



SYNTHESIS DOCUMENT



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WHAT IS THE 2030 ENERGY TRANSITION AND CLIMATE CHANGE STRATEGY OF PAMPLONA?



2030 ENERGY TRANSITION AND CLIMATE CHANGE STRATEGY OF PAMPLONA

The 2030 Energy Transition and Climate Change Strategy is part of the GoGreen Plan of the city of Pamplona; strategy development that takes into account sustainability as a transversal characteristic of the city promoted at the municipal level. A transformative proposal towards a much healthier city that is committed to Climate Change. This work is being implemented by Pamplona City Council with the aim of achieving a model of city that is adapted, innovative, modern and decarbonised in the coming decades.

The **2030 Energy Transition and Climate Change Strategy** for the municipality of Pamplona defines the objectives, lines and actions to be carried out to respond locally to the climate change threat in the context of sustainable development.

In other words, it aims to design a medium-term strategy with a city approach based on transversality, to contribute to limiting the temperature increase to 1.5°C with respect to pre-industrial levels, to increase the capacity to adapt to the adverse effects of climate change and to promote climate-resilient development with low greenhouse gas emissions. A strategy that promotes fair transition and energy sovereignty through the development of renewable energies, new technologies and the new roles that citizens and associations, as well as companies, industries and city agents must assume.



Carried out so far:

Energy balance of Pamplona for the period 2005 – 2018.

Alignment of the Strategy with the commitments acquired by the municipality, existing studies, plans and programmes, as well as regulatory and legal aspects in force, fundamentally the Pamplona-Iruña 2030 Urban Agenda.

Analysis of risks and vulnerabilities in view of the impact of climate change, to identify the main areas of action in terms of adaptation.

Development of the Participation and Communication Plan, aimed at city council staff and other agents of the municipality (social, economic, cultural sectors etc.) and citizens in general.

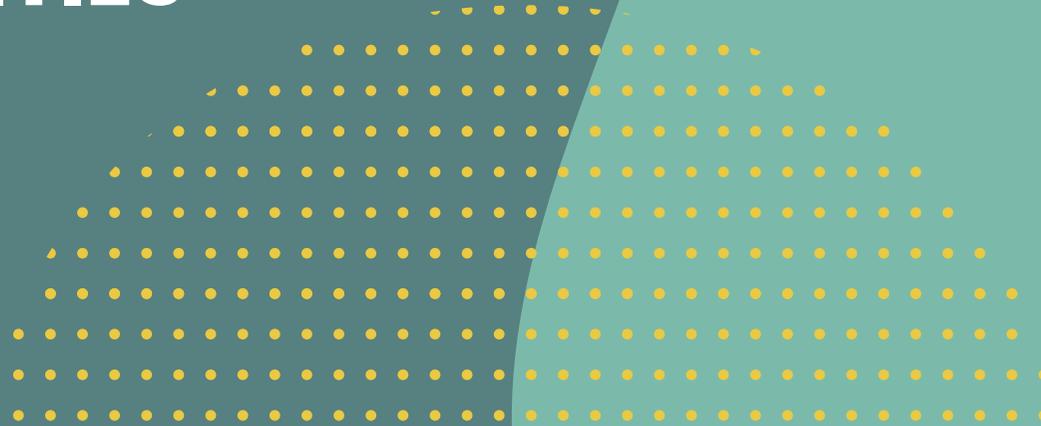
Preparation of the 2030 Energy Transition and Climate Change Strategy for the municipality of Pamplona (GoGreen Pamplona).

Linking the Strategy with the 2030 Sustainable Development Objectives and the Spanish Urban Agenda.



DIAGNOSIS: ENERGY BALANCE AND EVALUATION OF CLIMATE RISKS AND VULNERABILITIES

2



ENERGY BALANCE OF THE CITY

CITY SCOPE



PAMPLONA ENERGY CONSUMPTION

4,551,325
MWh in 2018

-8.7 %

2005 – 2018 period.



EMISSIONS OF CO₂eq PAMPLONA

1,128,937
tCO₂eq in 2018

-15.6 %

2005 – 2018 period.

€488m

in 2018

The reduction in Pamplona's consumption and emissions may be associated, in part, with the recent economic crisis, but also with the efficiency and savings measures implemented in sectors such as residential, as well as the evolution of the electricity emission factor, which has reduced in recent years as a result of the greater contribution of renewable energies to the national energy mix.

On the other hand, it is worth noting that in **the evolution of consumption over the years studied (2016-2018), the trend is increasing, so significant efforts must be made to dissociate economic activity, energy consumption and greenhouse gas emissions.** In other words, measures must be taken to reduce consumption and to promote energy efficiency and the generation of renewable energies or the consumption of sources with lower global warming potential.





SOURCES OF ENERGY

CONSUMPTION



EMISSIONS



SECTORS

CONSUMPTION



EMISSIONS



The primary sector is practically insignificant, with 0.1% consumption.



RENEWABLE ENERGY SOURCES

9.5 %
of final energy consumption
in Pamplona comes from
renewable energy sources.

This percentage is lower than national and Navarre averages respectively. In addition, **only 18% of this renewable source energy is produced locally, which represents 2% of the final energy consumption of the municipality.** This indicator demonstrates that steps must be taken to increase the consumption of renewable energy sources in all sectors at the municipal level and to increase local production.

CITY COUNCIL SPHERE



ENERGY CONSUMPTION OF PAMPLONA CITY COUNCIL

57,618

MWh in 2019

+24 %

2005 – 2019 period.



EMISSIONS OF CO₂eq OF PAMPLONA CITY COUNCIL

11,549

tCO₂eq in 2019

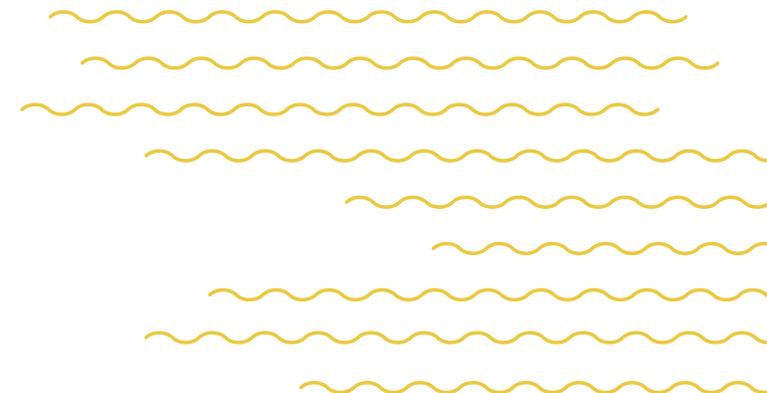
-22 %

2005 – 2019 period.

This increase in consumption is related to a greater provision of services to citizens, so indicators will be established at City Council level to assess the energy consumption based on the services provided. Progress will also be made towards rigorous and detailed municipal energy accounting.

On the other hand, the downward evolution of emissions is associated with the substitution of diesel for natural gas and, to a large extent, with the evolution of the electricity emission factor, so additional efforts must be made to electrify municipal services and increase the presence of renewable energy generation at a municipal level.

For the year 2018 (the last year for which data are available at municipal level), City Council emissions represent 1.15% of the total municipal emissions.



ENERGY SOURCES

CONSUMPTION



EMISSIONS



MUNICIPAL SERVICES

CONSUMPTION



EMISSIONS



RENEWABLE ENERGY SOURCES



30 Photovoltaic facilities



9 Solar thermal energy facilities



1 Geothermal facility



11 Biomass facilities

They represent an approximate production of 2% of Pamplona City Council's energy consumption.

MONITORING INDICATORS PER INHABITANT

The evolution of energy consumption, emissions and energy expenditure per inhabitant between 2005 and 2018 is as follows:



ENERGY CONSUMPTION PER INHABITANT

22.58
MWh/inhabitant
in 2018

-11.2 %
2005 – 2019 period.



EMISSIONS OF CO₂eq PER INHABITANT

5.60
tCO₂eq
in 2018

-17.9 %
2005 – 2019 period.

Energy consumption represented an annual cost of €488m in 2018, which represents an expenditure of €2,421/inhabitant. (This figure for 2005 is not available.)

2030 SCENARIO TREND

If the current trend continues and no energy efficiency measures or extra renewable generations are implemented, or BAU (Business as usual) continues, the scenario trend projected to 2030 for the municipality will be:

-16 %
of consumption

-28 %
of emissions

16 %
consumption of
renewable energy
over the final
consumption

The reduction in consumption and emissions, in addition to the increase in renewable energy generation of the scenario trend, (BAU), despite moving in the right direction, are far from the European commitments approved in the **Energy and Climate Change Policy Framework 2021–2030, “2030 Framework”**, (55% fewer GHG emissions* compared to 1990, 32% renewable energy in the consumption of energy and 32.5% improvement in energy efficiency compared to the BAU 2030 scenario), not to mention commitments made at national, regional or municipal level such as the Covenant of Mayors (40% emission reduction).

* GHG: greenhouse gases



CONCLUSIONS

The city's current energy model is largely based on the use of fossil fuels. To meet the commitments acquired as a city and the Pamplona 2030 Urban Agenda the **following Strategic Plan and its correct implementation is being developed by Pamplona City Council.**

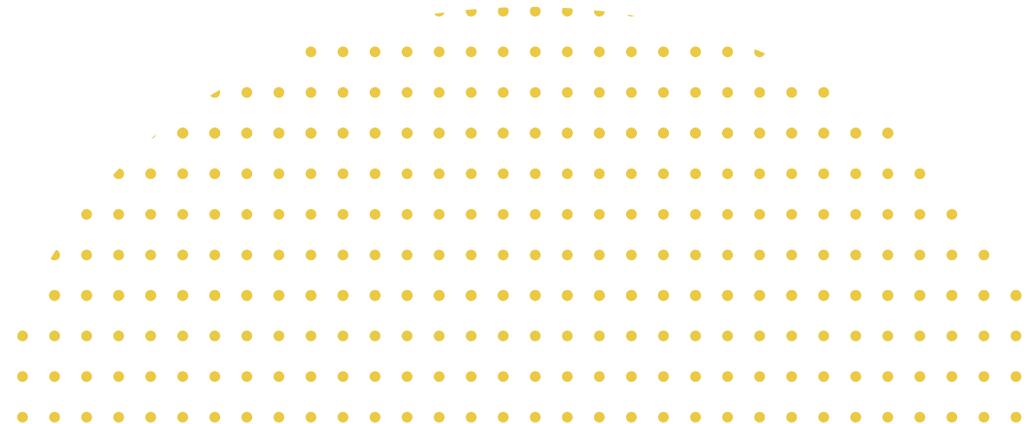
Rehabilitation and energy efficiency, aimed at both the city's building stock and the City Council's own facilities and installations. Ambitious targets must be set to substantially reduce energy consumption in the residential sector (the second largest energy consumer after transport) and in municipal facilities as an exemplary sector in terms of energy consumption.

urrent energy model by reducing demand, electrification and promotion of renewable energy generation, in municipal, residential and industrial sectors, encouraging renewable energy communities.

With regard to thermal demand in the residential sector, efforts should be made to electrify part of it, thereby reducing its emission factor and also contributing to the decarbonisation of the municipality.

The promotion of sustainable mobility that permits the changeover to more sustainable modes of transport such as cycling, walking and/or public transport, as well as the electrification of the sector and the efficient renewal of the fleet.

The necessary climate culture to promote changes towards a more sustainable city model at all levels.



ENERGY POVERTY

Energy poverty refers to the situation suffered in households that cannot afford to pay for the energy supply necessary to maintain decent living conditions inside their homes, an adequate level of thermal comfort or to carry out daily activities such as cooking and basic hygiene; or when an excessive proportion of their income goes towards energy bills (1).

Household income, the price of utilities and the low energy efficiency of houses and their appliances are the determining factors in this situation.



330

**grants to pay for
energy supply in 2019**

76,000 €

of associated budget

Studies published on this problem underline the high percentages of households in this situation in all cities throughout Spain. Currently, the only approximation to the situation of energy poverty in the city of Pamplona is the emergency aid requested. **It is therefore necessary to advance in characterising this problem in the city to have reliable information for its analysis and define an ambitious strategy to tackle this problem; a problem that will also be exacerbated by the effects of climate change in the city.**

(1) Disproportionate expenditure: percentage of households whose energy expenditure in relation to their income is more than double the national average.



CLIMATE RISKS AND VULNERABILITIES

CLIMATE PROJECTIONS

Climate change is a reality, and its grave effects are not only predicted for the future but are already being observed today. In Pamplona this change has already begun, and future projections point to clear variation trends.

In Navarre, as reflected in the Climate Variability Study of the LIFE-IP Nadapta-CC project, the average annual temperature has already increased at a rate of 0.23°C/decade during the period 1991-2019 with respect to the period 1961-1990.

This increase in the average temperature is also prompted by an increase in minimum and maximum temperatures, resulting in a rise in the frequency and intensity of extreme temperature episodes.

● Historic: (1961-1990)
● Future projection: (2051-2080)

TROPICAL NIGHTS

Number of nights a year when the minimum temperature is above 20°C.

5 nights/year 13 nights/year

DURATION OF HEAT WAVES

Number of days the heat wave lasts.

12 days/year 28 days/year

No. OF SUMMER DAYS

The number of days in the year when the maximum temperature is above 25°C.

73 days/year 96 days/year

No. OF HOT DAYS

Percentage of days a year when the maximum temperature exceeds the 90th percentile*

9 % 22 %

No. OF HEAT WAVES A YEAR

Number of individual heat waves that occur each summer (from May to September)

1.65 Waves 6.95 Waves

DAYS OF FROST

Number of days in the year when the minimum temperature is below 0°C.

33 days/year 13 days/year

According to information published in November 2020 in the Life-IP Nadapta-CC project.

* The 90th percentile indicates the value below which 90% of the observations are found, only 10% are higher.

According to future precipitation projections, Pamplona is expected to witness a change in the annual distribution. It is predicted that rainfall will be more concentrated and episodes even more extreme in the traditionally rainy months in autumn, winter and spring. If historically rainfall exceeded 80 l/month only in the months of January and November, in the future the months of February, March and December on average will also exceed this figure.

On the other hand, during the summer months, the driest months of the year, there will be less rainfall. In the months of July and August, historically the driest in the year, rainfall will decrease 63% and 53% respectively with regard to the period mentioned.



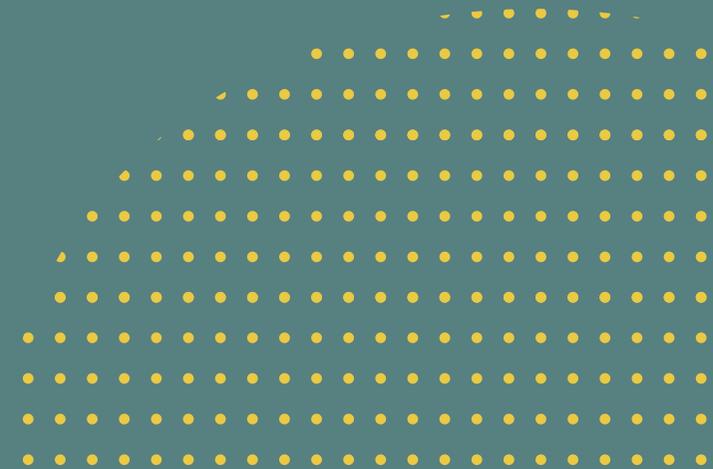
↓ 63%
precipitation
reduction in the
month of July

↓ 53%
precipitation
reduction in the
month of August

The climate in Pamplona will also be affected. In fact, using data over the last 27 years, the present climate is already different from the historical climate of the municipality. If Pamplona's climate has been classified as Marine West Coast (Cfb) for as long as climatological data has been available, the summer temperatures nowadays are not temperate but tropical. The general characteristics of Pamplona's climate are expected to continue shifting due to climate change, being considered Mediterranean with cool summers in the short term (2021 - 2050) and purely Mediterranean by the middle of the century (2051 -2080).

One of the direct consequences is that building requirements are adjusted to adapt to the characteristics of the climate and, therefore, the Technical Building Code would have to be revised so that housing being constructed now in Pamplona is prepared for the climate in 30 years' time.

What is more, flora and fauna will also adapt to the changing temperatures and rainfall, so there will be very important changes in the landscape.



MAIN RISKS IN PAMPLONA

The impact on human health and the effect of heavy rainfall on the built environment have been identified as the two main climate impact chains occurring in Pamplona.

The increase in droughts and, to a lesser extent, alterations in landscape will also have an impact on Pamplona, primarily due to the effect that these impacts may have on the ecosystem services of the territory and consequently, indirectly, on the city.

IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS

The diagnosis determines that Pamplona will see an increase in the risk of people's health being affected due to an increase in temperature in future scenarios, going from a medium risk to very high risk in the next 30 years and a maximum risk by the middle of the century.

The neighbourhoods most sensitive to this risk are San Juan, Iturrama, the Old Quarter, San Jorge and Azpilagaña. In these areas, the city has great potential for action on factors such

as the naturalisation of urban space, attention to vulnerable groups and areas with a high population density and the energy rehabilitation of old buildings.

The neighbourhoods best adapted to this risk are Buztintxuri-Euntzetxiki, Txantrea, Azpilagaña and Milagrosa-Arrosadia. In contrast, neighbourhoods such as Rochapea, San Jorge and San Juan have low levels of adaptive capacity and it is in these areas where the city has great potential for action on factors such as the presence of non-urban land or increasing availability of green infrastructure per inhabitant.

Bearing in mind these two risk components, the most vulnerable neighbourhoods and with more potential to adapt to the impact of temperature increases on people's health are San Juan, San Jorge and Azpilagaña, followed by Rochapea, the Old Quarter and Iturrama.

EFFECT OF INTENSE RAIN ON THE BUILT ENVIRONMENT

The risk of intense rain on the built environment will increase slightly in future scenarios according to the diagnosis, maintaining the current risk which is already high in Pamplona.

The neighbourhoods most exposed to the risk of being affected by intense rain on the built environment are those of Rochapea, Chantrea, San Jorge and Etxabakoitz, followed by Milagrosa-Arrosadia and San Juan. In these areas Pamplona has the potential to adapt by reducing the exposure to flooding of infrastructures, buildings and industries and reducing the levels of artificialised land.

On the other hand, sensitivity to risk is identified as being higher in Etxabakoitz and San Jorge due to the presence of sensitive businesses in flood-prone areas.

In contrast, the capacity of adaptation to risk is identified as higher in the neighbourhoods of San Jorge, San Juan and Ermitzgaña-Mendebaldea. In other neighbourhoods, in particular Mendillorri, Milagrosa-Arrosadia and Rochapea, the adaptive capacity is low so there is potential for action by increasing the non-urban surface area exposed to flooding.

Taking into account the risk components, the neighbourhoods with the greatest potential for adaptation to the impact of heavy rainfall on the built environment are Rochapea, San Jorge and Etxabakoitz.

CONCLUSIONS

Based on the climate diagnosis, the need to incorporate objectives and lines of action related to the following are highlighted:

Naturalisation of public space and the rehabilitation of buildings, as lines of action to improve the effects on the health of persons as a consequence of temperature increase, the loss of thermal comfort in the city and the effects of intense rainfall; in addition to reducing emissions directly linked to energy consumption.

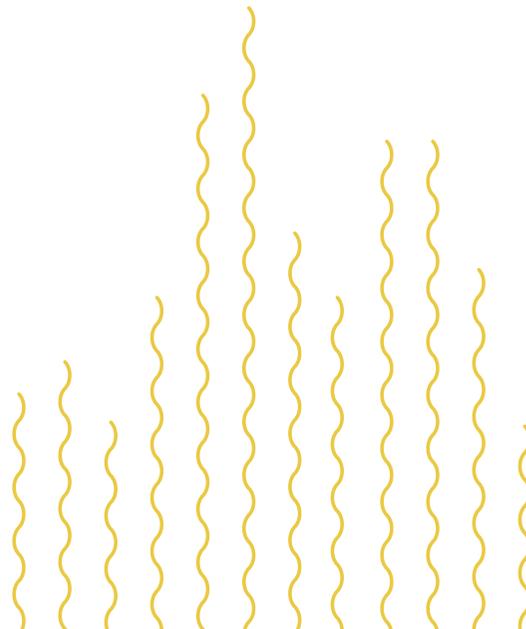
Management of ecosystems, which will be affected by the effects of climate change.

Optimisation of the water cycle, emphasising efficient use of resources.

Drive towards a new model of production and consumption, based on the principles of the Circular Economy.

Implementation of plans that allow adequate response to situations of emergency due to climate change effects.

The necessary climate culture to promote change towards a more sustainable city model, at all levels.



OBJECTIVES

The objectives defined in the framework of the 2030 Energy Transition and Climate change Strategy of Pamplona projected forward to 2030 are:

FAIR TRANSITION

MITIGATE CLIMATE CHANGE



REDUCE EMISSIONS



64%
reduction
compared to
2005



ENERGY EFFICIENCY



39%
improvement in
energy efficiency
with regard to future
predictions (BAU)



RENEWABLE ENERGIES



37%
of final
consumption
of energy from
renewable sources



ENERGY POVERTY



0
energy poverty
in 2030



REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS



REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT



REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES

When defining the specific objectives for Pamplona in terms of energy transition and adaptation to climate change for 2030, the following points have been taken into account:

European objectives for 2030, according to the "2030 Framework": 55% fewer GHG emission compared to 1990, 32% renewable energy in the consumption of energy and 32.5% improvement in energy efficiency.

The objectives of the INECP 2021 – 2030 and the Climate Change and Energy Transition Bill of Spain

The objectives of the Navarre Energy Plan 2020–2030

The objectives of the Climate Change Roadmap of Navarre

The objectives established in the Covenant of Mayors.

The desire of the City Council of Pamplona to carry out energy transition and adaptation to climate change as an opportunity to build a better city.



ACTION PLAN

PROCESS OF PARTICIPATION IN DRAWING UP THE PLAN

The 2030 ET&CCS [Energy Transition and Climate Change Strategy] of Pamplona will affect all municipal areas and departments, therefore, it is considered essential that they all form part of the process from the start and that each one identifies with the need to act on climate change.

Thus, a participatory process has been carried out in drafting the Strategy, combining work sessions in interdisciplinary groups and smaller meetings with the people responsible for the different areas, with the aim of involving all the technical staff and those responsible for drafting and the subsequent development of the Strategy.

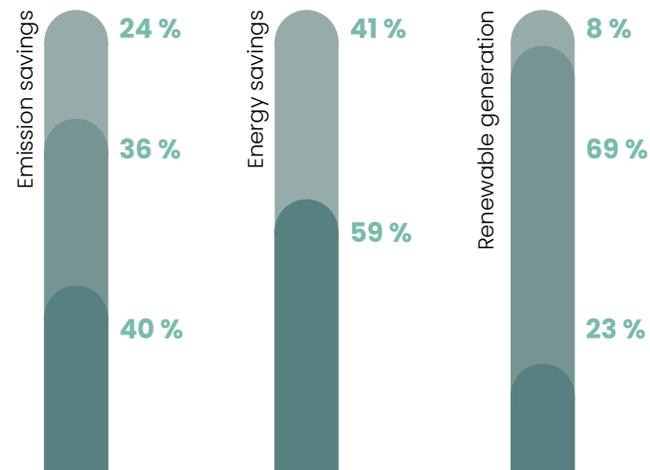
Work sessions have also been conducted with citizens and agents in the territory.

- 3 sessions of group participation with municipal technical personnel
- 1 Political Forum session
- 1 Agents Forum session
- 1 feedback session for agents and citizens
- Technical sessions with the different sections of the City Council
- Review of the proposal by the municipal services
- 1 Citizens Participation session

HOW TO COMPLY WITH THE OBJECTIVES?

To achieve the objectives defined in the present 2030 ET&CCS the following will be taken into account:

- The actions included in the Action Plan of the 2030 ET&CCS of Pamplona
- National and regional level policies, which will be crucial:
 - INECP 2030:
 - National plan of adaptation to climate change 2021-2030
 - Long-term Decarbonisation Strategy (2050)
- Advances already achieved



STRUCTURE OF THE ACTION PLAN

To achieve the general objectives set by the 2030 ET&CCS of Pamplona, the measures in the Action Plan have been structured into 5 strategic objectives and 24 lines of action, outlined below, and are related to the 10 strategic objectives of the Spanish Urban Agenda and the Sustainable Development Goals (SDGs) of the 2030 Agenda:

5
strategic objectives

24
lines of action



SO1:
REHABILITATE AND
RE-NATURALISE
THE URBAN
ENVIRONMENT

-
- SL1.** Naturalisation of urban space
 - SL2.** Actions on buildings
 - SL3.** Ecosystem, flora and fauna management
 - SL4.** Water cycle optimisation



SO2:
DECARBONISE THE
LOCAL ENERGY
MODEL

-
- SL5.** Renewable generation
 - SL6.** Energy efficiency
 - SL7.** Transversal



SO3:
IMPLEMENT A
HEALTHY, EFFICIENT
AND SUSTAINABLE
MOBILITY MODEL

-
- SL8.** Sustainable, inclusive and safe mobility
 - SL9.** Mode changes
 - SL10.** Management of motorised mobility and air quality
 - SL11.** Low Emission Zone



SO4:
HAVE SUSTAINABLE,
PREPARED, ACTIVE
AND RESPONSIBLE
MUNICIPAL SERVICES

-
- SL12.** Management of risks and vulnerabilities
 - SL13.** Change in consumption model
 - SL14.** Sustainable finance
 - SL15.** Fight against energy poverty
 - SL16.** City of entrepreneurship and sustainable innovation
 - SL17.** Legal and regulatory
 - SL18.** Sustainable Tourism
 - SL19.** Circular economy



SO5:
INSTIL A CLIMATE
CULTURE IN
PAMPLONA SOCIETY

-
- LS20.** Citizens' climate culture
 - SL21.** School climate culture
 - SL22.** Municipal climate culture
 - SL23.** Communication
 - SL24.** Coordinated, innovative and integral public management



SO1: REHABILITATE AND RE-NATURALISE THE URBAN ENVIRONMENT

SL1: NATURALISATION OF URBAN SPACE

GOALS

- Restrict artificialisation of municipal land
- Increase green and permeable area up to 30 m²/inhabitant.
- Ensure a maximum distance of 300 metres to green areas

ACTIONS

1. Draft a Green Infrastructure Plan of Pamplona which incorporates criteria of adaptation to climate changes and solutions based on nature, and integrally include this in the municipal plan
2. Conduct a tree risk study and a risk management plan
3. Locate and characterise areas of risk from extreme heat and cold
4. Renovate public space for the new climatic conditions

SL2: ACTIONS ON BUILDINGS

GOALS

- Rehabilitation of façades and roofs of 60% of dwellings built prior to 1979 (30,274 dwellings)
- Green roofs on 10% of buildings constructed after 1979 (261 buildings)
- 100% of municipal buildings with audit and action plan

ACTIONS

5. Rehabilitation plan of buildings in the private sector
6. Rehabilitation plans for municipal facilities (Audits and investment plans)

SL3: ECOSYSTEM, FLORA AND FAUNA MANAGEMENT

GOALS

- Sustainable management of flora and fauna in Pamplona

ACTIONS

7. Programmes to improve urban habitats for the conservation of autochthonous fauna and wild flora vulnerable to climate change
8. Recuperation of autochthonous ecosystem of Mount Ezkaba applying criteria of sustainable forest management and circular economy
9. Provide solutions to deal with the appearance of exotic or invasive species

SL4: WATER CYCLE OPTIMISATION

GOALS

- Increase the permeable surface area of the municipality.
- Reduce the consumption of drinking water to below 100 l/inhabitant/day

ACTIONS

10. Flow control and actions for heavy rains
11. Incorporate flood control systems: dikes, fixed barriers, temporary and demountable flood barriers
12. Define a sustainable urban drainage strategy to enhance soil permeability: needs analysis, guide with design recommendations, maintenance protocols, training and monitoring
13. Conclude the installation of separate networks
14. Promote water savings on a municipal scale through irrigation systematisation and remote control, monitor possible leaks, criteria for using rainwater for irrigation, etc.
15. Promote the use of grey water in new developments and renovations: innovative water purification systems and water consumption savings





SO2: DECARBONISE THE LOCAL ENERGY MODEL

LS5: RENEWABLE GENERATION

GOALS

- Install 5,338 kWp of photovoltaic solar energy in municipal buildings, equivalent to 62% of the City Council's electricity consumption.
- Install 68,437 kWp of photovoltaic solar energy in residential buildings, equivalent to 40% of domestic sector electricity consumption.
- Install 36,751 kWp of photovoltaic solar energy in industrial buildings, equivalent to 40% of industrial sector electricity consumption.
- Install 47,437 kWp of photovoltaic solar energy in commercial buildings, equivalent to 25% of the electricity consumption of the services sector.

ACTIONS

1. Municipal Self-sufficiency and Renewable Energy Plan
2. Self-consumption plan and energy communities (residential sectors, sports facilities, industry and services sector)

LS6: ENERGY EFFICIENCY

GOALS

- Renovation of 28,000 light points of street lighting (84% of the total)
- MEMS100% of municipal buildings have MEMS (Municipal Energy Management System)

ACTIONS

3. Energy efficiency plan for public lighting
4. Implement a Municipal Energy Management System integrated with the Smart City vision and City Platform

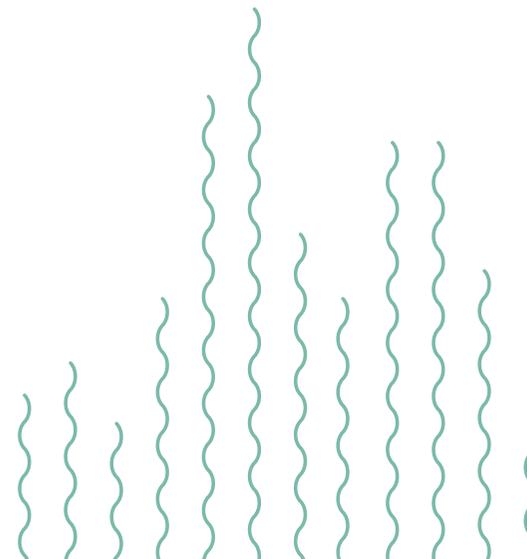
LS7: TRANSVERSAL

GOALS

- To have an Energy and Climate Office in Pamplona

ACTIONS

5. Creation of Energy and Climate Office





SO3: IMPLEMENT A HEALTHY, EFFICIENT AND SUSTAINABLE MOBILITY MODEL

SL8: SUSTAINABLE, INCLUSIVE AND SAFE MOBILITY

GOALS

- Achieve a city with sustainable mobility and a significant reduction in the emissions related to this sector.
- Promote electrification of municipal fleet of Pamplona

ACTIONS

1. Mobility strategy for the city of Pamplona coordinated with the Sustainable Urban Mobility Plan (SUMP) for the Region
2. Plan of Universal Accessibility for the City
3. Development of electric vehicle charging infrastructure
4. Compliance with municipal mobility bylaws
5. Sustainable municipal fleet of vehicles Update to sustainable vehicles

SL9: MODE CHANGES

GOALS

- Encourage active mobility by promoting the use of bicycles and the creation of safe school routes.
- Reduce the use of private vehicles, encouraging mobility plans and the use of regional public transport.
- Broaden the networks of public parking for bicycles

ACTIONS

6. Promotion of active and non-motorised mobility as a mitigation measure
7. Incentives to promote regional public transport
8. Planning and management of occupational mobility
9. Cycle lane network
10. Availability of a shared e-bike service
11. Extend the network of secure public bicycle parking facilities and promote their use as shared bike mobility centres
12. Creation of Safe School Paths to all schools in the city
13. Promote options of sustainable mobility at tourist events

SL10: MANAGEMENT OF MOTORISED MOBILITY AND AIR QUALITY

GOALS

- Have a fleet of 500 shared electric vehicles.
- Electrification of private car parks in multi-family buildings
- 1,000 deterrent parking places

ACTIONS

14. Implement shared electric car service
15. Promote electrification of car parks and renewable production in multi-family buildings (electric charging stations)
16. Modify the criteria for regulating surface parking
17. Development of a network of deterrent (park-and-ride) facilities to prevent private car access to the municipality

SL11: LOW EMISSION ZONE

GOALS

- Introduction of Low Emission Zone (LEZ) in Pamplona

ACTIONS

18. Low Emission Zone



SO4: HAVE SUSTAINABLE, PREPARED, ACTIVE AND RESPONSIBLE MUNICIPAL SERVICES

LS12: GESTIÓN DE RIESGOS Y VULNERABILIDADES

GOALS

- Know the main risks in the municipality and have updated emergency plans and early warning systems in place

ACTIONS

1. Analysis of the effect of rainfall distribution on flooding and flood management planning in terms of the Pamplona Basin, in collaboration with the Pamplona Basin Division and the Government of Navarre.
2. Update the Emergency Plan and the Local Action Plan to the new energy diagnosis
3. Create early warning systems for the population regarding heat waves, heavy rainfall episodes, high risk of river flooding, pests, air quality etc. and assessment of the effect of climate threats
4. Assess the trend in claims for compensation due to flood damage
5. Optimisation of occupational risk prevention policy related to the effects of climate change (cold, heat and insolation, relocation of work posts, shading, etc.).
6. Systematise the use of climate information, provide training in its use and extend the use of geographic information systems

LS13: CAMBIO DE MODELO DE CONSUMO

GOALS

- Promote local commerce and local agricultural production

ACTIONS

7. Promote dynamics of local and sustainable commerce
8. Creation of a circular economy project based on food in the traditional horticultural environment of the River Arga meanders and urban market gardens

LS14: FINANZAS SOSTENIBLES

GOALS

- Have innovative financing mechanisms for municipal climate action.
- Have a Climate fund for the implementation of 2030 ET&CCS actions
- Tax incentives for actions to combat climate change

ACTIONS

9. Strengthen the implementation of innovative financing models to overcome barriers to the implementation of projects with climate change adaptation or mitigation potential.
10. Climate budget or Climate Fund. Approve in municipal plenary session a percentage of the municipal budget to actions of the 2030 ET&CCS of Pamplona.
11. Within the framework of the planned amendments to the Local Finance Act, establish tax rebates to promote renewable energy.
12. Incorporation of sustainability criteria in subsidies and tax rebates.

LS15: LUCHA CONTRA LA POBREZA ENERGÉTICA

GOALS

- Guarantee access to energy for all the citizens of Pamplona

ACTIONS

13. Municipal plan to combat energy poverty promoting gender mainstreaming



SO4: HAVE SUSTAINABLE, PREPARED, ACTIVE AND RESPONSIBLE MUNICIPAL SERVICES

LS16: CITY OF ENTREPRENEURSHIP AND SUSTAINABLE INNOVATION

GOALS

- Creation of innovative projects related to climate change and energy transition

ACTIONS

14. Programme for creation of green businesses and employment in economic sectors linked to climate change and a sustainable innovation fund
15. Promote emission compensation mechanisms. Creation and register of carbon capture projects.
16. Promote the digitisation of public transport activities within municipal competence

LS17: LEGAL AND REGULATORY

GOALS

- Achieve a regulatory framework that promotes climate change mitigation and adaptation.
- Have a new Municipal Urban Land-use Plan

ACTIONS

17. New Municipal Urban Land-use Plan (MULP)
18. Rethink and adapt criteria in works and projects protocols and in the technical prescriptions of urban space, to provide them with a more transversal vision and guarantee compliance with these sustainability and resilience criteria in urban transformation projects (MULP)
19. Adapt the necessary existing urban planning regulations to achieve the adaptation and mitigation objectives.
20. Encourage the application of environmental procurement criteria for low-carbon public procurement
21. Revision of the municipal competences of the technical building code. New building bylaws

LS18: TOURISM SUSTAINABLE

GOALS

- Have a measurement system and indicators related to the tourism sector

ACTIONS

22. Improve knowledge about the tourism sector in Pamplona and the impact of climate change on it, implementing long-term measurement systems

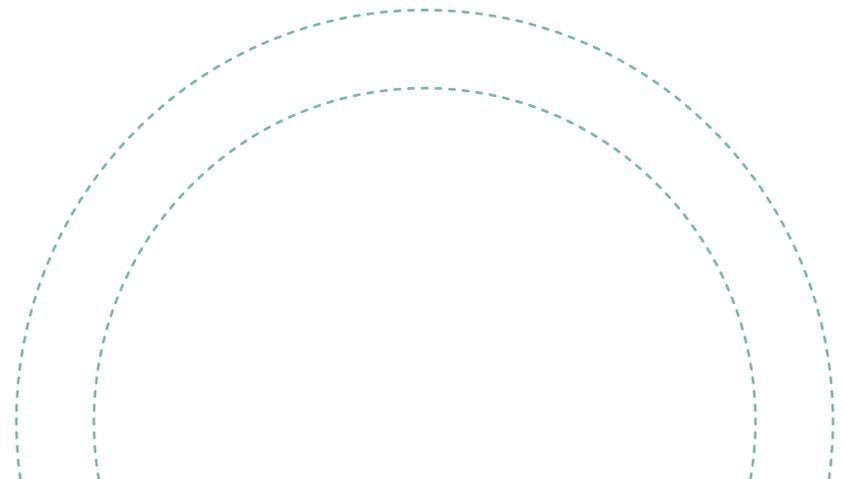
LS19: CIRCULAR ECONOMY

GOALS

- Reduce waste by recycling and reuse.
- Design a municipal strategy of green and circular economy

ACTIONS

23. Promotion of adequate waste recycling in the different municipal buildings, at festival events etc.
24. Design a municipal strategy of green and circular economy





SO5: INSTIL A CLIMATE CULTURE IN PAMPLONA SOCIETY

SL20: CITIZENS' CLIMATE CULTURE

GOALS

- Promote climate culture through the Strategic Plan of Environmental Education, citizens' participation and awareness

ACTIONS

1. Draw up the new strategic plan of environmental education which includes the ET&CCS objectives and contains gender impact analysis
2. Generation of mechanisms and processes of citizens' and agents' participation for climate action with continuity over time on aspects related to the ET&CCS
3. Creation of a youth participation entity on climate change and ecological transition
4. Carry out innovative communication and awareness-raising campaigns, and participation and training sessions with capacity of impact and for social transformation.
5. Campaign to promote sustainable mobility, aimed at citizens, which includes incentives

SL21: SCHOOL CLIMATE CULTURE

GOALS

- Training student population in Pamplona in climate change and energy transition

ACTIONS

6. Integrate climate culture into projects in educational centres and develop specific projects on the ecological transition
7. Training programme to improve knowledge on adaptation to climate change aimed at school staff (management and teaching staff)

SL22: MUNICIPAL CLIMATE CULTURE

GOALS

- Training of municipal personnel in climate change and energy transition

ACTIONS

8. Incorporate the climate change perspective in promoting cultural and sporting events and sports education
9. Develop an in-house training plan for both policymakers and staff directly involved in climate action and transformation of the city to achieve the objectives of adaptation and mitigation



SO5: INSTAURAR LA CULTURA CLIMÁTICA EN LA SOCIEDAD DE PAMPLONA

SL23: COMMUNICATION

GOALS

- Improve communication on issues of climate change and energy transition

ACTIONS

10. Promote institutional exemplarity and disseminate it as an attraction at different levels, incorporating energy transition and climate change adaptation into the city trademark
11. Optimisation, review and improvement of systems of communication with citizens (risks, impacts, waste management, mobility, etc.)

SL24: COORDINATED, INNOVATIVE AND INTEGRAL PUBLIC MANAGEMENT

GOALS

- Have adequate communication and coordination mechanisms between the different municipal areas

ACTIONS

12. Establish coordination and communication mechanisms between municipal areas to develop sectorial plans linked to this strategy



2030 ET&CCS LINES OF ACTION	ACTIONS TO CARRY IT OUT	REDUCE EMISSIONS (t CO ₂)	ENERGY EFFICIENCY (MWh)	RENEWABLE ENERGIES (MWh)	ENERGY POVERTY	REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS	REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT	REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES	BUDGET (€)
LS1: Naturalisation of urban space	1. Draft a Green Infrastructure Plan of Pamplona which incorporates criteria of adaptation to climate changes and solutions based on nature, and integrally include this in the municipal plan 2. Conduct a tree risk study and a risk management plan 3. Locate and characterise areas of risk from extreme heat and cold 4. Renovate public space for the new climatic conditions					●	●	●	83,000
LS2: Actions on buildings	5. Rehabilitation plan of buildings in the private sector 6. Rehabilitation plans for municipal facilities (Audits and investment plans)	115,751	314,890	●	●	●	●	●	534,728,000
LS3: Ecosystem, flora and fauna management	7. Programmes to improve urban habitats for the conservation of autochthonous fauna and wild flora vulnerable to climate change 8. Recuperation of autochthonous ecosystem of Mount Ezkaba applying criteria of sustainable forest management and circular economy 9. Provide solutions to deal with the appearance of exotic or invasive species					●			130,000
LS4: Optimisation of the water cycle	10. Flow control and actions for heavy rains 11. Incorporate flood control systems: dikes, fixed barriers, temporary and demountable flood barriers 12. Define a sustainable urban drainage strategy to enhance soil permeability: needs analysis, guide with design recommendations, maintenance protocols, training and monitoring 13. Conclude the installation of separate networks 14. Promote water savings on a municipal scale through irrigation systematisation and remote control, monitor possible leaks, criteria for using rainwater for irrigation, etc. 15. Promote the use of grey water in new developments and renovations: innovative water purification systems and water consumption savings						●	●	129,000



2030 ET&CCS LINES OF ACTION	ACTIONS TO CARRY IT OUT	REDUCE EMISSIONS (t CO ₂)	ENERGY EFFICIENCY (MWh)	RENEWABLE ENERGIES (MWh)	ENERGY POVERTY	REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS	REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT	REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES	BUDGET (€)
LS5: Renewable generation	1. Municipal Self-sufficiency and Renewable Energy Plan 2. Self-consumption plan and energy communities (residential sectors, sports facilities, industry and services sector)	13,487	●	205,280	●				261,105,400
LS6: Energy efficiency	3. Energy efficiency plan for public lighting 4. Implement a Municipal Energy Management System integrated with the Smart City vision and City Platform.	740	8,396	●	●				11,363,400
LS7: Transversal	5. Creation of Energy and Climate Office	484	3,170	1,030	●	●	●	●	2,425,000
LS8: Sustainable, inclusive and safe mobility	1. Mobility strategy for the city of Pamplona coordinated with the Sustainable Urban Mobility Plan (SUMP) for the Region 2. Plan of Universal Accessibility for the City 3. Development of electric vehicle charging infrastructure 4. Compliance with municipal mobility bylaws 5. Sustainable municipal fleet of vehicles Update to sustainable vehicles	149,737	598,799	5,909	●	●			6,665,000
LS9: Mode changes	6. Promotion of active and non-motorised mobility as a mitigation measure 7. Incentives to promote regional public transport 8. Planning and management of occupational mobility 9. Cycle lane network 10. Availability of a shared e-bike service 11. Extend the network of secure public bicycle parking facilities and promote their use as shared bike mobility centres 12. Creation of Safe School Paths to all schools in the city 13. Promote options of sustainable mobility at tourist events	17,078	62,686	●	●	●			18,690,000



2030 ET&CCS LINES OF ACTION	ACTIONS TO CARRY IT OUT	REDUCE EMISSIONS (t CO ₂)	ENERGY EFFICIENCY (MWh)	RENEWABLE ENERGIES (MWh)	ENERGY POVERTY	REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS	REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT	REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES	BUDGET (€)
LS10: Management of motorised mobility and air quality	14. Implement shared electric car service 15. Promote electrification of car parks and renewable production in multi-family buildings (electric charging stations) 16. Modify the criteria for regulating surface parking 17. Development of a network of deterrent (park-and-ride) facilities to prevent private car access to the municipality	16,693	72,195	2,955	●	●			1,816,000
LS11: Low emission zone	18. Low Emission Zone	22,259	81,462	●	●	●			500,000
LS12: Management of risks and vulnerabilities	1. Analysis of the effect of rainfall distribution on flooding and flood management planning in terms of the Pamplona Basin, in collaboration with the Pamplona Basin Division and the Government of Navarre. 2. Update the Emergency Plan and the Local Action Plan to the new energy diagnosis 3. Create early warning systems for the population regarding heat waves, heavy rainfall episodes, high risk of river flooding, pests, air quality etc. and assessment of the effect of climate threats 4. Assess the trend in claims for compensation due to flood damage 5. Optimisation of occupational risk prevention policy related to the effects of climate change (cold, heat and insolation, relocation of work posts, shading, etc.). 6. Systematise the use of climate information, provide training in its use and extend the use of geographic information systems					●	●		516,000
LS13: Change in consumption model	7. Promote dynamics of local and sustainable commerce 8. Creation of a circular economy project based on food in the traditional horticultural environment of the River Arga meanders and urban market gardens	●	●	●	●	●			18,265,000



2030 ET&CCS LINES OF ACTION	ACTIONS TO CARRY IT OUT	REDUCE EMISSIONS (t CO ₂)	ENERGY EFFICIENCY (MWh)	RENEWABLE ENERGIES (MWh)	ENERGY POVERTY	REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS	REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT	REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES	BUDGET (€)
LS14: Finance sustainable	<p>9. Strengthen the implementation of innovative financing models to overcome barriers to the implementation of projects with climate change adaptation or mitigation potential.</p> <p>10. Climate budget or Climate Fund. Approve in municipal plenary session a percentage of the municipal budget to actions of the 2030 ET&CCS of Pamplona.</p> <p>11. Within the framework of the planned amendments to the Local Finance Act, establish tax rebates to promote renewable energy.</p> <p>12. Incorporation of sustainability criteria in subsidies and tax rebates.</p>	●	●	●	●	●	●	●	165,000
LS15: Fight against energy poverty	<p>13. Municipal plan to combat energy poverty promoting gender mainstreaming</p>	●	●	●	●	●			60,000
LS16: City of entrepreneurship and sustainable innovation	<p>14. Programme for creation of green businesses and employment in economic sectors linked to climate change and a sustainable innovation fund</p> <p>15. Promote emission compensation mechanisms. Creation and register of carbon capture projects.</p> <p>16. Promote the digitisation of public transport activities within municipal competence</p>	●	●	●	●	●	●	●	610,000
LS17: Legal and regulatory	<p>17. New Municipal Urban Land-use Plan (MULP)</p> <p>18. Rethink and adapt criteria in works and projects protocols and in the technical prescriptions of urban space, to provide them with a more transversal vision and guarantee compliance with these sustainability and resilience criteria in urban transformation projects (MULP)</p> <p>19. Adapt the necessary existing urban planning regulations to achieve the adaptation and mitigation objectives.</p> <p>20. Encourage the application of environmental procurement criteria for low-carbon public procurement</p> <p>21. Revision of the municipal competences of the technical building code. New building bylaws.</p>	●	●	●	●	●	●	●	645,000



2030 ET&CCS LINES OF ACTION	ACTIONS TO CARRY IT OUT	REDUCE EMISSIONS (t CO ₂)	ENERGY EFFICIENCY (MWh)	RENEWABLE ENERGIES (MWh)	ENERGY POVERTY	REDUCE THE IMPACT OF TEMPERATURE INCREASE ON THE HEALTH OF PERSONS	REDUCE THE IMPACT OF INTENSE RAIN ON THE BUILT ENVIRONMENT	REDUCE THE IMPACT OF INCREASED DROUGHT EPISODES	BUDGET (€)
LS18: Tourism sustainable	22. Improve knowledge about the tourism sector in Pamplona and the impact of climate change on it, implementing long-term measurement systems.	●	●	●					90,000
LS19: Circular economy	23. Promotion of adequate waste recycling in the different municipal buildings, at festival events etc. 24. Design a municipal strategy of green and circular economy	●	●	●					100,000
LS20: Citizens' climate culture	1. Draw up the new strategic plan of environmental education which includes the ET&CCS objectives and contains gender impact analysis 2. Generation of mechanisms and processes of citizens' and agents' participation for climate action with continuity over time on aspects related to the ET&CCS 3. Creation of a youth participation entity on climate change and ecological transition 4. Carry out innovative communication and awareness-raising campaigns, and participation and training sessions with capacity of impact and for social transformation. 5. Campaign to promote sustainable mobility, aimed at citizens, which includes incentives	2,281	11,474	●	●	●	●	●	1,355,000
LS21: School climate culture	6. Integrate climate culture into projects in educational centres and develop specific projects on the ecological transition 7. Training programme to improve knowledge on adaptation to climate change aimed at school staff (management and teaching staff)	166	932	●	●	●	●	●	405,000
LS22: Municipal climate culture	8. Incorporate the climate change perspective in promoting cultural and sporting events and sports education 9. Develop an in-house training plan for both policymakers and staff directly involved in climate action and transformation of the city to achieve the objectives of adaptation and mitigation	1,637	11,014	●	●	●	●	●	155,000



EXPECTED RESULTS

With the implementation of the measures included in Pamplona's 2030 ET&CCS and the implementation of energy policies at national and regional level, the reduction in Pamplona's energy consumption will be as follows:

EXPECTED ENERGY CONSUMPTION IN 2030

(BAU SCENARIO)

4,186,486 MWh/year

ENERGY CONSUMPTION IN PAMPLONA IN 2030

(IMPLEMENTING THE ET&CCS)

2,570,348 MWh/year

-39%
of consumption with regard to future projections (BAU scenario)

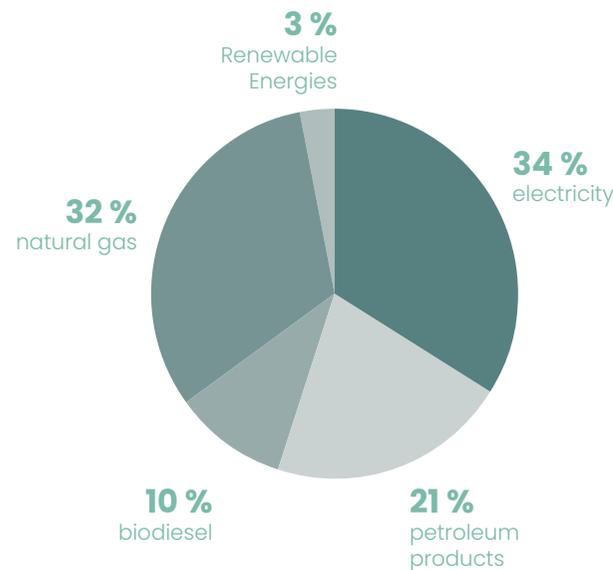
37%
of final consumption of energy from renewable sources



↓ 859,605 t CO₂eq/year in 2030 -64% with respect to 2005

With the implementation of the measures in Pamplona's 2030 ET&CCS, the city's energy matrix will be modified, considerably increasing the share of electricity and biodiesel and reducing the consumption of petroleum products and natural gas.

It should be noted that, of the electricity consumed by the city of Pamplona, 24% will be generated locally through renewable energy installations. This being so, 37% of the final energy consumption of Pamplona would come from renewable energy sources.



The measures included in the 2030 ET&CCS will also increase Pamplona's resilience to the expected effects of climate change, as they either reduce exposure and sensitivity or increase the municipality's adaptive capacity to the risks identified as priority (effects on people's health due to increased temperatures, effects on the built environment due to heavy rainfall and increased droughts).

* BAU scenario: The BAU or Business as Usual scenario is the scenario trend projected to 2030 if the current trend continues and no energy efficiency measures or extra renewable generation are implemented.

GOVERNANCE MODEL

To ensure the successful implementation of the ET&CCS, it is extremely important to establish a governance model based on **transversality, transparency and the participation** of all stakeholders, from the start and throughout the development process of the Strategy. Outlined below are the key aspects of the governance model proposed:

Given the magnitude and transversal nature of the project, a formal structure will be required to give municipal identity to the municipal areas and services and to give robustness to the development and monitoring of the Strategy. In this respect, the organisational, coordination and participation proposal of the ET&CCS is outlined below.

Leadership and political commitment

Integration in the local governance structures

Coordination and intersectorial communication

Transparency in the implementation process

Involvement of local agents

Internal coordination

ET&CCS management

Responsibility, impetus and political commitment of the ET&CCS

Municipal work commission

Leadership, technical responsibility and follow-up of the ET&CCS.

Temporary interdepartmental coordination commissions

Coordination, execution and follow-up of the intersectorial projects of the ET&CCS.

Environment and Climate Change Observatory

Advice, assessment and data provision on the Environment and Climate Change.

Sectorial participation entity

Coordination and involvement of local agents in the ET&CCS

External coordination





MONITORING AND EVALUATION SYSTEM

A coordination and monitoring system has been established to monitor the implementation of the actions of the 2030 ET&CCS of Pamplona. This system will be directed by:

Municipal work commission

Key municipal technical staff for the development of the Strategy in the different areas

Director of the ET&CCS

The purpose of the measurement and reporting system proposed for the 2030 ET&CCS of Pamplona is, on the one hand, to evaluate the execution of the proposed actions and the achievement of the associated objectives and goals, as well as to identify and adopt any necessary corrective measures.

The measurement component allows for the collation, analysis and monitoring of relevant information for the follow-up reports on the implementation of the strategy, for which it is recommended to use two types of indicators:

Execution indicators

Results and follow-up indicators

The reporting component is aimed at regularly communicating information on the actions defined in the Strategy. A fundamental aspect in the design of the reports is to define the target audience, as the relevant information may vary.

It is recommended that monitoring and implementation reports be generated on a regular (annual) basis. The preparation of these reports will be the responsibility of the municipal working commission.



2030 ET&CCS LINES OF ACTION	ACTIONS	TOTAL COST (€)	CALENDAR											
			2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
SL17: Legal and regulatory	17	500,000		●										
	18	25,000		●										
	19	50,000		●										
	20	20,000		●										
	21	50,000		●										
SL18: Sustainable Tourism	22	90,000			●									
SL19: Circular economy	23	60,000												
	24	40,000												
SL20: Citizens' climate culture	1	25,000		●										
	2	90,000												
	3	40,000												
	4	600,000												
	5	600,000												
SL21: School climate culture	6	360,000		●										
	7	45,000		●										
SL22: Municipal climate culture	8	5,000		●										
	9	150,000		●										
SL23: Communication	10	108,000		●										
	11	110,000		●										
SL24: Coordinated, innovative and integral public management	12	5,000		●										
INVESTMENTS		TOTAL	SHORT TERM (2021 – 2023)			MEDIUM TERM (2024–2026)			LONG TERM (2027–2030)					
Pamplona City Council Investment		72,921,600	20,333,300			22,672,414			29,915,886					
Public Fund Investment*		210,645,920	70,215,307			70,215,307			70,215,307					
Private investment		576,656,280	146,475,360			174,332,493			255,848,427					
TOTAL		860,223,800	237,023,967			267,220,214			355,979,619					

Implementation of the measure

Drafting the plan or period of implementation of the measure

* Financial resources in the form of public aid in different local, regional, national and European modalities.



Ayuntamiento de
Pamplona

Iruñeko
Udala

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 **Gobierno de Navarra**
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