CONSELL INSULAR DE MENORCA

Pacte de les Batlies per al Clima i l'Energia EUROPA

MENORCA RESERVA DE BIOSFERA

Plan of Action for the Climate and Sustainable Energy of the municipality of Es Migjorn Gran

azigrene energiza

DOCUMENT II- EXECUTIVE SUMMARY

February 2022

AJUNTAMENT DES MIGJORN GRAN

1. GLOBAL STRATEGY

The Covenant of Mayors for Climate and Energy is a European initiative composed voluntarily of regional governments which promise to apply the climate and energy commitments in their territories.

The municipality of Es Migjorn Gran became part of this specific programme on the 27th of May 2021. Additionally, this municipality aims to establish a roadmap with the Plan of Action for the Climate and Sustainable Energy (SECAP).

Strategic objectives for the mitigation of climate change

Objective 1		
Greenhouse gases: reduction of at least 55%		
Total emissions 2005 (t CO2)	**Total emissions 2019 (t CO2)**	**Objective 2030 Total emissions (t CO2) 55% of 2005 emissions**
11.588.78	**9,388.74**	**5,214.95**
Reducció respecte 2005 (tCO2)	2,200.04	**6,373.83**
Reducció respecte 2005 (%)	18.98%	**55**
Objective 2		
Energy efficiency: at least 32.5% improvement		
Total consumption 2005 (MWh)	**Total consumption 2019 (MWh)**	**Objective 2030 Total consumption (MWh) 32.5% of 2005 consumption**
19.234.50	**20,449.24**	**13,079.46**
Reducción respecto 2005 (MWh)	-1,214.74	**6,155.04**
Reducción respecto 2005 (%)	-6.32%	**32.50%**
Objective 3		
Renewable energies: at least 32% of quota		
TOTAL Consumption EE.RR. 2005 (MWh)	**TOTAL Consumption EE.RR. 2019 (MWh)**	**Objective 2030 Renewable Consumption 32% of consumption from renewable sources**
0.00	**24.83**	**4,185.43**
0.00%	**0.12%**	**32.00%**

Table 1: Mitigation objectives of the Plan

Strategic Objectives for adaptation to Climate change

- Objective 1. For citizens to be sensitized and awared of climate change.
- Objective 2. Promote energy efficiency and the use of renewable energies.
- Objective 3. Encourage the responsible management of resources.
- Objective 4. Design a sustainable and efficient municipality.

Prior to this document, a process of internal participation was held to establish a guideline for a better collaboration and coordination of the different areas of the City Council. The Action Plan organization is summarized below:

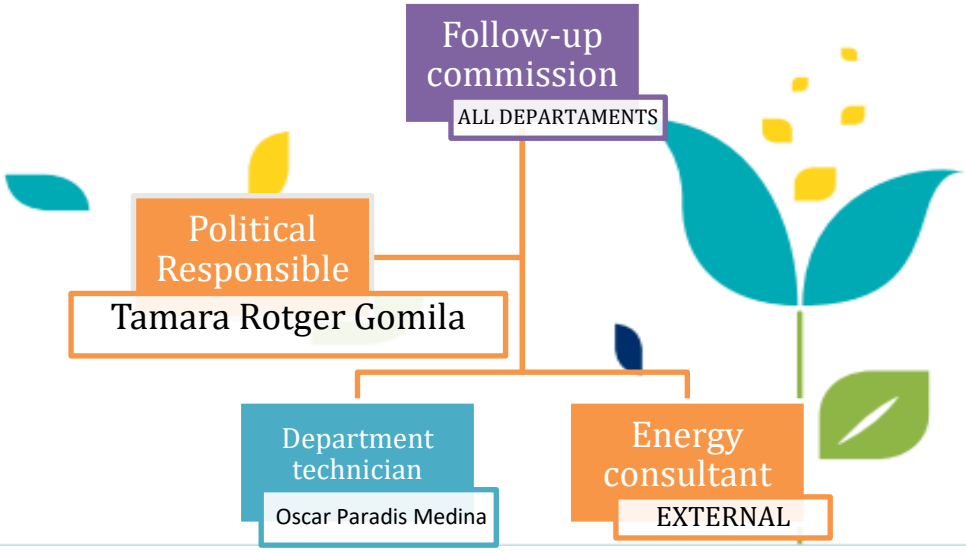

Figure 1: Internal Structure of the City Council

Regarding **the Action Plan for Climate and Sustainable Energy** in the municipal budget, and given there are some actions which need to be carried out within the various spending programs, the creation of a specific item has been proposed for this Action Plan. An economic provision will be made based on the resources available from the next financial year's budget.

Finally, in order to manage the proposed investments for each action, the European, national and local public nature subsidies could be granted depending on the fulfillment of certain requirements, the same way applies for the existing fundings.

The cost of implementing this Action Plan has been prepared taking into account market prices. Before carrying out each of the SECAP measurements, their effects will be determined depending on when they take place, then a deeper economical study will need to be done, because the Action Plan is meant to be seen as a roadmap.

AREA	INVESTMENT (€)
Areas that depend directly on the City Council	
Equipment and municipal facilities	338,118.97 €
Public lighting	15,200.00 €
Public and municipal transport	25,382.91 €
TOTAL	**378,701.88 €**
Areas that do not depend directly on the City Council	
Residential and services sector	36,559.94 €
Industrial sector	2,529.00 €
Waste	4,215.00 €
Private and commercial transport	109,786.00 €
Local energy production	20,165.00 €
TOTAL	173,254.94 €
TOTAL MITIGATION	**551,956.82 €**
Adaptation	
TOTAL ADAPTATION	**78,791.50 €**
TOTAL MUNICIPALITY	**630,748.32 €**

Table 2: Economic estimate of the Plan

2. CLIMATE CHANGE MITIGATION

Taking 2005 as the selected reference year, there was a global consumption of 325,744.54 MWh, which amounted to 162,856.12 t CO2 emissions in the municipality. The sector that caused most emissions was the private and commercial transport sector followed by the services sector.

Next, it is analyzed the trend followed by each of the sectors analyzed between 2005 and 2019:

REFERENCE INVENTORY OF CO_2 EMISSIONS

MUNICIPALITY: Es Migjorn Gran
YEAR: 2005
POPULATION: 1,409

Areas that depend on the City Council	Consumption (MWh)	Emissions (t CO_2)
Buildings. equipment and facilities (municipal)	**316.55**	**264.11**
Electricity consumption	*257.13*	*248.26*
Diesel C consumption	*59.42*	*15.85*
Public lighting	**111.74**	**107.88**
Municipal transport	**28.62**	**7.43**
Petrol consumption	*12.37*	*3.19*
Diesel consumption	*16.25*	*4.25*
Total Areas that depend on the City Council	**456.91**	**379.42**

Areas that do not depend on the City Council	Consumption (MWh)	Emissions (t CO_2)
Residential sector	**4,966.06**	**3,846.46**
Electricity consumption	*3,652.68*	*3,526.66*
LPG consumption	*771.74*	*175.31*
Diesel C consumption	*541.64*	*144.49*
Services sector	**6,151.67**	**4,944.81**
Electricity consumption	*4,770.39*	*4,605.82*
LPG consumption	*744.27*	*169.07*
Diesel C consumption	*637.01*	*169.93*
Industrial sector	**409.66**	**111.50**
Electricity consumption	*8.37*	*8.08*
LPG consumption	*91.72*	*20.84*
Diesel C consumption	*309.57*	*82.58*
Private and commercial transport	**7,250.20**	**1,882.72**
Electricity consumption	*0.00*	*0.00*
Petrol consumption	*3,044.85*	*784.08*
Diesel consumption	*4,205.35*	*1,098.64*
Residus (t) (non-energy)	**1,552.68**	**423.87**
Collected in mass (t)	*1,308.24*	*423.87*
Glass (t)	*105.91*	*0.00*
Paper (t)	*99.07*	*0.00*
Packaging (t)	*39.46*	*0.00*
Total Areas that do not depend on the City Council	**18,777.59**	**11,209.36**
Total in the municipality	**19,234.50**	**11,588.78**
Local emission factor of electricity	**0.966**	

Table 4 Summary of emissions inventory results 2005

REFERENCE INVENTORY OF CO_2 EMISSIONS

MUNICIPALITY: Es Migjorn Gran
YEAR: 2019
POPULATION: 1,405

Areas that depend on the City Council	Consumption (MWh)	Emissions (t CO_2)
Buildings. equipment and facilities (municipal)	**287.65**	**161.07**
Electricity consumption	*233.83*	*153.69*
LPG consumption	*26.13*	*0.00*
Diesel C consumption	*27.70*	*7.39*
Public lighting	**119.30**	**78.41**
Municipal transport	**32.51**	**8.43**
Petrol consumption	*15.33*	*3.95*
Diesel consumption	*17.17*	*4.49*
Total Areas that depend on the City Council	**439.46**	**247.92**

Areas that do not depend on the City Council	Consumption (MWh)	Emissions (t CO_2)
Residential sector	**5,203.03**	**2,968.59**
Electricity consumption	*4,101.82*	*2,695.97*
LPG consumption	*533.79*	*121.26*
Diesel C consumption	*567.42*	*151.36*
Services sector	**6,153.26**	**3,553.34**
Electricity consumption	*4,952.78*	*3,255.27*
LPG consumption	*559.95*	*127.20*
Diesel C consumption	*640.53*	*170.87*
Industrial sector	**435.27**	**115.35**
Electricity consumption	*6.33*	*4.16*
LPG consumption	*81.63*	*18.54*
Diesel C consumption	*347.31*	*92.65*
Private and commercial transport	**8,218.23**	**2,132.89**
Electricity consumption	*0.00*	*0.00*
Petrol consumption	*3,774.31*	*971.93*
Diesel consumption	*4,443.92*	*1,160.96*
Residus (t) (non-energy)	**1,423.01**	**370.64**
Collected in mass (t)	*1,143.96*	*370.64*
Glass (t)	*111.60*	*0.00*
Paper (t)	*101.49*	*0.00*
Packaging (t)	*65.96*	*0.00*
Total Areas that do not depend on the City Council	**20,009.78**	**9,140.82**
Total in the municipality	**20,449.24**	**9,388.74**

Local emission factor of electricity	**0.657**

Table 5 Summary of emissions inventory results 2019

The Mitigation Action Plan is comprised of a total of 65 actions divided among all the existing sectors in the municipality. which seek to modify the structural environment of buildings. establish new habits and forms of transport. take legal actions. management. technology and even training and awareness.

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.1. MUNICIPAL ENERGY MANAGER	short term	27,657.15	15.85	18.99	0.00	0.14%	0.10%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.2. MUNICIPAL ENERGY ACCOUNTING	short term	43,145.16	35.61	36.89	0.00	0.31%	0.19%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.3. REMOTE MEASUREMENT AND MANAGEMENT OF CONSUMER EQUIPMENT	medium term	12,000.00	1.24	2.88	0.00	0.011%	0.01%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.4. ENERGY AUDITS IN MUNICIPAL BUILDINGS	short term	5,964.00	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.5. ENERGY RATING IN MUNICIPAL BUILDINGS	short term	3,474.80	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.6. MAINTENANCE PROGRAM OF MUNICIPAL EQUIPMENTS AND INFRASTRUCTURES	medium term	37,316.93	3.45	5.25	0.00	0.03%	0.03%	0.00%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.7 IMPROVING ENERGY EFFICIENCY IN PUMPS	short term	8,000	23.49	35.74	0.00	0.20%	0.19%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.9. OPTIMIZATION OF THE COMPUTER EQUIPMENT CONSUMPTION	medium term	125.00	0.44	0.67	0.00	0.004%	0.003%	0.000%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	Ma10. "50/50" PROGRAM	short term	0.00	2.56	3.89	0.00	0.02%	0.02%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.12. DIVERSIFICATION TO MORE EFFICIENT FUELS IN MUNICIPAL BUILDING BOILERS	medium term	24,000.00	15.85	1.78	0.00	0.137%	0.009%	0.000%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.13.RENEWAL OF INTERIOR LIGHTING	short term	18,000.00	12.25	18.63	0.00	0.11%	0.10%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.14. CONTROL OF PRESENCE FOR INTERIOR LIGHTING	short term	4,320.00	1.63	2.48	0.00	0.01%	0.01%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	Ma15. OPTIMIZATION OF THE DEMAND IN CLIMATE CONTROL	medium term	80,000.00	2.49	3.78	0.00	0.02%	0.02%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.16. AEROTHERMAL FACILITIES IN BUILDINGS AND MUNICIPAL DEPENDENCES	medium term	20,000.00	0.00	0.00	0.00	0.000%	0.000%	0.000%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	Ma17. SOLAR ENERGY FACILITIES	short term	32,055.61	16.90	0.00	25.71	0.15%	0.00%	0.20%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.18. SOLAR THERMAL ENERGY INSTALLATIONS	short term	0.00	1.43	0.00	5.35	0.012%	0.00%	0.04%
MITIGATION	SECTOR RESIDENCIAL I SERVEIS	M.a.19. LOCAL MUNICIPAL ENERGY COMMUNITY	long term	1,405.00	110.72	0.00	168.46	0.96%	0.00%	1.32%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	Ma20. CAMPAIGN OF AWARENESS OF MUNICIPAL EMPLOYEES	short term	9,219.05	5.28	6.33	0.00	0.05%	0.03%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.21. CAMPAIGN OF PUBLICATION OF MUNICIPAL EQUIPMENT CONSUMPTION	short term	2,765.72	2.64	3.17	0.00	0.02%	0.02%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.22. ENERGY TRAINING COURSES TO MUNICIPAL EMPLOYEES	short term	7,375.24	5.28	6.33	0.00	0.05%	0.03%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.23. RECRUITMENT WITH ENVIRONMENTAL AND ENERGY EFFICIENCY CRITERIA. EFFICIENT PURCHASES	short term	1,000.00	0.00	0.00	0.00	0.00%	0.00%	0.00%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.24. PURCHASE OF CERTIFIED GREEN ENERGY	short term	1,700.31	356.14	0.00	368.87	3.07%	0.00%	2.89%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.25. PROMOTION OF MUNICIPAL REMOTW WORK	short term	0.00	0.00	0.00	0.00	0.00%	0.000%	0.00%
MITIGATION	BUILDINGS. EQUIPMENT AND FACILITIES (MUNICIPAL)	M.a.26. FOOTPRINT CALCULATION IN MUNICIPAL BUILDINGS	short term	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	PUBLIC LIGHTING	M.b.1. PUBLIC LIGHTING AUDIT	short term	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	PUBLIC LIGHTING	M.b.2. REPLACEMENT OF LUMINAIRES BY OTHER MORE EFFICIENT	short term	0.00	64.73	67.04	0.00	0.56%	0.35%	0.00%
MITIGATION	PUBLIC LIGHTING	M.b.6. IMPLEMENTATION OF LIGHTING TELEGESTION SYSTEMS	short term	15,200	21.58	22.35	0.00	0.19%	0.12%	0.00%
MITIGATION	MUNICIPAL TRANSPORT	M.c.1. GENERAL MANAGER OF THE MOBILE PARK	short term	0.00	0.30	1.14	0.00	0.003%	0.01%	0.00%
MITIGATION	MUNICIPAL TRANSPORT	M.c.2. EFFICIENT DRIVING COURSES	medium term	5,182.91	0.74	2.86	0.00	0.01%	0.01%	0.00%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	MUNICIPAL TRANSPORT	M.c.5. REPLACEMENT OF VEHICLES BY OTHERS MORE EFFICIENT	short term	20,000.00	0.67	2.58	0.00	0.01%	0.01%	0.00%
MITIGATION	MUNICIPAL TRANSPORT	M.c.7. INCORPORATION OF ENVIRONMENTAL VEHICLE CRITERIA IN CONTRACT PROCEDURES	short term	200.00	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.c.11. OPTIMIZATION OF PUBLIC TRANSPORT SERVICES	medium term	500.00	56.48	217.51	0.00	0.49%	1.13%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.1. AWARENESS CAMPAIGN	short term	10,184.00	263.74	333.53	0.00	2.28%	1.73%	0.00%
MITIGATION	RESIDENTIAL SECTOR	M.d.2. HOME ENERGY ASSESSMENT VISITS	medium term	5,461.49	19.23	24.83	0.00	0.17%	0.13%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.3. RENEWAL CAMPAIGN OF INTERIOR LIGHTING	medium term	843.00	207.38	93.14	0.00	1.79%	0.48%	0.00%
MITIGATION	RESIDENTIAL SECTOR	M.d.4. RENEWAL CAMPAIGN OF APPLIANCES	medium term	843.00	232.76	241.08	0.00	2.01%	1.25%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.5.CAMPAIGN RENEWAL OF INSULATION AND CLOSURE	medium term	843.00	105.50	133.41	0.00	0.91%	0.69%	0.00%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	RESIDENTIAL SECTOR	M.d.6. CAMPAIGN PURCHASE OF GREEN ENERGY	short term	6,844.44	529.00	0.00	547.90	4.56%	0.00%	4.29%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.7. SUSTAINABLE CONSTRUCTION	short term	300.00	527.48	667.06	0.00	4.55%	3.47%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.11. REPLACEMENT OF BOILERS BY MORE EFFICIENT OTHERS	medium term	843.00	3.29	13.47	0.00	0.0%	0.07%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.12. AIR CONDITIONING RENOVATION CAMPAIGN	medium term	843.00	97.59	43.83	0.00	0.84%	0.23%	0.00%
MITIGATION	RESIDENTIAL SECTOR AND SERVICES	M.d.13. ENERGY AND CLIMATE CHANGE ADVICE SERVICE	short term	0.00	1.318.69	1.667.66	0.00	11.38%	8.67%	0.00%
MITIGATION	RESIDENTIAL SECTOR	M.d.14. BONUSES IN FISCAL IMPROVEMENT WORK LICENSES OF ENERGY EFFICIENCY	short term	3,286.80	346.18	446.95	0.00	2.99%	2.32%	0.00%
MITIGATION	SECTOR SERVICES	M.e.1. SMALL-SCALE ENERGY AUDITS IN THE SERVICIS SECTOR	medium term	3,109.74	49.45	61.52	0.00	0.43%	0.32%	0.00%
MITIGATION	SECTOR SERVICES	M.e.2. GREEN ENERGY PURCHASE CAMPAIGN	medium term	662.27	736.93	0.00	763.26	6.36%	0.00%	5.98%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	SECTOR SERVICES	M.e.4. MENORCA RESERVA DE BIOSFERA	short term	818.40	241.81	250.45	0.00	2.09%	1.30%	0.00%
MITIGATION	SECTOR SERVICES	M.e.5. CARRY OUT A SPECIFIC CAMPAIGN IN THE HOTEL AND RESTAURANT SECTOR	short term	272.80	34.61	43.06	0.00	0.30%	0.22%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.1. TRAINING CAMPAIGN IN EFFICIENT DRIVING	short term	12,645.00	56.48	217.51	0.00	0.49%	1.13%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.2. RENOVATION OF THE MOBILE PARK AND PROMOTION OF VEHICLES USING NON-CONVENTIONAL FUELS	medium term	10,436.00	141.20	217.51	0.00	1.22%	1.13%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.3. ELECTRIC VEHICLE RECHARGE POINTS NETWORK	short term	500.00	5.65	21.75	0.00	0.05%	0.11%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.4. SUSTAINABLE URBAN MOBILITY PLAN	short term	84,300.00	338.89	1.305.04	0.00	2.92%	6.78%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.5. ROAD ADAPTATION FOR BICYCLE USE	medium term	0.00	0.00	0.00	0.00	0.0%	0.00%	0.00%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.6. SAFE PARKING SPACE FOR BICYCLES	medium term	0.00	0.00	0.00	0.00	0.0%	0.00%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.7. PROMOTION OF FOOT TRANSPORT	short term	0.00	0.00	0.00	0.00	0.00%	0.00%	0.00%
MITIGATION	PRIVATE AND COMMERCIAL TRANSPORT	M.f.9. SHARED ELECTRIC VEHICLE NETWORKS	medium term	1,405.00	18.83	72.50	0.00	0.16%	0.38%	0.00%
MITIGATION	INDUSTRIAL SECTOR	M.g.1. CAMPAIGN TO PROMOTE THE PERFORMANCE OF ENERGY AUDITS IN INDUSTRY	medium term	562.00	16.72	61.45	0.00	0.14%	0.32%	0.00%
MITIGATION	INDUSTRIAL SECTOR	M.g.2. CAMPAIGN TO SUPPORT THE REPLACEMENT OF ENERGY CONSUMPTION FACILITIES BY MORE EFFICIENT OTHERS	medium term	562.00	6.69	24.58	0.00	0.06%	0.13%	0.00%
MITIGATION	INDUSTRIAL SECTOR	M.g.3. TRAINING IN ENERGY EFFICIENCY AND CLIMATE CHANGE TO THE MANAGERS OF THE ENERGY FACILITIES OF INDUSTRIES	medium term	843.00	16.72	61.45	0.00	0.1%	0.32%	0.00%
MITIGATION	INDUSTRIAL SECTOR	M.g.6.LOCAL BUSINESS ENERGY COMMUNITY	medium term	562.00	2.02	0.00	2.09	0.02%	0.00%	0.02%

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	ESTIMATED INVESTMENT (€)	ANNUAL CO2 REDUCTION (tCO2 / year)	ENERGY SAVING (MWh / year)	ENERGY PRODUCTION (MWh / year)	IMPACT ON THE MUNICIPALITY´S TOTAL EMISSIONS (%)	IMPACT ON THE MUNICIPALITY´S TOTAL CONSUMPTION (%)	IMPACT OF THE MUNICIPALITY´S RENEWABLE TOTAL PRODUCTION (%)
MITIGATION	WASTE	M.h.2. AWARENESS CAMPAIGNS WITH THE RECYCLING AND SEPARATION OF THE ORGANIC FRACTION	short term	4,215.00	12.72	0.00	0.00	0.11%	0.00%	0.00%
MITIGATION	WASTE	M.h.4. IMPLEMENTATION OF DOOR TO DOOR COLLECTION SYSTEM	short term	0.00	21.19	0.00	0.00	0.18%	0.00%	0.00%
MITIGATION	LOCAL ENERGY PRODUCTION	M.i.1. PHOTOVOLTAIC SOLAR CAMPAIGN	medium term	4,215.00	1,104.57	0.00	1,144.04	9.53%	0.00%	8.96%
MITIGATION	LOCAL ENERGY PRODUCTION	M.i.2. SOLAR THERMAL CAMPAIGN	medium term	7,025.00	65.88	0.00	269.47	0.57%	0.00%	2.11%
MITIGATION	LOCAL ENERGY PRODUCTION	M.i.4. MINIEOLIC	long term	7,025.00	339.87	0.00	352.01	2.93%	0.00%	2.76%
MITIGATION	LOCAL ENERGY PRODUCTION	M.i.5. TAX BONUS IN WORK LICENSES FOR THE IMPLEMENTATION OF RENEWABLE ENERGIES	short term	1,900.00	366.22	0.00	459.80	3.16%	0.00%	3.60%
			TOTAL	551.957	7,768.20	6,462.08	4,106.97	67.03%	33.60%	32.15%

3. ADAPTATION CLIMATE CHANGE

The adaptation process tries to respond to the climatic impacts that are already occurring and will occur due to the historical accumulation of GHG in the atmosphere.

The methodology used in the previous study of Risk and Vulnerability Analysis is characterized using a set of qualitative methods and analysis techniques combined under a stable methodological framework based on different recognized publications. The following diagram provides a broad overview of the methodology used:

Figure 2: Methodology used

From the past and current climate variables. and future scenery for adaptation. the types of risk that constitute a cause of concern are identified:

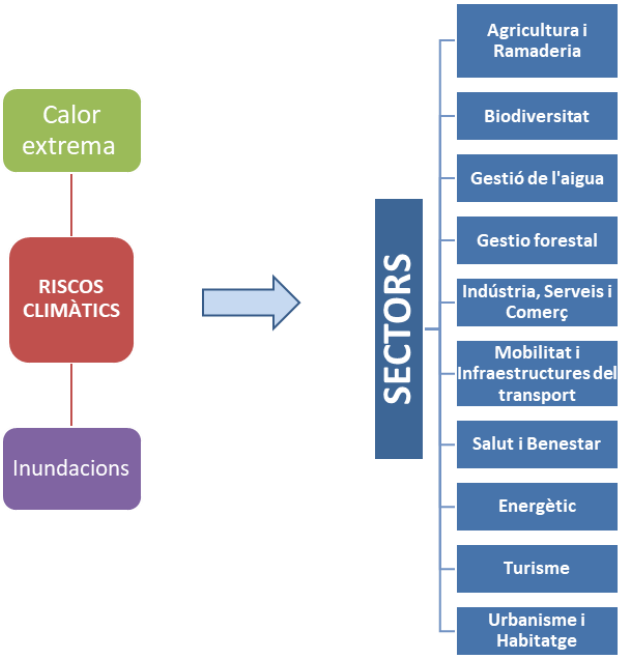

Figure 3: Climatic risks evaluated by sectors

	<< Current risks >>	<< Expected risks >>				
Type of Climate Risk	**Current risk level**	***Expected risk level***	***Expected* change in intensity**	***Expected* change in frequency**	**Timeframe**	**Indicators related to risk**
Extreme heat	MODERATE	***HIGH***	INCREASES	INCREASES	LONG TERM	• Number of heat waves per year • % of green areas affected by conditions or extreme weather events • Number of people injured / evacuated / moved due to extreme weather events. • Number of deaths related to extreme weather events. • Average response time (in min.) For police / firemen / emergency services in the case of extreme weather events. • % of the change in the number of native species.
Precipitation	MODERATE	***MODERATE***	NO CHANGE	NO CHANGE	MID TERM	• Number of buildings damaged by extreme weather conditions or episodes. • Annual economic losses (€ / year) direct due to extreme weather events. • Intensity of the rains (l / min) • Number of days without rain.

Table 6: Summary table of the risk assessment

Once the risks have been analyzed. the vulnerabilities are analyzed. according to the nature. magnitude and rate of climatic variation to which a system is exposed. its sensitivity and its ability to adapt:

Vulnerabilitat	Tipus	Nivell actual	Nivell previst
Temperature variation in AGRICULTURE AND LIVESTOCK	Physics and environment	Medium	High
Variation in precipitation AGRICULTURE AND LIVESTOCK	Physics and environment	Medium	Medium
Temperature variation in BIODIVERSITY	Physics and environment	Medium	High
Variation in precipitation BIODIVERSITY	Physics and environment	Medium	Medium
Temperature variation in WATER MANAGEMENT	Physics and environment	High	High
Precipitation variation WATER MANAGEMENT	Physics and environment	Medium	Medium
Temperature variation in FOREST MANAGEMENT	Physics and environment	High	High
Precipitation variation FOREST MANAGEMENT	Physics and environment	High	High
Temperature variation in INDUSTRY. SERVICES AND TRADE	Socioeconomic	Medium	High
Variation in precipitation INDUSTRY. SERVICES AND TRADE	Socioeconomic	Medium	Medium
Temperature variation in MOBILITY AND TRANSPORT INFRASTRUCTURES	Socioeconomic	Medium	High
Variation in precipitation MOBILITY AND TRANSPORT INFRASTRUCTURES	Socioeconomic	Medium	Medium
Temperature variation in HEALTH AND WELL-BEING	Physics and environment	High	High
Variation in precipitation HEALTH AND WELL-BEING	Physics and environment	Medium	Medium
Temperature variation in the ENERGY	Socioeconomic	High	High
Precipitation variation in the ENERGY	Socioeconomic	Low	Low
Temperature variation in TURISM	Socioeconomic	Medium	High
Precipitation variation in TURISM	Socioeconomic	Low	Low
Temperature variation in URBANISM AND HOUSING	Socioeconomic	Low	High
Precipitation variation in URBANISM AND HOUSING	Socioeconomic	Low	Low

Table 7: Vulnerability summary table

The Adaptation Action Plan is composed of a total of 15 actions:

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	First year of implementation	Last year of implementation	ESTIMATED INVESTMENT (€)
ADAPTATION	ADAPTATION	A.1. BUILDING REFORM CAMPAIGN	Medium term	2026	2030	1,405.00
ADAPTATION	ADAPTATION	A.2. REFORM OF INFRASTRUCTURES	Short term	2022	2030	35,125.00
ADAPTATION	ADAPTATION	A.3. REDUCTION OF THE SEALED EFFECT OF THE LAND AND INCREASE OF THE PERMEABLE AREAS	Short term	2022	2030	14,050.00
ADAPTATION	ADAPTATION	A.4. INCREASE OF GREEN AREA SURFACE	Short term	2022	2030	14,050.00
ADAPTATION	ADAPTATION	A.5. CAMPAIGN REDUCTION OF WATER CONSUMPTION	Medium term	2026	2030	702.50
ADAPTATION	ADAPTATION	A.6. IMPROVEMENTS IN MUNICIPAL WATER MANAGEMENT	Short term	2026	2030	2,529.00
ADAPTATION	ADAPTATION	A.7. WATER RECYCLING	Short term	2022	2030	1,264.50
ADAPTATION	ADAPTATION	A.8. FOREST FIRE PLANS	Short term	2022	2030	0.00
ADAPTATION	ADAPTATION	A.9. INCLUSION OF CLIMATE RISKS IN EMERGENCY PLANS AND PROTOCOLS	Medium term	2026	2030	2,500.00
ADAPTATION	ADAPTATION	A.10. CAMPAIGN DEDICATED TO THE AGRICULTURAL SECTOR	Short term	2022	2030	2,529.00
ADAPTATION	ADAPTATION	A.11. CAMPAIGN OF ACTIONS RELATED TO HEALTH AND RAISING AWARENESS OF THE POPULATION	Short term	2022	2030	1,264.50

TYPE	SCOPE	PROPOSED MEASURES	PRIORITY	First year of implementation	Last year of implementation	ESTIMATED INVESTMENT (€)
ADAPTATION	ADAPTATION	A.12. ACTIONS AGAINST HEAT WAVES	Medium term	2026	2030	702.50
ADAPTATION	ADAPTATION	A.13. MOBILIZATION AND ACCOMPANYING OF SOCIAL SERVICES IN THE DETECTION OF THE ACCESS TO ENERGY	Medium term	2026	2030	702.50
ADAPTATION	ADAPTATION	A.14. CAMPAIGNS AGAINST PESTS	Short term	2022	2030	1,264.50
ADAPTATION	ADAPTATION	A.16. CONSUMPTION OF PROXIMITY PRODUCTS	Medium term	2026	2030	702.50
					Total	**78,791.50€**