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**TERRITORIAL ANALYSIS OF DECENTRALISED
ENERGY MARKETS //**

ECOTXE

Mallorca (ES)

Case Study // December 2024

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EXOTXE, Mallorca (ES)

Relevant Local Practice: E- mobility

In addition to generating and managing renewable energy, energy communities have the potential to offer a wide range of e-mobility services, further enhancing their role in promoting sustainable practices within local communities. This local practice may stem from effectively utilising surplus electricity produced by the community's renewable energy sources, or by the aim to support a broader sustainable transition. These e-mobility services include, but are not limited to, electric vehicle charging, electric car-sharing programmes, e-bike rentals, and other innovative mobility solutions. By integrating these services into the energy community's offerings, residents can benefit from convenient, eco-friendly alternatives for mobility, while also supporting the broader goals of reducing emissions, fostering local sustainability, and encouraging the use of renewable energy for transportation. This synergy between renewable energy generation and e-mobility creates a holistic, sustainable ecosystem that promotes a cleaner, greener future for the community.

Executive Summary

ECOTXE is a cooperative of consumers and end-users based in Palma (Mallorca, Spain) that offers hourly rental services of shared electric cars. The carsharing service allows users to book a car for a period of time via internet or mobile phone, using the vehicle at the reserved times and paying only for the time used. Although after in-depth investigation, it was found that Ecotxe does not fully comply with all requirements of an energy community as per both the Spanish legislation and EU Directives. However, ECOTXE shares a set of values and characteristics that are typically common in community energy projects and schemes such as citizen participation, community engagement, environmental goals.. ECOTXE is also characterised by a solid bottom-up approach in its decision-making system and therefore its governance model resembles the one typical of an energy community: the cooperative structure and principles. Energy Communities keen in developing e-mobility services can learn from ECOTXE's path from a community-led initiative operated by volunteers to a mature car-sharing system. Given the absence of a carsharing provider in the territory, the cooperative pioneered the way for this type of services in the area, an that was possible thanks to the close collaboration with the local authorities was determinant.

1. Key characteristics and context

ECOTXE was founded to meet the increasing demand for car-sharing services in the city of Palma. Hereafter, the enabling conditions, the characteristics of the territory and main drivers behind the establishment of the cooperative are carefully described. Moreover, additional aspects will be mentioned in this case study, such as, the founding actors, and the national framework and policies that facilitated and supported the operation of the car service cooperative.

1.1. Location and geographical scope

The geographical area of operation of the cooperative is the territory of the autonomous community of the Balearic Islands, however, the cooperative is planning to provide its services with partners outside of the Balearic Islands to expand its operations.¹ ECOTXE owns e-vehicles² in Palma de Mallorca (Spain). The carsharing activity works through an application available on mobile devices which allows customers to book the car and then return it to the same station where it was picked up. The price of the service is calculated on a eur/min base, which allows the end-user to calculate the total amount to pay for the service in real-time while using the vehicle (based on how long the car will be used).

¹ Article 3 in ECOTXE's Constitution

² Renault ZOE model

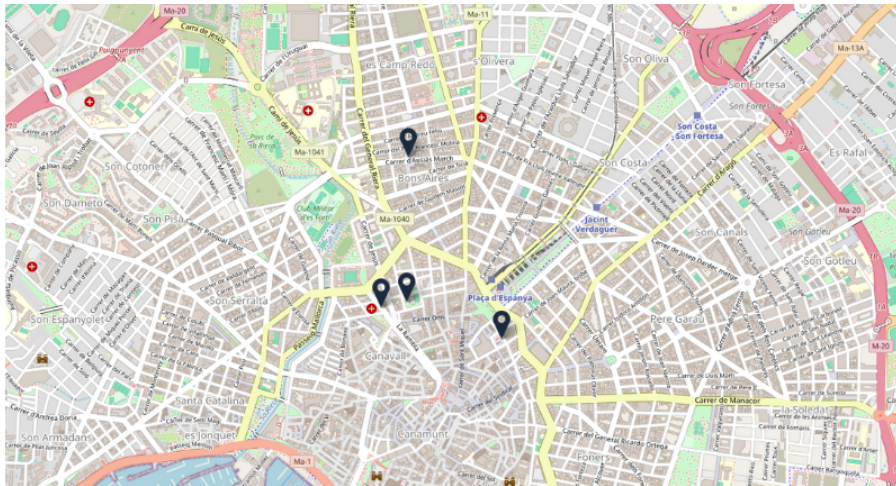


Figure 1: ECOTXE's locations in Palma. Source: ECOTXE's website

1.2. Foundation & history

ECOTXE was founded during the **European Mobility Week** in September 2015, during which a group of individuals from the Balearic Islands, aware of the need in the city of Palma, decided to implement a carsharing system to respond to the high demand for rental cars in the area. An increasing trend in **tourism seems to be putting pressure** over Mallorca, as visitors add CO₂ emissions. For instance, in 2024, the Balearic Islands, received 11.2 million tourists a 6.2% increase compared to the same period in 2023³. The environmental damage due to high intensity tourism and the potential of car sharing services to reduce the overall stock of emissions inspired the “founders” further.

In 2015 the project of the cooperative was officially established with the goal of providing access to e-vehicles but without having to own them, and with the approach of “pay for its use” (following and taking inspiration from the successful examples such as ZITY⁴ and ShareNow⁵). At the time in Mallorca, carsharing was still an uncommon practice compared to other cities in Europe and the world.⁶

The legal entity of the cooperative was officially established on **February 20th of 2016**. During its first year, ECOTXE organised a **crowdfunding campaign**, which allowed the cooperative to purchase their first electric vehicle. The e-cars model which ECOTXE offers are *Renault ZOE*, model which price can go over 35.000 euros. Currently, ECOTXE operates 4 e-cars). These cars are distributed across the city in four parking slots of both public and private ownership. The cooperative has been operating successfully, and growing in size, currently it has **280 Associates** working closely in the cooperative, and **345 users** enjoying the carsharing services.

ECOTXE has also been able to capitalise on the consequences of spike prices in the car market. Consumers’ ability to purchase personal cars has diminished, so opting for short-term rentals at a fair price seemed like a good alternative. Hence, ECOTXE’s success is partly due to the urgent need to meet this demand, paired with an increasing awareness of citizens, which explains the emerging niche they were able to fill in.

Although it is a well-known initiative for shared electric mobility in Palma, the cooperative encountered a number of obstacles⁷ that have hindered its expansion in different ways, primarily related to infrastructure, legal issues, and market conditions. To scale up its services, ECOTXE needs additional parking spaces, but those meeting the necessary conditions (e.g. 24-hour pedestrian accessibility and the possibility of installing electric charging points) are limited. An alternative would be purchasing suitable locations for car-sharing operations, but the **high property prices** make this difficult. In addition, the cooperative’s expansion is influenced by local government changes, as changing municipal commitment may impact the support for car sharing initiatives and the necessary permissions.

ECOTXE does not directly qualify as an energy community under both EU and national Spanish legislation. In fact, there is no direct energy sharing between its members in place. Furthermore, ECOTXE does not own its renewable energy source (as it will be explained below) but uses the energy shared by a provider which is already present in the Point of

³ More information at <https://www.ine.es/dyngs/Prensa/en/FRONTUR0824.htm>

⁴ More information available here: <https://zity.eco/it/>

⁵ More information available here: https://www.share-now.com/it/it/rome-ppc2/?utm_source=bing&utm_medium=cpc&utm_campaign=SN_Roma_PROS_SEA_Competitor&utm_term=car%20sharing%20kinto%20share&msclkid=96be26ab2bab11002dd741c9bd74bb18

⁶ ECOTXE’s Constituent Assembly (2016)

⁷ <https://www.ECOTXE.coop/ECOTXE-cerca-aparcament/>

Distribution in which the charging station is built. Nevertheless, as will stem from the decision-making model description as well as other sections of the case study, Ecotxe demonstrates to align with the fundamental principles and spirit of the energy community concept. In fact, citizens are at the very centre of the cooperative, empowered with significant decision-making power in the cooperative assemblies. Moreover, Ecotxe was established as a specific request from the local community to mitigate the negative effects of traffic congestion in Palma. Also, the cooperative distributes environmental, social and economic benefits towards the local community underlining again how this initiative further aligns with the approach typical of an energy community.

Finally, as it will explained below, Ecotxe envisages to become energy independent in the coming future by producing and consuming its own renewable energy.

1.3. Energy technologies applied

ECOTXE's provides its electric cars (*Renault ZOE* models⁸) with electricity directly coming from the local grid (see Figure X). The Energy provider of the cooperative is not directly decided by ECOTXE, but it's the one that provides energy in the Distribution Point in which the cooperative builds and maintains the charging stations.

The acquisition of the parking lots where charging stations are installed is at the forefront of their business model. The negotiations with the parking lots owners ultimately influence the opportunity for ECOTXE to upscale its activities.

The origin of the energy used by ECOTXE to charge and power its vehicles is dependent on the supplier that is active on the Distribution Point pertaining to the specific location in which the parking lots are established. In fact the energy source used to power the batteries from the e-vehicles relies on the supplier which operates in the specific grid. Guaranteeing a fully renewable energy source is a difficult endeavour as it depends on third parties.



Figure 2: ECOTXE's electric vehicles with the new charging point supplied by Uenergia

Source: ECOTXE's website

ECOTXE has various energy suppliers of different nature, including *Som Energia* or *Uenergia*. In the long-run, ECOTXE aims to produce its own electricity, purchasing renewable energy installations to power their electric vehicles in the Balearic Islands. In the immediate future though, this plan is not set as a priority for the cooperative given its main goal is to increase the usage of electric rental vehicles in the Balearic Islands.

1.4. National/regional enabling frameworks and policies

During the past few years, European and national policies and regulations have aimed to promote the development of a renewed e-vehicle fleet across European Member States, including Spain. For instance, the Spanish Recovery Plan, Transformation and Resilience is the key instrument for the exploitation of European funds in recovery Next Generation EU. Within this framework, the Spanish Ministry of Industry and Tourism developed the PERTE VEC, a

⁸ <https://www.renault.it/veicoli-elettrici-ibridi/zoe.html>

comprehensive initiative aimed at developing the industrial value chain for electric and connected vehicles in Spain⁹. At the regional level, sustainability has also been at the core of the policy agenda, with a special focus on how to mitigate the impacts of tourism. Some relevant legal provisions include the Climate Change and Energy Transition Law (2019)¹⁰, and the recently published Law on circularity and sustainability in tourism (2022)¹¹. Likewise, strategic plans like the Environmental and Tourism Balance Plan (2017)¹² or measures like limiting vehicles in natural areas (like Formentera did) showcase the strong commitment of the regional government in respecting the environment.

In the same vein, ECOTXE's purpose aligns with the draft decree being currently discussed in the region: Balearic Strategy for Green Infrastructure and Ecological Connectivity and Restoration in 2024¹³, which encourages local entities to promote charging stations. In addition, the city of Palma will officially establish a low-emission zone¹⁴ which will limit the circulation of combustion engine cars in the central areas from January 2025 onwards. This regulatory framework is likely to foster an increase in the demand for electric vehicles.

2. Governance and internal organisation

ECOTXE operates in an environment characterised by a multitude of actors and stakeholders, both within the cooperative and outside. This chapter elaborates how their governance structure is organised, including its owners and members, the decision-making processes, and the key stakeholders that matter for ECOTXE's activities. This is followed by an elaboration of the applied business model and funding sources, which are the basis of its financial operations.

2.1. Governance model

Ownership and legal model

"*ECOTXE Som Moviment, S. Coop*" is a non-profit cooperative of consumers, in accordance with the provisions of by Law 5/2011 of 31 March¹⁵, which is referred to as the "*Law on Cooperatives*" of the Balearic Islands. The purpose of this Cooperative is the provision of e-mobility services preferably from renewable energy sources¹⁶, as well as the provision of services and distribution of products that facilitate the economic and technical improvement of the cooperative and its members. ECOTXE can carry out this purpose directly or indirectly, also through participation in other companies.

Natural persons and entities can become members of ECOTXE, as long as they share the objective established in Article 4 of the cooperative statute (aligned with those of the International Cooperative Alliance): voluntary membership, democratic management, economic participation, autonomy, independence, education, training and information, cooperation between cooperatives and interest in the community. As such, its members wish to obtain the highest quality goods and services (in terms of quality, prices, information and opportunity) related to electric vehicles. Associated members may also be those individuals that without carrying out the main activities of the cooperative, can collaborate in the achievement of the cooperative's corporate purpose through voluntary contributions to the shared capital. The cooperative may have **working members** who can provide their work to carry out the purpose and social activity of the cooperative.

To become a member, the natural person must subscribe to the **minimum mandatory contribution to the share capital (100 Euros)**. This contribution works as a deposit, which will be reimbursed in case of termination of the membership. A membership entitles two individual persons to use the service.

Decision-making

Each member has the right to cast **one vote**¹⁷. When a member cannot attend the General Assembly, it can be represented by another member, however, one member may not represent more than two members at a time.

⁹ Proyecto Estratégico para la Recuperación y Transformación Económica del Vehículo Eléctrico y Conectado (PERTE VEC), (2022). <https://www.mintur.gob.es/en-us/recuperacion-transformacion-resiliencia/Paginas/perte.aspx>

¹⁰ https://www.caib.es/sites/canviclimatic2/es/la_ley_de_ccyte/

¹¹ https://www.oneplanetnetwork.org/sites/default/files/2022-10/Sustainability%20in%20the%20Balearic%20Islands%20the%20new%20Law%20for%20Circularity%20in%20Tourism_Balearic%20Islands%20Tourism%20Strategy%20Agency.pdf

¹² https://www.caib.es/pidip2front/files/annexes/2017/11/7/20171107_press_note_wtm_british_media.pdf_2194070.pdf

¹³ https://www.caib.es/sites/M170613081930629/es/n/corredores_ecologicos/

¹⁴ Anexo al Acuerdo de aprobación definitiva del Proyecto de Ordenanza municipal de reguladora de las zonas de bajas emisiones (ZBE), Ajuntament de Palma, (2024)

¹⁵ Which modifies Law 1/2003 of 20 March.

¹⁶ However, as explained in section 1.3, ECOTXE does not have direct control on the nature of the origin of the energy used, as this is strictly dependant on the provider the cooperative uses to power its charging stations.

¹⁷ Art.40

Details on the governing bodies of the cooperative are described in the box below.

1) The General Assembly

It is the highest governing body of the cooperative where each member of *ECOTXE Som Moviment* has a vote. The members of the **Governing Council** and the **Auditors** will be elected from among all of them. The assembly drafts the cooperative's annual strategic plan, monitors its implementation and evaluates the results.

2) The Governing Council

It is made up of a maximum of 11 people directly elected by the **Assembly**. The members of the Council **will** assume the functions of:

- **president**
- **vice-president**
- **secretary**

The overall objective of the Council is to promote the development of the guidelines set by assembly. The Council members are in charge **for a four-year term, and they may be re-elected indefinitely.**

3) The auditors of accounts

The General Assembly will nominate 3 auditors across the Associates of the cooperative and they will work for a 4-year period. The elected candidates will represent the fiscal body of the cooperative, and their main functionalities are (1) review the annual accounts, (2) review the accounts and legal acts of the Cooperative, and proposes to the Governing Council, where appropriate and necessary, their adaptation to the law; (3) informs the General Assembly of the matters or questions that it has Subjected.

All the decisions made in the general assembly will require a **two-thirds majority** of the votes present and represented to be adopted. Decisions about amendments of articles of the Association statute, mergers, requirements of new mandatory contributions or modifications in periodic payments are often the main topics under discussion.

2.2. Key actors and stakeholders

ECOTXE's realisation was determined by the collaboration of stakeholders of different nature, which contributed to the establishment of the cooperative in a variety of ways at different stages. In its early stages, the car-sharing service was awarded a social innovation award for the energy transition from the Germinador Social de Som Energia and Coop57¹⁸. During its establishment, ECOTXE was supported by academic institutions (e.g. Business Department of the University of the Balearic Islands, UIB) and a large and historically active regionally energy cooperative, SOM Energia contributed to the setting up of their services and creating technical feasibility studies for the project.

ECOTXE has collaborations with different organisations, most of them NGOs and local associations. These include We are Energy¹⁹, Amics de la Terra²⁰, S'Altra Senalla²¹, Deixalles Foundation²², Mediterranean wave²³, The Direct²⁴, GOB Majorca²⁵ and Association of Neighbours of Santa Pagesa²⁶

The purpose of each collaboration depends on the nature of the collaboration, but ECOTXE always encourages the members of these partners to use their carsharing services at an advantageous price. In return, the NGO's raise the cooperative's visibility by partnering up with ECOTXE and promoting its services to their networks.

The cooperative has received various grants from the Caixa d'Estalvis de Pollença and invested these resources in improving the maintenance services of the charging stations and parking lots. To this end, they partner up with Impulsa Igulat Predif IB²⁷, a non-profit organization that works to defend the right of people with physical disabilities. The

¹⁸ Find more information in <https://www.Ecotxe.coop/el-germinador-social-premia-la-cooperativa-Ecotxe/>

¹⁹ ECOTXE's Website (2018). <https://www.ECOTXE.coop/si-ets-de-som-energia-ara-pots-pujar-a-ECOTXE/>

²⁰ More information available here: <https://www.amicsdelaterra.org/es/>

²¹ ECOTXE's Website (2019). <https://www.ECOTXE.coop/si-ets-de-saltra-senalla-tambe-pots-pujar-a-ECOTXE/>

²² ECOTXE's Website (2019). <https://www.ECOTXE.coop/la-fundacio-deixalles-puja-a-la-mobilitat-electrica-compartida-amb-ECOTXE/2019>

²³ ECOTXE's Website (2020). <https://www.ECOTXE.coop/ona-mediterrania-puja-a-la-mobilitat-electrica-compartida/>

²⁴ ECOTXE's Website (2020). <https://www.ECOTXE.coop/carnet-directa/>

²⁵ ECOTXE's Website (2020). <https://www.ECOTXE.coop/gob-puja-a-ECOTXE/>

²⁶ ECOTXE's Website (2021). <https://www.ECOTXE.coop/acord-av-santa-pagesa-ECOTXE/>

²⁷ ECOTXE's Website (2024). <https://www.uenergia.es/es/quienes-somos/>

collaboration aimed at involving people with disabilities to participate in the cooperative under equal conditions cleaning and maintenance services. Recently, U Energia²⁸ started collaboration with ECOTXE, focusing on borrowing a charging point to charge e-vehicles.

The relationship between the cooperative and the City Council(s) has been determined by specific signed agreements to purchase parking lots to later install charging stations at a fair price (e.g. In *Esporles* residents were granted access the electric carsharing service without joining the cooperative during the first three months thanks to the agreement in return). Moreover, ECOTXE targets policymakers to promote sustainable mobility through studies and events that could raise its importance in the political agenda.

2.3. Business model

ECOTXE is a non-profit consumer cooperative, which means that every surplus of revenue is reinvested in the cooperative own projects and objectives. The aim of this business model is to ensure that the actions and activities are in line with the cooperative's goal and motto: **enhancing and bolstering sustainable mobility**.

Any user willing to use the car-sharing services logs on the website or in the app to book the car they want to use, and they **pay a rate based on the time and kilometres** used, there is no monthly payment required. All expenses are already included in the rates (VAT, energy, technical maintenance, parking, insurance, cleaning, etc.). Current rates can be found on their website²⁹, and those are the ones covering the maintenance costs of all the vehicles and charging stations.

The cooperative has used different pricing models for **negotiations** with local entities, and other partners, using tailor-made conditions to join the service. For example, people associated with Amics de la Terra Mallorca have access to the shared electric car service with the same rates and conditions as ECOTXE members, without having to the contribution of mandatory social capital of the cooperative. After one year, they will be given the option to continue with the service by associating with ECOTXE.

For the development of the cooperative, a voluntary social capital was established. It is the capital that members contribute to the cooperative, voluntarily, and for which they receive remuneration through the annual interest³⁰.

Article 29 of ECOTXE's Statute states the conditions for surpluses. After deducting losses and before taxes, surpluses will be applied to the following purposes:

- At least 30% will be allocated to the **Mandatory Reserve Fund** (intended for the consolidation and development of the Cooperative, may not be distributed among the members, even in the event of dissolution of society.)
- To the **Cooperative Education and Promotion Fund**, at least 10%. (will apply to the training and the education of the members and workers of the Cooperative in the cooperative principles and to the dissemination of the characteristics of cooperativism in the social environment in which the cooperative carries out its activity).
- At least **10% to the Contribution Reimbursement Fund**.

2.4. Grid connection

The Points of Distribution (PoDs) to which ECOTXE is connected are not the outcome of a negotiation between the cooperative and a DSO or a local provider. ECOTXE purchases the parking lots and areas directly from its owners (being them private entities of local public institutions). As such, these areas are already connected with the grid. They are thus subject to specific conditions depending on the provider, once acquired the lots, the cooperative connects its charging stations to those PoDs already present in the parking lots.

2.5. Access to finance

Initially, ECOTXE acquired its first shared electric-vehicle thanks to a Crowdfunding Campaign, in which 137 people participated³¹. In addition, they received recurrent grants from the local bank Colonya Ethical Savings³², a strategic financial institution which promotes ethical projects by funding innovative solutions. Thanks to the initial crowdfunding campaign, and its subsequent grants ECOTXE initiated its operations, and since then the increasing number of associates and subscribers allowed them to offer their services. The costs of the vehicles are covered thanks

²⁸ Find further information in <https://www.uenergia.es/es/quienes-somos/>

²⁹ <https://www.Ecotxe.coop/tarifas/>

³⁰ (Art. 87 of the Cooperatives Law of the Balearic Islands 5/2023 of March 8).

³¹ More information available at <https://www.Ecotxe.coop/gracies-per-pujar-a-Ecotxe/>

³² More information available at <https://estalvietic.com/>

to the fees paid by users, but additional costs have been overcome thanks to volunteering services. Currently, ECOTXE has 4 cars operating in the region.

Recently, a grant allowed them to improve the maintenance and cleaning of their vehicles. The acquisition of their second vehicle resulted from another collective effort from the partners who contributed to the Voluntary Social Capital.

The share capital is made up of the **compulsory and voluntary** contributions of the members (with the right to reimbursement in the event of termination):

- **Compulsory** contributions reimbursement may be refused unconditionally by the Governing Council in the event of termination. To successfully apply, members must pay the full mandatory contribution. The cooperative members are bound to make a minimum mandatory contribution of 100 EUR, whereas working members should contribute with 500 EUR.
- **Voluntary contributions** are considered as contributions with the right to Reimbursement in the event of cancellation.

Overall, the minimum share capital of the cooperative is 3000 EUR, which must be fully subscribed and disbursed at the time of its constitution.

3. Impact and Analysis

The development and activities of ECOTXE result in a variety of impacts on the local community of Palma. This chapter identifies the key social, environmental, and economic impacts, followed by an analysis of the implemented strategies to ensure inclusiveness. This includes an identification of the necessary and supporting conditions and actions, their transferability and replicability, and the key takeaways. A specific focus of this section is on how the local practice on electromobility facilitated and further supported the establishment of the ECOTXE reality.

3.1. Social, environmental, and economic impacts

Social impacts

ECOTXE promotes inclusivity across citizens living in Mallorca, allowing those with difficulties to acquire personal vehicles to benefit from the car-sharing services when needed. Different end-users benefit from the car-sharing system as they are able to move comfortably without the need to own a car. This includes people who move temporarily to Palma for work, freelancers which do not have a company car, or small companies which may want to offer this service to their employees could particularly benefit from this service.

In the long run, it is in ECOTXE's plans to expand its fleet and include adapted vehicles for disabled drivers to access cars that otherwise could be too pricey.

In addition, members are given the possibility of accessing the economic and social information of the cooperative, participating in its governance through the Assembly and the working groups that can be created or invest in the projects of the cooperative.

Environmental impacts

The city of Mallorca is located in the Mediterranean, a vulnerable area to climate change. For instance, global warming is said to be occurring 20% faster in the Mediterranean region compared to the global average³³. The transport sector is one of the key emitters of Greenhouse Gas Emissions, which are affecting global warming. The transport sector in the Balearic Island is responsible of 60-65% of the GHG³⁴. By promoting shared electric vehicles, ECOTXE helps decrease the number of high-emission vehicles on the road, contributing to lower overall emissions and improved air quality.

The increasing tourism in the island has led to land use changes, constructing road infrastructure to improve accessibility has altered original land use patterns and reduced ecological areas. Car-sharing reduces the need for extensive parking infrastructure, helping preserve ecological areas and limit urban sprawl.

Noteworthy, traffic also relates to noise pollution, with millions of people in the EU experiencing sleep disturbance and annoyance due to transport-related noise. ECOTXE promotes the use of electric cars, which are significantly quieter than traditional combustion engine vehicles, helping to reduce noise pollution.

³³ European Environmental Agency (2024). <https://www.eea.europa.eu/en/topics/in-depth/transport-and-mobility>

³⁴ https://www.caib.es/sites/canviclimatic2/es/fuentes_emisoras_de_gases_de_efecto_invernadero_en_las_islas_baleares-7115/#fuentes

Overall, ECOTXE contributes to promoting sustainable tourism, as it provides tourists with an alternative eco-friendly transportation option, while it supports the development of low-emission zones, which Palma plans to implement by 2025.

ECOTXE's electric cars rely on charging stations, which provide energy from different suppliers. At the moment, there is no certainty about the renewable origin of the energy produced, although ECOTXE aims to prioritise green energy to the extent that is possible.

The city of Palma is an attractive tourist destination. ECOTXE aims to promote alternative means of transport to travel around the city sustainably. Figure 2 shows ECOTXE's figures³⁵ in 2019³⁶, detailing the increasing trend of reservations and usage of the 2 initial electric vehicles. The figure reveals that the highest demand for ECOTXE's services was in August, which tends to be the high season in terms of tourism.

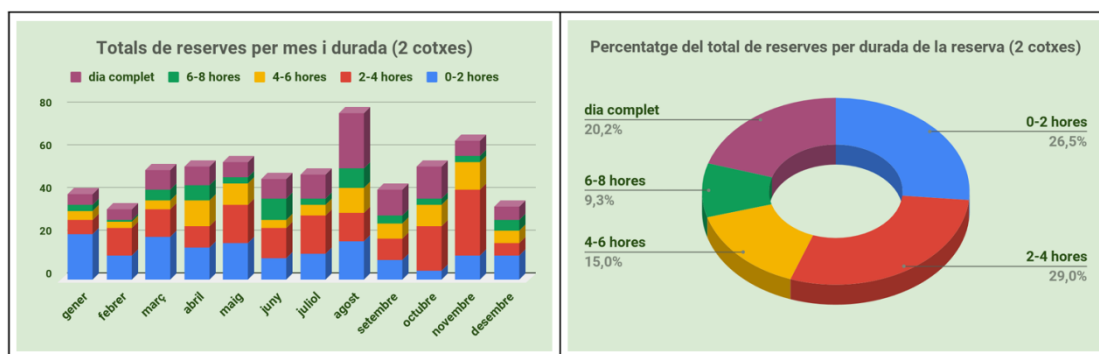


Figure 3: ECOTXE's statistics of car usage. Source: ECOTXE's annual report, 2019

The implementation of sustainable mobility schemes, such as car-sharing services, requires urban planning considerations and an unmet demand from citizens who are keen to use e-vehicles. Currently, the number of e-vehicles offered by ECOTXE does not allow to estimate remarkable environmental impacts in terms of Greenhouse Gas Emissions related to private vehicles. However, it is worth noting ECOTXE's role in the city as a promoter of sustainable behaviour through recurrent collaborations, participating in multiple events to raise visibility about sustainable mobility, involving local citizens to try e-vehicles to mitigate potential resistance to change, etc.

As an example, this year they celebrated PARK(ing) Day³⁷, a global annual event with the aim of showing that the potential alternative use of public spaces which currently offer parking for private cars.

Economic impacts

ECOTXE's economic contributions extend beyond individual user savings, encompassing broader local economic benefits:

ECOTXE's users benefit through the savings achieved thanks to avoiding paying parking fees, insurance costs and fuel when using the EVs of the cooperative. In addition, the members of the cooperative can further benefit from the financial growth of the entity by means of yearly interests. In the same vein, employees from ECOTXE's partners (e.g. NGOs) are eligible to access the cooperative services at a reduced and favourable price.

As a cooperative providing electric carsharing service in Mallorca, ECOTXE contributes to the local economy in several ways. Its growth indicates increasing adoption of shared electric mobility on the island, which can have broader economic implications. For instance, promoting shared vehicle use can decrease the number of cars on Mallorca's roads, potentially leading to reduced traffic congestion and consequently saving time for both ECOTXE users and non-users, increasing overall productivity.

In addition, ECOTXE has established partnerships with local entities, such as U Energia, a Sóller-based electric company that provides a charging point and free electricity in Palma. Such collaborations stimulate the local green economy and support other businesses in the sustainable energy sector. The cooperative is not only contributing to local economy, but also to the overall social economy. As a member of REAS Balears (Network of Alternative and Solidarity Economy), ECOTXE is part of a network of 14 organizations that generated over 24 million euros in revenue in 2019

³⁵ Memòria-activitats-BS-2019-Ecotxe.pdf

³⁶ The most recent information available on the website is from 2019. Additional data are pending receipt from the ECOTXE management

³⁷ More information at <https://www.Ecotxe.coop/parking-day-2024/>

and employed around 800 people³⁸. Through different initiatives, the cooperative has shown potential for job creation. As its services and fleet grow, new job opportunities in areas such as vehicle maintenance, customer service, and administration will arise.

Finally, by providing a sustainable transportation option for tourists, ECOTXE could contribute to Mallorca's appeal as an eco-friendly destination, potentially attracting environmentally conscious visitors and supporting the island's crucial tourism sector, while contributing to the overall economic well-being of the local population.

3.2. Inclusiveness

ECOTXE aims to promote inclusiveness (it is one of the main principles the cooperative defends). In the long-term, ECOTXE envisions expanding its vehicle fleet so that it includes all the necessary conditions for vulnerable communities (such as people with disabilities) to be able to enjoy the car-sharing service. However, due to limited resources, purchasing those vehicles may take a while.

In the meantime, ECOTXE the collaboration with Impulsa Igualtat Predif IB³⁹ is based on involving people with disabilities in carrying out activities relevant to the day-to-day management of ECOTXE (i.e. the cleaning of the EVs). Igualtat Predif IB has a special social initiative employment centre, which offered people from their organisation that could perform these tasks in a professional manner.

3.3. Key drivers of success

ECOTXE benefited immensely by different conditions present in Palma de Mallorca at the time of its establishment, as it aligns with the strategic commitment towards sustainable tourism practices. The gap in the market let a much swifter uptake of car-sharing services in the territory. This emerging niche in the market, paired with a growing demand for sustainable urban mobility certainly supported the creation of the cooperative and establishment of its services.

Furthermore, the reality of the centre of Palma facing severe traffic congestions during peak tourist periods (summer) acted as another driver to support and realise diffused car sharing services in the territory also offering the opportunity to those that do not own a private vehicle to benefit from the use of a car while not owning.

3.4. Replicability and transferability

Several cooperatives in Spain are offering electric car-sharing services, promoting sustainable mobility and community-driven solutions. Notable examples include Som Mobilitat⁴⁰ in Catalonia, Alterna Coop in Valencia or Conecta MovEl. These cooperatives have been relatively easy to establish due to their non-profit nature, low entry costs for members (ranging from 10 to 200 euros), and the use of mobile applications for vehicle reservations⁴¹. The cooperative model allows consumers to manage and decide on the service, rather than investors, making it adaptable to local needs. Additionally, the integration with existing sustainable transport options and the focus on environmental benefits have garnered community support.

ECOTXE's goal is to meet the increasing demand of the car-sharing service, aiming to offer more vehicles and different models too (e.g. vans). However, the limited parking lots available to establish charging stations limit the opportunity of upscaling for ECOTXE as it relies on a set of external factors too.

ECOTXE's model could be replicated in other islands that may face similar conditions and with local cooperatives present on the ground that can tailor the services to their local needs. To initiate these projects, community-owned organizations can replicate ECOTXE's strategy to secure funding through crowdfunding or eco-tax revenues and partnering with local electric companies for charging infrastructure.

In addition, cooperatives can replicate the two alternative schemes that ECOTXE has experienced when organising cleaning and maintenance work. Depending on the size of the municipality cooperative members could be the ones working on a voluntary basis on maintenance, whereas this task becomes too demanding in cities, where professional services shall be hired.

The service should be integrated with existing sustainable transport options and adapted to local regulations. Islands could also promote the initiative as part of a broader eco-tourism strategy, appealing to environmentally conscious visitors. By following ECOTXE's model and adjusting it to their unique circumstances, other islands could create

³⁸ More information at <https://www.Ecotxe.coop/Ecotxe-sadhereix-a-reas-balears-per-impulsar-leconomia-solidaria/>

³⁹ More information at <https://www.Ecotxe.coop/impulsa-igualtat-predif-Ecotxe-carsharing/>

⁴⁰ <https://www.sommobilitat.coop>

⁴¹ <https://etiquetazero.com/movilidad/cooperativas-de-coche-compartido-y-electrico/>

successful electric car-sharing programs that promote sustainable mobility, reduce carbon emissions, and involve the community in the transition to cleaner transportation options.

3.5. Main Takeaways and recommendations

Takeaways and recommendations on the local practice of electromobility

To enhance the viability and expansion of electric car sharing services in Mallorca, several strategic recommendations have been identified. For the establishment of this kind of service, **close collaboration with local authorities** is required, to integrate car sharing into urban mobility plans and to negotiate for dedicated parking spaces and charging infrastructure in strategic locations. However, such collaboration needs to be carefully balanced, preserving sufficient space of action for the cooperative.

In essence, **maximising control over key factors** by owning or directly managing charging points and parking spaces, also matters to ensure service stability.

The car sharing services operations in extended urban centres is different from the one in small towns, consisting in the need **to transition from a volunteer-based model (small towns) to a professional workforce (cities)**. Initially, enthusiasm has driven volunteerism, but as time commitment increases the volunteer's availability diminishes. Hence, long-term success requires professional workforce. Doing so is essential for long-term sustainability; thus, including staffing costs in budgets will facilitate this shift.

Moreover, to overcome citizens' concerns when using electric vehicles, **implementing educational initiatives**, such as hands-on training sessions and simulated usage experiences showcased to benefit these projects in the long-term. In that way, this community-led entity is raising awareness not only about the benefits of electric mobility but also of car-sharing operations. To this end, ECOTXE organised open house events to familiarise the public with the service while raising the visibility of their services.

Tailoring marketing and services to key demographic characteristics contributed to efficiently target specific user profiles. The main users that can benefit from car-sharing services in the city centre include:

- Newcomers to the city without personal vehicles.
- Families with one car seeking occasional access to a second vehicle.
- Freelancers and small businesses with intermittent travel needs
- Environmental activists and eco-conscious individuals.

In the same vein, **Word-of-Mouth Marketing** has been a successful strategy, as ECOTXE has implemented referral programs to leverage the effectiveness of personal recommendations (e.g. with members of its partners).

Developing a **Long-Term Sustainability Plan** will ensure the viability of the service, including financial planning and infrastructure development. To this end, exploring additional revenue streams, such as operating public charging points and selling electricity is key. Moreover, ECOTXE plans to **diversify its vehicle fleet** to include a variety of vehicle types, including two-seater vehicles for urban commuters, vans or cargo bikes for short-distance deliveries.

Other takeaways and recommendations

The takeaways and recommendations from the case study highlight several additional critical factors for successful implementation and upscaling. Energy communities aiming to use their economic surplus to install charging stations to charge electric vehicles will also **face the challenges that ECOTXE indicated**. For instance, charging stations shall meet specific requirements, so being able to **allocate parking lots** will rely on close collaboration with the public entities. Likewise, consumer education and **reluctance to change** may also affect the deployment of car-sharing services. For emerging energy communities, this may be a chance to complement its activities with education and awareness-raising on sustainable mobility practices.

Cooperatives keen to work in car-sharing services can learn from ECOTXE's lessons in various ways. Overall:

- Carefully balanced partnerships with public bodies and private sector at the start aiming to increase the available areas to install the charging stations.
- In the long run ensure higher levels of independence from external entities allowing the cooperative to choose its way forward in terms of project upscaling.
- Ensure the onboarding of volunteers as well as consider the opportunities to create employment opportunities.

- Establish free trials of the e-vehicles to raise awareness about the initiatives and mitigate potential resistance to change.

On the other hand, energy communities keen to implement this local practice may present a comparative advantage to **connect to the grid**. While ECOTXE depends on the landowners' energy suppliers and is not producing its renewable energy, energy communities could **ensure the renewable origin of the electricity** and reduce intermediary costs.

This case study was developed as part of the project Territorial Analysis of Decentralised Energy Markets conducted for ESPON EGTC. It is based on information that is publicly available online, on the energy community's own webpage, as well as on information collected through a semi-structured interview with representatives of the energy community. The reviewed documents include:

- **Memòria-activitats (2019)**
- **Estatutes ECOTXE (2016)**
- **Balance Social ECOTXE (2019)**
- **ECOTXE Website**

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ESPON 2030

ESPON EGTC
11 Avenue John F. Kennedy
L-1855 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: info@espon.eu
www.espon.eu

The ESPON EGTC is the Single Beneficiary of the ESPON 2030 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway, and Switzerland.

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