

CLIMATE AND ENERGY PLANS

IN THE BASQUE COUNTRY

GUIDE FOR DRAWING UP
MUNICIPAL AND REGIONAL PLANS



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LIFE 18 IPC 00001



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Content:

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The contents of this Guide have been checked with the following municipalities and regional bodies in the Basque Country: Azpeitia Town Council, Amurrio Town Council, Balmaseda Town Council, Basauri Town Council, Derio Town Council, Errearteria Town Council, Getaria Town Council, Gernika-Lumo Town Council, Irun Town Council, Lasarte-Oria Town Council, Nabarniz Town Council, Oñati Town Council, Pasaia Town Council, Donostia / San Sebastián City Council, Sestao Town Council, Vitoria-Gasteiz City Council, and the Cuadrilla de Gorbeialdea, Debegesa and Nerbioi Ibaizabal Community.

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Presentation and structure of the guide

Basque municipalities have a long history in the field of climate change, initially more focused on aspects related to mitigation. However, thanks to advances in knowledge generation in recent years and the resources developed within the framework of the **Udalsarea 2030 Basque Network of Sustainable Municipalities** to facilitate analysis, planning and monitoring of integrated action on climate change, local action on adapting to climate change has also been addressed.

All of this is aimed at moving towards more resilient municipalities, with a greater capacity to adapt to the impacts arising from the main climate threats and promote the decarbonisation of the towns and cities of the Basque Country.

The Basque Country's plans for energy transition and climate change, specifically **Law 4/2019 on Energy Sustainability in the Basque Country**, which sets out specific obligations in the field of energy, and **Law 1/2024 on Energy Transition and Climate Change**, which provides a stable legal framework for achieving climate neutrality in the Basque Country by 2050 at the latest and increasing the region's resilience to climate change, set the course for municipalities in the Basque Country to follow in order to make progress on climate action. Another benchmark instrument is the **Institutional Declaration on the Climate Emergency**, approved on July 30, 2019, through which the Council of the Basque Government set the goal of achieving a carbon neutral territory, as soon as a fair transition allows it and, in any event, no later than 2050, and

achieving a more resilient territory and society in the face of the climate emergency.

On a broader level, the **2030 Agenda** and the **Paris Agreement** constitute the benchmark strategic framework for the next decade in terms of local sustainability and climate action. This framework for action has strong legislative backing through a range of laws, including the European Climate Law, the Law on Climate Change and Energy Transition backed by the Spanish government, and Law 1/2024 on Energy Transition and Climate Change in the Basque Country.

Mitigation refers to human intervention to reduce emissions and enhance greenhouse gas sinks, while adaptation seeks to moderate damage and exploit the beneficial opportunities arising from changes.

Objectives and target entities

In this context, this guide aims to provide a clear, concise methodological framework that will make it easier for municipalities and regions to draw up “climate and energy plans (PCEs)” by making the most of the resources and tools available to them – i.e. add acronyms in brackets in accordance with the current regulatory framework.

The guide is aimed at city and town councils and regional entities, with varying degrees of experience in planning in the field of climate change. In short, it is a resource that can be useful

for any municipality or region, regardless of its starting point and the progress it has made in terms of adaptation and mitigation.

Similarly, municipalities adhering to the Covenant of Mayors for Climate and Energy can use the methodology presented here to respond to the corresponding planning and reporting requirements.

Structure of the guide

The guide is structured in four chapters and a number of appendices, the contents of which are summarised below:

| | |
|--|--|
| CHAPTER 1: PRESENTATION AND STRUCTURE OF THE GUIDE | Introduction to the Guide, detailing its objectives and the profile of the people at whom it is aimed . |
| CHAPTER 2: THE INITIAL POLITICAL AND REGULATORY FRAMEWORK | It explains the European, national and regional strategic and regulatory framework of reference to be considered when drawing up a local climate and energy plan. It includes a specific section which explains the relationship between Law 4/2019 on Energy Sustainability and Law 1/2024 on Energy Transition and Climate Change in the Basque Country, and the climate and energy plans. |
| CHAPTER 3: APPROACH AND METHODOLOGICAL KEYS | It details the issues related to the approach and methodological keys that will guide the process of drawing up a local climate and energy plan. It answers two fundamental questions that are essential to understanding and approaching the process correctly: What is a local climate and energy plan and what does a local climate and energy plan include? |
| CHAPTER 4: HOW TO DRAW UP A LOCAL CLIMATE AND ENERGY PLAN | It provides guidelines and resources on how to approach drawing up a local climate and energy plan in 5 steps, detailing the scope and tasks to be carried out in each step. Each step includes a section with recommendations and, in some cases, practical resources to include citizen participation throughout the process. It also includes a map of the tools available to municipalities and regions in the Basque Country for tackling local climate and energy plans, the use of which, in the majority of cases, is quite widespread and primarily partnered with the planning and management of local sustainability policies. Finally, it provides "methodological notes" to clarify concepts and issues that require explanation beyond the tasks themselves. |
| ANNEXES | The Guide has a final section of appendices which includes additional resources intended to provide complementary information and help with certain tasks in the process, mainly associated with the diagnostic and planning phases. |

It should be noted that the approach and contents of the guide have been checked against a representative sample of town councils and regional bodies in the Basque Country, with the aim of adapting and adjusting the methodology to different local realities and contexts.

The Guide was put together within the framework of the European LIFE IP Urban Klima 2050 project, specifically within Action C8.3, which aims to create tools and training for local administrations.

Following the approval of Law 1/2024 on Energy Transition and Climate Change in the Basque Country, the guide was updated to bring it into line with the guidelines and requirements set out in the law with regard to Climate and Energy Plans, and to integrate it with the provisions of Law 4/2019 on Energy Sustainability, and Decree 254/2020, of November 10, the purpose of which is to implement it. The update also includes updated resources and tools for climate and energy planning.



The initial political and regulatory framework

2.1

Aligning climate and energy plans with the Paris Agreement and 2030 Agenda

In 2015, the **Paris Agreement** was adopted, the first universal and legally binding agreement for countries that have signed it, committing them to combat climate change and adapt to its effects.

The core objective of the Paris Agreement is to keep the global average temperature increase well below 2°C above pre-industrial levels, pursue efforts to further limit the temperature increase to 1.5°C and build up the capacity of societies to cope with the consequences of climate change.

Furthermore, the Agreement recognises the importance of cities, regions and local administrations (as well as civil society, the private sector, etc.) and invites them to: (i) intensify their efforts and support measures to reduce emissions, (ii) increase resilience and reduce vulnerability to the adverse effects of climate change, and (iii) maintain and foster further regional and international cooperation.

Also in 2015, all UN Member States adopted the **2030 Agenda** and 17 Sustainable Development Goals (hereinafter referred to as SDGs), making a universal call to action to end poverty, improve people's lives and protect the planet.

The 2030 Agenda refers to the Paris Agreement, emphasising that its implementation is essential if the Sustainable Development Goals are to be achieved, as it provides a roadmap for climate actions that will reduce emissions and build the climate resilience the world needs.

The integral relationship between the 2030 Agenda and the Paris Agreement provides a holistic framework and strengthens the fit between climate and energy plans and local sustainability policies.

In short, these are the two major milestones that will shape the political agenda for the next decade and on which the **European Green Deal** hinges. It should be noted that this is a favourable context and represents an opportunity to deploy and implement the climate and energy plans promoted in this Guide.

In the Basque Country, the 2030 Agenda is being adopted by all levels of government and by other economic and social actors.

In short, it could be said that, by its very nature, the 2030 Agenda is fostering a new model of multilevel governance that facilitates cross-cutting policies, such as climate and energy plans.

The *LOCAL 2030 Agenda* guide. *How to approach the Sustainable Development Goals at a local level* (Ihobe, 2023)¹ identifies the SDGs to which mitigation plans (SDGs 3, 7, 11, and 13) and climate change adaptation plans (SDGs 1, 3, 6, 9, 11, 13, 14, and 15) contribute. Furthermore, given the nature of climate and energy plans, which require good internal coordination and the establishment of mechanisms for accountability and citizen participation, and their role in promoting climate action partnerships, they are also seen as contributing to SDGs 16 and 17.

However, the contribution of climate and energy plans is mainly focused on three SDGs: 7, 11 and 13. In addition, these plans are also partially linked to other SDGs, which include targets with explicit references to the resilience and adaptive capacity of human and economic systems and ecosystems.







| TARGETS OF THE SDGs LINKED TO CLIMATE AND ENERGY PLANS | | | |
|--|------|--|------|
| DIRECT LINK | | PARTIAL LINK | |
|  7 ENERGÍA ASEQUIBLE Y NO CONTAMINANTE | 7.1 |  1 FIN DE LA POBREZA | 1.5 |
| | 7.2 | | |
| | 7.3 | | |
|  11 CIUDADES Y COMUNIDADES SOSTENIBLES | 11.5 |  2 HAMBRE CERO | 2.4 |
| | 11.b | | |
|  13 ACCIÓN POR EL CLIMA | 13.1 |  15 VIDA DE ECOSISTEMAS TERRESTRES | 15.3 |
| | 13.2 | | |
| | 13.3 | | |

Table 1. Targets of the SDGs linked to climate and energy plans.

¹ Udalsarea - Publications - The LOCAL 2030 Agenda guide. How to address Sustainable Development Goals at a local level. Practical guide.

2.2 Strategic and regulatory framework of reference for climate and energy plans

The methodological approach proposed by this Guide has taken the main strategies and plans for mitigation and adaptation into consideration, together with the legislative framework in force associated with climate action at the different territorial scales, including the European, national and regional scales (**Figure 1**).

However, it should be borne in mind that this framework is changeable and that the targets set are being revised upwards. This is why the figure does not attempt to comprehensively detail the key elements and objectives of each of the strategies and frameworks, but rather to structure and position the key elements of climate change policy for the next decade and the path towards climate neutrality and territorial resilience by 2050.

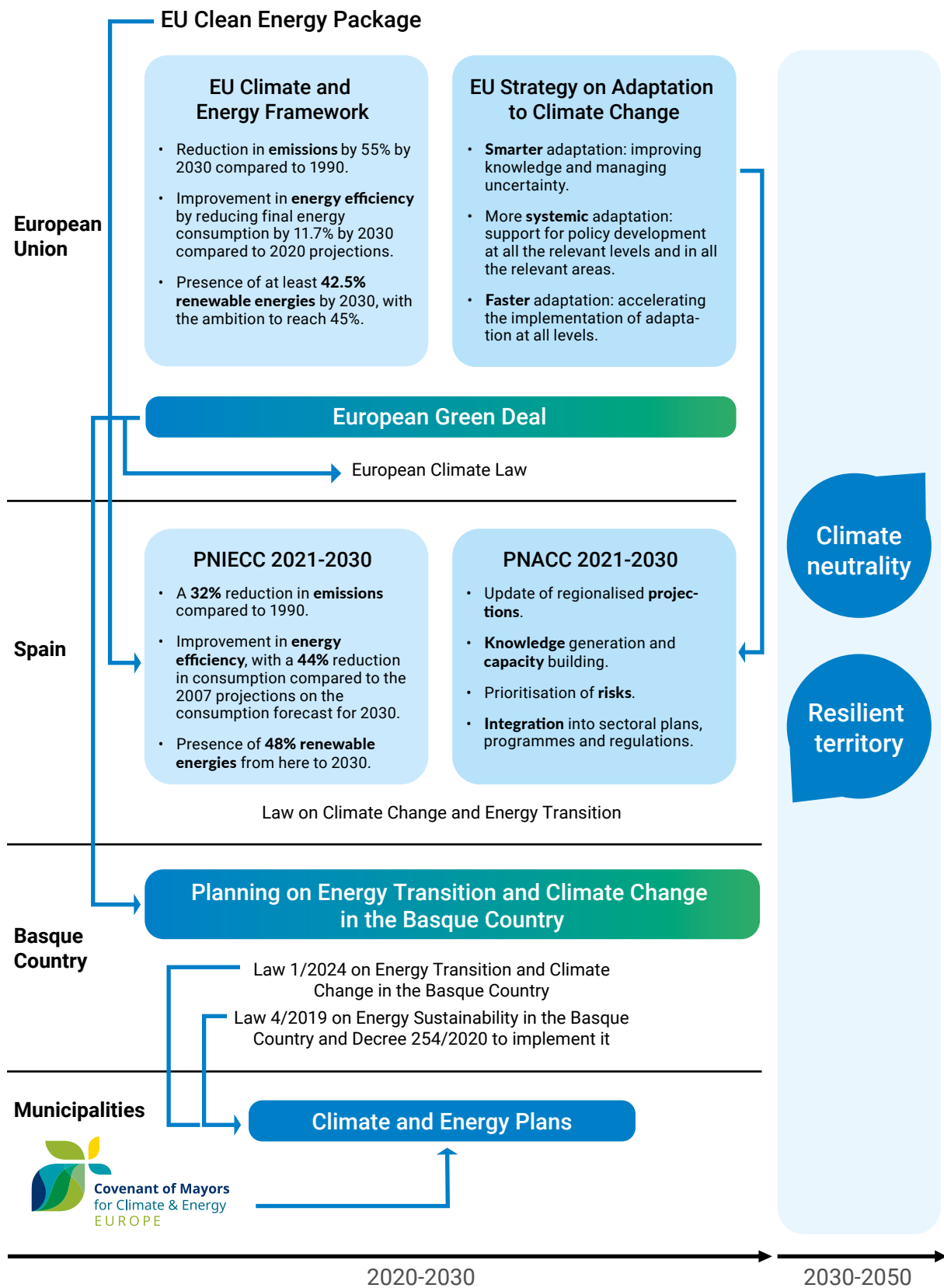


Figure 1. Strategic and regulatory framework of reference for climate and energy plans. Source: Compiled by the author.

The following is a summary of the key points and interrelationships between the different regulatory and planning instruments presented:

European level

At a **European** level, the reference framework for mitigation is made up of the 2030 Framework on **Climate and Energy** and the **Clean Energy Package**, also known as the “winter package”, a set of directives to promote the use of renewable energy and energy efficiency that were adopted in 2019.

Meanwhile, in the field of adaptation, the **European Strategy on Adaptation to Climate Change** that sets out the priority lines of action to be adopted by national governments in the deployment of measures to tackle the impacts of climate change and to improve the resilience of the European Union as a whole.

It should also be noted that climate action is at the heart of the **European Green Deal**, the roadmap that aims to provide the European Union with a sustainable economy through a **fair and inclusive transition**.

The climate action initiatives of the European Green Deal include the following:

- The **European Climate Law**, which provides legal backing for the goal of climate neutrality by 2050.
- The **Europe Climate Pact**, which aims to engage citizens and all parts of society in climate action.
- The **2030 Climate Target Plan** with a view to further reducing net greenhouse gas emissions by at least 55% by 2030.

In addition, work is being done on mechanisms for a fair transition, which is essential to ensure that

the move to a climate-neutral economy is done in an equitable way and leaves no one behind.

National level

At a **national** level, the government’s climate action plan for the next decade is based on two reference planning frameworks: the **Integrated National Energy and Climate Plan** (PNIEC 2021-2030 by its Spanish acronym) and the **National Climate Change Adaptation Plan** (PNACC 2021-2030 by its Spanish acronym). Their objectives and key points are derived from the European framework, namely the Clean Energy Package for the European Union in the case of the PNIEC and the European Strategy on Adaptation to Climate Change in the case of the PNACC.

Similarly, **Law 7/2021 on Climate Change and Energy Transition** is aimed at ensuring compliance with the objectives of the Paris Agreement. At a municipal level, the law calls on local councils to contribute to mitigation and adaptation policies in different areas.

At a regional level

The Energy Transition and Climate Change Plan for the Basque Country has focused on issues such as revising climate commitments upwards, among others, in line with the agreement reached by the European Union to **raise the GHG emission reduction target to at least 55% by 2030 and achieve climate neutrality by 2050**.

The adoption of a more ambitious commitment also responds to the **Institutional Declaration on the Climate Emergency** approved in July 2019 by the Council of the Basque Government, in which “urgent and ambitious actions” were announced to achieve a carbon neutral Basque Country by 2050.

The **Law on Energy Transition and Climate Change in the Basque Country**² provides an additional boost to climate action and the energy

2 [LAW 1/2024 of February 8 on Energy Transition and Climate Change](#). - Basque Government - Euskadi.eus

transition at all levels of the Basque public administration. It complements **Law 4/2019 on Energy Sustainability in the Basque Country³** and **Decree 254/2020, of 10 November⁴**, which implements it, and requires Basque provinces and municipalities with more than 5,000 inhabitants to approve climate and energy plans within the scope of their powers.

Local level

This is the territorial level of **climate and energy plans**. In this context, the approach of the plans promoted by this guide aims, on the one hand, to respond to the requirements of **Law 4/2019** and **Law 1/2024**. In short, it is a methodological approach that makes it possible to draw up plans that comprehensively address mitigation, adaptation to climate change and a fair transition, and are in line with European and national policies in this area.

At the same time, these plans make it possible for Basque municipalities to join the European Covenant of Mayors for Climate and Energy initiative, the largest global network of cities and municipalities committed to climate action. Joining this framework not only makes it possible to comply with its requirements, but also provides concrete benefits at a local level, such as sharing experiences with other territories, greater international visibility of municipal commitments and the backing of a technical and political support network that makes it easier to effectively implement the measures in the climate and energy plans.

GENDER EQUALITY

Local climate action cannot be separated from gender equality, as the impacts of climate change affect women and men differently and, therefore, magnify existing inequalities. Incorporating a gender perspective in local climate and energy plans will ensure that the transition is fair, inclusive and effective, in line with international and European commitments. Integrating this perspective will also ensure that mitigation and adaptation measures meet the needs of all citizens and contribute to a more equitable, resilient society.

KEY COMMITMENTS IN THIS AREA

- Agenda 2030 - SDG 5 (Gender Equality) and SDG 13 (Climate Action).
- Istanbul Convention (2011): equality in local public policies.
- European Green Deal and European Adaptation Strategy (2021): a fair transition, leaving no one behind.
- Covenant of Mayors for Climate and Energy: this recognises the importance of social inclusion and equity in climate action.
- Law 4/2005 on Equality Between Men and Women in the Basque Country, applied in a cross-sectoral way to local policies.

Interrelationship between Law 4/2019 on Energy Sustainability in the Basque Country and climate and energy plans

Basque municipalities are subject to the specific obligations set out in Law 4/2019 on Energy Sustainability in the Basque Country and Decree 254/2020 on local government, which is directly related to the Climate and Energy Plans set out in Law 1/2024.

³ [LAW 4/2019, of 21st February, on Energy Sustainability in the Basque Autonomous Community. - Basque Government - Euskadi.eus](#)

⁴ [DECREE 254/2020, of 10th November, on Energy Sustainability in the Basque Autonomous Community. - Website - Euskadi.eus](#)

Table 2 summarises some of the obligations set out in Law 4/2019 and implemented by Decree 254/2020, for all local councils in the Basque Country, regardless of their size. The obligations require an Energy Action Plan (PAE) to be drawn up, including an inventory of the buildings, installations and vehicles owned by the local council, how they are used and the measures that need to be taken to meet the energy targets set out in this Law.

Consequently, the scope of application of the Plans required by Law 4/2019 is limited to analysing the buildings, installations and vehicle fleet owned by local councils purely from an energy and mitigation perspective.

However, the scope of application of the Climate and Energy Plans (PCEs) required of municipalities with more than 5000 inhabitants by Law 1/2024 goes beyond this. These plans affect entire municipalities and cover the different sectors within the municipality (local council, residential, tertiary, industrial sectors, etc.) from 3 points of view: mitigation (energy), adaptation to climate change and a fair transition (**Figure 2**).

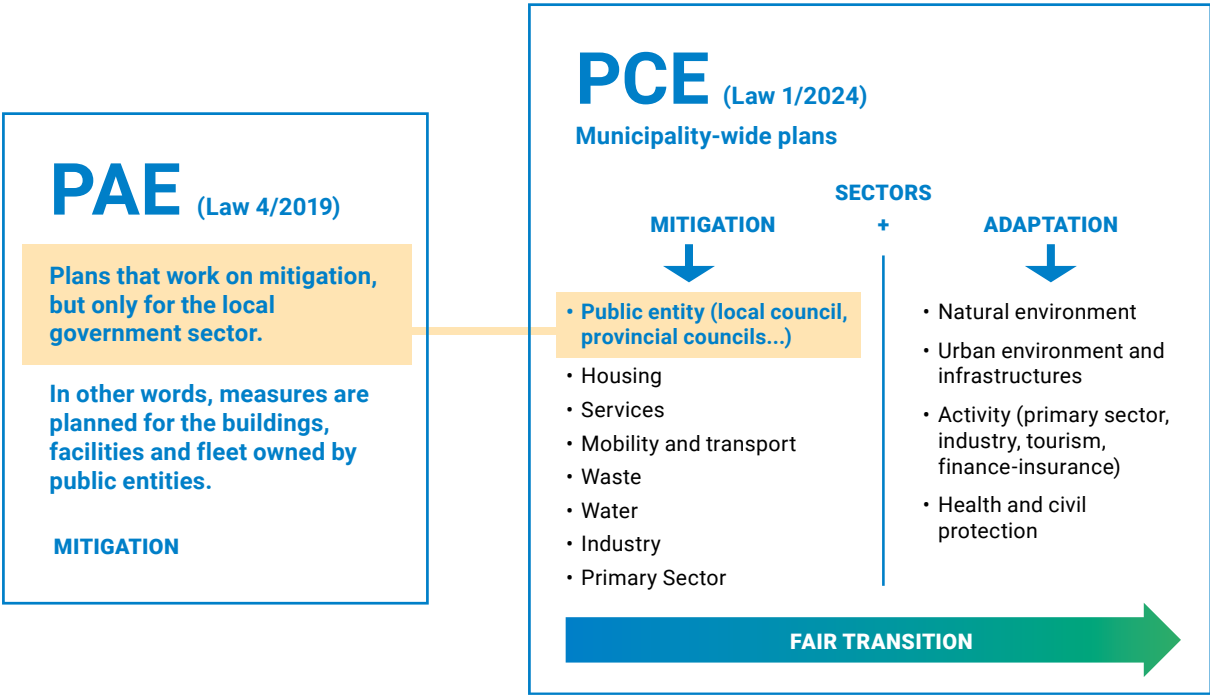


Figure 2. The Energy Action Plans (PAEs) required by Law 4/2019 would cover the energy and mitigation aspects of the local government sector in Climate and Energy Plans (PCEs). Source: Compiled by the author.

Given that Law 1/2024 stipulates that PCEs must incorporate the provisions of Law 4/2019, those municipalities that have a PCE that also includes the requirements of Law 1/2024 could use it to comply with many of the obligations of Law 4/2019.

with the provisions of Law 1/2024 must update it in order to comply with this Law, including the provisions of Law 4/2019.

This interrelationship between Law 4/2019 and the PCEs required by Law 1/2024 can be seen in **Figure 3** and in detail in **Tables 2 and 3**.

Please note that those municipalities that have a Climate and Energy Plan that does not comply

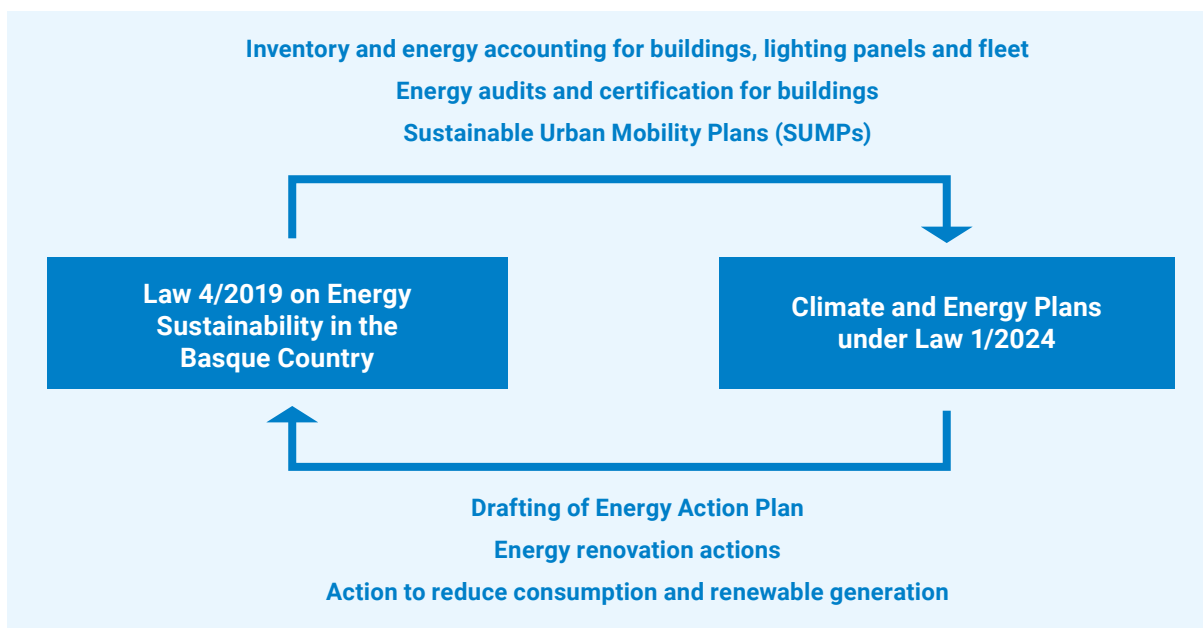


Figure 3. Feedback factors between Law 4/2019 and the climate and energy plans covered by Law 1/2024.

Source: Compiled by the author.

| Article in Law 4/2019 | Contribution of Law 4/2019 to implementing the PCE | Contribution of the PCE to complying with Law 4/2019 |
|--|--|--|
| <p>Article 11. – Inventory⁵ This makes it compulsory to take inventories, including energy consumption broken down by building, vehicle fleet and lighting installations owned by the local council.</p> | Basic information for carrying out assessments and planning of the local government sector for PCEs. | Having the inventory required by law 4/2019 for the year in which the PCE is drawn up. This inventory must be updated and recorded annually to comply with Law 4/2019. See Articles 16 and 17 of D254/2020. |
| <p>Article 12. - Consumption control This makes it compulsory to install equipment and systems for the centralised collection, transmission and provision of hourly consumption data. Monthly consumption and expenditure control system for all buildings and energy sources.</p> | Basic information for carrying out assessments and planning of the local government sector for PCEs. Information for calculating savings of resources and detailed monitoring of PCE by buildings and tables. | |
| <p>Article 13. – Energy audits This makes it compulsory to carry out energy audits for public administration buildings with a rated thermal output of more than 70 kW in 2021. Audits must be carried out again every 4 years.</p> | Integration of audit measures into the PCE. | Having the audits required by law 4/2019 in place and having detailed improvement measures for the local government sector. Audits must be carried out again every 4 years. |

⁵ Example of an inventory in Law 4/2019.

| Article in Law 4/2019 | Contribution of Law 4/2019 to implementing the PCE | Contribution of the PCE to complying with Law 4/2019 |
|---|--|---|
| <p>Article 14. – Energy action plans This makes it compulsory to draw up a multi-year Energy Action Plan, taking the objectives of reducing consumption and promoting renewables into account, as defined in Articles 16 and 17.</p> | <p>Basic information for implementing the mitigation aspect of the PCE for the local government sector.</p> | <p>Having a plan, the PCE, which will include the mitigation aspect for the local government sector, in response to the requirements of Law 4/2019 and D254/2020. The Energy Action Plan could be integrated into the PCE or presented as an annex to the PCE.</p> |
| <p>Article 19. – Energy rating of existing buildings This stipulates that all council buildings must be energy certified. 40% of existing buildings with an energy rating below level B will be required to upgrade their energy rating to a minimum of level B before 2030.</p> | <p>Integration of energy renovation measures for buildings in order to achieve the energy rating improvement targets required by Law 4/2019 within the PCE.</p> | <p>Having the energy certificates required by Law 4/2019. and the detailed improvement measures for the local government sector in order to comply with the provisions of law 4/2019. The frequency of renewal and validity of energy certificates is regulated by RD 390/2021 and its regional regulations.</p> |
| <p>Article 21. – Use of alternative fuels in privately-owned vehicles It calls for 100% of vehicles purchased by public administrations to use alternative fuels by 2020. Newly constructed buildings will be required to have electric vehicle charging points and areas to facilitate the use and parking of bicycles.</p> | <p>Contribution to the energy objectives of the Basque Country and basic information for carrying out assessments and planning of the local government sector.</p> | <p>Integration in the PCE of the measures required to purchase alternative fuel vehicles and electric vehicle charging points in order to achieve fleet targets.</p> |
| <p>Article 24. – Mobility plans This stipulates that, within two years of the entry into force of this law, municipalities with more than 5,000 inhabitants must have an urban mobility plan.</p> | <p>The municipalities concerned can make use of the Mobility Plan to integrate it into the PCE. This will allow sufficient measures to be put in place to reduce the climate impact of the municipalities' main GHG emitting sector.</p> | <p>Having a Mobility Plan to comply with the requirements of Law 4/2019 and Law 1/2024.</p> |
| <p>Article 26. – Publicity on measures This makes it compulsory to publish a report every two years, which should, as a minimum, include:</p> <ol style="list-style-type: none"> 1. The energy consumption of buildings and energy sources; 2. Audits carried out and their results; 3. Measures taken and investments made; 4. Degree of compliance with the Law. | <p>Updated basic information that will be used to draw up the mitigation part of the PCE for the local government sector.</p> | <p>The two-yearly evaluation and monitoring (compliance report) required of the PCE will include the sections set out in Law 4/2019 regarding the publication of the measures, thereby contributing to compliance with the requirement to publicly report on the progress of the implementation of both laws.</p> |

Table 2. The interrelationship between the obligations for Basque councils in the field of energy stemming from Law 4/2019 on Energy Sustainability in the Basque Country and the climate and energy plans (PCEs) covered by Law 1/2024.
Source: Compiled by the author.

| Article in Law 1/2024 | Contribution of Law 1/2024 to implementing the PCE | Contribution of the PCE to complying with Law 1/2024 |
|--|--|---|
| Art. 1. Objectives of the Law | This sets targets for emissions reductions, energy efficiency, adaptation and climate neutrality. | The PCE translates these objectives at a municipal and regional level into assessments, quantifiable objectives and action programmes. |
| Art. 4. Principles for action by the Basque public sector | This expressly recognises the responsibility of municipalities in the fight against climate change, including energy and climate planning. | The PCE is the main tool for enabling municipalities to exercise these competences by integrating climate action into their local policy. |
| Art. 14. Cooperation on energy transition and climate change. | This encourages multi-level cooperation and citizen involvement in climate action. | The PCE sets up local governance structures and participatory mechanisms to ensure citizen co-responsibility and institutional coherence. |
| Chapter IV. Climate neutrality | This makes it compulsory to have sector-specific measures in place to reduce emissions in transport, buildings, industry and waste. | The PCE identifies local emission sources and defines specific reduction measures for each sector. |
| Chapter V. Climate Change Adaptation | This recognises the obligation to integrate adaptation into spatial and sector-specific planning. | The PCE includes climate vulnerability assessments and local adaptation measures (e.g. climate shelters, risk management). |
| Art. 18. Climate and energy plans of the historical territories and local authorities | This sets an obligation for municipalities with more than 5,000 inhabitants to approve a plan within 2 years of the Law being passed. | The PCE provides a direct response to the requirement of the Law. |
| Art. 51. Environmental assessment of plans, programmes and projects | This makes it compulsory to have monitoring and transparency systems in place in relation to climate policies. | The PCE includes mitigation, adaptation and energy poverty indicators and facilitates local accountability. |

Table 3. *Interrelationship between the obligations for Basque councils stemming from Law 1/2024 on Energy Transition and Climate Change in the Basque Country and climate and energy plans (PCEs). Source: Compiled by the author.*

03



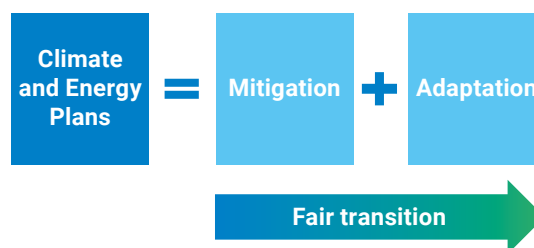
Approach and methodological keys

3.1

What is a climate and energy plan?

Concept

A climate and energy plan is a **long-term local planning tool** that simultaneously tackles action on **mitigation, climate change adaptation and a fair transition**, with a **holistic view** of the municipality.



The climate and energy plans promoted in this guide constitute the **framework instrument of reference for planning action** on climate and energy in the **city and town councils and regions in the Basque Country**. Consequently, they have an approach, methodology and tools that are specific to the context of Basque municipalities.

Under the same methodological framework, these plans **provide a simultaneous response to the various requirements and objectives of Basque legislation**. They are also aligned with, **include and extend the requirements of the Climate and Sustainable Energy Action Plans (PACES), and can be aligned with them** in cases where city and town councils choose to adhere to the Covenant of Mayors.

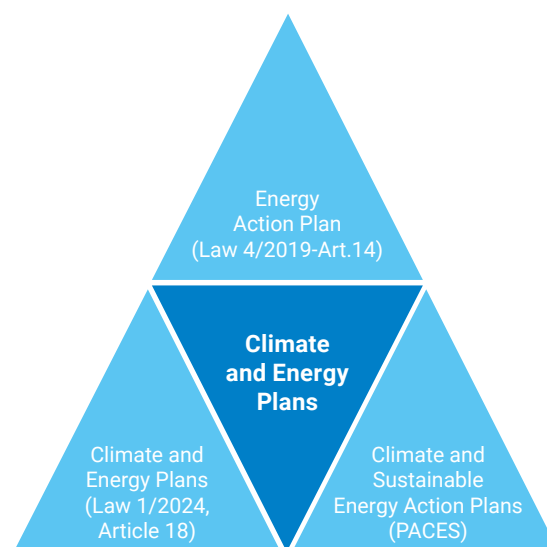


Figure 4. Compliance and alignment of climate and energy plans with current regulations and initiatives.

Source: Compiled by the author.

Consequently, the scope and intensity of the measures considered in the climate and energy plans in accordance with this publication will be those required to **comply with the quantitative**

objectives set out in the **regulations and policies of reference** on climate and energy in the Basque Country:

| Objectives | Goal | Reference |
|---|------|--|
| Reduction in the municipality's energy consumption (2030) compared to the base year set. | 35% | Law 4/2019 on Energy Sustainability in the Basque Country, Art. 16. |
| Reduction in the municipality's energy consumption (2050) compared to the base year set. | 60% | |
| Renewable generation as a proportion of local government electricity and heat consumption (2030) compared to the base year. | 32% | Law 4/2019 on Energy Sustainability in the Basque Country, Art. 17. |
| Tenders for purchasing renewable electricity. | 100% | |
| Reduction of GHG emissions in the Basque Country (by 2030 compared to 2005). | 45% | Law 1/2024 on Energy Transition and Climate Change, Art. 1. |
| Savings in final energy consumption in the Basque Country (compared to 2030). | 12% | Law 1/2024 on Energy Transition and Climate Change, Art. 21. |
| Savings in final energy consumption in the Basque Country (compared to 2050). | 37% | |
| Proportion of renewable energies in final energy consumption in the Basque Country by 2030. | 32% | Law 1/2024 on Energy Transition and Climate Change, Art. 23. |
| Climate neutrality (2050). | – | Law 1/2024 on Energy Transition and Climate Change, Art. 1. Covenant of Mayors for Climate and Energy |
| To increase the resilience of the region to climate change. | – | Law 1/2024 on Energy Transition and Climate Change. |
| Reduction of GHG emissions by municipalities (by 2030 compared to 1990) | 55% | Covenant of Mayors for Climate and Energy |

Table 4. Benchmark targets for the energy transition and climate change.

Objectives

The overall objective of a Climate and Energy Plan is to contribute to mitigating and adapting to climate change in the municipality, and includes the following **specific objectives**:

1. Develop a **vision and strategic objectives** in relation to **climate action** and a **fair energy transition** adapted to the local context.
2. Comply with the **regulatory obligations** of Law 4/2019 on Energy Sustainability and Law 1/2024 on Energy Transition and Climate Change in the Basque Country.
3. To **formulate** and rigorously **prioritise** the **actions** to be carried out in the coming years with a global perspective.
4. To facilitate and promote **more cross-cutting work** between departments/areas of city and town councils.
5. To stimulate and drive **citizen action** on climate and energy transition.

These plans can also contribute to increasing the availability of resources and reducing costs in 3 ways:

- By facilitating **access to funding and aid** in the field of energy transition and climate change.
- By contributing to **reducing energy supply costs**.
- By contributing to **reducing the costs of inaction** on adaptation.

Figure 5. Objectives of climate and energy plans.

Source: Compiled by the author.



Alignment with the 2030 Agenda and sectoral plans

Climate and energy plans are fully **aligned with the 2030 Agenda** by directly contributing to achieving the following Sustainable Development Goals (SDGs) and associated goals:

- **SDG 7:** Affordable and clean energy.
- **SDG 11:** Sustainable cities and communities.
- **SDG 13:** Climate action.

Furthermore, climate and energy plans are intended to **complement and be fully in line with any existing sector-specific plans** in the municipality or the region that may have an impact

on the municipality's consumption and emissions, its capacity to adapt to climate change, or the reduction of energy poverty, thereby driving a fair transition.

This alignment means that climate and energy plans can:

1. Identify criteria and areas of intervention in future sectoral plans to achieve the climate objectives set.
2. Reference measures contained in existing sectoral plans and add the contribution they can make to climate objectives.
3. Make adjustments to or update the contents of existing sectoral plans in specific cases where this is deemed appropriate.

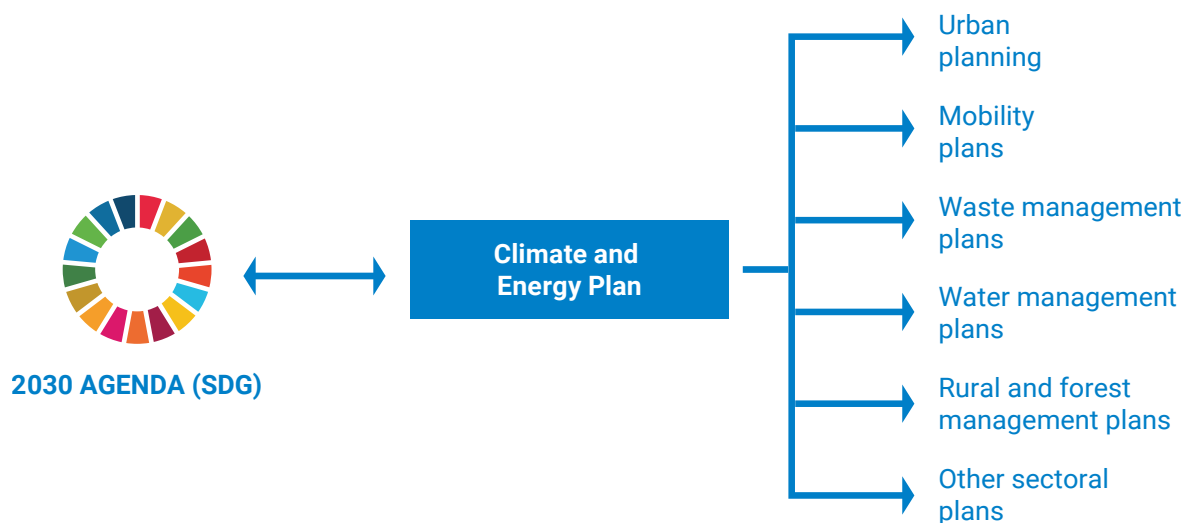


Figure 6. Alignment of climate and energy plans with the 2030 Agenda and sectoral plans. Source: Compiled by the author.

The *Methodological Guide to Reviewing Action Plans - Local Agenda 21* (Ihobe 2011)⁶ describes the phases for carrying out a review of Action Plans-Local Agenda 21. *Section 2.4 Mechanisms for coordinating and incorporating other plans and participation processes in the Local Action Plans* details guidelines for aligning and integrating plans that may overlap in the same areas of action

within municipalities, the application of which may be analogous in the case of climate and energy plans due to their cross-cutting nature.

⁶ <https://www.udalsarea2030.eus/publicaciones/guia-metodologica-para-revision-planos-accion-agenda-local-21-en-municipios-capv-2>

Alignment of Climate and Energy Plans (PCEs) and Climate and Sustainable Energy Action Plans (PACES)

Municipalities that opt to join the Covenant of Mayors for Climate and Energy can directly align the PCE with the Sustainable Energy and Climate Action Plan (PACES by the Spanish acronym) required by the Covenant, as long as the targets set by the Covenant of Mayors initiative are met.

As part of the commitments arising from the Covenant, municipalities wishing to join the Covenant must:

- Approve joining the Covenant in a plenary session of the council.
- Sign the letter of commitment and fill in a profile on the Covenant platform.
- Draw up a PCE within two years of joining. If there already is a PCE, update the data on the website with a GHG inventory and the actions in the plan.
- Update the GHG inventory (every 4 years) and report on the degree of implementation of the plan (every 2 years).

Therefore, committing to a climate and energy plan in line with this guide will facilitate adherence to the Covenant by avoiding duplication of efforts and resources.

Quality and applicability of climate and energy plans

Climate and energy plans are intended to be applicable and usable as an effective action-oriented management tool. To this end, care must be taken to make sure that the drafting process provides the human, technical and financial resources to ensure that it is of sufficient quality to achieve its purpose.

It is considered essential for the following execution quality criteria, among others, to be incorporated into the drafting of the plans:

- **Rigorous formulation and prioritisation of measures** based on the assessment and specific reality of the municipality and an **analysis of technical and economic feasibility** based on objective parameters (potential for savings or renewable generation, payback periods, etc.).
- **Precise definition and characterisation of measures** to avoid generic formulations that are not contextualised to the reality of the municipality.
- **Robust and rigorous quantification of costs** for each measure, **and estimates of energy savings, economic savings and GHG emission reductions for mitigation measures.** This criterion should be applied to measures for city and town councils in particular, for which the information required to make the calculation needs to be available.
- An assurance that all of the **measures** in the plan are technically, economically and legally **feasible** and **deliverable**.
- Definitions of the measures should be sufficiently precise and unambiguous so that their **execution can be assessed** clearly in the implementation phase of the plan.

3.2

What is included in a climate and energy plan?

As a minimum, the drafting of a climate and energy plan shall include the following components:

- Assessment of mitigation and adaptation with an overview of all sectors and areas of the municipality.
- Strategic formulation with objectives and goals to be achieved.
- Detailed planning and characterisation of mitigation, adaptation and fair transition measures, including aspects related to energy poverty.
- Model for monitoring the implementation of measures and achievement of improvement targets.

Likewise, the drafting process should consider communication and participation activities internally within the city or town council and externally with citizens, entities and companies.

Climate and energy plans are flexible tools and should be adapted to the needs of each municipality, with the possibility to adjust them on a case-by-case basis:

- Scope of sectors and areas of action included in the plan.
- Depth of analysis and planning applied.
- Scope of participation and communication activities.

The potential scope that may be envisaged and the prioritisation criteria on the basis of which each municipality chooses a particular scope and approach in each sector or thematic area are set out below.

Scope and areas of mitigation-related actions

As far as climate change mitigation is concerned, the following sectors may be considered, which include the areas of action shown below (**Table 5**). More specifically, the PCEs for the local government sector must comply with the provisions of Law 4/2019 and its implementing Decree D254/2020 (see **Table 2**, section 2.2):

| SECTORS | AREA |
|-------------------------------|---|
| Councils | <ul style="list-style-type: none"> • Energy savings and efficiency • Renewables • Fleet of vehicles |
| Housing | <ul style="list-style-type: none"> • Energy savings and efficiency • Renewables • Energy poverty and vulnerability |
| Services | <ul style="list-style-type: none"> • Energy savings and efficiency • Renewables • Green economy |
| Mobility and transport | <ul style="list-style-type: none"> • Mobility of residents and economic activity in the municipality (excluding through traffic on supra-municipal infrastructures) |
| Waste | <ul style="list-style-type: none"> • Urban waste management |
| Water | <ul style="list-style-type: none"> • Water supply and sanitation |
| Industry | <ul style="list-style-type: none"> • Energy savings and efficiency • Renewables (excluding industries affected by the European industrial emissions control and trading system) |
| Primary Sector | <ul style="list-style-type: none"> • Forestry management • Agricultural and livestock practices. • Local consumption |

Table 5. Sectors and areas of action in climate and energy plans (mitigation).

As far as the **assessment** and inventory of energy consumption and GHG emissions are concerned, all sectors included in the Udalsarea 2030 inventory calculation tool should be included, as this tool is available to all local councils in the Basque Country.

However, **at the planning stage**, each city or town council will be able to adapt the scope of its plan to its specific needs and available resources, and

may choose to address all or only some of the sectors concerned.

Table 6 shows general criteria for prioritising sectors in which to take action, which may vary in some cases depending on the reality of each municipality. The municipal energy and GHG emissions inventory and analysis of the specific capacity for action of the city or town council in question can be used for this purpose.

| SECTORS | Relevance in terms of GHG emissions | Council's capacity for action | Consideration of Law 4/2019 on energy sustainability in the Basque Country | Consideration of the Covenant of Mayors for Climate and Energy* | Overall priority for action |
|--|-------------------------------------|-------------------------------|--|---|-----------------------------|
| Councils (building and lighting efficiency, renewables and vehicle fleet) | LOW | VERY HIGH | COMPULSORY | KEY | VERY HIGH |
| Housing | MEDIUM | MEDIUM | - | KEY | MEDIUM/HIGH |
| Services | MEDIUM | LOW | - | KEY | MEDIUM |
| Mobility and transport | HIGH | MEDIUM | COMPULSORY** | KEY | HIGH |
| Waste | LOW | HIGH | - | - | MEDIUM |
| Water | VERY LOW | LOW | - | - | LOW |
| Industry | VARIABLE | VERY LOW | - | - | LOW |
| Primary | VARIABLE | LOW | - | - | LOW |

(*): The methodology for the Covenant of Mayors for Climate and Energy states that a Sustainable Energy and Climate Action Plan should contain measures for at least 2 key sectors and the emission inventory should cover at least 3 key sectors. The rest of the sectors can be reported, but are optional.

(**): Law 4/2019 on Energy Sustainability in the Basque Country calls on municipalities (with more than 5,000 inhabitants) to draw up a specific mobility plan (Article 24) separate from the Energy Action Plan (Article 14).

Table 6. Prioritisation of the treatment of the various sectors in the plans based on various criteria. Source: Compiled by the author from various sources.

Another aspect to consider when assessing the importance to give to each sector in every municipality is to evaluate the level of action already achieved by the municipality in each sector, and the availability or not of other planning

instruments. As a result, those sectors that do not have specific sectoral plans and for which no action has been taken will have a greater need for planning, and vice versa.

Figure 7 shows a general synthesis of the priority of each sector, defined on the basis of the criteria presented above, cross-referenced with the need for planning in each sector. This assessment shows the usual pattern in Basque municipalities

at the present time, which, once contextualised for each particular municipality, could facilitate the approach and scope with which to tackle the drafting of the climate and energy plan in terms of mitigation.

| | | | | |
|---|---------------|-------------------------|---------------------|---|
| NEED FOR PLANNING | HIGH | | Housing Services | Councils (Renewables) Councils (Buildings) Councils (Lighting) Councils (Vehicles) |
| | MEDIUM | Industry | Waste | Mobility and transport |
| | LOW | Water Primary Sector | | |
| | | LOW | MEDIUM | HIGH |
| OVERALL PRIORITY FOR MITIGATION ACTION | | | | |

Figure 7. Analysis of prioritisation and approach to integrating sectors in climate and energy plans in the field of mitigation. Source: Compiled by the author.

It is generally recommended that climate and energy plans should aim to incorporate all or most of the high and medium priority sectors. By contrast, it is recommended that low priority sectors be incorporated only in those municipalities where they may have a specific relevance and where there is a willingness to take action (e.g. the industrial sector in municipalities where industrial activity is prevalent or the primary sector in very rural municipalities.).

In relation to the scope and depth of planning, focusing efforts on the highest priority sectors that have no planning whatsoever (e.g. renewables in city and town councils) is recommended. In these cases, it will be essential for planned measures to be defined more thoroughly and in greater detail for their subsequent implementation, as the climate and energy plan will be the operational instrument of reference for defining them.

By contrast, in those sectors which already have or are expected to have specific sectoral plans (e.g. a mobility plan required by Law 4/2019), despite being priority sectors, the scope of the climate and energy plan does not need to be as detailed in the characterisation of its measures. Consequently, they can be limited to indicating the criteria and objectives for action in future sector-specific plans, or refer to the measures in the existing ones, while in all cases incorporating a quantification of the reduction in consumption and emissions that will be included in the impact of the climate and energy plan.

Scope and areas of adaptation-related action

With regard to adapting to climate change, the following sectors and areas will be considered, as defined in the context of the Basque Country and aligned with the sectors covered by the Covenant of Mayors for Climate and Energy:

| SECTORS | AREA |
|--|---|
| Natural environment | <ul style="list-style-type: none"> • Water resources • Terrestrial and coastal ecosystems • Soil |
| Urban environment and infrastructures | <ul style="list-style-type: none"> • Infrastructure • Linear infrastructures • Regional and urban planning • Urban environment • Buildings |
| Activity | <ul style="list-style-type: none"> • Agriculture, forestry, livestock and fisheries • Industry • Tourism • Finance-Insurance |
| Health and civil protection | <ul style="list-style-type: none"> • Health • Civil protection and emergencies |
| Others | <ul style="list-style-type: none"> • Other sectors not covered and cross-cutting actions |

Table 7. Sectors and areas of action in climate and energy plans (adaptation). Source: Compiled by the author.

The **assessment** should, as a minimum, consider the key risks for which Ihobe has carried out a vulnerability and risk analysis for all of the municipalities in the Basque Country (2026), the results of which are set out in a file for each municipality.

It is also recommended that the assessment be completed with complementary analyses of other risks or expected impacts that may be relevant to the municipality (see Assessment of adaptation in section 4.3).

Building on the conclusions of the assessment, three levels of gradual intervention are proposed for **planning adaptation actions** based on the results of the analysis of current and future risks for each of the key risks:

- LEVEL OF ACTION: **URGENT (I)**: urges action on key risks with a high current value that are expected to increase or stay the same in the future, and on those with a medium current value, which are at risk of increasing in the period 2011- 2040 (RCP 8.5).
- LEVEL OF ACTION: **MINIMUM RECOMMENDED (I+II)**: in addition to insisting on urgent action, this level calls for additional action on key risks with a high current value, but which are expected to decrease, on risks with a low current value where the value is likely to increase in the future, and on key risks with a medium current value that are expected to stay the same over time.
- LEVEL OF ACTION **COMPLETE (I+II+III)**: this covers action on all key risks (including the two levels of action above).

In addition, it is advisable to consider the **combined effect** of the key risks of **river and coastal flooding**, as they are interrelated and the effect of one on the other can exacerbate the impacts.

Looking at the **interaction between sectors** is also advisable, as one sector at risk may have consequences for others. To this end, using the guidelines provided in the guide *How to Improve Resilience to Climate Change in the Municipalities of the Basque Country. The case of Donostia/San Sebastian and Tolosa* (Ihobe, 2020)⁷.

⁷ Ihobe - Publications - How to Improve Resilience to Climate Change In the Municipalities of the Basque Country. The case of Donostia/San Sebastian and Tolosa: [resiliencia_cambio_climatico_municipios.pdf](#)

| CURRENT RISK | FUTURE RISK (RCP 8.5 scenario and period 2011–2040) | | |
|--------------|--|-----------|----------|
| | INCREASE | NO CHANGE | DECREASE |
| HIGH | I | I | II |
| MEDIUM | I | II | III |
| LOW | II | III | III |

Table 8. Proposed levels of action based on the results of the current and future risk analysis.

Source: Compiled by the author.

Fair transition

Fair transition has its place in local climate and energy plans, and it is no coincidence that the new Covenant of Mayors for Climate and Energy calls on municipalities to address this issue within the framework of the PACES and to include appropriate measures to alleviate this situation.

The approach of the climate and energy plans required by Law 1/2024 and promoted by this Guide, which tackle mitigation and adaptation in a comprehensive manner, encompasses actions to minimise vulnerability to ensure a fair transition. Planning should assess measures related to the following strategic lines:

- Encouraging social protection for groups in vulnerable situations, including energy poverty.
- Active promotion of training and green jobs.
- Promoting green financial instruments that encourage public-public and public-private partnerships.
- The exemplary role of the Basque public administration as a model for a conscious, sensitive society.
- Comprehensive, participatory and inclusive governance based on coordination and joint responsibility.

3.3

Regional approach to climate and energy plans

When to draw up a regional climate and energy plan?

One of the options that can be considered is that of drawing up climate and energy plans of a regional nature. This option will be recommended for those regional contexts where the following factors converge to a greater extent:

- Presence of **small municipalities** (< 5,000 inhabitants) and, in particular, **very small municipalities** (< 2,000 inhabitants) with few technical and economic resources.
- Existence of a **regional entity** with technical and institutional leadership capacities that already plays an important role in the field of climate and energy.
- The existence of **shared and common sectors and areas of action** whose joint management could provide greater efficiency and effectiveness.

As far as current legislation is concerned, both **Article 14** of Law 4/2019 on Energy Sustainability, which refers to the preparation of Energy Action Plans, and **Article 18** of Law 1/2024 on Energy

Transition and Climate Change, which refers to drawing up climate and energy plans in the Basque Country, include the possibility that municipalities with populations of less than 5,000 inhabitants may opt to join a regional plan if they consider it appropriate to do so.

Furthermore, the regional approach to adaptation is particularly important when dealing with regional risks, such as those associated with river flooding, which require an approach that focuses on the river basin beyond the boundaries of individual municipalities.

The assessment of the vulnerability and risk in the functional areas of the Basque Country to climate change (Ihobe, 2018)⁸ has already looked at this issue and each of the functional areas of the territory has been analysed with regard to different key risks. In addition to making it possible

to compare results with the Basque Country, it makes it easier to make decisions on whether certain measures need to be undertaken jointly.

Each regional entity and municipality will have to assess which regional and/or municipal approach it considers most appropriate for drawing up and implementing climate and energy plans.

Table 9 provides general guidelines as general recommendations that can facilitate this assessment. In general, opting exclusively for a regional climate and energy plan, without drawing up municipal plans, is highly recommended in areas with very small municipalities with a population of less than 2,000 inhabitants. The measures contained in the plan will be mainly joint, common measures headed by the regional authority, with participation required by the local councils to implement some of the measures.

| Potential territorial scope of a regional plan | Size of municipality (inhabitants) | Regional plan | Municipal plan* |
|--|------------------------------------|--------------------|-----------------|
| Region made up of a range of municipalities from very small to medium/large municipalities (regional townships). | < 2,000 | Highly recommended | Optional |
| | Between 2,000 and 5,000 | Recommended | Recommended |
| | > 5,000 | | Mandatory |

(*): It will be compulsory for all municipalities to draw up Energy Action Plans, regardless of their population size, in accordance with the requirements of article 14 of Law 4/2019.

Table 9. Approach in relation to drawing up regional and/or municipal climate and energy plans. Source: Compiled by the author.

In the case of those regions that feature municipalities with populations of up to 5,000 inhabitants, including municipalities with more than 2,000 inhabitants in the regional plan along with the other municipalities would be recommended. However, it is recommended that municipalities with more than 2,000 inhabitants should have their own plan. This plan may be drawn up by the municipality itself, or as a result of the process of drawing up the regional plan,

from which measures of a specific nature can be extracted for each municipality.

Finally, based on Article 18 of Law 1/2024, in regions that also have municipalities with more than 5,000 inhabitants, it is considered obligatory for these municipalities to have their own municipal plan, complementary to the existence of a regional plan that affects the rest of the municipalities.

8 CAST_Evaluacion de la vulnerabilidad y riesgo de los municipios vascos ante el cambio climatico_deff.pdf

What kind of measures should be incorporated in a regional climate and energy plan?

In a regional context, the measures to be incorporated into the plans could be classified into the categories shown in **Table 10**:

| Category of measures | Definition | Examples |
|----------------------|--|---|
| Global | Those measures whose most appropriate and effective scale of analysis, conception and execution is at a regional level, as their solution requires a global vision and action. | <ul style="list-style-type: none"> • Flood prevention in the regional river basin. • Inter-municipal mobility actions (inter-urban public transport, inter-urban cycle paths, etc.). |
| Common | Those measures whose scale of analysis and execution may be strictly municipal, but the joint implementation of which may optimise the technical and economic resources dedicated to them, as they are common to all municipalities. | <ul style="list-style-type: none"> • Regional waste management plan. • Draw up a protocol for preventive action in the event of heat waves. |
| Specific | Those measures that affect specific aspects of a particular municipality, the treatment of which at a regional level does not provide better action or save resources. | <ul style="list-style-type: none"> • Construction of cycle lanes for internal mobility within municipalities. • Increase in the green and permeable surface area of squares, public spaces and buildings in the municipality. |

Table 10: Types of measures to be included in climate and energy plans by area of action (municipal or regional).

Source: Compiled by the author.

In regional climate and energy plans, particular attention will be paid to measures of a global and common nature, as the regional scale is ideal for dealing with these types of measures.

However, where smaller municipalities are affected by the plan, the planning process should include specific measures for each municipality, as they will generally not have their own plan.

However, when municipalities are larger, it would be more appropriate to take specific measures in the framework of plans of a strictly municipal nature.

Regional plans should include a collaborative governance model, in which roles, responsibilities and coordination mechanisms between municipalities are defined, to ensure coherence in the implementation of measures.

It should also be borne in mind that acting on a regional scale makes it easier to access more ambitious lines of funding and makes it possible to optimise technical and economic resources, thereby reducing costs and increasing the impact of the actions.

Communicating the plan at a regional level should strengthen the common identity of the territory in terms of climate action, clearly show the collective benefits of the measures and encourage co-responsibility among citizens.

The monitoring system should include a regional assessment level that makes it possible to see the overall impact of the actions, while strengthening transparency and accountability between municipalities.

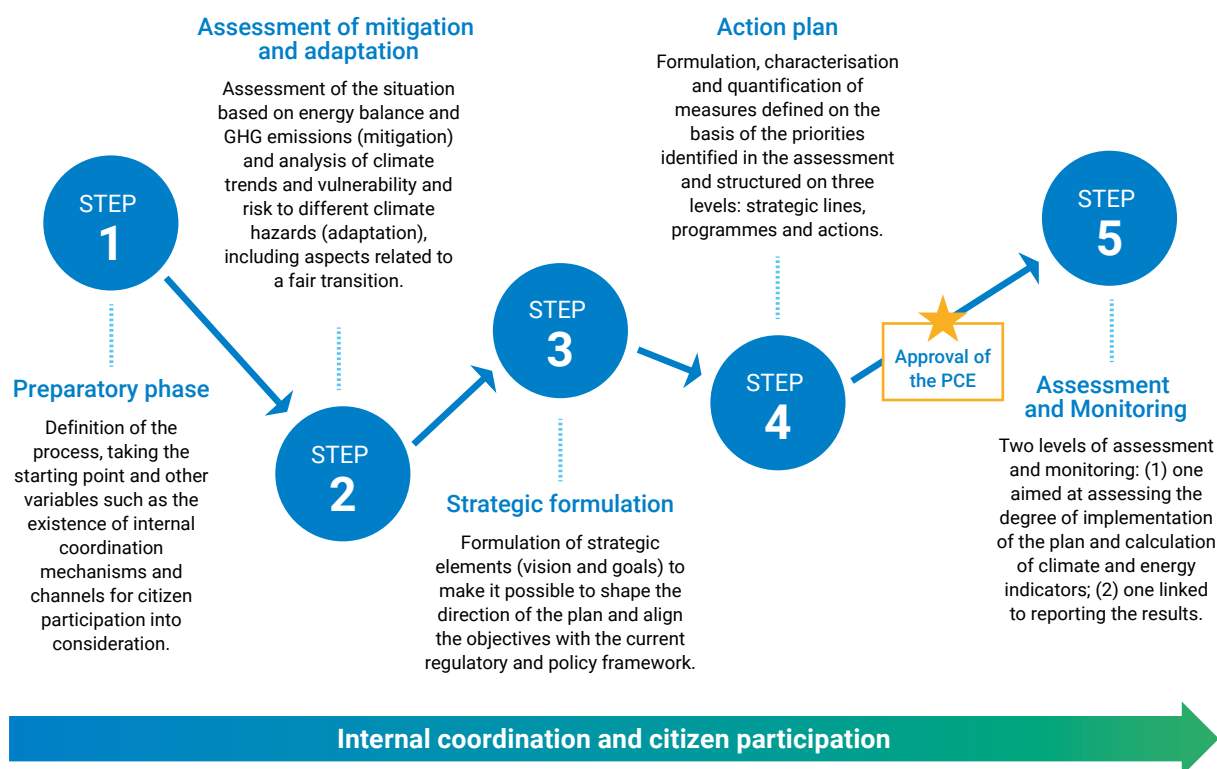
04



How to draw up a local climate and energy plan

4.1 Outline of work phases

The drafting of a climate and energy plan is structured in the five steps shown in the diagram below, in which issues related to internal coordination and citizen participation have been incorporated as a cross-cutting element inherent to the whole process.



The outline of tasks to be carried out at each step can be found in Appendix 5.1.

The tools shown in **Table 11** can be used for each of these steps.

4.2

Map of tools available

The municipalities and regions of the Basque Country have tools specifically designed to tackle the different tasks associated with the process of drawing up climate and energy plans which are part of the shared resources of the Udalsarea 2030 Network. These tools, along with others aimed at the private sector and the public, are available on the Ihobe website. They are described below:

The e-mugi indicator system

This is a computer application that facilitates the integrated management and monitoring of the Local Agenda 2030 plans of municipalities in the Basque Country, including a system of local sustainability indicators.

Municipal and regional GHG inventory

An Excel tool used to calculate the GHG emissions of all sectors in the municipality or region with data provided centrally by Udalsarea 2030, including the following sectors: transport, housing, services, waste, livestock, agriculture and industry.

Carbon Footprint of Councils

An Excel tool used to calculate a council's or local authority's GHG emissions associated with the energy consumption of municipal buildings, public lighting and the fuel consumption of the municipal fleet.

Climate Change Scenario Viewer

A web application that contains information on the current climate and climate change scenarios under the RCP 8.5 scenario for the periods 2011-2040; 2041-2070 and 2071-2100 for the Basque Country.

Kostaegoki

This tool makes it possible to identify the coastal risk of rising sea levels and waves on various receptors (population, residential and industrial land, beaches, capital stock, natural environment), and propose a set of guidelines for adapting elements that may be impacted by coastal flooding and erosion hazards, classified into three main groups as proposed by the IPCC (physical or structural measures, social measures and institutional measures) and by type (protection, accommodation and process). It consists of two documents (one that analyses the risk and one that proposes measures) and a map viewer.

Municipal Vulnerability and Risk Data Sheet

This sheet shows the results of the analysis of the vulnerability and risk presented by municipalities in the Basque Country based on 18 key risks linked to the natural environment, the primary sector, the urban environment and human health.

Other tools whose use is widespread among municipalities in the Basque Country but which are not part of the common resources generated within the framework of Udalsarea 2030:

Tools of the Covenant of Mayors for Climate and Energy (only for member municipalities)

Web form where the energy accounting and GHG inventory for the municipality is uploaded, together with a summary of the mitigation and adaptation measures included in the PACES. It must be completed for those municipalities that are members of the Covenant at the time the plan is finalised, and it must be updated periodically to monitor the implementation of the plan and evolution of inventories.

Table 11 shows the phase of the climate and energy plan drafting process when each of the tools presented would be applied:

| FUNCTIONALITY OF THE TOOLS IN THE CLIMATE AND ENERGY PLAN DRAFTING PROCESS | | | | | | | | | |
|--|--|---|---|---------------------------------|---|---|---------------------------|--------------------------|---------------|
| | ASSESSMENT OF MITIGATION | | ASSESSMENT OF ADAPTATION | | ACTION PLAN | MONITORING OF PLAN AND COMMUNICATION OF RESULTS (internal and external) | | | |
| | Municipal energy balance and GHG inventory | Energy balance and carbon footprint of councils | Analysis of historical trends and climate projections | Vulnerability and risk analysis | Mitigation and adaptation action planning | Assessing the degree of implementation of the plan | Calculation of indicators | Communication of results | PACES report* |
| E-mugi indicator system | | | | | | | | | |
| Municipal and Regional GHG Inventory | | | | | | | | | |
| Carbon Footprint of Councils | | | | | | | | | |
| Climate Change Scenario Viewer | | | | | | | | | |
| Vulnerability and Risk Data Sheet | | | | | | | | | |
| Kostaegoki | | | | | | | | | |
| Covenant of Mayors for Climate and Energy Tool | | | | | | | | | |

*Only for member municipalities of the Covenant of Mayors for Climate and Energy.

Table 11. Map of tools and application by drafting phase of climate and energy plans.

4.3 Detailed description of the tasks to be performed

STEP 1. Preparatory phase

The preparatory phase involves a number of essential preliminary tasks in order to approach the process correctly, both in terms of technical tasks and issues related to mainstreaming the process at a local authority level and to citizen participation.

Tasks

1. Definition of the starting point

It is essential to be clear about the starting point prior to drawing up a climate and energy plan so as to optimise the process and not duplicate tasks that have already been carried out. The table below shows which of the 5 steps should be addressed depending on the starting point of the process. In some cases, it is understood that some of the tasks included in this step have already been carried out and, therefore, they have been marked with the label "partial", while the tasks to be carried

out have been detailed (the references shown here are only a sample representing different case

studies of municipalities in the Basque Country) (see **Table 12**).

| STARTING POINT | STEP 1 PREPARATORY PHASE | STEP 2 ASSESSMENT OF MITIGATION AND ADAPTATION | STEP 3 STRATEGIC FORMULATION | STEP 4 ACTION PLAN | STEP 5 ASSESSMENT AND MONITORING |
|---|--|---|---|---|---|
| No current planning framework for either mitigation or adaptation | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ |
| Mitigation plan with targets prior to 2030 and no adaptation plan | ■ ■ (review and adjustment of internal coordination and citizen participation mechanisms) | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ |
| Mitigation plan with targets prior to 2030 with a current adaptation plan | ■ ■ (review and adjustment of internal coordination and citizen participation mechanisms) | ■ ■ (update assessment of mitigation) | ■ ■ (review and update vision and goals) | ■ ■ (plan mitigation actions) | – (this will depend on the assessment and monitoring system available to date) |
| Current mitigation plan (with 2030 targets) and no adaptation plan | ■ ■ (review and adjustment of internal coordination and citizen participation mechanisms) | ■ ■ (carry out a assessment of adaptation) | ■ ■ (review vision and goals and incorporate adaptation) | ■ ■ (plan adaptation actions) | – (this will depend on the assessment and monitoring system available to date) |
| Current mitigation plan but only for city and town councils, with targets prior to 2030 and no adaptation plan | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ | ■ ■ ■ (appraise council measures still in force) | – (this will depend on the assessment and monitoring system available to date) |
| Current adaptation plan and no mitigation plan | ■ ■ (review and adjustment of internal coordination and citizen participation mechanisms) | ■ ■ (carry out a assessment of mitigation) | ■ ■ ■ (review vision and adaptation goals, where they exist, and incorporate mitigation) | ■ ■ (plan mitigation actions) | – (this will depend on the assessment and monitoring system available to date) |

■ ■ ■ All tasks need to be carried out.

■ ■ Some tasks have already been carried out, others have not (those that need to be carried out are listed).

Table 12. Tasks to be completed in order to draw up a climate and energy plan based on the starting point.

The time frames mentioned under the different starting points need to be clarified in order to make them easier to interpret:

- Plans with **2030 targets**: plans with measures to be implemented up to 2030 by means

of which the targets set for that year are expected to be achieved.

- Plans with **targets prior to 2030**: plans with actions that do not cover the whole period up to 2030 and do not meet the level of effort required to achieve the targets for that year.

2. Identifying sources of information and compiling documentation

The first step will be to **identify and compile the main plans and studies** available in the **areas**

covered by the climate and energy plan. The following is a list of background information to be compiled:

PLANS, STUDIES AND OTHER DOCUMENTATION TO BE COMPILED

MITIGATION

- Inventory of council buildings, lighting, pumps and vehicle fleet and energy consumption associated with the council.
- Existing energy audits and studies.
- Energy studies on the potential for renewable energies.
- Initiatives to incorporate electric vehicles into the municipal fleet.
- Carbon footprint of the council for the baseline year and beyond.
- Housing regeneration and/or neighbourhood redevelopment and regeneration plans.
- Existing plans and set of actions contained therein which can be integrated into the PCE (already implemented or pending implementation).
- Plans and studies for all sectors considered in the local climate and energy plan (mobility plans, plans to promote cycling, waste management plans, etc.).
- Studies and/or reports on fuel poverty (at a local or regional level).

ADAPTATION

- Municipal vulnerability and risk data sheet.
- Climate scenarios.
- Record of extreme events.
- Flood risk mapping (river and coastal).
- Vulnerability, risk and adaptation along the Basque coast: Kostaegoki.
- General Urban Development Plan, Special Plans, etc.
- Master Plan for Use and Management (PRUG) of protected sites
- Emergency Plans and flood response protocols.
- Preventive action protocols for heatwave events.
- List of infrastructures or actions planned in urban areas.
- Supply/sanitation infrastructure management plans.
- Local or regional plans for eradicating invasive species.
- Social and economic development policies.

3. Setting up an internal working group or commission involving all areas linked to the process.

In this preparatory phase, it is advisable to set up a working team with technical and political personnel in which all municipal and/or regional areas whose activity is related to the areas of work in the climate and energy plan are represented.

In this regard, Article 5 of Law 1/2024 states that public administrations must update the functions of the energy sustainability committees set up by Law 4/2019, and add material not only on

energy transition but also on climate change. If a local authority does not have a committee in place, a new energy transition and climate change committee will need to be created. In both cases, committees will be assigned duties related to coordinating actions and projects in the area of energy transition and climate change, and issuing assessment and monitoring reports as required by Law 1/2024, among others.

It is considered that this Commission could be the working team responsible for tackling the process of drawing up a climate and energy plan. In any event, it should include personnel who are more



How can you incorporate citizen participation into the preparatory phase?

In this phase, putting together an initial outline of the participatory actions planned throughout the process is suggested, which may be of a different nature depending on the objectives pursued during each phase (perception surveys, group interviews, open sessions, sessions with specific sectors, etc.).

The main aim of citizen participation in the preparatory phase of the project is primarily informative, to raise awareness of the process and the objectives to be achieved. To this end, it is advisable to rely on the participation channels that city and town councils already have and to assess the need to open additional channels (on-line modality) to enable other actors to take part, or whose use is necessary in circumstances that prevent face-to-face activities from being carried out.

During this phase, it is also advisable to draw up an initial map of key actors, which can be adjusted and added to during the different phases.

Mapping of key actors and definition of levels of involvement

By way of example, the table below shows the different actors that can be called upon to take part in the process of drawing up a climate and energy plan and the different levels of participation that can be defined for each of them at the outset of the planning process specific to each municipality:

| | | LEVEL OF PARTICIPATION | | | |
|--|---|-------------------------|--------------------|------------------------------|----------------------|
| | | ON AN INFORMATIVE LEVEL | SPECIFIC ENQUIRIES | DEBATE AND SHARED REFLECTION | CO-DESIGN OF ACTIONS |
| ACTORS CALLED UPON TO PLAY A ROLE | Neighbourhood associations | | | | |
| | Retailers | | | | |
| | Environmental associations | | | | |
| | Education centres | | | | |
| | Research centres | | | | |
| | Osakidetza (Basque health service) (corresponding Basque Integrated Healthcare Organisation) | | | | |
| | Companies and business associations | | | | |
| | General public | | | | |
| | Youth and senior citizens' associations | | | | |

closely associated with the area of climate change adaptation and whose participation is considered necessary, for example, social services.

The following is a generic list of municipal areas or departments, and regional entities that, a priori, could form part of this working group:

Municipal departments

- Environment (manager).
- Urban development / town planning.
- Mobility.
- Maintenance.
- Works.
- Social services.
- Civil protection.
- Citizen participation.

Regional entities

- Local Development Agency.
- Rural Development Association.
- Community Association for Waste.

This proposal for configuring an internal coordination mechanism was made with a medium/large sized municipality in mind. Small municipalities, and mainly those that will approach the process from a regional perspective, should rely on their supra-municipal structures

of reference to address the areas of work in the climate and energy plan.

4. Design of an internal and external communication plan

Highlight the most important communication milestones, target audiences and channels to be used.

It is also advisable to design a communication plan in which the main internal and external communication milestones associated with each of the phases of the project are recorded from the start of the process, detailing the following information:

- Communications actions to be carried out.
- Objective and target audience.
- Coordinator.
- Date.
- Channel.
- Other useful information.

STEP 2. Assessment of mitigation and adaptation

Contextualisation of municipalities in the area of climate change

Compiling relevant information on the physical and geographical context of the municipality, and on demographic and socio-economic variables (those elements that condition or may condition local climate and energy action) is recommended to make it easier to subsequently interpret the results of the inventories and the vulnerability and risk analysis and target measures correctly.

Tasks

Compiling and analysing information

In particular, compiling and analysing information on the following aspects is suggested:

Territorial aspects:

- Geographical location.
- Land use.
- Existing urban plans (general urban land-use plans [PGOU], special plans).
- Building structure.
- Mobility plans.
- Basic characterisation of mobility.

Social and economic aspects:

- Demographics.
- Existence of vulnerable groups.
- Relative contribution of the different economic sectors.

Environmental aspects (waste and water):

- Waste management system.
- Supply and sanitation system.

Assessment of mitigation

The assessment of mitigation will be based on the GHG emission inventories of the municipality and the city or town council (or regional tools, in the case of regional approach processes) and on the specific energy accounting of buildings and lighting panels. This will help to identify those sectors with the greatest impact on consumption and emissions and that show a more negative trend.

It is recommended that data be collected at this point to provide information on the level of energy poverty in the territory in order to determine specific energy efficiency mitigation measures that promote decent standards of living and health for the population.

Scope

The general assessment of the municipality can be carried out to a greater or lesser extent, by either including an analysis only for the scope municipal sectors covered by GHG inventories, or by adding a more in-depth analysis. However, an assessment of the local government sector will need to be carried out in response to the specific requirements of Law 4/2019 (see **Table 2**, section 2.2). A specific level of analysis of the energy consumption and characteristics of each of the council's buildings, installations and vehicles should be considered for this sector.

Tasks

1. Energy balance and GHG inventory of the municipality's sectors



GHG INVENTORY

The Udalsarea 2030 inventory tool will be used to produce the energy balance and GHG emissions inventory.

The following sub-tasks will be considered:

- Calculating the energy balance of municipal sectors.
- Calculating the emissions inventory of municipal sectors.
- Interpreting the results.
- Establishing a baseline.

Whenever possible, it is advisable to work with a sufficiently long time series of data to visualise long-term trends (e.g. since 2010).

It will also be advisable to have energy consumption and GHG inventory data from the most recent calendar year possible in order to be able to subsequently diagnose and quantify the plan's measures as accurately as possible.

Once the historical series of GHG emission inventories has been calculated, the results will be interpreted based on their evolution and distribution by sectors and sources, both in terms of energy consumption and GHG emissions.

Based on the inventory calculated, it will be possible to **establish the baseline** against which the consumption and emission reduction targets can then be defined.

Guidelines for defining the baseline are provided in the section on calculating scenarios in Appendix 5.3.

INTEGRATING A FAIR TRANSITION INTO THE MITIGATION ASSESSMENT

The incorporation of a fair transition, particularly the aspects related to energy poverty in the climate change mitigation assessment, complements the usual contents – emissions by sectors, energy consumption and potential for reduction – by introducing a social dimension that is usually relegated to the adaptation sections. Its approach makes it possible to identify how the energy inefficiencies of the building stock, the low economic capacity of certain households and the dependence on obsolete technologies not only increase emissions, but also limit the capacity of citizens to join in the energy transition. In this sense, the assessment should include indicators of energy vulnerability (energy expenditure over income, quality of building envelopes, access to renewable energies, exposure to energy prices), and a mapping of the most affected groups and geographical areas.

INCLUSION OF THE GENDER DIMENSION IN THE MITIGATION ASSESSMENT⁹

In order to ensure that a gender perspective is integrated in a cross-cutting manner into the plan, it is recommended that the following points be included in this section of the assessment:

- Include gender-disaggregated analyses of mobility (use of public transport, private cars, pedestrian mobility).
- Include data on energy consumption in households by different types (e.g. single-parent households, female-headed households).
- Assess whether energy efficiency programmes reach men and women equally.

2. Energy balance, GHG inventory and carbon footprint of councils



CARBON FOOTPRINT. CITY/TOWN COUNCILS

The Udalsarea2030 carbon footprint tool will be used to produce the GHG balance and inventory of each council.

The following sub-tasks will be considered:

- Calculating the energy balance of councils.
- Calculating the carbon footprint of councils.
- Interpreting the results.
- Establishing a baseline.

As in the case of the inventory of all municipal sectors, whenever possible, it will be advisable to work with a sufficiently long time series of data to visualise long-term trends and with data from the most recent calendar year possible.

Similarly, once the historical series of GHG emission inventories has been calculated and integrated, the results will be interpreted based on their evolution and distribution by sub-sectors of the city or town council (buildings, lighting and municipal fleet) and by sources, both in terms of energy consumption and GHG emissions.

3. Energy analysis of municipal facilities

The following sub-tasks will be considered:

- Energy accounting of the municipal building stock, lighting and fleet.
- Compilation of energy information.
- Calculation of energy efficiency indicators and benchmarking.
- Identification of potential energy savings and renewable generation.

It will be essential to carry out **specific energy accounting** for the most recent calendar year, so that the formulation and calculations of energy and economic savings associated with the

⁹ Climate Change in the Basque Country from the gender perspective. Ithobe.

measures and repayment of these measures are as accurate as possible.

Accounting will be carried out **for each building, including all energy sources** used, including self-consumption. The only way to be able to formulate measures with a certain degree of rigour in terms of calculating costs, savings and repayment is by providing accounting for each building, thereby complying with Law 4/2019.

Energy accounting should be carried out by compiling information on energy bills for all energy sources (electricity, gas and other fuels) and then adding them together using Excel spreadsheets or specific energy accounting tools. This task can build on the work already carried out by the council to comply with Article 11 of Law 4/2019 on energy inventories. In those cases in which the municipality has not yet carried out inventories, the preparation of the Plan itself must include the preparation of these inventories in order to comply with the aforementioned article in the Law.

In addition to energy accounting, compiling information on the municipal building stock, public lighting and fleet will be essential, in accordance with Law 4/2019. This information should be compiled by requesting it from municipal decision-makers, by collecting data from existing studies and energy audits, or in some cases, resources permitting, by physically visiting some of the most important buildings.

In the case of buildings, Law 4/2019 expressly requires energy audits to be carried out in buildings with more than 70 kW of installed thermal energy and public lighting. To this end, a significant part of the energy analysis and subsequent measures to be proposed can be obtained directly from the audits already carried out. However, part of the building stock will not be audited, either because audits are not compulsory for these buildings, or because not all audits have been completed at the time of the start of the plan, or because audits are no longer considered to be in force. This situation may also sometimes apply to public lighting. Therefore, it may be necessary to carry out energy compilation and analysis tasks in addition to the

information that may be provided by existing audits.

In the case of buildings, the information to be compiled will be: physical characteristics (floor areas, building envelope...), equipment and installations (lighting, heating, cooling, domestic hot water and electrical equipment), renewable generation (photovoltaic, solar thermal or other sources) and type of use and management.

Efficiency ratios and potential energy savings will be calculated based on the energy consumption and energy information of the buildings, and then used to prioritise the buildings on which to act and the most cost-effective specific measures to be implemented.

In the case of public lighting, it will be necessary to identify the lighting technology available in the municipality and quantify the relative contribution of each in terms of overall consumption. It will also be necessary to understand the regulatory and management systems in order to identify areas that can be further improved.

In the case of the municipal fleet, it would be advisable to have the current distribution of consumption by energy sources and an inventory of the vehicle fleet by fuel type. Based on this information, it will be possible to define and determine the scale of measures for renewing the vehicle fleet in order to achieve the full transition to alternative sources other than fossil fuels by 2030.

Assessment of adaptation

The assessment of adaptation will be based on a **climate risk analysis** of the municipality that will make it possible to identify the most significant key risks and the sectors on which the main impacts will be felt.

The risk assessment methodology for municipalities in the Basque Country takes the concepts set out in the sixth report of the Intergovernmental Panel on Climate Change (IPCC) on Impacts, Adaptation and Vulnerability (IPCC, 2022) as a point of reference and also takes

into account the specifications included in the recent publications of UNDRR (2022) and MITECO et al. (2023). The key concepts of the IPCC

(2022) are used: hazard, exposure, vulnerability, sensitivity, adaptive capacity, response (new in the sixth IPCC Assessment Report) and risk.

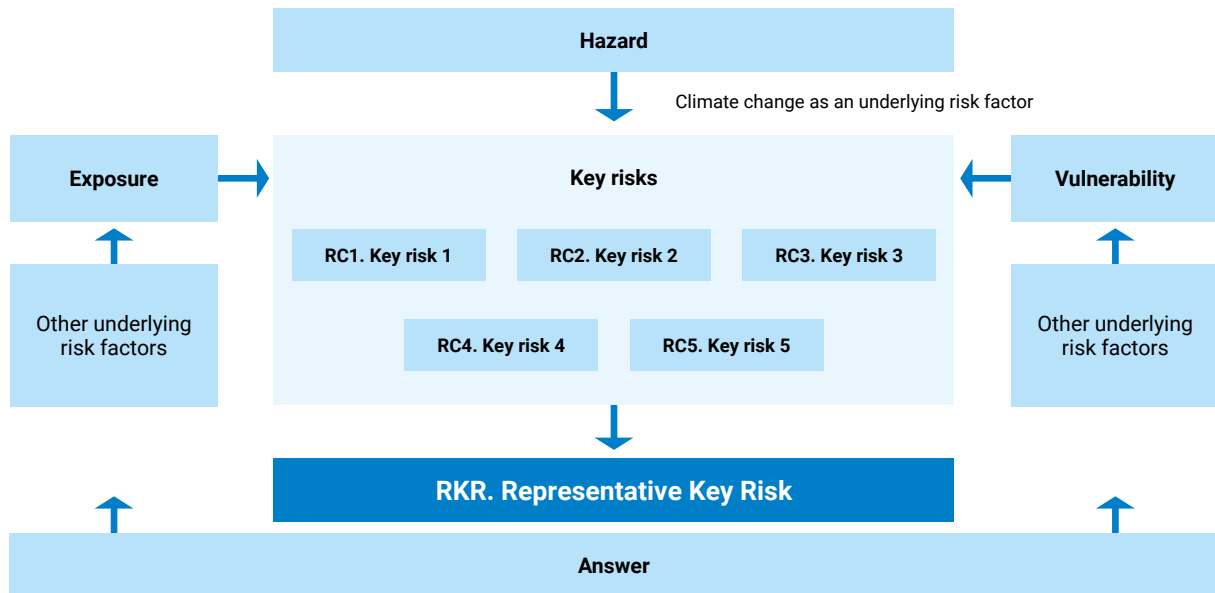


Figure 8. Conceptual framework of reference for the methodology for assessing the vulnerability and risk of municipalities in the Basque Country to climate change. Source: IPCC, 2022.

The definitions of each of the components of this conceptual framework for analysing the vulnerability and risk of municipalities are presented below:

HAZARD

Potential for a climatic phenomenon or physical process, such as an extreme event (floods, heat waves, storms, droughts) or gradual trend (rising sea levels, desertification), to cause damage to people, infrastructure, ecosystems and socio-economic activities.

EXPOSURE

This refers to the presence of people, livelihoods, environmental services, resources, infrastructure and economic, social and cultural assets in areas that could be adversely affected by a hazard and therefore be subject to impacts, loss and damage.

VULNERABILITY

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts that include sensitivity and susceptibility to harm and lack of capacity to respond and adapt.

RISK

Potential for the adverse consequences of a climate-related hazard, or of adaptation or mitigation responses to that hazard, on lives, livelihoods, health and well-being, ecosystems and species, economic, social and cultural assets, services (including ecosystem services), and infrastructure. Risks stem from the interaction of vulnerability (of the system affected), exposure over time (to the hazard), and the (climate-related) hazard itself. Hazards, exposure and vulnerability may be subject to uncertainty in terms of magnitude and probability of occurrence, and each may change over time and space due to socio-economic changes and human decision-making.

KEY RISK

Key risks are potentially serious risks that can cause impacts in the present and whose severity could increase over time due to changes in the nature of the hazards, in the exposure or in the vulnerability of the elements analysed to those hazards.

The **methodological notes** below detail an analytical sequence that is intended to facilitate the understanding of each of the components of vulnerability and risk analysis described above.

METHODOLOGICAL NOTES – ASSESSMENT

Analytical sequence for risk assessment (adapted from Spanish Office for Climate Change (OECC) Guidebook on drawing up Local Climate Change Adaptation Plans, 2016)¹⁰

How can the climate change?

A change in the patterns of extreme events (heat waves, torrential downpours, floods, etc.) and climate conditions and their associated variables (average, maximum and minimum temperatures, precipitation patterns, etc.) is expected. This change in weather patterns, expressed in terms of probability of occurrence, is called a **hazard**.

How can a specific territory or system (natural, urban, human, etc.) be affected?

A hazard by itself will not necessarily have an adverse effect, it will depend on exposure, i.e. the existence of receptors (people, livelihoods, ecosystems, environmental resources and services, infrastructure, economic, social or cultural assets) that may be affected. The effects of a particular hazard (or several hazards) on a receptor would in this case be the **impacts**.

What is the susceptibility of the exposed territory or system? Is it ready to deal with the damage?

The magnitude of the impact will in turn depend on **vulnerability**, which refers to the predisposition of the territory, its systems or sectors and elements or species to be affected by a climate hazard. Vulnerability can be explained in terms of two components: the **sensitivity** or susceptibility to harm (e.g. a high percentage of elderly people in a neighbourhood) and the **adaptive capacity** or capacity to cope with and overcome the effects (following the example above, the existence of a good social safety net to monitor and care for people in vulnerable situations).

What is the likelihood of being affected? To what extent can impacts and effects be critical?

Considering all factors together, **risk** is defined as a function of the probability of occurrence of an event and its impact, depending on the vulnerability of the system that has been affected.

¹⁰ https://www.adaptecca.es/sites/default/files/documentos/guia_local_para_adaptacion_cambio_climatico_en_municipios_espanoles_vol1.pdf

Scope

The assessment can be carried out in greater or lesser depth, based exclusively on a multi-criteria analysis of indicators or by accompanying it with spatial modelling to obtain detailed spatial information that can be very useful in the planning phase, which is particularly recommended for medium/large municipalities.

This approach is consistent with the methodological guidelines provided by the Covenant of Mayors for Climate and Energy, which distinguishes between these two approaches to vulnerability and risk analysis based on the size of the municipality.

Furthermore, as far as the climate hazards and impacts to be analysed are concerned, it should be noted that all of the municipalities in the Basque Country have the same starting point, which are the results of the vulnerability and risk analyses carried out for 18 key risks (see section 3.2). Nevertheless, it is recommended that those municipalities where, a priori, it is expected that there may be impacts associated with other risks

that have not been analysed, should carry out additional analyses to complete the assessment of adaptation.

Tasks

1. Analysis of historical trends and climate projections

The following sub-tasks will be considered:

- Analysis of historical trends and extremes.
- Analysis of future climate projections.



SCENARIO VIEWER

In order to analyse historical trends and climate projections for a municipality, using the information provided by the Climate Change Scenarios and Data Series Viewer for the Basque Country, developed by Ihobe¹¹ is recommended.

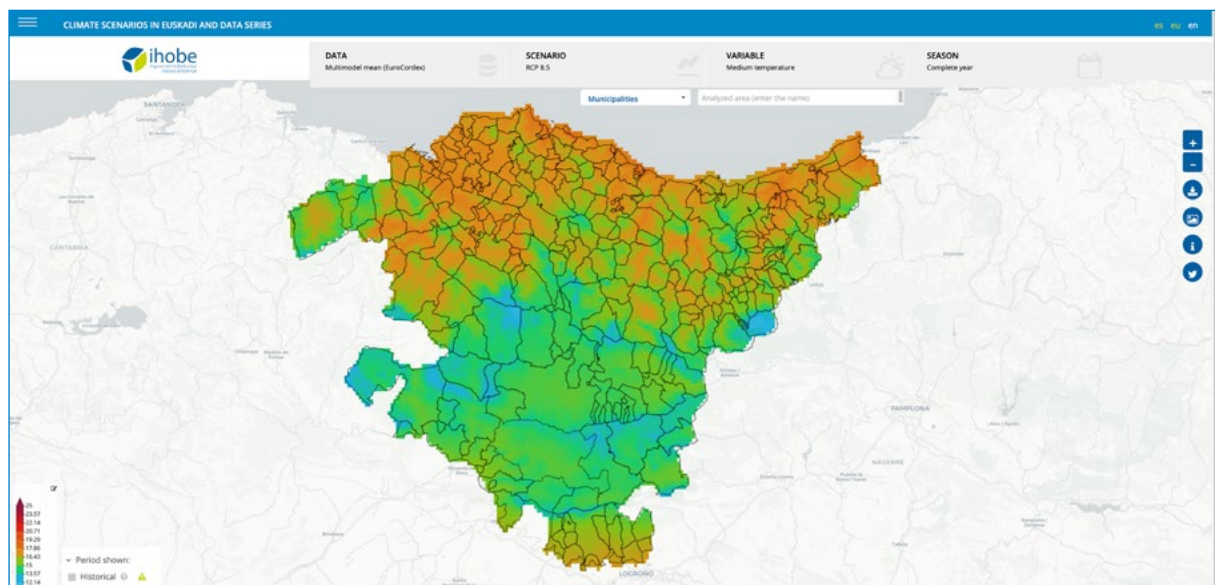


Figure 9. Image of the Climate Change Scenario Viewer and Data Series for the Basque Country.

11 https://escenariosklima.ihobe.eus/?lang=en#&model=multimodel&variable=tas&scenario=rcp85&temporalFilter=YEAR&layers=MUNICIPALITIES&period=MEDIUM_FUTURE&anomaly=RAW_VALUE&layers=MUNICIPALITIES

The viewer is fed by the high spatial resolution (1km x 1km) climate atlas generated for the whole of the Basque Country based on the results of calculating *high-resolution climate change scenarios for the Basque Country*.

The following information can be accessed via the viewer:

- **HISTORICAL TRENDS:** climate variables for precipitation and temperature for the period 1971-2015.
- **CLIMATE PROJECTIONS** climate projections for the 21st century, for the same climate variables, generated for the RCP4.5 and 8.5 scenarios for three time periods: i) 2011-2040, ii) 2041-2070 and iii) 2071-2100.

We propose analysing the information for the **RCP 8.5 scenario** and for the following time periods:

- Reference period (observed data): 1971-2000.
- Current-short term (projections): 2011-2040.
- Future-medium term (projections): 2041-2070.
- End of century (projections): 2071-2100.

The table below shows a selection of variables that would make it possible to analyse temperature and precipitation, considering both trend values and extremes for the 4 time periods:

| TREND | EXTREMES |
|---|--|
| TEMPERATURE | |
| <ul style="list-style-type: none"> • Maximum temperature • Minimum temperature • Average temperature | <ul style="list-style-type: none"> • Tropical nights (T min > 20°C). • Heat waves, frequency, duration and intensity. • Number of warm/hot days. • Days with frost/ice (T max < 0°C). |
| PRECIPITATION | |
| <ul style="list-style-type: none"> • Daily precipitation • Days with rain Pr >= 1mm | <ul style="list-style-type: none"> • Days with very intense precipitation Pr >= 20mm. • Days with intense precipitation Pr >= 10 mm. • Maximum mean precipitation for T=10 years. • Maximum precipitation accumulated over 5 days. • Maximum mean precipitation for T=50 years. • Days of drought (maximum no. of consecutive dry days (Pr < 1mm)). |

2. Assessing vulnerability and risk to climate change

The following sub-tasks will be considered:

- Characterisation of current vulnerability and risk.
- Characterisation of future vulnerability and risk.
- Interpreting the results.
- Identification of priority areas for action.



VULNERABILITY AND RISK DATA SHEET

In the absence of a specific study, using the **data sheet** prepared by Ilobe which summarises each municipality is suggested as a starting point for assessing vulnerability and risk.

The objective of this analysis is to characterise **current and future risk**, which will make it possible to identify priority areas for action in the planning phase. To this end, the **changes expected** in each of the key risks will be analysed **for each of the RCP scenarios** and the **four time frames**.



KOSTAEGOKI

The Kostaegoki tool provides information on flood zones and risk based on socio-economic criteria for different return periods in current and future climates in coastal areas. It also provides a range of possible adaptation measures.

It is also advisable to complete the vulnerability and risk analysis with additional analyses to make it possible to approximate current vulnerability and risk to other climate hazards and potential impacts on key sectors of the municipality.

Below is an example of a list of indicators for the analytical sequence for analysing vulnerability (sensitivity and adaptive capacity) and risk to hazards from **landslides associated with torrential rains and fires**¹² (the complete analytical sequences with all the indicators needed to assess the risks associated with these two hazards can be found in Appendix 1). The answer to most of the questions in the analytical sequence will be based on expert knowledge, although there are some questions that require a search for available data or referral to other sources. It would be interesting for this exercise to be carried out by a commission or working group with representatives from different municipal areas or departments.

INTEGRATING A FAIR TRANSITION INTO THE ASSESSMENT OF ADAPTATION

The integration of a Fair Transition into the assessment of adaptation to climate change complements the usual content – climate risk analysis – by highlighting how socio-economic conditions and the low energy efficiency of housing increase the vulnerability of certain groups. While a conventional analysis identifies physical exposure to climate risk, the inclusion of a fair transition, particularly aspects of energy poverty, makes it possible to recognise the unequal capacity of the population to deal with it, whether this is due to the impossibility of maintaining adequate indoor temperatures, the lack of access to efficient air-conditioning systems or the economic burden of extreme energy consumption. In this regard, the assessment should look at indicators such as the proportion of households in a situation of thermal vulnerability, the construction quality of the residential stock, access to adaptive air-conditioning technologies and the territorial distribution of these factors.

INCLUSION OF A GENDER PERSPECTIVE IN PCES

In order to ensure that a gender perspective is integrated in a cross-cutting manner into the plan, it is recommended that the following points be included in this section of the assessment:

- Identify the increased exposure of older women living alone to heat waves.
- Analyse fuel poverty from a gender perspective: single-parent households headed by women are at greater risk.
- Take care overload into account (e.g. care of dependants during heat waves or floods).

¹² HADAS-PACT Project - Fundación Biodiversidad



How can you incorporate citizen participation into the assessment phase?

Citizen participation in this phase of the project is essential as it facilitates shared reflection and the interpretation of data and variables that require it based on expert and citizen criteria. This becomes even more important in the field of adaptation due to the nature of the issues to be analysed.

In this sense, it is advisable to invite people of reference in the municipality, either because they have specific knowledge that can add value and be

of interest, or because of their ability to reach other people and contribute to disseminating the work.

Communications made while the plan is being drafted must take an inclusive approach, using non-sexist language, diverse representations and messages that promote the co-responsibility of men and women in climate action. In addition, where possible, the role of women as key actors in the energy transition and resilience of the community should be highlighted.

Example of an analytical sequence for shared reflection on the vulnerability and risk of the municipality to two climate threats¹³

| HOW IS CLIMATE CHANGE AFFECTING US? | | | |
|---|---|--|--|
| Dangers | Exposure | Vulnerability | |
| | | Sensitivity | Adaptive capacity |
| Rising temperatures and heat waves | Identification of people and elements exposed to this threat. | <p>Are some people particularly vulnerable? (ageing population, children, etc.).</p> <p>Are there specific areas where the lack of trees or green spaces accentuates the effect of high temperatures?</p> | <p>Is there enough shade?</p> <p>Are there sufficient sources of drinking water?</p> <p>Are the playgrounds where children play protected?</p> |
| Increase in torrential rainfall events | Identification of people and elements exposed to this threat. | <p>Are there areas of the municipality that are particularly vulnerable?</p> <p>Is there housing in these areas?</p> <p>Are the people who live in these areas more vulnerable?</p> <p>Are there any economic activities that may be affected?</p> | <p>Are there warning systems in place to detect the threat of the river flooding?</p> <p>Have any actions been taken to reduce the impact of flooding?</p> |

¹³ http://www.navarra.es/home_es/Temas/Medio+Ambiente/Sostenibilidad/Red+NELS.htm

STEP 3. Strategic formulation

The strategic nature of climate and energy plans means that, once the assessment has been carried out, a period of reflection is advisable prior to drawing up the action plan. The aim of this reflection is to **agree on the course of action and goals to be achieved by implementing the actions**, and to provide the plan with elements to tie it into other municipal policies and plans.

In this regard, the Local 2030 Agenda is particularly relevant as an integrating framework for local action on climate and energy. For this reason, the following guidelines and recommendations for approaching the strategic formulation of the plan are based on the *Local 2030 Agenda. How to approach Sustainable Development Goals at a local level*. (Ihobe, 2023¹⁴) prepared by Udalsarea 2030.

Tasks

1. Formulating the vision

The vision is a synthetic statement by means of which the intended course of action is defined in order to progress towards achieving the plan's objectives.

- **Time horizon:** the time horizon of the plan would be up to 2030 as this is the reference year for both climate and energy policies and for achieving the Sustainable Development Goals in the framework of the 2030 Agenda. Nevertheless, it would be advisable for the vision to be formulated with a view to 2050 and, therefore, accommodate concepts such as climate neutrality.
- **List of keywords:** it would also be advisable for the vision to incorporate keywords and concepts associated with climate and energy policies. The following are suggested words to consider:
 - Planet.
 - Mitigation.

- Adaptation.
- Vulnerability.
- Climate risk.
- Resilience.
- Fair ecological/energy transition.
- Affordable and clean energy.
- Climate action.
- Climate neutrality.
- People.
- Energy vulnerability.
- Self-consumption/personal use

In addition, it is important for the vision to include other concepts and elements that are unique to the municipality, thereby making it possible to represent a specific reality and differentiate it from plans for other municipalities.

- **Other issues:** it is advisable to articulate an integrated narrative, i.e. one that reflects a coordinated and complementary response in terms of mitigation and adaptation.

2. Formulating goals

Goals are usually set in the form of quantitative objectives, although in cases where quantification is not possible, qualitative goals can also be set.

In this regard, a distinction should be made between mitigation and adaptation goals:

- Goals associated with **mitigation** will be based on the policy and regulatory framework currently in force which has set specific targets to be achieved in terms of reducing greenhouse gas emissions, energy efficiency and incorporating renewables:
 - See benchmark targets based on existing policies and regulations in **Table 4**, Section 3.1 of this guide.
- Goals linked to **adaptation** will also be based on the political and regulatory framework currently in force (Table 4, Section 3.1),

14 Udalsarea - Publications - The LOCAL 2030 Agenda guide. How to address Sustainable Development Goals at a local level. Practical guide

although the objectives in this area are not easily quantifiable:

- Improve the resilience of the region.
- Increase the resilience of the natural environment.
- Increase the resilience of the primary sector and reduce its emissions.
- Anticipate the risks.
- Promote innovation, improvement and knowledge transfer.



How can you incorporate citizen participation into strategic formulation?

Participation could be incorporated in this phase of the project, either through face-to-face activities or by incorporating inputs gathered in the assessment phase, from which words and concepts can be extracted to provide a uniqueness to the vision and allow citizens to become more involved in the plan.

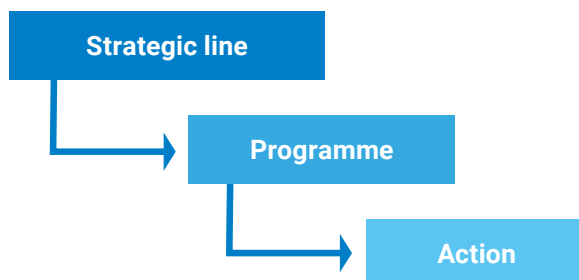
STEP 4. Action plan

Scope

The Action Plan will be based on the conclusions of the assessment, focusing action on those areas identified as priorities. Based on this consideration, and always ensuring traceability with the conclusions of the assessment, the result could be a balanced plan or, conversely, a plan that gives greater weight to the area of mitigation or adaptation.

The criteria for prioritising and defining the specific scope by sector and thematic area and the effort to be made in each of them are described in Section 3.2.

It is recommended that the plan be structured as follows:



Tasks

1. Drawing up the outline of the action plan

As a step prior to formulating actions in the plan, existing actions in other planning frameworks that fulfil the objectives of the climate and energy plan will be identified. Good practices and success stories from other municipalities with similar characteristics will also be analysed, which, depending on the case, could be directly replicated or serve as a source of inspiration.

For the area of adaptation, if there has been no previous planning framework in this area, it is very likely that there is no plan in place containing specific adaptation actions. However, it may be the case that actions have been planned with other objectives or from other approaches but with a clear impact on the municipality's adaptation to climate change. These are the so-called "adaptation assets", the identification and incorporation of which into the outline of the plan is recommended.

2. Characterisation of actions

When it comes to characterising actions, filling in common and specific characterisation fields is recommended, depending on whether the action

contributes to mitigation or adaptation. Based on this consideration, a record sheet is presented below with the fields that it is recommended should be filled in as a minimum:

| Code | Title of the action | |
|---|-----------------------------------|----------------------------|
| STRATEGIC LINE | | |
| PROGRAMME | | |
| Description | | |
| Primary Decision-Maker | | Secondary Decision-Maker |
| Start date | End date | Priority (High/Medium/Low) |
| Cost | Funding | |
| SDG to which it contributes | Continued (yes or no) | |
| Origin of the action | | |
| Comments | | |
| SPECIFIC PART - ACTIONS MITIGATION | | |
| Sector | | |
| Contributes to adaptation (yes or no) | | |
| Energy saving (kWh) | Renewable energy production (kWh) | |
| Emissions avoided (tCO ₂) | Cost/tCO ₂ | |
| Estimated economic saving | Simple Rate of Return | |
| Key mitigation action (yes or no, minimum of 3 key actions) | | |
| SPECIFIC PART - ACTIONS ADAPTATION | | |
| Sector | | |
| Scope | | |
| Contributes to mitigation (yes or no) | | |
| Key risks on which it has an impact | | |
| Target population groups | | |
| Key adaptation action (yes or no, minimum of 3 key actions) | | |

3. Calculation of the overall impact of the Plan

Calculations on the reduction of consumption, an increase in the council's generation of renewables and a reduction in GHG emissions will be required, as well as further calibration of the scope and intensity of the measures until the improvement targets for 2030 are reached.

As far as mitigation is concerned, the scope and intensity of measures included in the climate and energy plan should be sufficient to achieve the target reduction in GHG emissions across all sectors of the municipality by 2030 compared to the baseline year. In addition, it should consider sufficient measures to achieve a 35% reduction in energy consumption by the council by 2030 and renewable generation in municipal facilities equivalent to 32% of the local administration's energy consumption.

In order to do so, it will first be necessary to calculate the amount of reductions in energy consumption and emissions that the implementation of the plan should deliver, as well as the additional amount of renewable generation that it should promote.

This calculation will be based on consumption and emissions in the baseline year, current consumption and emissions, and the forecast evolution of these up to 2030 if the plan is not implemented. Appendix 5.3 sets out the methodology to implement it in detail.

Based on the calculated volume of reduction in consumption, emissions and increase in renewables to be contributed by the plan, the plan should include as many measures and their intensity as necessary to achieve this.

Therefore, once the quantification of the impact of the first version of the measures to be incorporated in the plan is available, it should be compared against the volume of reduction in consumption, emissions and increase in renewables to be provided by the climate and

energy plan. If the impact of the plan is below the required target impact, it will be necessary to iteratively increase the number of measures and their intensity until the target impact is reached.

METHODOLOGICAL NOTES – PLANNING

Alignment with the scope and focus of the Energy Action Plans resulting from Law 4/2019 and Law 1/2024.

The following action types which have been proposed for inclusion in the Energy Action Plans (see Technical Guide to Law 4/2019 on Energy Sustainability of the Basque Country¹⁵) should be taken into consideration when drawing up the climate and energy plan, with regard to the local council sector:

- Control and evolution of energy consumption.
- Renewal of installations, equipment, fleets and vehicles.
- Sustainable mobility.
- Energy rating of existing buildings.
- Energy rating of new buildings and existing buildings undergoing major refurbishment.
- Energy audits of buildings and installations.
- Training plans.
- Awareness-raising plans.

The drafting of the following types of action required by Law 1/2024 should also be taken into account:

- Development of funding tools, regulations and mechanisms, and fiscal support programmes to provide support for the energy transition and climate change to the different actors involved.
- Adaptation to climate change with a gender perspective.
- Transformation of the social and economic model.
- Cross-cutting administration.

15 <https://www.euskadi.eus/sostenibilidad-energetica-de-la-comunidad-autonoma-vasca/web01-a2energi/es/>



How can you incorporate citizen participation into the formulation phase of the action plan?

Citizen participation during this phase of the project is intended to achieve the involvement of social and economic actors and the general public in the co-design of certain actions which, due to their nature

and taking into account who the final beneficiaries will be, will require citizen involvement from the conceptualisation and design phase.

Co-design of actions based on benefits, barriers and actors who will be involved

| SOCIAL BENEFITS | ECONOMIC BENEFITS | ENVIRONMENTAL BENEFITS |
|--|---|---|
| <ul style="list-style-type: none"> • Easier to meet people and build social relationships. • increase in recreational/leisure space. • Education on the environment and the values of citizenship. • Greater safety for people. • Benefits to health. | <ul style="list-style-type: none"> • Creation of employment and opportunities for local businesses. • Attraction of tourism. • Increase in land and property values. | <ul style="list-style-type: none"> • Lower energy consumption. • Improvement in air quality (lower pollution levels). • Improvement in soil quality, stability and reduction of erosion. • Improvement in acoustic quality (lower noise levels). • Improvement in water quality. • Increased carbon storage (emission offsets). • Improvement in biodiversity. |
| <h4>BARRIERS TO IMPLEMENTATION</h4> | | |
| <ul style="list-style-type: none"> • Economic cost of actions. • Social disputes. • Technical barriers. • Lack of technological maturity. • ... | | |
| <h4>ACTORS WHO WILL BE INVOLVED</h4> | | |
| <ul style="list-style-type: none"> • Citizenship. • Local companies. • Research centres. • Educational community. • ... | | |

IMPORTANCE OF THE OFFICIAL APPROVAL OF THE PCE

The approval of a PCE by a plenary session of the council or the corresponding regional body is essential because it gives democratic legitimacy to the document, ensures transparency and public debate, commits the entire municipal corporation politically to carry out the plan, facilitates coordination between the different departments involved and ensures coherence with European commitments such as the Covenant of Mayors for Climate and Energy.

STEP 5. Assessment and Monitoring

Scope

The assessment and monitoring of climate and energy plans may respond to different needs depending on the commitments made by the municipality and regulatory requirements.

In any event, there is a first level common to all municipalities associated with managing public plans and policies. This first level of plan management provides information on the status of actions and the results obtained, as well as resources for accountability and galvanising internal coordination and citizen participation mechanisms.

Based on this consideration, the assessment and monitoring of climate and energy plans can be carried out at two levels: basic and complementary.

- **BASIC LEVEL OF MANAGEMENT:** management of climate and energy plans to measure the degree of implementation of actions and their results.
- **COMPLEMENTARY LEVEL OF MANAGEMENT:** complementary tasks linked to the need to report progress and results.

A model is available in the framework of the Local Agenda 2030 that could act as a reference and guide for managing climate and energy plans.

This model includes the following **tasks** and has the following tools:

Tasks

1. Assessing the degree of implementation of the plan



E-MUGI (ASSESSMENT)

Assessment of the degree of annual implementation of the plan in accordance with a standardised and common methodology for all Udalsarea 2030 municipalities that facilitates a global and partial reading of the results, and an analysis of the contribution to SDGs.

2. Indicator-based performance monitoring



E-MUGI (INDICATORS)

Annual calculation of the Municipal Indicators of Sustainable Development, analysis of their evolution and comparison with average values for the Basque Country.

3. Calculating the municipality's GHG inventory



GHG INVENTORY

Annual calculation of greenhouse gas emissions associated with the following sectors: mobility, residential, services (including councils), waste and primary waste.

4. Calculating the carbon footprint of councils



CARBON FOOTPRINT

Annual calculation of the greenhouse gas emissions associated with the council's activity, specifically the energy consumption of buildings and public lighting and the fuel consumption of the municipal fleet.

5. Reporting results and accountability

It is recommended that the results of the evaluation and monitoring process of the climate and energy plan be made known and shared with citizens through an annual (or biennial) report summarising the progress of the plan and the results of the main monitoring indicators.

6. Reporting progress and results



COVENANT OF MAYORS FORM

Municipalities that are members of the Covenant of Mayors for Climate and Energy and that align their climate and energy plan with PACES must complete the Covenant's online monitoring form including GHG inventory data and the degree of implementation of the various measures considered on a biennial basis.



FUTURE BASQUE GOVERNMENT REGISTER

Law 1/2024 will create the Basque Register of Energy Transition and Climate Change Initiatives, attached to the Basque Government's department responsible for energy and climate change, in which the owners of public or private activities will be registered free of charge, in order to publicly record the commitments undertaken in relation to adopting climate action measures linked to their activity, including those in the first sector.

The register will consist of a section for the compulsory registration of activities which will be set up by law, and other sections for organisations that want to publicise their climate action commitments on a voluntary basis.



How can you incorporate citizen participation into the monitoring phase?

The incorporation of citizen participation into the implementation and monitoring phase of the plan, i.e. once the planning process has been completed, will depend, to a large extent, on the participatory culture and dynamics of the municipality. However, maintaining an open channel that makes it possible to make progress on collaborative lines of work between the administration and citizens and thus facilitate the **joint implementation** of certain actions is recommended.

Furthermore, **accountability and reporting the progress** made in implementing the measures are of particular importance in this phase.

Annual or biannual reporting is recommended, based on the results of the assessment of the degree of implementation and the calculation of indicators, as well as the council's GHG inventory and carbon footprint.

05

Appendices



5.1

Detailed outline of the process

The outline of tasks associated with the five steps for formulating a climate and energy plan is presented below:

| | | |
|---|---|--|
| Aspects associated with integrating a fair transition | STEP 1: PREPARATORY PHASE | 1. Definition of the starting point. |
| | | 2. Identifying sources of information and compiling documentation. |
| | | 3. Setting up an internal working groups or commission. |
| | | 4. Design of an internal and external communication plan. |
| | | <i>Tasks associated with citizen participation in the preparatory phase.</i> |
| | STEP 2: ASSESSMENT OF MITIGATION AND ADAPTATION | Contextualisation of municipalities in the area of climate change. |
| | | Compiling and analysing information. |
| | | Assessment of mitigation. |
| | | 1. Energy balance and GHG inventory of the municipality's sectors. |
| | | 2. Energy balance, GHG inventory and carbon footprint of councils. |
| | | 3. Energy analysis of municipal facilities. |
| | | Assessment of adaptation. |
| | | 1. Analysis of historical trends and climate projections. |
| | | 2. Assessing vulnerability and risk to climate change. |
| | | <i>Tasks associated with citizen participation in the assessment phase.</i> |
| | STEP 3: STRATEGIC FORMULATION | 1. Formulating the vision. |
| | | 2. Formulating goals. |
| | | <i>Tasks associated with citizen participation in the strategic formulation phase.</i> |
| | STEP 4: ACTION PLAN | 1. Drawing up the outline of the action plan. |
| | | 2. Characterisation of actions. |
| 3. Calculation of the overall impact of the Plan. | | |
| <i>Tasks associated with citizen participation in the action plan formulation phase. Approval of the plan by the plenary session of the local council or competent regional body.</i> | | |
| STEP 5: ASSESSMENT AND MONITORING | 1. Assessing the degree of implementation of the plan. | |
| | 2. Indicator-based performance monitoring. | |
| | 3. Calculating the municipality's GHG inventory. | |
| | 4. Calculating the carbon footprint of councils. | |
| | 5. Reporting results and accountability. | |
| | 6. Reporting progress and results. | |
| | <i>Tasks associated with citizen participation in the assessment and monitoring phase Biennial monitoring report and Register - Law 1/2024.</i> | |

5.2

Resources for planning

Typical mitigation measures

The following is a list of typical mitigation measures grouped by thematic areas that could potentially be integrated into a climate and energy plan:

Public buildings

| AREA | TITLE |
|--------------------------|---|
| HEATING | Replacement of boilers with more efficient low-temperature or condensing boilers. |
| | Replacement of oil or LPG boilers with high efficiency gas boilers. |
| | Installation of thermostatic valves on radiators. |
| | Installation of heating system control units. |
| | Zoning of heating circuits. |
| | Improved insulation of the heating production system and heating system pipes. |
| AIR CONDITIONING | Replacement of cooling/heating production equipment with air conditioning systems. |
| | Improved insulation of the air conditioning production system and air conditioning system pipes. |
| | Installation of set-point temperature control thermostats. |
| | Implementation of ventilation protocols to promote free cooling. |
| DOMESTIC HOT WATER (DHW) | Replacement of DHW production equipment with more efficient systems using natural gas boiler or heat pump technology. |
| | Improved insulation of the DHW production system and DHW system pipes. |
| LIGHTING | Replacement of inefficient lamps and light fittings with maximum efficiency equipment using LED technology. |
| | Installation of presence detectors and photosensitive cells. |
| | Installation of stepping switches for centralised lighting control in large buildings. |
| | Creating sectors with lines of lighting. |
| | Regulating outdoor and/or ornamental lighting. |
| ELECTRICAL EQUIPMENT | Replacing old equipment and appliances with more efficient Class A equipment. |
| | Configuration of energy saving software for office equipment. |

| AREA | TITLE |
|-----------------------------|--|
| BUILDING ENVELOPE | Replacement of single glazed windows with double glazing. |
| | Implementation of green roofs and vertical gardens. |
| | Reduction of air infiltration by using passive systems. |
| | Improvement in the thermal insulation of buildings by means of External Thermal Insulation Composite Systems (ETICS) or ventilated façade systems. |
| | Install internal and/or external sunscreens. |
| ENERGY MANAGEMENT | Implementation of a web application for accounting for and managing energy supplies. |
| | Implementation of monitoring and remote management systems. |
| | Installation of a building management system (BMS) to centrally control operating hours, lighting levels, set point temperatures and machine status. |
| | Continuous training of buildings' technical staff on the efficient use and management of the installations. |
| RENEWABLE GENERATION | Installation of electricity production systems using photovoltaic solar energy for self-consumption. |
| | Installation of systems for using solar thermal energy for domestic hot water and air-conditioning support. |
| | Installation of geothermal heating and cooling systems. |
| | Replacement of the boiler with a biomass boiler. |

Public Lighting

| AREA | TITLE |
|----------------------------------|---|
| LIGHTING | Replacement of lamps and lighting fixtures with LED technology in public lighting and traffic lights. |
| REGULATION AND MANAGEMENT | Incorporation of advanced regulation and control systems. |
| | Centralised management systems. |

Fleet of vehicles

| AREA | TITLE |
|--------------------------|---|
| FLEET OF VEHICLES | Renewal of the municipal vehicle fleet with electric/plug-in hybrid vehicles. |
| | Renewal of the municipal vehicle fleet with alternative fuel vehicles (biofuels, LNG, LPG). |
| MANAGEMENT | Include vehicle charging points. |

Housing and services

| AREA | TITLE |
|--|--|
| TOWN PLANNING AND BUILDING | Incorporation of high energy efficiency criteria in new urban developments. |
| | Incorporation of high energy efficiency criteria in the construction of new public housing. |
| | Sustainable building ordinance. |
| | Reduction in the cost of building permits for energy renovation. |
| COMMUNICATION AND AWARENESS-RAISING | Incorporation of criteria to include electric vehicle charging in new buildings. |
| | Awareness-raising activities aimed at citizens. |
| | Awareness-raising activities in schools. |
| | 50-50 projects in schools. |
| | Training activities on energy saving and efficiency. |
| | Energy audits in shops. |
| | Creation and stimulation of an energy office. |
| RENEWABLES AND SELF-CONSUMPTION | Home energy management applications. |
| | Access to consumption data digital meters. |
| | Reduction in Property Tax (IBI) for installing renewable energies. |
| | Reduction in cost of building permits for installing renewable energies. |
| | Facilitating the processing of photovoltaic installations on roofs by means of prior notification. |
| | Promotion of shared self-consumption in buildings. |
| ENERGY VULNERABILITY | Promotion of local renewable energy communities. |
| | Promotion of a biomass heat network. |
| | Advice on electricity bill savings. |
| ENERGY VULNERABILITY | Energy audits of vulnerable households. |
| | Savings actions in vulnerable households. |

Waste

| AREA | TITLE |
|--|--|
| REDUCTION, REUSE AND RECYCLING IN PUBLIC ADMINISTRATION | Integration of environmental criteria into public procurement and the contracting of goods and services. |
| | Raising the awareness of municipal staff on the prevention of waste generation and its selective collection at municipal facilities. |
| | Promoting the reuse of materials in schools. |
| | Waste prevention and recycling protocol for public events. |

| AREA | TITLE |
|---|--|
| REDUCTION, REUSE AND RECYCLING AT HOME | Campaigns and initiatives to promote responsible food purchasing and consumption. |
| | Continuous promotion of public involvement in minimising waste and selective waste collection. |
| | Continuous improvement of collection systems for different household waste fractions. |
| REDUCTION, REUSE AND RECYCLING IN ECONOMIC SECTORS | Raising the awareness of the service sector on minimising waste and sorting waste at source. |
| | Increasing control over industrial waste generated and promoting its minimisation. |
| | Promoting the proper management of agricultural waste. |
| | Promoting the proper management of construction waste. |
| | Continuous improvement of waste management systems in the various sectors of activity. |

Mobility and transport

| AREA | TITLE |
|--|---|
| PLANNING AND MANAGEMENT | Drafting of sustainable urban mobility plans. |
| | Traffic and parking management aimed at minimising traffic in town centres. |
| | Drafting of sustainable mobility plans for workplaces. |
| PUBLIC TRANSPORT | Increasing the provision of collective public transport services. |
| | Improving collective transport information through digitisation. |
| | Implementation of fare policies that facilitate the use of public transport. |
| | Adaptation of the public transport service to the needs of isolated areas. |
| PEDESTRIANS AND CYCLING | Urbanisation of public space to make it safe, pleasant and attractive for pedestrians and cyclists. |
| | Increase in the number of streets with priority for pedestrians and traffic calming zones. |
| | Increase in the network of cycle lanes to access different neighbourhoods and urban mobility centres of interest. |
| VEHICLE FLEET | Increase in the provision of inter-urban cycle lanes. |
| | Tax incentives and subsidies for renewing vehicle fleets with electric vehicles. |
| | Restrictions on access to more polluting vehicles. |
| | Discount on public parking fees for electric vehicles. |
| AWARENESS RAISING AND COMMUNICATION | Promotion of electric vehicle charging points. |
| | Awareness-raising activities on sustainable mobility. |
| | Promotion of efficient driving courses. |
| | Safe school roads initiatives. |

Water

| AREA | TITLE |
|---|--|
| INFRASTRUCTURE | Incorporation of technologies to improve energy efficiency in wastewater treatment and sanitation processes. |
| | Preventive maintenance programme for the supply and sanitation network. |
| | Implementation of leakage detection systems and control of consumption not accounted for. |
| PUBLIC ADMINISTRATION SAVINGS | Implementation of systems to control and account for water consumption at municipal facilities. |
| | Installation of water-saving systems to increase the efficiency of water consumption and municipal facilities. |
| | Use of untreated water for irrigation or street cleaning. |
| SAVINGS IN SECTORS OF THE MUNICIPALITY | Information campaigns on good practices aimed at reducing water consumption in the domestic and services sector. |
| | Reuse of treated and rainwater for agricultural use. |

Industry

| AREA | TITLE |
|--|---|
| ENERGY PLANNING AND MANAGEMENT | Support for drawing up energy improvement plans. |
| | Promotion of voluntary energy audits. |
| | Provision of shared ICT energy management services and applications for energy management for groups of companies and industrial parks. |
| | Promotion of the implementation of energy management systems through ISO50001 certification. |
| ENERGY SAVINGS AND EFFICIENCY | Tax allowances and subsidies for investment in energy saving and energy efficiency. |
| | Training and awareness-raising activities on energy saving and energy efficiency. |
| RENEWABLES AND SELF-CONSUMPTION | Tax allowances for installing renewable energies. |
| | Reduction in cost of building permits for installing renewable energies. |
| | Facilitating the processing of photovoltaic installations on roofs by means of prior notification. |
| | Promotion of shared self-consumption at Industrial parks. |
| | Promotion of local renewable energy communities in industrial parks. |





Primary Sector





| AREA | TITLE |
|---|--|
| MANAGEMENT OF PRIMARY ACTIVITIES | Dissemination and promotion of agricultural practices aimed at minimising GHG emissions. |
| | Dissemination and promotion of sustainable forest management practices aimed at maximising CO ₂ absorption. |
| ECONOMIC PROMOTION AND LOCAL CONSUMPTION | Initiatives to stimulate and support local commercialisation of agricultural and livestock production. |
| | Initiatives to stimulate and support the commercialisation of biomass for energy generation. |





Typical adaptation measures

Measures included in the publication *Assessment of the Vulnerability and Risk of Basque Municipalities to Climate Change* (Ihobe, 2019).

| Measures | Impact of heat waves on human health | Impact of river flooding on the urban environment | Impact of floods due to rising sea levels on the urban environment | Impact of the increase in droughts on economic activities | Sector | Types |
|---|--------------------------------------|---|--|---|--|--|
| 01. Increase the green and permeable surface area of squares, public spaces and buildings in the municipality. | ■ | ■ | | | Urban environment and infrastructure - territorial planning and urban planning | NBS |
| 02. Carry out refurbishment work to improve the energy efficiency of public buildings. | ■ | | | | Urban environment and infrastructures - buildings | Structural |
| 03. Create a network of local ecological connectivity to maintain biodiversity in the urban ecosystem. | ■ | ■ | ■ | ■ | Natural environment - terrestrial and coastal ecosystems | NBS |
| 04. Promote the greening of rooftops and balconies of buildings, along with common spaces and courtyards. | ■ | | | | Urban environment and infrastructures - buildings | NBS |
| 05. Draw up a preventive action protocol for heat wave events involving municipal actors, including early warnings, advice and recommendations for the vulnerable population. | ■ | | | | Health and civil protection - health | Warning systems |
| 06. Identify, adapt and maintain urban cooling zones as a resource for the vulnerable population during heat waves (shaded squares and promenades, fountains...). | ■ | | | | Health and civil protection - health | NBS |
| 07. Promote awareness and raise public awareness of the possible effects of climate change on the municipality. | ■ | ■ | ■ | ■ | Others - other sectors not covered and cross-cutting actions | Awareness raising and training measures |
| 08. Conduct an analysis of existing water resources and demand under future climate conditions (anticipate the need to increase water storage capacity in advance). | ■ | | | | Natural environment - water resources | Knowledge generation and decision-making support |
| 09. Regularly update civil protection emergency plans incorporating anticipated climate risks. | ■ | ■ | ■ | ■ | Health and civil protection - civil protection and emergencies | Preventive |

| Measures |  Impact of heat waves on human health |  Impact of river flooding on the urban environment |  Impact of floods due to rising sea levels on the urban environment |  Impact of the increase in droughts on economic activities | Sector | Types |
|---|---|--|---|---|--|--|
| 10. Drawing up protocols for action in a participatory manner together with neighbours who may be affected by specific impacts on a regular basis. | ■ | ■ | ■ | | Health and civil protection - civil protection and emergencies | Preventive |
| 11. Draw up a list of homes for the elderly, nursery schools and other centres where the presence of people vulnerable to high temperatures can be expected. | ■ | | | | Health and civil protection - health | Awareness raising and training measures |
| 12. Install shallow, rain-fed urban swimming pools to counteract the "heat island" effect | ■ | | | | Urban environment and infrastructures - urban environment | Structural |
| 13. Equip the homes of the most vulnerable people with measures that help to improve comfort and thermal control inside the home in periods of high temperatures: thermometers, fans, awnings, etc. | ■ | | | | Urban environment and infrastructures - buildings | Preventive |
| 14. Re-naturalise riverbeds in areas exposed to and vulnerable to river flooding | | ■ | | | Natural environment - water resources | NBS |
| 15. Implementing sustainable urban drainage systems (SUDs) | | ■ | | | Natural environment - water resources | Structural |
| 16. Make sure that municipal planning regulations for new building work take the increased risk of flooding (coastal and river) and increased risk of drought into account | | ■ | ■ | | Urban environment and infrastructures - buildings | Plans and programmes, regulations, governance and management |
| 17. Restrict new building work in flood-prone areas (even those not currently at high risk of flooding). | | ■ | ■ | | Urban environment and infrastructure - territorial planning and urban planning | Plans and programmes, regulations, governance and management |
| 18. Check the insurance policies taken out by the council and make sure that they cover the risks associated with climate change. | | ■ | ■ | | Activity - finance - insurance | Plans and programmes, regulations, governance and management |

| Measures |     | | | | Sector | Types |
|--|--|---|--|---|--|--|
| | Impact of heat waves on human health | Impact of river flooding on the urban environment | Impact of floods due to rising sea levels on the urban environment | Impact of the increase in droughts on economic activities | | |
| 19. Coordinate management and/or action in flood-prone areas with the relevant, competent public actors. | | ■ | | | Urban environment and infrastructure - territorial planning and urban planning | Plans and programmes, regulations, governance and management |
| 20. Analyse the capacity of the municipal sanitation network under climate change scenarios. | | ■ | | | Natural environment - water resources | Structural |
| 21. Install "rain gardens". Rain gardens consist of depressed areas in the landscape with specific vegetation (indigenous long-rooted plants and grasses) to absorb rainwater, which are filled during rainfall events and the water percolates into the ground instead of being sent to the mains | | ■ | | | Natural environment - water resources | NBS |
| 22. Change of location of flood-prone public facilities | ■ | | ■ | | Urban environment and infrastructure - territorial planning and urban planning | Preventive |
| 23. Build storm tanks in order to increase rainfall drainage capacity and thereby reduce flood risks. | | ■ | | | Urban environment and infrastructures - urban environment | Structural |
| 24. Establish a procedure for checking and maintaining the municipality's infrastructures that are exposed to rising sea levels and/or strong waves. | | | ■ | | Urban environment and infrastructures - urban environment | Plans and programmes, regulations, governance and management |
| 25. Study the effect of waves and rising sea levels on currents and beaches in the municipality. | | | ■ | | Natural environment - terrestrial and coastal ecosystems | Knowledge generation and decision-making support |
| 26. Slow the advance of the coastline through different types of action (dune restoration, beach regeneration, marsh and wetland regeneration, etc.). | | | ■ | | Natural environment - terrestrial and coastal ecosystems | NBS |
| 27. Build dykes that aim to reduce the risk from events associated with rising sea levels. | | | ■ | | Urban environment and infrastructures - urban environment | Structural |

| Measures |  Impact of heat waves on human health |  Impact of river flooding on the urban environment |  Impact of floods due to rising sea levels on the urban environment |  Impact of the increase in droughts on economic activities | Sector | Types |
|---|---|--|---|---|--|--|
| 28. Adapt sanitation networks to the possibility of overflows and floods, especially where rivers discharge into the sea. | | | ■ | | Urban environment and infrastructures - critical infrastructures | Structural |
| 29. Monitor the shoreline for inflows of solids from rivers and other coastal areas in order to stabilise the shoreline. This measure must be implemented in coordination with other municipalities and public administrations. | | | ■ | | Natural environment - terrestrial and coastal ecosystems | Preventive |
| 30. Implement early warning systems for forest fires | | | | ■ | Health and civil protection - civil protection and emergencies | Warning systems |
| 31. Consider using alternative species for trees and shrubs in parks and green areas, selecting varieties that are more drought tolerant | | | | ■ | Natural environment - terrestrial and coastal ecosystems | NBS |
| 32. Facilitate the adaptation of the primary sector (agriculture and fisheries) to the new climate conditions (to combat the negative effects of climate change and take advantage of the opportunities arising from it). | | | | ■ | Activity - agriculture, forestry, livestock and fisheries | Knowledge generation and decision-making support |
| 33. Explore new markets and new economic opportunities arising from climate change | | | | ■ | Others - other sectors not covered and cross-cutting actions | Knowledge generation and decision-making support |
| 34. Dedicate areas at higher risk of flooding to less sensitive uses such as parks and sports areas. | | ■ | ■ | | Urban environment and infrastructure - territorial planning and urban planning | Preventive |
| 35. Avoid locating critical facilities (hospitals, fire and police stations, waste treatment plants, etc.) in areas at risk, especially from flooding and fire, by regulating land uses in the land classification process. | ■ | ■ | ■ | | Urban environment and infrastructure - territorial planning and urban planning | Preventive |
| 36. Avoid creating underground car parks in areas at risk of flooding. | | ■ | ■ | | Urban environment and infrastructure - territorial planning and urban planning | Preventive |

Data sheet descriptors

Common part

| DESCRIPTOR | DEFINITION |
|---|--|
| Code | Identifying number of the measure. The numbering corresponds to: (Line), (Programme) and (Measure Number). |
| Title | Synthetic and self-explanatory text relating to the measure. |
| Strategic line | Strategic line to which the measure relates. |
| Programme | Programme in which the measure is integrated (more detailed than the strategic line). |
| Description | Definition and basic characterisation of the measure. It provides the minimum elements necessary for its subsequent implementation and assessment. |
| Main person in charge / Secondary person in charge | Agent or entities involved in executing or implementing the measure. The primary agent is distinguished from secondary agents that will have to support the measure. They may be of a very diverse nature, and may not necessarily involve the council. |
| Start year / end year | Time frame for implementing action: planned start year/planned end year. |
| Priority | Sets priority levels (high, medium, low) based on different variables depending on whether the action is mitigation or adaptation. In the case of mitigation, its effectiveness in terms of the absolute value of energy savings and reduction in GHG emissions , its efficiency in terms of reduction in GHG emissions per unit cost, and its economic viability in terms of a positive rate of return will be taken into account; in the case of adaptation, other variables will be taken into consideration, such as the pre-defined levels of action (I, II and III) in terms of current and future risk , and its effectiveness in terms of improved adaptive capacity . |
| Cost | Estimated economic cost or investment to execute or implement the action. Expressed in euros. |
| Funding | Entity or body that may fund the measure. |
| Continuous | Defines whether the action is of a continuous nature and will therefore never be completed (mainly education, awareness raising, etc.). |
| SDG | SDG to which the action primarily contributes. |
| Origin of the action | Origin of the action (according to categories defined in the PACES): <ul style="list-style-type: none"> • Local authority. • Regional coordinator of the Covenant. • Others (National, Regional, etc.). |
| Comments | Comments to clarify and/or justify content incorporated into other fields in the data sheet, in particular on the scope of the measure and the estimated costs applied. Considerations on energy savings and emission reductions can be found in the relevant appendices. |

Specific part - Mitigation

| DESCRIPTOR | DEFINITION |
|--|--|
| Sector | Scope of analysis to which the measure belongs: <ul style="list-style-type: none"> • Housing, Services, Councils, Municipalities (includes Housing and Services), (see Table 5). |
| Contributes to adaptation (yes or no) | Capacity of specific mitigation actions to simultaneously contribute to adaptation. |
| Energy savings | Amount of energy that can be saved by implementing the measure. |
| Avoided emissions | Reduction in greenhouse gas emissions. Expressed in tonnes of CO ₂ equivalent/year. |
| Economic savings | Economic savings resulting from implementing the measure. Expressed in €/year. |
| Renewable energy production | Expected annual energy production. Expressed in kWh/year. |
| Cost/tCO₂ | Cost of each unit of greenhouse gas emissions. Expressed in euros/tonne of CO ₂ equivalent. |
| Simple rate of return | Period in which the economic cost of executing or implementing the action is recovered through the associated energy and economic savings. Expressed in years. |
| Key action (yes or no) | An action considered to be key to achieving the mitigation objectives proposed in the PCE (a minimum of 3 key actions has been set for inclusion in the plan). |

Specific part - Adaptation

| DESCRIPTOR | DEFINITION |
|--|--|
| Sector | Scope of analysis to which the measure belongs: <ul style="list-style-type: none"> • Natural environment, urban environment, activity, health and civil protection etc. (see Table 7). |
| Scope | Scope of action based on the categories set out in Table 7. |
| Contributes to mitigation (yes or no) | Capacity of specific adaptation actions to simultaneously contribute to mitigation. |
| Key risks on which it has an impact | Climate hazard index for a given sector: <ul style="list-style-type: none"> • Natural environment. • Primary sector. • Urban environment. • Human health. |

| | |
|---------------------------------|--|
| Target population groups | <p>Main action groups at which the action is targeted:</p> <ul style="list-style-type: none"> • Women. • Children. • Youth. • Elderly people. • Marginalised groups. • People with disabilities. • People with chronic illnesses. • Low-income households. • Unemployed people. • People living in substandard housing. • Migrants and displaced people. • Others. • All. |
| Key action (yes or no) | <p>An action considered to be key to achieving the adaptation objectives proposed in the PCE (a minimum of 3 key actions has been set for inclusion in the plan).</p> |

Calculating scenarios

The scope and intensity of measures included in the climate and energy plan should be sufficient to achieve the targets of reduction in GHG emissions by 2030 compared to the baseline year.

The following steps will be required to do this:

1. Set the baseline year and calculate the associated GHG emissions

Each region or municipality may choose to set its own baseline year. However, it is recommended that baselines be between 2005 and 2010 where possible, or alternatively, the first year after 2010 for which information is available. The adoption of a baseline year in this period will make it possible to highlight the contribution of measures implemented over the last years and make it more feasible to achieve the reduction targets. It will also provide a longer time series that will make it easier to identify trends over a sufficiently long period of time.

2. Calculate the emissions target to be achieved by 2030

The target volume of emissions for 2030 will be the result of multiplying the corresponding emission target factor by the volume of emissions in the baseline year, which represents the commitment to reduce the GHG emissions of the municipality.

The calculation of the emission target factor is based on the following formula:

$$1 - (\text{Municipal reduction target} / 100).$$

Example: For a GHG emission reduction target of 55%, the emission target factor will be: $1 - (55/100) = 0.45$.

3. Formulate the Baseline Scenario

The baseline scenario for the municipality's estimated GHG emissions should be defined in the event that the climate and energy plan is not implemented. The following should be taken into consideration to this end:

- Socio-economic variables (overall and sectoral GDP, population, household size, etc.).
- Evolution of energy intensity and efficiency by sector.
- Evolution of the energy and electricity mix.
- Evolution of the demand and efficiency parameters of the various non-energy areas considered in the PCE (mobility, waste and water).

4. Calculate the reduction in the volume of GHG emissions to be contributed from the measures contained in the climate and energy plan

The additional reduction in the volume of GHG emissions to be achieved under the plan will be the difference between the emissions for 2030 in the baseline scenario (point 3) and the target volume of emissions to be achieved for the same year (point 2).

Figure 10 shows the calculation of the GHG emissions to be reduced under the climate and energy plan (PCE) based on the level of emissions in the baseline scenario ($E_{\text{baseline}} 2030$) and the target emissions calculated from the base year ($E_{\text{OBJ}} 2030$).

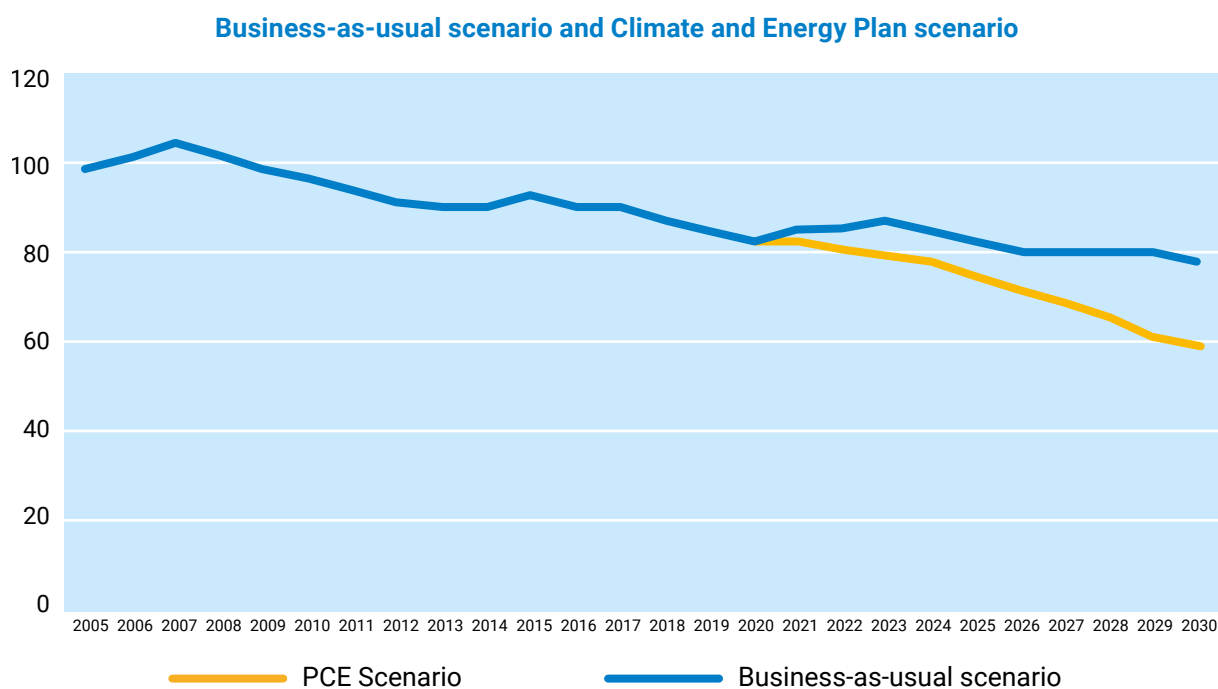


Figure 10. Example of a definition of GHG emissions to be reduced by means of a climate and energy plan for a municipality with a baseline in 2005 and reduction targets of 40% for 2030.

The same process should be applied to determine the reduction in energy consumption for local government to which the PCE will contribute and to meet the 35% reduction targets compared to the baseline year. The same should be done for the renewable generation target for municipal facilities compared to the consumption of these facilities by 2030.

In the event that the energy and climate targets to be achieved by 2030 are modified in the future, the calculation will be the same as the one presented, but modifying the calculation of the target volume of emissions or energy consumption to be achieved by 2030.

Based on the calculated volume of reduction in consumption, emissions and increase in renewables to be contributed by the plan, the plan should include as many measures and their intensity as necessary to achieve this.

Municipalities that choose to join the Covenant will need to incorporate complementary measures into their plans:

- Main actions already undertaken by the council that may have contributed to reducing emissions between the baseline year and the time of implementing the PCE.
- Main actions carried out or that may be carried out by supra-municipal administrations and the private sector that may have an impact on the reduction of GHG emissions in the municipality.

The total reduction in GHG emissions achieved under the plan should be equivalent to at least the target percentage selected by the municipality of the emissions in the baseline year adopted, with the incorporation of these additional measures.

5.3

Keys to contracts for implementing a Climate and Energy Plan (PCE)

a. What is the scope of contracts for implementing PCEs?

The scope of the Climate and Energy Plan (PCE) will vary depending on the starting point for each municipality. Contracts may be for a lower amount if prior work such as an Energy Action Plan (PAE)

or Adaptation Plan has already been carried out, or if the municipality already has an updated inventory of energy consumption for municipal facilities and equipment (or energy accounting software). Although the time frame may vary depending on each case, the process generally takes between 7 and 9 months from the approval of the draft PCE to its final draft.

Below is a list of some of the PCE public contract specifications available on the Basque Country's procurement platform:

| Municipality | Inhabitants | Year | Starting point | Basic budget for tender (exc. VAT) | Specif. | PCE* |
|--------------|-------------|------|---|------------------------------------|----------------------|----------------------|
| Azpeitia | 15,343 | 2025 | No information | € 18,092 | Link | Unpublished |
| Durango | 30,068 | 2021 | No information | € 94,200 | Link | Link |
| Ermua | 15,532 | 2025 | Energy Action Plan (PAE) | € 13,177 | Link | Unpublished |
| Galdakao | 29,332 | 2022 | Has energy accounting software | € 32,000 | Link | Link |
| Hernani | 20,446 | 2025 | Energy Action Plan (PAE) | € 12,000 | Link | Unpublished |
| Irun | 62,933 | 2019 | Energy Action Plan (PAE) | € 72,450 | Link | Link |
| Legutio | 2,091 | 2023 | No information | € 26,446.28 | Link | Link |
| Oiartzun | 10,291 | 2022 | Energy Action Plan (PAE) and energy accounting software | € 19,700 | Link | Link |
| Oñati | 11,433 | 2025 | No information | € 23,250 | Link | Unpublished |
| Ortuella | 8,536 | 2024 | Energy Action Plan (PAE) | € 25,800 | Link | Unpublished |

** PCEs that were drawn up before Law 1/2024 came into force should be reviewed to update any aspects that were not taken into account and that are covered by Law 1/2024, using this guide as a reference. In accordance with the provisions of Art. 18 of Law 1/2024, PCEs must incorporate the provisions of Law 4/2019, of 21 February, on Energy Sustainability in the Basque Country, and integrate the climate variable from the perspective of mitigating and adapting to climate change.*

b. Are there grants available for drawing up PCEs?

The four public administrations in the Basque Country have subsidy lines with different time frames and amounts. The links to the latest calls can be found below.

- Basque Government (Ihobe): [Link](#)
- Araba Provincial Council: [Link](#)
- Bizkaia Provincial Council: [Link](#)
- Gipuzkoa Provincial Council: [Link](#)

5.4

Glossary¹⁶

Adaptation

The process of adjusting, in human and natural systems, to actual or predicted climate and its effects, in order to moderate harm or take advantage of beneficial opportunities.

Adaptive capacity

The capacity of systems, institutions, humans and other organisms to adapt to potential harm, take advantage of opportunities or deal with consequences.

Climate neutrality

A concept referring to a state in which human activities have no net effect on the climate system. In this study, carbon neutrality is mainly applied where emissions are offset by CO₂ capture and the balance is 0.

Climate projection

A simulated response of the climate system to various scenarios of emissions or concentrations of greenhouse gases and aerosols, usually obtained from simulations using climate models. Climate projections differ from climate predictions in that they depend on the emissions/concentrations/radiative forcing scenario used, based on assumptions relating to socio-economic and technological developments, for example, which may or may not materialise.

Exposure

This refers to the presence of people, livelihoods, environmental services, resources, infrastructure and economic, social and cultural assets in areas that could be adversely affected by a hazard and therefore be subject to impacts, loss and damage.

Extreme weather event

An event that is rare at a particular place and time of the year. Definitions of rare vary, but an extreme weather event is normally as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season).

Greenhouse effect

Infrared radiation effect of all the materials that absorb infrared in the atmosphere. Greenhouse gases, clouds, and (to a lesser extent) aerosols absorb terrestrial radiation emitted by the Earth's surface and elsewhere in the atmosphere. These substances emit infrared radiation in all directions, but, all else being equal, the net amount emitted into space is normally less than would have been emitted in the absence of these absorbers due to the decrease in temperature with altitude in the troposphere and the consequent weakening of the emission. An increase in the concentration of greenhouse gases increases the magnitude of this effect; the consequence is an increase in the temperature of the earth's surface and troposphere.

16 Reference glossary used: Assessment of Risks and Impacts of Climate Change in Spain (ERICC-2025 by the Spanish acronym)

Greenhouse gases

These are natural and anthropogenic gaseous components of the atmosphere that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself, and clouds. This property causes the greenhouse effect.

Hazard

Potential for a climatic phenomenon or physical process, such as an extreme event (floods, heat waves, storms, droughts) or gradual trend (rising sea levels, desertification), to cause damage to people, infrastructure, ecosystems and socio-economic activities.

IPCC

Intergovernmental Panel on Climate Change (IPCC). This group was set up in 1988 to provide comprehensive assessments of the state of scientific, technical and socio-economic knowledge on climate change, its causes, potential impacts and response strategies. Since the start of its work in 1988, the IPCC has prepared five assessment reports and in 2021 is in its sixth assessment cycle.

Key risk

Key risks are potentially serious risks that can cause impacts in the present and whose severity could increase over time due to changes in the nature of the hazards, in the exposure or in the vulnerability of the elements analysed to those hazards.

Mitigation

Human action aimed at reducing emissions and improve sinks of greenhouse gases.

RCP

This is an abbreviation for 'Representative Concentration Pathways', a concept developed by the IPCC to reflect greenhouse gas concentration pathways in the atmosphere associated with radiative forcing (measured in watts per square metre). The most common RCPs are RCP 2.6 (drastic emissions reduction), RCP 4.5 (emissions peaking around 2040), and RCP 8.5 (high emissions, no significant mitigation).

Resilience

The capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance by responding or reorganising themselves in ways that maintain their essential function, identity and structure, while retaining the capacity to adapt, learn and transform.

Risk

The potential for adverse consequences of a climate-related hazard, or adaptation or mitigation responses to that hazard, on life, livelihoods, health and well-being, ecosystems and species, economic, social and cultural assets, services (including ecosystem services), and infrastructure. Risks stem from the interaction of vulnerability (of the system affected), exposure over time (to the hazard), and the (climate-related) hazard itself. Hazards, exposure and vulnerability may be subject to uncertainty in terms of magnitude and probability of occurrence, and each may change over time and space due to socio-economic changes and human decision-making.

Scenario

A plausible description of a credible future, based on a coherent, internally consistent set of assumptions about the main variables and the most important relationships. Please note that scenarios are not predictions or forecasts, but they are useful because they provide a picture of the consequences of the evolution of different situations and measures.

Sensitivity

The degree of adverse or beneficial effects of climate variability or change on a system or species. The effect may be direct (e.g. a change in crop yield in response to a change in average temperature, or the range or variability of temperature) or indirect (e.g. damage caused by an increase in the frequency of coastal flooding due to rising sea levels) (IPCC, 2018b).

Sink

Any process, activity or mechanism that removes a greenhouse gas, aerosol or precursor of either of these from the atmosphere (IPCC, 2014a).

Vulnerability

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts that include sensitivity and susceptibility to harm and lack of capacity to respond and adapt.

CLIMATE AND ENERGY PLANS

IN THE BASQUE COUNTRY

GUIDE FOR DRAWING UP
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