housing through rental policy.

[www.alokabide.euskadi.eus](http://www.alokabide.euskadi.eus)

- **IHOBE**

*Public government agencies working in the area, Euskadi*

Public Society of the Basque Government for the development of the environmental policy and in the extension of the culture of environmental sustainability in the Autonomous Community of the Basque Country.

[www.ihobe.eus](http://www.ihobe.eus)

- **Área de planificación territorial, urbanismo y regeneración urbana (GOBIERNO VASCO)**

*Public government agencies working in the area, Euskadi*

This Area has different tasks assigned to it: the promotion of territorial planning (DOT, PTP and PTS); the assessment and report on municipal urban planning (COTPV); the generation of a geographical computer system (udalplan, inbentarioa and indicators) that includes the urban situation of any point of the Basque Country; the promotion of instruments for the protection and management of the landscape; The organization of the annual EuskalHiria congress, which disseminates disciplinary advances in the field; the production of quality reference cartography and geographic data; as well as the management and coordination of the spatial data infrastructure (geoEuskadi) as a corporate platform for the reuse, exploitation and dissemination of territorial information.

<https://www.euskadi.eus/gobierno-vasco/planificacion-territorial-urbanismo-regeneracion-urbana/>

- **URAgentzia**

*Public government agencies working in the area, Euskadi*

The Basque Water Agency aims to carry out water policy in the Basque Country.

[www.uragentzia.euskadi.eus](http://www.uragentzia.euskadi.eus)

- **Consorcio Aguas**

*Public government agencies working in the area, Bizkaia*

The Water Consortium is the entity responsible for the management of the primary network, both for the supply of drinking water and for the sanitation of the wastewater of approximately one million inhabitants of Biscay.

[www.consorciodeaguas.eus](http://www.consorciodeaguas.eus)

- **ACLIMA**

*Clusters and Associations, Euskadi*

A reference and unifying force for Euskadi's eco-industry and environmental services and products, this cluster represents the value chains in waste (reduction, reuse, refabrication, energy recovery, recycling and management), contaminated soils (investigation and recovery), integrated water cycle, air and climate change, ecosystems and Eco-efficient Production and Eco-design.

[aclima.eus](http://aclima.eus)



- **ERAIKUNE**

*Clusters and Associations, Euskadi*

Eraikune is a non-profit cluster association, created in 2010, that includes the whole value chain of the Construction Industry sector. Our strategic goal is to be a reference in the Construction Industry, the engine of the economic, social and territorial transformation of the Basque Country.

[www.eraikune.com](http://www.eraikune.com)

- **GAIA**

*Clusters and Associations, Euskadi*

GAIA is the Association of Applied Knowledge and Technology Industries in the Basque Country, and brings together over 260 companies in this sector. Its objective is to be a benchmark in Collaborative Innovation for the creation and implementation of globally competitive solutions based on own Knowledge and Technology (Consulting, Engineering, Electronics, Computing, Telecommunications and Gamification).

[www.gaia.es](http://www.gaia.es)

- **EUDEL**

*Clusters and Associations, Euskadi*

The Association of Basque Municipalities (EUDEL) was founded in 1982 with the aim of defending municipal autonomy and representing local interests before other institutions.

[www.eudel.eus](http://www.eudel.eus)

- **Clúster de Movilidad y Logística**

*Clusters and Associations, Euskadi*

The Mobility and Logistics Cluster, MLC ITS Euskadi, is a private non-profit association. Its aim is to promote the competitiveness of its partners, companies and agents in the Basque Country that work in the field of Logistics and Supply Chain, Infrastructures and Mobility, both for people and goods.

[www.mlcluster.com](http://www.mlcluster.com)

- **Iberdrola**

*Developers/ infrastructure parties, Spain*

Iberdrola is a Spanish multinational electric utility company based in Bilbao.

[www.iberdrola.com](http://www.iberdrola.com)

- **Naider**

*Clusters and Associations, Euskadi*

Naider is a social and business project. Its foundational objective is to co-work in the construction of INTELLIGENT ECONOMIES, co-create INNOVATIVE AND INCLUSIVE CITIES and co-lead processes towards ENVIRONMENTAL SUSTAINABILITY.

[naider.com](http://naider.com)

- **Jaureguizar**

*Developers/ infrastructure parties, Bizkaia*

Real Estate Promotion and Management.

[jaureguizar.com](http://jaureguizar.com)

- **Petronor**  
*Local entrepreneurs, Bizkaia*  
Petronor is a Spanish oil company, whose corporate purpose is the refining and marketing of various oil products, as well as their derivatives, which was founded in Bilbao (Bizkaia) in 1968.  
[petronor.eus](http://petronor.eus)
- **Goiener**  
*Cooperatives, Euskadi*  
GoiEner is a cooperative project for the generation and consumption of renewable energy that aims to recover energy sovereignty.  
[www.goiener.com](http://www.goiener.com)
- **Ibil**  
*Developers/ infrastructure parties, Spain*  
Charging technology and services for electric vehicles.  
[www.ibil.es](http://www.ibil.es)
- **Factor CO2**  
*World*  
Factor CO2 is a group specialized in offering solutions that are global, innovative, and sustainable.  
[www.factorco2.com](http://www.factorco2.com)
- **Air Garden**  
*Developers/ infrastructure parties, Euskadi*  
Company specialized in cover wall gardens.  
[www.air-garden.com](http://www.air-garden.com)
- **ZinCo**  
*Developers/ infrastructure parties, World*  
ZinCo is a pioneer and one of the world leaders in extensive and intensive green roofs.  
[zinco-greenroof.com](http://zinco-greenroof.com)
- **Euskaltel**  
*Developers/ infrastructure parties, Euskadi*  
Euskaltel is a Spanish telecommunications operator. It was founded in 1995 as a cable operator for the three Basque provinces. It currently provides telephone (fixed and mobile), internet (fixed and mobile) and television services.  
[www.euskaltel.com](http://www.euskaltel.com)
- **Ibermática**  
*Developers/ infrastructure parties, Spain*  
Ibermática is a global service company in information and communication technologies (ICT) in the Spanish market.  
[ibermatica.com](http://ibermatica.com)

- **Eurohelp**  
*Developers/ infrastructure parties, Spain*  
 EUROHELP is a consulting and service rendering company specializing in the field of Information Technology with a broad business background since 1997.  
[eurohelp.es](http://eurohelp.es)
- **Inkolan**  
*Clusters and Associations*  
 A consortium set up by the majority of big public utility operators, whose job is to supply information on line about water, gas, electricity, telecommunications and municipal infrastructure networks.  
[www.inkolan.com](http://www.inkolan.com)
- **Tecnalia**  
*Knowledge institutions, Bizkaia*  
 Tecnalia is the leading private Technology Centre in Spain and one of the main organisations devoted to applied research in Europe.  
[www.tecnalia.com](http://www.tecnalia.com)
- **University of Deusto**  
*Knowledge institutions, Euskadi*  
 The University of Deusto is a private university governed by the Society of Jesus, with two campuses, one in the district of Deusto in the city of Bilbao, and another in San Sebastian, Basque Country, as well as two sites in Vitoria and Madrid.  
[www.deusto.es](http://www.deusto.es)
- **BC3**  
*Knowledge institutions, Euskadi*  
 Basque Centre for Climate Change.  
[www.bc3research.org](http://www.bc3research.org)
- **BCAM**  
*Knowledge institutions, Euskadi*  
 BCAM is the research center on applied mathematics created with the support of the Basque Government and the University of the Basque Country, which aims to strengthen the Basque science and technology system, by performing interdisciplinary research in the frontiers of mathematics, talented scientists' training and attraction, so the excellence of our results are recognized by the Society.  
[www.bcamath.org](http://www.bcamath.org)
- **University of Mondragon**  
*Knowledge institutions, Euskadi*  
 The University of Mondragon is a private, non-profit, social initiative university belonging to the Mondragon Corporation located in Mondragon, Guipuzcoa.  
[www.mondragon.edu](http://www.mondragon.edu)
- **University of Navarra**  
*Knowledge institutions, Spain*  
 The University of Navarra is a private Catholic university belonging to the Prelature of Opus Dei and founded in Pamplona, Navarra (Spain) in 1952 by Josemaría Escrivá de Balaguer.  
[www.unav.edu](http://www.unav.edu)

- **DigiPen Institute of Technology**

*Knowledge institutions, Zorrotzaurre*

DigiPen Institute of Technology is a non-profit university headquartered in Redmond, Washington. It focuses its educational and training activities on Art, Computer Science and Computer Engineering with special emphasis on the creation of video games. Since 2010, it has had a headquarters in Europe, currently in the town of Bilbao, Basque Country, and since 2008, another in Asia located in Singapore.

[www.digipen.es](http://www.digipen.es)

- **Cátedra Unesco (UPV)**

*Knowledge institutions, Euskadi*

UNESCO Chair - Sustainable Development and Environmental Education, has set itself the challenge to step up research and specialized studies on Sustainability and Environmental Education from an interdisciplinary perspective, encompassing natural and social sciences.

[www.ehu.eus/cdsea](http://www.ehu.eus/cdsea)

- **Zorrotzaurre Barria**

*Cooperatives, Zorrotzaurre*

Publicly subsidized housing in Zorrotzaurre.

[www.zorrotzaurrebarria.com](http://www.zorrotzaurrebarria.com)

- **Consejo de Distrito de Deusto**

*Public government agencies working in the area, Deustu*

Deusto District Council.

[www.bilbao.eus/cs/Satellite?](http://www.bilbao.eus/cs/Satellite?c=BIO_Generico_FA&cid=3006123060&language=es&pageid=3000066037&pagename=Bilbaonet%2FBIO_Generico_FA%2FBIO_Generico)

[c=BIO\\_Generico\\_FA&cid=3006123060&language=es&pageid=3000066037&pagename=Bilbaonet%2FBIO\\_Generico\\_FA%2FBIO\\_Generico](http://www.bilbao.eus/cs/Satellite?c=BIO_Generico_FA&cid=3006123060&language=es&pageid=3000066037&pagename=Bilbaonet%2FBIO_Generico_FA%2FBIO_Generico)

- **Comisiones técnicas de Consejo de Distrito**

*Public government agencies working in the area, Bilbao*

District Council Technical Commissions.

- **Oficina Municipal de Distrito Deusto**

*Public government agencies working in the area, Deustu*

Deusto District Municipal Workshop.

[www.bilbao.eus/cs/Satellite?](http://www.bilbao.eus/cs/Satellite?c=Page&cid=3000045873&language=es&pageid=3000045873&pagename=Bilbaonet%2FPage%2FBIO_contenidoFinal)

[c=Page&cid=3000045873&language=es&pageid=3000045873&pagename=Bilbaonet%2FPage%2FBIO\\_contenidoFinal](http://www.bilbao.eus/cs/Satellite?c=Page&cid=3000045873&language=es&pageid=3000045873&pagename=Bilbaonet%2FPage%2FBIO_contenidoFinal)

- **Bilbao dendak**

*Clusters and Associations, Bilbao*

The public-private platform for the promotion of commercial and tourist activity in Bilbao, Bilbao Dendak, is a non-profit entity whose main purpose is the encouragement, promotion and development of trade in Bilbao.

[www.bilbaodendak.eus](http://www.bilbaodendak.eus)

- **Deusto Bizirik**

*Clusters and Associations, Deustu*

Deusto Association of Commerce, Services and Catering.

[www.deustobizirik.com](http://www.deustobizirik.com)



- **Energía Justa**

*Clusters and Associations, Spain*

Energía Justa is a network of volunteers committed to the fight against energy poverty and its effects and consequences on the health, economy and well-being of people in situations of greater social vulnerability.

[energijusta.org](http://energijusta.org)

- **Bilbao Metropoli 30**

*Clusters and Associations, Bilbao*

The Association for the Revitalization of Metropolitan Bilbao is an association of promotion and research constituted to carry out projects of planning, study and promotion, directed towards the recovery and revitalization of Metropolitan Bilbao, defined as a social and economic reality without precise geographic limits and whose existence has been projected throughout its regional and international surroundings.

[www.bm30.eus](http://www.bm30.eus)

- **Bilbao Urban Design**

*Clusters and Associations, Bilbao*

An Urban Strategy Think Tank formed by professionals in different fields like urbanism, architecture, engineering, energy efficiency, environment and mobility.

[www.bilbaourbandesign.org](http://www.bilbaourbandesign.org)

- **Comisión Gestora de Zorrotzaurre**

*Public government agencies working in the area, Zorrotzaurre*

The Management Commission for the Urban Development of Zorrotzaurre founded in 2001 is currently composed of five proprietors from the area working in collaboration to implement the Zorrotzaurre project.

[www.zorrotzaurre.com](http://www.zorrotzaurre.com)

- **Mao Mao Beach**

*Residents and local business managers, Zorrotzaurre*

Disco and night club in Bilbao.

[www.facebook.com/MaoMaoPhotography](https://www.facebook.com/MaoMaoPhotography)

- **Don Cesar**

*Residents and local business managers, Zorrotzaurre*

Bar-restaurant.

- **Santi**

*Residents and local business managers, Zorrotzaurre*

Bar-restaurant.

- **Bolintxe**

*Residents and local business managers, Zorrotzaurre*

Bar-restaurant.

- **Begoña Berria**

*Residents and local business managers, Zorrotzaurre*

Bar-café.

[facebook.com/pages/category/Local-Business/Bego%C3%B1a-Berria-1019414434795682](https://facebook.com/pages/category/Local-Business/Bego%C3%B1a-Berria-1019414434795682)

- **Ibai Aurre**  
*Residents and local business managers, Zorrotzaurre*  
Bar-restaurant.
- **Erribera Taberna**  
*Residents and local business managers, Zorrotzaurre*  
Bar.
- **Urederra**  
*Residents and local business managers, Zorrotzaurre*  
Bar (currently closed for retirement).
- **Bar Modes Julen**  
*Residents and local business managers, Zorrotzaurre*  
Bar.
- **Pensión Ría de Bilbao**  
*Residents and local business managers, Zorrotzaurre*  
Hotel (One star).  
[www.bilbaoturismo.net/BilbaoTurismo/es/hoteles/hotel-ria-de-bilbao](http://www.bilbaoturismo.net/BilbaoTurismo/es/hoteles/hotel-ria-de-bilbao)
- **Open Your Ganbara**  
*Local communities, Zorrotzaurre*  
Open Street Market: Open Your Ganbara is a flea market open to all audiences and one of the first initiatives of the creative Zorrotzaurre.  
[espacioopen.com/openyourganbara/](http://espacioopen.com/openyourganbara/)
- **Tokyo Story**  
*Local entrepreneurs, Zorrotzaurre*  
Interior Design and Decoration, from preparing distributions to optimize space, to integral reforms. We also rent furniture for advertising, window dressing, photo sessions, T.V. etc.  
[www.tokyostory.biz](http://www.tokyostory.biz)
- **Centro Municipal Bidarte**  
*Public government agencies working in the area, Deusto*  
District-wide Basic Social Services
- **Clínica IMQ Zorrotzaurre**  
*Zorrotzaurre*  
Private medical hospital  
[clinicazorrotzaurre.imq.es](http://clinicazorrotzaurre.imq.es)
- **Asociación cultural Haceria Arteak**  
*Local communities, Zorrotzaurre*  
Cultural Association, a non-profit organisation is to improve art, culture and heritage, as well as to integrate and transform areas, communities, and organizations.  
[www.haceriaarteak.com](http://www.haceriaarteak.com)

- **Zorrotzaurre Art Work in Progress**  
*Local communities, Zorrotzaurre*  
Cultural association that works in the social, economic and cultural revitalization of the neighborhood through the creation, intervention and enhancement of memory.  
[www.zawp.org](http://www.zawp.org)
- **Bizinahi**  
*Local communities, Zorrotzaurre*  
Self-managed social and cultural space of the neighborhood.
- **Eidabe**  
*Local entrepreneurs, Zorrotzaurre*  
Cultural management company that focuses on children and youth leisure, theater production and event organization.  
[eidabe.com](http://eidabe.com)
- **Guretxoko Skateskola**  
*Local entrepreneurs, Zorrotzaurre*  
Skate school.  
[guretxokoskatepark.com](http://guretxokoskatepark.com)
- **Zirkozaurre**  
*Local communities, Zorrotzaurre*  
Center for the creation and exhibition of circus and performing arts.  
[zirkozaurre.com](http://zirkozaurre.com)
- **Karola Zirko Espazio**  
*Local communities, Zorrotzaurre*  
A space of circus and street theater where the companies can develop all their areas, to be able to help to the artistic diffusion of the circus and the scenic arts in Bilbao.
- **Piugaz**  
*Local communities, Zorrotzaurre*  
Space for climbing and sport.  
[piugaz.com](http://piugaz.com)
- **AIRLAN**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacturer of Air Conditioning Equipment.  
[www.airlan.es](http://www.airlan.es)
- **Asociación de vecinos "Ribera de Deusto"**  
*Local communities, Zorrotzaurre*  
Neighborhood association.
- **Asociación de vecinos "Euskaldunako Zubia"**  
*Local communities, Zorrotzaurre*  
Neighborhood association.  
[www.zorrozaurre.org](http://www.zorrozaurre.org)
- **ASOC. GRUPO MUJERES RIBERA DE DEUSTO**  
*Local communities, Zorrotzaurre*  
Women's association.

- **CLUB JUBILADOS EL DESCANSO DE LA RIBERA DE DEUSTO**  
*Local communities, Zorrotzaurre*  
Pensioners' association.
- **Armademakosu**  
*Local entrepreneurs, Zorrotzaurre*  
Furniture factory.
- **Fundación Eguzkilo**  
*Local communities, Zorrotzaurre*  
Entity promoted by the Diocese of Bilbao to promote access to and support of decent and adequate housing for people.
- **Burdin 2000**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of locks and hardware.
- **Erabi Tecnología Audiovisual**  
*Local entrepreneurs, Zorrotzaurre*  
Electric installations.
- **Habitat Store**  
*Local entrepreneurs, Zorrotzaurre*  
Retail of furniture, lighting fixtures and other household items in specialized stores.
- **Inmobiliaria Zorrotzaurre**  
*Local entrepreneurs, Zorrotzaurre*  
Real estate.
- **Hircus Artifex**  
*Local entrepreneurs, Zorrotzaurre*  
Retail trade by correspondence or Internet.
- **Regin Control Iberica**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of other special purpose machinery n.e.c.
- **Teknodidaktika**  
*Local entrepreneurs, Zorrotzaurre*  
Education.
- **Reparts 3D**  
*Local entrepreneurs, Zorrotzaurre*  
Repair of computers and peripheral equipment.
- **Eskalgune**  
*Local entrepreneurs, Zorrotzaurre*  
Management of sports facilities.
- **Back Stage Marketing**  
*Local entrepreneurs, Zorrotzaurre*  
Public relations and communication.



- **Atomic producción De Espectáculos**  
*Local entrepreneurs, Zorrotzaurre*  
Auxiliary activities to the performing arts.
- **Bilbo Dulce**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of bread and fresh bakery and pastry products
- **Talleres Arro**  
*Local entrepreneurs, Zorrotzaurre*  
Metalworking machine tool manufacturing.
- **Sustraiak Catering**  
*Local entrepreneurs, Zorrotzaurre*  
Provision of prepared meals for events.
- **Serblo**  
*Local entrepreneurs, Zorrotzaurre*  
Sale of cars and light motor vehicles.
- **Pabellon 6**  
*Local entrepreneurs, Zorrotzaurre*  
Artistic and literary creation.
- **Montajes Monvemo**  
*Local entrepreneurs, Zorrotzaurre*  
Other specialized construction activities n.e.c.
- **Asociacion Cultural Open Your Kolektiboa**  
*Local entrepreneurs, Zorrotzaurre*  
Magazine publishing.
- **Lantegin Construcciones Y Proyectos**  
*Local entrepreneurs, Zorrotzaurre*  
Construction of residential buildings.
- **Diseños y Construcciones Nicolex**  
*Local entrepreneurs, Zorrotzaurre*  
Plastering.
- **Suanayes**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale of wood, building materials and sanitary equipment.
- **Estanterias Modelo**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of office and commercial furniture.
- **Productos Vulcanizados**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of other rubber products.

- **Grua Policía Municipal**  
*Public government agencies working in the area, Zorrotzaurre*  
Municipal Police Crane.
- **Dogerty**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of other machinery and equipment.
- **Aize- Klima**  
*Local entrepreneurs, Zorrotzaurre*  
Plumbing, heating and air conditioning systems.
- **Palets Vizcaya**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of scrap and waste products.
- **MECANIZADOS ANGARBI**  
*Local entrepreneurs, Zorrotzaurre*  
Mechanical engineering on behalf of third parties.
- **Bilsey**  
*Local entrepreneurs, Zorrotzaurre*  
Repair of other personal effects and household items.
- **Olagorta S.L.**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of other machinery and equipment.
- **Gráficas Euskolor**  
*Local entrepreneurs, Zorrotzaurre*  
Other printing and graphic arts activities
- **Deco Publicitario**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of metallic carpentry
- **Industrias Mecanicas Roberto**  
*Local entrepreneurs, Zorrotzaurre*  
Mechanical engineering on behalf of third parties.
- **Ingetek Sistemas**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of other machinery and equipment.
- **Translider**  
*Local entrepreneurs, Zorrotzaurre*  
Other activities related to transport.
- **C. E. Consonni**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of electrical distribution and control apparatus.

- **AITOR ORTIZ PROYECTOS FOTOGRAFICOS**  
*Local entrepreneurs, Zorrotzaurre*  
Photography activities.
- **Tecmae**  
*Local entrepreneurs, Zorrotzaurre*  
Rental of other machinery, equipment and tangible goods n.e.c.
- **Industrias Lar**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of wire products, chains and springs.
- **Vicinay Cadenas**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of wire products, chains and springs.
- **Siegel**  
*Local entrepreneurs, Zorrotzaurre*  
Mechanical engineering on behalf of third parties.
- **Saigo**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of other semi-finished products
- **Tecresa**  
*Local entrepreneurs, Zorrotzaurre*  
Other specialized construction activities n.e.c.
- **Hom**  
*Local entrepreneurs, Zorrotzaurre*  
Electrical installations.
- **Talleres Rontegui**  
*Local entrepreneurs, Zorrotzaurre*  
Mechanical engineering on behalf of third parties.
- **VIZCAINA DE PRODUCTOS QUIMICOS S.A.**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of chemical products
- **Accesorios Navales e Industriales Mar-Fran**  
*Local entrepreneurs, Zorrotzaurre*  
Construction of ships and floating structures.
- **Aize Tec**  
*Local entrepreneurs, Zorrotzaurre*  
Plumbing, heating and air conditioning systems.
- **Alcresa**  
*Local entrepreneurs, Zorrotzaurre*  
Rental of machinery and equipment for construction and civil engineering.

- **Bar Zorrozaurre**  
*Local entrepreneurs, Zorrotzaurre*  
Bar.
- **Basque Live**  
*Local entrepreneurs, Zorrotzaurre*  
Non-specialized wholesale trade.
- **Carpintería Zuma**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of other wood structures and carpentry and joinery parts for construction.
- **Carrocerías Mulei**  
*Local entrepreneurs, Zorrotzaurre*  
Maintenance and repair of motor vehicles.
- **Centro de Investigación de Materiales de Altas Prestaciones**  
*Local entrepreneurs, Zorrotzaurre*  
Research institution.
- **El Almacén**  
*Local entrepreneurs, Zorrotzaurre*  
Retail trade of second-hand articles in specialized establishments.
- **Eraiki Berrietak**  
*Local entrepreneurs, Zorrotzaurre*  
Floor and wall covering.
- **Fundiciones Bronal**  
*Local entrepreneurs, Zorrotzaurre*  
Intermediaries of the trade of diverse products.
- **Herramientas Cisidel**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale trade of machine tools.
- **Isifuera**  
*Local entrepreneurs, Zorrotzaurre*  
Film and video production activities.
- **Kiperman Publi Regalo**  
*Local entrepreneurs, Zorrotzaurre*  
Non-specialized wholesale trade.
- **Luz Publicidad**  
*Local entrepreneurs, Zorrotzaurre*  
Advertising agencies.
- **Metal Gommen**  
*Local entrepreneurs, Zorrotzaurre*  
Repair of metal products.

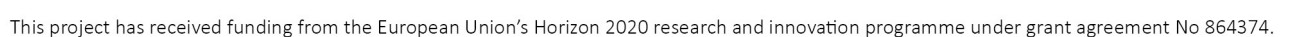


- **Metrol Centaur**  
*Local entrepreneurs, Zorrotzaurre*  
Manufacture of other general purpose machinery n.e.c.
- **Tecmae Montaje y Mantenimiento**  
*Local entrepreneurs, Zorrotzaurre*  
Other facilities on construction sites
- **Tubos Euba**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale of wood, building materials and sanitary equipment.
- **ULIA TRISTAN**  
*Local entrepreneurs, Zorrotzaurre*  
Wholesale of furniture, carpets and lighting fixtures





## Statistical context of Zorrotzaurre, Deusto and Bilbao



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# Statistical data

Statistical tables of different indicators for the areas of Zorrotzaurre, Deusto and Bilbao are shown below.

## 1 Zorrotzaurre

The data below relate to the Zorrotzaurre Island, neighbourhood of La Ribera, which is part of the Deustu district in the city of Bilbao.

### Location

The former peninsula of Zorrotzaurre – which was transformed into an island to ensure the non-floodability of the area in 2018 - is located “in the heart of Bilbao”, closely connected to the central city area of Abando and the central bus station of San Mamés, and situated on the banks of the Nervión river.

### Area development

The General Plan for Urban Development of Bilbao, approved in 1995, changed the industrial use of Zorrotzaurre for residential use. At the same time, it left the definition of the urban design of the area to the drafting of a Special Plan. The Master Plan of the project was designed by the prestigious Anglo-Iraqi architect Zaha Hadid. This Master Plan, elaborated in 2004 and revised in 2007, was finally approved in 2012.

### History

Zorrotzaurre is the last big operation of urban regeneration started in Bilbao. It is an area in continuous decline (both industrial and social) since the eighties of the last century and where nowadays less than half a thousand residents live.

### Segmentation

20-20-60 (20% subsidised housing, 20% appraised housing, 60% unregulated housing). Minimum requirement by legislation as Zorrotzaurre is considered unconsolidated urban land.

### Housing stock by ownership Ratio

Owner-occupied houses:	81 %
Corporate housing:	2 %
Private Rent:	18 %

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)  
 (Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

Value per m <sup>2</sup>	787.89
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Source: Catastro, 2016:

[www.bizkaia.eus/Ogasuna/katastro/pdf/Bilbao\\_Txostena\\_Ponencia\\_Jun\\_16.pdf?hash=40fc0a340a6b2b79ae93b9c33f5db8f8#page=60](http://www.bizkaia.eus/Ogasuna/katastro/pdf/Bilbao_Txostena_Ponencia_Jun_16.pdf?hash=40fc0a340a6b2b79ae93b9c33f5db8f8#page=60)

### Zorrotzaurre in numbers

Residents	403 (206 women, 197 men)
Properties	1,674
Offices	86 (28,284.37 m <sup>2</sup> )
Stores food	0
Employed persons	188
Schools	0
Surface area	838,781.25 m <sup>2</sup>
Population Density	480.46 h/km <sup>2</sup>

Sources: Bilbao OpenData, 2019

<https://www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019>

<http://apps.bizkaia.net/KUPW/servlet/webAgentKUPW>

(parcelario, Bilbao, CSV, codpol 124)

### Composition of housing stock

Private owners	154
Private rent	34
Corporation property	3

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

### Number of households

Total	182
Houses with single person	39.56 %
Houses with children	35.16 %

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Estadística municipal de viviendas -> Viviendas familiares principales por número de residentes)

### Age range of the population

0 – 17	56 (31 women, 25 men)
65+	62 (38 women, 24 men)
80+	15 (11 women, 4 men)

Source: Bilbao OpenData, 2019

[www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019](http://www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019)

## Migration background

Natives	367 (186 women, 181 men)
Foreigners	36 (20 women, 16 men)
Europe	18 (9 women, 9 men)
Southern Europe	8 (4 women, 4 men)
Eastern Europe	6 (3 women, 3 men)
Western Europe	2 (0 women, 2 men)
Northern Europe	2 (2 women, 0 men)
Africa	10 (7 women, 3 men)
Western Africa	8 (6 women, 2 men)
Northern Africa	1 (1 women, 0 men)
Central Africa	1 (0 women, 1 men)
America	7 (4 women, 3 men)
Southern America	6 (4 women, 2 men)
Central America	1 (0 women, 1 men)
Oceania	1 (0 women, 1 men)

Source: Bilbao OpenData, 2019

<http://www.bilbao.eus/opendata/es/catalogo/dato-extranjeros-barrio-sexo-pais-2019>

## Economical indicators (per 1000 inhabitants)

Catering establishments	15
Shopping Centres	0
Retailers	2
Employed persons	478

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)  
 (Tablas estadísticas -> Otras tablas -> Equipamientos) [Comercio de alimentación - Grandes superficies y supermercados, Hogar - Grandes almacenes y bazares]

## Socio-cultural indicators (per 1000 inhabitants)

Cultural facilities	22
Sports facilities	6
Neighborhood activities	6

## 2 Deusto

The data below relate to the district of Deustu. The neighborhood of La Ribera, where the island of Zorrouzaurre is, is part of this district.

### Location

Deusto is the district #1 of Bilbao and it is located on the right side of the Bilbao estuary, in the northwestern part of the city and bordering the estuary itself on the south and the southern hillside of Mount Artxanda and Mount Bandera on the north.

### History

Deusto was a small town around the San Pedro de Deusto church constructed around the 14th century. It maintained its municipality until 1925 when it was completely annexed by Bilbao in order to expand the free land available to the city.

### Housing stock by ownership Ratio

Owner-occupied houses:	86 %
Corporate housing:	2 %
Private Rent:	12 %

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)  
 (Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

Value per m <sup>2</sup>	2,711
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Source: Etxebide, 2020:

[https://www.etxebide.euskadi.eus/contenidos/estadistica/ovv\\_registral20/pendata/Estadistica-Registadores-2020.1.xlsx](https://www.etxebide.euskadi.eus/contenidos/estadistica/ovv_registral20/pendata/Estadistica-Registadores-2020.1.xlsx)

### Deusto in numbers

Residents	49,193 (26,243 women, 22,950 men)
Properties	54,339
Offices	730 (122,830.30 m <sup>2</sup> )
Stores food	134
Employed persons	19,849 (9,884 women, 19,849 men)
Schools	20
Surface area	4.96 km <sup>2</sup>
Population Density	9,917 h/km <sup>2</sup>

Sources: Bilbao OpenData, 2019

<https://www.bilbao.eus/pendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019>

<http://apps.bizkaia.net/KUPW/servlet/webAgentKUPW>

(parcelario, Bilbao, CSV, codpol 124)

## Composition of housing stock

Private owners	17,553
Private rent	2,414
Corporation property	407

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

## Number of households

Total	20,701
Houses with single person	29.76 %
Houses with children	38.88 %

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Estadística municipal de viviendas -> Viviendas familiares principales por número de residentes)

## Age range of the population

0 – 17	6,635 (3,172 women, 3,463 men)
65+	12,916 (7,739 women, 5,177 men)
80+	4,727 (3,104 women, 1,623 men)

Source: Bilbao OpenData, 2019

[www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019](http://www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019)

## Migration background

Natives	45,675 (24,320 women, 21,355 men)
Foreigners	3,518 (1,923 women, 1,595 men)
America	2,166 (1,330 women, 836 men)
Southern America	1,300 (742 women, 558 men)
Central America	776 (535 women, 241 men)
Northern America	58 (33 women, 25 men)
Caribbean	32 (20 women, 12 men)
Europe	593 (330 women, 263 men)
Eastern Europe	355 (207 women, 148 men)
Southern Europe	115 (52 women, 63 men)
Western Europe	67 (47 women, 20 men)
Northern Europe	56 (24 women, 32 men)
Africa	441 (116 women, 325 men)
Northern Africa	272 (57 women, 215 men)



Western Africa	109 (31 women, 78 men)
Central Africa	51 (26 women, 25 men)
Eastern Africa	9 (2 women, 7 men)
Asia	310 (144 women, 166 men)
Eastern Asia	161 (78 women, 83 men)
Southern Asia	79 (23 women, 56 men)
Western Asia	54 (33 women, 21 men)
Southeast Asia	14 (9 women, 5 men)
Central Asia	2 (1 women, 1 men)
Oceania	3 (0 women, 3 men)
No country	5 (3 women, 2 men)

Source: Bilbao OpenData, 2019

<http://www.bilbao.eus/opendata/es/catalogo/dato-extranjeros-barrio-sexo-pais-2019>

### Economical indicators (per 1000 inhabitants)

Catering establishments	5.24 (258 in total)
Shopping Centres	0.67 (33 in total)
Retailers	7.33 (361 in total)
Employed persons	408

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Otras tablas -> Equipamientos) [Comercio de alimentación - Grandes superficies y supermercados, Hogar - Grandes almacenes y bazares]

### Socio-cultural indicators (per 1000 inhabitants)

Cultural facilities	0.06
Sports facilities	0.16
Neighborhoodactivities	0.14

### 3 Bilbao

The data below relate to the city of Bilbao. The island of Zorrotzaurre is part of the municipality of Bilbao.

#### Location

Bilbao is a city located near the northern edge of the Iberian Peninsula, on the Basque threshold, the range between the larger Cantabrian Mountains and the Pyrenees. It is the largest city in the Basque Country, and also the largest city in northern Spain. It is the 10th largest city in Spain.

#### History

The Villa of Bilbao was founded in 1300, but it already existed from the previous century as a populated nucleus on both sides of the Nervión-Ibaizabal. The richness of the iron ore deposits near Bilbao initially led to a mining sector, but this later led to a great deal of industrialization. With the economic crisis, the city has suffered an important reorientation to the service sector.

#### Housing stock by ownership Ratio

Owner-occupied houses:	84 %
Corporate housing:	2 %
Private Rent:	14 %

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

Value per m <sup>2</sup>	2,808
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Source: Etxebide, 2020:

[https://www.etxebide.euskadi.eus/contenidos/estadistica/ovv\\_registral20/pendata/Estadistica-Registadores-2020.1.xlsx](https://www.etxebide.euskadi.eus/contenidos/estadistica/ovv_registral20/pendata/Estadistica-Registadores-2020.1.xlsx)

#### Bilbao in numbers

Residents	347,083 (183,461 women, 163,622 men)
Properties	374,184
Offices	6667 (1,106,908.15 m <sup>2</sup> )
Stores food	1211
Employed persons	156,958
Schools	138
Surface area	40.59 km <sup>2</sup>
Population Density	8,551 h/km <sup>2</sup>

Sources: Bilbao OpenData, 2019

<https://www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019>

<http://apps.bizkaia.net/KUPW/servlet/webAgentKUPW>

(parcelario, Bilbao, CSV, codpol 124)

## Composition of housing stock

Private owners	121,520
Private rent	19,664
Corporation property	3,410

Source: Eustat, 2016:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Censo de población y viviendas -> Viviendas familiares principales por régimen de tenencia)

## Number of households

Total	147,113
Houses with single person	31.54 %
Houses with children	38.04 %

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gsservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Estadística municipal de viviendas -> Viviendas familiares principales por número de residentes)

## Age range of the population

0 – 17	49,788 (24,270 women, 25,518 men)
65+	83,321 (50,307 women, 33,014 men)
80+	30,814 (20,493 women, 10,321 men)

Source: Bilbao OpenData, 2019

[www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019](http://www.bilbao.eus/opendata/es/catalogo/dato-habitantes-distrito-barrio-edad-2019)

## Migration background

Natives	317,268 (168,554 women, 148,714 men)
Foreigners	29,815 (14,907 women, 14,908 men)
America	13,415 (8,157 women, 5,258 men)
Southern America	9,589 (5,480 women, 4,109 men)
Central America	2,878 (2,137 women, 741 men)
Caribbean	525 (277 women, 248 men)
Northern America	423 (263 women, 160 men)
Africa	7,492 (2,428 women, 5,064 men)
Northern Africa	3,962 (1,163 women, 2,799 men)

Western Africa	2,660 (881 women, 1,779 men)
Central Africa	802 (356 women, 446 men)
Eastern Africa	61 (25 women, 36 men)
Southern Africa	7 (3 women, 4 men)
Europe	5,201 (2,686 women, 2,515 men)
Eastern Europe	3,020 (1,684 women, 1,336 men)
Southern Europe	1,168 (524 women, 644 men)
Western Europe	577 (297 women, 280 men)
Northern Europe	436 (181 women, 255 men)
Asia	3,629 (1,602 women, 2,027 men)
Eastern Asia	2,176 (1,065 women, 1,111 men)
Southern Asia	955 (262 women, 693 men)
Western Asia	351 (170 women, 181 men)
Southeast Asia	122 (87 women, 35 men)
Central Asia	25 (18 women, 7 men)
Oceania	15 (4 women, 11 men)
No country	63 (30 women, 33 men)

Source: Bilbao OpenData, 2019

<http://www.bilbao.eus/opendata/es/catalogo/dato-extranjeros-barrio-sexo-pais-2019>

### Economical indicators (per 1000 inhabitants)

Catering establishments	5.99 (2081 in total)
Shopping Centres	0.82 (284 in total)
Retailers	9.67 (3356 in total)
Employed persons	413

Source: Eustat, 2019:

[www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT](http://www.eustat.eus/dgsServicesWar/MainId?gservice=apps&gsrequest=getApplication&idapp=EUSTAT)

(Tablas estadísticas -> Otras tablas -> Equipamientos) [Comercio de alimentación - Grandes superficies y supermercados, Hogar - Grandes almacenes y bazares]

### Socio-cultural indicators (per 1000 inhabitants)

Cultural facilities	0.13
Sports facilities	0.17