AGREEMENT

Core 3, area 3.9 of the Plan of Government (2007-2010) includes as a strategic goal 2 "to promote the change towards a sustainable development" and specifies in goal 2.1 the need "to establish and develop a Catalan strategy for sustainability".

This goal replies to the different international mandates relative to the need to elaborate strategies of sustainable development (especially, Rio in 1992 and Johannesburg in 2002), as well as to the demands of the Parliament of Catalonia, that has brought up several times the need of Catalonia to endow with a strategy of sustainable development (Decision 301/VII, 2009).

Otherwise, local entities and social agents also promote this strategy. Thus, on the one hand, the Declaration of Manresa +10 promoted in 2008 by the Cities and People for the Sustainability Net express the need and the demand of a nation-wide strategy. On the other hand, the need to elaborate this Strategy has been agreed on among the Government and the social agents within the framework of the strategic Agreement for the internationalization, the quality of the employment and the competitiveness of Catalan economics 2008-2011.

The Strategy for the sustainable development of Catalonia in horizon 2026 has to become a route map that fixes the main strategic lines and objectives in order to guarantee the transition of Catalonia towards a safe, eco-efficient and low carbon-containing economics, based on a minimization in the consumption of resources (the non-renewable ones especially) and in the impacts on health and environment in Catalonia and all over the world.

The Strategy is based on 16 strategic lines and establishes 101 strategic goals, 49 of which are quantified, and they guarantee, in an operating level, the concretion and the feasibility of model 2026. These strategic goals have been agreed on with the different departments of the Government of Catalonia and with a wide range of social and economic agents, guaranteeing the integrating character of the Strategy with the other plans and programmes of the Government of Catalonia.
Once the process of joint elaboration and consensus of the Strategy within the framework of the interdepartmental Working Party has been made;

For that reason at the proposal of the minister of Environment and Housing, the Government

AGREES:

1. To approve the Strategy for the sustainable development of Catalonia, that is attached to the appendix.

2. The deployment of this Strategy will be carried out through departmental plans of action. These plans shall specify the instruments and the priority measures to attain the goals of the Strategy and shall be integrated into the Framework Plan of Monitoring and Coordination of the Strategy.

3. The monitoring of the Strategy shall be carried out by the competent department on the subject of Environment.

4. To order the publication of this Agreement in the *Official Gazette of the Government of Catalonia*. The attached document that the Strategy for the sustainable development of Catalonia contains shall be able to be consulted in the Web page of the Department of Environment and Housing (www.gencat.cat/dmah), and shall be at the disposal of the persons interested in the headquarters of the Department of Environment and Housing (Av. Diagonal, 523-525, 08029 Barcelona).

Barcelona, August 31st 2010
1. An Economic, Social and Environmental Strategy
1. An Economic, Social and Environmental Strategy

1.1 The strategy: a Catalan Commitment to International and European Mandates

The Government of Catalonia has devised the Strategy for Sustainable Development in a coherent manner with the objective of responding to the commitments it has acquired on multiple levels, from the international to the local.

1.1.1 The International Context

In 1987, the report *Our Common Future* (also known as the *Brundtland Report*) defined sustainable development as development that “meets the needs of the present without compromising the ability of future generations to meet their own needs”. There have been in the past and there will be in the future a series of essential milestones for sustainable development, as summarised in the table below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>Aalborg</td>
<td>Aalborg Charter. Local Agenda 21</td>
</tr>
<tr>
<td>2001</td>
<td>Gothenburg</td>
<td>European Union Sustainable Development Strategy (EU SDS)</td>
</tr>
<tr>
<td>2002</td>
<td>Johannesburg</td>
<td>World Summit on Sustainable Development - Rio+10 Summit</td>
</tr>
<tr>
<td>2006</td>
<td>Brussels</td>
<td>1st review of the European Union Sustainable Development Strategy</td>
</tr>
<tr>
<td>2009</td>
<td>Brussels</td>
<td>2nd review of the European Union Sustainable Development Strategy</td>
</tr>
</tbody>
</table>
The United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 coined the term Agenda 21 to refer to the action plans required on the local, regional and state levels to make progress in sustainable development. The concept of Agenda 21 became very popular in the years following the conference, leading to the implementation of a large number of Agenda 21 projects on various territorial levels.

At the Johannesburg Summit (2002) – held 10 years after the Rio summit and before the new emerging challenges imposed by economic globalisation – the concept of Agenda 21 paved the way for sustainable development strategies. At this summit, the Network of Regional Governments for Sustainable Development put forward the Gauteng Declaration, which established the need for regional governments to create their own sustainable development strategies to link state and international strategies to the work carried out by local authorities within the framework of Agenda 21.

We are approaching the Rio+20 Summit (2012), where the effectiveness of state and regional sustainable development strategies will once again be discussed in relation to the challenges of climate change and the insufficient progress of the Millennium Development Goals.

1.1.2 The European Union: the Framework of Reference for the Strategy

The concept of sustainable development forms an inherent part of the European construction process, as compiled in the fundamental principles of the creation of the EU (Constitutional Treaty). Subsequently, the will to transversely incorporate the environment into community policies appeared in the Cardiff process and led to the European Union Sustainable Development Strategy (EU SDS) presented at the Gothenburg Summit in 2001.

The transverse nature of sustainable development and particularly of the EU SDS is reflected in the fact that it originated as a complementary element of the Lisbon Strategy. The main objective of the Lisbon Strategy was to coordinate European Union structural reforms to increase the EU’s economic potential, even though it was already supported by three fundamental pillars: the economic pillar, the social pillar and the environmental pillar.

Both in the Europe 2020 Strategy and in the Lisbon Strategy, poverty, energy, the environment and research and innovation are priority areas to foster growth and employment in the EU. With regard to research, the Seventh Framework Programme for Research and Technological Development (2007-2013) considers it to be one of the main European economic and social ambitions so it may respond to the needs of industry and more generally to needs of European policies.

Since 2001, both the Lisbon Strategy and the EU SDS have been reviewed (in 2005 and 2006, respectively), without losing sight, however, of the need to guarantee the integration of sustainable development into all European policies both as a fundamental principle and as an opportunity to face future challenges. This is, therefore, a long road, as manifested in the fact that the strategic nature of sustainability is being transferred both to the EU’s Europe 2020 Strategy proposal and to the review of the EU SDS planned for 2011.

The mandate to develop sustainable development strategies in EU Member States led the Spanish Government to approve the Spanish Sustainable Development Strategy in 2007; the majority of the other Member States have also implemented similar strategies.
In tandem with the work undertaken by the Commission and the Member States, the strong repercussions of these commitments on a local scale should also be taken into account. These effects are evident in the large number of Agenda 21 projects implemented on numerous territorial levels over the last twenty years. As a consequence of the first European Sustainable Cities and Towns Conference, the Aalborg Charter was drawn up, which encouraged a significant number of local authorities to adhere to this process. Catalonia has played a leading role in this movement, principally due to the support initially provided by the Xarxa de Ciutats i Pobles cap a la Sostenibilitat (Network of Cities and Towns for Sustainability), promoted by Barcelona Provincial Council and subsequently by the Consell d’Iniciatives Locals pel Medi Ambient (Council for Local Environment Initiatives - CILMA), promoted by Girona Provincial Council, Tarragona Provincial Council and Lleida Provincial Council.

1.1.3 Catalan Mandates

The 2006 Statute of Autonomy of Catalonia makes several references to sustainable development. In particular, article 4.3 consecrates it as one of the governing principles of the Catalan political framework: “The public authorities of Catalonia shall promote the values of freedom, democracy, equality, pluralism, peace, justice, solidarity, social cohesion, gender equity and sustainable development”. Article 27 establishes rights and obligations concerning the environment and article 45 establishes sustainable development as one of the governing principles upon which socioeconomic development, the integration of the environment and the management of the territory are to be based. Therefore, a sustainable development strategy is included within the mandate of the Statute of Autonomy and it develops one of the pillars established by Catalonia’s fundamental legislation.

Beyond the development of the Statute, in line with the mandates established on the international scale, on numerous occasions the Catalan Parliament has proposed the need to implement a sustainable development strategy, including Resolution 301/VIII of 2009. It is also an objective of the government included in its 2007-2010 Plan.

Furthermore, local authorities and social agents are also lending their support to this Strategy. The Manresa Declaration + 10 devised in 2008 by the Network of Cities and Towns for Sustainability manifests the need and demand for a strategy on a national scale, as proposed in its founding charter in 1997. Moreover, the need for such a strategy has been agreed by the Government and social agents within the framework of the Strategic Agreement to Promote Internationalisation of the Catalan Economy, the Strengthening of its Competitiveness and the Quality of Employment 2008-2011.

1.2 The Long Road to the Strategy

1.2.1 Acquired Experience

Catalonia has actively participated in the aforementioned international summits (Rio, Johannesburg, Aalborg, conferences on climate change...) and has unquestionable experience thanks to the progressive implementation of specific actions and policies integrated within the Agenda 21 project.
For almost 20 years we have had our own formulations regarding sustainable development and 10 years ago the Government of Catalonia created the CADS, the Consell Assessur per al Desenvolupament Sostenible de Catalunya (Advisory Council for the Sustainable Development of Catalonia), which promotes sustainability and advises the Government of Catalonia with regard to sustainability policies.

Moreover, Catalan society has progressively increased its active participation in processes to draw up and implement plans and policies on all levels, clear examples of which are local Agenda 21 projects, the Catalan Climate Change Convention, and those linked to the waste planning processes, the Plan to Reduce Pollution in the Barcelona Metropolitan Region, the implementation in Catalonia of the Water Framework Directive and the Strategy for the Sustainable Development of Catalonia fostered by the Department of the Environment and Housing (DoEH).

However, until now the Catalan Government has not had its own sustainable development strategy. Although from 1998 to 2003, in a context where local Agenda 21 projects were gaining importance in municipal politics, work was carried out on a Catalan regional scale to devise an Agenda 21 proposal for Catalonia. Even though in the end this initiative was not successfully implemented, it constituted a preliminary reflection process of great interest. Accordingly, the Strategy for Sustainable Development is, in coherence with the international and national mandate and the experience obtained from the implementation of local Agenda 21 projects, a national strategy with a transverse vision aimed at progress towards scenarios with greater social, economic and environmental sustainability for Catalonia in the medium term.

1.2.2 Catalonia is Well Positioned

Sustainable development strategies are by no means a new concept in the political scenario. In the last 15 years Catalonia has created a number of sector-based instruments that have incorporated sustainability into their formulation and development, resulting in significant progress in this field.

On the local scale, as mentioned above, these instruments include Agenda 21 projects and, more recently, the Covenant of Mayors, which constitutes one of the main European initiatives to reduce greenhouse gas (GHG) emissions and increase energy saving and efficiency in the municipalities. As with local Agenda 21 projects, Catalonia is a European leader in terms of adhesion to the Covenant, mainly thanks to the support lent by Barcelona Provincial Council. The major efforts made by some municipalities with regard to the inclusion of sustainability criteria in municipal planning instruments are also worthy of note.

Similarly, considerable progress has been made with regard to the development of sector policies on the national scale that foster the sustainable development of the country, such as the law on urban development and the territorial planning programme, national directives on mobility and the various mobility planning instruments, the decree on eco-efficiency, the Catalan Energy Plan, the National Housing Agreement, the extension of the Plan for Areas of Natural Interest in Catalonia (PEIN) and the consolidation of the Natura 2000 network, new waste management legislation, the application of the Water Framework Directive, the new law on the environmental prevention and control of activities and the law on the environmental assessment of plans and programmes.

Similarly, the approval of certain plans should be underlined, such as the Catalan Framework Plan for Climate Change Mitigation 2008-2012, the Plan to Improve Air Quality in the Barcelona Metropolitan Area (2007-2009), Plan to Foster Ecological Agriculture, which exceed sector scope and are cross-cutting instruments implemented by means of participative processes with social and economic actors. Furthermore, analysis and forecasting exercises have also been carried out to
serve as a reference for the development of sector planning, such as the Catalan Energy Forecast 2030, or the preparation of the Criteria for the Development of the Territorial Planning Programme, which are all fundamental for the definition of this Strategy.

These advances have resulted in the favourable development of various indicators in recent years, showing an improvement in the capacity of the administration, the public and socioeconomic actors to respond to socio-environmental problems (for example, the reduction of domestic water consumption, the increase in the percentages of selective waste collection and the reduction of final energy intensity).

Catalonia, therefore, is well positioned to take a decisive step forward towards more sustainable scenarios. In this context, the Strategy must serve as an instrument that integrates, coordinates and elevates to the national level a transverse and holistic sustainable development policy. A policy that constitutes a general frame of reference for the Government of Catalonia’s policies and specifies common strategic objectives for it. The Strategy must have the capacity to face Catalonia’s main challenges and to contribute to the generation of a highly significant positive impact on the creation of wealth, employment and quality of life, in a similar manner to how the European Union Sustainable Development Strategy is complemented by the Lisbon Strategy adopted by the EU.

1.3 The Strategy as an Opportunity for Change in a Context of Economic Crisis

1.3.1 Sustainability Means Internalising Externalities

The economic conceptions of the 19th and 20th centuries considered that the biophysical matrix was alien to economic processes, to the extent that some of its essential components in terms of production (water, land, climate, etc.) were irrelevant free goods. This proposal, which is a skewed vision of the actual situation, has generated an economic system that is removed from the physical environment and, moreover, has led to significant problems in the system. Additionally, and now more than ever, these secondary factors are taking on great value, related to phenomena such as climate change, forest fires and floods. This internalisation of underestimated biophysical elements or externalities is one of the principles of sustainability.
The concept of externality is based on the fact that an action carried out by an economic agent (individual or company) can have a direct impact on the wellbeing of other people, the quality of the environment or the production processes of other companies. These externalities can be positive or negative. It is a significant aspect to be taken into account in economic analysis, given that when externalities are generated their effects are not reflected in market prices, and therefore, the system works inefficiently.

It is no longer possible to sustain an economic model without integrating socio-environmental objectives into its formulation. Resolving the socio-environmental malfunctions of a model that has not set well-founded objectives and consequently has generated these malfunctions is illogical; it generates environmental and social problems that are difficult to address and, moreover, it results in a high economic cost.

Incorporating externalities into economic accounts is important in terms of efficiency and is a key factor in achieving sustainable development. For this reason, it constitutes one of the essential elements that have been incorporated into the Strategy for the Sustainable Development of Catalonia and has accordingly become one of its added values.

Assessment of the Externalities

There are multiple studies on the global, European and Catalan scales that have calculated the external costs of various sectors of the economy, of the implications of climate change and of positive externalities arising from the inclusion of sustainability in the economy.

One of the most far-reaching studies in recent years is the Stern Review\(^1\). This study values in economic terms the effects of climate change based on its effect on production activities and also on the social externalities that it can generate. It is following this assessment when it is feasible to make cost-benefit analyses, as the review does, and to quantify the profitability of the investments required to mitigate the effects of climate change. The Stern Review concludes that an investment equivalent to 1% of GDP can save a 20% drop in GDP in the worst-case scenario and, therefore, it shows the efficiency of these investments. According to the review, one of the keys to guaranteeing this saving consists of developing highly efficient technologies that are low in carbon, which is the same conclusion reached by the Strategy.

In November 2008 the United Nations published the New Green Deal, within the Green Economy Report\(^2\), proposing development towards an economy that incorporates sustainability as an integral part, which is presented as a viable response to the global economic and financial crisis. It is estimated that this evolution will create, from now to 2030, 20 million jobs related to renewable energies worldwide and will significantly contribute to reducing unemployment rates. Within the framework of the Green Economy Report, the United Nations has also carried out an economic assessment of global biodiversity by means of the project The Economics of Ecosystems and Biodiversity (TEEB)\(^3\). According to the EmployRES report\(^4\), the EU will create 2.8 million jobs in 2020 if it complies with its objective in terms of renewable energies: 20% by 2020, which will represent an additional contribution to GDP of 0.24%. These reports have already inspired the development of multiple studies on the international and European scales, in many cases arising from government plans to face the current economic crisis.

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1. Nicholas Stern, Stern Review on the Economics of Climate Change, 2006. [http://www.hm-treasury.gov.uk/sternreview_index.htm](http://www.hm-treasury.gov.uk/sternreview_index.htm)
Furthermore, the Global e-Sustainability Initiative (GeSI), an international strategic union of the main information technology companies, has prepared for the United Nations the report *SMART 2020: Enabling the low carbon economy in the information age* which assesses global economic savings with regard to various sectors by the year 2020. According to this report, the car industry can save €68 billion and the logistics sector can save €280 billion by implementing an approach to reduce GHG emissions.

Similarly, the German government has announced that it predicts that the renewable energy sector, which already constitutes 4-5% of GDP, will increase to 16% in 2025, thus becoming a fundamental pillar of economic recovery.

These studies reinforce the relevance of initiatives designed to strengthen social, environmental and economic sectors related to the sustainability of Catalonia, as an opportunity to contribute to economic recovery.

In fact, according to the Economic Study of the Environment in Catalonia 2008 carried out by Fundació Fòrum Ambiental, the added value of the environmental sector in Catalonia grew by 81% from 2003 to 2008, that is, 3 times more than GDP for the same period. The same study quantified the population working in the environmental sector as 1.24% of the working population in Catalonia for the year 2006. Similarly, in 2006 the Department of the Environment and Housing published a study entitled the *Economic Potential of the Environmental Sector in Catalonia* carried out by Gabinet d’Estudis Econòmics, which estimated that in 2005 activities related to the environmental sector represented between 2.8% and 3% of the Catalan GDP. It also predicted that this participation would increase by 0.1 percentage points per year, thanks to the impulse of renewable energies, environmental services, changes in processes and materials, investments in environmental infrastructure and ecologic trade and consumption.

It is equally relevant to mention the report *Green Employment in a Sustainable Economy*, published in 2010 by Fundación Biodiversidad (Biodiversity Foundation) and the Spanish Observatory for Sustainability, according to which the green employment sector can achieve 2,775,000 jobs in Spain by 2020, the sustainable transport sector contributing the most with 770,000 jobs generated exclusively in this sector.

The growth of the contribution to the GDP of the environmental sector must involve the generation of new employment niches, but not only this. Innovation based on the achievement of the objectives of the Strategy in all productive sectors will also be a competitiveness factor for Catalan companies on the European scale, as manifested in the implementation of the Catalan Agreement on Research and Innovation, in which research and innovation in sustainability are considered to be priorities for the future of the country.

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6 http://www.sostenibilidad-es.org/
1.3.2 Towards an Eco-efficient Economy

The practical application of the concept of externality leads, in practice, to talk of a new paradigm: the eco-efficient economy. In general terms, the application of this model in Catalonia would involve the transition towards a secure economic model, based on knowledge and low carbon content. This model is based on the following four principles:

- Fostering efficient use of natural resources and minimising the effects on health and the environment, especially with regard to ecosystems and the climate.
- Harmonising economic development and improving the wellbeing and quality of life of the citizens.
- Internalising environmental costs and the value of the services of ecosystems and of biodiversity.
- Increasing the working population with high added value that produces innovative, more efficient, quality goods and services.

This paradigm already has a political realisation as shown in the conclusions of the EU Council of Environment Ministers (October 2009), which covered the eco-efficient economy in the context of the future of the Lisbon Agenda. At this summit the following points were considered:

- Urgency of considering the current crisis to be an opportunity to change to an eco-efficient economy.
- Emphasis on the close relationship between the eco-efficient economy, the competitiveness of the EU in the long term and the growth of employment.
- Need to complement the GDP with complementary indicators that more accurately reflect progress in the social, economic and environmental areas, and the need to remove economic growth from environmental degradation.
- Need to internalise environmental costs and to recognise the cost of not acting.
- Make progress in knowledge of the economic value of the services of the ecosystems and of biodiversity and propose suitable price mechanisms that reflect the real value of these services.
- Consider eco-innovation to be a special contribution in the European Innovation Act and facilitate transition towards an eco-efficient economy.

1.3.3 Crisis and Sustainability: New Solutions for Old Problems

Currently, the country is immersed in a period of significant economic crisis, a crisis that is much deeper and more global than that of 1973 and only comparable to the great depression of 1929, which has shaken the global economic system.

In the 1970s the concept of sustainable development had not yet been formally defined and the 1973 crisis, which was only perceived in economic and energy terms, only had a slow, and often conflictive, response in strictly energy and economic terms. Over the course of the last 35 years, this biased response has enabled the consolidation of a model that has led to the separation of economic development from social and environmental development, as manifested in:
• Economic disparity and political instability resulting in an accentuation of the differences between rich and poor, both on the local scale and on the global scale.

• The globalisation of the markets, without true globalisation of the economy in socio-environmental terms.

• The discovery of serious global problems such as climate change and forecasts of scarcity in energy availability as a consequence of the socio-environmental model of the most developed countries, the effects of which are beyond merely environmental matters and have a direct effect on economies and societies around the world.

• The relativisation of the role of classic macroeconomic indicators, in particular the GDP, as true means of measuring progress and the quality of life of people and countries.

The predominant global socioeconomic model of the last few decades does not internalise socio-environmental costs, the true transcendence of which is only evident years after the impact is produced (hole in the ozone layer, climate change, reduced atmospheric quality and water body quality, etc.). Paradoxically, even though the 1973 crisis had its origin in the increase in the price of oil, changes in the world energy model have not been as substantial as we might have thought and fossil fuels continue to be the main source of primary energy.

It can be stated, therefore, that the response to the 1973 crisis was based on simple partial corrections to the same model that was responsible for producing it, corrections that have proven to be insufficient, especially given the fact that the crisis has been reproduced with even more severity.

It is interesting to note that, in fact, the etymological meaning of the word crisis is not necessarily negative given that it originally meant judgement or decision. With this etymological focus, crisis can be interpreted as the moment when it is necessary to analyse a situation and take steps to address it. If we apply this meaning to the present and take into account that the socioeconomic model does not work, it is clear that work is required to change the model and to move towards the adoption of a new one.

Similarly, in contrast to 1973, it seems that the international community is starting to defend the development of a new conceptual framework that will enable a response to this crisis by facilitating the transition towards a new model based on the integration of sustainability as a viable response to the current context. It is not, however, a matter of forcing the introduction of the environmental dimension into the existing socioeconomic system, rather it is a matter of contributing to the generation of a new paradigm that integrates social, economic and environmental aspects. That is, a new sustainable system organised by means of a new governance model and an eco-efficient economy.

Catalonia has not kept to the sidelines with respect to the changes that have been made and the socioeconomic model that has prevailed since 1973. In this sense, the tendency observed in recent decades used to be the absolute separation of economic indicators from environmental and social ones.

Even so, as expressed above, the efforts made by the public, companies and the Administration have resulted in the improvement of certain sustainability indicators. Mention could be made for example of the sustained increase in selective waste collection since 2002 or the reduction in energy intensity and in the generation of waste per capita since 2005.

This recent experience must serve as a driver to accelerate the tendency towards environmental recovery and jointly to guarantee economic recovery and social improvement. This time, economic
recovery will not have to be achieved at the cost of socio-environmental malfunctions, rather by taking the achievement of an eco-efficient economy as the base.

With the clear intention of aligning itself with international trends and the European commitment to an eco-efficient economy, the Government of Catalonia is developing its strategy for sustainable development as an instrument to provide viable solutions to improve the quality of life of the public and guarantee the transition towards a sustainable Catalonia. In short, an innovative solution for an old problem.

Catalonia, like the rest of the world, must face these major challenges – both on a global scale and on a local scale – in order to be a developed society within 21st-century Europe. An equal share of responsibility and commitment to international and European Union objectives corresponds to it, but, beyond these demands it needs to be equipped with an instrument to help it direct its policies and plan its actions with a global and integrating vision. This cannot be improvised and cannot be reduced to the implementation of partial solutions to sectoral problems and, less so, to the identification of false solutions that mitigate the effects without affecting the causes. Catalonia in the year 2030 must be designed, agreed to and planned now, and the Strategy for Sustainable Development is destined, due to its very nature, to become an instrument to make progress in this direction.

1.4 2026.cat, the Participative Process in the Preparation of the Strategy

In May 2009, the Department of the Environment and Housing, with the collaboration of the Department of Home Affairs, Institutional Relations and Participation, channelled an intense participative process with regard to the preparation of the Strategy for the Sustainable Development of Catalonia, taking into account the various sectors of activity and aiming to cover the whole Catalan territory. The participation process, called 2026.cat, was created to support the decision-making process by means of debate, deliberation and shared information with the objective of guaranteeing public involvement in order to map out jointly the route to achieving a scenario of optimal sustainability in the future. Deliberation was centred on the major challenges of sustainability for the future of Catalonia and also on the actions necessary to achieve a sustainable country in the long term.

The use of various methods of participation, both in-person and virtual, has facilitated dialogue with society, while promoting the involvement of social and economic actors from the start. On the one hand, territorial debate forums have been organised in several municipalities in Catalonia to discuss priority measures that have to be implemented by the various socioeconomic sectors to facilitate the transition towards scenarios of greater sustainability. Accordingly, debate sessions aimed at specific groups such as the third social sector, young people and the education community have been organised. Moreover, in order to compile the point of view of the public at large, a session addressed to the general public was also held.

On the other hand, a process of virtual participation has been opened by means of encouraging a specific debate forum. This forum has been structured based on the sectors that the Strategy analyses, which are also the sectors dealt with in the in-person sectoral debate sessions. Moreover, new methods of social communication provided by the Internet have been used to reach a larger
number of citizens. One of the main methods used is the social network Facebook, where more than 1,300 friends of the Strategy have been able to follow its participation process, share opinions and access information about various aspects of the preparation.

These participation methods have compiled proposals from entities, authorities, companies, academia and the general public, which have been assessed and considered in the final draft of the Strategy. This process was an essential element in the preparation of a Strategy that combines a wide range of perceptions and proposals and to guarantee that the sustainable Catalonia model that emerges from the Strategy is shared with society.

One of the key aspects of the process is the constitution of the advisory board and the local round table (created ad hoc to prepare the Strategy), which have guaranteed the strength of the Strategy and of the process of participation itself. In parallel with the participative process, an interdepartmental working group, which has been fundamental in the assessment and monitoring of the preparation process of the Strategy and has facilitated consensus within the Government of Catalonia, has also been established. Annexe I contains more detailed information about the participative process.
2. The Major Challenges of Sustainability in Catalonia
2. The Major Challenges of Sustainability in Catalonia

2.1 Definition Process

Throughout 2008 and 2009, the Department of the Environment and Housing carried out a series of sector-based studies – agriculture, industry, construction, mobility, energy, tourism, trade and domestic area, governance – in addition to a study of global sustainability scenarios for Catalonia for 2026. These studies have enabled the preparation of a global assessment of the status of sustainability in Catalonia especially designed to identify the main challenges of future sustainability, which are summarised in this chapter. These studies constitute the technical base of the preparation process of the Strategy for the Sustainable Development of Catalonia and also of the work carried out by the interdepartmental working group.

In tandem with these specific studies, the analyses developed on the interdepartmental level for the design of the Energy Plan, the Territorial Planning Programme, the development of the Water Framework Directive in Catalonia, the new waste plan, sectoral analyses on education, the process developed at the Rural Society Congress and a large number of studies, analyses and sector plans have also constituted an essential technical base for the identification and definition of Catalonia's socio-environmental challenges.

In the first stage of the preparatory work for the Strategy, a matrix was developed to compile and prioritise the major challenges of sustainability that have to be faced by 2026 as a preliminary phase to identify the sustainable model of Catalonia defined by the Strategy. The design of this matrix was based on the three basic pillars of sustainability (economic, environmental and social), although certain nuances were introduced in order to increase their operability, transversality and specificity for the Catalan territory within the framework of the Strategy.

On the one hand, three main areas were identified (territorial, environmental flows and socioeconomic), which were divided into various subareas in order to facilitate the structuring and analysis of the information:

- The territorial area is subdivided into three subareas: urban development and planning, natural and agricultural heritage, and mobility.
- The environmental flows area is divided into three subareas: energy and climate change, water, and waste.
- The socioeconomic area includes another three subareas: health, sustainable production and consumption, and economic activity.

In relation to certain aspects associated with the social and political area, it should be noted that the subareas equality and social inclusion, education and awareness and governance worked better if they were transversal, as the challenges are of a global nature and it was difficult to assign them to specific economic sectors.
From the start, the aim was to include the sectoral aspect as a fundamental part of the Strategy, not only with regard to the current socioeconomic context, but also with the intent of assessing the contribution of the sectors to the sustainability of the country. Accordingly, the sectors were introduced as columns of the matrix to establish the relationships and interactions with the challenges of sustainability. The domestic area and administration were also added to it, even though they are not strictly economic areas, because of their special relevance in the analysis.

Parallel to the establishment of the challenges, the impact of the sectors was analysed with respect to how each challenge is faced, based on a three-level scale: very high, high and medium. The colour code chosen to represent them is as follows:

![Colour Code]

This impact was quantified by means of specific indicators in the challenges considered to be priority. These indicators constitute a fundamental element and were the basis for the identification of the strategic objectives (chapter 5).

The initial matrix was enhanced by numerous contributions made thanks to the deliberations arising from the participation processes, the ad hoc working groups and the involvement of the departments of the Government of Catalonia, both in relation to the definition of the challenges and their prioritization. The final result of this process (which involves the identification of more than fifty challenges) is summarised in the next section.

### 2.2 Sustainability Challenges

The matrix of challenges shown below compiles the sustainability challenges identified within the framework of the Strategy for 2026 in a structured and prioritised manner.

The aforementioned iterative and participative work carried out by all the actors involved enabled the identification of 26 priority challenges (identified with a un √), which have diverse and multiples on the sectoral areas analysed. The prioritization was done in accordance with a multi-criteria analysis that basically includes the following criteria:

- The transversality of the challenge.
- The socioeconomic and environmental effect of the challenge.
- The distance between the current situation and/or recent development with regard to what could be considered a sustainability objective for 2026.
- The integration of the various challenges, placing priority on those with greatest transversality
- The expert opinion of the technical teams in the preparation of the Strategy.
- The strength and social and scientific consensus of the challenge. For example, adaptation to climate change.
<table>
<thead>
<tr>
<th>AREA</th>
<th>SUBAREA</th>
<th>CODE</th>
<th>PRIORITIES (TOP 3)</th>
<th>CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Territorial area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Urban development and Planning</td>
<td></td>
<td></td>
<td>1. Minimize the area of developed land, reuse rural land and foster efficient land use.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Consolidate a territorial model that especially strengthens the urban nodes of Catalunya, establishing growth and regeneration strategies with compactness and complexity criteria that prevent an increase in urban sprawl and that foster sustainable modes of transport.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Prevent the fragmentation of natural and agricultural systems caused by infrastructure, incorporating those objectives into the assessment of their need and their design.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Foster the integrated management of territorial scopes with specific peculiarities (coast, mountain areas, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5. Regulate the implementation of functions and activities in the territory, facilitating the provision of service infrastructure and optimising environmental flows (water supply and treatment, waste management, energy supply, etc.) in order to guarantee territorial cohesion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6. Sheer the construction sector towards the rehabilitation of existing housing so that it adjusts to the social demand for housing and the demand for internalisation of environmental costs and incorporation of environmental criteria.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7. Improve the balance in the uses and functions of the urban public area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8. Incorporate eco-efficiency and landscape criteria and measures into construction.</td>
</tr>
<tr>
<td></td>
<td>Natural and agricultural heritage</td>
<td></td>
<td></td>
<td>9. Guarantee the conservation of species, habitats and geological heritage, and make progress in our knowledge of them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10. Foster the management and sustainable use of forest areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11. Revise the socio-environmental services and productive and protective functions of the natural systems, including agricultural and forestry systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12. Integrate natural heritage conservation objectives into sectoral policies, and particularly in agricultural areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13. Complete the system of protected natural areas, extending it to marine areas, and guaranteeing sustainable management.</td>
</tr>
<tr>
<td></td>
<td>Mobility</td>
<td></td>
<td></td>
<td>14. Significantly increase the modal share of sustainable mobility, both for passengers and for goods.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15. Foster the reduction of everyday mobility needs that would result in a reduction of atmospheric emissions.</td>
</tr>
<tr>
<td>AREA</td>
<td>SUBAREA</td>
<td>CODE</td>
<td>PRIORITIES (TOP 20)</td>
<td>CHALLENGES</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Environmental flows</td>
<td>Energy and climate change</td>
<td>16</td>
<td>✓</td>
<td>• Transform the Catalan energy system into a system of low energy intensity and low carbon emissions by fostering energy saving and maximising energy efficiency in all sectors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>✓</td>
<td>• Foster renewable energies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
<td>✓</td>
<td>• Foster the energy exploitation of forest biomass, making it compatible with the sustainable management of forests.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>✓</td>
<td>• Optimise the electrical energy distribution networks in order to respond to the needs of the future sustainable energy model in Catalonia.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>✓</td>
<td>• Reduce GHG emissions from all sectors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21</td>
<td>✓</td>
<td>• Foster alternatives (electric vehicles, biofuels, etc.) to fossil fuels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
<td>✓</td>
<td>• Consolidate the sustainable energy sector as an opportunity for economic growth and the creation of qualified and territorially distributed employment.</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>23</td>
<td>✓</td>
<td>• Guarantee the good state of the water bodies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24</td>
<td>✓</td>
<td>• Ensure the guarantee of the availability of the resource, especially in internal basins.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25</td>
<td>✓</td>
<td>• Reduce water consumption based on an increase in efficiency.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26</td>
<td>✓</td>
<td>• Make progress in the links between the various sectoral plans (energy, urban development, irrigation, forestry management, etc.) and the water policy.</td>
</tr>
<tr>
<td></td>
<td>Waste</td>
<td>27</td>
<td>✓</td>
<td>• Minimize the generation of waste and foster reuse, based on product policies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28</td>
<td>✓</td>
<td>• Increase selective collection and material reuse, in addition to minimising waste with final treatment, in order to achieve the objectives established by sectoral planning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29</td>
<td>✓</td>
<td>• Ensure that all waste receives treatment before being sent to its final destination.</td>
</tr>
<tr>
<td>AREA</td>
<td>SUBAREA</td>
<td>CODE</td>
<td>PRIORITIES (TOP 28)</td>
<td>CHALLENGES</td>
</tr>
<tr>
<td>-----------------------------</td>
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<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Socioeconomic area</td>
<td>Health</td>
<td>30</td>
<td>✓</td>
<td>Foster the good environmental quality of water, land and air, in order to reduce the risks to public health.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>31</td>
<td></td>
<td>Reduce the accident rate in all sectors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>32</td>
<td></td>
<td>Reduce the health risks of consumer products, in addition to fostering healthy consumption habits.</td>
</tr>
<tr>
<td></td>
<td>Sustainable production and</td>
<td>33</td>
<td></td>
<td>Increase the level of food sufficiency, by guaranteeing sufficient and sustainable agricultural production.</td>
</tr>
<tr>
<td></td>
<td>consumption</td>
<td>34</td>
<td>✓</td>
<td>Foster systems for the production of agricultural products, goods and services with sustainability criteria.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
<td>✓</td>
<td>Adopt and foster rationality and sustainability criteria in consumption: fair trade, local products, organic produce and foster local trade.</td>
</tr>
<tr>
<td></td>
<td>Economic activity</td>
<td>36</td>
<td>✓</td>
<td>Internalise socio-environmental costs in Calatian economic balances based on the identification and assessment of socio-environmental malfunctions in economic activities and guide prevention and correction strategies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37</td>
<td></td>
<td>Establish tools to guarantee the future of economic activity with sustainability criteria.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38</td>
<td>✓</td>
<td>Increase the working population in high added value activities and that produce more energy-efficient goods and services, with fewer materials and fewer pollutants (alignment of the sustainable production and consumption programme).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>39</td>
<td></td>
<td>Foster research and development in sustainability as a strategic factor to promote the quality of employment and competitiveness in the economy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40</td>
<td>✓</td>
<td>Establish and implement climate change adaptation strategies.</td>
</tr>
<tr>
<td>AREA</td>
<td>SUBAREA</td>
<td>CODE</td>
<td>PRIORITIES (TOP 6)</td>
<td>CHALLENGES</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>Equity and social inclusion</td>
<td>41</td>
<td></td>
<td>Foster social cohesion by means of the attention to the most disadvantaged population groups.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42</td>
<td>✓</td>
<td>Foster social action policies to reach European standards, integrating sustainability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43</td>
<td></td>
<td>Adopt gender perspective in all policies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td></td>
<td>Facilitate access to information and participation mechanisms in order to foster the willingness of all groups to participate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45</td>
<td></td>
<td>Guarantee access to quality lifelong education to foster social equity.</td>
</tr>
<tr>
<td>Transverse area</td>
<td>Education and awareness</td>
<td>46</td>
<td></td>
<td>Establish effective mechanisms to place at the disposal of the public relevant information about socio-environmental problems that facilitates understanding and encourages them to participate in their resolution.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47</td>
<td>✓</td>
<td>Significantly increase the incorporation of sustainability aspects into all levels of formal and informal education with the objective of ensuring that co-responsibility and critical reflection are lived in education, and that education is oriented towards action.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48</td>
<td></td>
<td>Achieve the incorporation of quality criteria into environmental education programmes, significantly increasing research into methodological and assessment processes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>49</td>
<td></td>
<td>Significantly increase training action and facilitate access for all the public's sectors of activity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50</td>
<td></td>
<td>Strengthen the holistic and transdisciplinary vision of sustainability as a central pillar in the educational area, in communication, economic activities and among the citizens.</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
<td>51</td>
<td></td>
<td>Investigate the development and application of the principles of good governance for sustainable development.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>52</td>
<td></td>
<td>Apply inter-administrative coordination in the deployment of the various sectoral policies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>53</td>
<td>✓</td>
<td>Foster the practical application of the principles of “good governance” for the implementation of the policies of the Government by means of options such as: making use of local and international knowledge, proposing global, transdisciplinary and transverse debates, fostering frameworks for discussion and debate that respond to continued negotiation and consensus efforts, by incorporating social instruments that facilitate participation in planning and management processes, continually informing and communicating with the public, carrying out continued and systematic monitoring of the impact of decisions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54</td>
<td></td>
<td>Manage and analyse risks (natural, technological and to human health).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55</td>
<td></td>
<td>Formulate institutional collaboration strategies with non-governmental actors. Strengthen non-governmental actions to enable effective participation in the resolution of actions.</td>
</tr>
</tbody>
</table>
3. Vision and Mission of the Strategy
3. Vision and Mission of the Strategy

3.1 Vision of the Strategy

Catalonia must continue to be a leading country in Europe in which, as established in the Statute of Autonomy, everyone has the right to live in a sustainable environment with respect for health, to enjoy natural resources and the countryside in conditions of equality, and to protection from all forms of pollution. Sustainability is a condition for justice between generations, an imperative for global justice and a challenge that demands the maintenance of the balance between economic, social and environmental aspects.

Based on this premise, the Strategy for the Sustainable Development of Catalonia is a fundamental tool to guide the action of the government and influence the behaviour of society in order to move towards a new country model based on sustainability that will lead us towards a prosperous, egalitarian future with quality of life. The progress made so far is facilitating suitable conditions to be able to guarantee the effective and urgent realization of the change towards sustainability.

The Strategy has the aim of integrating its long-term objectives into sectoral policies in order to guarantee that decisions in the short and medium term are made based on sustainability and facilitating the effectiveness of these policies and measures.

In a socioeconomic crisis like the present one, the Strategy also constitutes a capital opportunity to face Catalonia’s main challenges and to contribute in the short term to providing innovative solutions that will improve employment, create wealth and be a source of competitiveness for companies in the European environment.

3.2 Mission of the Strategy

The 2026 Strategy for the Sustainable Development of Catalonia must become a roadmap that establishes the key strategic objectives and lines to guarantee Catalonia’s transition towards a safe, eco-efficient and low-carbon economy, based on the minimisation of the consumption of resources (especially non-renewable resources) and of the impacts on health and the environment both in Catalonia and the world, and that:

- Harmonises economic development and improves the wellbeing and quality of life of the citizens.
- Internalises environmental costs and the value of the services of ecosystems and of biodiversity.
- Ensures the restoration of the damage caused by environmental impacts and the recovery of natural capital and its functionality.
- Achieves true horizontal and vertical integration with regard to the various sectoral policies and the various levels of government, respectively, whilst guaranteeing coherence between the various sectoral objectives.
Guarantees the participation of the public in decision-making processes.

Achieves a cultured and inclusive society with equal opportunities and solidarity.

The Strategy is based on a long-term vision and a wide-ranging political framework, which guarantees, on the one hand, that it will become an effective instrument for the preliminary detection of unsustainable tendencies used as a guide to implement the required reforms. On the other hand, by integrating its strategic objectives into sectoral policies, the Strategy is an essential inter-sector frame of reference to enable decision making in the short to medium term to be effectively integrated with regard to the achievement of common objectives.

Given the unsustainability of the current social, economic and environmental model – and even more so in the economic crisis – the Strategy for the Sustainable Development of Catalonia was established with the aim of decisively contributing to a transition towards a new country model in which Catalonia is a leader in the integration and practical application of sustainability principles in the economic and social model.

The strategy offers a viable means of progress towards sustainability as a factor to increase the competitiveness of the Catalan economy and improve the quality of life of its citizens that should be integrated into sectoral policies and into current and future legislative, planning, management and administration instruments with the full support of socioeconomic actors and society in general.

Within this context, the main guidelines of the Strategy for the Sustainable Development of Catalonia are:

- Respect the load capacity of the ecosystem and use its resources efficiently and in accordance with the principle of precaution.
- Assume social and ecological responsibility for the current situation taking into account the principles of equality and intra/intergenerational solidarity in and outside of Catalonia.
- Improve the quality of life of people, separate this concept from the concept of economic growth strictly in terms of GDP and guarantee social equality and justice.
- Minimize the socio-environmental impact of Catalonia on the world and work towards solidarity in projects that foster sustainable development.
- Ensure that both the policies of the Government of Catalonia and its international commitments are coherent with global policies in relation to sustainable development.
4. A sustainable model for Catalonia in 2026
4. A Sustainable Model for Catalonia in 2026

4.1 Strategic Pillars of the 2026 Sustainable Model

The Strategy for the Sustainable Development of Catalonia has proposed three prospective scenarios with regard to development of the indicators associated with the challenges of sustainability resulting from the initial diagnosis (described in Chapter 2). A first scenario that shows the situation if the current tendencies are maintained, a second scenario based on the regulatory framework of reference, and a third scenario called the scenario of the Strategy, which indicates the value of the strategic objective for 2026. This methodology enables the definition of viable objectives considered to be of optimal sustainability, taking as a reference the normative framework of reference, which is mainly established for the short and medium term. As will be seen later, the battery of indicators associated with the challenges will become the essential monitoring instrument to assess progress towards the scenario of the Strategy.

The number of possible combinations for 2026 resulting from this analysis is extremely broad (considering the multiplicity of indicators and parameters and their potential variability), even taking into account only scenarios that may be called sustainable. The Strategy for the Sustainable Development of Catalonia opts for one of these sustainable models – ambitious, agreed and with guarantees of viability – to define a sustainability horizon for 2026. Although it is necessary to accept, then, that it is not the only possible model, it is evident that it constitutes a suitable model (reviewed over time, if the circumstances so advise) to advance in the appropriate direction: that is, to foster the transition towards truly sustainable socio-environmental scenarios.

The definition of this sustainability model for 2026 is complex, given the multiple interrelations between the areas and the objectives to be considered and the intrinsic complexity of the socioeconomic model of the 21st century. For this reason, it is to be expressed in descriptive terms, although this description is based on the quantitative analysis of 49 indicators. These indicators are organised into 7 pillars, which are deployed in 16 strategic lines and complemented with 52 non-quantitative objectives.

This approach is suitable with the understanding that this sustainability model for 2026, like any other element in which forecasting is involved, may undergo changes throughout its journey to adapt to new contexts, challenges or unforeseen situations. Therefore, it constitutes a general framework of reference for the model with specific quantified objectives.

It is unlikely that the general directives of the model will undergo substantial modifications, whereas the quantitative objectives are more susceptible to change in order to adapt to any events that might occur over the next 15 years. On the other hand, the absence of quantified and time-scaled objectives would lead to an excessively generalist Strategy that would make it difficult to achieve significant milestones.

Accordingly, it should be said that many of the efforts to prepare this Strategy have been aimed at the achievement and quantification of objectives. This is, undoubtedly, the element that characterises the Catalan Strategy, and imbues it with its innovative and brave nature and its integrating power. Thanks to the referential element of the strategic objectives, to the definition of a
deployment mechanism and of an assessment and monitoring system, the Strategy can be seen as an effective forecasting and warning instrument of great interest for short- and medium-term decision making with the aim of maintaining, strengthening or, if necessary, redirecting policies, strategies and instruments. At the same time, the integrationist nature of the objectives provides significant added value that will help in the process of interrelating the objectives between the various sectors.

With the aim of being able to present this model of a sustainable Catalonia for 2026 in a structured manner, it has been broken down into the following seven pillars, the order of which does not imply any type of specific priority:

<table>
<thead>
<tr>
<th>Pillar 1</th>
<th>CATALONIA, A BIODIVERSE TERRITORY WITH CITIES AND TOWNS. A nodal territory with habitable and compact cities and towns and a free productive area and service generator.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillar 2</td>
<td>CATALONIA, EFFICIENT IN THE USE OF ENERGY AND IN CLIMATE ACTION. An energy production and consumption model based on efficiency that fosters renewable energies and faces climate change.</td>
</tr>
<tr>
<td>Pillar 3</td>
<td>CATALONIA WITH SMART MOBILITY. Intelligent mobility that fosters collective transport and reduces the dependence on fossil fuels. Catalonia with low-carbon and intermodal mobility.</td>
</tr>
<tr>
<td>Pillar 4</td>
<td>ECO-EFFICIENT, COMPETITIVE AND INNOVATIVE CATALONIA. An eco-efficient production model that optimises the use of resources, based on advanced services and clean production. Catalonia, Europe’s green factory and centre of advanced services.</td>
</tr>
<tr>
<td>Pillar 5</td>
<td>CATALONIA CONSUMES WISELY. Rational consumption committed to the source and the socio-environmental implications of the products that it acquires and uses and that minimizes waste generation.</td>
</tr>
<tr>
<td>Pillar 6</td>
<td>CIVIC, INCLUSIVE, CARING, HEALTHY AND SAFE CATALONIA. A balanced and safe society based on education.</td>
</tr>
<tr>
<td>Pillar 7</td>
<td>PARTICIPATIVE CATALONIA WITH CLOSE LINKS TO THE COMMUNITY. For more efficient and participative governance</td>
</tr>
</tbody>
</table>
### Pillar 1. CATALONIA, A BIODIVERSE TERRITORY WITH CITIES AND TOWNS

The territory is a limited resource that sustains the socioeconomic system of a country in both purely physical terms (obtaining food, raw materials) and functional terms (regulation of natural cycles, sustenance of the ecosystems and of the ecological function), which is why its conservation in sufficient quantity and quality is essential.

Even though urban land and major infrastructure only represent 5% of the surface area of Catalonia, its inscription in the territory and in the countryside induces certain direct and indirect effects, which considerably exceed what the simple consideration of this figure represents. This fact, in conjunction with the rapid increase in the rate of use of land produced in recent decades – with use models that are not always contained or balanced – has led to a clearly unsustainable situation.

The mosaic of free areas in the territorial matrix accumulates a large number of socioeconomic activities, socio-environmental functions and heritage values that cannot be understood (and often cannot be conserved) in a context other than a free area. Although a substantial number of these functions and values, such as the regulation of eco-systematic functions or the high level of biodiversity of the country, are not currently assessed in economic terms, recognition of their importance is inseparable from a territorial and sustainable socioeconomic model.

The territory of Catalonia is clearly heterogeneous taking into account the characteristics of its physical matrix (relief, geomorphology, climate, bodies of water, coast...), and accordingly the age-old land use dynamics pertaining to it are equally heterogeneous. The territorial model, therefore, cannot be based on a blanket treatment, rather on the recognition of the peculiarities of each area, on the relevant scale in each case, and on guaranteeing for each of these scaled areas the balance between the planned use of resources, the conservation of heritage values and the right of the population to access quality basic services.

In order to have a highly efficient productive territory it is necessary to achieve suitable integration of the cities, towns and isolated farmland areas into the territorial matrix in such a way that it harmonises objectives related to the improvement of biodiversity and the maintenance of natural heritage, and, in short, makes the values associated with free areas compatible with the characteristics of rural society. To achieve it, it is fundamental to guarantee compactness and complexity levels that prevent the segregation of functions and ensure social cohesion, which requires compliance with the three basic principles with regard to built areas: 1) efficiency in the use of land; 2) mix of uses to enable residence, work and enjoyment of urban life to take place in complex areas and 3) the obligation of ensuring the right to housing for all and preventing segregation.

Territorial and urban planning must contribute to the establishment of a nodal structure for the cities organised around poles that concentrate growth and that generate major opportunities for collective transport and mixed uses. This must ensure, at the same time, the maintenance of the agroforestry production structure, of free areas and of the countryside mosaic. Similarly, the plans must limit growth strategies related to residential uses and economic activities to optimise the consumption of land and its reuse, and also to minimise territorial fragmentation while infrastructure is managed and ordered to facilitate more universal and more sustainable mobility. The towns and cities of Catalonia must also guarantee their quality (public areas, air, services, facilities) to become more inhabitable and ensure fair access.
A sustainable country must consider the whole territory and assume all its complexity and diversity. It must affect both developed and developable land and non-developable land, in cities and in rural areas, in coastal areas and in mountainous areas, taking into account at all times the essential role of the local environment and firmly adopting supra-municipal visions. This effect does not always have to result in physical transformation, rather it can also involve specific management strategies.

Firstly, it is necessary to indicate that management of the rural environment requires intervention strategies that cover multiple dimensions of the situation of rural society, which, even though demographic abandonment has slowed in recent years, is still marked by population losses produced in the past. The ageing and, in many cases, over-ageing of the population poses challenges both with regard to the conservation of agricultural and forestry activity and to the management of natural areas.

It is, therefore, essential for there to be sustainable management of forestry and agricultural areas to guarantee the maintenance and improvement of their conservation and the assessment of their economic, environmental and social functions, such as, the production of food, the supply of forestry products, the regulatory function of the climate, the conservation of water quality, the capacity of hydrological control and erosion, the improvement of biodiversity, the prevention of certain natural risks (forest fires, avalanches, landslides, floods, desertification...) and recreational use.

In Catalonia, 60% of the surface area corresponds to forest terrain and 80% of this terrain is private property. Consequently, it is necessary to strengthen forestry property in order to improve the planning and management of forests. At the same time, it is necessary to suitably protect the most productive and ecological agricultural land and organise sustainable management policies for agricultural land and forests with territorial and urban development planning and also with agricultural management and planning instruments.

Similarly, the conservation of biodiversity, the inclusion of protected areas in the territorial matrix, the assessment and the integral management of natural heritage and the recognition of the environmental goods and services of the ecosystems will be fundamental pillars as intrinsic elements of the value, the identity and the countryside of the Catalan territory, taking into account that 30% of the surface area of Catalonia is protected.

Secondly, it is essential that there be integrated and comprehensive management of the coast and also of the mountainous areas to contribute to adaptation to the effects of climate change. Catalonia is a Mediterranean country with a 780 km coastline. Taking into account the interactions between the land and sea, it is essential for the sustainable model to ensure the integrated management of the coastal area and of its resources (land and sea) and the regeneration of coastal areas harmed by intensive tourism, which ensure the coexistence of a rich multiplicity of activity sectors. In order to guarantee the balance between the maintenance of social uses and the preservation of natural and cultural values, it is essential to environmentally restore the coast, comply with environmental quality legal requirements and steer the integrated planning and coordination of the development policies of the rest of the territory towards the integrity of the coast.

An element that is becoming increasingly important in the coastal management of Catalonia is coastal regression. The sedimentary deficit of the waterways, the interruption of the coastal dynamic with maritime work, the presence of terrestrial infrastructure that affects the sedimentary cycle, in addition to the renovation of the beach generation policy in recent years, have generated a sand deficit situation at certain points of the coastline, which has been accentuated by weather conditions. For this reason, it is necessary for the territorial model of Catalonia to define which type
of coast it is necessary to conserve in each section and to strike a balance between the means to recover and stabilise sand on the beaches (the rigidification of the coast and the periodic supply of sediments) with the objective of minimising negative impacts on the coast. In this sense, it is essential that the actions fostered be carried out in accordance with integrated management of the uses and of the sediments, taking into account the need to adapt to climate change.

With reference to adaptation to global change, it is important to introduce the concept of risk, which is not always assessable, into the management projects of the territory. To do so, it would be necessary to analyse the vulnerability of the territories, ecosystems, infrastructure and economic activities (tourism, agriculture, fishing, etc.) that could be affected and to prepare maps of the most vulnerable areas with the objective of defining the immediate and priority intervention zones, recalibrating or updating the most exposed projects and respecting the principle of prevention in their dimensioning. In this sense, it is becoming essential to establish strategies to identify and predict environmental changes, while assessing associated social and economic changes, with the aim of preventing and mitigating their effects.

Key Terms

- Land use
- Territorial planning and urban development
- Management of natural risks
- Urban design
- Sustainable construction
- Biodiversity and natural heritage
- Agricultural, forestry and fishing activities
- Countryside

Directives of the Model

- It contains and makes efficient use of land in order to strengthen the urban nodes of Catalonia, conserves natural heritage and strengthens agricultural, forestry and fishing activities. It ensures the reuse of the socio-environmental goods and services of the ecosystems and of agricultural, forestry and fishing activities.
- It emphasises the proactive management of land not for development in territorial planning and urban development.
- It establishes a compact and mixed city model with a diversity of uses with regard to the evident advantages it presents in the efficiency of environmental flows and their management (supply of water and energy, waste management, mobility, etc.) in addition to contributing to minimising land consumption.
- It prioritises, with regard to new urban growth, the regeneration and rehabilitation of urban fabrics in accordance with compactness and complexity criteria (mixed uses).
- It recognises the heterogeneity of the territory in accordance with each scaled area and the singularities and determining factors of specific areas (coast, mountain areas...)
• It fosters urban design and efficient construction models and promotes energy efficiency with passive and active methods. In short, it facilitates the improvement of the energy metabolism of the built city, with the objective of approaching the neutral balance of emissions.

• It integrally manages the coast as a strategic natural area with a high socioeconomic value. It ensures that the activities that are carried out in the marine environment promote its natural values, which are the ones that are appreciated in its use as a natural, tourism and heritage resource.
Pillar 2. CATALONIA, EFFICIENT IN THE USE OF ENERGY AND IN CLIMATE ACTION

The energy model constitutes a central element of the sustainability policies of the 21st century due to its multiple repercussions for all economic sectors and mobility, and also because of its strong environmental impacts. In this sense, greenhouse gas (GHG) emissions, atmospheric pollution and effects on health are of particular importance. The adoption of sustainability criteria and objectives in this area – based on saving and efficiency and on fostering renewable energy – naturally results in major environmental benefits in many other areas. Logically, it also provides enormous economic benefits by reducing dependency on energy sources with increasing prices and high negative externalities.

Until fairly recently, economic growth, the increase in mobility and certain standards of living of western society were based on the growing consumption of energy resources which ignored the impossibility of maintaining these standards in the medium to long term, and also on exporting them to developing countries, as a consequence both of the exhaustion of energy resources or the constant increase in their price and of negative impacts associated with their transport, processing and use (greenhouse gas emissions, emissions of suspended particulate matter and nitrous oxides, acid rain...).

This model of growing energy consumption – associated with a proportional increase in GHG emissions – has recently started to reverse due to economic factors and international commitments adopted in relation to the mitigation of climate change. In this sense, major efforts are being carried out by the international community, and particularly by the European Union, to further the Kyoto Protocol beyond 2012 with the aim of guaranteeing that the increase in global temperature does not exceed 2°C, which would have grave consequences. This objective has been recognised and defended by the EU and accepted in the Copenhagen Accord of December 2009. In any case, the EU has already adopted the so-called climate and energy package, which has been defined in four directives and two decisions that are already being transposed and unilaterally developed independently of the international agreement.

Therefore, the mitigation of climate change is a fundamental tool of the European policy, which is now necessary to complement by establishing territorial (coastline, mountain areas) and socioeconomic (agriculture, tourism, fishing, coastal infrastructure and ports) adaptation mechanisms. In the local area, one of the key elements is the Covenant of Mayors, a local instrument fostered by the European Commission that fosters the commitment to reduce GHG emissions, to increase energy efficiency and saving and to apply renewable energies in the cities and towns adhered to it with the aim of reducing their global environmental impact by 2020.

Moreover, Catalonia has a clear deficit of energy resources (petroleum, natural gas, uranium, etc.), resulting in a high level of dependence on external markets, strongly conditioned by complex geopolitical factors that are difficult to predict and even harder to control. Energy constitutes, therefore, an area that is strongly inscribed in the globalised economy and that at the same time has strong repercussions on everyday socioeconomic activity on a local scale.

In spite of all the conditioning factors, the potential to improve the energy area in Catalonia is remarkable, provided that an energy mix that contributes evident economic and socio-environmental benefits is established. Firstly, a key element is the margin of improvement in terms of efficiency and savings on all levels and in all sectors. Secondly, it is necessary to consider the reduction of the exterior energy dependency on fossil fuels by fully developing the potential of renewable energy and the use of alternative renewable fuels within the framework of the strict control of environmental quality. Although it is necessary to assume limitations with regard to the
production of renewable energy on the territorial scale, the potential to improve is multiplied if a firm commitment is made to substantial changes in the technology used in the production processes and to research into the reuse potential to guarantee environmental quality standards, resulting in an improvement in energy intensity.

Moreover, the improvement potential with regard to the transport, distribution and storage of electrical energy is equally significant if efficient management of electrical demand and optimal dimensioning of the electrical network are guaranteed intelligently and coherently with the multiplication of energy generation centres. Moreover, the decentralisation of the generation of electricity contributes to the effective deployment of renewable energy.

**Key Terms**
- Energy saving and efficiency
- Climate change (mitigation and adaptation)
- Renewable energy (wind, photovoltaic, marine, geothermal, biomass...)
- Intelligent networks
- Fuel

**Directives of the Model**
- It develops strategies to mitigate and adapt to the effects of climate change.
- It establishes an energy system with low energy intensity and low carbon emissions to face climate change, improve competitiveness and reduce dependence on fossil fuels.
- It significantly increases energy saving and maximises energy efficiency in all sectors.
- It guarantees the achievement of significant renewable energy generation quotas, fostering, among other things, new resources that are today not sufficiently taken advantage of, such as biomass (especially forestry biomass), the production of energy in the marine environment (wind, waves, currents) and geothermal heating (residual heat).
Pillar 3. CATALONIA WITH SMART MOBILITY

The mobility of people and goods, which is strongly interrelated with territorial planning and the economic and energy model, results in numerous socio-environmental implications that, in the final analysis, become externalities. On the one hand, these externalities are based on energy consumption, atmospheric pollution and the emission of greenhouse gases, and also on the social impact (accident rate, public health, social equity, use of public areas in urban centres and congestion). On the other hand, the externalities are also based on territorial, landscape and ecological implications generated by linear mobility infrastructure (such as the fragmentation of the territory). Accordingly, therefore, progress towards a more sustainable mobility model will enable the reduction of externalities and will have favourable repercussions on multiple aspects of environmental quality, the wellbeing of people and the operation and development of economic sectors, especially in the production system.

Transport is not the same as mobility. The difference is huge: while the first term traditionally covers motor vehicle traffic, the second covers the movement of people and goods without the implicit hierarchy of the motor. Confusion between the terms has led to the inadequacy of policies (and/or the unsuitability of actions) to slow down the exponential increase in the use of private vehicles and their almost total preponderance in Catalan mobility. The excessive weight in mobility of private motor vehicles using fossil fuels has had highly significant direct socio-environmental consequences:

- The relevant contribution of this mobility model in terms of GHG emissions and local pollutants. In fact, these are two sides of the same coin that are close linked to the energy model and the use of fossil fuels. Mobility is responsible for approximately a quarter of GHG emissions in Catalonia and contributes to almost half of the emissions of the main local atmospheric pollutants (PM10 and NOx) in the Barcelona Metropolitan Area. This has major consequences for health and it conditions the difficulties of complying with EU legislation related to air pollution.

- Effects on the quality, public use and occupation of urban areas, with an excessive domination of the private vehicle. To progress towards a sustainable mobility model, the urban area must rebalance the uses and functions of the public area based on an increase in peaceful transit zones and in public areas especially for pedestrians.

- The congestion of the road network. The substantial increase in the number of vehicles in circulation, both with regard to personal transport and goods transport, has socioeconomic impacts due to the increase in the time invested in travelling and to the major energy consumption characterised by traffic jams or intermittent traffic.

- Social inequity. A model of sustainable mobility must have the objective of accessing a place or service, not movement per se and not movement in private vehicles as the principle, if not the only, option. If it is calculated that approximately two thirds of the population of Catalonia do not have regular access to a car, because they do not have a driving licence or do not have a car or because they cannot access the only car in the family, then it is difficult to be able to guarantee the universal right to mobility with a model that excessively relies on private vehicles.

Since 2003, with the appearance of the Mobility Act, multiple planning instruments have been developed. These instruments require the involvement of various levels of government, and in this sense, it is necessary to emphasise the role of local governments in the creation of an urban area
with more sustainable mobility, given that it is closer to the public and where the results of sustainability municipal policies and strategies are more evident.

With regard to goods, road transport has become hegemonic in recent years due to logistic tendencies, in detriment to rail transport. Sustainable mobility in goods transport demands an integrated vision that rebalances the various modes of transport, facilitates the interoperability of the various networks, fosters new mobility service formulas and promotes distribution vehicles with a low environmental impact without disregarding economic development and the management of aspects related to trading circuits (territorial and time zones).

It is necessary, however, by 2026 for mobility in Catalonia to have structurally internalised five key aspects: the reduction of the average distance of trips (related to territorial planning), the reduction of non-sustainable transport in the mobility of people and goods, the improvement of efficiency in each means of transport, the electrification of transport (railway, tram and electrical vehicles) and the efficient functioning of the so-called motorways of the sea. To make progress in this direction, the main strategies are territorial planning, the construction and management of transport infrastructure and the management of transport services.

**Key Terms**
- Mobility of people and goods
- Intermodality
- Transport infrastructure
- Connectivity

**Directives of the Model**
- It guarantees the existence of competitive sustainable modes of transport, both for people (on foot, by bicycle, collective transport) and for goods (railway and maritime), in order to significantly change their market share.
- It reduces mobility needs, while separating economic growth, the demand for mobility and associated emissions.
- It facilitates a change in individual habits when choosing modes of transport with the aim of making progress towards more sustainable personal mobility.
- It reduces the social inequity of the mobility model.
- As a priority it invests in infrastructure that fosters sustainable mobility, both of people and goods, and intermodality and minimises the fragmentation of the natural, agricultural and forestry systems.
- It guarantees a quality urban area for the use of pedestrians and sustainable transport modes.
- It makes motorised transport modes more energy efficient.
- It optimises the existing infrastructure by means of efficient management.
Pillar 4. ECO-EFFICIENT, COMPETITIVE AND INNOVATIVE CATALONIA

The production of goods and services constitutes the implicit base of the economy of a country and of the people who live there.

Despite the remarkable advances made in recent years, it is essential to make progress towards a much more eco-efficient system, especially in a context in which the availability of resources such as water or fossil fuels is increasingly more limited and in which the conservation of the environment and the improvement of environmental quality are essential to guarantee the wellbeing, quality of life and health of the public. From the sustainability perspective, it is truly important to achieve and maintain economic development and a quality of life standard in a manner that is compatible with the sustainable use of resources. Moreover, whereas the traditional production model used to be based on quantitative aspects of production, it is highly likely that by 2026 immaterial contributions will have taken on more value with regard to the quality of life of people.

New technology and the knowledge society play an important role as instruments to facilitate transition towards this new model. Moreover, it is necessary to make significant progress in aspects such as the minimisation of the generation of pollutants and waste, efficiency in production and use, reuse, etc., if progress is to be made towards eco-efficient production. These aspects are grouped into global concepts such as the integrated product policy, which is based, among other things, on a design that takes into account all the phases of the product life cycle. Strategically it is necessary to incorporate the life cycle principle that maximises the efficiency of the use of resources and materials, periodically facilitating their reincorporation into the system in the form of subproducts. This concept, based on eco-effectiveness, proposes going to the root: in order to reduce energy consumptions, it is possible to use the largest number of resources in the supply for a product, process or service to be conceived as a good that prevents pollution, energy consumption and is even capable of benefiting and enriching the environment.

Integrating the concept of eco-efficiency into the production system is, now, compulsory in order to maintain the competitiveness of the production of goods. Making it a strategic objective must offer an advantage to Catalan industry. At the same time, redirecting the tertiarisation of the Catalan economy towards the supply of new services emanating from this perspective – energy services, environmental services and consultancy, knowledge intensive services for companies, mobility services, services for people... – offers a range of new employment niches that are necessary and that can be especially relevant in the framework of new employment plans.

In fact, this eco-efficient production system affects all the production sectors, both of goods and of services. Therefore it affects, on several levels and in several vectors, the primary sector (agriculture, cattle farming, forestry, aquaculture and fishing), the secondary sector (industry, construction) and the tertiary sector (trade, tourism, services).

The formulation of a change in the production model is especially suitable in a crisis like the current one, where the competitiveness of the Catalan economy requires innovative proposals that add value to knowledge and contribute to employment. Proof of this is the EU’s commitment to innovation and sustainability being key vectors of the Europe 2020 Strategy. Evidence that eco-innovation must be an incentive that induces the emerging economy is also present in the main focuses of the Catalan Research and Innovation Plan 2010-2013 arising from the National Agreement and, therefore, it is an area upon which research and innovation must focus in the future.
A fundamental advantage of the eco-efficient economy that is especially important in times of crisis is the internalisation of environmental externalities, given that it results in significant economic savings in the long term.

The concept of externality arises from the fact that any production activity or individual has, by definition, repercussions and impacts on the use of resources such as water and energy and on the quality of the atmospheric (including climate change), aquatic and land environment. The internalisation of the externalities of the various production sectors implies the inclusion of costs derived from these impacts, both positive and negative, on the balances of global compatibility, which enables the establishment of a more real value of the products beyond the market value assigned in economic circuits. Consequently, the effective inclusion of externalities enables the importance of what is produced and how it is produced in accordance with the socio-environment impacts that it generates to be truly defined.

**Key Terms**

- Competitiveness of economic activity and creation of jobs with high added value
- Internalisation of environmental externalities
- Research, development and innovation, a special priority in the area of sustainability
- Environmental quality
- New employment niches

**Directives of the Model**

- It reduces the needs of natural resources (dematerialisation of the economy) and minimises the generation of waste, and also the impact on ecosystems and the climate. It integrates the protection of natural resources by extractive activities.
- It internalises environmental externalities based on integrated product policies that take into account the life cycle of produced goods and services and the value of natural systems and biodiversity.
- It ensures the competitiveness of economic activities located in Catalonia and favours their internationalisation.
- It strengthens the environmental sector and public investment in sustainability due to its economic potential and its contribution to the transition to an eco-efficient economy.
- It incorporates a significant percentage of the population working in high added value activities that produce goods and services with efficiency and quality.
- It effectively fosters innovation, research and technological development in sustainability as a fundamental pillar of the eco-efficient and competitive economy, contributing to facing future challenges.
- It facilitates and promotes the development of local economies.
**Pillar 5. CATALONIA CONSUMES WISELY**

The behaviour and attitude of consumers with regard to the goods and products they acquire have profound socio-environmental implications in relation to the use of resources, the quality of the environment and the generation of waste, and they also have an effect on the market economy, because of their capacity to affect the productive system.

Consumption is defined as the final use of goods and services in order to obtain direct satisfaction from them. Current consumption patterns and levels are the result of a set of sociological and economic tendencies, including the increase of income per capita, the increase in the number of working women and of people living on their own, the growth in the number of pensioners and changes in lifestyle, which have led to a progressive increase in individual consumption, a preference towards more processed and packaged products, the presence of a high number of owned goods in each home and a more generalised use of recreational and leisure services.

The transition towards sustainable and responsible consumption cannot be achieved if there is no separation between quality of life and the consumption of materials. A separation which, moreover, results in the reduction of negative externalities with regard to health and the environment, both inside and outside of the Catalan territory. This element, which has become one of the main guidelines of the Strategy (chapter 3), requires a social change, in terms of the modification of individual attitudes, and means that the sustainability transition has to be tackled from a double perspective. Accordingly, on the one hand, it is necessary to affect consumption levels, which demands the modification of the social logic of the acquisition of goods to the acquisition of services (more efficient) and the commitment to strategies such as sharing goods (carsharing, carpooling), facilities and services (energy service companies or ESCOs, time-based currencies, local shopping, consumption cooperatives, leasing...) or optimising the useful life of the products (reuse, product banks, recycling).

Additionally, it is necessary to redirect consumption patterns towards the consumption of more sustainable products and services. The globalised economy and the multiplicity of available consumption materials offer an enormous range of products, the socio-environmental implications of which are not always sufficiently known or analysed by potential consumers. In this sense, sustainable consumption implies product prices that are coherent with product quality, but also with their source and socio-environmental implications, which ensures the consumption of products and services that have been produced in a manner that is socially fair (based on strategies such as fair trade, corporate social responsibility...) and environmentally sustainable (minimizing the consumption of resources, the impact on ecosystems, carbon footprint, etc.).

Moreover, sustainable consumption guarantees the incorporation of suitable and sufficient information about the impact, composition and traceability of products to enable the consumer to make informed decisions. The safety of food and non-food products is also becoming a central aspect of the consumption model, due to the complexity associated with the traceability of the sources and substances involved in the manufacture of the wide range of available articles and products. We should comment on, for example, the current extraordinary diversity of substances and chemical compounds: eleven million synthetic chemical substances have been catalogued, even though only a small proportion is habitually used commercially. Therefore, informed and responsible consumption is the best guarantee for healthy, sustainable, and caring consumption and constitutes a necessary path to promoting a production change that contributes to the transition to sustainability.
As a consequence, the analysis and the management of the risks (physical, chemical and biological) of the products are becoming key tools in public health. A significant proportion of the risks to be considered is related to food products and, therefore, with food production, either because of the introduction into the food chain of harmful or contaminating chemical substances or because of the direct or indirect effects of biological agents that can affect human health (such as the mad cow episode some years ago). So, the promotion of the consumption of products with environmental quality marks and/or from ecological or integrated agriculture systems constitutes a supplementary guarantee with regard to the quality and safety of these products.

The consumption model is inseparable from the public’s individual and collective attitude and responsibility, but also from the role of socioeconomic actors and from the exemplifying role that the administration can play by means of green and/or sustainable purchasing strategies and public contracting. Each year the public authorities spend approximately 17% of EU GDP on goods and services that have an impact on the environment throughout their life cycle. Green public procurement enables a reduction in adverse effects and is an effective instrument to foster the innovative products and services market that contributes to accelerating the transition to more sustainable consumption models and to strengthening the competitiveness of companies. So far the European Commission has identified 10 priority sectors (construction; food and catering services; transport and transport services; energy; office machinery and computers; clothing, uniforms and other textiles; paper and printing services; furniture; cleaning products and services; and equipment used in the health sector) for which green procurement criteria have been established and it is working on the preparation of additional socially significant criteria in order to extend this concept towards sustainable purchasing.

Key Terms

- Resources and waste
- Role of the public and consumption patterns (responsible consumption)
- Rigorous determination of the criteria to define the “sustainable product” concept
- Sustainable procurement (incorporating environmental, social and economic criteria)
- Safety and quality of consumer products and consumer information
- Local and quality production
- Services to improve consumption

Directives of the Model

- It promotes rational and responsible guidelines for the consumption of goods and services based on quality, safety and life cycle eco-efficiency criteria, guaranteeing the competitiveness of the economy
- It stimulates the consumption of local products with quality marks and/or certificates of environmental quality, ecological production, fair trade, etc.
- It applies public sector sustainable procurement policies on all levels of administration and the execution of Government policies

• It informs the public and makes them aware of the importance of their decisions in the purchasing and use of goods and services with sustainability criteria

• It analyses and regulates the consumption of certain products in accordance with their repercussions on the quality of the environment and the potential effects on the health of people.
Pillar 6. CIVIC, INCLUSIVE, CARING, HEALTHY AND SAFE CATALONIA

Sustainability is not only inseparable from the environmental and economic areas, but also from the social area. The interrelationships between these three dimensions are multiple and undeniable. In fact, true environmental sustainability cannot be achieved if social and economic sustainability is not also advanced. The application of sustainability principles to the social model results in fair access to services and resources that fosters social cohesion and gender equality and also inclusively guarantees the standards of quality of life and wellbeing with regard to the most vulnerable groups, taking into account intra- and intergenerational solidarity. Unfortunately, today there is a downturn in certain social indicators (poverty, employment, access to housing...) due to the crisis of the last two years. In this sense, it is becoming especially essential for the achievement of high social standards to constitute a crucial element in progress towards a sustainable Catalonia for 2026.

To construct a prosperous Catalonia, the public needs a safe environment to guarantee the exercise of freedoms and rights as a basis for peaceful and democratic coexistence. The safety sphere stands out because of its transversality in managing the protection of the public from possible risk situations (social and environmental, inequality and vulnerability).

A socially inclusive society based on solidarity and the guarantee of the quality of life and the wellbeing of society in general has to be progressively achieved. Therefore, it is necessary to foster social action policies to reach the highest standards of the EU; favour social cohesion, with special attention on the most vulnerable sectors of the population; guarantee access to quality life-long education to foster social equity, sustainability and the economy (which promotes and is based on the added value of knowledge); and to promote a cultured, critical and participative society based, among other things, on the increase in the level of studies and firm support for R&D&I (research, development and innovation).

A fair and inclusive society demands responsible and sustainable behaviour by the social and economic actors and the public. With regard to organisations and companies, this requires a change in vision by means of, for example, corporate social responsibility. This involves the adoption of management policies that integrate the social and environmental repercussions of activities and that confirm the added value of intangible goods. Moreover, all initiatives in this direction are unquestionably establishing a relationship and dialogue with the various stakeholders, such as the local communities, workers, administrations and NGOs. The administration also plays a decisive role as a promoter and facilitator of social dialogue to foster, among other values, environmental and energy sustainability, the cooperation to compete, innovation, the development of human capital, responsible competitiveness and social commitment, internationalisation and the culture of effort.

The education of the public is also a key means to equip society with the capacity to adapt in this transition towards a more sustainable model for Catalonia 2026. A more cultured society is a more critical and participative society that is more flexible in terms of adaptation to changes in production and consumption, mobility and the energy system (to name but a few examples). Cultural, scientific and technical training enables full social and employment inclusion and active participation as citizens. In this sense, the Strategy is committed to life-long learning, guaranteeing fair access to training and the quality of education.

It should be taken into account, however, that the incorporation of the new sustainability paradigm into all aspects of human action demands a rethinking of the prevailing values in society that promote the increase of consumption as a necessary requirement to improve quality of life. There are numerous indicators, such as the growth of mental illnesses, that show that to guarantee the real improvement of quality of life it is necessary to modify these individual and social values.
To achieve these profound changes it is also necessary to refocus life-long educational activities and implement effective mechanisms to inform the population. Both aspects, education and information, contribute first-hand experience and critical thought to people by training them for action. For this reason, the Strategy is committed to the implementation of an educational model, both in compulsory education and in university and non-formal education, which transversally integrates environmental matters and sustainability into all the programmes and all the activities. This model, simultaneously, fosters and consolidates occupational and continuous training that guarantees the training of professionals in all fields so that they can carry out their work with the least impact possible. Similarly, cultural promotion actions, and, more specifically, the work carried out by museums in terms of education and the dissemination of scientific and environmental culture, are becoming fundamental.

The subject of the sustainable social model cannot be raised without considering health to be a fundamental pillar. In this sense, the efficient management of social demands arising from the ageing of the population is becoming an essential factor of future Catalan society and, consequently, protection from the increase in dependence situations. It should also be mentioned that, in tandem with an optimal tendency of the general health indicators (mortality rate, life expectancy), chronic exposure to potentially toxic anthropogenic substances or pollutants and/or radiation that could have a direct effect on people’s health, especially for the most vulnerable population groups (children, pregnant women and the elderly), has been observed. Accordingly, epidemiological studies confirm an increase in the effect on respiratory and cardiovascular diseases associated with high levels of certain types of atmospheric pollutants. This aspect of the management of risks clearly shows the interaction between health and eco-efficient production and responsible consumption. For this reason, policies aimed at clean production that minimise the introduction of potentially toxic or harmful anthropogenic substances into the environment are fundamental.

In the context of the globalised world, moreover, the repercussions of our model of life and our economic system on third countries should be taken into account, so proactive implication in cooperating with and promoting sustainable development in these countries is also becoming essential. The administration, and, specifically, the Government of Catalonia, may play an exemplary role by incorporating exterior responsibility criteria into public actions.

**Key Terms**

- Social cohesion and inclusion and equity
- Quality of life, health and wellbeing
- Risk prevention and safety
- Globalisation
- Information and communication
- Education
Directives of the Model

- It fosters social action policies to favour inclusion, cohesion, equity and gender equality, and it places special emphasis on the most vulnerable groups in society.

- It guarantees access to quality life-long education to foster social equity, gender equality, sustainability and the knowledge economy.

- It promotes a cultured, responsible, critical, participative and egalitarian society.

- It guarantees everyone the free exercise of rights and freedoms as a basis for peaceful and democratic coexistence.

- It fosters policies and actions to prevent and minimises risk situations and manage associated emergencies.
Governance is a manner of governing that, in a scenario of plural interests, permits the redistribution of the resources of the political actors (public and private) in order to generate more horizontal power structures when making collective decisions. This definition not only refers to democratisation in decision making, but also to the possibility of social innovation with regard to the construction of progress options or new paradigms, such as sustainability.

The complicity and involvement of the public are fundamental to achieve the objectives that configure the sustainable country model for 2026 established in this Strategy. Independently of social or economic roles, the improvement of individual and/or collective attitudes and behaviour generates a considerable global effect. The public constitutes the central element of the sustainability change and, consequently, has to receive the information and have the mechanisms required to be proactively co-responsible in sustainability change.

In its turn, the government and public administrations have a direct and determining responsibility with regard to progress towards scenarios with greater sustainability. This responsibility has to result in specific government policies and actions, in the government becoming an exemplary reference point and in the development of a model of good governance for sustainable development. The objectives of the Government of Catalonia within the framework of this model to guarantee the effective deployment of the Strategy are to:

- Assume the commitments and objectives of this Strategy as a basic reference in the action of Government and ensure their integration into all sectoral plans and programmes that are developed, and also their effective implementation.
- Improve, within the framework of governance for sustainability, transparency in information, and also communication and the participation of social and economic actors and of the public in decision making.

In addition to the Government of Catalonia, other levels of government will also play an essential role in the achievement of the objectives of the sustainability strategy. The local and supra-local levels are essential due to their role in the development of Agenda 21 projects and due to the dissemination on the territorial level of the sustainability paradigm. It is also necessary then to recognise the relevance of local Agenda 21 processes as a basis for the creation of a collective framework that favours sustainability on the local level and as reference instruments to frame and foster new strategic actions.

Due to the experience they have acquired and their capacity to affect other economic and social agents in their respective territories, local governments have to be responsible for guaranteeing the implementation of the Strategy in the territory. Consequently, institutional involvement in the extensive work developed thus far by the local world and the Strategy will be one of the keys for successful implementation.

**Key Terms**

- Participation of the social and economic actors and of the public in general
- Social innovation
- Institutional involvement of the Strategy at the local and supra-local levels
- Good governance for sustainable development
Directives of the Model

With regard to this pillar, the directives of the model must be based on the principles of a model of governance that is coherent with the sustainability strategy. These principles are:

- **Commitment**, which means that the Government has to lead and be capable of determining clear principles and priorities in the short, medium and long term, seek out major country agreements in major subjects that determine sustainability and construct its policies on these principles and priorities.

- **Coherence**, which involves seeking coordination and internal coherence between the policies and showing a high level of exemplariness in the actions of Government towards the exterior and the interior.

- **Persistence**, given that sustainability is a far-reaching objective that requires a complex transition process and not ceding to private and short-sighted pressures.

- **Effectiveness**, which means the capacity to obtain resources and public support to implement sustainability policies and to generate positive results.

- **Efficiency**, use public resources responsibly and prevent, as much as possible, the transfer of burdens from the present to the future, in the form of public debt or non-internalisable externalities (CO₂ in the atmosphere, pollution, reduction of biodiversity...).

- **Intelligence**, which presupposes completely understanding problems before acting, learning from errors and rectifying, having a strong vocation to innovate in policies and in management, and using all the cognitive formal and informal resources there are in society.

- **Inclusiveness**, which implies a commitment to enable all people and all groups to be able to participate in the wellbeing generated by society by means of access to consumer goods, public services, culture and participation.

- **Participation and proximity**, facilitate access for and meetings with the public and foster individual and collective participation in the different levels of decision making and in management, and also simple and effective contact with the territory by means of administrative decentralisation and a stronger role for municipalities.

- **Prudence**, systematically apply the principle of precaution with regard to new projects and policies, measuring their possible economic, social and environmental impacts and ensure their reversibility.

- **Transparency**, show the will and capacity to communicate to the public, in a clear and intelligible manner, all the relevant data and information to determine, understand, control and assess their action.
4.2 The Sectoral Implications of the 2026 Sustainable Model

The seven pillars described in the section above that have resulted from the strategic global analysis are, as would be expected, mainly inter-sector. Even so, the aim of this section is to compile the effect of each sector, taking into account the interest in specifically analysing the contribution of the key economic sectors in the Catalan economy when configuring the new socioeconomic model identified by the Strategy in the global sustainability scenario.

Before examining each sector in detail, the following matrix analyses the level of transversality detected in the major strategic pillars in relation to the sectors. It should be remembered that, as stated in section 2.1, the sectors studied were construction, industry, transport, agriculture, energy and trade, in addition to the public (domestic area) and the administration. A colour code indicates the magnitude of the main interactions: very high (dark orange), high (light orange), and medium (light yellow). It should be mentioned that this matrix does not exhaust all the possible interactions – which in the end would be practically all – rather it features those that are considered to be the most significant.

As observed in the matrix, each sector is strongly involved (very high interaction) in one or two pillars of the Sustainable Catalonia for 2026 model and, in variable proportion in one or three more, which shows the major contribution that each sectoral area can have with regard to the achievement of the strategic objectives. Moreover, the matrix also reflects the inter-sector transversality of the various pillars of the model – which, in turn, are also closely interrelated – showing that for the development of the directives of each pillar it will be necessary to guarantee the simultaneous involvement of various sectors.
The need to maintain this diversity of involvement and coordination between the sectors will become key when deploying the Strategy through the Action Plan in order to guarantee the effectiveness of the instruments implemented to achieve common objectives.

Below is a brief summary of the results of the sectoral diagnoses carried out within the framework of the Strategy, both with regard to the major challenges and the directives that are proposed in relation to each sector to jointly contribute to the achievement of the sustainable model for Catalonia 2026. These studies are available in full on the website of the Strategy.

The primary sector is traditionally linked to natural resources. Initially, the productive point of view was the first determinant of the development of this activity and subsequently the economic determinant was imposed as it was subject to a stricter framework of competence.

The high demand for agricultural activities has generated a duality between production and externalities. When the sector tried to reduce the level of dependence on its immediate environment while increasing productivity, tensions were generated resulting in an increase in the needs for water, fertilizers, phytosanitary products, etc. Now, externalities, such as erosion, effects on water, atmosphere and countryside have been generated with consequences for the sector and also on a global scale.

Notwithstanding, the primary sector is involved in the conservation of a highly significant part of the territory and numerous socio-environmental functions are derived from it. This is why it is becoming fundamental, in order to guarantee the sustainable Catalan model and to strengthen rural society, to transform negative effects into improvement opportunities. In fact, statistics on the consumption of chemical fertilisers and phytosanitary products have been showing a downward trend since 1992 and each year the use of more active substances is prohibited to make agriculture more respectful of the environment.

The main environmental challenges to be faced by agriculture, without forgetting that it is the guarantor of the country’s food, are: the degradation of water bodies (both in quantity and in quality), biodiversity and climate change. The agricultural and forestry sector of the 21st century, without losing its productive aspect, must strengthen the sustainability management of the territory and commit to quality. So, in the case of the agricultural sector, it means, on the one hand, strengthening ecological and integrated agriculture, but also more focus on the inclusion of sustainability criteria in conventional agriculture, and on the other hand, a decisive guarantee of efficiency in the use of water. In the case of the forestry sector, it means strengthening the sustainable use and management of forestry areas. Maintaining agricultural and forestry activity and its capacity to produce food and products with sustainable criteria, while integrating into the compatibility of the sector the reuse of the socio-environmental services it provides, will be the base of the sustainable model for Catalonia 2026.

In recent years, the Catalan industrial sector has undergone an intense transformation characterised by the diversification of the sector, the offshoring of certain subsectors, as in the case of the car and textile industries, and the growth of other highly dynamic sectors, such as the pharmaceutical and chemical sectors.

The major challenge facing the Catalan industrial sector is to advance towards increased specialisation in emerging activities with high added value and the production of more efficient goods and services. This new model of the Catalan industrial sector will have to be supported by the pillars of innovation and eco-innovation, human capital and the improvement of the competitiveness of the sector.
With regard to the transformation process, in this model both existing and new industries will have to progressively adapt their production systems, whether by incorporating new technologies (Best Available Techniques), adapting energy efficiency measures or improving the productivity of resources (reduced consumption of raw materials and less generation of waste and pollutants). On this path, new legal demands in environmental matters will also have to be taken into account, with regard to the reduction of CO₂ emissions, energy consumption and water quality; in this sense, technologies related to the knowledge society play a leading role as instruments to facilitate this adaptation of the industrial fabric.

With regard to the production of goods, new industrial sectors related, for example, to the manufacture of electric vehicles, renewable energy, or energy saving and efficiency will have to be fostered to permit an increase in the quality of employment and contribute to improvements in the competitiveness of the sector. Moreover, it will be necessary to take into account the need to grow, with small and medium-sized enterprises operating in emerging sectors with high added value, assuming R&D&I, internationalisation and business cooperation, in order to achieve sufficient dimension to compete.

Accordingly, it is necessary to redefine the sector, not only in terms of production, but also in terms of management, structures and organisational culture.

The construction sector is one of the economic sectors that has generated most wealth in Catalonia in recent years and most increased its activity, measured both in terms of the number of companies and employees in the sector and the volume of turnover and number of buildings constructed. This growth has been, in some cases, above the capacity of the territory to assimilate new housing and, over the years, above the housing needs of society, causing environmental impacts in part due to the large volume of new houses and secondary residences created in recent years, but also due to inefficiency and the low environmental quality of the majority of the buildings.

In the new sustainable model, it is evident that it is necessary to steer the construction sector towards the rehabilitation of existing housing for environmental reasons but also for social reasons (improvement in the inhabitability of the buildings and the accessibility of people) and for economic reasons (it represents an opportunity for a sector that is clearly in crisis). It is also necessary to steer the sector towards construction, both with respect to new builds and partial or total rehabilitations, in which electrical, thermal and solar energy installations, etc. are optimised in terms of energy production and consumption, energy intensity and carbon emissions. This is a sector that today also offers employment opportunities. It is necessary therefore for the sector to incorporate environmental criteria into new builds and to internalise the environmental costs of all the phases of the life cycle.

Moreover, it is necessary for the production of buildings to be compatible with the rest of the uses of the territory (agricultural zones and areas of natural interest, etc.) and for the supply to meet the demand, both with regard to prices and the quantity of residences on the market. In this sense, it is necessary to consolidate a territorial model that especially strengthens the urban nodes of Catalonia. Urban growth, or urban regeneration, must be undertaken in accordance with compactness and complexity criteria, preventing new developments from perpetuating old models based on high levels of urban spread.

All the normative instruments coincide in the need to reduce the CO₂ emissions of the various sectors in order to prevent climate change and ensure more sustainable development. In order to effectively reduce CO₂ emissions it is fundamental for buildings to consume less energy and fewer
materials, but at the same time the domestic sector can make a significant contribution. In this sense, one of the directives of the Strategy consists of guaranteeing that user consumption is more responsible and adapted to real needs.

The current domestic consumption guidelines are the result of a set of sociological and economic tendencies that have led to the consumption of a higher number of goods and services. Accordingly, the model established by the Strategy defines a domestic sector that is prepared and has opportunities to effectively modify consumption habits and patterns in order to guarantee the efficient use of energy and water, low generation of waste and high levels of recycling. Moreover, these consumption guidelines are aimed at facilitating the acquisition of services rather than the acquisition of goods, local shopping and the consumption of products with environmental, ecological and quality certificates that have been produced in a socially fair manner.

Trade and distribution are not removed from the various transformations being produced on the global scale (globalisation of the economy, digital accessibility to the supply and demand of products, etc.), on the territorial scale (implementation of large shopping centres and concentration of leisure and commercial areas, new forms of distribution, etc.) and the lifestyle of people (change in habits, shopping behaviour, etc.). In this sense, with regard to the trade sector, the main socio-environmental challenges to be faced are based on the use of the territory associated with commercial establishments outside of the consolidated urban area, energy consumption and the generation of waste, mobility generated by shopping and arising from the concentration of the commercial sector.

The new sustainable model for Catalonia 2026 shows a trade sector with eco-efficient buildings that are territorially planned with environmental criteria and with optimal management of accessibility. The issuing of commercial licences already includes environmental parameters, the undertaking of generated mobility studies and the adoption of environmental and eco-efficiency criteria in buildings. Moreover, the trade sector must consolidate socio-environmental commitments regarding product traceability, quality, safety and information, low generation of waste and suitable waste management, and in which ICTs contribute to reducing mobility needs.

With regard to the tourism sector, the main challenge with respect to the new sustainable model is to reduce – or at least slow down – the impact of the expansion of tourism facilities, especially second residences and the degradation of adjacent zones, especially in coastal and mountain areas. It is necessary therefore to plan the needs of tourist capacities with the objective of slowing down disproportionate growth and fostering tourism with high added value. In this sense, tourist towns would have to implement sustainable tourism development plans, with the objective of promoting integrated management of the territory, infrastructure and services, contributing to redistributing tourism, both in terms of space and time.

A second territorial challenge of the tourism sector encompasses the sustainable use of protected natural areas. In this sense, one of the objectives proposed by the Strategy consists of the conservation of the countryside and of heritage, in such a way that leisure activities are offered without affecting the environment.

The dynamics of the described economic sectors, their territorial distribution and the willingness of the population generate significant flows of people and goods. In this socioeconomic context, the mobility sector has become one of the fundamental pillars of current society and one of the main concerns of the public and governments. The generalisation of the mobility model based fundamentally on private vehicles has led to major social, economic and environmental externalities,
the maximum exponents of which are high energy consumption with significant GHG emissions and other atmospheric pollutants, the territorial, landscape and ecological implications of the infrastructure of the sector and the high economic cost of its maintenance, in addition to a high accident rate.

In the new sustainable model, the Strategy has decisively committed to a mobility culture that has already been fostered in Catalonia for some years. The sustainable model of the mobility sector seeks social equity, economic efficiency and respect for the environment, and is aimed at reducing the externalities of transport by means of the reduction of mobility needs, the reduction of travelling distances and an effective modal change that commits to more sustainable transport modes, where electric and hybrid vehicles will play a major role, both for people and for goods, and therefore, it will be necessary to suitably regulate the energy system.

The Administration, although it is not strictly a socioeconomic sector, has been considered due to its capacity to contribute to the completion of the objectives proposed by the Strategy and due to the exemplary role that it could play with regard to the socioeconomic actors and the public. In this sense, the Strategy defines a revolutionary administration model that is committed to sustainability objectives and that facilitates the complicity and involvement of the public to be co-responsible for change while guaranteeing information transparency.

Finally, the energy sector is probably the most transversal sector of all the ones analysed. The progressive exhaustion of fossil fuels, upon which the Catalan energy system is dependent, and mankind’s proven involvement in climate change are now the most structurally relevant transversal challenges, not only for Catalonia but also internationally. They manifest the need to take urgent measures to establish a new innovative, competitive and sustainable energy model based on low energy intensity and low carbon emissions.

The energy sector is a key sector with regard to the reduction of emissions as the processing of energy is now responsible for almost 75% of the greenhouse gas (GHG) emissions in Catalonia (14% caused by the energy sector industries, 21% by manufacturing industries and construction, and 28% by transport).

The Strategy commits to a significant reduction of global final energy consumption, by means of the implementation of actions that ensure significant progress in energy saving and efficiency in all sectors and guarantee the effective deployment of renewable energies: mainly wind power, thermoelectric solar power, photovoltaic solar power, biomass and sustainable biofuels (especially second generation).

Another factor to be taken into account to improve energy efficiency lies in the optimisation of the distribution of electrical generation. In Catalonia, there is a major territorial imbalance between energy production and consumption, which causes social impacts and losses in the transport of energy that need to be improved in the future. Another fundamental factor in the improvement of the energy efficiency of our companies is the introduction and subsequent generalisation of electric and hybrid vehicles in urban mobility, which will contribute to a qualitative leap with regard to the reduction of fossil fuels and GHG emissions.
5. Strategic Lines and Objectives of Sustainable Change
5. Strategic Lines and Objectives of Sustainable Change

This chapter develops the strategic lines (SL) that are deployed in the seven pillars described in the previous chapter. These are the lines that are identified as essential in order to guarantee the transition from the current situation to the sustainable model for Catalonia 2026, given that they are the ones that introduce the necessary structural changes to effectively implement the transition.

The achievement of each line is guaranteed by means of strategic objectives (SO) that precisely define sustainability scenarios characterised by a high level of ambition but with guarantees of viability.

5.1 Strategic Lines

The strategy is therefore broken down into 16 strategic lines, which are grouped below in accordance with their pillars:

<table>
<thead>
<tr>
<th>PILLAR 1. CATALONIA, A BIODIVERSE TERRITORY WITH CITIES AND TOWNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL 1.1 Diverse and functional territorial matrix, efficient in the use of land</td>
</tr>
<tr>
<td>Consolidate a territorial model that reinforces urban nodes with compactness and complexity criteria and that minimises land consumption.</td>
</tr>
<tr>
<td>SL 1.2 Urban rehabilitation and regeneration</td>
</tr>
<tr>
<td>Regenerate residential and industrial urban land and rehabilitate housing with environmental and social sustainability criteria as a preferential option for new growth.</td>
</tr>
<tr>
<td>SL 1.3 Integrated management of natural heritage and conservation of biodiversity</td>
</tr>
<tr>
<td>Effectively coordinate and integrate the conservation of biodiversity and of natural heritage with various sectoral policies in order to redress the tendency towards the loss of biodiversity, habitats and socio-environmental services provided by ecosystems.</td>
</tr>
<tr>
<td>SL 1.4 Sustainable agricultural, forestry and fishing</td>
</tr>
<tr>
<td>Reuse agricultural land, forestry areas and bodies of marine water for the production of quality, local food and products, while establishing a new socioeconomic model for the sectors in which socio-environmental services are compatible and provided.</td>
</tr>
</tbody>
</table>
### PILLAR 2. CATALONIA, EFFICIENT IN THE USE OF ENERGY AND IN CLIMATE ACTION

**SL 2.1 More quality of life with less energy**

Reorganise the energy production and consumption model, prioritising low energy intensity and low carbon emissions and maximising energy saving and efficiency, in order to face climate change, within a future sustainable energy model that also guarantees safe, reliable and quality energy supplies.

**SL 2.2 Fostering renewable energy sources and intelligent management in networks**

Substantially increase the generation of renewable energy, reduce dependency on fossil fuels and the emission of GHGs and prepare the electrical energy distribution network for distributed generation.

### PILLAR 3. CATALONIA WITH SMART MOBILITY

**SL 3.1 Competitive sustainable transport**

Effectively increase the modal share of the sustainable transportation of goods and people in order to minimize socio-environmental and economic impacts and increase sustainability in transport.

**SL 3.2 Intelligent management of the infrastructure and electrification of transport**

Establish suitable technical and logistic conditions to guarantee a determinant increase in the electrification of transport: electric vehicles, rail transport and optimisation of existing infrastructure.

### PILLAR 4. ECO-EFFICIENT, COMPETITIVE AND INNOVATIVE CATALONIA

**SL 4.1 Economic internalisation of socio-environmental externalities**

Effectively internalise externalities in the economic balances of the sectors of activity.

**SL 4.2 Eco-efficiency and innovation in the production processes and development of environmental and social services**

Optimise the production processes and foster development of new services that minimise the consumption of resources and raw materials based on integrated product and eco-innovation strategies, guaranteeing the competitiveness of the Catalan economy.
### PILLAR 5. CATALONIA CONSUMES WISELY

**SL 5.1 Rational consumption and quality of life**
Facilitate cultural changes on all levels of society in order to transform current consumption patterns in accordance with the premise that it is necessary to disassociate the concept of quality of life from the consumption of material resources and goods and from the generation of waste.

**SL 5.2 Sustainable procurement and trade**
Significantly increase the market shares of goods and services designed and made with eco-efficiency, durability, quality, recyclability and excellent management criteria, and also sustainable procurement mechanisms and systems to dematerialise consumption.

### PILLAR 6. CIVIC-MINDED, INCLUSIVE, CARING, HEALTHY AND SAFE CATALONIA

**SL 6.1 Social cohesion**
Establish social inclusion and cohesion strategies under the principles of equity, equal opportunities, access to basic services and intra- and intergenerational solidarity in order to ensure and increase the quality of life of people and of society in general.

**SL 6.2 More environmental quality for more health**
Guarantee a high standard of environmental quality to minimise risks and potential effects on the health of people and ecosystems.

**SL 6.3 Education for knowledge and training for sustainability**
Foster a responsible and cultured society and guarantee, by means of educational and communicative tools, that it has a global and transdisciplinary vision of sustainability in order to ensure co-responsibility and guide action.

### PILLAR 7 PARTICIPATIVE CATALONIA WITH CLOSE LINKS TO THE COMMUNITY

**SL 7.1 For more efficient and participative governance**
Make progress in the framework of governance for sustainability based on information transparency, effective communication and the participation of social and economic actors and of society in general in decision making and management.
In spite of the grouping of the lines established in the paragraph above, it is essential to be aware that these lines in reality would be closely related to each other, in addition to the various pillars of the model, as shown in the following matrix:

<table>
<thead>
<tr>
<th>2026 SUSTAINABLE MODEL</th>
<th>Territorial</th>
<th>Energy</th>
<th>Mobility</th>
<th>Production</th>
<th>Consumption</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Efficient use of land</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2 Urban rehabilitation and regeneration</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3 Integrated management of natural heritage and biodiversity</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4 Sustainable agricultural, forestry and fishing</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 More quality of life with less energy</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>2.2 Fostering renewable energy sources and intelligent management in networks</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Competitive sustainable transport</td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.2 Electrification of transport</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Internalisation of externalities</td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2 Eco-efficiency and innovation of the production processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>5.1 Rational consumption for quality of life</td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>5.2 Sustainable procurement and trade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>6.1 Social cohesion</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2 Environmental quality</td>
<td></td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>6.3 Education and training for sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>7.1 Efficient and participative governance</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
</tbody>
</table>
5.2 Strategic Objectives

The following pages present the strategic objectives, structured in accordance with the 16 strategic lines. Even though the objectives have been assigned to a certain strategic line, the level of interrelationship between the various lines determines that, in many cases, they are involved in more than one line and/or pillar of the model.

The strategic objectives define and specify each strategic line. Not all the objectives have been quantified, either because their nature does not permit it or, more usually, because there are no suitable indicators for suitable parameterisation. In the case of the quantified objectives, the numerical value that corresponds to the strategic objective and the difference in relation to the current situation is indicated because the magnitude of the change required to achieve it can be assessed.

In short, the Strategy establishes 101 strategic objectives, 49 of which are quantified (see annexe 2). Table 2 summarises the number of objectives in accordance with each strategic line. It is necessary to observe that the number of objectives does not mean that a strategic line is more or less important as all are necessary to achieve the 2026 sustainable model.

The internalisation of externalities (strategic line 4.1) constitutes a particularly remarkable case, even though it is a central element of the design and the implementation of the Strategy, its formulation in terms of objectives is channelled by means of a single quantified objective. It is evident, however, that in the broadest sense, the majority of the other objectives assigned to other lines participate in this internalisation.

Table 2. Structure of the Strategy for the Sustainable Development of Catalonia, with details of the strategic objectives associated with each strategic line

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Strategic line</th>
<th>Strategic objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1 Efficient use of land</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>1.2 Urban rehabilitation and regeneration</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>1.3 Integrated management of natural heritage and biodiversity</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.4 Sustainable agricultural, forestry and fishing</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>2.1 More quality of life with less energy</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2.2 Fostering renewable energy sources and intelligent management in networks</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>3.1 Competitive sustainable transport</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>3.2 Electrification of transport</td>
<td>3</td>
</tr>
</tbody>
</table>
The strategic objectives are described below by means of the graphs that represent the three defined forecast scenarios: the business-as-usual scenario, the referential scenario and the Strategy for sustainable development. It is fundamental to clarify that the broken lines do not mark the development of the value of the indicator over time, rather they indicate their value at the corresponding time. Therefore, the broken lines of each graph are a simple artefact or graphical resource. The departmental action plans to deploy the Strategy will be where the intermediate time milestones will be set.

It is also necessary to take into account that only one referential scenario has been graphically represented for each indicator (in the timescale determined by the reference used), even though more than one reference has been taken into account in the cases where so required.

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Strategic line</th>
<th>Strategic objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4.1 Internalisation of externalities</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>4.2 Eco-efficiency and innovation of the production processes</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>5.1 Rational consumption for quality of life</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>5.2 Sustainable procurement and trade</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>6.1 Social cohesion</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>6.2 Environmental quality</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>6.3 Education and training for sustainability</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>7.1 Efficient and participative governance</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>101</strong></td>
</tr>
</tbody>
</table>
PILLAR 1. CATALONIA, A BIODIVERSE TERRITORY WITH CITIES AND TOWNS

SL 1.1 Diverse and functional territorial matrix, efficient in the use of land

To consolidate a territorial model that reinforces urban nodes with compactness and complexity criteria and that minimises land consumption.

Strategic objectives

SO 1.1.1 To reach an average rate of primary residences with regard to the total number of residences of 82%. (*)

- This means a six-percentage point increase in the current average rate (76% in 2007).

![Average rate of primary residences](chart.png)

SO 1.1.2 To increase the density of urban land inhabitants, currently around 63 inhabitants/ha, in order to make more efficient use of urban developed land and reduce the need to develop more land.

SO 1.1.3 To reuse agricultural land in urban planning strategies, maintain agricultural land with respect to urban land at a proportion of 6.4 (taking into account at all times the differences between urban zones and rural zones and the characteristics of each part of the territory) and identify agricultural land that, due to its strategic value for the production of food, has to be excluded from urban development transformation actions.

SO 1.1.4 To consolidate a nodal structure of cities and towns that is organised around polarities that concentrate growth where there are more opportunities for collective transport and the variety of uses.

SO 1.1.5 To plan, in tandem with the definition of new growth, the implementation of necessary infrastructure and services, and also the corresponding management measures, to guarantee the efficiency of supplies, the prioritization of sustainable transport and the reduction of average travelling distances.

(*) SDS refers to the scenario of the Strategy for the Sustainable Development of Catalonia.
SO 1.1.6 To guarantee suitable access for all the population to basic services and facilities, and also the quality of public areas.

SO 1.1.7 To strengthen the sectors of economic activity (trade, services, compatible industry) and ensure they are within the consolidated urban framework.

SO 1.1.8 To ensure that the quotient between the surface area that is for sale and the territorial surface area that is used by major commercial establishments or individual establishments that form a major commercial establishment in new licences is always higher than the unit.

SO 1.1.9 To ensure the permeability of infrastructure, especially roads and railways, to facilitate connectivity and minimise the fragmentation of the territorial matrix.

SO 1.1.10 To increase the proactive governance and management of the risks – natural and anthropic – in territorial and sectoral planning.

SO 1.1.11 To restore the coastal dynamic as established in the Catalan Ports Plan (2007-2015).

SL 1.2 Urban rehabilitation and regeneration

To regenerate residential and industrial urban land and rehabilitate housing with environmental and social sustainability criteria as a preferential option for new growth.

Strategic objectives

SO 1.2.1 To ensure that the weight of building rehabilitation and maintenance with respect to the total number of buildings is 47%.

- This means increasing the current weight (34% in 2002) by thirteen percentage points.

Weight of building rehabilitation and maintenance with respect to the total number of buildings

[Graph showing the weight of building rehabilitation and maintenance from 1995 to 2030, with two lines representing Business-as-usual and SDS scenarios.]
SO 1.2.2  To limit the generation of waste from construction and demolition to 120 kg/m² built.

- This means a 75% reduction in the current rate of generation (480 kg/m² in 2006).

SO 1.2.3  To achieve an 80% rate of reuse of construction and demolition waste.

- This means quadrupling the current rate (20% in 2007).

SO 1.2.4  To incorporate the mechanisms required for rehabilitations to compulsorily apply eco-efficiency criteria (thermal bridges, insulation, air-conditioning systems, etc.).

SO 1.2.5  To strengthen or incorporate eco-efficiency criteria in all the sectors of economic activity (industry, trade, services etc.).
SL 1.3 Integrated management of natural heritage and conservation of biodiversity

To effectively coordinate and integrate the conservation of biodiversity and of natural heritage with various sectoral policies in order to redress the tendency towards the loss of biodiversity, habitats and socio-environmental services provided by ecosystems.

Strategic objectives

SO 1.3.1 To increase the number of effective land management instruments to guarantee the conservation of biodiversity, the environmental services of the ecosystems and landscape quality, and also complete the deployment of management plans for protected natural areas.

SO 1.3.2 To strengthen the system of protected areas in Catalonia and equip all the protected natural areas with basic management. Ensure that 50% of the surface area of protected natural areas has a high level of management. A high level of management is understood to be that of national parks, natural parks and other protected natural areas that have a specific management body

- Currently there are 31 areas with a high level of management (39% of the total protected surface area in 2010).

SO 1.3.3 To guarantee the conservation of indigenous fauna and flora and the recovery of threatened species, approve and apply conservation, handling and recovery plans, and guarantee the conservation of the habitats where they live. To achieve it, it is necessary for Catalonia to maintain around 60% of its area covered by natural and semi-natural habitats. Natural and semi-natural habitats are those of the Catalogue of Habitats of Catalonia, with the exception of intensive farming and irrigation fields, tree plantations, urban, developed and industrial areas, etc. (codes 81a to 90o).
The area of natural and semi-natural habitats is currently 60.74% (2009)

Area of natural and semi-natural habitats
over the total area of Catalonia

SO 1.3.4 To guarantee the conservation of marine phanerogam prairies in order to enable their natural regeneration and achieve a 10% increase in their current surface area.
SL 1.4 Sustainable agricultural, forestry and fishing

To reuse agricultural land, forestry areas and bodies of marine water for the production of quality, local food and products, while establishing a new socioeconomic model for the sectors in which socio-environmental services are compatible and provided.

Strategic objectives

SO 1.4.1  To ensure that the managed forest area with respect to the total is 92% (30% in 2007).

SO 1.4.2  To ensure that the ecological cultivation agricultural surface area with respect to the total agricultural surface area is 12%.

- This means tripling the current percentage (4% in 2008).
SO 1.4.3 To ensure a progressive increase in the average minimum size of individuals in the fish populations most caught in Catalonia. This objective implies the need to ensure the availability of suitable and periodic scientific studies on the aforementioned fish populations.
SL 2.1 More quality of life with less energy

To reorganise the energy production and consumption model, prioritising low energy intensity and low carbon emissions and maximising energy saving and efficiency, in order to face climate change, within a future sustainable energy model that also guarantees safe, reliable and quality energy supplies.

Strategic objectives

SO 2.1.1 To achieve a final energy intensity of between 50toe/€M and 55toe/€M of GVA in Catalonia.

- This means a reduction of between 33% and 39% of the final energy intensity with respect to the current value, 81.6 toe/€M in 2007 (the forecasts of the evolution of the GDP calculated in the Strategy are different to those of the Catalan Energy Plan. Moreover, the figures of the Catalan Energy Plan have been calculated with prices from 2000 and those of the Strategy with prices from 2008, which is why the absolute values of the energy intensities differ).

SO 2.1.2 To limit the global emissions of GHG of the diffuse sectors to between 27,000 and 29,200 kt of CO\textsubscript{2}e

- This means a reduction of between 25.5% and 29% in the global emissions from the diffuse sectors with respect to those of 2005 (39,162 kt CO\textsubscript{2}e in 2005)
SO 2.1.3 To achieve a final energy consumption of between 13,770 ktoe and 15,000 ktoe per annum with the following sectoral sub-objectives:

SO 2.1.3a To limit the final energy consumption of the industrial sector to between 79 toe and 85 toe per €M of industrial GVA.\(^9\)

- This means a reduction of between 33% and 38% in the energy intensity with respect to the current value, 128 toe/€M in 2007 (the forecasts of the evolution of the GDP calculated in the Strategy are different to those of the Catalan Energy Plan. Moreover, the figures of the Catalan Energy Plan have been calculated with prices from 2000 and those of the Strategy with prices from 2008, which is why the absolute values of the energy intensities differ).

\(^9\) The range of values has been estimated based on the bracket established in the strategic objective on the reduction of the global consumption of final energy (SO 2.1.3), even though it will be necessary to analyse in detail the distribution of efforts between the various sectors (industry, domestic, services, primary and transport) in accordance with multiple parameters (normative, technology, change in habits, etc.).
SO 2.1.3b To limit the annual energy consumption of buildings (residential and services) to between 4,550 ktoe and 5,400 ktoe, with regard to both construction and use.

- This means an approximate reduction of between 22% and 34% in the current value (6,900 ktoe in 2007).¹⁰

¹⁰ The range of values has been estimated based on the bracket established in the strategic objective on the reduction of the global consumption of final energy (SO 2.1.3), even though it will be necessary to analyse in detail the distribution of efforts between the various sectors (industry, domestic, services, primary and transport) in accordance with multiple parameters (normative, technology, change in habits, etc.).
SO 2.1.3c To achieve a maximum energy consumption of 50 kWh/m² per year in new buildings.

- This means a reduction in final energy consumption of between 7% and 15% (16,200 ktoe in 2007).

SL 2.2 Fostering renewable energy sources and intelligent management in networks

To increase substantially the generation of renewable energy, reduce dependency on fossil fuels and the emission of GHGs and prepare the electrical energy distribution network for distributed generation.

Strategic objectives

SO 2.2.1 To achieve a 15.8% share of renewable energy in the consumption of primary energy.

- This means multiplying the current level of renewable energy by more than five (2.8% in 2007).
SO 2.2.2 To achieve a 20% to 30% share of renewable energy in the gross consumption of final energy.

- This means multiplying the current level of renewable energy by five to eight (3.6% in 2007).
SO 2.2.3 To achieve a primary energy consumption from forestry, agricultural and animal biomass of 520 ktoe.

- This means multiplying the current consumption value by almost six (89 ktoe in 2007).

SO 2.2.4 To develop and foster research, development and innovation in the area of renewable energy with special attention on deep water offshore wind energy, the efficiency of solar energy, geothermal energy and alternative fuels.

SO 2.2.5 To improve the quality and structure of the electrical energy distribution network, and also the management of electrical demand, to be able to maximise the integration capacity of distributed energy sources and intelligent management (smart grids).
PILLAR 3. CATALONIA WITH SMART MOBILITY

SL 3.1 Competitive sustainable transport

To increase effectively the modal share of the sustainable transportation of goods and people in order to minimize socio-environmental and economic impacts and increase sustainability in transport.

Strategic objectives

SO 3.1.1  To achieve a 64% modal share of sustainable mobility on working days in work trips and 71% in all everyday trips.

- This means an increase of 15 and 12 percentage points, respectively, with respect to the current values (49% and 59%, respectively, in 2006).

SO 3.1.1a  To facilitate access with sustainable modes of transport to economic activity sectors far from urban areas.

SO 3.1.1b  To promote local trade, within the consolidated urban area.

SO 3.1.2  To limit GHG emissions arising from transport to between 10,650 and 11,250 kt CO₂e.

- This means reducing GHG emissions arising from transport by between 31% and 35% with respect to 2007 (16,315 kt of CO₂e in 2007).
SO 3.1.3  To maximise the reduction of traffic accidents in Catalonia.

SO 3.1.4  To maximise the reduction of the direct and indirect costs of transport, especially those arising from the time invested, atmospheric pollution, noise pollution and the use of public areas.

SO 3.1.5  To foster more sustainable mobility in tourism trips.

SO 3.1.6  To reduce employment mobility needs by implementing formulas such as telework.

SL 3.2 Intelligent management of the infrastructure and electrification of transport

To establish suitable technical and logistic conditions to guarantee a determinant increase in the electrification of transport: electric vehicles, rail transport and optimisation of existing infrastructure.

Strategic objectives

SO 3.2.1  To achieve a penetration of between 25% and 30% of electric vehicles (pure and plug-in hybrids) and non-plug-in hybrids in the vehicles total.

- This means a very substantial change with respect to the current situation in which the proportion of electric vehicles and non-plug-in hybrids is 0.01%.
SO 3.2.2 To achieve a share of goods mobility by railway of 6 to 10%, which means reversing the tendency to increase the share of the road transport of goods maintained in recent years.

- Taking into account that in 2008 the road transport of goods was 97%, the completion of the strategic objective would permit its reduction to around 90-94% by 2026.

SO 3.2.3 Ensure that the maximum number of infrastructure elements incorporate intelligent management systems to improve fluidity, a reduction in the number of accidents and a reduction in atmospheric pollution.
### Pillar 4: Eco-efficient, Competitive and Innovative Catalonia

#### SL 4.1 Economic Internalisation of Socio-environmental Externalities

To internalise effectively externalities in the economic balances of the sectors of activity.

**Strategic Objectives**

| SO 4.1.1 | To carry out an in-depth study of the calculation methodology for the externalities developed in this Strategy to enable sectoral and global analyses to be made of the externalities in order to take them into consideration with regard to the integration of environmental and economic costs. To carry out an in-depth study of the recovery of natural heritage and the calculation of environmental debt. |
| SO 4.1.2 | To develop a complementary index to GDP that considers other aspects that enable the measurement of progress in achieving economic, social and environmental objectives in a sustainable manner in accordance with the one developed on the European scale (COM (2009) 433 final of 20.8.2009). |
| SO 4.1.3 | To reduce by at least 18% the socio-environmental externalities of the Catalan economy with respect to 2008. To incorporate the socio-environmental externalities of the various production sectors into the economic balances and establish the strategies and best techniques suitable for minimising them. This objective will be especially subject to review in accordance with the results of the methodological improvement of the two previous ones. |
| SO 4.1.4 | To recognise and guarantee the environmental goods and services of the ecosystems, and incorporate their benefits into the current tax system. |

#### SL 4.2 Eco-efficiency and Innovation in the Productive Processes and Development of Environmental and Social Services

To optimise the production processes and foster development of new services that minimise the consumption of resources and raw materials based on integrated product and eco-innovation strategies, guaranteeing the competitiveness of the Catalan economy.

**Strategic Objectives**

| SO 4.2.1 | To achieve a 5.4% share of green employment (including the environment, sustainable construction, renewable energy and environmental sustainability R&D&I sectors) |
|          | This means more than doubling the percentage of green employment with respect to the current value (2.2% in 2009). |

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SO 4.2.2 To increase the share of the population working in energy services, other environmental and personal attention services and knowledge-intensive services.

SO 4.2.3 To achieve a volume of expenditure in research and development in the industrial sector of more than €5000M.

> This means almost tripling the volume of current expenditure (€1,830M in 2007).

SO 4.2.4 To promote industrial clusters based on the application of the concept of industrial ecology.

SO 4.2.5 To achieve a level of R&D expenditure of at least 3.5% of GDP by 2020, in alignment, as established by the Catalan Agreement on Research and Innovation, with the proposal of the Industrial Policy Plan.

SO 4.2.6 To promote and incentivise research, development and innovation in the areas of energy, climate change, water, sustainable construction, sustainable production and consumption, natural heritage, etc. as a guarantee of competitiveness.
SO 4.2.7 To ensure that approximately 600 companies have an environmental management system with EMAS certification.

- This means more than doubling the current number of companies (250 companies in 2009).

SO 4.2.8 To reformulate the tourism model with quality, sustainable efficiency, territorial and time-based extension and rebalancing (deseasonalisation) of the supply criteria, and also adaptation to the new climatic and socioeconomic contexts.

- To ensure that 80% of tourist accommodation has environmental certification.
  - This means multiplying the current percentage by 20 (4% in 2008).
SO 4.2.9  To limit the generation of industrial waste to 67 t of waste per €M of industrial GVA.

- This means reducing the current generation intensity by 46% (124 t/€M in 2007)

![Waste from the industrial sector generated to produce one unit of industrial GVA](image)

SO 4.2.10  To achieve a level of 85% with regard to the reuse of industrial waste generated within a framework of strict environmental quality control.

- This means a twelve-point increase in the current rate (73% in 2007).

![Reused waste from the industrial sector with respect to the total waste generated in the industrial sector](image)

SO 4.2.11  To foster the progressive use of renewable alternative fuels, specifically biomass, in order to reduce emissions and guarantee the competitiveness of Catalan companies, with strict environmental controls and conditions.
SO 4.2.12 To limit, by means of an increase in efficiency, the growth of water consumption in agriculture to 2,200-2,500 hm³ per year.

Total consumption of water in agriculture

![Diagram showing total consumption of water in agriculture from 1995 to 2030, with the trend line for Business-as-usual and the Sustainable Development Strategy (SDS).]

SO 4.2.13 To foster the reuse of water by the economic sectors, and, particularly, by industry and agriculture.
PILLAR 5. CATALONIA CONSUMES WISELY

SL 5.1 Rational consumption and quality of life

To facilitate cultural changes on all levels of society in order to transform current consumption patterns in accordance with the premise that it is necessary to disassociate the concept of quality of life from the consumption of material resources and goods and from the generation of waste.

Strategic objectives

SO 5.1.1 To limit domestic energy consumption, by means of saving and efficiency, to between 2,210 ktoe and 2,380 ktoe.

- This means that domestic energy consumption has to be between -2% and +5% with respect to the current value (2,260 ktoe in 2007).

![Energy consumption in the domestic sector](image)

SO 5.1.2 To limit the increase of domestic water consumption to 417 hm³ per year.

- This means limiting the increase to 20% with respect to the current value (348 hm³ in 2007).

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12 The range of values has been estimated based on the bracket established in the strategic objective on the reduction of the global consumption of final energy (SO 2.1.3), even though it will be necessary to analyse in detail the distribution of efforts between the various sectors (industry, domestic, services, primary and transport) in accordance with multiple parameters (normative, technology, change in habits, etc.).
SO 5.1.3 To reduce the generation of non-recyclable waste and ensure that 100% of waste generated receives treatment at the end of its life, provided that the priority is given to maximisation of material reuse, followed by other forms of reuse that guarantee environmental quality standards.

SO 5.1.4 To reduce the per capita generation of municipal waste to 1.22 kg/inhab./day.

- This means reducing the current per capita generation of municipal waste by 23% (1.59 kg/inhab./day in 2008).
SO 5.1.5 To achieve a 60% rate of material recovery of municipal waste.

- This means multiplying the current rate (24% in 2006) by two and a half, which means a reduction to 100 kg/inhab./year in the quantity of waste sent to the dump.

SO 5.1.6 To achieve a 73% rate of gross selective collection of municipal waste.

- This means doubling the current rate (34% in 2008).
SO 5.1.7 To reduce by 95% the consumption of single-use plastic bags with respect to the consumption values in 2007.

Percentage reduction in the consumption of single-use plastic bags

SO 5.1.8 To increase the public’s awareness with respect to the social and environmental impacts of its consumption habits on a local and global scale.

SO 5.1.9 To prevent diseases related to food and reduce to reasonably possible or acceptable levels people's exposure to agents capable of causing diseases by food ingestion.

SL 5.2 Sustainable procurement and trade

To increase significantly the market shares of goods and services designed and made with eco-efficiency, durability, quality and recyclability criteria, and also sustainable procurement mechanisms and systems to dematerialise consumption.

Strategic objectives

SO 5.2.1 To commit to changing the production model to one that facilitates eco-efficiency in material consumption, the extraction of resources in the natural environment and importations, including goods transport.

- This means a reduction in domestic material consumption (DMC), in such a way that it facilitates the separation of the consumption of resources from economic growth (DMC/GDP).

SO 5.2.2 To achieve a 100% rate of green public procurement in the sectors proposed in Communication from the Commission to the European Parliament COM (2008) 400.  

SO 5.2.3 To foster the consumption of local products and local trade.

SO 5.2.3a To increase the annual turnover of Catalan ecological operators per inhabitant to achieve around €30/inhabitant/year.

- *This means multiplying current levels of turnover by 3 to 4.*

![Turnover of Catalan ecologic operators per inhabitant](image)

SO 5.2.3b To increase the presence of local food products in shops (the value in 2006 was 78% of the products available for consumption).

![Local food products available for consumption](image)

SO 5.2.4 To increase the labelling information for consumption products in relation to their origin, composition, processing and environmental impact.
## PILLAR 6. CIVIC-MINDED, INCLUSIVE, CARING, HEALTHY AND SAFE CATALONIA

### SL 6.1 Social cohesion

To establish social inclusion and cohesion strategies under the principles of equity, equal opportunities, access to basic services and intra- and intergenerational solidarity in order to ensure and increase the quality of life of people and of society in general.

### Strategic objectives

| SO 6.1.1 | To ensure that the public has fair and local access to services and facilities, taking into account the associated social and environmental benefits. |
| SO 6.1.2 | To combat poverty and the risk of social exclusion among the most disadvantaged groups. |
| SO 6.1.3 | To incorporate systematically the perspective of gender and of women and also integrate gender equality objectives into all policies. |
| SO 6.1.4 | To reduce early school leaving to less than 10%, that is, the percentage of the population aged 18 to 24 who have only completed compulsory secondary education and are not continuing with subsequent studies. |
  - This means reducing the current rate by almost more than half (32% in 2007). |
| SO 6.1.5 | To improve the effectiveness and the quality of cooperation for development by fostering integral respect, the consolidation of human rights, the strengthening of the social fabric and sustainability in its triple social, economic and environmental dimension, and minimise the impacts that our socioeconomic model represents in third countries. |
| SO 6.1.6 | To increase the number of companies adhering to corporate social responsibility systems. |

### SL 6.2 More environmental quality for more health

To guarantee a high standard of environmental quality to minimise risks and potential effects on the health of people and ecosystems.

### Strategic objectives

| SO 6.2.1 | To ensure that 100% of the stations in the Air Pollution Monitoring and Forecasting Network do not exceed the annual limit value of 40 \( \mu g/m^3 \) for PM10 and for NO\(_2\), established by Royal Decree 1073/2002 and European Directive 2008/50/CE. |
  - With regard to NO\(_2\), in 2008 71% of the transit stations complied with the regulations, while in the case of industrial stations the value was already 100%. |
  - With regard to PM10, in 2008 70% of the transit stations and industrial stations complied with the regulation. |
| SO 6.2.2 | To contribute to achieving good atmospheric quality, in such a way that the Catalan Index of Air Quality (ICQA) shows good air quality values for all stations, that is, above 50, which may be satisfactory (50<=ICQA.<75) or excellent ((75<=ICQA.<= 100). |
| SO 6.2.3 | To reduce the population exposed to noise pollution levels exceeding 65 dBA. |
SO 6.2.4 To contribute to achieving good ecological status in all the surface and subterranean bodies of water in the context forecast in the Water Framework Directive, especially in relation to nitrates.

SO 6.2.5 To ensure that 100% of the busiest beaches and those most visited by tourists in Catalonia (215 according to the ACA) have environmental certification.

- This means multiplying the current number of beaches with environmental certification (44 in 2009) by approximately five and, therefore, multiplying the current percentage (20% in 2009) by five.

SO 6.2.6 To limit the organic load dumped annually into industrial wastewater to under 36,000 t COD.

- This means reducing the current organic load value (almost 45,000 t COD in 2008) by 20%.
<table>
<thead>
<tr>
<th><strong>SO 6.2.7</strong></th>
<th>To contribute to achieving good knowledge of land pollution by all potentially polluting activities in the context provided for in Law 20/2009, of 4 December, on environmental prevention and control of activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SL 6.3 Education for knowledge and training for sustainability</strong></td>
<td>To foster a responsible and cultured society and guarantee, by means of educational and communicative tools, that it has a global and transdisciplinary vision of sustainability in order to ensure co-responsibility and guide action.</td>
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<tr>
<td><strong>Strategic objectives</strong></td>
<td></td>
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| **SO 6.3.1** | To ensure that 100% of the educational centres integrate, by means of participation processes, education about sustainability into their Educational Centre Project (PEC) and into the Annual Programming of the Centre (PAC).  

➢ *By way of example, it could be assessed by means of the number of schools in the Network of Schools for Sustainability in Catalonia (XESC). This would mean significantly increasing the number of schools in the XESC (19% in 2009).* |
| **SO 6.3.2** | To ensure that the bachelors and post-graduate degrees with the greatest effect on sustainability at Catalan universities are greened by means of participation processes, social interaction and transdisciplinarity, and guarantee professional competence in sustainability. |
| **SO 6.3.3** | To ensure that all means of communication disseminate relevant environmental information and contribute to public training. |
| **SO 6.3.4** | To foster the use of communication channels to make relevant information about socio-environmental problems available to the public to aid understanding and encourage the public to participate in the formulation and application of solutions. |
| **SO 6.3.5** | To incorporate information and education for sustainability as co-responsibility and training instruments into public administration programmes and plans, and also into the education programmes of the entities. |
| **SO 6.3.6** | To ensure that all the activity sectors (public and private) with the greatest effect on the state of the environment have a continuous training plan that guarantees the training of professionals working to minimize the impact on the environment. |
| **SO 6.3.7** | To foster and consolidate specific lines of research in various areas of education for sustainability with the collaboration of universities, research centres, educational centres and entities. |
PILLAR 7 PARTICIPATIVE CATALONIA WITH CLOSE LINKS TO THE COMMUNITY

SL 7.1 For more efficient and participative governance

To make progress in the framework of governance for sustainability based on information transparency, effective communication and the participation of social and economic actors and of society in general in decision making and management.

Strategic objectives

SO 7.1.1 To guarantee and facilitate the active participation of the social and economic actors and of the public in decision making and in management; and their participation and co-responsibility in the definition of a more sustainable society within the framework of the entities and collectives in which civil society is organised, the operation of which also exemplifies the application of sustainability criteria.

SO 7.1.2 To ensure access to information to guarantee transparency, establishing effective mechanisms to place relevant information about socio-environmental problems that facilitates understanding at the disposal of the public and encourages them to participate in their resolution.

SO 7.1.3 To deploy coordination strategies with the local and supra-local entities to guarantee the achievement of sustainability objectives on the territorial scale and establish complementary strategic objectives.

SO 7.1.4 To carry out an in-depth study into the development and application of the principles of good governance for sustainable development.
5.3 The Economic Benefits of the 2026 Sustainable Model

5.3.1 The Economic Benefits of the 2026 Sustainable Model

The scenario of the Strategy for 2026 has, in addition to its positive socio-environmental implications, a significant effect in economic terms and, in particular, in relation to the reduction of negative externalities (see 1.3.1 Sustainability Means Internalising Externalities).

The technical work that has served as the basis for the preparation of the Strategy has enabled the identification of the various externalities associated with the main socio-environmental impacts of the analysed economic sectors (including the domestic area) and the estimation of some of the most significant ones.

To carry out these calculations, methodologies based on multiple approaches have been used: induced costs, protection, prevention and control costs, the costs of corrective measures, revealed preferences, contingent valuation, real preferences, stated preferences, legal compensations, etc. Each one of these was used following a detailed analysis of their suitability and adaptability to Catalonia, and also in accordance with the available data.\(^{14}\)

The following table shows the main subjects that have been covered in this first approach to the calculation of externalities and their relationship with the sectoral areas analysed in the foundation work of the Strategy. The marked cells correspond to the intersections for which a monetary calculation of the externalities has been carried out.

<table>
<thead>
<tr>
<th>Territory</th>
<th>Agriculture and forestry</th>
<th>Construction and territory</th>
<th>Industry</th>
<th>Energy system</th>
<th>Transport</th>
<th>Tourism</th>
<th>Trade</th>
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<td>Land consumption</td>
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Notwithstanding, it is necessary to qualify various circumstances with regard to the calculation methodology:

\(^{14}\) Methodologies validated by the British consultancy firm Metroeconomica, headed by Dr Anil Markandya.
The externalities for which there is a reliable and proven methodology that can be applied to the Catalan situation have been calculated. This means that the figures obtained represent certain minimum and estimated values, and that this study has not exhausted the assessment of the externalities, rather that, on the contrary, it has started a process that may be extended in the future.

Not all the intersections have been analysed with the same intensity. Accordingly, while some thematic areas and sectors (such as climate change or transport) have been assessed in a solid and complete manner, in other cases (such as tourism), the assessment carried out has been partial due to the lack of broken down data or specific methodologies. It is necessary to underline, however, that, in some cases, such as the aforementioned tourism, some externalities have been included in other sectoral areas.

The accumulative and synergic effects of the impacts could not be taken into account when calculating the externalities due to the methodological challenges it involves.

Finally, it is necessary to indicate that externalities, mainly negative ones, arising from ten different areas have been calculated. They are grouped into the three categories of the original matrix: territory, environmental flows and socioeconomic area. The externalities that have been calculated are expressed below, grouped in accordance with the three categories of the initial matrix:

Territorial area

- *Land consumption in development and infrastructure*: the negative externality arising from the loss of environmental functions in pre-existing (natural or agricultural) land has been included.

- *Natural, agricultural and forestry heritage*: positive externalities due to the assessment made by the population of natural, agricultural and forestry areas have been calculated. It also includes negative externalities arising from the impact of certain activities on these ecosystems (such as the excessive use of fertilizers and pesticides).

Environmental flows

- *Balance of CO₂ emissions and fixation*: it includes the negative externality arising from the annual unfavourable balance of emissions with respect to the fixation by the forests within the area of Catalonia. It does not include the long-term storage effect of the forests because even though it clearly constitutes the most significant entry, it is relatively constant over time and would distort the global assessment of the externalities.

- *Water consumption of the economic sectors and of the residential sector*: the negative externalities arising from the reduction in quantity or quality of the resources have been considered.

- *Waste management*: the negative externalities arising from the external costs associated with waste management have been taken into account.
Socioeconomic area

- **Air quality and health**: the negative externalities for health arising from concentrations of pollutants in the air, whether produced by economic activities or mobility, have been calculated.

- **Work and traffic accidents**: it includes the negative externalities arising from the indirect costs that result in work-related accident rates and mobility-related accident rates.

- **Sustainable production and consumption**: positive externality obtained thanks to the incorporation of improvements in the production model. Specifically, it has been assessed in relation to the primary sector, and in accordance with the application of an ecological agricultural model and the reduction of negative externalities caused by the use of agrochemicals.

- **Energy generation**: negative externalities of energy generation on other vectors or activities (climate change, health, agricultural production, biodiversity, etc.).

- **Effect on the environmental quality of the beaches on tourism**: positive externalities regarding the tourism sector obtained thanks to the availability of beaches with blue flags.

Even though the number of assessable externalities could be much higher, those that have been considered most significant and for which there were analysis methodologies validated in the European scale have been considered, in addition to those obtained from reliable and itemised data in the Catalan area. Therefore, even though this study does not incorporate all the possible elements, it constitutes a highly valid first approach that enables the comparison in relative terms of major elements, and also of time-based scenarios (that is, the current situation with respect to 2026).

As new calculation methodologies are consolidated and all the data required is made available, this assessment of the externalities could be extended to other areas and it could incorporate aspects related to other environmental externalities, and also externalities of a social or economic nature.

Once more it is evident that the completion of the objectives of the Strategy affects the improvement of environmental quality and of the quality of life of the public. In effect the achievement of the objectives of the Strategy results in a broad range of benefits, both in the social area and in the economic area, in terms of saving due to not having to apply corrective or compensatory measures – for example, in relation to climate change – that it would be necessary to undertake in a less sustainable country model. Thus, for example, the strategic lines established by the Strategy not only reduce GHG emissions (and, therefore, direct externalities in relation to this subject), rather that it also results in multiple improvements in energy sufficiency and distributed generation, in the electrification of transport etc. All with evident economic and social implications.

Taking into account the observations carried out with regard to the scope of the calculation methodology, the analysis of externalities carried out within the framework of the Strategy enables the following to be concluded:
The negative externalities of the current socioeconomic model (2008) have been estimated at almost €8 billion, which represents 4% of Catalan GDP.

The extrapolation of these externalities to 2026, in accordance with the current tendencies, would lead to an increase in these externalities to a little over €11 billion (practically a 40% increase), maintaining the weight over GDP at a level similar to the current one.

In contrast, the achievement of the sustainable objectives established by the Strategy for 2026 would represent a reduction in the negative externalities to €6.3 billion in 2026 (practically 50% with respect to the business-as-usual scenario), which represents 2.3% over GDP in 2026. Therefore, its relative significance with respect to GDP is notably reduced.

These figures correspond to a single year, 2026. Therefore, it is necessary to consider that the reduction of negative externalities in the scenario of the Strategy will also be given in the years between 2008 and 2026. Making a calculation based on linear development, the sustainability scenario results in an accumulated reduction of negative externalities of €45 billion by 2026 with respect to the business-as-usual scenario.

The most significant negative elements that have been assessed correspond to climate change, land consumption and accident rates (work and traffic), whereas the most significant positive externalities were related to the environmental functions of the habitats.
Despite the methodological limitations of the assessment of externalities (assuming that their real value will be clearly higher), the results obtained are coherent, in relative terms, with those obtained in similar studies. Thus, even though there are no studies that have proposed the calculation of the global value of the externalities with the breadth that this Strategy has applied, there are studies that have made partial approaches that could serve to verify the obtained results. For example, within the Greensense project, a calculation was made of the externalities caused by atmospheric pollution (NH₃, VOₓ, NMVOC, SO₂), biodiversity, the extraction of resources (mineral and energy), toxic substances that contaminate land and aquifers, noise, waste and the contamination of water resources. The methodology was similar in the sense that it was a matter of finding the data available for each indicator and applying a shadow price to each one. The results obtained in 1998 for Great Britain place the value of these externalities at 1.3% of GDP. Using the same parameters for Catalonia in 2008 and taking into account all the precautions that carrying out this exercise represents, the figure is 1.0-1.1%.

In a very different context, a study on the value of the externalities in Southern Mediterranean countries, which included the subjects of pollution, climate change, waste, water pollution and territorial degradation (especially of the coastal areas), established the value of the externalities for the following countries: Egypt (5.1% of GDP), Syria (4.2%), Algeria (4.1%), Morocco (3.8%), Lebanon (3.1%), and Tunisia (2.5%).

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6. Instruments of Sustainable Change
6. Instruments of Sustainable Change

6.1 Current Plans and Programmes

The current sector plans and programmes constitute fundamental instruments to guarantee the completion of the Strategy. For this reason, their analysis is a priority throughout the deployment, monitoring and assessment phase of the Strategy.

Current plans and plans being prepared have validity periods that range from 2010 to 2027, but in most cases work with intermediate horizons (2012, 2015), which means that they will have to be reviewed before 2026.

Therefore, successive reviews of these sectoral planning figures will have to be made to forecast the general directives and specific objectives of the Strategy for the sustainable development of Catalonia, in the corresponding aspects in each case. Accordingly, this process is an effective instrument to facilitate the effective incorporation of the directives of the Strategy into government policies and to guarantee the assignment of the budgetary resources required for their implementation.

The number of plans and programmes to consider is very large. In fact, any economic, social or environmental plan or programme would have to include its contribution to achieving the objectives of the Strategy for the sustainable development of Catalonia to the corresponding extent, and justify the decisions adopted within the framework of the Strategy. However, there is a series of current plans and programmes related to the territorial spheres and sustainability that are particularly affected by the Strategy, which are presented below by way of example (by no means is this an exhaustive list of all the current plans):

- The General Territorial Plan of Catalonia
- Partial territorial plans corresponding to the seven defined territorial areas: Alt Pirineu i Aran, Terres de Ponent, Comarques centrals, Comarques gironines, Regió Metropolitana de Barcelona, Camp de Tarragona and Terres de l’Ebre
- Urban development master plans
- Municipal urban development planning figures (POUM, partial plans, etc.)
- Energy efficiency and saving plans
- Framework plan to mitigate climate change and adaptation plan
- Catalan Transport Infrastructure Plan 2006-2026
- Ports of Catalonia Sectoral Territorial Plan 2007-2015
- Catalan Airports, Aerodromes and Heliports Plan 2009-2015
- Catalan Passenger Transport Plan 2008-2012
• Catalan Logistic System Plan 2003-2026
• Metropolitan Region Infrastructure Master Plan 2001-2010
• Mobility master plans of the various functional areas (Regió Metropolitana de Barcelona, Camp de Tarragona, Terres de l'Ebre, Ponent, Comarques Gironines, Catalunya Central and Alt Pirineu i Aran)
• National Infrastructure Agreement
• Mobility plans for industrial estates, universities, etc.
• Catalan Strategic Bicycle Plan 2008-2012
• Catalan River Basin District Management Plan (in public information)
• Urban Wastewater Treatment Programme 2005 (PSARU)
• Industrial Wastewater Treatment Programme 2003 (PSARI)
• Catalan Water Reuse Programme 2008
• Catalan Municipal Waste Management Programme 2007-2012 (PROGREMIC)
• Catalan Municipal Waste Management Infrastructure Sectoral Territorial Plan 2007-2012
• Catalan Construction Waste Management Programme 2007-2012 (PROGROC)
• Catalan Industrial Waste Management Programme 2007-2012 (PROGRIC)
• Rural Development Plan
• Livestock Manure Management Plan
• Action Plan for Ecological Food and Agriculture 2008-2012
• Catalan Irrigation Plan 2008-2020
• Public use, management and protection plans for all areas of natural interest
• Action Plan of the System of Protected Natural Areas (being prepared)
• Research and Innovation Plan 2010-2013
• National Housing Agreement 2007-2016
• Plan for the Right to Housing 2009-2012
• Catalan Health Plan for 2010
• Interdepartmental Public Health Plan
• Food Safety Plan of Catalonia 2007-2010
• Barcelona Metropolitan Region Air Quality Improvement Plan
• Forestry Biomass Energy Exploitation Plan 2008-2010
• Strategic Agreement to Promote Internationalisation of the Catalan Economy, the Strengthening of its Competitiveness and the Quality of Employment 2008-2011
• Regional Promotion Initiatives Plan 2008-2010
• Catalan Social Services Strategy Plan
• Catalan Government Women’s Policy Plan 2008-2011
• Youth Policies Action Plan 2008-2011
• Territorial Programming of Specialised and Home Social Care in Catalonia of the ICASS 2008-2012
• Infancy and Adolescence Master Plan 2009-2012
• Training Master Plan 2008-2010
• Green Schools Programme
• Tertiary Sector Support Master Plan 2008-2010
• Action Plan for Social Inclusion and Cohesion in Catalonia 2010-2013
• Local Social Services Action Plans PALMSS 2009-2010
• Catalan General Employment Plan
• Agreement on Youth Employment Measures in Catalonia 2009-2012
• Catalan General Security Plan 2008-2011
• Catalan Occupational Health and Safety Strategy 2009-2012
• Action Plan on External Actions of the Government
• Road Safety Plan 2008-2010
• Responsible Gambling Programme
• Interdepartmental Citizen Participation Plan 2008-2010
• Catalan Cultural Facilities Plan 2010-2020
• Catalan Government Social Responsibility Measures Plan 2009-2012
• Forestry Policy General Plan (being processed)
• Catalan Sectoral Territorial Costs Plan (being prepared)
• Cooperation for Development Master Plan 2007-2010 (2011-2014 being prepared)
• Industrial Policy Plan (being prepared)
• Catalan Electric Vehicle Implementation Plan (being prepared)
• Operational Programme of the European Fisheries Fund for Catalonia 2007-2013

6.2 Proposal of Instruments

In order to enable the full implementation of the Strategy, it is evident that it will also be necessary to prepare a wide range of instruments, understood to be mechanisms or tools to be developed and implemented to make progress towards the achievement of the strategic objectives presented in the previous chapter.

However, these possible instruments, in conjunction with the priority measures and actions upon which they are based, will be identified when the Action Plan of the Strategy is prepared (see chapter 7 on deployment and assessment).

These instruments, which are necessarily interrelated and have the capacity to establish multiple synergies, can be classified into the following six categories:

- planning
- management
- economic, fiscal and financial
- legislative
- social
- interadministrative coordination

The following pages present the characteristics and the relevance of each type of instrument and they are exemplified with certain specific proposals, obtained from the synthesis of the numerous contributions received in the participative process presented in point 1.4 and in annexe I. The details of all the specific proposals made within the framework of the participative can be consulted on the Strategy website. This information has been of great use in the preparation of the Strategy.

It is important to interpret these examples of instruments as initial proposals, to be considered when drafting the Action Plan, which will become a key element of the deployment of the Strategy.

6.2.1 Planning Instruments

The planning instruments make reference, as we have already mentioned, to all the sector plans and programmes – in relation to the territory, mobility, energy, water, waste, etc. – that are prepared with short- and medium-term goals. They would also include the strategic forecasting instruments with medium- to long-term goals.
Examples of planning instruments:

- Urban development planning instruments that integrate non-developable land into management mechanisms.
- Urban development planning instruments that facilitate eco-efficiency or low emissions in the built city.
- Instruments that foster the Local Employment Plans in employment generating sectors, prioritising areas such as renewable energy, energy efficiency and saving, waste management, water, building rehabilitation, public areas and information and communications technology (ICT).
- Sustainable tourism development plans that favour diversification, sustainable mobility and the decentralisation of the tourism sector.
- Strategy for the preservation of natural heritage (currently being prepared).
- Forestry resource organisation plans.

6.2.2. Management Instruments

Even though good planning constitutes the base required for any policy or intervention in sustainability matters, it is equally evident that suitable management instruments – and associated economic resources, if applicable – have to be developed as an essential requirement to enable the interventions to be truly effective and be optimally implemented. Moreover, the scenarios and objectives established in the planning figures can become merely theoretical referents.

The range of possibilities for this type of instrument is extraordinarily varied. By way of example, the following can be mentioned:

- Urban development management instruments of the sectors of economic activity on a supra-municipal scale and for the integration of land not for development.
- Forestry management instruments: planning projects, forestry improvement and management technical plans, simple forestry management plans, joint forestry management plans.
- Integrated management instruments for areas of natural, agricultural, forestry and landscape value.
- Instrument to modernise traditional irrigation to increase the efficiency of agricultural irrigation.
- Best available techniques and clean development mechanisms for industrial processes to improve efficiency in the use of resources and the management of waste and to reduce GHG and pollutant emissions.
- Reuse and use of reclaimed water for industry, agriculture and urban uses.
- Packaging deposit and return systems.
- Logistics systems to promote local and/or ecological products or fair trade products in shops, municipal markets and tourism establishments.
- Instruments to measure the emissions generated in the manufacture and availability of construction materials, and their introduction into the energy qualification of the buildings.

- Push & Pull strategies to encourage collective transport and discourage private transport to guarantee the competitiveness of collective transport with respect to private transport.

- Instruments to foster car pooling, multi-user cars, shared taxis, high occupancy vehicle (HOV) lanes, reserved parking for shared cars, etc. in order to increase the average occupation of vehicles.

- Instruments for the coordinated management of means of transport by the territorial mobility authorities.

- Systems to manage fleets of road transport vehicles and the development of urban distribution centres with low environmental impact distribution vehicles, in order to optimise the logistics of goods transport.

- Mechanisms to improve the accessibility of the logistics platforms to the main goods rail transport networks, facilitating intermodality.

- EMAS.

- Integrated management instruments for industrial concentrations in industrial estates in order to reduce environmental impact and improve eco-efficiency in flows of materials and energy.

- Environmental certification systems on all the beaches.

- Environmental management systems in tourism establishments that promote, for example, energy efficiency, the saving of resources and accessibility with sustainable means of transport.

- Voluntary agreements and domestic projects (domestic offset) to reduce GHG emissions.

- Technical instruments to adapt local Agenda 21 projects to the contents and requirements of the Sustainable Energy Action Plans (PAES).

- Environmental management instruments for sports facilities.

- Instruments to monitor and assess the application and the consequences for women in the deployment of the Strategy.

- Instruments to examine policies and prepare actions to increase the number of women who participate as decision makers, planners, managers, and technical advisers in the formulation, development and application of policies and programmes for sustainable development.
6.2.3 Economic, Fiscal and Financial Instruments

Investing in sustainability requires a market that internalises the cost of environmental externalities, which implies in certain cases recurring to environmental taxation instruments, and the establishment of grants and subsidies to strengthen or foster certain sustainability strategies. This type of instrument is closely related to the concept of eco-efficient economy presented in chapter 1.

Some examples of this type of instrument are:

- Financing to adapt energy efficiency measures, cogeneration systems and the use of renewable energy in the industrial sector.
- Agreements between the public and private sectors in R&D&I projects that foster eco-efficiency and eco-design in the industrial sector.
- Diversification or extension of tax benefits for the reformation, reconstruction or rehabilitation or buildings and housing, conditioned to the application of sustainability criteria.
- Programmes to manage the demand to reduce electrical consumption peaks and their effect on inefficient generation and network losses.
- Increase in the progressiveness of the water tariffs and extension of the supply.
- Incentivisation to reduce environmental externalities in the various production sectors.
- Fostering the concession of subsidies to local entities to carry out extraordinary local employment plans (Impuls-Treball Project) in the field of sustainability.
- Financing to adapt local Agenda 21 projects to the contents and requirements of the PAES.

6.2.4 Legislative Instruments

Legislative instruments constitute an essential requirement to foster sustainability policies, and to show the political will to make progress towards more sustainable scenarios.

The legislative framework in Catalonia includes a normative hierarchy: European Union, state, autonomous region and local regulations; and it is articulated by means of competences assigned in accordance with each territorial area.

As a whole, the legislative body is extraordinarily extensive and is subject to very frequent modifications and updates. Although it is not homogenously feasible to incorporate sustainability principles into legislation, the very fact that there is constant renewal within this legislative body must enable the progressive incorporation of the sustainable approach, not only in environmental legislation, but also in all sectoral areas. In fact, this sustainable approach is already expressly present in many current regulations – beyond those that are strictly environmental – such as, for example, in the Urban Development Act or the Mobility Act. Specifically, the Strategy will be an effective tool to integrate the sustainable approach by means of the establishment of transverse strategic objectives that any new legislative text or review of an existing text will have to assume.

Even though it is considered unnecessary to increase the volume of legislation per se, this does not preclude that a specific regulation can be suitably developed to favour the practical, effective and/or efficient implementation of other types of instruments (management, fiscal, etc.), and also to give certain questions legal status (such as climate change, for example).
6.2.5 Social Instruments

Social instruments include a wide range of tools and mechanisms that could be considered to be within the following categories:

- Information and communication
- Training
- Education and awareness
- Active participation

The development of these instruments is essential to facilitate changes in the behaviour patterns of the general public and of the socioeconomic actors who will enable the achievement of the majority of the sustainable objectives compiled in this Strategy.

Some examples of this type of instrument are:

- Training and professional recycling programmes for workers in the sectors most affected by the financial crisis (construction, industry, etc.).
- Instruments to foster employment aimed at groups at risk of social exclusion.
- Instruments that facilitate an increase in the number of programmes dedicated to sustainability and the environment in the media and the transversal integration of these contents into the rest of the programmes with the participation of scientists, technicians and political representatives.
- Campaigns and communication and participation tools to involve the public and socioeconomic actors, fostering public co-responsibility and social cohesion.
- Communication instruments aimed at the consumer to guarantee information about the health risks associated with the consumption of food and non-food products.
- Development of programmes and publication of materials aimed at training for sustainability on all educational levels. Fostering and consolidation of the Network of Schools for Sustainability of Catalonia.
- Specific actions to support and train teachers in sustainability.
- Campaigns and the preparation of informative materials for the public on the importance of the consumption of products that are environmentally and socially more respectful from ecological or integrated agriculture, fair trade, prepared with recycled materials, etc. and to promote their social consumption (schools, hospitals, consumer cooperatives, etc.).
- Tools for the deployment of ICTs in rural society and promotion of their use.
- Information and training tools concerning corporate social responsibility programmes in the employment world.
- Tools for the deployment of services and social benefits by means of Law 12/2007, on social services and the portfolio of social services 2010-2011.
• Campaigns and communication tools during Sustainable and Safe Mobility Week (SMSS), which is held annually and which by means of a number of initiatives fosters sustainable mobility.

• Instruments, fostered by the Catalan Broadcasting Corporation, to disseminate environmental information and provide public training in the media.

• Instruments to disseminate the knowledge and experiences of women with respect to the management and conservation of natural resources.

• Instruments with the objective, for men and for women, of improving the balance between professional, family and personal lives.

• Land stewardship.

6.2.6 Interadministrative Coordination Instruments

The Catalan Government and the local authorities have a direct responsibility in the management of the transition towards a more sustainable country model and in the effective achievement of the sustainability objectives established by the Strategy. In fact, a significant proportion of the instruments mentioned in the previous points have to be managed and approved by the affected administrations.

Beyond this direct involvement, the authorities have to play an exemplary role and be involved, more than any other actor, both in the achievement of sustainability objectives and in directing the processes to reach them.

The concept of governance is essential in this sense. In relation to this concept, it is necessary to emphasise network tools and efficient coordination between the various authorities – and between the various units within a single authority – and also between the social actors and the authorities.

One of the instruments that is especially relevant consists of the consolidation or creation of mixed bodies that intervene in the monitoring and the implementation of the Strategy (see chapter 7).

Other examples of this type of instrument are:

• Guarantee global coherence between the various sectoral plans and programmes, and also their adaptation to the objectives of the Strategy.

• Strengthen, extend and harmonise the definition of sustainability criteria in the goods and services procurement conditions of all the administrations. Official recognition of a catalogue of products.

• Voluntary agreements to reduce and compensate CO₂ emissions associated with energy consumption.

• Adhesion agreements with municipalities for the achievement of common objectives related to the Strategy.

• Local innovative networks and the facilitation of their connection to international networks.

• Territorial eco-innovation clusters formed by universities, companies and various levels of administration.

• Instruments to promote local Agenda 21 projects and the Covenant of Mayors.
7. Deployment and Assessment
The instruments that will guarantee the deployment and implementation of the Strategy for the Sustainable Development of Catalonia are as follows:

a. **Departmental action plans to deploy the strategy** that identify the instruments and priority measures to achieve the objectives and the sustainable country model established by the strategy for 2026. The drafting and assessment of the departmental plans will be the responsibility of each department. The DoEH will foster and promote the drafting of these plans, ensure the coherence of their content and assess them within the framework of interdepartmental queries undertaken in the regulatory projects.

   Due to the established timescale, 2026, the departmental plans will have to specify the intermediate objectives of the Strategy, with short- and medium-term horizons, in order to outline the actions that can contribute most effectively and efficiently to the achievement of sustainability milestones.

   Obviously, the departmental action plans to deploy the Strategy will be additional to the sectoral plans mentioned in chapter 6 which, in themselves, constitute instruments to deploy the Strategy.

b. **Strategy monitoring and coordination framework plan**, which will integrate the various departmental plans. Taking into account the strongly transverse nature of the Strategy and with the aim of optimising its multisector integration capacity, this framework plan will be devised in such a way as to unite actions and foster synergies in the various departmental plans. The DoEH will foster and coordinate the definition, preparation and development of this plan.

c. **Action plans on specific subjects** that specify the priority actions to be carried out for a specific subject or sector that has a special effect on the achievement of the objectives of the Strategy. In the context of this type of action plans the sectoral analysis of the social aspect of sustainability could be investigated.

d. Development of criteria for the integration of the strategic objectives and lines of the strategy in the plans, programmes and legislative texts prepared by the Government of Catalonia and its departments. This integration will guarantee, in conjunction with the departmental action plans, the effective implementation of the Strategy.
Moreover, the monitoring and assessment system of the Strategy will be undertaken by means of the instruments presented below:

a. **Monitoring** and **review** by means of:

- The **system of indicators** within the framework of the strategy to assess effective progress and to meet and update the strategic objectives, and that results in true monitoring of the level of sustainability of the country. The central element, therefore, will be the monitoring of the quantified strategic objectives, which are established as fundamental for the definition of the 2026 Sustainable Catalonia Model.

  Despite the established horizon, in accordance with the development of policies, social dynamics and technological adaptation over time, it is obvious that subsequent reviews of the values established in this proposal will have to be taken into account in order to guarantee a process of continuous improvement.

  Additionally, this process will include the optimisation of the calculation of the indicators and the identification of complementary indicators and/or indicators that respond to new challenges that might appear subsequent to the preparation of the Strategy. It will ensure that the base statistical information is easily accessible.

- Balance of the suitability of the actions that are undertaken in the departmental action plans and redirection of the application of certain types of instruments or measures (or proposals for new ones), if it is noticed that good results are not being produced in practice or that their cost-benefit relationship is not suitable.

b. **Assessment** of the Strategy by means of the preparation of a biennial report on the progress made in the achievement of the strategic objectives, carry out a prospective analysis of new needs and detect emerging priorities. This assessment, which is of a technical nature, will be complemented with the preparation of communication materials, with the aim of socialising the progress.

### 7.2 Governance of the Strategy

To guarantee the implementation of a governance model that is coherent with the Strategy it is essential to provide continuity and consolidate the monitoring bodies that have played an active part in the preparation of the Strategy (presented in section 1.4), specifically:

- The Interdepartmental Working group
- The Advisory Board
- The Local Panel
The main functions of each body are as follows:

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<th>MONITORING BODIES</th>
<th>DEFINITION AND FUNCTIONS</th>
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| Interdepartmental Working group | Working group formed by the leaders of the bodies designated by the ministers of each department of the Catalan Government, with the minimum rank of director general (including the director of the CADS). Functions:  
  - Deliberation and intersectoral consensus on the governmental scale to prepare the Monitoring and Cooperation Framework Plan of the Strategy.  
  - Monitoring of the departmental action plans to deploy the Strategy.  
  - Approval of the suitability of departmental actions with regard to the Strategy.  
  - Assessment of the incorporation of the objectives of the Strategy into the regulations and the plans and programmes prepared from 2010 to 2026. |
| Advisory Board                 | Intersectoral body representing the social and economic actors of Catalan society, with a permanent technical secretary. Functions:  
  - Monitoring and assessment of the Strategy  
  - Monitoring and deliberation with regard to the Strategy Monitoring and Cooperation Framework Plan.  
  - Dissemination and social projection of the progress of the Strategy. |
| Local Panel                    | Body for the representation of and the coordination with the local world. Functions:  
  - Establish tools to exchange and mutually strengthen the local world and the department with authority in environmental matters and sustainability of the Catalan Government.  
  - Preparation of proposals for mechanisms to connect the Strategy to local Agenda 21 projects and other local instruments to guarantee the coherence of the sustainabilist transition. |
Obviously, the denomination, composition or functions of these monitoring bodies may vary to adapt to the needs of the deployment of the Strategy.

In addition to these working groups it is interesting to highlight the role of the two governmental actors: the department of the Catalan Government with environmental and sustainability competences and the board that has assessment competences in sustainability.

Thus:

a) The Department of the Environment and Housing, through the directorate general for environmental policies and sustainability, or the department of the Catalan Government that has authority in environmental matters and sustainability, will undertake the technical management and foster the deployment and the specific monitoring of the Strategy. Some of the tasks to be carried out are to:

- Carry out comprehensive monitoring of the progress of the Strategy for the Sustainable Development of Catalonia. Assess the integration of its objectives in the plans, programmes and legislative texts that are prepared by the Government within the interdepartmental consultation process of the instrument.

- Compile and structure the information required to calculate and review monitoring indicators and to develop new indicators.

- Foster and coordinate the definition, preparation and development of the Strategy Monitoring and Coordination Framework Plan. Promote agreement in the context of the Interdepartmental Working group to enable submissions to the Government for approval.

- Develop or promote action plans on specific subjects.

- Prepare the technical reports and communications materials.

- Chair and convene the monitoring bodies of the Strategy at least every six months.

- Foster strategic actions, such as, adhesion agreements with the municipalities and social and economic actors of the country for the achievement of common objectives related to the Strategy.

- Develop and permanently update a specific website that compiles all the information about the tasks and reports with a specific section on the participation of the actors and general public.

b) The Advisory Board for the Sustainable Development of Catalonia (CADS) or the Government body responsible for sustainability advice will undertake the following functions:

- Encourage the body responsible for environmental matters and sustainability to convene the Strategy Interdepartmental Working Group in the event that it does not call a meeting at least twice a year, at six-monthly intervals. Subsidiarily, and one month after the formalisation of the request to the competent body to have it, the Interdepartmental Working group of the Strategy can be convened by the CADS.
• Be consulted by the Government on the definition and development of the Strategy Monitoring and Coordination Framework Plan; participate in the preliminary studies and in the agreement of the proposals.

• Assess the biannual reports of the competent body and the monitoring reports of the indicators carried out within the framework of the assessment process of the Strategy.

• Assess and/or report on any other monitoring instruments of the Strategy commissioned to it.

• Additionally, the creation of a parliamentary commission on sustainability can be proposed to ensure the monitoring of this process in the legislative texts prepared by the Government of Catalonia.

These tasks will be executed in contact with the Sustainability Monitoring Foundation and the Biodiversity Foundation Sustainability Monitoring Centre and other bodies, with which data, methodologies and experiences can be shared, and also with the Network of Regional Governments for Sustainable Development (nrg4SD), of which Catalonia is a member.

7.3 Monitoring Mechanisms

There are three main categories of monitoring mechanism to consider:

• Qualitative monitoring referring to:
  o Assessment of the global effectiveness of government policies to make progress towards more sustainable scenarios.
  o Informed incorporation of the guidelines of the Strategy into any regulations and plans and programmes prepared from 2010 to 2016. This type of monitoring – which does not have to result in new procedures – could be managed, for example, within the framework of the strategic environmental assessment process of plans and programmes. Accordingly, the Environmental Assessment Office will ensure that each plan or programme establishes mechanisms required to contribute to the achievement of the objectives of the Strategy.

• Semi-quantitative monitoring in relation to:
  o Objectives specified but not quantified by the Strategy.
  o Instruments – planning, management, fiscal, etc. – identified in the departmental action plans and prepared within the framework of the Strategy.

In these two cases, it will be necessary to assess the need to quantify some of the objectives for which specific thresholds have not yet been established, or the need to develop new indicators that enable the assessment of the level of effectiveness or of the results obtained due to the implementation of certain instruments.
Quantitative monitoring, by means of indicators:

- Monitoring of the fifty quantitative objectives established by the Strategy as central to the definition of the sustainable country model (chapter 4). If possible, the data will also be presented by sex.
- Additionally, all the indicators prepared within the framework of the studies of the Strategy may serve as a base for monitoring, especially when it is necessary to monitor a specific sector or area.

In summary, the indicators that are considered fundamental to guarantee objective and quantitative monitoring of the level of progress of the Strategy are those that constitute the strategic objectives identified in chapter 5. In any case, this process can include the identification of criteria to guide the prioritization of the objectives.

They are presented below by strategic line:

<table>
<thead>
<tr>
<th>Indicators SL 1.1 Diverse and functional territorial matrix, efficient in the use of land</th>
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<tbody>
<tr>
<td>• Average rate of primary housing with respect to total housing</td>
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<tr>
<td>• Agricultural land/urban land ratio</td>
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<tr>
<td>• Density of inhabitants per urban land surface area</td>
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<tr>
<td>• Percentage of the population with high accessibility to public transport networks</td>
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<tr>
<td>• Percentage of inhabitants in municipalities with 5,000-300,000 inhabitants</td>
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<tr>
<td>• Quotient of area for sale/territorial area used by large commercial establishments</td>
</tr>
<tr>
<td>• Relationship between the volume of sand intercepted by the ports and the volume of sand dredged to each port, as established in the Ports Plan</td>
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<tr>
<th>Indicators SL 1.2 Urban rehabilitation and regeneration</th>
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<tbody>
<tr>
<td>• Weight of building rehabilitation and maintenance with respect to the total number of buildings</td>
</tr>
<tr>
<td>• Construction and demolition waste generated per m² built</td>
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<tr>
<td>• Rate of reuse of construction and demolition waste</td>
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<tr>
<th>Indicators SL 1.3 Integrated management of natural heritage and conservation of biodiversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Area of protected natural areas with a high level of management with respect to the total area of protected natural areas</td>
</tr>
<tr>
<td>• Surface area of natural and semi-natural habitats over the total area of Catalonia</td>
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</tbody>
</table>
- Increase in the area covered by phanerogam prairies with respect to the current surface area

**Indicators SL 1.4 Sustainable agricultural, forestry and fishing**

- Managed forest area with respect to the total
- Area being used for ecological agricultural production with respect to the total useful agricultural area

**Indicators SL 2.1 More quality of life with less energy**

- Final energy intensity
- GHG emissions from the diffuse sectors
- Final energy consumption
- Final energy intensity of the industrial sector
- Final energy consumption during the use and construction of buildings (including residential and service buildings)
- Maximum energy consumption in new buildings

**Indicators SL 2.2 Fostering renewable energy sources and intelligent management in networks**

- Percentage of total primary energy consumption from renewable sources
- Percentage of gross final energy consumption from renewable sources (in accordance with the criterion of the new European Directive on Renewable Energy)
- Consumption of primary energy from forestry, agricultural and animal biomass

**Indicators SL 3.1 Competitive sustainable transport**

- Modal share of sustainable mobility on working days in work trips and in all everyday trips
- CO₂e emissions from transport
- Traffic accident rate

**Indicators SL 3.2 Intelligent management of the infrastructure and electrification of transport**

- Proportion of electric vehicles (plug-in hybrid and pure) and non-plug-in hybrid vehicles with respect to the total number of vehicles.
- Share of goods transport by road
### Indicators SL 4.1 Economic internalisation of socio-environmental externalities
- Reduction of socio-environmental externalities in the Catalan economy with respect to 2008

### Indicators SL 4.2 Eco-efficiency and innovation of the production processes and development of environmental and social services
- Green employment share
- Industrial expenditure on R&D
- Companies with environmental management systems with EMAS certificates
- Waste from the industrial sector generated to produce one unit of industrial GVA
- Reused waste from the industrial sector with respect to the total waste generated in the industrial sector
- Total water consumption in agriculture
- Tourist accommodation with environmental certification

### Indicators SL 5.1 Rational consumption and quality of life
- Municipal waste generation per capita
- Energy consumption in the domestic sector
- Water consumption in the domestic sector
- Percentage of the non-recyclable waste that receives treatment at the end of its life maximising reuse
- Total material reuse of municipal waste
- Rate of gross selective collection of municipal waste
- Percentage reduction in the consumption of single-use plastic bags
- Incidence of food-related diseases
- Data concerning exposure to dangers transmitted by food ingestion
- Prevalence of dangers in the food chain
Indicators SL 5.2 Sustainable purchasing and trade

- Intensity of domestic consumption of materials
- Green public purchases in the sectors proposed in COM (2008) 400
- Turnover of Catalan environmental operators per inhabitant
- Local food products available for consumption

Indicators SL 6.1 Social cohesion

- Poverty rate
- Social protection expenditure
- Early school leaving

Indicators SL 6.2 More environmental quality for more health

- Percentage of stations of the Air Pollution Monitoring and Forecasting Network that comply with the standards for PM10 and NO₂
- Atmospheric environmental quality by means of the Catalan Index of Air Quality (ICQA)
- Organic load dumped into industrial wastewater
- Beaches with environmental certificates (EMAS and/or ISO 14001)

Indicators SL 6.3 Education for knowledge and training for sustainability

- Literacy rate
- Education rate by level
- Percentage of schools in the Network of Schools for Sustainability in Catalonia

Beyond the wide range of matters presented in relation to monitoring, it is necessary to observe the importance of continuing to work towards the in-depth and complete integration of all the socio-environmental aspects that intervene in the Strategy, and, in particular, the following:

- The practical application of the principles of governance for sustainability.
- The development of governance for sustainability indicators.
- Further assessment and integration of the externalities in the economic balances and the assessment of natural capital, and also in the cost-benefit ratio in the application.
- Focus on the social dimension of sustainability and on its interaction with the economic and environmental dimension.
- The implications of the Catalan Strategy on a global level and in international cooperation.
Annexe I. Participation Process
Annexe I. Participation Process

1. Phases of the Participation Process of the Strategy for the Sustainable Development of Catalonia

The diagram below chronologically summarises the participation process that was undertaken. Each of the phases of this process is then detailed.

**Figure 1. Participative Process Diagram**

**Phase 1. Background**

One of the first actions to be undertaken in the preparation of the Strategy was the design, planning and dissemination of its participation process. One of the key elements to enable the public to follow
the process closely with the opportunity to become involved was the use of various communication channels.

Firstly, a website was set up, www.2026.cat, where all the documentation related to the Strategy and its participation process is kept up to date and where news, calls to meetings and the process schedule are published. The website offers a specific contact e-mail address for the submission of doubts and other questions (estrategia.sostenible.dmah@gencat.cat).

One of the new elements of the process is the use of social networks to publicise it. Specifically, a user profile was established on Facebook and a YouTube channel was set up to show interviews with some key social actors. In February 2020, the Strategy Facebook account had more than 1,300 friends who followed the process online.

**Phase 2. Opening Day**

On 8 May 2009, the Opening Day of the participation process was held to present the objectives of the Strategy, the focus, the major challenges of sustainability and the participation plan.

Three hundred people attended the presentation, representing 193 entities of Catalan society.

**Phase 3. Debate Forums**

In May, June, July and September 2009 the various process debate forums were organised. Due to the relevance of this phase and with the objective of guaranteeing the plurality and representation of the proposal, the main actors in each socioeconomic sector were invited.

As mentioned above and detailed below, the debates took place in person and online. Two types of session with in-person participation were organised: sectoral debate sessions and debate sessions aimed at specific groups.

**SECTORAL DEBATE SESSIONS**

With the objective of territorially decentralising the process, these sessions took place in various locations in the Catalan territory. Specifically, the sessions and the economic sectors dealt with were as follows:

- **Mobility**, Girona, 8 June 2009
- **Construction**, Sabadell, 11 June 2009
- **Agriculture**, Lleida, 16 June 2009
- **Industry**, Tarragona, 18 June 2009
- **Tourism**, La Seu d’Urgell, 29 June 2009
- **Trade and Consum.**, Barcelona, 1 July 2009
- **Energy**, Tortosa, 7 July 2009
- **Governance**, Manresa, 16 September 2009
In each session, and in order to contextualise the debate, a team of experts presented a diagnosis of the sector, in accordance with economic, environmental and social variables. Then moderated working groups were formed to debate and propose measures to facilitate the transition towards a Catalonia with optimal sustainability in relation to their sector of activity.

A total of 407 proposals were received from the social actors taking part, with 244 people from 109 entities attending the sessions.

**DEBATE SESSIONS WITH VARIOUS SPECIFIC GROUPS**

In this phase of the process, sessions were held for specific groups that had a direct or indirect relationship with the subject areas of the Strategy. Specifically, the sessions were aimed at the following groups:

- **Third social sector**: session organised in collaboration with Third Social Sector Panel of Catalonia.
- **Education Professionals**: workshop organised with Research in Education for Sustainability Network.
- **Social actors in formal education**: session in coordination with Schools for Sustainability Network of Catalonia.
- **Youth**: session organised with the National Youth Council of Catalonia.

The sessions were organised with the collaboration of the most representative second- and third-level entities in each sector. Moreover, various entities in each of these groups were contacted for advice and to involve the maximum number of actors in Catalan society.

Additionally, in order to be able to include the point of view of the general public, a session was organised for the general public: the citizens group. The objective of the session was to collectively analyse and reflect on the measures that the public considers worthy of inclusion in the draft of the Strategy.

Simultaneously, work has been carried out with other groups, such as:

- The Catalan Association of Scientific Communication, specifically the Environmental Information Group, in order to include the vision of the role that communication has to play in the objectives proposed by the Strategy.

- The National Council of Women of Catalonia, to analyse the Strategy from the gender perspective.

- The Council of Senior Citizens of Catalonia. In the Third Plenary Session of the Council, information was provided about the Strategy and about the participation methods available to enable the contributions to be submitted.

The distribution of the participants in the various in-person sessions (sectoral debate sessions and debate sessions with specific groups) is shown below:
Moreover, the participating groups were distributed in the following manner:
VIRTUAL PARTICIPATION

It was considered necessary and opportune to establish complementary virtual communication channels in order to enrich participation and extend dissemination.

On the one hand, contributions were compiled by means of an online form on the website www.2026.cat. The form facilitated the transmission of proposals on specific measures to achieve a sustainability scenario.

On the other hand, by means of the website http://ecatalunya.gencat.cat, a virtual debate forum structured into the various areas of the Strategy was created. This platform showed all the information resulting from the process and provided a tool to continue the debate, with the objective of compiling new contributions or reflections on the various areas of the Strategy. The forum has 687 registered users and 5,963 visits.

Furthermore, thanks to the Facebook wall posts, people could follow the participation process, read news related to sustainability and interesting links, and find out about the established participation channels (the online form and the e-Catalunya forum platform).

The proposals compiled by means of the online form and the virtual debate forum have been summarised and integrated into the proposals of the in-person debate sessions, and they have been of great use in preparing the Strategy.

Phase 4. Results of the Debate Forums

The proposals concerning measures compiled in the in-person and virtual debate sessions are systematised and grouped according to content in the report on the results of the debate forums. These contributions were the fundamental element in the preparation of the Strategy, and will also be key in the definition of the departmental action plans during its deployment phase.

Moreover, the conclusions of the participation process on the challenges for Catalan sustainability organised by the Advisory Council for Sustainable Development (CADS) from 14 to 16 October 2009 within the framework of the 10 year anniversary of the CADS have been included. Throughout the process, a mutual synergy has been established between the two participation processes, which enriched the resulting Strategy proposal.
The number of contributions regarding each sector of the Strategy is given below:

<table>
<thead>
<tr>
<th>NUMBER OF CONTRIBUTIONS GROUPED FROM THE IN-PERSON FORUMS</th>
<th>Territorial area</th>
<th>124</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Environmental flows area</td>
<td>116</td>
</tr>
<tr>
<td></td>
<td>Social area</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>Governance area</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Other contributions referring to employment and the economic sectors</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Other contributions referring to infant, secondary and university teaching</td>
<td>34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NUMBER OF CONTRIBUTIONS GROUPED FROM THE VIRTUAL FORUMS</th>
<th>Territorial area</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Environmental flows area</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Social area</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Governance area</td>
<td>2</td>
</tr>
</tbody>
</table>

* The number of contributions from each sector given does not correspond to the total contributions made in each debate forum. The number given in the table corresponds to the number of contributions grouped according to their similarity. The number of contributions received in the various participation forums was much higher.

**Phase 5: Drawing up of the Strategy Proposal**

From November 2009 to February 2010, the Directorate General of Environmental Policies and Sustainability prepared the proposal of the Strategy for the Sustainable Development of Catalonia. To do so, and as mentioned above, the numerous proposals resulting from the participation process were assessed and taken into account.

**Phase 6: Presentation of the Strategy Proposal**

On 25 February 2010, the proposal of the Strategy for the Sustainable Development of Catalonia was presented in a public assembly that summarised the results of the participation process, the strategic objectives and the sustainable Catalonia model for 2026. Representatives of the various groups that took part in the preparation of the Strategy, Catalan public authorities and organised civil society were in attendance.
Once the Strategy was presented, a period of one month was provided for amendments, modifications and other comments with regard to the document. All the contributions received have been considered in the final draft of the Strategy proposal.

The Figures of the Process

The following table shows the global figures concerning participants in the presentations and debate forums of the process and the proposals received in the various debate forums:

<table>
<thead>
<tr>
<th>PARTICIPATION EVENTS AND FORUMS</th>
<th>PARTICIPANTS</th>
<th>ENTITIES</th>
<th>PROPOSALS RECEIVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inaugural presentation</td>
<td>300</td>
<td>193 entities</td>
<td>-</td>
</tr>
<tr>
<td>Sectoral debate sessions</td>
<td>274</td>
<td>142 entities</td>
<td>407 proposals</td>
</tr>
<tr>
<td>Debate sessions aimed at specific groups</td>
<td>116</td>
<td>95 entities</td>
<td>385 proposals</td>
</tr>
<tr>
<td>Presentation of the Strategy Proposal</td>
<td>396</td>
<td>216 entities</td>
<td>-</td>
</tr>
<tr>
<td>Virtual participation</td>
<td>700 participants</td>
<td>-</td>
<td>38 proposals</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>- *</td>
<td>432 entities**</td>
<td>830 proposals</td>
</tr>
</tbody>
</table>

* A total figure for the participants cannot be provided. Some of the participants in the presentations and debate forums also participated in the virtual forums and, therefore, there is duplication, so the result is not real.
** Given that some entities have participated in more than one forum, the total number of participating entities does not correspond to the sum of the entities that took part in the various forums.

The virtual participation figures correspond to the participants and proposals received from e-Catalunya and the online form proposals.

Point 3 of the annexe shows a list of these 432 participating entities in the various events (opening and Strategy presentation days), in-person debate forums (sectoral debate sessions and debate sessions aimed at specific groups) and participants by means of the online proposal form. The participants in the e-Catalunya virtual platform debate were acting as individuals and as such are not included in this list of entities.
2. The Monitoring Bodies

At the start of the process, various bodies were created ad hoc to monitor and foster the preparation of the Strategy. They were key to guaranteeing the strength of the content of the Strategy and of the participation process itself. Specifically, these are the ones listed below:

- **INTERDEPARTMENTAL WORKING GROUP OF THE STRATEGY**: Formed by the representatives of all the departments of the Catalan Government. The aim of this working group was to channel, deliberate and analyse the contributions of the various departments to the Strategy, which was essential to guarantee the consensus of the Government with regard to the strategic lines and objectives established in the Strategy.

- **ADVISORY BOARD**: At the start of the process the Strategy Advisory Board was constituted. It was formed by a representation of Catalan organised society. The Board was formed by 39 members including ecological entities, business organisations and consultancies, trade unions, financial entities, professional colleges, universities, municipal entities, the social association sector, representatives of the councils of the DoEH and other representatives of the Government of Catalonia (point 4 of the annexe lists the member entities).

The objective of the Board is to monitor, discuss and analyse the participation and preparation process of the Strategy by means of periodic information and debate meetings. Six plenary sessions have been held. In these sessions, working groups have been organised on two occasions, compiling a total of 108 contributions. Moreover, by means of e-mail and a specific ICT environment for the Board, a further 43 contributions have been made. In total (also including the contributions of the plenary sessions), the members of the Advisory Board have put forward a total of 235 proposals and amendments during the preparation process.

The contributions can be classified into the following types:

- **Strategy challenges**: 65 contributions
- **Objectives and indicators**: 94 contributions
- **Strategy methodology**: 25 contributions
- **Externalities**: 11 contributions
- **Governance aspects of the Strategy**: 13 contributions
- **Communication and participation aspects**: 7 contributions
- **Other**: 20 contributions
• **LOCAL PANEL:** This is a specific participation body for the local world. Its purpose is to guarantee maximum consistency between the Strategy and the numerous Agenda 21 projects implemented in the territory, making use of the experience gained by the local world and jointly planning future proposals that will enrich both processes. The most representative entities of the Catalan local world (the four provincial councils, the Federation of Municipalities of Catalonia and the Catalan Association of Municipalities) and the local networks related to sustainability such as the Network of Cities and Towns for Sustainability and the Council for Local Environment Initiatives (CILMA) took part in this forum. The Panel has carried out a total of 3 sessions, contributing 70 proposals. Similarly, the Network has fostered a more in-depth debate on the interaction between the Agenda 21 projects and the Strategy within the framework of a specific working group.
3. Entities Participating in the Process

129 estudi
22 sistema sostenible
Abac enginyers
Abacus Cooperativa
Abengoa
Acció natura
ACR Gestión de Proyectos Sostenibles
ADENC, Ecologistes de Catalunya (EdC) (Federation of Ecologists of Catalonia)
Administració, Promoció i Gestió, SA (ADIGSA)
Agenda Catalana de l'Aigua (Catalan Water Agency)
Agència Catalana de Seguretat Alimentària (Catalan Food Safety Agency)
Agència de Residus de Catalunya (Catalan Waste Agency)
Agenda 21 Barcelona
Agrupació AuS del CoAC
Agrupació Catalana d'Enginyeries i Consultories Medi Ambientals (ACECMA) (Catalan Association of Environmental Engineering and Consultant Firms)
Agrupació per a la Protecció del Medi Ambient (APMA) (Environmental Protection Group)
Agrupació de Energies Renovables (AERESA)
AGVA SCP
Aigües de Barcelona (AGBAR)
Aiguaviva Council
Badalona Council
Barcelona Council
Calella Council
Callús Council
Castellbisbal Council
Castelldefels Council
Cornellà de Llobregat Council
Figueres Council
Gavà Council
La Garriga Council
L'Hospitalet de Llobregat Council
Lleida Council
Lloret de Mar Council
Mataró Council
Molins de Rei Council
Montcada i Reixac Council
Palafrugell Council
Pontós Council
Premià de Mar Council
Reus Council
Sabadell Council
Sant Boi de Llobregat Council
Sant Cugat Council
Santa Coloma de Gramenet Council
Santa Perpètua de Mogoda Council
Tarragona Council
Terrassa Council
Torrelles de Llobregat Council
Torroella de Montgrí Council
Tortosa Council
Vic Council
Vilafranca Council
El Prat de Llobregat Council
Igualada Council
Organyà Council
ALcontrol Laboratories
Alma social, SL
Almar
Alter Civites
Ambito Arquitectura
Amphos 21
APRES SL
APRISE-PROMOCIONS
ARC Mediación Ambiental
Barcelona Metropolitan Area, Environment Entity
Àrea Social de Participació
Ciutadana (Citizen Participation Social Area)
ARQ3, SLP
Artefacto Cultural
Associació Amics del Baix Empordà (Friends of El Baix Empordà)
Associació Barrinar cap a la Sostenibilitat (Barrinar Sustainability Association)
Associació Catalana Cases de Colònies (Catalan Association of Summer Camp Houses)
Associació Catalana de Comunicació Científica (Catalan Association of Scientific Communication)
Associació Catalana de Municipis i Comarques (ACMC) (Catalan Association of Municipalities and Regions)
Associació Catalana del Biodièsel (Catalan Biodiesel Association)
Associació de Naturalistes de Girona (Girona Association of Naturalists)
Associació Defensem el Territori de les Comarques de Girona (Association to Defend the Territory of the Regions of Girona)
Associació d'Empresaris de les Comarques de l'Ebre (L'Ebre Regions Business Association)
Associaió d'Usuaris de la Bicicleta del Vendrell i el Baix Penedès (El Vendrell and El Baix Penedès Bicycle User Association)
Associació Empresarial Química de Tarragona (Tarragona Chemical Business Association)
Associació Nereo (Nereo Association)
Associació per a la Defensa i l’Estudi de la Natura (Association for the Defence and Study of Nature)
Associació Rasol (Rasol Association)
Aurenxis, SL
Aus-rurban
Tarragona Port Authority
Avantia
Banc Aliments
Banc de Sabadell
Barcelona Regional
BASF Española, SL
BCNecologia
BioQuat
Bruno Remoué & Associats
Barcelona Chamber of Commerce
Sabadell Chamber of Commerce and Industry
Camp d’Aprenentatge de Can Santoi (Ca Santoi Learning Camp)
Casa de l'Aigua, Fundació Nova Cultura de l’Aigua (New Water Culture Foundation)
Enresa-Amphos Chair, UPC
Barcelona Tech
CCOO Barcelonès Nord (Workers’ Commissions Union)
CDEA, Enviromental Service - Terrassa Council
CECI Centre d’Estudis Comarcal Igualada (Igualada Regional Studies Centre)
CECOT
Agustí Barberà Infant and Primary School (CEIP)
Barrufet Infant and Primary School (CEIP)
Benviure Infant and Primary School (CEIP)
Can Massallera Infant and Primary School (CEIP)
Francesc Macià Infant and Primary School (CEIP)
Mare de Déu de Montserrat Infant and Primary School (CEIP)
Celulosa de Levante, SA
Sustainability Centre, Local Agenda 21 Offices, Department of the Environment
Centre Tecnològic de l’Aigua (CETAQUA) (Water Technology Centre)
UNESCO Centre of Catalonia
Centres d’Innovació i Formació Ocupacional (CIFO) - Servei d’Ocupació de Catalunya (SOC) (Occupation Innovation and Training Centres (CIFO) – Catalan Employment Service (SOC))
CIMAS Innovación y Medio Ambiente, SLL
Ciment Catalá
CITIES, UPC Barcelona Tech
Clavegueram de Barcelona, S.A.
Club EMAS
CMT
COBEGA
Bon Salvador School
Col·legi d’Ambientòlegs de Catalunya (COAMB) (College of Environmental Scientists of Catalonia)
Col·legi Oficial d’Arquitectes de Catalunya (COAC) (Official College of Architects of Catalonia)
Col·legi Oficial de Geògrafs de Catalunya (Official College of Geographers of Catalonia)
Col·legi Oficial d’Economistes de Catalunya (Official College of Economists of Catalonia)
Col·legi Oficial d’Enginyers Industrials (Official College of Industrial Engineers)
Col·legi Oficial d’Enginyers Agrònoms de Catalunya (Official College of Agricultural Engineers of Catalonia)
Col·legi Oficial d’Enginyers Tècnics Agrícoles (Official College of Technical Agricultural Engineers)
Comissió Obrera Nacional de Catalunya (Workers’ Commissions Union of Catalonia)
Comissions Obreres - Construcció i fusta (Workers’ Commissions Union of Catalonia Construction and carpentry division)
Comissions Obreres – Mobilitat (Workers’ Commissions Union of Catalonia – Mobility division)
Comitè Català de Representants de Persones amb Discapacitat (COCARMU) (Catalan Committee of Representatives of People with Disabilities)
Compostadores, SL
CONC
Confederació d’Associació de Veïns de Catalunya (Confederation of Neighbourhood Associations of Catalonia)
Confederació de Comerç de Catalunya (Commerce Confederation of Catalonia)
Consejo Internacional Asociativo para la Protección del Pirineo (CIAPP) (International Associative Board for the Protection of the Pyrenees)
Consell Assessor per al Desenvolupament Sostenible (Advisory Council for the Sustainable Development of Catalonia), Government of Catalonia
Consell Català de l’Esport (Catalan Sports Council)
Consell Català d’Estadística (Catalan Statistics Council)
La Noguera Regional Council
El Bages Regional Council
El Baix Empordà Regional Council
El Baix Llobregat Regional Council
El Maresme Regional Council
Consell d’Iniciatives Locals per al Medi Ambient de les Comarques de Girona (CILMA) (Council for
Local Environment Initiatives of Girona
Consell de la Gent Gran de Catalunya (Council of Senior Citizens of Catalonia)
Consell de la Sostenibilitat de L’Hospitalet de Llobregat (L’Hospitalet de Llobregat Sustainability Council)
Consell Nacional de Dones de Catalunya (National Council of Women of Catalonia)
Consell Nacional de la Joventut de Catalunya (National Youth Council of Catalonia)
Consorci Colls i Miralpeix (Colls i Miralpeix Consortium)
Consorci de Gestió de la Fertilització Agrària de Catalunya (Agricultural Fertilisation Management Consortium of Catalonia)
Consorci d’Educati de Barcelona (Barcelona Education Consortium), Sant Martí (CRP)
Consorci del Lluçanès (El Lluçanès Consortium)
Consorci EL FAR (EL FAR Consortium)
Consorci Forestal de Catalunya (Forestry Consortium of Catalonia)
Consorci Vies Verdes Girona (Girona Greenways Consortium)
Cooperativa ECTS (ECTS Cooperative)
Coordinadora de Tallers per a Persones amb Discapacitat Psíquica de Catalunya (Workshop Coordination Body for People with Mental Disabilities of Catalonia)
Coordinadora d’Usuaris de la Sanitat: Salut, Consum i Alimentació (Coordination Body for Health Care Users: Health, Consumption and Food)
CORESSA - Sant Boi Council
Corresponsables
Cresol, Solucions Energètiques Locals, SCP

Red Cross Youth
CRIA SL - Xarxa de Coneixements Promocions
Red Cross
Telecommunications and Information Technology Centre, Department of the Environment and Housing
Central Catalonia Local Office of the Government of Catalonia
Tarragona Local Office of the Government of Catalonia
Deloitte
DEMAC-EdC
Department of Astronomy and Meteorology, Faculty of Physics, University of Barcelona
Department of Social Action and Citizenship, Government of Catalonia
Department of Agriculture, Food and Rural Action, Government of Catalonia
Department of Culture and Media, Government of Catalonia
Didactics of Science Department, Complex Group, Autonomous University of Barcelona
Department of Governance and Public Administration, Government of Catalonia
Department of Justice, Government of Catalonia
Department of the Environment and Housing, Government of Catalonia
Department of Territorial Policies and Public Works, Government of Catalonia
Presidential Department, Government of Catalonia
Public Health Department, University of Barcelona
Department of Health, Government of Catalonia
Sustainability and Architecture Department, School of Architecture, International University of Catalonia (UIC)

Department of Employment, Government of Catalonia
Vice-presidential Department, Government of Catalonia
Department of Economics and Finance, Government of Catalonia
Department of Education, Government of Catalonia
Department of Information and Communications Engineering (dEIC), Autonomous University of Barcelona (UAB)
Department of Innovation, Universities and Enterprise, Government of Catalonia
Department of the Interior, Institutional Relations and Participation, Government of Catalonia
Department of Astronomy & Meteorology, Faculty of Physics, UB
DEPLAN, Ingenieria i Consultoria Ambiental, SL
Didactics of Mathematics and Experimental Sciences, Faculty of Education Sciences, Autonomous University of Barcelona (UAB)
Barcelona Provincial Council
Lleida Provincial Council
Tarragona Provincial Council
Directorate General of Trade of the Department of Innovation, Universities and Enterprise
Directorate General of Tourism
Directorate General of Terrestrial Transport
Ecas-intress
Eco Intelligent Growth (EIG)
EcoDiari
ECOFYS
EcolIntelligentGrowth
Ecologistes en Acció de Catalunya (Association of Ecologists in Action of Catalonia)
Ecostream
Eco-union
Eficiència energètica E-cuatro, SL
GRM, Geography Department, Autonomous University of Barcelona
Grodema
Grup Carles, Gestió i Projectes, S.L.
Cerveró Group
Grup d’Estudi i de Protecció dels Ecosistemes Catalans – Ecologistes de Catalunya (Catalan Ecosystem Study and Protection Group – Ecologists of Catalonia)
DAMM Group
Grupo Inel - Green World Consulting
Harquitectes
IAE DEN - Ecologistes de Catalunya (Ecologists of Catalonia)
IBERDROLA, S.A.
IDAEA-CSIC
Antoni Pous Secondary School
Sales Secondary School
Eduard Fontseré Secondary School
Gelida Secondary School
Itaca Secondary School
Joaquim Rubió i Ors Secondary School
Lluís de Peguera Secondary School
Marianao Secondary School
Montmeló Secondary School
IGREMAP SLP
IHOBE, Sociedad Pública de Gestión Ambiental
iMat – Construction Technology Centre
Inèdit Innovació s.l.
INERCO SA
InnovAD
Institució Catalana d’Història Natural (Catalan Institution of Natural History)
Institució de Ponent per a la Conservació i l’Estudi de l’Entorn Natural (IPCENA) (Ponent Institution for the Environmental Conservation and Study)
Institut Català de la Fusta (INCAFUST) (Catalan Wood Institute)
Institut Català del Sòl (Catalan Land Institute)
Institut Cerdà (Cerdà Institute)
Institut de Govern i Polítics Públiques (IUB) (Institute of Government and Public Policies, Autonomous University of Barcelona)
Institut de Tecnologia de la Construcció de Catalunya (ITeC) (Catalan Construction Technology Institute)
Institut d’Estudis de la Seguretat (Safety Studies Institute)
Institut Metropolità del Taxi (Metropolitan Taxi Institute)
Institut per al Desenvolupament i la Promoció de l’Alt Pirineu i Aran (IDAPA) (Institute for the Development and Promotion of L’Alt Pirineu i Aran)
Institut Universitari d’Estudis Europeus (University Institute of European Studies)
Invall
IUEE, Autonomous University of Barcelona
IUSC
J. Vilaseca S.A.
Jaume Carné Arquitectura SLP
Jesus Feliu Consultants
Junior Chamber International
Joves Agricultors i Ramaders de Catalunya (JARC) (Young Farmers and Cattle Raisers of Catalonia)
Joves d’Esquerra Republicana de Catalunya (Young Republican Left of Catalonia)
Joves d’Esquerra Verda (Young Green Left)
Kairos Solutions
La Copa SCCL
Lavola
Leitat Centre Tecnològic (Leitat Technology Centre)
Les Guilleries Associació de Promoció i Educació Mediambiental (Les Guilleries Environmental Promotion and Education Association)
Litoral Consult
Lliga per a la Defensa del Patrimoni Natural (Natural Heritage Defence League)
Mancomunitat la Plana (La Plana Association of Municipalities)
Mataró Energia Sostenible, SA
Mecalux
Mesa de la Bicicleta (Bicycle Round Table of Catalonia)
MINUARTIA
Missatgers Trèvol SCCL
MN Consultants en Ciències de la Conservació
Moville SL
Agbar Water Museum, AGBAR Foundation
Network
Nissan Motor Iberica
Nissan, Grup Gestors Energia (Energy Managers Group)
Novotec Consultores, SA
Observatori de la Tordera (La Tordera Monitoring Centre)
Observatori de la Sostenibilitat de les Comarques Gironines (Girona Regional Sustainability Monitoring Centre)
Observatori Sostenibilitat d’Andorra (Andorra Sustainability Monitoring Centre)
Climate Change Office, Department of the Environment and Housing
Environmental Assessment Office, Department of the Environment and Housing
Government of Catalonia Unified Environmental Management Office
<table>
<thead>
<tr>
<th>Organization / Company Name</th>
<th>City / Location</th>
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<tr>
<td>Organització de Consumidors i Usuaris de Catalunya (OCUC)</td>
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<td>Government of Catalonia Housing Secretariat</td>
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<td>Industry Secretariat, Department of Innovation, Universities and Enterprise</td>
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<tr>
<td>Secretariat de Medi Ambient del Col·legi de Registradors (College of Property Registration Professionals Secretariat of the Environment)</td>
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<td>Service Civil International</td>
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<td>Sindicat d’Indústria de Tarragona de Comissions Obreres (Workers’ Commissions Union - Tarragona Industry Union)</td>
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<td>Societat Catalana d’Educació Ambiental (Catalan Environmental Education Society)</td>
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<td>Autonomous University of Barcelona</td>
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<td>University of Barcelona</td>
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<td>VOLT--TOUR</td>
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<td><a href="http://www.sostenible.cat">www.sostenible.cat</a></td>
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<tr>
<td>Xarxa de Recerca en Educatió per a la Sostenibilitat (Research in Education for Sustainability Network)</td>
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<td>Xarxa d’Escoles per a la Sostenibilitat de Catalunya (Network of Schools for Sustainability in Catalonia)</td>
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</table>
4. List of Members of the Strategy Advisory Board

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associació Catalana de Municipis i Comarques (ACMC) (Catalan Association of</td>
<td>Sustainable Development of Catalonia</td>
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<tr>
<td>Municipalities and Regions)</td>
<td></td>
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<tr>
<td>Agrupació Catalana d'Enginyeries i Consultories Medi Ambientals (ACECMA)</td>
<td>Consell de Protecció de la Natura (Nature Protection Council)</td>
</tr>
<tr>
<td>(Catalan Association of Environmental Engineering and Consultant Firms)</td>
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<tr>
<td>Associació d'organitzacions registrades EMAS a Catalunya (CLUB EMAS)</td>
<td>Consell de Qualitat Ambiental (Environmental Quality Council)</td>
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<tr>
<td>(Association of EMAS Registered Organisations of Catalonia – CLUB EMAS)</td>
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<tr>
<td>Associació Eòlica de Catalunya (EOLICCAT) (Catalan Wind Energy Association)</td>
<td>Consell General de Cambres de Catalunya (General Council of Chambers of Commerce of Catalonia)</td>
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<tr>
<td>Assiciació per a la Promoció del Transport Público (PTP) (Association for the</td>
<td>Consell Nacional de la Joventut de Catalunya (CNJC) (National Youth Council of Catalonia)</td>
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<tr>
<td>Promotion of Public Transport)</td>
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<tr>
<td>Banc Sabadell</td>
<td>Consell per a l'ús Sostenible de l'Aigua (Council for the Sustainable Use of Water)</td>
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<tr>
<td>Col·legi d'Ambientòlegs de Catalunya (College of Environmental Scientists of</td>
<td>Consell per a la prevenció i la gestió dels residus (Council for the Prevention and Management of Waste)</td>
</tr>
<tr>
<td>Catalonia)</td>
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</tr>
<tr>
<td>Col·legi de Periodistes de Catalunya (College of Journalists of Catalonia)</td>
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</tr>
<tr>
<td>Col·legi d'Economistes de Catalunya (College of Economists of Catalonia)</td>
<td></td>
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<tr>
<td>Comissions Obreres (CCOO) (Workers’ Commissions Union)</td>
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<tr>
<td>Confederació d’Associació de Veïns de Catalunya (CONFAVC) (Confederation of</td>
<td>Federació Catalana de Caixes d’Estalvi (Catalan Federation of Savings Banks)</td>
</tr>
<tr>
<td>Neighbourhood Associations of Catalonia)</td>
<td></td>
</tr>
<tr>
<td>Consell Assessor per al Desenvolupament Sostenible (CADS) (Advisory Council for the</td>
<td>Federació Catalana d’ONGs per al Desenvolupament (FCONGD) (Catalan Federation of NGOs for Development)</td>
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<td></td>
<td>Federació de Cooperatives Agràries de Catalunya (Federation of Agricultural Cooperatives of Catalonia)</td>
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<tr>
<td></td>
<td>Federació de Municipis de Catalunya (FMIC) (Federation of Municipalities of Catalonia)</td>
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<td></td>
<td>Foment del Treball (Institut Català de les Dones (Catalan Women’s Institute)</td>
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<td></td>
<td>Joves Agricultors i Ramaders de Catalunya (JARC) (Young Farmers and Cattle Raisers of Catalonia)</td>
</tr>
<tr>
<td></td>
<td>Lliga per a la Defensa del Patrimoni Natural (Depana) (Natural Heritage Defence League)</td>
</tr>
<tr>
<td></td>
<td>Organització de Consumidors i Usuaris de Catalunya (OCUC) (Catalan Consumers and Users Organisation)</td>
</tr>
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<td></td>
<td>Petita i Mitjana Empresa de Catalunya (PIMEC) (Association of Small and Medium-sized Enterprises of Catalonia)</td>
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<td>Societat Catalana d'Educació Ambiental (SCEA) (Catalan Environmental Education Society)</td>
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<td></td>
<td>Taula d'Entitats del Tercer Sector Social de Catalunya (Third Social Sector Round Table of Entities of Catalonia)</td>
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<td></td>
<td>Unió de Pagesos (UP) (Farmers Union of Catalonia)</td>
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<td></td>
<td>Unió General de Treballadors (UGT) (General Union of Workers of Catalonia)</td>
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<td>Autònom University of Barcelona (UB)</td>
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<td></td>
<td>University of Barcelona (UB)</td>
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<td>University of Girona (UdG)</td>
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<td></td>
<td>UPC Barcelona Tech</td>
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<td>Xarxa de Custòdia del Territori (XCT) (Land Stewardship Network)</td>
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Annexe II. Quantified Strategic Objectives
<table>
<thead>
<tr>
<th>Code</th>
<th>Indicators description</th>
<th>Current value (year)</th>
<th>Strategic objective</th>
<th>Business-as-usual scenario 2026</th>
<th>Reference scenario (year)*</th>
<th>Reference Framework**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1</td>
<td>Average rate of primary housing with respect to total housing</td>
<td>%</td>
<td>7% (2007)</td>
<td>63% (2007)</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1.1.2</td>
<td>Density of inhabitants per urban land area</td>
<td>%</td>
<td>62% (2007)</td>
<td>2% (2007)</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1.1.3</td>
<td>Surface area of agricultural land with respect to urban land</td>
<td>%</td>
<td>6.4 (2002)</td>
<td>6.4 (2002)</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1.2.1</td>
<td>Weight of building rehabilitation and maintenance with respect to the total number of buildings</td>
<td>%</td>
<td>47% (2002)</td>
<td>30% (2012)</td>
<td>26% (2012)</td>
<td>-</td>
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<tr>
<td>1.2.2</td>
<td>Construction and demolition waste generated per m² built</td>
<td>%</td>
<td>34% (2002)</td>
<td>30% (2012)</td>
<td>26% (2012)</td>
<td>-</td>
</tr>
<tr>
<td>1.2.3</td>
<td>Rate of reuse of construction and demolition waste</td>
<td>%</td>
<td>30% (2002)</td>
<td>30% (2012)</td>
<td>26% (2012)</td>
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<tr>
<td>1.3.1</td>
<td>Surface area protected natural areas with a high level of importance with respect to the total area of natural areas</td>
<td>%</td>
<td>57% (2002)</td>
<td>45% (2012)</td>
<td>32% (2012)</td>
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<tr>
<td>1.3.2</td>
<td>Area of natural and semi-natural habitats over the total area of Catalonia</td>
<td>%</td>
<td>50% (2002)</td>
<td>45% (2012)</td>
<td>32% (2012)</td>
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<td>1.3.3</td>
<td>Increase in the area of marine phanerogam groves</td>
<td>%</td>
<td>92% (2002)</td>
<td>92% (2012)</td>
<td>92% (2012)</td>
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<tr>
<td>1.3.4</td>
<td>Managed forest area with respect to the total</td>
<td>%</td>
<td>92% (2002)</td>
<td>92% (2012)</td>
<td>92% (2012)</td>
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<tr>
<td>1.4.1</td>
<td>Area being used for ecological agricultural production with respect to the total area agricultural area</td>
<td>%</td>
<td>92% (2002)</td>
<td>92% (2012)</td>
<td>92% (2012)</td>
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<tr>
<td>2.1.1</td>
<td>Final energy intensity</td>
<td>%</td>
<td>3% (2002)</td>
<td>3% (2012)</td>
<td>3% (2012)</td>
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<tr>
<td>2.1.2</td>
<td>Final energy consumption</td>
<td>%</td>
<td>3% (2002)</td>
<td>3% (2012)</td>
<td>3% (2012)</td>
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<tr>
<td>2.1.3</td>
<td>Final energy consumption during the use and construction of buildings (including residential and service buildings)</td>
<td>%</td>
<td>3% (2002)</td>
<td>3% (2012)</td>
<td>3% (2012)</td>
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<tr>
<td>2.1.4</td>
<td>Maximum energy consumption in new buildings</td>
<td>%</td>
<td>3% (2002)</td>
<td>3% (2012)</td>
<td>3% (2012)</td>
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</table>

*Even though more than one reference has been taken into account where required, this column only cites the references used to obtain the values assigned to the reference scenario (previous column). **The principle of the reference framework is shown in Tables 1A and 2A.
<table>
<thead>
<tr>
<th>Code</th>
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<th>Current value (year)</th>
<th>Strategic objective</th>
<th>Business-as-usual scenario 2026</th>
<th>Reference scenario (year)*</th>
<th>Referential Framework**</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1</td>
<td>Percentage of total primary energy consumption from renewable sources</td>
<td>%</td>
<td>2.8% (2007)</td>
<td>15.8%</td>
<td>7.3%</td>
<td>10% (2015)</td>
<td>Review 2009 PEC</td>
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<td>2.2.2</td>
<td>Percentage of gross final energy consumption from renewable sources</td>
<td>%</td>
<td>3.6% (2007)</td>
<td>20-30%</td>
<td>7%</td>
<td>20% (2020)</td>
<td>EU energy and climate package</td>
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<td>2.2.3</td>
<td>Consumption of primary energy from forestry, agricultural and animal biomass</td>
<td>ktoe</td>
<td>89 (2007)</td>
<td>520</td>
<td>96</td>
<td>306 (2015)</td>
<td>Review 2009 PEC</td>
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<tr>
<td>3.1.1</td>
<td>Sustainable mobility modal share of daily mobility on working days for work trips</td>
<td>% of trips</td>
<td>49% (2006)</td>
<td>64%</td>
<td>34%</td>
<td>51% (2012)</td>
<td>PDMRMB DNM</td>
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<tr>
<td>3.1.1</td>
<td>Sustainable mobility modal quota of daily mobility on working days for everyday trips</td>
<td>% of trips</td>
<td>59% (2006)</td>
<td>71%</td>
<td>44%</td>
<td>61% (2012)</td>
<td>PDMRMB DNM</td>
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<tr>
<td>3.2.1</td>
<td>Proportion of electric vehicles (plug-in hybrid and pure) and hybrid vehicles with respect to the total number of vehicles</td>
<td>%</td>
<td>0.01% (2009)</td>
<td>25-30%</td>
<td>19.6%</td>
<td>4.6% (2015)</td>
<td>Review 2009 PEC</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Share of goods transport by road</td>
<td>%</td>
<td>97% (2008)</td>
<td>90-94%</td>
<td>97%</td>
<td>94% (2020)</td>
<td>PITC</td>
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<td>4.1.3</td>
<td>Reduction of socio-environmental externalities in the Catalan economy with respect to 2008</td>
<td>%</td>
<td>--</td>
<td>&gt;18%</td>
<td>--</td>
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<tr>
<td>4.2.1</td>
<td>Share of green employment (environment, sustainable construction, renewable energy and environmental sustainability R&amp;D&amp;I)</td>
<td>%</td>
<td>2.2% (2009)</td>
<td>5.4%</td>
<td>3.7%</td>
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<tr>
<td>4.2.3</td>
<td>Industrial expenditure on R&amp;D</td>
<td>€M</td>
<td>1,830 (2007)</td>
<td>5,000</td>
<td>4,550</td>
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<td>4.2.7</td>
<td>EMAS-registered companies with environmental management systems</td>
<td>number of companies</td>
<td>250 (2009)</td>
<td>600</td>
<td>305</td>
<td>350 (2011)</td>
<td>Strategic Agreement to Promote Internationalisation of the Catalan Economy, the Strengthening of its Competitiveness and the Quality of Employment</td>
</tr>
<tr>
<td>4.2.8</td>
<td>Tourist accommodation with environmental certification</td>
<td>%</td>
<td>4% (2008)</td>
<td>80%</td>
<td>11%</td>
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<tr>
<td>4.2.9</td>
<td>Waste from the industrial sector generated to produce one unit of industrial GVA</td>
<td>€M/year</td>
<td>124 (2007)</td>
<td>67</td>
<td>156</td>
<td>117 (2012)</td>
<td>PROGRIC</td>
</tr>
<tr>
<td>4.2.10</td>
<td>Reused waste from the industrial sector with respect to the total waste generated in the industrial sector</td>
<td>%</td>
<td>73% (2007)</td>
<td>85%</td>
<td>80%</td>
<td>82% (2012)</td>
<td>PROGRIC</td>
</tr>
<tr>
<td>4.2.12</td>
<td>Total consumption of water in agriculture</td>
<td>hm³</td>
<td>2,072 (2007)</td>
<td>2,200-2,500</td>
<td>2,990</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Code</th>
<th>Indicator description</th>
<th>Unit</th>
<th>Current value</th>
<th>Strategic objective</th>
<th>Business-as-usual scenario 2026</th>
<th>Reference scenario (year)*</th>
<th>Referential Framework**</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.3</td>
<td>Percentage of the non-recyclable waste that receives</td>
<td>%</td>
<td>--</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>treatment at the end of its life maximising reuse</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.1.4</td>
<td>Generation of municipal waste per capita</td>
<td>Kg/inhab/day</td>
<td>1.59 (2008)</td>
<td>1.22</td>
<td>1.59</td>
<td>1.48 (2012)</td>
<td>PROGREMIC</td>
</tr>
<tr>
<td>5.1.5</td>
<td>Total material reuse of municipal waste</td>
<td>%</td>
<td>24% (2006)</td>
<td>60%</td>
<td>50%</td>
<td>48% (2012)</td>
<td>PROGREMIC</td>
</tr>
<tr>
<td>5.1.6</td>
<td>Rate of gross selective collection of municipal waste</td>
<td>%</td>
<td>34% (2006)</td>
<td>73%</td>
<td>57%</td>
<td>58% (2012)</td>
<td>PROGREMIC</td>
</tr>
<tr>
<td>5.1.7</td>
<td>Percentage reduction in the consumption of single-use</td>
<td>%</td>
<td>--</td>
<td>95%</td>
<td>--</td>
<td>50% (2012)</td>
<td>PROGREMIC</td>
</tr>
<tr>
<td></td>
<td>plastic bags</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.2</td>
<td>Green public purchases in the sectors proposed in COM</td>
<td>%</td>
<td>--</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(2008) 400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2.3a</td>
<td>Turnover of Catalan ecologic operators per inhabitant</td>
<td>€/inhabitant-year</td>
<td>9 (2009)</td>
<td>30</td>
<td>27</td>
<td>13 (2012)</td>
<td>PAAAE</td>
</tr>
<tr>
<td>5.2.3b</td>
<td>Local food products available for consumption</td>
<td>%</td>
<td>78% (2006)</td>
<td>81%</td>
<td>70%</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6.1.4</td>
<td>Early school leaving</td>
<td>%</td>
<td>32% (2007)</td>
<td>&lt;10%</td>
<td>30%</td>
<td>&lt;10% (2020)</td>
<td>Europe 2020 Strategy</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Percentage of stations of the Air Pollution Monitoring</td>
<td>%</td>
<td>transit stations: 71% (2008)</td>
<td>100%</td>
<td>--</td>
<td>100% (since 2002)</td>
<td>RD 1073/2002 Directive 08/50/EC</td>
</tr>
<tr>
<td></td>
<td>and Forecasting Network that comply with the standards for NO₂</td>
<td>transit stations: 71% (2008)</td>
<td>industrial stations: 100% (2008)</td>
<td>100%</td>
<td>--</td>
<td>100% (since 2002)</td>
<td>RD 1073/2002 Directive 08/50/EC</td>
</tr>
<tr>
<td>6.2.2</td>
<td>Atmospheric environment quality by means of the Catalan Index of Air Quality (ICQA)</td>
<td>--</td>
<td>&gt;50</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>6.2.5</td>
<td>Beaches with environmental certificates (EMAS and/or ISO 14001)</td>
<td>number of beaches</td>
<td>44 (2009)</td>
<td>215</td>
<td>132</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6.2.6</td>
<td>Organic load in industrial wastewater outlets</td>
<td>t COD</td>
<td>45,000 (2008)</td>
<td>36,000</td>
<td>42,000</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Percentage of schools in the Network of Schools for</td>
<td>%</td>
<td>19%</td>
<td>100%</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Sustainability in Catalonia</td>
<td></td>
<td></td>
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