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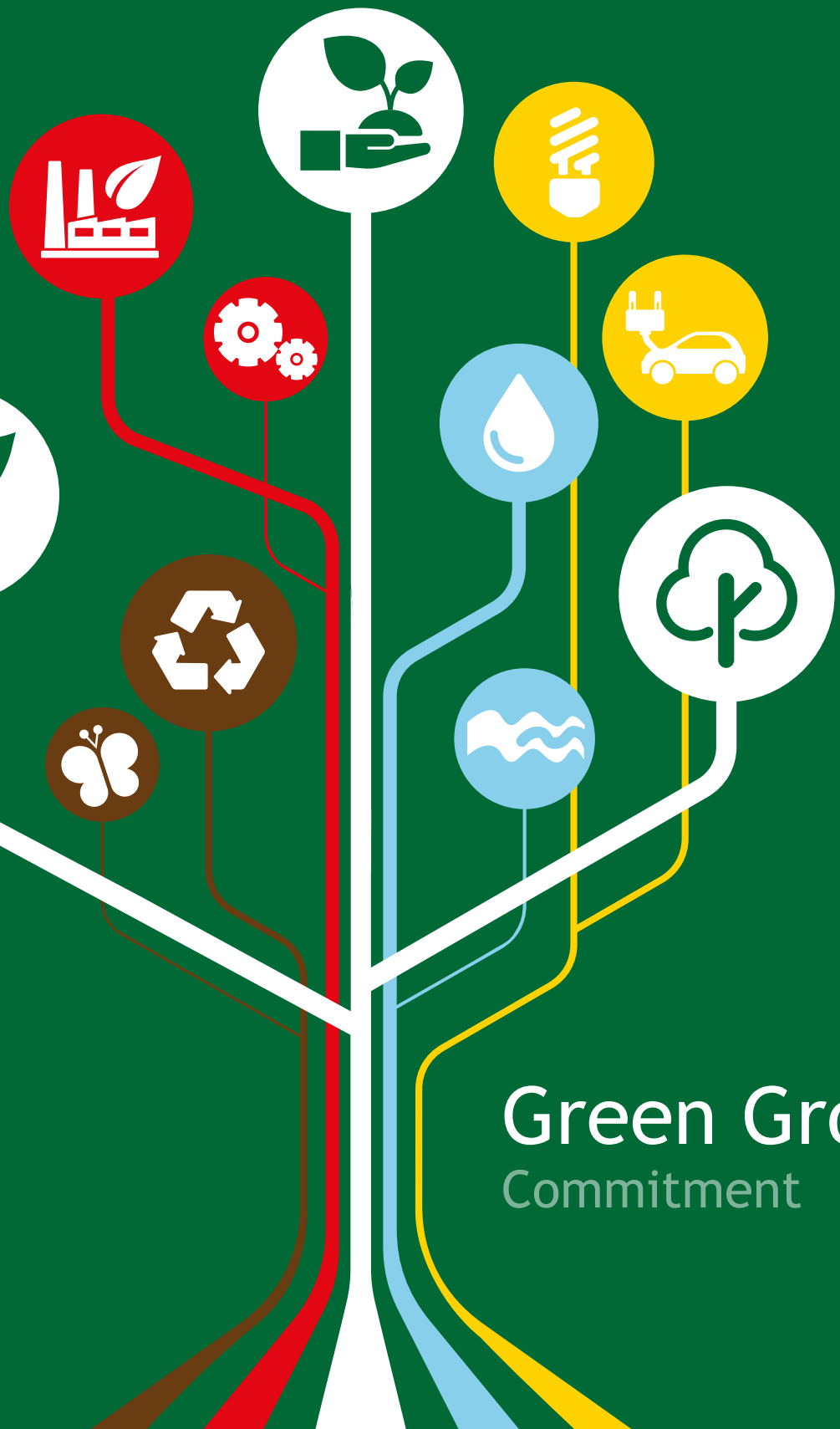

Green Growth

Commitment

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Green Growth Commitment

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CONTENTS

List of figures

List of tables

EXECUTIVE SUMMARY

After completion of the Economic and Financial Assistance Programme (PAEF), monitored by the troika, it is essential to establish and implement a post-troika vision of long-term development benefitting from the launch of a new cycle of structural reforms and of selective and productive investments in strategic areas, such as knowledge, industrial policy and the green economy, that can promote growth and employment sustainably.

Therefore, it is crucial, in particular in terms of the green economy, to generate political solutions that go beyond the short-term horizon and which can provide demanding structural reforms with ambition, stability and predictability.

Firstly, it is necessary to take action in light of the worsening signs of climate change, the deterioration and scarcity of water resources and the loss of biodiversity, as resources come under increasing pressure. The demographic effect is expected to increase energy consumption by 45%, water consumption by 30% and food consumption by 50% by 2030. The effects of climate change in Portugal according to the Fifth Report of the Intergovernmental Panel on Climate Change (IPCC)[i] will be considerably greater than the European average, especially when it comes to the coastline and water resources.

Secondly, there is an urgent need to overcome the paradoxical situation that Portugal has faced for decades. Where natural resources are concerned, we have talents, resources and infrastructures with high potential, but also considerable structural problems. This paradox is more than evident in the following aspects:

- Portugal has abundant and diverse renewable energy resources. This places us in a position to achieve a target of 31% renewables in gross final energy consumption by 2020[ii] (25.7% in 2013, corresponding to 57.4% renewable electricity generation).[iii] But the country remains highly energy dependent (around 73.9% in 2013,[iv] the lowest figure of the last 20 years) with very high energy intensity relative to GDP (129 toe/M€ 2011 GDP, in 2013);

- Portugal is currently the fourth-best performing country in terms of climate action, according to the Climate Change Performance Index CCPI,[v] in a ranking of 58 countries

that account for more than 90% of greenhouse gas (GHG) emissions. On the other hand, Portugal is also one of the most vulnerable countries, in particular in the European context, to the effects of climate change;

- Portugal is one of Europe's richest countries in terms of biodiversity, but it continues to have threatened species and habitats, for which it is necessary to strengthen the adoption of active conservation measures;

- The Natura Network and protected areas cover one-fifth of the country,[vi] one-quarter of its municipalities and one-third of the population. However, the people who live in nature reserves do not benefit enough from the economic value of biodiversity;

- We have witnessed a vast improvement in water infrastructures. Around 95% of the population has access to mains water supply and 80% to waste water treatment. Even so, losses in the water supply system average 35%. Furthermore, operations are economically and financially unsustainable with high tariff deficits and debts owed by municipalities. There are also blatant inequalities between prices of services in inland and coastal regions;

- The Portuguese coastal areas contain 80% of the population, and are of high environmental and economic value. However, 14% of the coast is artificial, 25% is suffering from erosion and 67% is at risk of land loss;

- The country has great potential in the mining sector, specifically metal ores (possibly up to 1% of GDP), but, with the exception of the recent Semblana concession, no new mining licences have been issued for more than 30 years;

- Waste dumps disappeared many years ago, but 43% of urban waste is still deposited in landfill[vii] and the use of plastic bags is very high;[viii]

- Portugal is a main tourist destination, but one-third of its buildings require renovation and our town centres still suffer from dilapidation and depopulation;

- The country has considerable skills in the construction sector, but only 10% of work is allocated to urban renewal. The European average is 37%;

- Structural problems have been resolved in terms of access to housing, but this is often at the expense of extending urban areas with new construction, with the associated increase in commuting, damage to the environment and decrease in quality of life;

- Spatial planning policies and instruments have played an essential role in regulating land use in recent decades. Many overlapping plans for the same area exist that communicate with each other inefficiently and any change is slow and uncoordinated. This has generated inefficiency and inequality, reduced transparency and competitiveness and made people wary of decision-making processes.

Thirdly, we must harness economic opportunities and the chance to create jobs associated with green growth. Because, from the outset, we have the talent, the resources and the infrastructures required to compete and win on a global scale in the short-term. And also due to the growing global demand for green goods and services. It is worth noting that:

- The Green economy already represents 4 trillion euros worldwide and is growing at 4% a year. Green sectors accounted for 2.5% of the EU's total GDP in 2010 and are expected[ix] to grow around 30% a year up to 2025. It is therefore one of the region's most dynamic sectors;

- Investment in clean energies totalled 300 billion dollars, with the EU and China responsible for 25% each;

- Investment in energy generation infrastructures and networks is estimated to reach 48 trillion dollars by 2035 of which two-thirds will be invested in emerging and non-OECD countries. From the total amount, it is estimated that 7 trillion dollars are invested in electricity grids, 6 trillion dollars in renewable energy and 1 trillion dollars in nuclear power;[x]

- In the EU it will be necessary to invest 1 trilion euros in infrastructures by 2020 and 2.5 trillion euros by 2025;

- Green jobs have been remarkably resilient to the recession. They increased from 3 to 4.2 million in the EU between 2002 and 2011 and rose 20% in the recent European recession.[xi] In Portugal, from 2012-2013, green employment grew by 5.0%;

- If the EU sets the goal of increasing the productivity of resources by 30% up to 2030, as is currently being discussed in the interim review of the 2020 Strategy, this will contribute to a 1% increased in GDP and 2 million jobs in the EU.[xii]

The goals of green growth are wholly consistent with the major challenges facing Portuguese society and may even make a decisive contribution to meeting them: growth, employment, lower dependency on imports, more intelligent taxation (higher taxes on things that harm and pollute and lower taxes on those that produce and enhance) and quality of life.

Under the MoU and also within a post-troika agenda, the government has been undertaking ambitious structural reforms in the areas of the environment, energy, spatial planning, the sea, transport, urban rehabilitation, housing, science, innovation, agriculture and tourism. These reforms need to be viewed over a **much longer time frame than a single legislature.**

It was in this spirit of non-acquiescence with the diagnosis, reformism with the solutions and optimism in the results that the **Green Growth Coalition (GGC)** was founded in February 2014. The GGC **combines the efforts of almost 100 associations, representatives of the business, science and financial sectors, public bodies, foundations and non-governmental organisations (NGOs)** and is a direct result of the spirit and discussions within the Green Growth Coalition.

The **GGC seeks to lay the foundations for a commitment to policies, goals and targets** that foster a development model that will reconcile essential economic growth with lower consumption of natural resources and social justice and quality of life for the population.

Assuming the need for lasting, intelligent budgetary responsibility, the focus is now on eliminating other structural constraints that have, in recent decades, prevented the Portuguese economy from achieving a financially, socially, economically and environmentally sustainable course. A new cycle of EU programmes, with funds that could be drivers of change and national recovery, is opening up new opportunities for public and private agents and driving up the competitiveness and sustainability of the Portuguese economy.

There has been growing awareness in recent years among economic and political players of the potential for synergies between economic growth and sustainability and strategic choices in which the green component is an actual reality in economic growth priorities.

Portugal is in a privileged position and must invest in its competitive advantages. It must aspire to be a leader of this new global trend and make full use of its natural resources, infrastructures and talent to compete and win on a global scale. This framework provides an opportunity to promote an integrated and comprehensive vision of areas and sectors with green growth potential. This vision should nurture the ability to link research, development and innovation to production, products, services and processes and also to funding mechanisms. This would help dissociate economic growth from the use of resources, foster energy and material efficiency and identify new economic opportunities.

It is important to understand, given the wide-ranging nature of this issue, that this document is in harmony with other overall key public policy instruments, such as the National Research and Innovation Strategy for Smart Specialisation 2014-2020 (ENEI) and the Industrial Development Strategy for Growth and Employment 2014-2020 (EFICE),[xiv] and also encompasses a significant number of existing or future sectoral or theme-specific plans aimed at generating joint accountability of public and private stakeholders.

This document is intended, furthermore, to lay the foundations for an ambitious and lasting commitment which benefits from dialogue with both the political parties and the social, economic and environmental partners. **The initiatives mentioned here therefore reflect a conceptual and quantitative determination while seeking enough flexibility during implementation to accommodate a variety of management options.**

The GGC sets out 14 quantified goals for 2020 and 2030.

Table 1: Quantified Goals for 2020 and 2030

Goal 1	**Increase "green" GVA** From 1.5 billion euros in 2013 to 2.1 billion euros in 2020 and 3.4 billion euros in 2030.
Goal 2	**Increase "green" exports** From 560 million euros in 2013 to 790 million euros in 2020 and 1.28 billion euros in 2030.
Goal 3	**Create "green" jobs** From 75,500 jobs in 2013, to 100,400 in 2020 and 151,000 in 2030.
Goal 4	**Increase productivity of materials** From €1.14 of GDP/kg materials consumed in 2013, to 1.17 in 2020 and 1.72 in 2030 (reaching the European target of 30% growth by 2030).
Goal 5	**Increase the incorporation of waste into the economy** From 56% in 2012, to 68% in 2020 and 86% in 2030.
Goal 6	**Focus on urban rehabilitation** Increasing rehabilitation as a share of total construction from 10.3% in 2013 to 17% in 2020 and 23% in 2030.
Goal 7	**Improve energy efficiency** From 129 toe/€M of GDP in 2013 to 122 toe/€M of GDP in 2020 and 101 toe/€M of GDP in 2030.
Goal 8	**Improve water efficiency** From 35% of unbilled water in 2012 to a maximum of 25% in 2020 and 20% in 2030.
Goal 9	**Increase public transport use** From 10.894 million pkm in 2013 to 12.528 million in 2020 and 15.296 million in 2030.
Goal 10	**Reduce CO_2 emissions** From 87.8 Mt CO_2 in 2005 to 68-72 Mt CO_2 in 2020 and 52.7-61.5 Mt CO_2 in 2030, (contingent on the conclusions of the European negotiations).
Goal 11	**Boost the share of renewable energy** From 25.7% of final energy consumption in 2013 to 31% in 2020 and 40% in 2030.
Goal 12	**Improve the condition of bodies of water** From 52% with a rating of "good" or higher in 2010 to 79.8% in 2021 and 100% in 2027.
Goal 13	**Improve air quality** From an average of 14 days of "poor" or "bad" air quality according to the Air Quality Index in 2013 to a maximum average of 9 days by 2020 and an average of 2 days by 2030.
Goal 14	**Enhance biodiversity** From 81 species and 46 habitats with "favourable" conservation status per bio-geographical region in 2012 to 96 species and 53 habitats in 2030, ensuring that in 2020 all existing species and habitats retain or improve their conservation status.

In addition to these 14 quantified goals for 2020 and 2030, the Green Growth Commitment **has laid down 111 initiatives in 10 sectors and 6 catalysts.** Of these, we can highlight the following:

1. Ensure a **broad restructuring of the water sector** by:

- increasing the independence and competences of the regulatory authority by setting out new statutes for the ERSAR, legislating on itemised invoices and new tariff regulations for upstream systems;
- reorganising the territorial areas covered by the Águas de Portugal (AdP) Group and multi-municipal systems by merging the 19 systems into five to generate economies of scale and scope, to promote balanced tariffs over extended regions and to find solutions to the problem of chronic tariff deficits;
- fostering more integrated strategies for managing upstream and downstream water supply and sewerage services as a way of maximising operational process synergies with significant benefits to consumers while reducing pressure on resources;
- reorganising the AdP Group's corporate structure to achieve reductions in operating costs (25% below current contracts).

2. Achieve, by 2020, ambitious levels of waste reuse and recycling promoting a more circular economy: reducing disposal in landfills of biodegradable urban waste from 63% to 35% against the reference year of 1995; increasing the rate of preparation of waste for reuse and recycling from 24% to 50%; achieving a selective collection rate of 47kg/inhabitant/year.

3. Promote **certification of sustainable forest management** by helping holdings and companies to adapt to environmental, safety and risk-prevention requirements: 500,000 ha of certified forest by 2020 and 1,000,000 ha by 2030.

4. Increase **renewable energy generation** (increasing the percentage of renewable sources in gross final consumption of energy from 31% in 2020 to 40% in 2030).

5. Promote **the consumption of self-generated energy**, to reach at least 300MW by 2020.

6. **Reinforce energy interconnections** in Europe, promote **renewable energy export** projects to meet European third-country goals and position Portugal as a **gateway for liquefied natural gas (LNG) into the EU** (the Iberian Peninsula's current LNG terminals could supply the EU with 50,000 million m^3 of natural gas per year, replacing 40% of Europe's gas imports from Russia).

7. **Integrate adaptation to climate change into territorial management instruments**, particularly in the PDMs.

8. Promote **electric mobility** by extending the public network and making it more competitive, favouring **charging at home and in the workplace** as well as in **private locations open to the public** (e.g. shopping centres) and implementing programmes of **sustainable mobility in the public administration** (introducing 1,200 electric vehicles into a renewed car fleet by 2020).

9. Encourage **the use of public transport** in city and inter-city travel by improving public transportation and introducing **measures to discourage the use of private cars.**

10. **Promote the transfer of freight transport to rail**, increasing the proportion of goods transported by rail and reducing energy intensity in the sector.

11. **Promote the bicycle as a particularly efficient means of urban mobility**, increasing the proportion of bicycles used on urban journeys.

12. Implement a single environmental permit (SEP) scheme that aims to reduce the amount of paperwork per licensing request application, the number of requests for additional information and the average time take to reach a decision.

13. Promote **the sustainable use of metal ores** – which may reach 1% of GDP and 25,000 jobs — by:

> mapping the resources, increasing knowledge and research into mineral resources;

> promoting and attracting private and international investment in the sector and setting up a **One-stop Mining Shop;**

> **reviewing the mining licensing model** to make application processing faster and more transparent and to provide the investor with all available information about the area requested during the initial phase of the procedure, making consultation with municipalities and competent authorities mandatory from the prospecting and research phase in areas of environmental and heritage protection, territorial management and nature conservation.

14. Implement the **TEEB (The Economics of Ecosystems and Biodiversity) initiative in Portugal based on** the mapping and evaluation of the condition of the ecosystems and ecosystem services and on their economic and social value.

15. Expand the **natural.pt brand** of products and services developed with resources from protected areas to encompass 200 adherents (products and services) in 2016 and increase this number at an average rate of 10% per year from 2017 until 2030.

16. Significantly increase the share of urban rehabilitation in construction work. This can be done via the **Exceptional Urban Rehabilitation Framework (RERU)** which offers a seven-year exemption for buildings aged over 30 years from compliance with some rules that made rehabilitation of such buildings technically and financially unfeasible. Implement, under the new **European funds framed by the partnership agreement - Portugal 2020**, a new financial instrument to support urban rehabilitation and regeneration in deprived areas, abandoned industrial areas, social housing, public buildings and energy efficiency in private homes **totalling almost 1 billion euros** (which can be maximised through interaction with other funding sources).

17. **Within the framework of the spatial planning reform, ensure rational, efficient land use** by: limiting urban expansion, concentrating all the planning rules in Municipal master plans, eradicating land eligibility for building, simplifying procedures, introducing a new economic and financial framework and encouraging inter-municipal planning solutions. **Maintain the current level of man-made landscapes at 5% until 2030.**

18. Create the **National Cadastral Information System**, in order to ensure harmonisation of the property registration system and promote a more effective cadastral survey of the national territory.

19. Establish **new marine protected areas** (10% of total area by 2020), ensuring the sustainable use of marine resources.

20. Strengthen **the competitiveness of ports** to attract the traffic sailing through the EEZ placing Portugal on the route connecting Europe to the world.

21. Replicate processes that, by **recognising the added value of natural resources**, can be validated and become an independent international reference framework, improving the country's ability to attract tourists through, for example geo-tourism, eco-tourism and scientific tourism initiatives with potential for inclusion in the **UNESCO European Geoparks Network.**

22. Refocus national environmental funds for Green Growth and promote their integrated management, concentrating, under a single strategic and operational framework, a substantial volume of financing with a strong catalysing effect in the area of energy efficiency, water resources management, biological resource management, waste treatment, resilience, low carbon and eco-innovation.

23. Design and implement a strategic action plan outside the Green Growth Commitment that focuses on the interconnection with the main international institutions and similar movements, ensuring its presence in economic and political forums, while seeking to make the GGC a global reference for public policy.

24. Implement, within a framework of tax neutrality, **the green tax reform** in order to: diversify sources of revenue, foster eco-innovation and eco-efficiency in the use of resources, reduce dependency on energy imports, encourage more sustainable production and consumption patterns and boost entrepreneurship, employment and the economy.

25. Promote the development of R&D&I pilot projects with potential impacts on sustainability and efficient use of resources.

26. Establish a green public procurement programme and ensure that sustainability criteria are included in all public contracts for the purchase of goods and services.

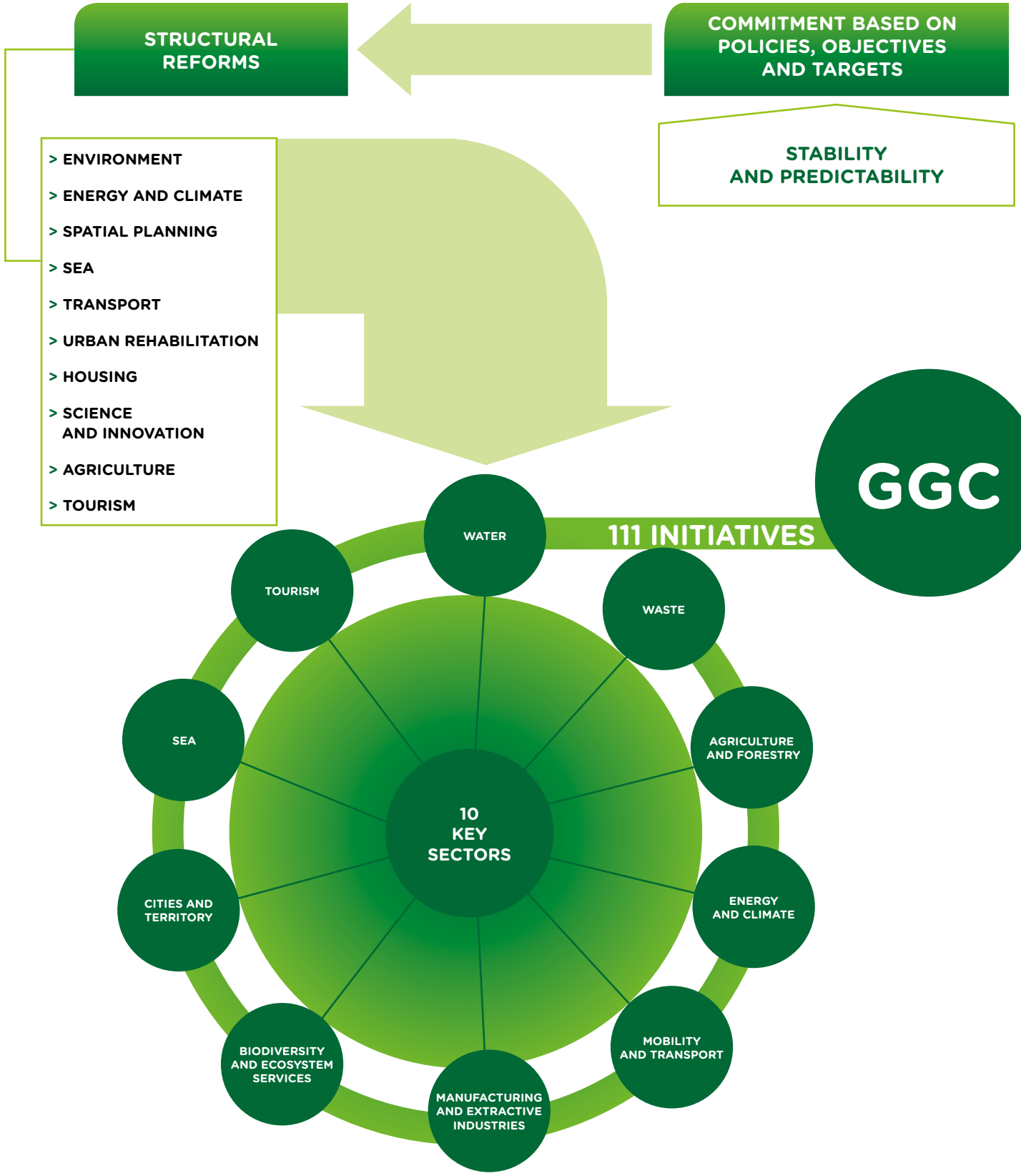
27. Ensure, through the recently launched **iGeo portal, the public availability** - and subsequent use or integration in other information systems – **of georeferenced cartographic information**, namely on architectural heritage natural heritage, geology, protected areas and conservation, municipal master plans and land occupation charts.

This is a strategic plan that is sufficiently detailed to ensure ambitious, stable and predictable policies but also open enough to accommodate different implementation models.

This **Green Growth Commitment aims to position Portugal as a global role model for green growth**, and it therefore sets short-, medium- and long-term goals that are demanding and ambitious but achievable if there is a will to reform and a willingness to participate.

The graph below presents, in a 360º vision of the essential information about the GGC and the relationships between its basic components.

Figure 1: Green Growth Commitment: a 360º vision



LONG TERM

A POST-PROGRAMME VISION OF FINANCIAL AND ECONOMIC ASSISTANCE

A NEW GLOBAL PARADIGM OF SUSTAINABLE DEVELOPMENT

14 QUANTIFIED GOALS

1. INCREASE GREEN GVA
From 1.5 billion euros in 2013 to 2.1 billion euros in 2020 and 3.4 billion euros in 2030

2. INCREASE GREEN EXPORTS
From 560 million euros in 2013 to 790 million euros in 2020 and 1.28 billion euros in 2030

3. CREATE GREEN JOBS
From 75,500 people employed in 2013 to 100,400 people employed in 2020 and 151,000 people employed in 2030

4. INCREASE PRODUCTIVITY OF MATERIALS
From €1.14 of GDP/kg of material consumed in 2013 to 1.17 in 2020 and 1.72 in 2030 (reaching the European target of 30% growth by 2030)

5. INCREASE THE INCORPORATION OF WASTE INTO THE ECONOMY
From 56% in 2012 to 68% in 2020 and 86% in 2030

6. FOCUS ON URBAN REHABILITATION
Increasing rehabilitation as a share of total construction from 10.3% in 2013 to 17% in 2020 and 23% in 2030

7. IMPROVE ENERGY EFFICIENCY
From 129 toe/€M of GDP in 2020 to 122 toe/€M GDP in 2020 and 101 toe/€M GDP in 2030

8. IMPROVE WATER EFFICIENCY
From 35% of unbilled water in 2012 to a maximum of 25% in 2020 and 20% in 2030

9. INCREASE PUBLIC TRANSPORT USE
From 10.894 million pkm in 2013 to 12.528 million in 2020 and 15.296 million in 2030

10. REDUCE CO_2 EMISSIONS
From 87.7 Mt CO_2 in 2005 to 68-72 Mt CO_2 in 2020 and 52.7-61.5 Mt CO_2 in 2030 (contingent on the conclusions of European negotiations)

11. BOOST THE SHARE OF RENEWABLE ENERGY
From 25.7% of final energy consumption in 2013 to 31% in 2020 and 40% in 2030

12. IMPROVE THE CONDITION OF BODIES OF WATER
From 52% with a rating of "good" or higher in 2010 to 79.8% in 2021 and 100% in 2027

13. IMPROVE AIR QUALITY
From an average of 14 days of "poor" or "bad" air quality according to the Air Quality Index in 2013 to a maximum average of 9 days by 2020 and a maximum average of 2 days by 2030

14. ENHANCE BIODIVERSITY
Improve the conservation status of species and habitats protected under the Habitat Directive: from 81 species and 46 habitats with "favourable" conservation status per biogeographical region in 2012 to 96 species and 53 habitats per biogeographical region in 2030, ensuring that all existing species and habitats retain or improve their conservation status by 2020

6 CATALYSTS

- FINANCING
- INTERNATIONAL MARKETING
- TAXATION
- RESEARCH, DEVELOPMENT AND INNOVATION
- INFORMATION AND PARTICIPATION
- PUBLIC PROCUREMENT

GREEN GROWTH

AT THE CENTRE OF A NEW GLOBAL PARADIGM

Growing awareness of the impact of human action on the environment has boosted the green economy, a concept which has gained in importance in the public debate in recent years. This mainly reflects the perception that the current model of economic growth based on the increasing use of resources with growing waste production and pollutant emissions cannot be maintained in a world of limited resources and ecosystem resilience.[xv]

Figure 2: Definition of the Green Economy

GREEN ECONOMY

"... That which results in the improvement of well-being and social equity and, at the same time, reduces environmental risks and ecological scarcity. In this context, Investment and Innovation must be encouraged, thereby sustaining growth and favouring the appearance of new opportunities for business and the creation of employment, with a growing efficient use of resources".

A number of multilateral organisations have been working on this issue, including the Organisation for Economic Cooperation and Development (OECD), the United Nations and the World Bank. For example, in 2008 the United Nations Environment Programme (UNEP) launched the Green Economy Initiative.[xvi] In 2009, the ministers of the 34 OECD countries signed a Declaration on Green Growth and tasked the organisation with developing a common strategy for economic growth, development, investment and innovation, while still recognising the rational use of natural resources and environmental protection as essential to people's well-being.[xvii]

Efforts made by a number of entities culminated in the UN Rio+20 Conference in 2012. The signatory countries at the meeting undertook to renew "... our commitment to sustainable development ... for our planet and present and future generations ... integrating economic, social and environmental aspects and recognising their interconnections, so as to achieve sustainable development in all its dimensions".[xviii]

At this conference, the financial sector took the lead in creating a financial system in which the private sector took account of natural capital when making decisions and appealed to governments to encourage sustainable use of natural capital. The same forum (Rio+20) stated, through a declaration, that natural capital "comprises the Earth's natural assets (soil, air, water, flora and fauna), and the ecosystem services which make human life possible".[xix]

In this context, the EU agreed to **encourage the transition to a green economy** and to fight for an absolute decoupling between economic growth and environmental deterioration (Conclusions of the Environment Council, June 2012). Thirteen ministers in the Green Growth Group appealed for low carbon and agreed with a post-2020 political framework based on ambitious targets.[xx]

The EU "Roadmap for moving to a competitive low carbon economy in 2050" sets out the challenges, stages and innovations that have to take place in key sectors for an overall reduction in greenhouse gas emissions by 2050.[xxi]

The seventh EU Environment Action Programme which came into force in 2014 supports fulfilment of the commitments made at the 2012 UN Conference on Sustainable Development (Rio+20) and its aim is to make the global economy inclusive and green in the context of sustainable development and poverty reduction.[xxii]

The green economy can be regarded as an economic system that is fully aligned with the goals of environmental protection and social justice. UNEP defines the green economy not only as a link between the economy and the environment but also as an economy that results in higher levels of human well-being and social equality, while significantly reducing environmental risks. It is an economy in which policies and innovations enable society to create more value while preserving the natural systems that sustain us.[xxiii] This low-carbon, resource-efficient, socially inclusive economy can be achieved by stimulating investment aimed at reducing pollution

and greenhouse gas emissions, increasing energy from renewable sources, using resources efficiently and protecting biodiversity and ecosystem services.

Green growth, according to the OECD, means promoting development and economic growth and ensuring that natural resources continue to provide environmental services essential to human well-being. Investment and innovation in policies, processes and technologies that foster the conservation and harnessing of resources must be encouraged, thereby sustaining growth and creating new economic opportunities.

The concepts of Green Growth and Green Economy have gained ground as instruments for the sustainable optimisation of resources and the creation of employment. These concepts are often considered interchangeable, but green growth emphasises the dynamic component of the process and the opportunities to create value offered by taking advantage of synergies between the economy and the environment. It is a means to achieve sustainable growth.

Figure 3: Green Economy and Green Growth

GREEN ECONOMY	GREEN GROWTH
An economic system compatible with the natural environment which is socially fair, resulting in improved well-being and social equity while at the same time reducing the risks to the environment and ecological scarcity	*A type of growth that accentuates the dynamic component (investment and innovation) of the transition to a green economy, taking advantage of the opportunities for the creation of value associated with the exploitation of the relationship between the economy and environment*

This development model not only includes the prevention and punishment of negative environmental behaviour but also aims to implement environmentally sustainable processes that can generate new economic and social opportunities and a range of environmentally friendly goods and services and ensure well-being. IIt is an integrated view based on the economy-environment dichotomy which recognises that, through public and private investment, innovation and technology, infrastructures and institutions, it is possible to introduce a structural change to the current development paradigm.[xxiv]

As an example of this, the UN Green Economy Report published in November 2011 estimates that an investment of just 2% of world GDP in key sectors will have a doubly positive effect, providing long-term growth as high as the most optimistic model forecasts - based on current practices - while at the same time avoiding considerable risks, such as the effects of climate change, water shortages and the loss of ecosystem services.[xxv]

In the particular case of job creation, which is one of the major long-term global challenges, the potential to assert and develop new opportunities and functions within the framework of the green economy should be noted. With the rapid and intensive adoption of green technologies there will be a need for highly-qualified labour to work on renewable energies, electric mobility and intelligent networks. The integration of energy technologies with information and communication technology is another area with great potential requiring investment in research, development and innovation (RD&I) skills in commercially attractive green technologies.[xxvi] Moreover, and as an illustration, in the agricultural and forestry sector, environmental and ecological values acquired over time call for the provision of agriculture and forestry-related services, promoting green growth in these sectors. Also with strong links to the agricultural sector, of note are job creation opportunities in organic farming, landscape management, eco-tourism and services and/or green infrastructure in rural areas, among others.[xxvii] Another such example is the renewable energy sector, which foresees a rise in job opportunities extending to activities such as auditing and energy certification, installation and maintenance of equipment and energy security.[xxviii]

Green growth's potential for success arises from the double need to reconcile a response to the global economic crisis and the realisation that the current development model is putting the planet's resources at risk. It is therefore a structural transformation of the current paradigm and its ultimate goal is sustainable growth based on:

Stimulation of the circular economy: implementation of waste policy that takes into account the principle of its hierarchy (prevention and reduction; preparation for reuse; recycling; other types of recovery and disposal) along the entire value chain;

Development of sustainable production and consumption: changing consumer behaviour and basing the production system on the principle of intergenerational equality;

Development of a low-carbon economy: focus on reducing carbon intensity by favouring investments and economic activities that help reduce greenhouse gas emissions.

Figure 4: Low-Carbon Economy, Circular Economy and Sustainable Production and Consumption

LOW-CARBON ECONOMY	CIRCULAR ECONOMY	SUSTAINABLE CONSUMPTION AND PRODUCTION
An economy that emits a minimum, socially agreed, amount of carbon dioxide and other greenhouse gases. The essential aspect of this concept is the reduction over time of the carbon intensity of the economy, both in unitary terms (measured in CO_2 per unit of GDP) as in absolute terms. [xxix]	*An economy that reduces the consumption of resources and applies the three R's policy: reduce, reuse and recycle throughout the value chain. This can be analysed as a partial result of the operation of one aspect of the green economy concept. It is assumed that investment in energy efficiency, water and waste management/ recycling and recovery technologies not only generates new sources of income and employment, but also contributes to the reduction of pressure on resources and the minimisation of waste.*	*Close focus on intergenerational equity in respect of the satisfaction of basic needs and quality of life improvements, while minimising resources used and waste generated throughout the whole life cycle. The three R's policy is also present, both in production and consumption given that the concept implies changes in consumer behaviour and in the organisation of the production system. It is also linked with the concept of circularity and it assumes a continuous process of adjustment, in technology, in resource use and in demand patterns. Intrinsically associated with the green economy concept, it focuses on the product lifecycle and demand side policies.*

The green economy has become increasingly important in emerging countries (e.g. China and India) and those in central and eastern Europe as a response to environmental challenges, particularly air and water quality arising from rapid industrialisation and urbanisation. Regardless of the setting, a number of common factors foster growth of environmental goods and services:

An international regulatory framework that emphasises environmental impact as an integral part of assessing economic development options and introduces concerns with ecosystems;

Higher energy costs, which have encouraged companies to adopt energy efficiency policies;

Extension of public and private investment programmes to the environmental domain, especially in those activities associated with the energy, waste and water sectors.

National development plans that seek to reconcile economic growth and environmental protection are appearing all over the world. The trend extends from developed countries such as France,[xxx] Ireland[xxxi], Canada[xxxii], Australia[xxxiii] and Singapore[xxxiv], to developing countries, such as the Dominican Republic[xxxv].

These plans show similar goals, even though each country is seeking to address its own specific challenges. Nonetheless, even though the formulation may vary from one document to another, their aspirations are based on three main pillars:

Development of green activities with goals including job creation or incentives for green business in order to increase this segment's contribution to the domestic GDP;

Resource efficiency, which combines aspirations in terms of water use, energy consumption or recycling of materials;

Environmental protection, with goals such as reducing greenhouse gas emissions.

PORTUGAL: A GREENER ECONOMY

VISION AND GOALS

The initiatives set out in the commitment are expected to contribute to sustainable growth in Portugal by creating value based on reconciling economic growth with sustainability. This will make the country more competitive and assert its position as an international green growth role model.

This aim encompasses the three key ideas of green growth:

> **Focus on highly green economic activities** with a national and/or international impact and which contribute to increasing GDP and job creation;

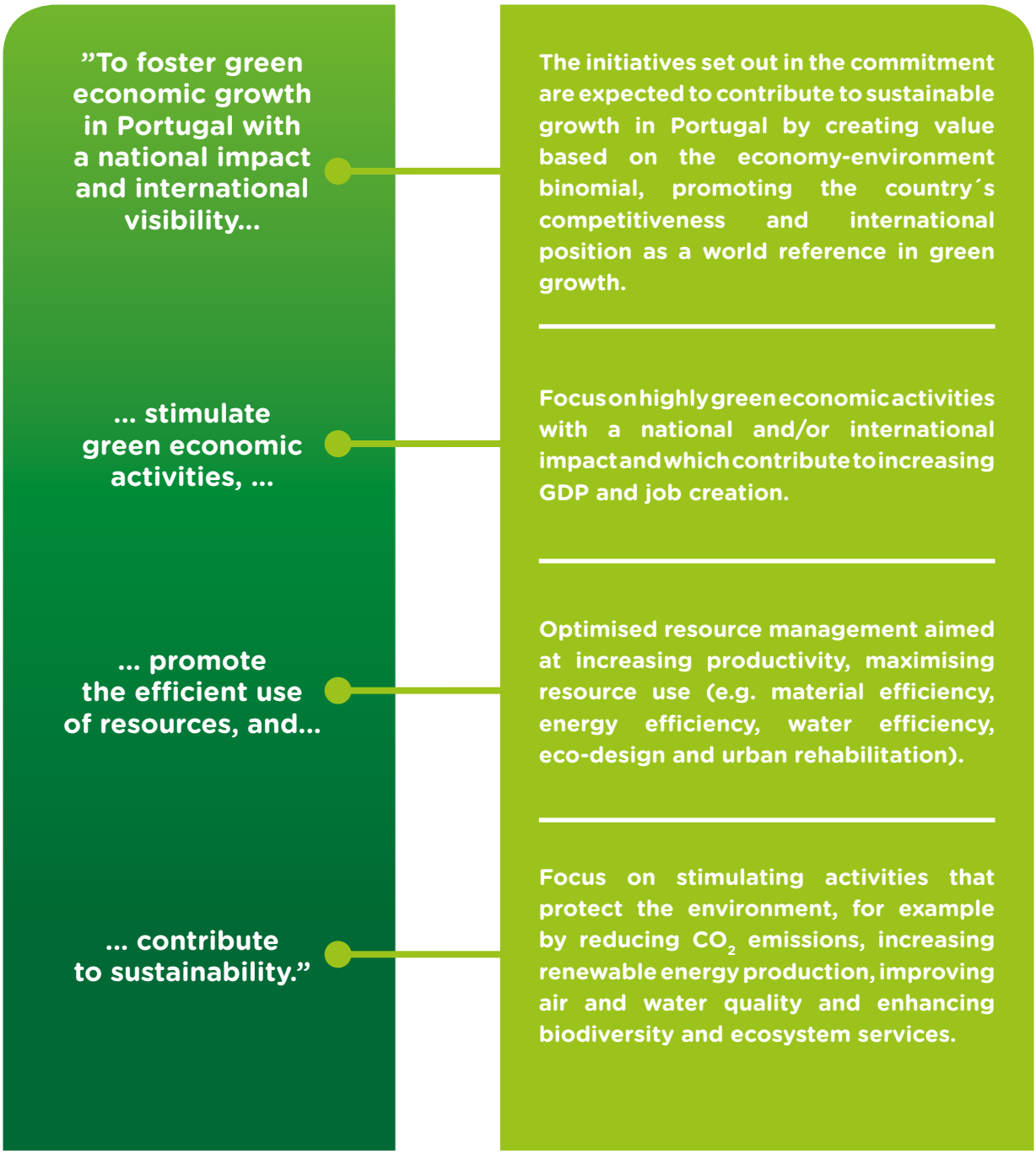
> **Optimised resource management** aimed at increasing productivity, maximising resource use (e.g. reuse, recycling, energy efficiency and water efficiency) and reducing carbon intensity;

> **Focus on stimulating activities that protect the environment,** for example by increasing renewable energy production, improving air and water quality and enhancing biodiversity.

These are the key ideas behind the Green Growth Commitment's vision:

"To foster green growth in Portugal with a national impact and international visibility, stimulate green economic activities, promote the efficient use of resources and contribute to sustainability".

Figure 5: Vision and goals



For this vision to succeed, there must be a tangible impact on Portugal's economic, social and environmental reality. However, the indicators mentioned here by no means limit our ambitions and are included as a benchmark to measure the success of initiatives. They are largely the result of a compromise between limitations on available information and the need to set concrete, measurable, goals that can be monitored for each objective.

The Commitment undertaken here entails 14 goals with two time frames (2020 and 2030). Each goal fits into one of the three areas of the vision mentioned above:

To stimulate green sectors of activity:

- increase "green" GVA (GOAL 1);
- increase "green" exports (GOAL 2);
- create "green" jobs (GOAL 3).

To promote efficient use of resources:

- increase the productivity of materials (GOAL 4);
- increase the incorporation of waste into the economy (GOAL 5);
- focus on urban rehabilitation (GOAL 6);
- improve energy efficiency (GOAL 7);
- improve water efficiency (GOAL 8);
- increase the use of public transport (GOAL 9).

To contribute to sustainability:

- reduce CO_2 emissions (GOAL 10);
- increase the share of renewable energy (GOAL 11);
- improve the condition of bodies of water (GOAL 12);
- improve air quality (GOAL 13);
- enhance biodiversity (GOAL 14).

Table 2: Goals set in each of the vision's three areas:

		Objective and Indicator	2009/13 Average	2013
GROWTH	Stimulate green activity sectors	> **Increase "green" GVA** (billions of euros)	1.7	1.5
		> **Increase "green" exports** (billions of euros)	0.57	0.56
		> **Create "green" jobs** (thousands of people employed)	77.1	75.5
EFFICIENCY	Promote efficient use of resources	> **Increase the productivity of materials** (€ GDP[2] /kg of materials consumed)	0.96	1.14
		> **Increase the incorporation of waste in the economy** (rate of waste incorporation in the economy)[3]	50% [4]	56% [5]
		> **Focus on urban rehabilitation** (proportion of total construction)	8.4%	10.3%
		> **Improve energy efficiency** (Energy intensity - toe/€M GDP[6])	129	129
		> **Improve water efficiency** (unbilled water/water issued to the urban supply network)	n.a.	35% [7]
		> **Increase the use of public transport** (millions of pkm transported on public passenger transport services)	n.a.	10,894
SUSTAINABILITY	Contribute to sustainability	> **Reduce CO_2 emissions** (Mt CO_2 eq.)	72.4 [8]	68.9 [9]
		> **Increase the share of renewable energy** (% of gross final energy consumption)	24.8%	25.7%
		> **Improve the condition of water bodies** (% of water bodies of "good" or higher quality)	n.a.	52% [10]
		> **Improve air quality** (average number of days ranked "poor" or "bad" in the Air Quality Index, in urban areas)	18	14
		> **Valorize biodiversity** (Improve the conservation status of species and habitats protected by the Habitat Directive - Number of species evaluations and habitats assessment with "favourable" conservation status as established by bio-geographical region)	n.a.	81 and 46 [13]

n.a. not available / [1] the CAGR (Compound Annual Growth Rate) is a geometric average of annual growth rates. The CAGR, also referred to as a "smoothed" rate, measures growth as if it had occurred at a stable rate on an annual compound basis. The reference value is 2013, subject to the exceptions indicated. / [2] GDP evolution according to the average value of macroeconomic scenarios for Portugal as shown in the REA 2014 (the 2014 State of Environment Report). They provide an update to the scenarios considered in the 2050 RNBC (National Low Carbon Roadmap) (APA, 2012). / [3] recovered waste (excluding energy recovery)/waste produced. / [4] 2008-2012 Average. / [5] 2012. / [6] GDP growth according to the average value of macroeconomic scenarios for Portugal as shown in the REA 2014 (the 2014 State of Environment Report). They provide an update to the scenarios considered in the 2050 RNBC (National Low Carbon Roadmap) (APA, 2012). / [7] 2012. / [8] 2008-2012 Average. / [9] 2012. / [10] 2010. / [11] 2021. / [12] 2027. / [13] Report Data for the 2007-2012 period.

Goals for 2020 and 2030			Racional
2020	2030	CAGR[1] 2030	
2.1	3.4	(+5.0%)	> Develop the green economy to obtain competitiveness gains greater than the national average
0.79	1.28	(+5.0%)	> Develop a rate of growth in green exports similar to the increase in green GVA
100.4	151.0	(+4.2%)	> Double the number of jobs by 2030
1.17	1.72	(+3.5%)	> Align with the goals of the PNGR (National Waste Management Plan), the principle of circular economy, efficiency in resource use and the reduction environmental impacts (achieving the European growth objective of 30% by 2030)
68%	86%	(+2.3%)	> Consider waste as a material or energy resource, promoting the closing of the cycle (circular economy) and the routing of waste away from landfill; compliance with PNGR (National Waste Management Plan)
17%	23%	(+4.9%)	> Increase the amount of renovation work in the construction sector by about 7.5% from 2013 to 2020 and 3.1% from 2020 to 2030. Quicker growth is assumed between 2013 and 2020 than in 2020-2030
122	101	(-1.4%)	> Compliance with the PNAEE (National Energy Efficiency Action Plan) by 2020 > 30% reduction in baseline energy by 2030
25%	20%	(-3.1%)	> Compliance with the PNUEA (National Programme for the Efficient Use of Water) 2020 goal - real losses < 20% in 2020) [unbilled water = real losses + apparent losses + authorised non-invoiced consumption]
12,528	15,296	(+2.0%)	> Compliance with the PETI3+ by 2020 > Transfer from individual transport to collective transport
68.0-72.0	52.7-61.5	(-0.6/-1.5%)	> Alignment with EU objectives for 2030 and with the emission reductions reported in the groundwork for the PNAC (National Programme for Climate Change) and 2050 EU Roadmap > Reduction of between 18% (72 Mt CO_2 eq.) and 23% (68 Mt CO_2 eq.) in 2020 vs 2005 (2005 = 87.8 Mt CO_2 eq.) > Reduction of between 30% (61.5 Mt CO_2 eq.) and 40% (52.7 Mt CO_2 eq.) in 2030 vs 2005 (2005 = 87.8 Mt CO_2 eq.), (contingent on the conclusions of European negotiations)
31%	40%	(+2.6%)	> Compliance with the PNAER (National Renewable Energy Action Plan) by 2020 > Alignment with the goal set out in the PT proposal for the 2030 Energy and Climate Package, contingent on the results of European negotiations
79.8% [11]	100% [12]	(+3.3%)	> Compliance with the Water Framework Directive (contingent on developments in the negotiations within the EU regarding its implementation)
9	2	(-10.9%)	> Compliance with the objectives set out in the CAFE Directive and with the Clean Air for Europe Programme
81 and 46	96 and 53	(+0.9% e +0.8%)	> Compliance with the Habitats Directive > Alignment with the European Biodiversity Strategy for 2020 > Alignment with the National Strategy for the Conservation of Nature and Biodiversity for 2020 (under review)

Current economic activity includes countless economic sectors that contribute in different ways to the goals set out here. It is therefore necessary to establish priorities to make actions more efficient, effective and lasting. Focusing efforts on a feasible number of initiatives allows appropriate control of their implementation and monitoring, which, furthermore, are essential for later identification of new courses of action and areas of intervention.

The proposed green growth initiatives are based on 10 pillars, i.e. sectors or topics that are considered a priority, enabled by a set of wide-ranging catalysts.

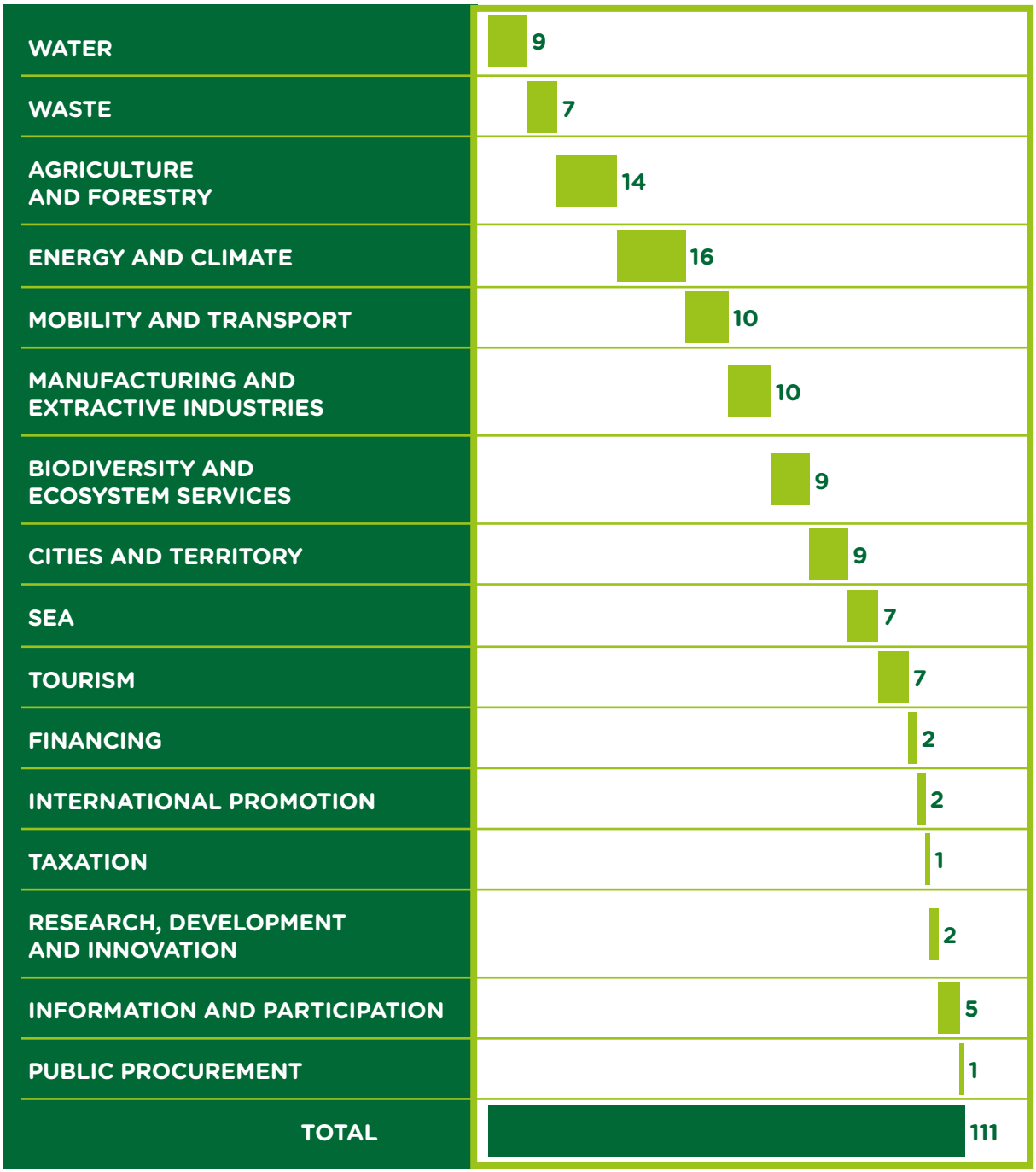
Figure 6: Pillars and Catalysts of Green Growth

PORTUGAL: GREEN TRANSITION

INTERVENTION AREAS

Within the total of 10 sectors and 6 catalysts, which require implementation in order to achieve the goals set out above, the GGC comprises 111 initiatives (Table 3).

Table 3: Sectoral and thematic initiatives



In addition to an introductory text, for each of the sectors and catalysts there is a table with the following: the thematic initiatives, respective performance indicators, context, the identification of the Focal Points (FPs) responsible for monitoring the development/implementation of the initiatives, as well as a brief cross-sector analysis of the initiatives.

3.1 Water

Water is essential to human life, the environment and the economy. It is a resource that is constantly being renewed as part of its natural cycle. It is not, however, an unlimited resource and cannot be produced or replaced by other resources. Pressure on the world's water resources has been growing, especially in the 20th century, as the population has risen, technology has developed and society's demands have increased. The threat of climate change in the 21st century has created new concerns and the extent of society's awareness of this problem has been achieved at the expense of the violent impact of increasingly frequent extreme weather phenomena. The pressure on water resources can be expected to increase, however, as scenarios point to a fall in the average availability of water.

Fresh water only accounts for approximately 2% of the planet's water, so competition for this resource may lead to a global water shortage, which it has been estimated may reach 40% by 2030.[xxxvi] These challenges must be addressed in order to preserve the basic resources for life, nature and the economy and to protect human health. We know of course that water environments vary considerably, and so there is no single solution.

The factors behind the negative impacts on water are interlinked and include: (1) climate change, (2) land use, (3) economic activities, such as energy generation, industry, agriculture and tourism, (4) urban development, (5) demographic growth, (6) deforestation and (7) forest fires and ecosystem degradation.

The ecological and chemical state of water in the EU is under threat from pollutant emissions, excessive water use (water stress) and morphological changes in bodies of water. The risk of water shortage has extended to more EU regions and the aquatic

ecosystems, on whose "services" societies depend, may become more vulnerable to extreme weather phenomena, such as floods and drought.

Water will only be a resource accessible to everyone if it is properly managed, taking into consideration the (eco)systemic functioning of natural resources. A society's efficiency in managing its water resources is regarded by many as a good indicator of its development.

The Water Framework Directive (WFD) sets out the basic principles of a sustainable water policy in the EU. Its aim is to preserve and improve the EU's aquatic environment. Integrated management of water resources is based on three essential principles: social equality to ensure equal access by all users to water in sufficient quantity and quality to sustain human well-being, economic efficiency to achieve maximum benefits for the greatest number possible with the available water and financial resources; and ecological sustainability, meaning that water systems must also be recognised as users and resources will be allocated in a way that sustains their function.

In Portugal, the Water Act transposed the WFD into national law and established a national framework for action in the field of water policy. It includes basic principles such as the polluter-pays and a cost-recovery approach that is designed to contribute to the sustainability of water as a resource and to economic efficiency in its use.

After receiving structural funds from the European Union, Portugal has focused considerably on water supply infrastructure and waste water treatment. Portugal has invested more than 10 billion euros over the past 20 years, with positive impacts on health, the environment, economic development and quality of life. Examples include the revamping and development of local economic activities, improvement of drinking and bathing water quality, waste recovery and protection of ecosystems.

The improvement in quality of life in Portugal is clear in the results achieved in terms of services coverage: A full 95% of the population is now served by water supply systems and around 80% by waste water treatment plants. Drinking water quality has been improving steadily and sustainably year after year. In 2012, 98.2% of tap water was safe to drink (monitored good quality water indicator), which represents a 50% increase in 20 years.[xxxvii] The quality of bathing water in Portugal is now higher

than the European average and constantly improving. About 300 beaches were awarded a Blue Flag in 2014.[xxxviii]

Today we are experiencing new challenges in terms of water resources and water management. Our water resources policy is currently focused on preparing the second generation of River Basin Management Plans (PGRH). In the case of international river basins, this exercise involves close liaison and coordination with Spain in the Bilateral Commission on the Luso-Spanish Hydrographic Basins.

The recently started reformulation of the National Water Plan sets out a strategic vision for management of water resources for the next 15 years. Greater importance is to be given to quantitative aspects of bodies of water and their influence on the ecosystem status of surface waters, adaptation to climate change, improvement in inter-sectoral governance, environmental measures for natural protection of bodies of water and the recovery of environmental liabilities.

Within a framework of extended planning and growth, it remains necessary to ensure true awareness of the status of national bodies of water supporting different uses and usages. This knowledge can only be guaranteed by a monitoring system based on requirements established by the WFD and the River Basin Management Plans to ensure the bodies of water are in good condition.

In addition to the need to improve the quantitative and qualitative monitoring of bodies of water, and to ensure the publication of this information, it is necessary to pay special attention to any extreme situations, such as floods, droughts and accidental pollution, and to establish preventive strategies and define mitigation measures and responses to cope with any natural or man-made disasters.

It is important in water resource governance to pursue innovative forms of user participation, namely via the institutional models intended for this purpose provided for in the Water Act and subsequent legislation, as in the case of user associations and bodies that are responsible for managing multi-purpose projects. Notwithstanding other possibilities, revenue obtained through the water tax should be used to encourage innovation and participation in water management.

On another level, 20 years after the infrastructure-building cycle, it is urgent to change the water supply and waste water treatment management paradigm. It is time to change the focus from infrastructure-building to efficient asset management by fostering reforms that contribute to social and territorial cohesion, environmental quality and the economic and financial sustainability of operations.

In spite of considerable efforts to extend the service to more and more people, structural and particularly operational, environmental, economic and financial challenges have yet to be resolved. These challenges have to be overcome in order to ensure that these essential public services continue to be provided reliably, universally and with quality to everyone today and in the future.

The diagnosis leaves little doubt. There is cumulative growth in tariff deficits in the multi-municipal water supply and waste water systems. Local authorities are in debt to multi-municipal systems. There are considerable asymmetries between coastal and inland areas in terms of tariffs charged. Not enough of the costs are recovered through tariffs, which jeopardises necessary investments. The utilities are fragmented and lack scale. An average of 40% of water is lost in distribution and a substantial amount of water is not billed.

A large number of reforms are required on the basis of this diagnosis, some of which are under way. They must foster economic and financial sustainability and make operations more efficient in these areas, in order to ensure the continuity, universality and quality of these essential public services and compliance with national and European environmental goals. The strategic lines for restructuring include the following aspects:

> **Guarantee the sector's sustainability** with tariffs that recover costs;

> **Reduce the cost of water and sanitation services** through gains obtained from economies of scale based on combining range and multi-municipal systems by merging water supply and waste water systems;

> **Ensure the sustainability of water resources** by reducing losses and renewing infrastructures, especially in downstream distribution.

The restructuring of the water sector is based on six main pillars:

> a **new strategic and action framework** specified through the PENSAAR2020[xxxix];

> **more independence and power for the regulatory authority** by setting out new statutes for the ERSAR, legislating on itemised invoices and introducing new tariff regulations for upstream systems;

> a **new financing model**, based on the new European funds provided for in the partnership agreement - Portugal 2020, aimed at territorial cohesion and the environmental, economic and financial sustainability of operations;

> reorganisation of both the territorial areas of the AdP Group and the multi-municipal systems **by merging systems in order to generate economies of scale and scope** and to promote balanced tariffs in extended regions while finding solutions to the problem of chronic tariff deficits;

> promotion of **more integrated strategies for managing upstream and downstream water supply and sewerage treatment services** as a way of maximising operational process synergies with significant benefits for consumers;

> **corporate reorganisation of the AdP Group**, by establishing shared services (e.g. accounting and finance, human resources, legal services, information systems, purchasing, engineering and innovation, sustainability and corporate responsibility, and communication) which will produce operational cost reductions.

Nine initiatives were identified in this sector.

Table 4: Water initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
WATER 1	Reduce pressures on water bodies by identifying those which affect their good condition and by giving priority to the implementation of economically sustainable measures to reduce them	» Reduce pressures on water bodies by identifying those which affect their good condition and by giving priority to the implementation of economically sustainable measures to reduce them » Reach 100% of water bodies with condition rated good or higher, in 2030	F: PO SEUR 2022/2023 target; PDR 2020 along with the PGRH 2015-2020; WFD and Water Act; PGRH 2015- 2020/ WFD and PNA FP: APA (Portuguese Environment Agency)	Agriculture and forestry; Waste; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; RD&I
WATER 2	Increase the water reuse rate, meeting economic, technical and environmental criteria	» Increase the water reuse rate	F: PGRH 2015-2020/WFD; PNUEA; PENSAAR 2020; Horizon 2020; European Innovation Partnership on Water (EIPWATER) FP: ERSAR	Waste; Agriculture and forestry; Manufacturing and extractive industries; Cities and territory; RD&I
WATER 3	Encourage the reduction of water losses in water adduction and distribution systems (predict the risk associated with leaks and intervene in terms of asset management)	» Reduce physical and commercial water losses » By 2020 reduce physical losses to less than 20% in the urban sector, 35% in the agricultural sector and 15% in the industrial sector » By 2030 reduce physical losses to less than 16% in the urban sector, 32% in the agricultural sector and 10% in the industrial sector	F: PENSAAR 2020 measures; PGRH 2015-2020/WFD; PDR 2020; PNUEA measures and targets FP: ERSAR	Agriculture and forestry; Cities and territory; R&D&I

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
WATER 4	Increase the operational efficiency of water supply and sanitation systems	» Reduce operating costs with regard to current Economic and Financial Feasibility Studies (EVEF) for multi-municipal water systems: 23% reduction by 2020 and 32% reduction by 2030 » Increase the infrastructure utilisation rate	F: PENSAAR 2020; PNUEA; PDR 2020 FP: ERSAR	Waste; Agriculture and forestry; Energy and climate; Cities and territory; RD&I
WATER 5	Develop tools to promote water efficiency such as "water certification" and water labelling	» Increase the number of certificates issued and number of products labelled	F: PNUEA; EU Ecolabel; PGRH 2015-2020/WFD; Roadmap for Eco-Innovation in Portugal FP: APA	Agriculture and forestry; Manufacturing and extractive industries; Tourism; Information and participation
WATER 6	Promoting the internationalisation of consortia with companies based in Portugal	» Growth rate of the amount of investment awarded to consortia (relative to 2012)	F: PENSAAR 2020 FP: SG MAOTE	Agriculture and forestry; Manufacturing and extractive industries; International promotion; RD&I
WATER 7	Enhance and consolidate the monitoring network for water resources in its various quantitative and qualitative aspects and ensure suitable dissemination of information	» Increase national resources dedicated to monitoring water resources » Meet EU requirements	F: PNA; PGRH 2015- 2020; WFD FP: APA	Agriculture and forestry; Energy and climate; Manufacturing and extractive industries; Cities and territory; Biodiversity and ecosystem services
WATER 8	Establish strategies to cope with natural and man-made risks and problems, particularly floods, droughts and accidental pollution	» Identify and map, by 2020, potential risks throughout the territory, particularly with regard to floods, droughts and accidental pollution » By 2020, define prevention, mitigation and response strategies	F: PGRH 2015-2020; Specific Water Management Plans; WFD; PDR 2020; Floods Directive; EC Recommendations on Droughts and Scarcity; FP: APA	Agriculture and forestry; Energy and climate; Manufacturing and extractive industries; Cities and territory; Biodiversity and ecosystem services

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
WATER 9	Continue to foster innovative and participative forms of water resource management, in particular based on user associations and the management of Multi-Purpose Enterprises	» By 2020, implement sample cases covering a variety of situations and types of users and undertakings	F: Water Act; User Associations (Decree-Law 348/2007); Multi-Purpose Enterprises (Decree-Law 311/2007) FP: APA	Agriculture and forestry; Energy and climate; Manufacturing and extractive industries

3.2 Waste

The waste sector is strategic to green growth in view of its high potential for contributing to the overall goal of a circular economy. The main goals of a circular economy include minimising use of virgin raw materials, reducing waste production, reprocessing waste produced in the same or a different production process to minimise losses and the recovery of waste that is unavoidably generated. The idea is to close the life cycle of materials and increase the productivity of resources.

An increase in demand for waste-related services and recycled products plus a shortage of natural resources and the resulting increase in prices of virgin raw materials has led to constant growth in the waste market sector.

Recycling has proved to be an important area in the creation of employment in the global market. The collection, sorting and processing of recyclable materials sustains ten times as many jobs as landfills or an incineration plant. Although high recycling rates can reduce job opportunities in the extraction of raw materials and related activities, the overall net balance seems to be positive. Studies have shown that an investment in waste collection will lead to a substantial increase in employment in the future.

The circular economy should not only be associated with reduction and waste recovery; it should also be seen as an economic lever associated with innovation and re-industrialisation, encouraging a rethink of product life-cycles and creating new employment opportunities and wealth.

Eco-design, the reuse of products and materials and the prevention of waste production also make a large contribution to higher resource productivity. Whenever material recovery is not possible, the waste must be treated according to a ranking of priorities in the least harmful way to the environment and human health in order to generate value. The creation and promotion of information banks on the waste produced that can support industrial symbiosis programmes are key to implementing the principles of the circular economy.

Increasing recycling rates and reintroducing the resulting products into the economy will reduce demand for virgin raw materials, contribute to the recovery of materials that would otherwise be wasted and reduce energy consumption and pollutant emissions from extraction and manufacture. This process involves developing and expanding new market opportunities to increase the recycling rate of industrial and urban waste and the recovery of almost all electrical and electronic waste, packaging, batteries and cells, end-of-life vehicles, used tyres, mineral oils and other specific waste flows.

According to the Portuguese State of Environment Report 2014 (PT-SoER), urban waste production in continental Portugal fell from 5.184 to 4.362 million tonnes between 2010 and 2013. The main choices in terms of UW management options were direct disposal in landfills (43% of waste produced), followed by incineration with energy recovery (22%), mechanical and biological treatment (MBT) (17%), organic recovery (2%) with the remainder sent for material recovery (9%) and mechanical treatment (MT) (7%). There has been a growing trend towards reducing the portion disposed of in landfills as a result of the operational start-up of planned MBT plants.

Green growth requires constant evolution in waste management. This involves preventing its production or reducing energy consumption in the management chain (from collection to recovery or disposal) and ensuring that treatment is carried out by the best available techniques in accordance with the waste hierarchy so that there is a trend towards less waste being sent to landfills.

Making waste sector management greener requires policy and regulation measures designed for its sustainable development. This may be helped by institutional agreements, funding and/or economic incentives. Although the legislative framework has progressed considerably in recent years in terms of scope and management solutions, the overall impact of its implementation is not yet fully known, as experience acquired in the management of certain waste flows differs substantially.

The urban waste sector was recently restructured, focusing on:

> **independence and autonomy of the regulatory authority;**

> **establishing new environmental targets**, such as those set out in the PERSU 2020[xl] (reduction of biodegradable urban waste sent to landfills from 63% to 35% of the total weight compared to the 1995 reference year, 50% preparation for reuse and recycling and selective collection take-backs of 47kg/inhabitant/year);

> **review of the tariff regulations**, moving from a cost-plus to a revenue-cap scheme (remuneration of regulated assets), which is a strong sign of a focus on efficiency and the limiting of costs eligible for tariff purposes. This means that tariffs will be 25% lower, on average, than forecast in the previous tariff model by 2020;

> **reinforcement of public service targets** established as the basis for concessions in the multi-municipal systems in terms of quality, accessibility and universality;

> **privatisation of the Empresa Geral de Fomento (EGF).**

Seven initiatives have been identified in this sector.

Table 5: Waste initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
WAS 1	Apply the Waste Management Tax (TGR) to encourage the reduction/ prevention of waste production, strengthen the disincentive to carry out waste disposal operations and encourage waste recovery, including co-processing, energy recovery and retrieval of materials for recycling	» Increase the proportion of revenue allocated to waste recovery projects » Broaden the range of beneficiaries » Reduce the proportion of waste sent to landfill or incineration	F: PERSU 2020; Green Tax Reform; Roadmap for Eco-Innovation in Portugal FP: APA	Energy and Climate; Manufacturing and extractive industries; Financing; Taxation
WAS 2	Encourage the use of waste in the manufacturing of new products	» Increase the proportion of waste subject to recovery which meets technical standards or specifications » Increase the amount of waste used as raw materials	F: PNGR; Roadmap for Eco-Innovation in Portugal FP: APA; DGAE	Energy and climate; Manufacturing and extractive industries; RD&I
WAS 3	Promote industrial partnerships involving waste and by-product transactions (including the waste market)	» Increase the proportion of waste introduced into manufacturing processes » Increase the proportion of by-products traded between industries	F: PNGR; Roadmap for Eco-Innovation in Portugal; ENEI FP: APA	Manufacturing and extractive industries
WAS 4	Stimulate the recycling and selective collection of urban waste (UW)	» Reach 47 kg/inhab/year for separate collection take-back » Increase the UW recycling rate » Phase out direct UW disposal in landfill	F: PNGR; PERSU 2020; Decree-Law No. 73/2011, of 17 June FP: APA	Energy and Climate; Cities and territory

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
WAS 5	Increase the operational efficiency of UW treatment systems	» Reduce system operating costs, safeguarding the waste hierarchy » Increase the infrastructure utilisation rate » Increase the amount of waste/ materials sold » Increase revenues generated from the sale of waste/materials » Reduce rejected quantities	F: PNGR; PERSU 2020 FP: APA; ERSAR	Energy and Climate; Cities and territory; RD&I
WAS 6	Promote the increase in WTP and WWTP sludge recovery by boosting and strengthening final destination diversification	» Increase the proportion of recovered sludge relative to the volumes produced	F: PENSAAR 2020 FP: APA; ERSAR	Agriculture and forestry; Energy and Climate; Manufacturing and extractive industries; RD&I
WAS 7	Dissemination of the "Get the economy circulating" project	» Number of companies subscribing to the campaign	F: PNGR; PERSU 2020 FP: APA	Water; Agriculture and forestry; Energy and climate; Manufacturing and extractive industries; Innovation, information and participation

3.3 Agriculture and Forestry

The country's vision for agriculture and rural development is set out in its Mainland Rural Development Programme 2014-2020 (PDR2020), which promotes sustainable growth of the agro-forestry sector and has three strategic goals:

- Growth of added value in the agro-forestry sector and in the economic return from agriculture;
- Efficient management of natural resource factors and protection: soil, water, air and biodiversity;
- Creation of the right conditions for ensuring economically and socially viable rural areas.

Efficient management and protection of natural resources: soil, water, air and biodiversity:

- Measures for the protection and redevelopment of forest stands;
- Support for sustainable growth of agriculture and forests and the conservation of natural resources through measures and initiatives connected to financial support for natural resource conservation, the climate, organic agriculture and the Natura 2000 Network;
- Support measures for agriculture in areas with natural or specific limitations;

The National Strategy for Forests (ENF), approved by Council of Ministers Resolution 114/2006 of 15 September, and updated by Council of Ministers Resolution 6-B/2015 of 4 February, is the reference document for both guidelines and public and private action plans for the development of the forestry sector. The ENF update reflects the changes in context that in the meantime have been verified particularly in relation to the development of the country's economic and financial situation and the

organisation of the various forestry sector stakeholders, together with new data on the situation of forests obtained via the fifth and sixth National Forest Inventories. The ENF assumes a new approach based on the sustainability of forest management, in accordance with internationally established criteria, adopted by Portugal through the pan-European process for sustainable continental forest management at the Ministerial Conference on the Protection of Forests in Europe (FOREST EUROPE) and the United Nations Forum on Forests (UNFF).

Around 70% of the country is occupied by agricultural land and forests. The utilised agricultural area (UAA) in Portugal is around 3.5 million hectares, 32.7% of which are occupied by arable land, 19.4% by permanent crops and almost half by meadows and permanent pasture. There were around 278,114 agricultural holdings in 2009. The average UAA per holding is 12.74 hectares, though the figure stands at 61.5 hectares in Alentejo. At the NUTS III level, the average varies from 1.95 hectares in Pinhal Interior and 65.7 hectares in Baixo Alentejo. Only 15% of the UAA can be irrigated. As regards structure, around 75% of continental holdings have less than 5 hectares and account for only 11% of the UAA. On the other hand, 7.3% of the holdings have over 20 hectares and account for 76.2% of the total UAA.[xli]

On average, each holding employs 1.2 annual work units (AWU) and 80% of labour is family-based. Labour on holdings represented 357,000 AWUs in 2011. Around 80% of work is unpaid. Employment in the agro-forestry sector represents around 13% of total employment in Portugal, of which agriculture is responsible for the largest share at 10.2% (average 2007-2011).

Agro-forestry activities are of considerable importance in international trade and currently account for 15% of the value of exports and 17% of imports. The weight of exports has shown very high growth rates over the last 10 years (annual average 2000-12: 6.3%) with special focus on agriculture and the food, beverages and tobacco industries (IABT), albeit with some loss of weight in GDP and employment).

Generally speaking, although the balance of trade in agro-forestry is still negative (even though the forestry component is positive), there have been significant improvements. Even so, it is one of the structural deficits in the Portuguese economy.

In terms of protected name products, fruit is one of the most important. Organic crops represented 6% of the UAA in 2011. As regards the structure of agricultural production, 52% of value is accounted for by plant production, especially fruit (17.3%), and 43% by livestock, particularly the dairy sector (11.4%). Gross value added from agro-forestry at current prices (2006 base) was 8.549 billion euros in 2010 and accounted for 5.6% of GDP.[xlii]

Portugal is self-sufficient in wine, vegetables, rice, eggs and milk. It produces a high quantity of olive oil, poultry, lamb and goat meat, but has a large deficit in terms of grain. The agro-food sector's self-sufficiency is nearly 85% (weight of production in apparent consumption), while forestry products and those of related industries enjoy a very sizable positive balance of trade.

Portugal's goals for the forestry sector are based on the attraction of capital in order to increase the country's production capacity and ensure the sustainable management of resources and multiple use of forested areas.

Forested areas, which include not only forest stands but also scrub land and spontaneous pasture, cover around six million hectares. Around three million hectares are forest (35% of the country's area), one of the highest forestation rates in the EU. Most Portuguese forest is privately owned (around 92%). The state only owns around 2% of forested land, with the remaining 6% belonging to local authorities and communities.[xliii]

Wildfires and growing infestations by pests and disease are some of the main obstacles to growth and sustainability in the forestry sector. These have serious effects on the state and vitality of stands and cause imbalances in the production structure and in the sustained supply of intangible goods and services. An average of 74,614 hectares of forest were destroyed by fire between 2003 and 2012 (2.5% of the total area). This figure stood at 30,771 hectares per year if we exclude the extreme, atypical numbers for 2003 and 2005. For this same period, the total area destroyed by fire was, on average, 142,582 hectares per year.[xliv]

In order to meet the goals in the National Plan for Forest Protection Against Fires (PNDFCI), it is essential to set up forest fire protection networks in rural areas. Important aspects are the management of fuels in corridors or mosaics and

preventative forestry management initiatives and awareness campaigns for specific target audiences. These structural prevention measures are complemented by surveillance and concerted firefighting at different planning levels.[xlv]

Each person's perception of forests is different and this diversity reflects their richness. For some people forests are a place for hunting or tourism, for others they are a source of honey, chestnuts and nuts, while for others they mean biodiversity, carbon sequestering, landscapes or a place for introspection. It is also important to understand the role of forests in the economy. Environmental activities and services are estimated to contribute around 1.3 billion euros to the Portuguese economy each year.[xlvi] The sector's added value has accounted for an average of 2.1% of the country's GDP since 2000. Also since 2000, the forestry sector has accounted for an average of 10% of Portuguese exports and an average positive trade balance of more than 1 billion euros. The figure in 2011 was very close to 2 billion euros. Finally, the sector is also responsible for around 100,000 jobs.

Forests also have non-productive functions, such as soil protection, protection and regulation of water resources, prevention against wind and water erosion, micro-climate protection and environmental protection and security, and structural functions, both in terms of the forest itself and of the land in general.

It is therefore important to remember that **the value of agricultural and forestry systems is measured not only by the wealth they generate but also by their social, ecological, cultural and sustainability functions and the role they play in social and territorial cohesion as a support for biodiversity and ecosystem services.** These activities are highly dependent on natural resources for production and also provide countless environmental benefits. Their potential for contributing to green growth is therefore very high.

Fourteen initiatives were identified in this sector.

Table 6: Agriculture and forestry Initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
AGF 1	Promote agri-environmental measures and streamline processes to allocate subsidies	» Increase the area under agri-environmental commitment, linked to measurable environmental performance, to 25% by 2020	F: PDR 2020 FP: GPP	Water; Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing; Taxation
AGF 2	Support holdings that comply with Good Agricultural and Environmental Conditions (GAEC)	» Increase the agricultural area that complies with GAEC by 10%	F: Conditionality – Regulation (EU) No. 1306/2013 FP: GPP	Water, Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing
AGF 3	Promote the diffusion and dissemination of information and knowledge, and of advisory services to farmers	» 25% of farmers with access to agricultural advice	F: PDR 2020 FP: DGADR	Water, Cities and Territory; RD&I; Information and participation
AGF 4	Support farms complying with the Greening measures, the environmental component of the direct payments in the first pillar of the Common Agricultural Policy (CAP 2014-2020)	» Area of farms complying with Greening measures	F: Direct payments to farmers – Regulation (EU) No. 1307/2013, of 17 December FP: GPP	Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing
AGF 5	Support investments in agriculture that promote higher levels of sustainability in the use of resources. (E.g. investment in efficient irrigation and in operations requiring improvements in the efficient use of water; make use of and improve production of non-irrigated land)	» Number of investments with an environmental component	F: PDR 2020; Roadmap for Eco-Innovation in Portugal FP: GPP	Water; Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
AGF 6	Support the development and structuring of new agro-forestry sector products, ensuring greater environmental added value	» Number of projects supported » Number of new products supported	F: National Strategy for Forests (ENF); Roadmap for Eco-Innovation in Portugal FP: ICNF	Energy and climate; Manufacturing and extractive industries; RD&I
AGF 7	Support agricultural and forestry activities carried out in areas classified under the Birds and Habitats Directives, through the Natura Payment	» Number of farms benefiting from the Natura Payment/ number of agricultural or forestry holdings in classified areas (to reach 25% by 2020)	F: PDR 2020; EU Biodiversity Strategy 2020 - COM (2011) 244 final FP: GPP	Biodiversity and ecosystem services; Financing
AGF 8	Reduce the risk of deterioration in the quality of agricultural and forestry land	» Reduction in the agricultural and forestry soil area at risk of degradation	F: National Action Programme to Combat Desertification (PANCD) FP: ICNF	Water; Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; Tourism
AGF 9	Promote the certification of sustainable forest management by supporting the adaptation of farms and enterprises to environmental, safety and risk prevention requirements	» By 2020: 500,000 hectares of certified forest area » By 2030: 1,000,000 hectares of certified forest area	F: PDR 2020; ENF; Roadmap for Eco-Innovation in Portugal FP: ICNF	Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Information and participation

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
AGF 10	Streamline ZIF - Forestry Intervention Areas	» Increase of 20% in the number of ZIF members by 2020 » Increase of 30% in the ZIF forest intervention area by 2020	F: National Strategy for Forests (ENF) FP: ICNF	Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory
AGF 11	Increase the economic contribution of fishing, grazing, hunting, bee-keeping, cultivation of mushrooms and other non-timber products in forestry holdings	» Number of projects supported by 2020: 200 » 10% of forestry holdings/ ZIF in 2020 and 20% in 2030 making more than one original product for commercial/economic exploitation	F: National Strategy for Forests (ENF); PDR 2020 FP: ICNF	Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; RD&I
AGF 12	Improve forestry management and productivity of forest areas	» 20% increase in the area subject to Forest Management Plans (PGF) between 2014 and 2020 » Area of forestry stands subject to productive improvements (100,000 ha)	F: National Strategy for Forests (ENF) FP: ICNF	Energy and climate; Biodiversity and ecosystem services; Cities and Territory; RD&I
AGF 13	Promote the use of forestry products with low carbon footprints (e.g. through green public procurement)	» 50% increase in the volume of wood and other certified forestry products traded on the market between 2010 and 2020	F: National Strategy for Forests (ENF) FP: ICNF; ESPAP	Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Public contracts
AGF 14	Promote organic agricultural production	» Increase the size of the utilized agricultural area (UAA) used to produce organic products » Increase the number of farms converted to organic production methods	F: PDR 2020; Regulation (EU) No. 1305/2013, of the Council and the European Parliament; Regulations (EC) No. 834/2007 and No. 889/2008, respectively of the Council and the Commission; Decree-Law No. 37/2013, of 13 March FP: DGADR	Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory

3.4 Energy and Climate

Critical decisions are currently being made about the future of European energy policy and the global climate framework. Portugal must not only include these factors in its decision processes but must also be particularly active in influencing and even leading some of these discussions.

Of note is the political, scientific and technical conviction that climate change is a reality and that it has and will continue to have an impact on our society, economy and ecosystems, and should for that reason be considered a national priority. A growing number of scientific studies and international institutions have shown that the global climate system is changing and predict that Portugal and the Mediterranean will be seriously affected. Adaptation to this reality it is, therefore, very important.

A number of decisions on a **climate and energy package for 2030** have recently been taken at the European level, and it is in this context that, in addition to the greenhouse gas emissions reduction goals and the promotion of renewable energy and energy efficiency, **Portugal proposed a minimum target for gas and electricity interconnections in all EU countries**. Europe is also discussing ways of improving energy security, which has been seriously threatened by tensions on a number of geographic and economic fronts.

At a global level, the 2015 Paris Summit is expected to complete negotiations on a **global climate framework to replace the Kyoto Protocol.** At the same time, the EU and United States of America are negotiating the **Transatlantic Trade and Investment Partnership (TTIP),** with strong implications for the energy market.

This is therefore a decisive moment for defining a national energy and climate policy that both consolidates the structural reforms approved during the PAEF and sets new strategic objectives.

Although Portugal's **dependency on imported energy remains too high, it is at its lowest level of the last 20 years, having fallen to** 73.9% today after reaching 89% in 2005. The energy intensity of the economy decreased by around 17% between 2005 and 2013.

The commitment to renewable energy has achieved remarkable results. In 2013, renewable energy generation accounted for 29.2% of final energy consumption and 61% of electricity production in 2014. We are therefore well-placed to achieve the ambitious target of 31% renewables in 2020 and to exceed 60% of renewables in final electricity consumption. Between 2011 and 2014, licences for 2,757 MW of new renewable power were issued, bringing the total for installed generating capacity to 11.6 GW.

Greenhouse gas emissions peaked in Portugal in 2005, after which they registered a significant decrease, falling –22% by 2012. Since then, the national economy has consolidated its trend towards decarbonisation. Having met the Kyoto Protocol targets for 2012, Portugal is well placed to reach its CO_2 reduction goals for 2020. In 2014, Portugal was considered **the world's fourth-best country in terms of climate policy (CCPI 2015)**.[xlvii] This is largely due to the decision not to use the economic and financial crisis to slow down the commitment to renewable energy. Indeed, Portugal actually showed it was possible to reconcile environmental ambition with a reduction in excessive energy tariffs.

The government implemented two packages (March and September 2013) to reduce excessive tariffs in the electricity sector. These packages resulted in a cost reduction of 3.4 billion euros in the sector and involved cuts in cogeneration, wind power, costs for the maintenance of contractual equilibrium (CMEC), power purchase agreements, mini-hydroelectric power stations, water terrain payments, distortions in the system services market and coal-fired power stations. These cuts of 3.4 billion euros have allowed for a very significant reduction in tariff debt by 2020 (the current debt is more than 4.4 billion euros, but will fall to 600 million euros - 1 billion euros by 2020, as opposed to almost 5 billion euros), guaranteeing that the average tariff increases up to 2020 will be limited to between 1.5% and 2% above inflation. Without cuts in the tariffs, the rates would have increased by over 10% in the last three years.

Furthermore, in 2014 and 2015, the government levied an extra tax on the energy sector that is expected to raise 150 million euros, and made sure that this contribution could not be passed on to consumers.

Taking into account that the two previous packages already ensured the sustainability of the energy sector and the elimination of the tariff debt by 2020, the government decided that the third package of measures for the energy sector, agreed with the

troika in April 2013, ought to achieve other results, with a focus on social issues and business competitiveness, while introducing cuts across the whole energy sector and not just electricity. The four most important initiatives in this third package are: i) the setting of a benchmark for propane and butane bottled gas; ii) the extension of the "social tariff" from 60,000 to 500,000 households (i.e. 1.5 million people), reducing electricity bills by 34% (and not 20%); iii) the extending of the energy sector surtax to an amount equivalent to the economic value of long-term contracts (take or pay) to purchase, import and supply gas from Algeria and Nigeria, which may represent, over a period of three years, a reduction in natural gas prices of between 3% and 5%; and iv) the inclusion of low cost fuels at petrol stations.

In this context it is important to aspire to increase our **energy independence and continue to pursue the goal of decarbonising energy consumption and production and improving the competitiveness of our companies.**

There are **six challenges** which, having been undertaken in a context of demanding structural reforms, must have an implementation time line that exceeds the current legislature:

First, making energy efficiency the main priority of national energy policy. To do this, we must reach the goal of reducing energy consumption by 25% by 2020 (30% in the public administration). There are four strategic factors for achieving this change in behaviour on the demand side: i) revitalising energy service companies (ESE); ii) conceptually and operationally integrating energy efficiency and water efficiency, as both reflect decisive aspirations and depend on synergy in constructive solutions and efficient use in the new circular economy paradigm; iii) allocating around 400 million euros from new EU funds to this priority; iv) accepting green taxation as a means of changing behaviour so that green production equates to competitiveness and green consumption to savings.

Second, strengthening the competitiveness of the economy and consumer purchasing power by implementing cost reduction policies in the electricity, natural gas and fuel sectors at the levels of production, transport, distribution and commercialisation, contributing to a reduction in the tariff deficit, increase in business competitiveness and reduction in domestic consumer expenditure, with a focus on social issues to ensure access to energy services for low-income families, in particular.

Third, taking the opportunity, through the increase in electricity interconnection in the European climate and energy framework for 2030, **to position Portugal as a supplier of renewable energy to the EU.** In other words, interconnections would have the benefit of allowing a number of European countries to meet their increasingly ambitious national goals for renewable energy and greenhouse gas emissions by importing from countries with more resources, thereby reducing the total cost of European decarbonisation, enhancing the harmonisation of the European electricity market and attracting projects, investment and employment to the exporting countries. On the other hand, the commitment to interconnect with other markets, such as North Africa, will expand exports of electricity to the European market to markets where the demand for electricity is still growing strongly. These are also markets highly dependent on fossil fuels in which there are problems of energy security and supply and where energy is more expensive. This is a change in paradigm for Portugal: from a good user to an exporter of renewables.

Fourth, the the Iberian Peninsula should take advantage of the current energy security crisis in the EU, particularly regarding gas, to position the seven LNG terminals in Portugal and Spain as strategic hubs for supplying gas to the EU, thereby drastically reducing gas imports from Russia. The current seven terminals, with the strengthening of energy interconnections, particularly between Spain and France, could replace 40% of European gas imports from Russia. The **Sines terminal alone could replace 7% of Russian gas imports.**

Fifth, making a commitment to a cost-efficient and structural (therefore not charitable or merely symbolic) investment in electric mobility, on the one hand creating the conditions to increase the use of this option (reducing the use of fossil fuels) and, on the other, establishing an industrial cluster in this field. Considering the way it has been implemented so far, this investment depends on a broad vision that includes: i) reviewing the electric mobility charging model and introducing more competition in the public charging-point network, favouring charging at home and at the workplace; ii) mitigating the price disadvantages of electric vehicles and plug-in hybrids compared to conventional vehicles via a reform of green taxation; and iii) introducing an electric mobility programme in the public administration, with 1,200 new vehicles by 2020.

In sixth place, encouraging self-generation as an efficient means of promoting renewable energy (particularly solar energy), reducing the need to invest in grids

and reducing the losses associated with them. To achieve this, procedures have been simplified and projects oriented towards individual use (and not, as before, mainly for sale to the grid at highly favourable prices), allowing surpluses to be supplied to the grid at market prices with degradation. This investment will stimulate those SMEs with expertise in the area and promote renewable energy and energy efficiency while having no effect on the sustainability (i.e. tariff deficit) of the electricity sector.

In terms of climate, Portugal has prioritised the review, update and consolidation of its political instruments for 2020-2030. Portugal is preparing a second generation of policy instruments supported by the Strategic Framework for Climate Policy (QEPiC), which includes the National Climate Change Progamme (PNAC) 2020/2030 and the second phase of the National Strategy for Adaptation to Climate Change (ENAAC 2020). In this context, it is worth noting that at least 20% of funding under Portugal 2020 shall be channelled to achieve climate and energy goals. In particular, the recently launched Operational Programme - Sustainability and Efficiency in the Use of Resources (PO SEUR)[xlviii] adopts a direct response to the challenges of climate action, in particular in Axis 1 – Transition to a Low-Carbon Economy and Axis 2 – Adapting to Climate Change, with a combined budget of more than 1 billion euros until 2020.

A total of seven additional challenges were identified in this particular area:

> Ensuring a sustainable trajectory for reducing greenhouse gas emissions in order to achieve a target of -18% to -23% in 2020 and -30% to -40% in 2030, when compared to 2005, ensuring compliance with national mitigation commitments and bringing Portugal into line with European objectives. This trajectory is consistent with promoting the transition to a low-carbon economy, generating more wealth and employment and contributing to green growth;

> Confirming the EU Emissions Trading System (EU ETS) as the main instrument of European climate policy for 2030. For this it is essential to make a structural reform of the system, including the entry into force of the market stability reserve, in order to ensure a stable investment environment to allow for the development of sustainable low carbon technologies.

Ensuring the proper operation of the carbon market is an essential element both in decarbonising the electricity sector at the EU level and for achieving 2030 climate and energy package goals;

- Promoting the use of carbon and connecting markets as privileged tools for achieving efficient and cost-effective emission reductions at EU and international levels. At EU level, promoting initiatives aimed at exploring flexibility options to ensure compliance by Member States and businesses with the EU ETS, within defined limits, with the aim of maximizing the countries potential for cost-effective reduction;

- Promoting the integration of land use, land-use change and forestry (LULUCF) in EU and national goals, with Portugal remaining active in discussions on this matter in order to ensure the sector's potential is recognised and promoted at national and EU levels (the great potential of forestry and other sources of production, such as biodiverse pastures or carob orchards);

- Actively promoting the adoption of carbon taxation schemes in sectors not covered by the EU ETS, indexed to the price of carbon permits in the EU ETS, which aim to achieve more effective consumption decisions and to promote a low-carbon economy that is inclusive, competitive and innovative, and which will be more efficient in the use of resources, particularly energy. The recent introduction in Portugal of a carbon tax, as part of the green taxation reform, is worthy of note;

- Promoting the integration of climate change adaptation, particularly in territorial management instruments at the local level, and in accordance with the recent revision of the Legal Regime for Territorial Management Instruments. A pilot scheme involving 26 municipalities as part of the AdaPT programme seeks to enable municipalities to adapt and test solutions for

integration at the Municipal Master Plan level. Their efforts should be used to extend this adaptation nationwide;

> Ensuring incorporation of climate policy goals, both in terms of adaptation and mitigation, in the relevant sectoral policies. It is important, given the wide-ranging nature of climate policy, to inform policy-makers and ensure the ability of public bodies to support decision-making, so that climate policy goals can be independently integrated into the various public policies and instruments and spatial planning and management practices.

A total of 16 initiatives have been identified in this sector.

Table 7: Energy and Climate Initiatives

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
EC 1	Promote efficiency by extending the scope of the Intensive Energy Consumption Management System (SGCIE)	» Increase in the number of enterprises covered by the rules of the SGCIE » Percentage reduction in energy consumption after integration in the SGCIE	F: PNAEE 2016; PNAER 2020; SGCIE; Roadmap for Eco-Innovation in Portugal FP: DGEG	Agriculture and forestry; Manufacturing and extractive industries; Cities and territory
EC 2	Promote energy efficiency in the public administration (PA) (including public lighting, buildings and vehicle fleets), through technological measures and systems management	» Reduction of energy consumption of street lighting » Reduction of energy consumption in the PA (30% by 2020 and 35% by 2030) » Introduction of around 1200 electric vehicles in the PA by 2020 » Introduction of fleet management systems and car pooling and car sharing initiatives in the PA	F: PNAEE 2016; PNAER 2020; ECO.AP Programme; ECO.mob; Roadmap for Eco-Innovation in Portugal; MAOTE Initiative-MEF FP: DGEG	Mobility and Transport; Cities and territory; R&D&I
EC 3	Improve energy efficiency in buildings	» Reduction of energy consumption in buildings (25% by 2020 and by 30% 2030) » Increase in the proportion of renovated buildings with energy certification	F: PNAEE 2016; PNAER 2020; System of Energy Certification of Buildings (SCE); Roadmap for Eco-Innovation in Portugal; MAOTE Initiative FP: DGEG	Manufacturing and extractive industries; Cities and territory; R&D&I

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
EC 4	Increase low-impact renewable energy production, by promoting the use of cost-efficient technologies that foster competitiveness	» Renewable production in gross final energy consumption (31% by 2020 and 40% by 2030) » Reduction in the price of renewable energy	F: PNAER 2020; PNAEE 2016; MAOTE Initiative; Roadmap for Eco-Innovation in Portugal FP: DGEG	Manufacturing and extractive industries; Cities and territory; R&D&I
EC 5	Promote self-generation of energy, avoiding additional costs for the national electricity system (SEN)	» Goal: 300 MW by 2020 » Reduction of the kW cost of installed self-generation capacity	F: PNAER 2020; PNAEE 2016; MAOTE Initiative; Decree-Law No. 153/2014, of 20 October, concerning Distributed Generation; Roadmap for Eco-Innovation in Portugal FP: DGEG	Agriculture and forestry; Manufacturing and extractive industries; Cities and territory; R&D&I
EC 6	Boost investment in R&D&I in the fields of energy, climate change mitigation and adaptation	» Increase in the number of patent applications in the field of energy » Increase in the number of patents granted in the field of energy » Increase in the percentage of R&D&I investment in the field of energy	F: Horizon 2020, 2020 Portugal; MAOTE Initiative; Roadmap for Eco-Innovation in Portugal FP: DGEG	Water; Waste; Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Cities and territory; Sea; R&D&I
EC 7	Promote the installation of economically-viable smart meters	» Increase in the number of smart meters installed as a percentage of all existing meters	F: PNAEE 2016; Directive 2012/27/EU; Directive 2009/72/EC and Directive 2009/73/EC; Roadmap for Eco-Innovation in Portugal FP: DGEG	Manufacturing and extractive industries; Cities and territory

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
EC 8	Implement the European commitment to electric power interconnections	» Targets for electrical energy interconnections with Europe: (10% by 2020 and 15% by 2030)	F: Energy and climate change package; MAOTE Initiative FP: DGEG	Cities and territory; International promotion
EC 9	Promote projects to export renewable energy to meet European third-country targets	» Number of statistical transfer agreements for renewable energy » Increase annual energy exported through agreements for the statistical transfer of renewable energy (MWh)	F: Energy and climate change package; MAOTE Initiative; Directive 2009/28/EC and Decree-Law No. 39/2013, of 18 March FP: DGEG	Cities and territory; International promotion
EC 10	Establish, in the European context, the goal for natural gas interconnections, positioning Portugal as a gateway for liquefied natural gas (LNG) in Europe	» Third gas interconnection between Portugal and Spain after confirmation of: interconnection in the Pyrenees; EU funding » 25% of interconnections by 2030, which, in the Iberian Peninsula, will replace 50 billion m^3 of annual European imports of natural gas from Russia	F: Energy and climate change package; MAOTE Initiative FP: DGEG	Mobility and transport; Cities and Territory; Sea; International promotion
EC 11	Implementation of the National Climate Change Progamme (PNAC)	» Reduction of GHG emissions by between 18% (72.0 Mt CO_2 eq.) and 23% (68.0 Mt CO_2 eq.) by 2020 vs 2005 (2005 amount = 87.8 Mt CO_2 eq.) » Reduction of GHG emissions by between 30% (61.5 Mt CO_2 eq.) and 40% (52.7 Mt CO_2 eq.) by 2030 vs 2005 (2005 amount = 87.8 Mt CO_2 eq.), contingent upon the results of European negotiations	F: Strategic Framework for Climate Policy FP: APA	Water; Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; Tourism; Financing; R&D&I

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
EC 12	Integrate adaptation into Territorial Management Instruments	» Number of municipalities with a revised municipal master plan incorporating climate change adaptation	F: Strategic Framework for Climate Policy (QEPiC); ENAAC – National Strategy for Adaptation to Climate Change (second phase) FP: APA, as coordinator of ENAAC; DGT; ANMP	Water; Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; Tourism; Financing; Information and participation
EC 13	Encourage reform of the EU ETS, within the European context, including the early entry into operation of the market stability reserve	» Entry into operation of the stability reserve	F: European Target: 40% GHG emissions reduction by 2030, compared to emissions in 1990 FP: APA	Waste; Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; Financing; International promotion; R&D&I; Information and participation
EC 14	Defend, within the European context, the promotion of domestic projects aimed at achieving cost-effective emission reductions as a new flexibility mechanism for EU ETS and non-EU ETS, within defined limits	» Adoption, at the European level, of a flexibility mechanism relating to domestic projects	F: European Target: 40% GHG emissions reduction by 2030, compared to emissions in 1990 FP: APA	Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing; International promotion; Taxation; R&D&I
EC 15	Encourage the adoption of carbon rates indexed to the prices of EU ETS licences at Community level	» European Commission recommendation for the adoption of carbon rates indexed to the prices of EU ETS licences in non EU ETS sectors as part of low carbon policies and measures	F: MAOTE Initiative; Green Taxation Reform FP: APA	Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Financing; International promotion; Taxation; R&D&I

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
EC 16	Promote the inclusion of the - land use, land-use change and forestry (LULUCF) sector in European missions reduction targets	» Inclusion of the LULUCF sector in European emission reduction targets	F: European Target: 40% GHG emissions reduction by 2030, compared to emissions in 1990 FP: APA	Agriculture and forestry; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Cities and territory; Financing; International promotion

3.5 Mobility and Transport

The macroeconomic importance of this sector is immediately obvious from its GDP weighting, which is between 6% and 12% in most developed countries.[xlix]

Transport in Portugal **accounts for 36% of final energy consumption.** Road transport accounts for almost all of this (95% of the sector's consumption). Furthermore, land transport accounts for **73% of total oil for energy purposes. This demonstrates the sector's high-energy dependency and exposure to variations in international fuel market prices.**[xlvii]

The transport sector has a highly significant impact in terms of noise and air pollutant emissions, especially in urban settings.

The sector was responsible for around 41% of the country's total nitrogen oxides (NO_x) emissions and about 6% of suspended particulate matter emissions (PM_{10} and $PM_{2.5}$)[xlviii] in 2012. The transport sector was responsible for about 25% of total national greenhouse gas emissions.[xlix]

The pressures on air quality from the transport sector are a very important factor that must be dealt with, as Portugal's large cities have failed to meet the goals set for these two pollutants, with substantial impacts on public health. The failure to do

so is mainly due to road traffic, so measures applicable to the transport sector in an urban environment are particularly important in terms of air quality and the joint benefits associated with noise and climate change.

There is therefore an important need to find an alternative to the use of individual transport in urban areas. Greater use of **public transport and better-functioning transport networks** are increasingly essential, in addition to soft mobility.

The Strategic Plan for Transport and Infrastructure (PETI3+) therefore prioritises the need to ensure mobility and accessibility for people and goods in an efficient manner that is suited to their needs, thereby fostering social cohesion. To this end, the PETI3+ has set aside 6.067 billion euros for investment in priority transport projects for 2014-2020, including rail (2.639 billion euros), ports (1.534 billion euros) and public transport (755 million euros).

The PETI3+ also establishes the Portugal Door-to-Door programme, which aims to meet the population's basic needs for mobility in an efficient manner that is appropriate to demand, guaranteeing minimum levels of public passenger transport service throughout the country, including in areas of low population density.

The introduction of the legal regime for public passenger transport will bring about an effective decentralisation of power in the organisation of local and regional transport, which is expected to significantly improve the levels of quality and service in the provision of public transport by strengthening planning and organisation responsibilities and creating the conditions for regulated competition in this sector, with concessions being awarded via public tenders. An example of this is the call for tenders to operate the public passenger transport services in Lisbon and Porto, which among other things calls for a renewal of the bus fleets in these cities, to bring them into line with best international practice.

In addition to public transport and soft mobility, it is necessary to find more efficient vehicles which use more environmentally friendly fuels. Two solutions which stand out are the conversion of vehicles to natural gas and, in particular, electric mobility. In a country like Portugal with a very high level of renewable energy, the use of electricity for mobility allows fossil fuels to be replaced by water, wind and sun, significantly reducing both environmental impacts and the country's energy dependency.

The commitment to invest in electric mobility cannot be made from a charitable or merely symbolic perspective. It is crucial to develop a series of initiatives that overcome logistical, economic and even cultural constraints that have stood in the way of this option. Something therefore needs to be done with regard to the recharging model. We must promote competition in the public mobility network and favour recharging at home and in the workplace by means of a green tax reform to reduce the costs of electric vehicles and plug-in hybrids. We must encourage the use of electric vehicles in the public administration so that it can lead by example.

Electric vehicles are especially important in urban environments. **Natural gas is more suited to heavy vehicles.** We therefore have two complementary options.

According to the targets of the PETI3+s, there must be a minimum 40% increase in goods carried by rail (tkm) by 2020. To encourage the transfer of freight onto the rail network, it is essential for medium- and long-term planning to include the development of a modern railway system that is in line with European mobility policies and in agreement with European Rail Traffic Management System (ERTMS) standards. The system should be planned as a network for passengers and freight that connects the main hubs: cities, ports, airports and logistic platforms.

A total of 10 initiatives have been identified in this sector.

Table 8: Mobility and Transport Initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
MTR 1	Create the conditions for the transfer of passengers from individual transport to public transport, particularly in metropolitan areas (e.g. by improving public transport and implementing measures which deter individual car use)	» Increase by 15% the pkm transported on public transport passenger services: +15% (horizon 2014-2020) » Reduce pollutant emissions: GHG, CO, VOC, NOx and particulate matter » Improve urban air quality » Measures implemented to deter individual vehicle use	F: PETI3+; Green Tax Reform; PNAEE 2016; Air Quality Plans; Roadmap for Eco-Innovation in Portugal FP: IMT	Energy and climate; Cities and Territory; Tourism; Information and participation

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
MTR 2	Encourage the transfer of passengers and goods onto rail	» Increase the percentage of passengers (% pkm) and goods (% tkm) transported by rail » Reduce the sector energy intensity (tep/pkm and tep/tkm)	F: PETI3+; EFICE FP: IMT	Energy and climate; Manufacturing and extractive industries; Sea
MTR 3	Promote electrical mobility by extending the public network and making it more competitive, favouring charging methods both in private places (at home and in the workplace) and in publicly accessible private places (e.g. shopping centres)	» Increase the proportion of electric vehicles in the vehicle fleet » Increase the number of (fast and slow) charging stations » 1,200 electric vehicles in the renewed PA fleet by 2020, in the context of shared fleet management » Reduce the charging time » Improve urban air quality	F: PNAER 2020; PNAEE 2016; MAOTE-MF initiatives on Sustainable Mobility (PA and Green Taxation reform) FP: DGEG	Energy and climate; Manufacturing and extractive industries; Cities and Territory; RD&I
MTR 4	Develop mobility plans at the public administration level and for enterprises	» Increase the number of mobility plans for enterprises » Increase the number of PA mobility plans	F: PNAEE 2016; Roadmap for Eco-Innovation in Portugal FP: IMT	Cities and Territory
MTR 5	Encourage the use of vehicles powered by cleaner fuels	» Reduce the sector emissions » Reduce the sector energy intensity (tep/pkm) » Increase the proportion of vehicles powered by cleaner fuels	F: PNAEE 2016; PNAER 2020; Regulation to Manage Energy Consumption (RGCE) - Transport; MAOTE Initiative FP: DGEG	Energy and climate; Manufacturing and extractive industries; Cities and Territory; RD&I
MTR 6	Promote the use of second and third generation biofuels	» Incorporation of 10% of renewable energies in the sector » Increase the percentage of incorporation of second and third generation biofuels	F: PNAER 2020 FP: DGEG	Agriculture and forestry; Energy and climate; Manufacturing and extractive industries

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
MTR 7	Promote the development of a network of clean fuel filling stations	» Increase the number of licensed stations	F: PNAEE 2016; PNAER 2020 FP: DGEG	Energy and climate; Manufacturing and extractive industries; Cities and Territory; Information and participation
MTR 8	Disseminate information on urban mobility options	» Increase the number of information campaigns » Increase the number of people reached through information campaigns	F: PNAEE 2016; PETI3+; Roadmap for Eco-Innovation in Portugal FP: IMT	Energy and climate; Cities and Territory; Information and participation
MTR 9	Promote cycling as an efficient means of urban mobility and through "combined mobility", linking in particular to forms of public transport.	» Increase the role of bicycles in urban journeys » Increase the number of dedicated places/spaces » Extend the types of transport and entities covered » Increase the number of transport interfaces with parking spaces for bicycles	F: ME Initiative FP: IMT	Energy and climate; Cities and Territory
MTR 10	Promote intermodal transport by creating/using car parks on the periphery for free or at reduced prices for those with a public transport ticket as a way of discouraging use of private transport	» Increase the number of car parks on the periphery in line with this initiative » Increase the number of users of this service	F: Plans and programmes for the improvement of air quality in the LVT region FP: IMT	Energy and climate; Cities and Territory

3.6 Manufacturing and Extractive Industries

Manufacturing Industry

The manufacturing sector plays a crucial role in supporting a resilient economy and can contribute to green growth essentially by fostering cleaner production and sustainable product design which contribute to a more efficient use of natural resources and to the reduction of the negative effects associated with waste. In this context, it is particularly important to **promote the closing of material cycles, the adoption of life-cycle approaches and the efficient use of both material and energy resources.**[liii, liv]

According to the INE's Industrial Production Statistics (2012) and the results of the Annual Industrial Production Survey in 2011, sales of products and services in the manufacturing industries totalled 70.55 billion euros, 10% more (+ 6.418 billion euros) than the previous year. The sales value of products increased by 10.3%, while that of services rose only 2.3%, now representing 3.7% of the total value of sales and services of the manufacturing industry, or 0.3 percentage points down on 2010.

The manufacturing industry has countless opportunities to influence the transition to green growth. For example:

- Ecological product design (development of new products or optimisation of existing ones), which in particular will prevent the waste of materials and energy during the manufacturing process, namely by incorporating less raw material in the product's composition or by incorporating recycled materials and requiring less energy during processing. Eco-design will prolong the useful life of products, minimise end-of-life waste production and facilitate recycling;
- Changes in flows of goods by ensuring the use of more ecological transport systems namely by choosing rail rather than road;
- The increasing use of alternative fuels in the energy mix of manufacturing industries, contributing to the sector's sustainability by fostering energy efficiency and renewable energy, for example.

Extractive Industry

The World Economic Forum identified population growth, increasing urbanisation and industrialisation and the challenge of meeting global demand for some commodities as predetermined factors with high impact on the global mining sector up to 2030. Population growth and the trend towards rising urbanisation and industrialisation, especially in emerging economies, has caused a substantial increase in demand for commodities in the mining and metal markets.[lv]

Portugal is normally considered to be a country with few resources. However, a detailed analysis shows that a number of resources are being under-exploited or exploited in an unsustainable manner.

Geological resources (minerals, ornamental stone, inerts, geothermal energy generation, natural mineral water and spring water) are unequally divided and assume varying importance in regional economies.[lvi] All together, the exploitation of industrial mineral resources for construction and non-ferrous metals generated more than 830 million euros in 2012 and was responsible for around 9,300 direct jobs in 525 companies and 859 million euros in exports.[lvii]

The National Strategy for Geological Resources - Mineral Resources (ENRG-RM)[lviii] stresses the importance of environmentally sustainable use of our geological and mineral resources. In this paradoxical situation in which we find ourselves (high potential and insufficient exploitation), special attention must be devoted to metals. Only three mining concessions are currently in operation. Their economic weight is 0.3% of GDP and they provide 5,000 jobs. Not only can we estimate a **national potential in metal resources of up to 1% of GDP and 25,000 jobs**[lix] **but it is also particularly significant in terms of critical minerals** (tungsten, antimony and tantalum), very important minerals (iron and manganese) and important minerals (copper and quartz). There is also highly significant vitality in the sector. More than 130 prospecting and research contracts and exploration concessions have been awarded. Of these, the most significant are the hydrocarbon prospecting and research contracts and, **for the first time in more than 30 years, a concession for a new mine, Semblana, was signed.**

The promotion of mining, providing it is properly structured to preserve the environment and heritage, offers an opportunity for growth, employment and territorial cohesion, and helps combat population loss in the interior. However, this potential can only be tapped if structural reforms to overcome obstacles are carried out. With the exception of Semblana, (which will come into operation in 2017/18), there have been no new mining operations for more than 30 years. In accordance with the National Strategy for Geological Resources. the Basic Law on Geological Resources and the Mining Promotion Programme, **it is essential to take action in the following areas:**

> Better **coordination of policies on the environment, culture, spatial planning, energy and geology.** Applications for prospecting and research, operation and trial operation rights requested from the competent authorities must be previously submitted to municipalities and the competent authorities for environmental conservation, territorial management and nature conservation. Investors are therefore aware from the beginning of any contingencies affecting their operations, permitting the informed management of their investment. Development of a sectoral plan for mineral resources has also been scheduled.

> **Greater** mapping, knowledge and research activities on mineral resources. If you do not have a deep understanding of something, it is impossible to exploit or take maximum advantage of it.

> Promotion, internationalisation and attraction of private and foreign investment in the sector. A **One-Stop Mining Shop** will be set up to support and assist investors and publicise Portugal's mining potential.

> Revision of contract models and division of expenses and benefits between the state and private companies by creating a **new licensing phase in the procedure - the optional prior assessment phase -** to enable investors to perform studies of existing resources for a maximum of one year with no need for costly investments, giving the holder of the assessment rights priority in the granting of prospecting and exploration rights.

The resources that have not yet been fully exploited include oil and gas, although prospecting and exploration have found interesting signs in onshore and offshore sedimentary basins. In spite of oil prospecting and exploration over the years, no economically-viable discoveries have been made and there are no demarcated areas for exploitation or production. In recent years, however, there has been **growing interest in Portugal's oil potential from companies in the sector, especially offshore.** Onshore and offshore concession areas have been awarded.

A vital contribution to boosting green growth in the geological and mineral resources sector is the development of a tool which alongside locating already identified geological resources and others which are in the process of being identified can identify the constraints arising from the spatial planning instruments and other applicable legislation, expanding the knowledge and reliability of the risk analysis and slashing the associated costs. It is also essential to implement internationally recognised best Health, Safety and Environment (HSE) practices, especially in the development of the hydrocarbon extraction industry.

In the manufacturing and extraction sector 10 initiatives were identified.

Table 9: Manufacturing and Extractive Industries initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
IND 1	Develop eco-industrial parks and Responsible Business Zones (ZER) to optimise the flow of resources between industries	» Increase the constructed area classified as energy parks » Increase the number of enterprises located in eco-industrial parks/ZERs » Increase the proportion of industrial GVA created by industries located in eco-industrial parks/ZERs » Increase the number of eco-industrial parks/ZERs and rehabilitated industrial parks » Increase the number of cases of industrial symbiosis with plans to rationalise materials and energy	F: Ministry of the Economy Initiative; PNGR; Roadmap for Eco-Innovation in Portugal FP: IAPMEI; DGEG	Waste; Energy and climate; Cities and Territory; RD&I

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
IND 2	Promote cogeneration as a way to increase the energy efficiency of production processes, minimizing the burden on energy consumers and removing artificial non-environmental barriers to licensing	» Increase the percentage of enterprises in the manufacturing and extractive industry sectors that use cogeneration systems	F: PNAEE 2016; Directive 2012/27/EU FP: DGEG	Energy and climate; RD&I
IND 3	Increase the proportion of alternative fuel use in the energy mix of manufacturing industries	» Percentage of biodiesel, biogas, waste-derived fuels (WDF) used as an industrial energy source	F: PNAER 2020; SGCIE FP: DGEG	Waste; Energy and climate; Cities and Territory; RD&I
IND 4	Promote the eco-design of products	» Increase the proportion of recycled materials used in the production of new consumer goods » Increase the recycling potential of products » Increase the biodegradable potential of products	F: PNAEE 2016; Green Tax Reform; Roadmap for Eco-Innovation in Portugal FP: APA	Waste; Energy and climate; Biodiversity and ecosystem services; RD&I
IND 5	Periodic public dissemination of information on the environmental impact and carbon cost of the production of consumer goods	» Increase the products covered by disclosure of information about carbon cost and environmental impact	F: MAOTE Initiative; Roadmap for Eco-Innovation in Portugal FP: DGEG; APA	Energy and climate; Information and participation
IND 6	Implement the single environmental permit (SEP) scheme	» Reduce the amount of paperwork per licensing request application (65%) » Reduce the number of requests for additional items (25%) » Reduce the average time for procedural decisions (25%)	F: Initiative: MAOTE/SEA FP: APA	Water; Waste; Agriculture and forestry; Biodiversity and ecosystem services; Cities and Territory; Tourism; Information and participation

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
IND 7	Review the mining licensing model in order to make application processing faster and more transparent and to provide the investor with all available information concerning the requested area at the initial stage of the licensing process, making consultation of the municipalities and competent bodies in the area of environmental preservation and heritage, land management and nature conservation obligatory right from the prospecting and research phase.	» Implementation of the Framework Law for Geological Resources and the respective supplementary legislation » Number of signed contracts for prospecting and searching for geological resources, the investments involved and their assigned area » Number of signed contracts for the exploitation of mineral deposits (mines) and investments involved » Number of new licences granted for the exploitation of mineral blocks (quarries) » Average number of days until the signing of contracts or for the awarding of licences, from submission of the application until the award of the document providing access to the activity	F: National Strategy for Geological Resources - Mineral Resources (ENRG-RM 2020); Sector legislation revision process FP: DGEG	Waste; Biodiversity and ecosystem services; Cities and Territory
IND 8	Develop the hydrocarbon extraction industry based on best Health, Safety and Environment practices	» Number of signed contracts and investments foreseen » Number of km^2 subject to prospecting and surveys and the respective annual investment » Number of metres of probes sunk each year	F: Decree-Law No. 109/94, of 26 April; Directive 2013/30/EU FP: DGEG	Energy and climate; Biodiversity and ecosystem services; Cities and Territory; Sea
IND 9	Development of a geo-referenced data tool that simultaneously enables the location of geological resources and environmental and patrimony restrictions arising from Spatial Planning Instruments and other applicable legislation	» Proportion of territory with updated and available information	F: National Strategy for Geological Resources - Mineral Resources (ENRG-RM 2020); Mineral Promotion Plan FP: DGEG	Water; Waste; Energy and climate; Biodiversity and ecosystem services; Cities and Territory; Information and participation
IND 10	Disseminate and internationalise the mining sector, providing close support for investors through the One-Stop Mining Shop and collecting information to enable the identification of the most effective strategies to attract investment	» Number of contracts for prospecting and searching for geological resources and the respective areas and investment, involving foreign investors » Number of contracts for the exploitation of mineral deposits involving foreign investors and their respective investments » Number of mineral block licences with foreign investors and their respective investment	F: National Strategy for Geological Resources - Mineral Resources (ENRG-RM 2020); Mineral Promotion Plan FP: DGEG	International promotion; Information and participation

3.7 Biodiversity and Ecosystem Services

Natural capital compromises the Earth's natural assets (soil, air, water, flora and fauna), and the ecosystem services resulting from them, which make human life possible.[lx]

Ecosystems are forms of renewable natural capital that depend on their biodiversity to function. Their conservation and recovery must be undertaken on a global scale in order to maintain or re-establish connectivity between existing natural areas, as their destruction has repercussions that go far beyond the mere disappearance of rare species.[lxi]

Ecosystem services are generally the direct and indirect benefits that people obtain from them. They include the contributions of ecosystems to adequate access to basic goods for quality of life, which are necessary to support the freedom of choice and action, poverty reduction, prosperity, better public health, security, the capacity for mutual help and social cohesion.[lxii]

According to the European Environment Agency, ecosystem services can be divided into provisioning services, regulating and maintenance services and cultural services. Provisioning services include material, food and energy products or outputs from ecosystems. Regulating and maintenance services result from the way in which living organisms can modify and transform the environment by controlling erosion, floods and the spread of diseases, regulating bio-geochemical cycles and mediating waste flows to living processes and incorporating them in the system. Cultural services include scenic values, beauty and inspiration that affect people's physical and spiritual state and contribute to human well-being. This category includes spiritual, symbolic and other interactions with ecosystems and the sea or landscapes and physical experiences provided by active forms of recreation.[lxiii, lxiv]

Reducing and preventing natural risks, adapting and mitigating the effects of climate change, combatting desertification and ensuring soil protection are services provided by ecosystems that can be enhanced by the development of green urban, rural and coastal infrastructures.

The conservation of these services and of biodiversity has a positive impact on the economy. Concerning employment, although only a relatively small number of jobs are directly related to the conservation of ecosystems and biodiversity, a large variety of economic sectors, and consequently a much larger number of jobs either depend upon or benefit from biodiversity and ecosystem services.[lxv]

Integrating nature conservation into corporate sustainability policy implies recognising the role of natural capital in value chains. There are sectors in which activity is entirely dependent on biodiversity throughout its production cycle, from the use of raw materials to processing the final product and its packaging, and in which management of natural resources takes a leading role. Other sectors depend on and benefit from biodiversity without directly managing them, particularly tourism, pharmaceuticals and the creative industries. There are also companies that interact with nature primarily because of its location and/or which integrate it as part of their social and environmental responsibility policies.

It is of vital importance to identify, value and assess ecosystem services, including production of raw materials, food production and opportunities for recreation and tourism, and to assign them an economic value that will be incorporated as an essential part of the decision-making process. The Millennium Ecosystem Assessment (2009) of Portugal provides a preliminary, mostly qualitative, evaluation.[lxvi] The development of Mapping and Assessment of Ecosystems and their Services (MAES) and The Economics of Ecosystems and Biodiversity (TEEB) systems contributes to a geo-spatial assessment of future challenges: to adopt a methodology that includes necessary public expenditure markers in biodiversity, implementing a system of remuneration for the services provided by ecosystems with a view to their integration in public and private accounts and to the design and implementation of a system of biodiversity credits.

The National Strategy for Nature Conservation and Biodiversity (ENCNB) that was adopted through Council of Ministers Resolution 152/2001, and which is currently being reviewed, integrates Nature Conservation policies with other relevant sectoral policies. The ENCNB's general goals are: to conserve nature and biological diversity, including notable elements of geology, geomorphology and palaeontology; to promote sustainable use of biological resources; and to contribute to achieving the goals set by international cooperation processes in the area of nature conservation.

Continental Portugal has an area of more than nine million hectares and is located in south-west Europe in a transition area between the Atlantic and Mediterranean bio-geographic regions. The Madeira (77,892 ha) and Azores (232,967 ha) archipelagos are part of the Macaronesia region. Given the many geographical and biophysical impacts of human intervention over the centuries, the whole **country boasts rich and diverse fauna and flora and a wide variety of ecosystems and landscapes.** The existence of some unique endemic species, the 4,000 taxa of flora, the long lists of invertebrate groups, the 800 or so species of sea and estuary fish, the 35 species and subspecies of freshwater and migrant fish, the 16 species of amphibians, 28 of reptiles and 341 of resident, nesting or migrant birds and the 104 of mammals are proof of this diversity.[lxvii, lxviii, lxix]

The National Network of Classified Areas was set up to safeguard significant samples of the country's different systems and conserve species and their habitats. It includes areas classified at national and international levels.

Our natural heritage also includes a vast genetic repository of particular interest to agriculture, forestry and grassland farming, different industry sectors and scientific research.[lxx]

In order to reduce the risks of degradation, through appropriate incentives and the commitment of all stakeholders, it must be used efficiently and its capacity for natural renewal taken into account, ensuring that there is no additional loss of natural values.

Economic activities and the conservation of biodiversity are two pillars that cannot be dissociated from green growth. The challenge is to make biodiversity a factor of economic enhancement and incorporate the value of ecosystem services in public accounts.

The change to green growth implies recognising its importance in everyday life within society and the dependence and impacts of activities so that decisions are taken with the best information available so that the flows of goods and services necessary to human well-being are maintained.

Nine initiatives were identified under the biodiversity and ecosystem services pillar.

Table 10: Biodiversity and Ecosystem Services Initiatives

Ref.	Initiative	Performance indicators	Framework (F) and Focal Point (FP)	Also relevant for
BIO 1	Define, in the context of new European regulations, the conditions of access to genetic resources and the fair and equitable sharing of benefits from their use	» Comply with Regulations concerning access and benefit-sharing (ABS) for the genetic utilisation of resources » Complete the cost-benefit assessment study of the impact of the development of a national scheme for access to genetic resources and the sharing of the benefits arising from its use and proceed in accordance with its conclusions	F: Convention on Biological Diversity, approved in Rio de Janeiro in 1992 - Portugal ratified this through Decree No. 21/93, of 21 June, and it entered into force on 21 March, 1994; EU Biodiversity Strategy 2020 - COM (2011) 244 final; Regulation (EU) No. 511/2014, of 16 April, from the Parliament and the Council on access to genetic resources and the fair and equitable sharing of the benefits arising from their use in the European Union - Access and Benefit-Sharing (ABS); Nagoya Protocol, adopted on 29 October 2010 - which entered into force in October 2014 FP: ICNF	Agriculture and forestry; Manufacturing and extractive industries; Sea; International promotion

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
BIO 2	Implement the TEEB (taking the MAES – Mapping and Assessment of Ecosystems and their Services - into consideration)	» Map and assess the state of terrestrial ecosystems in continental Portugal by 2018 » Implement the TEEB initiative in one Nature Park by 2016, and in all of them by 2020 » Implement the TEEB initiative in three cities by 2020 » Establish the economic value of the main ecosystem services by 2020 and incorporate it into public accounting by 2030 » Incorporate the value of ecosystem services, insofar as they are available, into the Portuguese State of Environment Report 2014 (PT-SoER) » Include 50% of the TEEB recommendations in the policies and plans for 2020 and 10% more in the policies and plans for 2030 » Prepare two guidance documents for the implementation of TEEB methodology at a national and municipal level » Develop new remuneration mechanisms for ecosystems, particularly biodiversity credit systems, without calling into question compliance with the regulations in force	F: EU Biodiversity Strategy 2020 - COM (2011) 244 final; TEEB - international project (UNEP) sponsored by the European Commission on the economy of services provided by ecosystems and biodiversity FP: ICNF	Water, Agriculture and forestry; Energy and climate; Manufacturing and extractive industries; Cities and Territory; Sea; Tourism; International promotion
BIO 3	Implement natural systems (green infrastructures) and other investments in natural capital in coastal, rural and urban areas with a view to protection against natural disasters and risks, such as floods, and improve the adaptation and mitigation of climate change	» No. of km of banks of rivers and estuaries restored ecologically with alluvial forests » No. of km of coastline protected through green infrastructures	F: EU Biodiversity Strategy 2020 – COM (2011) 244 final; Green Infrastructure – COM (2013) 249 final FP: APA; ICNF	Water; Agriculture and forestry; Energy and climate; Cities and Territory; Sea; RD&I
BIO 4	Increase the efficiency and effectiveness of the management of classified areas to promote local development	» Increase public and private investment in the management of classified areas, particularly for the Natura 2000 Network » Improve surveillance and monitoring of nature conservation	F: EU Biodiversity Strategy 2020 - COM (2011) 244 final FP: ICNF	Agriculture and forestry; Manufacturing and extractive industries; Cities and Territory; Tourism; Financing

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
BIO 5	Expand the natural. pt brand of products and services developed based on resources from the classified areas	» By 2016, reach 200 members (products and services) » Increase the number of members to an average annual rate of 10% between 2017 and 2030 » Number of infrastructure concessions, in particular tourist developments, under the management of the Institute for the Conservation of Nature and Forests (ICNF) signed up to the brand and located in relevant promotional areas	F: MAOTE Initiative FP: ICNF	Agriculture and forestry; Manufacturing and extractive industries; Cities and Territory; Sea; Tourism; International promotion
BIO 6	Boost voluntary membership by companies and other entities of the "Business and Biodiversity" initiative	» Increase the number of member organisations by at least 50% by 2020 (107 organisations) and by 75% by 2030 (125 organisations) » Increase the number of events held for the promotion and dissemination of this initiative, as well as case studies and the associated advantages and opportunities	F: The Convention on Biological Diversity (CBD) – Conference of the Parties (8ª COP). Curitiba, Brazil, March 2006, Decision VIII/17; Private-sector engagement; EU Biodiversity Strategy 2020 – COM (2011) 244 final; Roadmap for Eco-Innovation in Portugal FP: ICNF	Water, Waste, Agriculture and forestry; Energy and climate; Manufacturing and extractive industries; Sea; Tourism; International promotion
BIO 7	Promote the sustainable management of game, preserving species and habitats of a high natural value	» Improve the conservation status of target species and habitats	F: EU Biodiversity Strategy 2020 - COM (2011) 244 final FP: ICNF	Agriculture and forestry; Cities and territory; Tourism; RD&I; Information and participation
BIO 8	Implement measu-res relating to the promotion and im-provement of animal genetic resources – local breeds	» Number of animals supported (unit: LU -"Livestock Unit")	F: PDR 2014-2020 FP: ICNF	Agriculture and forestry; Manufacturing and extractive industries; Cities and Territory
BIO 9	Promote agri-environment measures that support Natural High Value Agricultural Systems (SAAVN)	» Increase the agricultural area covered	F: EU Biodiversity Strategy 2020 - COM (2011) 244 final FP: ICNF	Water; Agriculture and forestry; Cities and Territory

3.8 Cities and Territory

The diagnosis of the problems on a territorial scale suggests the need for territorial development policies that ensure an appropriate dynamic in the organisation and transformation of space, with direct impact on the quality of life of citizens and on the territory's sustainability and economic competitiveness.

Urban sprawl (enlargement of urban perimeters and scattered building), particularly in the metropolitan areas, has resulted in the fragmentation of the urban fabric, with the depopulation of inland and areas and negative effects in terms of the depopulation and degradation of urban centres, alongside the creation of peripheral residential areas that are served by an inadequate network of infrastructure and community facilities. Urban sprawl has consumed resources, jeopardized the environmental and productive potential of the soil, created deprived urban areas, increased the extension and cost of infrastructure and facilities, and incurred environmental costs due to the increase in commuting, for which private transport is generally used.

As far as green growth is concerned, it is important to regard the country as a whole and strengthen national cohesion. It must be organised in such a way as to increase the complementarity of economic, social and cultural functions between cities, limit urban sprawl, correct regional asymmetries and ensure equal opportunities of access to infrastructures, facilities and services. It is necessary to ensure territorial competitiveness in economic terms, create jobs and organise the land market efficiently to avoid real estate speculation and practices which are detrimental to the general interest.

Enhancing land potential to protect its quality and fulfil its environmental, economic, social and cultural functions as a source of raw materials, carbon sink and support for biodiversity and ecosystem services is an essential step in the conservation of natural resources and cultural heritage for future generations.

The reform of spatial planning, which began with the Framework Law for Land, Spatial Planning and Urban Development Policies contains a new generation of programmes and plans that are able to offer a coordinated and wide-ranging response to planning needs. It adopts a non-conformist approach to the physical expansion of the urban agglomerations and the consequent degradation and depopulation of

town centres, the overlapping of plans and programmes that contain weaknesses in terms of coordinating the principles to be protected and the incorporation of responses to climate change in the municipal master plans. In this context, the reform has developed around the following aspects:

> Clarification of the legal framework governing land use. Land use will be divided into only two categories – rural or urban, **and that of "buildable" will be abolished.** Land for potential building development will therefore be limited, fostering the containment of urban perimeters and promoting urban renewal with resulting gains in energy and environmental sustainability.

> **Concentration in the municipal master plans (MMPs) of all rules governing the actions of individuals.** The special programmes will no longer be directly binding on individuals, making the MMPs central to the planning process, thereby integrating all of the rules spread across the different special programmes.

> **Greater inter-municipal cooperation.** Inter-municipal planning will gain new territorial management tools that provide cities which share infrastructures and facilities with an opportunity to develop integrated solutions, including the creation of inter-municipal master plans, thus providing a commitment to a model of sub-regional territorial development.

> Assigning of new territorial management mechanisms to municipalities, such as the **transfer of building permits,** contributing to urban regeneration and renewal.

> Transformation of rural land into urban land through **detailed plans,** contingent upon the demonstration of economic and financial feasibility. Buildable areas, upon which buildings may be constructed on a case-by-case basis and without assurance of urban quality, will cease to exist. The physical expansion

of cities will only occur under exceptional circumstances when it is associated with an integrated investment option in a proposal that is based on a detailed plan. This will foster sustainable investments in spatial development and the sharing of responsibility for development by the state and private citizens.

> **Enhancement of biodiversity and ecosystems.** Mechanisms for the distribution of costs and benefits will be set up to offset the expense of protection of the general interest in order to safeguard cultural heritage, enhance biodiversity and protect ecosystems. Living in a protected area can no longer be regarded as a burden and should be considered beneficial to the local population.

> **Investment in Urban Rehabilitation.** Territorial development must focus on regeneration of existing urban areas. New territorial management instruments will be regulated and urban expansion will only occur if the urban area can no longer meet needs. The expectation of being able to build has removed the capacity to rehabilitate.

> **Simplification of the licensing procedures by means of a new prior notification system** when the conditions for building have been properly defined in a detailed plan in terms of zoning or in consolidated urban areas. It is also anticipated that there will be a reduction in the time limits for inter-service consultation, the establishment of a 10-year validity period for zoning licenses and the focusing of municipal licensing on the urban impact of operations and not on building interiors.

The phenomenon of the concentration of people in urban areas, and the focus on guaranteeing quality of life, is increasingly raising awareness of the need to take a new look at our urban areas. Because of their demographic, economic and environmental scale, cities are complex systems that integrate challenges – including employment, housing, trade, mobility, and water and energy consumption – which are key factors in green growth.

Cities assume increasing importance as they concentrate the majority of the population, economic activities and wealth. They are places with the greatest potential for the promotion of economic growth and employment, competitiveness and innovation, but also those where the complex phenomena of social exclusion and serious sustainability problems which threaten the quality of people's lives are focused.

Nowadays, cities are disparate and heterogeneous, whether from the morphological and spatial point of view, or from the demographic and functional perspective, which makes their delimitation and conceptualisation particularly complex.

As open and dynamic systems in which multiple agents interact at different temporal and spatial levels, contemporary cities call for new interpretations and understandings, as well as for the establishment of new borders and dimensions for analysis and intervention. We must overcome the nostalgic reference to urban space in its traditional sense, which remains obscured by the imagery of the ancient, compact and bounded city. Beyond the limits imposed by a political and administrative jurisdiction, the contemporary city conforms to and is characterised by a set of functional relationships established with the region and the different hinterlands around it. These include the sea and rural areas as well as other cities and urban centres, creating sustainable urban networks from the perspective of complementarity and interdependence.

Sustainability is an European reference guideline with particular importance over the 2014-2020 programming period, with the Europe 2020 growth strategy expecting "that the European Union becomes a smart, sustainable and inclusive economy". Over the last decade there has been a discussion on the development of public policy towards urban sustainability. The 2007 Leipzig Charter and 2010 Toledo Declaration contributed to the 2014-2020 Cohesion Policy, Policy, which incorporated integrated and sustainable urban development as one of its priorities.

The concepts of sustainable urban development and sustainable growth are very closely linked, implying a broad perspective that covers key areas of development: economy, society, environment, culture and governance.

Considering the inner complexity of urban systems in particular, sustainable urban development represents an integrated approach par excellence, focusing on the

interconnections between established areas of sustainability and development, and respecting the different strategic territorial dimensions of city policies (intra-urban, city-region and inter-urban).

A sustainable city must also be an analytical city. This concept underscores the importance of managing the information generated by cities and implies a deposit of knowledge on city phenomena associated with their systems and the people themselves that justify the decisions made. This suggests a new reality in which a network of interconnected sensors creates a real nervous system that is able to "feel" the city. Cities can be more sustainable, more resilient and greener, leading governance and the exercise of citizenship to the heights of excellence. The aim is to invest in the development of an important knowledge base on city phenomena using advanced facts-based research methods and cross-checking the data associated with systems and people. This will help add depth to the concept of analytical cities in an urban world in which digital ubiquity prevails.

Since it is linked closely to health issues and negative environmental effects, urban air quality is one of the areas highlighted. There are problems which urgently need to be addressed, in particular the levels of nitrogen dioxide, ozone and particulate matter. Effectively, and as elsewhere in Europe, at the national level a significant proportion of the population is exposed to high levels of air pollution that requires concerted political action and intervention at central, regional and local levels. The National Air Strategy 2020 (ENAR 2020) emerged from the need for a holistic approach that focuses on the relationships with other important domains to ensure coherence in the policies and measures implemented as a way of reducing the impact of air quality on both health and ecosystems.

We must also invest and commit to the **efficient use of the resources cities consume, for example, by raising public awareness of the need to stop wasting water and energy** at home and at work and by developing smart systems for managing these resources. The benefits of connecting the city with the countryside should also be explored, for example by improving the coordination of agricultural produce supply chains. At the same time, the existence in the urban environment of natural systems essential to the sustainability of ecosystems, bio-geochemical cycles and a balanced micro-climate must be ensured in order to protect and enhance urban biodiversity and landscapes.

Construction mobilises a number of upstream and downstream sectors in its production chain. This makes it one of the driving forces behind the national economy, both because of its contribution to the creation of wealth and its importance to economic growth.

In 20 years, the country has built 1.5 million new homes, overcoming the housing shortage in technical terms. Portugal has moved from a position in which there was a housing shortage to one in which there is a surplus, becoming a nation of homeowners. However, problems persist, particularly with urban housing degradation, the mobility needs of families and the high cost of rents.

Contrary to what one might expect, rent levels continued to rise as housing construction and supply grew. And this increase was markedly greater than the growth in the disposable income available to Portuguese families.

The contraction of the rental market — a process that had begun during the first half of the 20th century as a consequence of rent controls that were extended following the revolution of 25 April 1974 and which effectively halted investment in the redevelopment of old housing stock — contributed to rent increases and to the reduction in the supply of homes for rent.

Policies to promote and finance house purchases, and which may have compensated for the retraction in the rental market, have had a perverse effect on rising prices and contributed to the growing indebtedness of the state, banks, companies and families, which has been aggravated by the large number of house repossessions. The associated public and private investment has neither served nor contributed to ensure that families have access to housing.

Instead, the policies have promoted the expansion of suburbs that are in many cases isolated and excluded, generated enormous areas of “artificial land”, increased the amount of commuting and home-employment and exponentially increased the amount of energy consumed by transport.

In the old town centres, these policies have increased overall costs and have concentrated solely on very expensive property renovation solutions.

Alongside the occurrence of significant economic and demographic changes – the reduction in average family size, ageing of the population, depopulation of inland areas, need for mobility due to changes in the job market and stagnation of household disposable incomes – housing construction continued to provide the same types of properties. These consisted almost exclusively of new homes in areas of urban sprawl for purchase via the same model of financing, accumulating legislative and regulatory requirements which made licensing increasingly complex and construction more expensive.

In 2013, around 29.1% of completed construction work related to renovation (alterations, extensions or reconstructions), 2.3 pp higher than in 2012 (26.8%). Between 2008 and 2013, it was apparent that new construction had lost relative importance. In 2008, it represented 79.6% of total construction, after which it declined steadily, accounting for 70.9% in 2013. In contrast, extension and reconstruction work increased in relative importance during this period. The continuation of this trend depends on several factors, ranging from the adoption of new practices in the construction and transport sectors to the training and qualifications of all practitioners involved.

Urban rehabilitation requires specific business models, with their own high technical standards and construction rules. **Only 10% (7% a year ago) of civil construction work is devoted to urban rehabilitation, whereas the European average is 37%.** Blaming insufficient levels of urban rehabilitation on constraints in public and private investment alone paints an incomplete picture of the structural limitations. As has been the case, the answer therefore involves a wide range of intervention measures including: **the new legal framework on urban rehabilitation,** which simplifies municipal licensing and intervention procedures in extensive areas of regeneration, especially in the most rundown areas and uninhabited homes; **revitalisation of the urban rental market,** spurred by the legislative reform that ended decades of frozen rents and attracted younger people and families to the cities; **the adoption of the Exceptional Urban Renewal Framework (RERU),** which offers a seven-year exemption for work on buildings over 30 years old from compliance with certain rules that had made restoration as demanding as new construction and renovation options technically and financially infeasible in practice; **public support, through new EU funds provided as part of Portugal 2020,** to finance urban rehabilitation and regeneration work in disadvantaged areas, abandoned industrial areas, social housing and public buildings and energy efficiency in private homes, totalling **almost 1 billion euros** (which can be maximised by combining with other financing sources).

Finally, the coastline deserves a particular mention in this regard. Being a coastal country, the relationship between land and sea in Portugal is part of a historical identity and of the country's development model, which is decisive in terms of its ambitions for green growth. The majority of the population, housing, employment and economic activity is concentrated along the coast, as are the key environmental values and natural resources that it is essential to use in a conscious and sustainable way.

Worsening coastal erosion puts people and goods at risk. Over the years there have been disturbances in the sedimentary dynamics that contribute to maintaining the coastline. About 25% of continental Portugal's coastline is affected by coastal erosion, with 232 km of the coast showing a tendency towards erosion or actual erosion. The greater the human occupation of vulnerable areas of the coast, the higher the risks associated with coastal erosion, reaching particularly high rates where this occupation is unlicensed or the result of bad planning. The process of erosion may be exacerbated by climate change, and especially by rising sea levels and more frequent bad storms.

Coastal protection is therefore a **public policy priority** that requires concerted medium- and long-term action. It is essential to introduce a model of coastal zone governance that will ensure the interlinking and convergence of the interests of economic agents and those responsible for planning, thereby enabling:

> Implementation of a systemic sediment management policy, that will help restore the natural sedimentary cycle, and which will involve all bodies with responsibilities in this area.

> Promotion of resilience planning and the defining of new options that may include the relocation of activities and goods that are exposed to risk in critical sections, from a medium- and long-term perspective.

> Development of a comprehensive Portuguese coastal monitoring programme involving several institutions and improving information management systems.

- Strengthening of the Coastal Resource Administration System (SIARL) as a knowledge platform that brings together existing coastal data, improving support for planning and policy-making.

- Elaboration of an up-to-date set of maps showing vulnerability and risk along the entire coastline under different climate change scenarios, created using consistent and established scientific methodologies and which enjoy the greatest possible consensus among the scientific community.

- Encouraging public participation in activities designed to provide information, clarification and advice concerning coastal problems and the options available for coastal protection and adaptation.

- The funding of priority actions through PO SEUR 2014-2020, and its Strategic Axis 2, which is concerned with adapting to climate change and the prevention and management of risks that affect Portuguese territory. The protection of the coast from erosion is now a priority, to which 200 million euros has been allocated.

Nine initiatives were identified in the Cities and territory pillar.

Table 11: Cities and Territory Initiatives

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
CT 1	Ensure rational and efficient use of land, limit urban sprawl, concentrate all regulations concerning planning within the Municipal Master Plan, abolish buildable land, simplify procedures, introduce a new economic and financial scheme and promote inter-municipal planning solutions	» Keep the total percentage of man-made landscapes at 5% (448 401 ha) – maintain at the same level in 2020 and 2030 » Consolidate green infrastructure, in terms of the ecological corridors which ensure the connectivity of the Fundamental Network for Nature Conservation, by 2030 » Ensure that all Territorial Management Instruments (IGT) include nature conservation objectives » Define criteria to be applied as of 2017, concerning the rules for IMI tax benefits for rural buildings that form part of classified areas providing ecosystem services not attributable by the market	F: Law No. 31/2014, of 30 May (Framework law for (Framework Law for Land, Spatial Planning and Urban Development Policies); Green Infrastructure - Enhancing Europe's Natural Capital - COM (2013) 249 final; EU Biodiversity Strategy 2020 - COM (2011) 244 final FP: DGT	Manufacturing and extractive industries; Information and participation
CT 2	Create the National Property Register Information System (SNIC), in order to ensure harmonisation of the property registration system and promote a more effective cadastral survey of the national territory	» Increase the area within the national territory with cadastre registration » Number of building registration communications carried out within the SNIC	F: Specific legislation to be approved to regulate Law No. 31/2014, of 30 May (Framework Law for Land, Spatial Planning and Urban Development Policies) FP: DGT	Water; Agriculture and forestry; Energy and climate; Mobility and transport; Biodiversity and ecosystem services; Information and participation

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
CT 3	Apply the Exceptional Scheme for Urban Rehabilitation (RERU) and amend rules regarding the conservation, alteration, reconstruction and extension of old buildings	» Convergence of the relative weighting of renovation within civil construction with the European average (currently 10% in Portugal and 37% in the EU)	F: Law No. 31/2014, of 30 May (Framework Law for Land, Spatial Planning and Urban Development Policies); Exceptional Scheme for Urban Renewal (RERU); Legal System for Urbanisation and Building (RJUE) FP: IHRU	Energy and climate; Manufacturing and extractive industry
CT 4	Promote integrated coastal zone management, paying special attention to the protection of the coast against risks, especially erosion	» Increase the extent of coastline subject to work to protect people and goods. Target for 2022/23: 50 km » Increase access to information on coastal systems. Target: creation of at least one database (as an important support tool for specialists and the non-specialist public) » Reduce risk at the coastline's most vulnerable areas Target: Approve six Programmes for the Coastline	F: PO SEUR; PAPVL FP: APA	Energy and climate; Sea; Tourism
CT 5	Create and implement a financial instrument to support urban regeneration	» Increase the number of rental properties in the historic centres by 10% by 2020 and 25% by 2030	F: Law No. 31/2014, of 30 May (Framework Law for Land, Spatial Planning and Urban Development Policies); Portugal Partnership Agreement 2020 FP: IHRU	Manufacturing and extractive industries; Tourism; Financing
CT 6	Create and implement municipal or inter-municipal programmes for sustainable urban development aimed at promoting the enhancement of public spaces and clean and efficient transport	» Improve urban air quality » Reduce noise levels » Increase public spaces and green areas and improve existing ones (increase the use of Mediterranean species less demanding in terms of water) » Number of cities covered » Increase the number of green roofs and vertical gardens in façades and balconies » Kilometres of roads for smooth transportation	F: Law No. 31/2014, of 30 May (Framework Law for Land, Spatial Planning and Urban Development Policies); ENAR 2020 FP: DGT	Energy and climate; Mobility and transport; Tourism; International promotion; RD&I

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
CT 7	Create and implement the Urban Sustainability Index (USI) promoting healthy competition between cities, with potential benefits to the level of funding	» Improve the classification of cities » Proportion of cities assessed above a given established index value	F: MAOTE Initiative FP: DGT	Water; Waste; Energy and climate; Mobility and transport; Tourism; International promotion; Financing; Information and participation
CT 8	Develop new approaches to green spaces in cities	» Increase the number of vertical gardens in the façades, balconies and terraces of public and private buildings » Increase the number of "green roofs" » Number of municipal plans attributing benefits to vertical gardens or green roofs	F: MAOTE Initiative; EU Biodiversity Strategy 2020 - COM (2011) 244 final; Green Infrastructure - COM (2013) 249 final FP: DGT	Water; Agriculture and forestry; Energy and climate; Biodiversity and ecosystem services; Tourism; International promotion; RD&I; Information and participation
CT 9	Implement ENAR 2020	» Air quality improvement: reduce the average no. of days of "poor" or "bad" air quality according to the Air Quality Index (AQI) from 14 in 2013 to a maximum of 9 on average in 2020 and 2 on average in 2030.	F: ENAR 2020; Clean Air For Europe (CAFE) Directive; Clean Air For Europe Programme FP: APA	Agriculture and forestry; Energy and climate; Mobility and transport; Manufacturing and extractive industries; Biodiversity and ecosystem services; Tourism

3.9 Sea

If we consider only the size and characteristics of its territory, Portugal is a relatively small country. However, if we look at the maritime dimension, it is one of the world's great nations, with a large geostrategic, geopolitical and economic potential. Portugal is perceived as an example of marine resource sustainability and faces a number of challenges to achieve sustainable, inclusive and smart growth. The institutional framework that directs, facilitates and promotes its commitment to the sea is composed by the National Ocean Strategy (ENM), the Basic Law on Maritime Spatial Planning and Management (LBOGEM) and complementary legislation. The National Strategy for the Sea 2013-2020 focuses on five main objectives.[lxxiii]

> **Restoring the country's maritime identity** within a modern, proactive and enterprising framework;

> **Fulfillingl its economic, geo-strategic and geopolitical potential** by attracting national and foreign investment and fostering growth, employment, social cohesion and territorial integrity;

> **Increasing the maritime sector's direct contribution to GDP** by 50%, **by 2020;**

> **Reinforcing the national scientific and technological capacity** by motivating the development of new fields of action;

> Asserting Portugal as a **maritime nation** worldwide and as an essential part of the EU's Integrated Maritime Policy and Maritime Strategy.

Maritime spatial planning is a fundamental instrument of sea policy and the aim of the LBOGEM is, on the one hand, to define the general principles applicable to maritime spatial planning and, on the other, the legal framework relating to the use of Portugal's maritime areas. The financial component of sea policy is based on the complementarity and interlinking of available sources. One of the main sources is the European Structural and Investment Funds 2014-2020, which focus on the priorities of the Europe 2020 Strategy, which, in its maritime component, is aimed at "blue growth" and, in public policy matters, is reflected in Portugal in the ENM. Considering

the all-encompassing nature of this strategy, part of it will involve not only support from the European Maritime and Fisheries Fund but also from the Cohesion Funds, according to the Partnership Agreement 2014-2020 - Portugal 2020.

Below we present some details about the economy of the sea set out in the ENM and based on the calculations of the Directorate-General of Maritime Policy using the national accounts produced by the INE.

Wealth generated in Portugal through the use of the sea and related activities **totalled 8.174 billion euros in 2010, or 2.4% of national production.** Total employment in the economy of the sea was close to 109,000 full-time equivalent (FTE) jobs in 2010, which is around 2.3%

These figures refer only to direct effects, though indirect effects are also important, including sectors such as fisheries, aquaculture, fish industries, construction, maintenance and repairs, maritime transport, ports, logistics, coastal and nautical tourism, salt production and coastal defence works.[lxxiv]

As far as the fisheries sector is concerned, the Fisheries Statistics reveal that, **including sales and processing, it has a turnover of more than 1.2 billion euros and secures around 25,000 direct jobs,** according to 2013 data.

Portuguese fishermen catch about 200,000 tonnes of fish per year (a figure which has been steady for around the last 15 years). In 2013, fresh or refrigerated fish sold at wholesale fish markets totalled 144,654 tonnes worth 253,148,000 euros, which averages out 1.70 €/kg. There are 16,797 fishermen spread across roughly 4,527 licensed vessels (8,276 in total), 53 of which are engaged in distant-water fishing. Producer organisations owned a total of 1,546 vessels in 2013, accounting for 34.2% of all licensed vessels in Portugal.[lxxv]

The aquaculture sector produced around 10,000 tonnes of fish worth 53,659,000 euros in 2012. Turbot and clams were the main species farmed, which together accounted for 69% of the production iin brackish and sea water. In the year in question, there were 1,492 licensed establishments.

Sea salt production amounted to 91,000 tonnes in 2013 (an average of 2,173 tonnes per year per salt pan).[lxxvi]

The fish processing industry produced 212,000 tonnes of product in 2012. Sales totalled 784 million euros and approximately 62% of production was sold in the domestic market. The production of frozen products continued to make up the bulk of sales (49.9%) in 2012, followed by dried and salted fish (29%) and prepared fish and canned goods (21.1%).

Portugal exported over 830 million euros in fishery products in 2013 and as a result the balance of trade in the sector improved. This was due to the joint effect of lower imports and higher exports. Even so, the sector still had a negative balance in 2013 of 641 million euros and the coverage rate was 56.4%.

"Frozen fish excluding fillets" was the major product group responsible for the overall rise in exports in 2013, with a 26.1% increase. Spain continued to be the main market for Portuguese fish products, with the exception of dried, salted and smoked fish, preparations and canned fish and canned crustaceans and molluscs, where the main importers were Brazil, France and the United States, respectively. The canned goods sector made a contribution to the sustained improvement in the trade balance. The value of exports of canned fish, fish oils and meal, crustaceans and molluscs rose to 207 million euros at the end of 2012. The biggest chunk of imports is of salted cod, which exceeds 407 million euros per year.

Imports of fishery and fishery-related products totalled 1.471 billion euros in 2013. Frozen fish, excluding fillets, continued to constitute the main imports, accounting for 22.7% of the total value. In 2013, Spain was still the main supplier of fishery products, with the exception of dried, salted and smoked fish, which came mainly from Sweden.

The total fishing quotas allocated to Portugal rose by 3.5% in 2013. This trend was mainly due to increases in quotas of cod (+49%), redfish (15.8%), hake (+15%), blue whiting (+13%), black scabbard (7%) and horse mackerel (3.4%).

Portugal occupies a strategic position at the crossroads of the north-south and east-west maritime routes. Europe's commitment to develop non-pollutant, low-carbon transport systems encourages the transfer of freight traffic to rail, sea and river transport. It promotes short distance maritime transport and enables sea highways in order to develop the maritime port sector. In terms of repair and maintenance,

Portugal continues to have an international reputation, which can be boosted with the growth of the economy of the sea.

Cruise ship tourism has significant potential for growth in Portugal in the short term. Nautical tourism (sun and sea) could increase considerably over the coming years. Environmental activities, especially watching whales, dolphins and other marine species, have been increasing. At the same time, the popularity of water sports has turned Portugal into a world leader in activities such as surfing, sailing and canoeing.

One key process remains: the proposal to extend Portugal's continental shelf to incorporate an area of about 2.15 million km^2, increasing the area under Portuguese jurisdiction to around 4 million km^2. This vast area is equal to 40 times the surface area of Portugal (Continental Portugal and the Madeira and Azores Archipelagos).

This would mean Portugal enjoying such important benefits as:

> **Strategic International Projection:** the extension of the Continental Shelf will allow Portugal to demonstrate its knowledge and scientific and technological expertise in the areas of ocean and marine science at an international level;

> **Scientific Knowledge and Development:** to legitimise the proposed extension, the project provided investment for innovative Research and Development; these unique R&D initiatives, which concern mainly hydrography, geology, geophysics and international law, show a commitment to strengthening the national scientific community and involving young researchers;

> **Socio-economic Impacts:** realising this goal will result in significant potential economic, biotechnological and health benefits;

> **Future Legacy:** this project will enable Portugal to become an increasingly important European maritime nation, and at the same time provide a legacy for the future generations that will enjoy and explore this vast maritime area.

The marine environment, in general, and the plan to extend the continental shelf in particular are both huge challenges and great opportunities. Our role is to make the most of the data and their associated knowledge to provide continuity to the efforts already made and to maximise the value that can be gained

Seven initiatives were identified in the sea pillar.

Table 12: Sea initiatives

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
SEA 1	Establish new protected marine areas and ensure sustainable exploitation of marine resources	» By 2020, classify close to 10% of the Portuguese sea area	F: "Marine Strategy" Framework-Directive (DQEM) FP: DGRM; DGEG	Energy and climate; Manufacturing and extractive industries; Biodiversity and ecosystem services; Tourism; International promotion; RD&I
SEA 2	Improve the competitiveness of ports to attract traffic sailing in the Exclusive Economic Zone (EEZ) and put Portugal on the crossroads linking Europe and the rest of the world	» Increase the number of TEU handled in Portuguese ports » Increase the number of cruise tourists stopping over in national ports	F: PETI3+ FP: IMT, Turismo de Portugal	Mobility and transport; Manufacturing and extractive industries; Cities and Territory; Tourism; International promotion
SEA 3	Encourage the use of maritime transport (ships and boats) powered by cleaner fuels	» Reduce the emission of greenhouse gases, nitrogen oxides (NOx), sulphur oxides (SOx) and maritime transport particulate matter	F: Directive 2012/33/EU FP: APA; DGEG; IMT	Energy and climate; Mobility and transport; Biodiversity and ecosystem services
SEA 4	Stimulate the transfer of road freight to sea transport	» Increase the proportion of goods transported by sea » Increase the number of TEU handled in Portuguese ports	F: PETI3+ FP: IMT	Energy and climate; Mobility and transport; Manufacturing and extractive industries; Cities and Territory

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
SEA 5	Implement new and more environmentally-friendly techniques and processes that impact directly on marine species and ecosystems, minimising and mitigating negative impacts	» By 2020, aquatic marine organism populations will be managed in a sustainable way, in line with DQEM parameters » Gradually phase out discards in compliance with the Common Fisheries Policy (CFP), and reduce unwanted catches so that by 2023 they do not exceed more than 17% of the fish caught in any fishery	F: "Marine Strategy" Framework-Directive (DQEM); Common Fisheries Policy (CFP) FP: DGRM	Mobility and transport; Biodiversity and ecosystem services; Tourism; RD&I
SEA 6	Enhance the coastal positioning of the main Portuguese cities to reinforce their economic attractiveness and tourist, sporting, cultural and commercial dynamism	» Increase the number of access points to the water » Increase the number of nautical centres involved in school sports » Maintain the number of international events related to nautical activities in Portugal	F: National Strategy for the Sea 2013-2020 (ENM) and the corresponding Mar-Portugal Plan (PMP); PENT 2013-2015 FP: DGPM	Cities and Territory; Tourism; International promotion
SEA 7	Develop nautical tourism: recreational boating and surfing, improving infrastructures to respond to growing demand and boosting related activities	» Increase number of nautical tourism projects » Increase employment created by nautical tourism » Increase turnover of nautical tourism	F: PENT 2013-2015 FP: Turismo de Portugal	Cities and Territory; Tourism; International promotion

3.10 Tourism

In comparison with other European countries, Portugal has a mild climate and vast wealth in terms of natural, historical and cultural heritage. A continental coastline of over 800km and a wide variety of landscapes within a short distance, due to its location and biophysical characteristics, substantiated by a human presence since time immemorial, constitute an important distinguishing feature and therefore an assertion of national identity at the Europe and global level. Other distinguishing features are good access routes, modern infrastructure, Portuguese hospitality and high levels of safety.[lxxvii]

According to the World Tourism Organisation, worldwide tourism reached a historical milestone in 2013, with the number of tourists travelling abroad growing by 5% to 1,087 billion and revenues totalling 873 billion euros. These results were achieved in a context of economic uncertainty in which the sector's growth recovered rapidly after a slight fall in 2009. The continuous growth in tourism and its wide territorial reach require greater responsibility to make the most of its benefits and mitigate possible negative impacts on communities and the environment.

Over the years, tourism has been one of the most important sectors in Portugal's economy has proved essential to the country's recovery in recent years. Portugal is one of the world's main tourist destinations and **it occupies 20th place in the *Travel & Tourism Competitiveness Index 2013*** out of 140 countries.[lxxviii]

The performance of tourism in Portugal in 2013 was better than both the international average and its most direct competitors, achieving gains in market share. A total of 14.4 million people visited the country, which was 4.2% more than in the previous year, and there were 41.7 million overnight stays, 5.2% more than in 2012.[lxxix] In the same year, there were roughly 300,000 beds available. Based on the Bank of Portugal's balance of payments, revenue from tourism totalled 9.25 billion euros, corresponding to a 7.5% annual increase, and the balance of payments, corresponding to 7.5% annual increase and the balance of tourism rose 8.3%. Also according to Bank of Portugal, tourism accounted for 14% of exports in 2013.

The vast majority of tourists who stay overnight in Portugal are from Europe, particularly from the United Kingdom, Spain, Germany and France. The Algarve, Lisbon and Madeira were the main destinations (74% of annual overnight stays).[lxxx]

Tourism is a priority sector for the Portuguese economy. In 2013, it accounted for 1,9 billion euros in total earnings from the hospitality industry, a year-on-year growth of 6.2%[lxxxi]. It is therefore crucial to the country's employment structure and export capacity, and makes a positive contribution to the current account. It also has an important multiplying effect on other sectors, particularly transport, the agro-industries, culture, traditional textiles and footwear, and many more.

The 2013-2015 National Strategic Plan for Tourism (PENT) prioritises 10 products: (1) sun and sea, (2) golf, (3) nautical tourism, (4) nature tourism, (5) residential tourism, (6) health tourism, (7) religious and cultural tours, (8) business travel, (9) city breaks, and (10) food and wine.[lxxxii]

The success of any of these products depends on providing something different and the ability to implement a competitive model involving efficiency, innovation, human resource training and the preservation of in its different forms.

Portugal's ambition is to develop innovative and sustainable tourism. It is therefore **important to highlight nature tourism, as demand has been increasing steadily (it is expected to reach 43.3 million trips worldwide in 2015).** This product is expected to reach annual growth of 5% in Portugal over the next few years. The main tourist markets are Germany and the Netherlands, which represent 25% and 21%, respectively.[lxxxiii]

Tourists whose main motivation is seek peace, quiet, rest and authenticity. They engage in many cultural, sport and leisure activities, such as mountaineering, climbing, hiking, biking, horse-riding, boat trips, birdwatching and study of other fauna and flora. Investment in this type of product, either in the form of accommodation or recreation, requires better structuring of available supply and economic and social valuation of our natural heritage. This will ensure the sustainability of the public enjoyment of classified areas and others of high natural value. Although more travel means more energy-intensive transport, tourism also has the potential to contribute to green growth, involving improvements in energy efficiency, water use and waste systems, increased local employment potential and harnessing the opportunities for local culture and the natural environment.

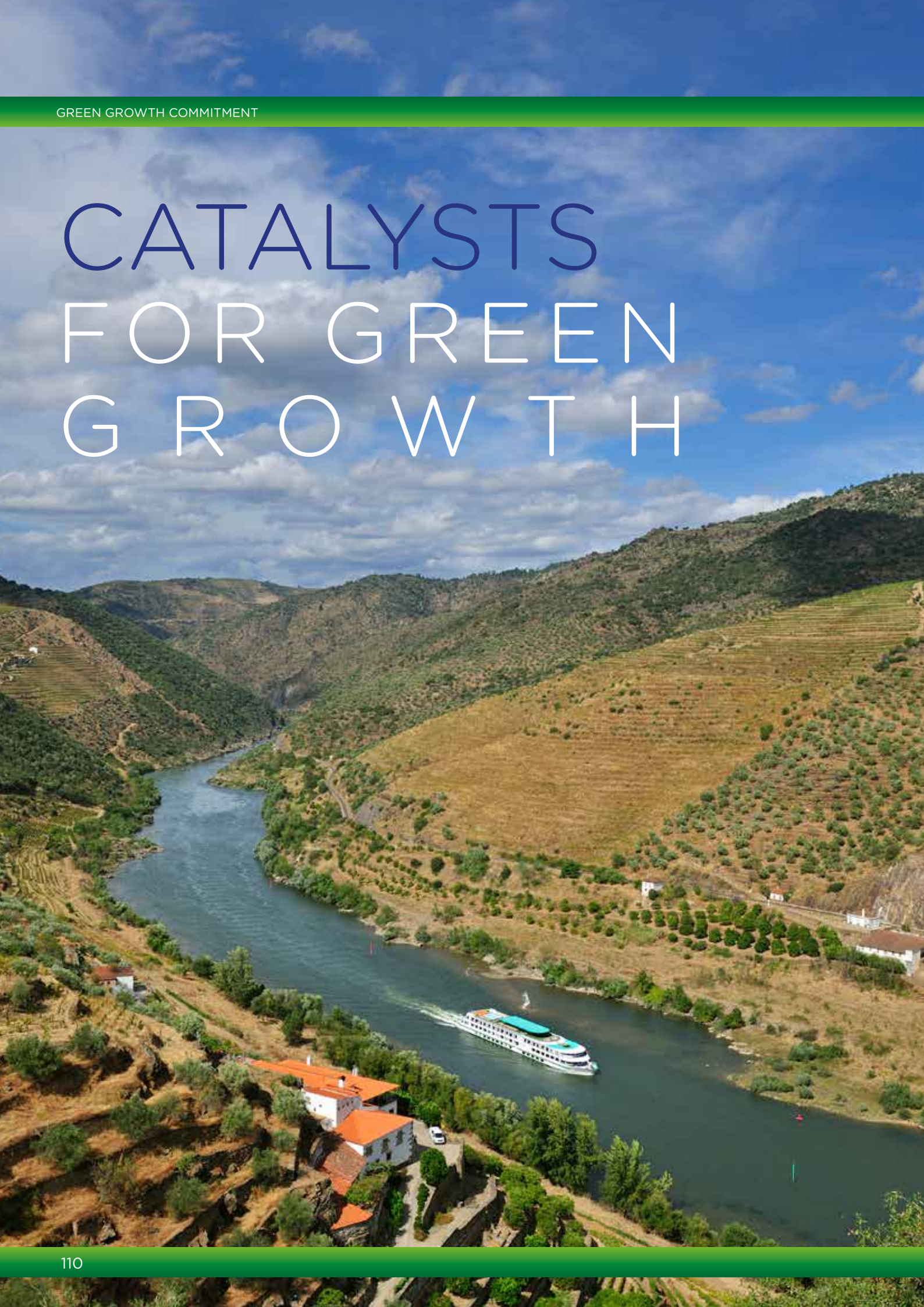
Seven initiatives have been identified in this sector.

Table 13: Tourism initiatives

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
TOU 1	Position Portugal as a world-renowned tourist destination complying with the principles of sustainable development, supported by distinctive and innovative national features	» Improve the position in various rankings related to these themes	F: PENT (National Strategic Plan for Tourism); MAOTE initiative FP: Turismo de Portugal	Water; Energy and climate; Biodiversity and ecosystem services; Cities and territory; International promotion; Information and participation
TOU 2	Replicate processes that, through the recognition of the added value of natural resources, seek validation and an independent international reference framework, improving the country's appeal to tourists (geotourism, technological and scientific tourism cases with the potential to be integrated in the UNESCO European Geopark Network)	» Increase the number of national Geoparks integrated in the UNESCO European Geoparks Network » Increase the number of national Biosphere Reserves integrated in the UNESCO European Network » Increase the number of visitors of: Geoparks, Biosphere Reserves	F: MAOTE initiative FP: Turismo de Portugal	Biodiversity and ecosystem services; Cities and territory; Sea; International promotion; Information and participation
TOU 3	Structuree and increase the supply of nature tourism, improving visiting conditions and the training of human resources	» Increase the number of nature tourism projects » Increase employment created by nature tourism » Increase turnover from nature tourism	F: PENT (National Strategic Plan for Tourism) FP: Turismo de Portugal, ICNF	Biodiversity and ecosystem services; Cities and territory; Sea; International promotion; Information and participation
TOU 4	Develop and implement a recognition system for hotel and catering establishments that comply with sustainability criteria	» Increase the number of recognised establishments » Annual increase in turnover of recognised establishments	F: PENT (National Strategic Plan for Tourism); MAOTE initiative; Roadmap for Eco-Innovation in Portugal FP: Turismo de Portugal	Water; Energy and climate; Manufacturing and extractive industries; Cities and territory; Information and participation

Ref.	Initiative	Performance Indicators	Framework (F) and Focal Point (FP)	Also relevant for
TOU 5	Improve the environmental quality of tourist resorts	» Increase the number of tourist resorts meeting the new official sustainability criteria	F: SET initiative FP: Turismo de Portugal	Water; Waste; Energy and climate; Biodiversity and ecosystem services
TOU 6	Invest in the restoration of classified monuments and buildings and their integration within tourist routes	» Increase the number of classified monuments and buildings that have been restored and integrated into tourist itineraries	F: MAOTE initiative FP: Turismo de Portugal	Manufacturing and extractive industries; Cities and territory; International promotion; Information and participation
TOU 7	Promote the provision of Blue Tourism services, in particular those related to diving and the observation of species	» Increase the number of tourists/customers involved » Increase the number of tourist recreation agents working as maritime-tourism operators (through the National Scheme for Tourist Recreation Agents - RNAAT)	F: Madeira 2020 - Regional Strategy for Smart Specialisation; Research and Innovation Strategy for Smart Specialisation in the Autonomous Region of the Azores; Decree-Law No. 9/2006, of 1 June FP: Turismo de Portugal	Mobility and transport; Biodiversity and ecosystem services; Sea; International promotion

CATALYSTS FOR GREEN GROWTH



In addition to the sectoral initiatives above, the GGC also proposes across-the-board initiatives as catalysts in six areas:

> Financing

> International promotion

> Taxation

> RD&I (research, development and innovation)

> Information and participation

> Public procurement

4.1 FINANCING

The existence of adequate financial instruments takes on a crucial role in building resilient solutions that are capable of responding to the challenges at the heart of the strategic process associated with this Commitment, through which Portugal intends to achieve a post-Economic and Financial Assistance Programme vision which encourages a new round of structural reforms and selective and productive investments in strategic areas and promote sustainable growth and employment.

The crucial financial mainstay for the ambitious objectives of the GGC can be found within the framework of the Portugal 2020 programme and national environmental funds, but also in other sources, including the European Investment Plan, or as it is also known, the "Juncker Plan".[lxxxiv] This is an initiative by the European Commission's President, which is based on the conviction that Europe needs an investment plan capable of boosting economic recovery, creating jobs, and ensuring long-term growth and competitiveness. To achieve this, the plan outlines a set of financial instruments and calls for a more effective and efficient use of existing financing mechanisms, in an attempt to use productivity savings and financial liquidity to meet the funding needs of economically-viable projects.

Similarities between the Juncker Plan and the GGC include the intention to support investment in strategic areas (infrastructure, particularly broadband and energy networks; transport infrastructure; industrial centres; education, research and innovation; renewable energy and energy efficiency) and the implementation of a sustainable and inclusive economic growth model.

Portugal 2020 – Catalyst of green growth

European Structural and Investment Funds (ESIF)[lxxxv] for 2014-2020 will be crucial in changing the course of Portugal's development as part of an intelligent, sustainable and inclusive growth strategy.

These funds are a decisive mechanism for increasing the competitiveness and sustainability of the Portuguese economy at a time when national investment is highly limited. Their use should entail a genuine paradigm shift: from infrastructure building to efficient infrastructure management and a competitive economy; from grants to repayable loans that can reach a wider range of entities, companies and citizens; from a linear economy binding competitiveness and productivity to the use of resources, to a circular economy that rewards their efficient use.

In this context, another National Thematic Programme devoted to the environment – PO SEUR[lxxxvi] – has been set up. This is designed to contribute to the affirmation of the Europe 2020 Strategy[lxxxvii], especially with regard to the sustainable growth priority, and will respond to the challenges involved in the transition to a low-carbon economy based on a more efficient use of resources.

Portugal's performance in this area has shown important progress and the contribution of EU funds has been decisive. Nonetheless, in spite of existing investments, there are still challenges arising from the high energy intensity of the Portuguese economy, the inefficient use and management of resources, the vulnerabilities to natural and technological risks and the weaknesses in the protection of environmental values.

The response to such constraints can be structured around three perspectives that will be fundamental to the mobilisation of EU funds in the next cycle:

> **transition to a low-carbon economy,** focused on promoting energy efficiency, especially the reduction of energy consumption within the public administration and the fostering

of energy efficiency within enterprisess, the transport sector and residential buildings;

> **adaptation to climate change and risk prevention and management,** with a focus on coastal erosion and forest fires;

> **environmental protection and promotion of resource efficiency** based on strategies for the waste sector (PERSU 2020), water sector (PENSAAR 2020), biodiversity and environmental liabilities.

The Strategic Framework for Climate Policy (QEPiC), which includes the National Climate Change Programme (PNAC) 2020/2030, the second phase of the National Strategy for Adaptation to Climate Change (ENAAC 2020) and the challenges listed in the National Energy Efficiency Action Plan (PNAEE) and National Renewable Energy Action Plan (PNAER), lists, amongst others, the following challenges: significant reductions in greenhouse gas emissions, within a sustainability and low carbon framework; greater energy efficiency and efficient use of resources; and a more competitive economy. These are to be achieved both by **reducing the consumption and operating costs of enterprisess and the public sector and the costs of domestic energy consumption.**

In line with this strategy, and in addition to promoting energy efficiency in companies and local government, to be financed by regional operational programmes with structural funds, it is forecast that the PO SEUR, through a financial allocation of around 200 million euros from the Cohesion Fund, will accelerate a reduction in energy consumption in the central public administration (which has been given a target of a 30% reduction – ECO.AP[lxxxviii]) and, via a further 200 million euros, encourage energy efficiency in residential buildings. These investments will be made alongside support of around 500 million euros of EU structural funds for urban regeneration.

Regarding the promotion of sustainable mobility and energy efficiency in the transport sector, approximately 100 million euros from the Cohesion Fund will provide support for sustainable mobility policies that include public administration measures to encourage both behaviour and paradigm changes, with considerable gains in efficiency.

Portugal is amongst those European countries most vulnerable to the impacts of climate change and therefore cross-cutting sectoral and territorial responses are therefore essential, in accordance with the provisions of the ENAAC.[lxxxix] The next financing cycle will focus on increasing the country's resilience in two inter-related investment priorities. The first has to do with adaptation to climate change and the second with the prevention and management of specific risks, which may be natural (erosion, flooding, storms, drought and earthquakes) or related to human activity (technology).

The protection of the coastline is admittedly the main intervention priority in this domain, to which funding of 200 million euros has been allocated. In view of the extent and systemic nature of the problem, which combines natural phenomena and human impacts, it is necessary to continue to invest more intelligently, efficiently and determinedly with a view to integrated management and the pursuit of a strategy of planned adaptation. New options may even be considered, such as the planned removal of human occupation from certain sections of at-risk coastline, in conjunction with appropriate institutional and financial frameworks. In terms of priorities, Portugal must implement a systemic sediment management policy that will restore the natural sedimentary cycle, and lead to a more structural reduction of erosion.

Moreover, preventing and fighting forest fires adequately, by allocating around 50 million euros to the reinforcement of the country's aerial firefighting equipment, has proven essential to ensure the effectiveness and efficiency of fire fighting in inaccessible terrain. This has involved the discharging of large amounts of retardants and support for communications in rough terrain as well as the overall coordination of operations aimed at reducing the area covered by forest fires to levels comparable to the average for the Mediterranean countries.

In the field of urban waste management, and in line with the PERSU 2020, the next planning period, with an allocation of around 300 million euros from the Cohesion Fund, foresees the focus of investment on infrastructures for the recovery of waste, both organic (mechanical and biological treatment and organic recovery centres) and material (mechanical treatment, sorting stations, recycling bins and recycling centres). This will guarantee that the 2020 targets, which require preparation

for the reuse and minimum recycling of 50% of urban waste and a reduction of biodegradable urban waste disposed of in landfills to 35%, are met.

The management of water resources, including the use and management of land affecting both the quality and quantity of available water, requires coordination with spatial planning measures and integration in funding priorities. It has thus been allocated nearly 634 million euros from the Cohesion Fund, which, combined with funding from other sources (eg. EIB - European Investment Bank), will enable investments of around 3 billion euros in actions under the "PENSAAR 2020". The new strategy is no longer focused on infrastructure construction to increase coverage, but rather on management and operation of assets and the quality of service from the perspective of wide-ranging sustainability. This new strategy requires a new design and use of subsidies, namely provided as non-repayable funding of situations that ensure compliance with regulations and used, through financial instruments (repayable loans and guarantees), to leverage investments in those situations which foster efficiency gains.

In the field of biodiversity and ecosystem services, the conservation status of species and habitats must be improved and knowledge about natural heritage and biodiversity must be updated and integrated into information and monitoring systems, essential to support the development of conservation and management actions.

This financial framework also provides an important commitment to urban rehabilitation and regeneration interventions in deprived areas, abandoned industrial areas, social housing and public buildings, totalling approximately 600 million euros (which may be maximized by interaction with other sources of financing). If associated with energy efficiency interventions in housing, the total rises to almost 1 billion euros worth of rehabilitation interventions.

To support financially and economically viable projects that fail to obtain sufficient private funding, the provision of financial engineering mechanisms supported by sustainability and efficient resource use (SEUR) funds (allocated both to the PO SEUR and regional operational programmes) may be offered as debt instruments (loans and credit guarantees) which can be combined within the same operation, for example with technical support or subsidised interest rates.

The mobilisation of financial instruments falls within the new European Regional Policy directives which reveal their potential to maximise the effect of the ESIF, through their ability to combine different forms of public and private funding in furtherance of public policy goals, as well as their ability to ensure a renewable flow of financial resources for strategic investment, by supporting long-term sustainable investment and boosting the EU's potential for growth.

Generally speaking, these financial instruments should attract more financial resources and increase the impact of the programmes; achieve gains in efficiency and effectiveness due to the repayable nature of the funds covering specific programmes for future use towards similar goals; improve project quality due to their greater requirements for sustainability and ability to generate financial return; and improve access to a wider spectrum of financial instruments for policy implementation and greater involvement by the private sector.

Redirecting national environmental funds towards Green Growth and promoting their integrated management

In the context of a shortage of public funds to support the economy, recourse to solutions supported by financial instruments can achieve a multiplying effect and a resulting increase in the ability to act, through combination with private resources. It is also anticipated that national environmental funds will be restructured and redirected towards Green Growth, providing complementary funding lines to those anticipated in the operational programme and destined to support investment priorities that are ineligible for the ESIF in those areas more directly associated with Green Growth: (1) energy efficiency, (2) efficient management of water, biological resources and waste, (3) resilience and low carbon, and (4) eco-innovation.

In addition to the advantages mentioned above, the redirecting of various national environmental funds towards Green Growth, and their alignment with Portugal 2020 funds, of which 1 billion euros is repayable and the rest a non-repayable grant, seeks to concentrate a substantial amount of funding under the same strategic and operational framework to act as a powerful catalyst.

4.2 INTERNATIONAL PROMOTION

The aim of positioning Portugal as a global benchmark in Green Growth requires action at multiple levels, for example, in terms of the international expansion of green companies and sectors, increases in exports of associated products and services, promotion of Portugal in the most important foreign markets for the profile in question and promotion of brand "Portugal", while associating it with "green" values.

Portugal offers resources and opportunities associated with green growth, that can be enhanced and promoted to attract investment. At the present time of political and economic change - with a focus on development - there is an opportunity for external projection by conveying confidence around structural reforms and selective investment in green growth.

Designing and implementing a strategic external action plan for the Green Growth Commitment

This plan will focus on linking up with leading international institutions and movements in other countries, regions and macro-regions, with goals similar to those of the GGC.

It seeks to ensure an effective presence in economic and political forums and to position Portugal as the international leader of this renewed development model, encouraging international partnerships, capturing quality investment, and retaining, creating and attracting talent.

It aims to further contribute to making GGC a global public policy benchmark, sharing best practices and developing projects alongside other countries and supra-national bodies.

Creating a campaign to position Portugal as a global benchmark in Green Growth

Taking into account the national advantages where green growth is concerned, this initiative, coupled with the 'Portugal' brand (from the perspective of "nation branding"), seeks to develop a communication concept capable of **projecting *Portugal as leading Green Growth country*** in order to:

> Contribute towards the internationalisation of companies and sectors;

- Increase the country's attractiveness, especially for those areas and sectors more closely associated with Green Growth;
- Improve the country's positive reputation and project a more sustainable image abroad.
- Form an integrated strategic communication and promotion framework that effectively interlink different instruments, such as a web portal, promotional and inspirational videos, economic diplomacy, communication and promotional materials, an investment portfolio, economic intelligence software and strategic partnerships, among others.

This approach, concentrating on promotion and communication, will help internationalise Portugal's green economy and complement other instruments and investments.

4.3 TAXATION

The Green Taxation Reform must stimulate innovation and sustainable growth, helping to reconcile protection of the environment with economic growth, while remaining in line with the general principles and goals of environmental policy, especially those set out in national and EU guidelines and standards.

The reform must also encourage the efficient use of resources, thereby preserving and harnessing natural capital and fostering fair and sustainable use of the soil, territory and urban areas while introducing signs which facilitate the transition to a low-carbon economy.

Implementing the Green Taxation Reform to refocus the economy

The debate on taxation, and especially environmental taxation, is very important in the current context of structural reforms to fight the economic and financial crisis and to contribute to fiscal consolidation. The importance of an intelligent relationship between tax policy and environmental policy is based on the opportunity to **adjust the tax system to a more competitive, innovative, inclusive and low-carbon economy that is greener and more energy and resource efficient.**

The implementation of this new generation of environmental policies is in harmony with best European practices. Environmental policies are based on economic instruments that seek to internalise environmental costs in the economy and encourage greater public engagement in sustainability policies.

Environmentally-related taxes totalled 4.49 billion euros in 2013, representing 7.7% of total revenue from taxes and social contributions (9.3% in 2012), the lowest amount for the 2006-2013 period. This represents a 10.7% decrease compared to 2012, while tax revenues and social contributions increased by 8%. According to the data available for 2012, the share of these taxes as a proportion of total tax revenue, including social contributions, in Portugal, was slightly higher (6.7%) than the EU average (6.1%) (INE, 2014)[xc]. Between 2006 and 2011 there was an increase in the share of energy and pollution tax, and a decrease in the share of taxes on transport. Nonetheless, during this period, almost three-quarters of revenue came from tax on vehicles and energy products[xci]. The reduction in environmentally-related taxes in 2012 and 2013 was mainly due to a decrease in revenue from taxes on energy and transport, most significantly those on oil and energy products, as well as the motor vehicle tax (IA/ISV) (INE, 2014).[xcii]

In 2012, Portugal was ranked 20th in the EU27 with regard to the weight of environmentally related taxes relative to GDP, at 2.2% of GDP, lower than the EU27 average (2.4%). In 1990, however, it occupied one of the top positions in this ranking (fourth place). This shows that **Portugal is one of the countries which has shown the largest decline in environmental taxation as a percentage of GDP.**[xciii] Portugal could do more to increase environmental taxation. There is an estimated potential for increasing revenue from environmentally related taxes of around 2.2 billion euros by 2016, through the replacement of taxes on labour and companies.[xciv]

In this context, the following are deemed necessary: improved efficiency in the use of resources, reduced dependency on external energy and more sustainable patterns of production and consumption, thus strengthening the freedom and responsibility of people and enterprises. Therefore, it is also necessary to formulate a structural response to structural problems and, in a context of ambitious goals, stable policies and predictable investment, it is essential that we all engage in a sustainable vision of the future.

The Green Taxation Reform is part of a broader goal to introduce a fiscal policy that is more in line with growth and employment goals. It is based on the indisputable premise of tax neutrality and the principle that the heaviest taxes fall on pollution and degradation rather than earnings and production.

The reform covers all sectors and resources and assesses the environmental, economic and social impacts of decisions taken.

Green taxation presents a triple dividend:

- Protection of the environment and reduction in energy dependency;
- Fostering of growth and employment; and
- Contributes to budgetary responsibility and the reduction in external imbalances.

Green taxation introduces incentives for electric vehicles, plug-in hybrids and natural gas-powered vehicles; it supports nature conservation and forestry production projects and ensures a fairer method of allocating the revenue from surtaxes levied on companies depending on their environmental impact. It represents a paradigm shift in behaviour, giving citizens the opportunity to use resources in a more sustainable way.

Of the expected revenue from green taxation in 2015 (165 million euros), 17.5 million euros will be allocated to benefits and incentives for sustainable mobility, forest management and nature conservation. The remaining amount of 148 million euros will, in practice, fund an income tax reduction, under the family quotient.

The green taxation reform will introduce a carbon tax on those sectors not included in emissions trading, increase motor vehicle tax (IA/ISV) depending on a vehicle's CO_2 emissions and levy a tax on lightweight plastic bags and on landfill waste disposal.

The reform is independent and tax neutrality will have to be attained every year. The annual strategy for recycling the revenue generated from Green Taxation should contribute not only, as in 2015, to reductions in income taxes, but should also be applied to the allocation of tax credits to encourage companies to invest in energy efficiency. The net revenue increase must be used to reduce other taxes, particularly taxes on income.

Assuming it is impossible to promote and monitor this kind of reform without recourse to rigorous modelling of the financial and economic impact of the proposed environmental measures, the Commission identified the TIMES, DGEP, MODEM and GEM models used by other bodies and assessed their suitability.[3]

The goals of the Green Taxation Reform are:

- To penalise that which pollutes and harms, relieving the burden on labour and families;
- To reduce energy dependency;
- To encourage more sustainable patterns of production and consumption, strengthening the freedom and responsibility of citizens and businesses;
- To promote the efficient use of resources, namely of water, energy and materials;
- To promote entrepreneurship and job creation;
- To diversify revenue sources, in a context of tax neutrality and economic competitiveness.

The following features of this reform are highlighted:

- **Carbon tax:** will focus on those sectors that are not included in the European Emissions Trading Scheme (EU ETS); the annual value of the tax is indexed to the price of carbon in the previous year, reflecting the arithmetical average of ETS auctions – tax revenue of 95 million euros;

[3] (i) TIMES – Technical Linear Optimisation Model resulting from the implementation in Portugal of the TIMES economy– energy-environment technology -based optimisation models generator, developed by the Energy Technology Systems Analysis Programme of the International Energy Agency; (ii) DGEP model – a model that incorporates a fully dynamic optimisation as well as endogenous growth and detailed modelling of public sector activities, both in terms of revenue and in terms of consumer spending and investment; (iii) MODEM – a model that assumes production is determined by the final demand, with all of this demand being exogenous – with the exception of private consumption, which is determined by available disposable income, which determines the level of economic activity combined with fiscal variables; (iv) GEM – static general equilibrium model – a mathematical representation of the economic system as a whole. As it considers the interaction of multiple economic agents in all markets, subject to behavioural and institutional constraints that allow the representation of structural policy changes and external shocks, this model proved useful in simulating energy and environmental policies.

> **ISV:** increasing the tax on petrol and diesel vehicles according to their CO_2 emissions — tax revenue of 28 million euros;

> **Public transport:** a tax surcharge on the cost of electricity, natural gas for vehicles (NG) and liquefied petroleum gas (LPG); 130% for electricity and 120% in the case of LPG and CNG, when used for public transport and freight;

> **Electric cars, plug-in hybrids, LPG and VNG:** an increase in the maximum depreciation that can be offset against tax and a reduction in income tax (IRS) and corporation tax rates (IRC) — expenditure of 8 million euros;

> **Electric vehicles, plug-in hybrid, LPG and VNG:** deduction in value added tax (VAT) on the cost of acquisition, manufacture or import, and the cost of leasing and repair – expenditure of 1 million euros;

> **Bike-sharing and car-sharing systems in companies and acquisition of bicycle fleets:** surcharge on the costs of associated goods and services;

> **Disposal of end-of-life vehicles:** refund of ISV or provision of a subsidy for the purchase of a new electric (4,500 euros) or plug-in hybrid vehicle (3,250 euros);

> **Lightweight plastic bags:** will be subject to a tax of 8 cents plus VAT; the objective is to encourage individuals to use fewer plastic bags, with the following targets: from 50 bags per person per year in 2015 to 35 bags per person per year in 2016; part of the resulting revenue will be used to reinforce the Fund for Nature Conservation and Biodiversity in order to finance projects in municipalities within classified areas, mainly through the NATURAL.PT program — tax revenue of 40 million euros;

> **Waste Management Tax (TGR):** benchmark of 5.5 euros/tonne in 2015, progressively increasing to 11 euros /tonne in 2020, as a means of discouraging the use of landfill for municipal waste disposal (MW) — raising 2.5 million euros;

> **Municipal property tax (IMI) and Municipal Property Transfer Tax (IMT):** 50% reduction in IMI for properties intended for the production of renewable energy and rural properties providing ecosystem services in classified areas; exemption from IMI for properties involved in public water supply, sanitation and the management of municipal waste; exemption from IMI and IMT for rural properties in Forest Intervention Zones (ZIF) or which are subject to forest management plans (note also the 30% IRC and IRS surcharge for fiscal purposes on fiscal contribution to the ZIF Common Fund); reduction of IMI on rural properties incorporated into the land exchange;

> **Corporate tax surcharge:** when more than 50% of a company's turnover derives from the exploitation of natural resources or the treatment of waste, the surcharge can be attributed to its respective Municipality.

4.4 RESEARCH, DEVELOPMENT AND INNOVATION

The challenges facing nations as a result of the intersection of significant trends (climate change; demographic transformation; urbanisation; etc.) and their expected impact on the escalation of resource scarcity, are huge and the problems and opportunities they bring can only be resolved by an ambitious mix of solutions. Not only does the situation require global political agreements and significant investment to support societal adaptation and responses to these challenges, but also new approaches and innovative thinking. New less resource-intensive technologies must be disseminated, developed and adopted to ensure that these challenges don't become even more difficult to manage.

Sustainability-focused RD&I is now a feature of the daily activities of many organisations. Performing this type of activity requires new ways of thinking, and the involvement of various stakeholders as well as the constant renewal of their skills. The latest data for Portugal from the EU Innovation Survey[xcv] (2010) shows that of all companies engaged in technological innovation, 27.1% did so to reduce the amount of material and energy per unit produced and 25.9% to reduce their environmental impact.[xcvi] This is a clear demonstration of the innovative potential of companies operating in the domestic market, with room for expansion following a green growth approach. Sustainability and environmental performance now make "good business sense" for Portuguese companies, especially for those whose products and technology include reduced environmental impact as a key strategic parameter.

In the context of Green Growth, innovation consists of the creation of new products (goods or services) or processes. It includes not only environmental technology but also changes to business models to incorporate the concept of "sustainability". These models are based on new cost-efficient and cost-effective ways of using energy and materials in production processes, manufacturing processes and value chains, thereby enabling the sustainable use of natural resources and contributing to global environmental solutions that do not focus only on the symptoms.[xcvii]

RD&I incentives and support for companies in Portugal have been redirected to more mature technologies. In addition to sharing costs, the combination of public investment and private enterprise can direct RD&I towards immediate solutions to specific problems. The creation of international consortia of research institutions will also make it possible to share financial investment while boosting access to knowledge and promoting the internationalisation of the technologies developed.[xcviii]

One of the strategic orientations with an impact on Green Growth involves encouraging the creation of wealth based on RD&I, enabling the creation of new companies with a resulting increase in scientific employment. In this context, the financing model will enhance the proximity to the production base and assume the definition of strategic areas or clusters by region. It may also include measures to stimulate the pre-incubation of companies at RD&I institutions and universities, and the creation of consortia (of companies, universities and state-owned laboratories) focusing on strategic sectors for Green Growth.

Particularly pertinent is the clear interlinking with the Diagnosis of the National System of Research and Innovation[xcix] and the Research and Innovation Strategies for Smart Specialisations (RIS3),[c] which will become key options for research and innovation in the 2014-2020 period. Of note:

- the areas of intervention in common with the GGC (referred to as priority areas in the RIS3), such as: water and environment; agri-foodstuffs; forestry; energy; mobility, space and logistics; habitat; maritime economy; and tourism);
- the alignment of the vision underlying the RIS3 with green growth: "Portugal must consolidate or ensure its leadership in the green, digital and blue economies through the use and development of advantages acquired via information and communication technologies and new materials, and the sustainable exploitation of endogenous resources, namely from the sea, forests and minerals. Emphasis will be given to major societal challenges, such as the mitigation of climate change risks, biodiversity, water and ageing.

Launching a Roadmap for Eco-Innovation in Portugal that nurtures national innovation priorities

Eco-innovation is one of the main pillars in the transition to Green Growth. The Roadmap for Eco-Innovation will be a strategic instrument for Green Growth in Portugal and for promoting the competitiveness and internationalisation of the national economy. This roadmap will receive, expand and apply knowledge accumulated during the life of the ECOPOL (Public innovation partnership for better policies and instruments in support of eco-innovation) project, with a medium to long-term time frame and intermediate and final goals. Among others, the roadmap will address the following aspects: market drivers; funding; tools and skills; RD&I priorities and technical information; internationalisation; and governance.

Its design and implementation will be based on multi-ministerial collaboration, and will seek an extended social support base, starting with the search for synergies in the promotion of eco-innovation framed by three national strategies focused on

innovation, industry and resources: the ENEI,[ci] the EFICE[cii] and the GGC. It will also link up with the national ESIF programme as part of Portugal 2020. The promotion of eco-innovation will include a commitment to the integration of environmental components into technological development, encouraging innovations which adopt a more complete approach towards efficiency gains for sustainability (minimisation of resource consumption, dematerialisation of the economy, improvement of environmental quality, etc.). Its aim is to promote the use of techniques and technologies that increase productivity and competitiveness and include environmental and economic efficiency criteria that are able to reduce environmental impacts, increase resistance to pressures and foster a more conscientious and efficient use of natural resources.

Encouraging the development of disruptive technologies - Technological Disruption and Sustainable Growth

There are a number of potentially disruptive technologies[ciii] with impacts at various levels, such as sustainability, renewal of industrialisation patterns and links to Green Growth, which can be explored and accelerated. Innovation in this context can also encompass new products (goods or services) or processes and is not limited to technology, in spite of its core importance.

For example, technologies such as 3D printing can lead to profound changes in the medium to long term in the patterns of production, transportation and marketing of products. They can revolutionise production and consumption patterns, generate new opportunities for creating employment and wealth and have significant impacts on regional organisation and the respective economic base. There are those who regard this technology as a strategic tool for the renewal of industrialisation patterns. Where sustainability is concerned, it may be a question of reducing overall product transport needs (with resulting reductions in emissions) and permitting the use of raw materials with greater efficiency, productivity and creativity.

The GGC proposes the development of the "Technological Disruption and Sustainable Development" initiative, entailing the **creation of a framework that**

[4] This involves the creation of products by successive layering of a material. It is different from the predominant techniques in traditional production, which are often subtractive and involve cutting, machining or moulding blocks of material into the correct shape and then assembling, gluing or soldering them into more complex products. 3D printing can drastically reduce the monetary and environmental costs of production, packaging, distribution and transport.

encourages and finances disruptive technology projects, with impacts in terms of sustainability, efficient use of resources, re-industrialisation and green growth. This instrument's development process will include an international conference on the subject in Portugal and the elaboration of a raming forward-looking participatory study. In fact, following a forward-looking public policy approach, Portugal can try to accelerate or adjust the "direction" of disruption towards "green re-industrialisation", defining instruments and incentives to fund projects in this area. The challenge lies in giving public visibility to the issue, providing financial instruments and promoting stakeholder coordination.

4.5 INFORMATION AND PARTICIPATION

Quantification of the Green Economy in Portugal

This involves deepening quantification of the green economy in Portugal, developing metrics and knowledge platforms/information systems which allow for a better evaluation of the size of green economic sectors and parts of other economic sectors which work within the area of protecting and enhancing of the environment and sustainability, thus contributing to green growth.

The production of this information through its collection, processing and validation, relies on the establishment of a consistent, systematic and detailed methodology for compiling it and ensuring the comparability of national and international results.

These projects will be developed in close collaboration with public and private bodies and will focus on different green economy themes and sectors in Portugal, seeking at all times, to improve knowledge of their impact and socio-economic potential in order to inform decision making and to align the views of stakeholders.

A Green Growth Index for Portugal will be developed to enable integrated communication of developments in the implementation of initiatives and to allow the country's green growth trajectory to be followed and monitored. This will aggregate and simplify a large amount of information, making it suitable for disclosure to the general public and facilitating the assessment of green growth trends and progress over time. Its starting point will be the aspects and aspirations

expressed in this Commitment and it will establish itself as an international benchmark, participating in and promoting international sharing of best practices.

Platform/Portal on Green Economy in Portugal

This is a platform for sharing information about the green economy. It will include important information about green economy ideas, challenges, projects, technologies and stakeholders in Portugal and across the world. It will explore innovative solutions and products, facilitating coordination between staekholders.

The information sharing platform, in particular, will be a catalyst in the link between RD&I and business. It will provide information, on the one hand, about the main and potential research areas and the projects and teaching being undertaken in the universities, research laboratories and technology centres and, on the other, the needs, projects and potential areas of business development and investment, thereby contributing to the formation of partnerships.

iGeo initiative

The iGeo initiative[civ] was launched on 12 May 2014 and seeks to create added value via intensive knowledge models based on public administration reference data. The main beneficiaries of the generated data will be the public administration, teaching and research institutions, NGOs and private companies.

The data will be permanently and dynamically available in a preset format so that they can be integrated in real time into software used or developed by users.

In its initial phase, the iGeo portal will provide cartographic and geo-referenced information (e.g. architectural heritage, natural heritage, protected and conservation areas, MMPs and land use maps, etc.), translating into the provision of more than 7,000 web services.

At a later stage, data will be made available on environmental protection, energy and geology, agriculture and rural development (available in the near future). An ideas competition ("Creative Minds"[cv]) will promote the use of the data sources provided by the portal by different audiences through its migration to mobile platforms.

The **provision of the reference data for reuse or inclusion in other information systems will leverage and support the creation of new business models.**

Developing regional Green Growth plans

The development of an overall economic and social model requires global responses, but also regional and local empowerment and application. Believing that there are regional and local solutions to global problems and opportunities (competition for resources, climate change, value of biodiversity, etc.), we must recognise the importance and stimulate the ability of each region to apply these responses, organising their respective strategic commitments by shaping them to the different territorial characteristic features in a way that is coherent, creates synergies and is capable of mobilising regional stakeholders.

The aim of this initiative, therefore, is to stimulate, promote and support local Green Growth that mobilise innovative and resource-enhancing projects.

These action plans can be incorporated in and supported by RIS3 strategies, for example, and should have a strong element of business and social involvement, as well as of participation by other regional stakeholder institutions. They will be multi-sectoral plans that will encourage the exploitation of synergies between different areas of activity. They should identify flagship projects, while at the same time leaving the regions to create their own "portfolio" of green economy commitments, not only improving the complementarity of projects, but also opening up new trends in regional economy specialisation. They will include activities in such areas as: research, training, entrepreneurship, entrepreneurial training, internationalisation and, where appropriate, inclusion and social innovation. They will encourage a logic of experimentation and testing of innovative solutions.

Introducing programme of educational initiatives

The challenges associated with Green Growth and sustainable growth depend on the knowledge, involvement and commitment of the general public and the different economic, social and institutional agents.

As an example, the extent to which people save energy or water depends on how informed and motivated they are towards reducing environmental impacts and solving problems that concern society as a whole. The efficient use of resources is everyone's responsibility. For example, from the viewpoint of the "citizen-consumer", there are also many choices that can and should be made in full awareness of the environmental impacts of different options.

It is also important to consider that environmental problems change over time and require different responses by the public. While in the 1980s and 1990s the Portuguese population was concerned about waste dumps, water quality and the location of certain infrastructures, today there are new targets, such as adaptation to climate change, desertification, quality of food products and biodiversity conservation.

It is important to focus on his issue from a political and planning standpoint and promote the introduction of **new initiatives that take advantage of new information technologies to disseminate information, share knowledge, establish networks, and actively engage the public in general and young people in particular.** The GGC proposes the development of a cross-cutting initiative focused on raising awareness about sustainability, contributing to the promotion of more sustainable behaviour. It is important to create a national programme for different target audiences, focusing on problems and identifying proposals that the public can embrace.

4.6 PUBLIC PROCUREMENT

Ecological public procurement

Where green growth and sustainable development are concerned, public procurement plays a key role in encouraging behavioural changes in citizens and businesses through the associated turnover and respective contribution to market creation and also by promoting sustainability while contributing to the construction of a new concept of development, taking the public administration as a good example.

The latest EU guidelines on the modernisation of EU public procurement policy,[cvi] namely those in the Green Paper of January 2011, identify public procurement as having considerable potential for integrating economic, social and environmental policies. This will be achieved in Portugal by the National Strategy for Ecological Public Procurement 2015-2018, emphasising the close link the implementation of this priority among different bodies within the MAOTE and the Ministry of Finance, especially the ESPAP – Public Administration Shared Services Authority.

Public bodies are among the largest consumers at the European level, with more than 19% of GDP spent on procurement in the EU.[cvii] **Public procurement therefore has an undeniable role in contributing to the competitiveness of certain environmentally oriented goods or services, as well as in promoting eco-innovation and the pursuit of sustainability objectives.**

The public contract and procurement system must be based on principles of effectiveness and efficiency and on a business-like management structure in order to achieve reforms in the public administration while fostering the inclusion of environmental criteria in public contracts for the purchase of goods and services, framed within a global approach to environmental issues and economic and social matters.

The implementation of a public procurement policy based on a green and sustainable rationale will be an undeniable catalyst for Green Growth.

The Catalysts for Green Growth include 13 initiatives.

Table 14 – Catalysts for Green Growth

Catalyst	Initiative and Focal Point (FP)	Objectives
CAT 1 Financing	» Portugal 2020 - Enhance European Structural Funds and Investment (2014-2020) FP: Fund Managing Bodies	» Oversee investments and financing instruments to support projects and operations under sustainability criteria » Promote measures that strengthen the competitiveness of sectors and activities and stimulate the creation of new businesses » Promote the internationalisation of enterprises and sectors and in so doing contribute to the increase in exports of products and services » Prepare human resources for the challenges of green growth » Invest in innovation, research and technological development, aiming at greater efficiency in the use of resources
	» Redirect national environmental funds towards Green Growth and promote their integrated management – Structure financial instruments to provide strong investment potential FP: Fund Managing Bodies	
CAT 2 International Promotion	» Design and implement a strategic plan involving external action for the Green Growth Commitment, focusing on the interconnection between the main international institutions and similar movements and ensuring attendance at the economic and political forums FP: GGC Executive Secretariat	» Contribute to the internationalisation of businesses and sectors » Enhance attractiveness in the areas of green growth: renewable energies, climate, efficiency in the use of resources, etc. » Project an external image of environmental, social, economic and financial sustainability, increasing the country's positive reputation » Form an integrated strategic communication and promotion framework that expresses different instruments in an effective manner » Make the Green Growth Commitment a global global benchmark for public policy
	» Communication campaign - Position Portugal as a world leader in green growth FP: SG MAOTE"	

Catalyst	Initiative and Focal Point (FP)	Objectives
CAT 3 Taxation	» Green Tax Reform – Implementing and monitoring the Reform FP: MF; MAOTE	» Diversify revenue sources in a context of tax neutrality » Promote eco-innovation and efficiency in resource use » Reduce energy dependency » Create more sustainable patterns of production and consumption » Encourage entrepreneurship, the economy and employment
CAT 4 Research, Development and Innovation	» Roadmap for Eco-Innovation - Launch a Roadmap for Eco-innovation which nurtures national innovation priorities in terms of sustainability and efficiency in the use of resources, leveraging eco-innovation in Portugal FP: ANI; APA	» Provide the market with credible information on the performance of eco technologies, promoting their market penetration and awareness of their adoption » Empower the innovation system for eco-innovation and set up new technical support infrastructures or streamline existing ones to prompt and support companies to eco-innovate » Promote products and services based on eco-innovative business models that are aimed at domestic and global markets » Promote programmes that contribute to productivity, competitiveness and the efficient use of resources » The public administration to act as a promoter of eco-innovation » Launch a financing line for eco-innovation and radical innovation projects » Use the support of the national financial system » Encourage the development of pilot projects for disruptive technologies with potential impact in terms of sustainability and efficiency in the use of resources
	» Plan D – Disruptive Technologies - Create a favourable environment to encourage projects with greater technological risk FP: ANI; APA	

Catalyst	Initiative and Focal Point (FP)	Objectives
CAT 5 Information and Participation	» Quantification of the green economy in Portugal – Develop metrics/ knowledge platforms / information systems on the green economy, including a Green Growth Index in Portugal FP: SG MAOTE and GGC Executive Secretariat	» Enable the integration and reuse of information » Contribute to decision making based on a detailed analysis of risks, trends and potential » Communicate, in an integrated manner, the evolution of the implementation of initiatives, following and monitoring the path of green growth in the country » Promote the dissemination of information, the sharing of knowledge and the establishment of networks » Streamline regional actions for green growth, mobilising innovative projects and the enhancement of resources » Promote the link between stakeholders » Promote the active involvement of citizens, and in particular the youngest, contributing to the change and improve in behaviour regarding greater sustainability
	» Platform/portal on the green economy in Portugal – Platform sharing information about ideas, challenges, projects, technologies and stakeholders involved in the green economy in Portugal and abroad FP: GGC Executive Secretariat	
	» iGeo Initiative - Making information available that provides decision-making models based on Public Administration data FP: DGT	
	» Develop regional plans for green growth - Identification of the importance of each region in providing answers to the challenges of green growth, organising strategic bids and bringing the various stakeholders together FP: GGC Executive Secretariat	
	» Educational Initiatives - Developing educational programmes and environmental awareness aimed at various target-audiences FP: GGC Executive Secretariat	

Catalyst	Initiative and Focal Point (FP)	Objectives
CAT 6 Public Procurement	» Green Public Procurement - Include and/or reinforce sustainability criteria in public procurement contracts for goods and services FP: ESPAP; APA	» Stimulate behavioural changes in citizens and enterprises » Lead by example in promoting the construction of a new concept of development » Promote the competitiveness of goods and services targeted at sustainability

GOVERNANCE MODEL

By establishing a clear vision for the future, this Green Growth Commitment seeks to contribute towards placing Portugal among the countries at the forefront of the transition to the green economy. It defines a unique strategic reference framework at the global level, with 14 ambitious growth, efficiency and sustainability goals for 2020 and 2030. With the commitment of the whole of society, these demanding goals are attainable.

The Green Growth Coalition, which was formed in February 2014, combines the efforts of about 100 associations and representatives from the business, science and financial sectors, in addition to public bodies, foundations and NGOs. The Commitment to Green Growth is a direct result of the spirit and of the discussion developed within the coalition.

Given the importance of exploiting the relational capital resulting from this Coalition and from the design process and public discussion of the GGC, and taking into account the need to ensure the continuity and effectiveness of this strategic movement, a two-pronged approach was adopted:

(1) The formal constitution of the Green Growth Coalition as an extended strategic definition body and as a broad-based strategic body which acts as the driving force behind green growth in Portugal. The Coalition will work as a consultative body and its composition and operational rules shall be established in its own regulations. This Coalition is composed of the members of government and officials responsible for the areas of the environment, spatial planning, energy, finance, agriculture, sea, economy and innovation, transport, tourism and science and also of the following entities:

ACAP - Automobile Trade Association;
ADENE - Energy Agency
AdP - Águas de Portugal, S.G.P.S., S.A.;
AEP - Portuguese Business Association;
AEPSA - Association of Portuguese Companies for the Environment Sector;
AIP - Portuguese Industrial Association;
ANI - National Innovation Agency, S.A.;
ANIET - National Association of Extractive Industry and Manufacturing;
ANMP - National Association of Portuguese Municipalities;
APA - Portuguese Environment Agency, I.P.;
APB - Portuguese Banking Association;
APCRI - Portuguese Association of Venture Capital and Development;
APE - Portuguese Energy Association;

APETRO - Portuguese Association of Oil Companies;
APIGCEE - Portuguese Association of Industrial Large Electric Energy Consumers;
APPB - Portuguese Association of Biofuel Producers;
APREN - Portuguese Renewable Energy Association;
APVE - Portuguese Electric Vehicle Association;
ASSIMAGRA - Portuguese Association of Manufacturers of Marbles, Granites and Related Enterprises;
BCSD Portugal - Business Council for Sustainable Development;
Calouste Gulbenkian Foundation;
CAP - Confederation of Farmers of Portugal;
CATIM - Technological Center for the Metal Working Industry;
CCISP - Portuguese Polytechnics Coordinating Council;
CCP – Portuguese Commerce and Services Confederation;
CENSE - Centre for Environmental and Sustainable Research;
CESAM – Center for Environmental and Marine Studies;
CEVALOR - Technological Centre for the Portuguese Natural Stone;
CIP – Entrepreneuria Confederation of Portugal;
CITAAB – Centre for the Research and Technology of Agro-Environmental and Biological Sciences;
CITEVE - Technological Centre for the Textile and Clothing Industries of Portugal;
COGEN Portugal - Portuguese Association for Energy Efficiency and the Promotion of Cogeneration;
CONFAGRI - National Confederation of Agricultural Cooperatives and Agricultural Credit of Portugal, CCRL;
COTEC Portugal - Business Association for Innovation;
CPCI - Portuguese Confederation of Construction and Real Estate;
CRUP - Council of Rectors of Portuguese Universities;
CSP - Confederation of Portuguese Services;
CTCP - Footwear Technology Centre of Portugal;
CTCV - Technological Center for Ceramics and Glass;
CTP - Portuguese Confederation of Tourism;
DECO - Portuguese Association for Consumer Protection;
DGADR - Directorate-General for Agriculture and Rural Development;
DGAE - Directorate-General for Economic Activities
DGEG - Directorate-General for Energy and Geology
DGPM - Directorate-General for Maritime Policy
DGRM - Directorate-General of Natural Resources, Security and Marine Service;
DGT - Directorate-General of the Territory;
EDM - Mining Development Company, S.A.;
EGF - Empresa Geral de Fomento, S.A.;
EPAL - Empresa Portuguesa de Águas Livres, S.A.;
ESPAP - Entity Shared Services Public Administration, I.P.;

FEEM - Portuguese Business Forum for the Economy of the Sea;
FEPICOP - Portuguese Federation of the Construction Industry and Public Works;
FNABA - National Federation of Business Angels Associations;
GEOTA - Group of Spatial Planning and Environmental Studies;
GPP – Office of Planning, Policy and General Administration;
IAPMEI - Agency for Competitiveness and Innovation, I.P.;
IB-S - Institute of Science and Innovation for Bio-Sustainability;
ICNF - Institute for Nature Conservation and Forestry, I.P.;
IDL - Dom Luís Institute;
IHRU - Institute for Housing and Urban Rehabilitation, I.P.;
IMT - Institute for Mobility and Transport, I.P.;
IN + - Center for Innovation, Technology and Policy Research;
INBIO - Research Network in Biodiversity and Evolutionary Biology;
INESC Porto - Institute for Systems and Computer Engineering of Porto;
IPMA - Portuguese Sea and Atmosphere Institute, I.P.;
IT - Territorial Institute - Portuguese Network for Territorial Development;
ITQB - Institute for Chemical and Biological Technology;
Lisbon Oceanarium, S.A.;
LNEG - National Laboratory for Energy and Geology, I.P.;
Luso-American Foundation;
Oceano XXI – Association for the Knowledge and Economy of the Sea;
Portuguese Association of Architects;
Portuguese Association of Biologists;
Portuguese Association of Economists;
Portuguese Association of Engineers;
PCS - Platform for Sustainable Growth;
Polis Programme Coordination Office;
Portugal Ventures;
POSEUR - Operational Programme for Sustainability and Efficient Use of Resources;
PPA - Portuguese Water Partnership;
Quercus - National Association for Nature Conservation;
Regional Rural Development Directorate - Regional Secretariat for Agriculture and Environment - Azores;
RNAE - Association of Energy and Environmental Agencies;
SEDES - Association for Economic and Social Development;
Turismo de Portugal, I.P.;
WavEC, Offshore Renewables.

(2) The work to be developed by the coalition will be coordinated by an Executive Secretariat which will be responsible for accelerating the momentum created by the Green Growth Commitment and shall, amongst others:

- propose a plan of activities to be approved by the Green Growth Coalition and promote it's implementation;
- mobilise Coalition members on a project by project basis, reflecting their respective proposals in the plan of activities;
- organise and promote a structure of thematic working groups, ensuring a significant presence of organisations and experts with the relevant technical skills that will be responsible for monitoring and supporting GGC initiatives;
- promote the annual assessment of the implementation of the GGC, monitoring the execution of its initiatives and the path to achieve its goals, coordinating with the Focal Point identified for each of the initiatives of the Commitment and with other entities if relevant;
- promote outreach events/initiatives to inform/increase awareness about the GGC;
- contribute towards the "internationalisation" of the GGC, promoting connections and initiatives with partners and international projects;
- manage the enlargement of the Coalition;
- develop and propose new GGC indicators and initiatives and new sectors/themes, catalysts and goals;
- communicate the Portuguese green growth strategy and the innovative solutions that are essential to its success; disseminate relevant information on "green" solutions, policies and programmes in Portugal and across the world.

The GGC Executive Secretariat will include:

- an executive secretary to be appointed by the Minister of Environment, Spatial Planning and Energy;
- a representative of the Secretary-General of the Ministry of Environment, Spatial Planning and Energy (Planning and Foresight);
- a representative of the Network for Green Growth as provided for in Decree-Law No. 137/2014 of 12th September.

PUBLIC DISCUSSION

and Acknowledgements

The Green Growth Commitment assumes that its content is, at least as important as the process of participation and co-responsability in its formulation and implementation. The Commitment also assumes that less direct impacts, such as increasing the alignment and long-term mobilisation of Portuguese society, the international projection of the country and its attractiveness, the retention and attraction of talent and the interntionalisation of companies and projects, are at least as important as the more direct impacts of the process and of initiatives included in it.

In this context, an active process of public consultation of the GGC took place between 15th September 2014 and 15th January 2015, during which the thematic issues of the Commitment were explored and debated by different agents, enabling the identification of opportunities, weaknesses and constraints. This process contributed to a coordination of interests, providing greater consistency and solidity to the final document. In fact, **this document resulted from the spirit, discussion and effort of a wide number of stakeholders** who are aware of the huge potential for economic growth and competitiveness that environmental enhancement and sustainability represent.

This process of public consultation included a series of 10 conferences on specific themes (water, waste, agriculture and forestry, energy, transport, industry, biodiversity and ecosystem services, cities and territory, sea and tourism) held on the initiative of the Ministry of Environment, Spatial Planning and Energy (MAOTE) to debate the contents of the draft GGC. These were organised by entities belonging to the Green Growth Coalition and other relevant stakeholders. A large number of people attended the conferences, which were part of a movement to enhance public discussion and mobilisation on the theme of green growth. The reflections and discussions **allowed the consolidation of the vision, improved the current document, made the initiatives more solid and, above all, strengthened the commitment of the social stakeholders towards the GGC.** Around 1,500 people and 91 speakers took part in the conferences that were transmitted over the Internet and recorded on video. An integral summary was prepared for each of them, enriching the process and enhancing the basic GGC document.[5] It should be noted that the creation of the Green Growth Commitment Portal has been accompanied by a strong presence on social networks, with accounts on Facebook, LinkedIn, Twitter, YouTube and Instagram.

[5] Videos of the sessions and summaries are available at http://www.crescimentoverde.gov.pt/agenda/videos/ (videos) and http://www.crescimentoverde.gov.pt/pagina-inicial/downloads/ (summaries).

The public consultation on the draft Commitment is part of a wider movement to which the important work of the **Green Growth Coalition**, established in February 2014, has greatly contributed. This coalition unites the efforts of some 100 associations and representatives from the business, scientific and financial sectors, as well as public bodies, foundations and NGOs. The success of the conferences was due mainly to the care and commitment which the organisers and partners put into preparing and holding them. We would therefore like to thank all of the organisations involved: PPA – Portuguese Water Partnership, IST – Instituto Superior Técnico / CEHIDRO – Centre for Hydro-systems Studies, APA – Portuguese Environment Agency, Calouste Gulbenkian Foundation, GEOTA - Group of Spatial Planning and Environment Studies, FCT/UNL – Faculty of Science and Technology, New University of Lisbon, AEPSA – Association of Portuguese Companies for the Environmental Sector, Municipal Council of Leiria, CCP – Portuguese Commerce and Services Confederation, Chamber of Commerce for the District of Viseu, CAP – Confederation of Farmers of Portugal, CONFAGRI – National Confederation of Agricultural Cooperatives and Agricultural Credit of Portugal, APE – Portuguese Energy Association, Serralves Foundation, CTP – Portuguese Confederation of Tourism, AHETA – Algarve Association of Hotels and Tourist Resorts, AEP – Portuguese Entrepreneurial Association, CIP - Entrepreneurial Confederation of Portugal, Quercus – National Association for Nature Conservation and Évora University.

In the process of discussion and drafting of the Green Growth Commitment, 75 written contributions were also received and considered:

> From the following bodies: ACAP – Automobile Trade Association; Adega Cooperativa de Borba; AEP – Portuguese Entrepreneurial Association; AEPSA – Association of Portuguese Companies for the Environment Sector; AmBioDiv - Valor Natural; AML – Lisbon Metropolitan Area; ANIET – National Association of Extractive Industry and Manufacturing; ANQIP – Association for Quality in Building Installations; APCRI – Portuguese Association of Venture Capital and Development; APETRO – Portuguese Association of Oil Companies;

APREN – Portuguese Renewable Energy Association; ATIC – Technical Cement Industry Association; AVE – Environmental Management and Energy Recovery; Barreiro Municipal Council; Leiria Municipal Council; CAISL – Carlucci American International School of Lisbon; CAP – Confederation of Farmers of Portugal; CCP – Portuguese Commerce and Services Confederation; CEVALOR – Technological Centre for the Portuguese Natural Stone; CITEVE – Technological Centre for the Textile and Clothing Industries of Portugal; COGEN Portugal – Portuguese Association for Energy Efficiency and the Promotion of Cogeneration; CONFAGRI – National Confederation of Agricultural Cooperatives and Agricultural Credit of Portugal, CCRL; Green Economy Consortium: SaeR, TTerra e SystemicSphere; CPCI – Portuguese Confederation of Construction and Real Estate; CTCP – Footwear Technology Centre of Portugal; CTCV – Technological Center for Ceramics and Glass; DECO – Portuguese Association for Consumer Protection; DGT – Directorate-General of the Territory; EDM – Mining Development Company; EGF; EGSRA – Association of Waste Management Systems; Dr Ginestal Machado Secondary School (Santarém); D. Fernando II Primary School – Monte da Lua School Board (Sintra); FENAREG – Portuguese Federation of Local Irrigation Associations; FEPICOP – Portuguese Federation of the Construction Industry and Public Works; Ferrovial Serviços; FPCUB – Portuguese Federation of Cycletourism and Bicycle Users; GEOTA – Group of Spatial Planning and Environmental Studies; IMT – Institute for Mobility and Transport, I.P.; Gulbenkian Oceans Initiative (IGO) – Calouste Gulbenkian Foundation; Lipor – Greater Porto Inter-municipal Waste Management Service; LPN – League for the Protection of Nature; Portuguese Association of Biologist; Prélis Cerâmica; Quercus – National Association for Nature Conservation; REN – National Energy Networks; RNAE – Association of Energy and Environment Agencies; Sirplaste – Recovered Plastic Industrial Society; SUMA – Urban Services and the Environment; and Valsassina College (Lisbon);

- And from the following individuals: António Falcão Estrada; António Marques; Armando B. Silva Afonso; Artur da Rosa Pires; Cláudio Monteiro; Fernando Monteiro; Filipe Ferreira; Filipe Rocha; Gabriela Prata Dias; Gonçalo Lobo; Gonçalo Peres; João Peças Lopes; José Costa Cruz; José Manuel Félix Ribeiro; Leonardo Costa; Luís Cabral da Silva; Maria Amélia Loução; Mário Carmo; Mauro Raposo; Miguel Gonçalves; Nuno Mexa; Patrícia Mesquita; Pedro Fonseca and Teresa Batista.

As previously mentioned, the present document has been improved substantially as a result of the many institutional and personal contributions received during the public consultation. For example, as a result of the presentation and discussion of the Green Growth Commitment in the Assembly of the Republic, on 20th January 2015, a new goal was introduced for the use of public transport, including two quantified targets for 2020 and 2030.

Below are briefly listed the main changes to the draft document presented for public discussion on 15 September 2014. The dimension and range of these changes are proof of the depth of public involvement in the consultation. The main changes are:

- A comprehensive review and update of the text, in particular the introduction to each of the 10 key sectors and six catalysts;
- The revision and update of most of the initiatives, plus their success indicators and framework. The inclusion of 28 new initiatives and 64 new success indicators;
- The introduction of additional information in the tables: numbering; Focal Points (PFs); and a new column headed "Also relevant for", stressing the cross-cutting nature of many of the initiatives. The initiatives were also reordered in order to make them more coherent;
- The introduction of a new quantified goal for 2020 and 2030 (use of public transport);

- The update of the quantified goals as a result of the availability of new data and methodological improvements. The updating of the base year to 2013 and establishment of a reference period (2009-2013);
- The combination of "climate", with the theme of "energy", to form the new pillar of "Energy and Climate";
- The inclusion of a 360-degree graph (at the end of the Executive Summary);
- A comprehensive update of the catalysts, including the broadening of the scope of the "Innovation" catalysts to include "Research, Development and Innovation" and "Information" to include "Information" to "Information and Participation";
- The description of a possible management model for the future GGC (new chapter: "Governance Model");
- The inclusion of a new chapter at the end of the document: "Public Discussion and Acknowledgements";
- The introduction of a methodological appendix explaining the calculations and rational behind each of the 14 quantified goals for 2020 and 2030.

The Green Growth Commitment was drafted by a project team consisting of António Alvarenga (rapporteur) and Paula Virgínia Meireles (institutional coordination and liaison).

The starting point for this public consultation process was the draft Commitment drawn up by the Green Growth Working Group - Paula Virgínia Meireles (GMAOTE), Fernando Teigão dos Santos (GSEA), Lurdes Carvalho (GSEOTCN), Francisco Gregório (GSEE), António Alvarenga (APA), Susana Escária (APA), Ana Paula Araújo (ICNF), Manuel Bóia (ADENE), Miguel Guarino and Bruno Esgalhado (McKinsey & Co. consultants) – which was subsequently replaced by the Draft Green Growth Commitment Public Consultation Working Group: Paula Meireles (GMAOTE), António Alvarenga (APA), Nelson Lage (ADENE), Fernando Teigão dos Santos (GSEA), Lurdes Carvalho (GSEOTCN), Francisco Gregório (GSEE) and Susana Escária (SG MAOTE).

The preparation and organisation of the various conferences and drafting of content were undertaken with invaluable support from:

- A team from GMAOTE: Carla Grou (Communication and Logistics supervision); Pedro Costa (Energy, Mobility and Transport), Rosália Russo (Cities and territory), Helena Freixinho (Financing) and João Silva Lopes (Taxation);
- a team from the APA DEAE: event preparation support and editing of the final text, content research and preparation (Ana Cristina Fernandes, Miguel Déjean Guerra, Rita Ribeiro and Sofia Rodrigues);
- and a team from the CEGER and MADR: design and management of the GGC portal, video and photographic records and online streaming of conferences (João Curinha, João Rogério, Paulo Santos, Diogo Gomes, Teresa Mota and Rodrigo Gatinho).

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This document brings together the main guidelines for green growth, as a means of joining forces and combining the many regulatory and planning instruments in existence in Portugal. To this end, the involvement of the stakeholders of this transition process was and will remain instrumental in defining and implementing initiatives which, when implemented at a level ever closer to the stakeholders, be they businesses, citizens, or associations, will give body to the vision proposed here. The government, direct and indirect public administration services, private associations, companies and other organisations will therefore be called upon to make a joint contribution to the ongoing optimisation and implementation of the initiatives described herein.

APPENDIX: GOAL METHODOLOGY

		Objective and Indicator	2009/13 Average	2013
GROWTH	Stimulate green activity sectors	> **Increase "green" GVA** (billions of euros)	1.7	1.5
		> **Increase "green" exports** (billions of euros)	0.57	0.56
		> **Create "green" jobs** (thousands of people employed)	77.1	75.5
EFFICIENCY	Promote efficient use of resources	> **Increase the productivity of materials** (€ GDP[2] /kg of materials consumed)	0.96	1.14
		> **Increase the incorporation of waste in the economy** (rate of waste incorporation in the economy)[3]	50% [4]	56% [5]
		> **Focus on urban rehabilitation** (proportion of total construction)	8.4%	10.3%
		> **Improve energy efficiency** (Energy intensity - toe/€M GDP[6])	129	129
		> **Improve water efficiency** (unbilled water/water issued to the urban supply network)	n.a.	35% [7]
		> **Increase the use of public transport** (millions of pkm transported on public passenger transport services)	n.a.	10,894
SUSTAINABILITY	Contribute to sustainability	> **Reduce CO_2 emissions** (Mt CO_2 eq.)	72.4 [8]	68.9 [9]
		> **Increase the share of renewable energy** (% of gross final energy consumption)	24.8%	25.7%
		> **Improve the condition of water bodies** (% of water bodies of "good" or higher quality)	n.a.	52% [10]
		> **Improve air quality** (average number of days ranked "poor" or "bad" in the Air Quality Index, in urban areas)	18	14
		> **Valorize biodiversity** (Improve the conservation status of species and habitats protected by the Habitat Directive - Number of species evaluations and habitats assessment with "favourable" conservation status as established by bio-geographical region)	n.a.	81 and 46 [13]

n.a. not available / [1] the CAGR (Compound Annual Growth Rate) is a geometric average of annual growth rates. The CAGR, also referred to as a "smoothed" rate, measures growth as if it had occurred at a stable rate on an annual compound basis. The reference value is 2013, subject to the exceptions indicated. / [2] GDP evolution according to the average value of macroeconomic scenarios for Portugal as shown in the REA 2014 (the 2014 State of Environment Report). They provide an update to the scenarios considered in the 2050 RNBC (National Low Carbon Roadmap) (APA, 2012). / [3] recovered waste (excluding energy recovery)/waste produced. / [4] 2008-2012 Average. / [5] 2012. / [6] GDP growth according to the average value of macroeconomic scenarios for Portugal as shown in the REA 2014 (the 2014 State of Environment Report). They provide an update to the scenarios considered in the 2050 RNBC (National Low Carbon Roadmap) (APA, 2012). / [7] 2012. / [8] 2008-2012 Average. / [9] 2012. / [10] 2010. / [11] 2021. / [12] 2027. / [13] Report Data for the 2007-2012 period.

Goals for 2020 and 2030			Racional
2020	2030	CAGR[1] 2030	
2.1	3.4	(+5.0%)	> Develop the green economy to obtain competitiveness gains greater than the national average
0.79	1.28	(+5.0%)	> Develop a rate of growth in green exports similar to the increase in green GVA
100.4	151.0	(+4.2%)	> Double the number of jobs by 2030
1.17	1.72	(+3.5%)	> Align with the goals of the PNGR (National Waste Management Plan), the principle of circular economy, efficiency in resource use and the reduction environmental impacts (achieving the European growth objective of 30% by 2030)
68%	86%	(+2.3%)	> Consider waste as a material or energy resource, promoting the closing of the cycle (circular economy) and the routing of waste away from landfill; compliance with PNGR (National Waste Management Plan)
17%	23%	(+4.9%)	> Increase the amount of renovation work in the construction sector by about 7.5% from 2013 to 2020 and 3.1% from 2020 to 2030. Quicker growth is assumed between 2013 and 2020 than in 2020-2030
122	101	(-1.4%)	> Compliance with the PNAEE (National Energy Efficiency Action Plan) by 2020 > 30% reduction in baseline energy by 2030
25%	20%	(-3.1%)	> Compliance with the PNUEA (National Programme for the Efficient Use of Water) 2020 goal - real losses < 20% in 2020) [unbilled water = real losses + apparent losses + authorised non-invoiced consumption]
12,528	15,296	(+2.0%)	> Compliance with the PETI3+ by 2020 > Transfer from individual transport to collective transport
68.0-72.0	52.7-61.5	(-0.6/-1.5%)	> Alignment with EU objectives for 2030 and with the emission reductions reported in the groundwork for the PNAC (National Programme for Climate Change) and 2050 EU Roadmap > Reduction of between 18% (72 Mt CO_2 eq.) and 23% (68 Mt CO_2 eq.) in 2020 vs 2005 (2005 = 87.8 Mt CO_2 eq.) > Reduction of between 30% (61.5 Mt CO_2 eq.) and 40% (52.7 Mt CO_2 eq.) in 2030 vs 2005 (2005 = 87.8 Mt CO_2 eq.), (contingent on the conclusions of European negotiations)
31%	40%	(+2.6%)	> Compliance with the PNAER (National Renewable Energy Action Plan) by 2020 > Alignment with the goal set out in the PT proposal for the 2030 Energy and Climate Package, contingent on the results of European negotiations
79.8% [11]	100% [12]	(+3.3%)	> Compliance with the Water Framework Directive (contingent on developments in the negotiations within the EU regarding its implementation)
9	2	(-10.9%)	> Compliance with the objectives set out in the CAFE Directive and with the Clean Air for Europe Programme
81 and 46	96 and 53	(+0.9% e +0.8%)	> Compliance with the Habitats Directive > Alignment with the European Biodiversity Strategy for 2020 > Alignment with the National Strategy for the Conservation of Nature and Biodiversity for 2020 (under review)

GOAL 1: Increase the "green" GVA (2.1 billion euros in 2020 and 3.4 billion euros in 2030)

2009-2013	2013	2020	2030	CAGR 2030
1.7	1.5	2.1	3.4	+ 5.0%

Unit: billions of euros

Starting point: the value of "green" GVA in 2013 was 1.5 billion euros, representing 2.0% of the total GVA of non-financial companies. This value is equivalent to a percentage (87.4%) of the total GVAmp of companies producing environmental goods and services (EPBSA). To obtain this percentage, we used the ratio of the turnover of the environmental activity of EPBSA to the total turnover of EPBSA. At this stage"green" GVA is only a first (and prudent) estimate, used in conjunction with the National Statistics Institute (INE). This data is preliminary and is still being calculated with support from INE. It should be noted that calculating the size of the green sector in the economy is still at a very early stage and as such is open to debate, particularly within Eurostat. The INE is currently working on a pilot study of the accounts of the environmental goods and services sector, and we await publication of an indicative list of environmental goods and services, as well as the list of economic activities. Total GVA for non-financial companies does not include the state, financial companies or voluntary organisations.

Reasoning behind the aspirations for 2020 and 2030: the goal of the Green Growth Commitment is to achieve a CAGR of 5% in Portugal. The overall CAGR for the green economy is 4%.[cviii]

GOAL 2: Increase "green" exports (790 million euros in 2020 and 1.28 billion euros in 2030)

2009-2013	2013	2020	2030	CAGR 2030
0.57	0.56	0.79	1.28	+ 5.0%

Unit: billions of euros

Starting point: the value of "green" exports in 2013 is based on the total turnover of the entities producing environmental goods and services for export (560 million euros). [Source: INE and ISBSA]

Reasoning behind the aspirations for 2020 and 2030: the growth of exports is in line with the growth of the green GVA (5.0% per annum).

GOAL 3: Create "green" jobs (100,448 people in 2020 and 151,014 in 2030)

2009-2013	2013	2020	2030	CAGR 2030
77,1	75,5	100,4	151,0	+ 4,2%

Unit: thousands of people in work

Starting point: there is no consensus concerning what constitutes "green employment". The scope of this variable is under discussion. The figures were obtained from information collected by the Environmental Goods and Services Survey (ISBSA). [Source: INE – Environment Statistics]

The figures presented include "people employed in entities producing environmental goods and services", "people employed in environmental NGOs", "active registered fire fighters", "people employed in forestry fire fighting teams" and "people (military and civilian) in the Nature and Environment Protection Service". It should be noted that the figures presented do not include people working for companies involved in the production of renewable energy. However, INE is working towards gathering this information from 2008 in order to make a co-

herent time series available. The study, entitled "The macroeconomic impact of the renewable electricity sector in Portugal" (*Impacto macroeconómico do setor da eletricidade de origem renovável em Portugal*) (Deloitte, in association with APREN – Portuguese Renewable Energy Association, September 2014),[cix] suggests the renewable electricity generation sector was responsible for up to 40,000 direct and indirect jobs in 2013.

Reasoning behind the aspirations for 2030: to double the number of green jobs.

Reasoning behind the aspirations for 2020: the linearization of growth in order to achieve the 2030 target, using the CAGR.

GOAL 4: Increase productivity of materials (1.17 in 2020 and 1.72 in 2030)

2009-2013	2013	2020	2030	CAGR 2030
0.96	1.14	1.17	1.72	+ 3.5%

Unit: € GDP / kg of materials consumed

Starting point: material productivity is the ratio between GDP and domestic material consumption (DMC). The 2014-2020 National Waste Management Plan (PNGR) methodology was used in this case, taking average material productivity over a five-year period as the starting point. The most recent years for which DMC and GDP are available are 2009-2013 (PNGR 2014-2020 used the period 2007-2011). GDP was used at constant 2011 prices (PNGR 2014-2020 used GDP at constant 2006 prices). [Source: INE, 2014]

Reasoning behind the aspirations for 2020 and 2030: goals calculated using PNGR 2014-2020 methodology:

> 2% annual reduction of DMC in relation to the reference value of 180.6 million tonnes - DMC average for the period 2009-2013 (PNGR 2014-2020 reference value is 207 million tonnes tonnes, DMC average for the period 2007-2011.

> Portugal's GDP growth, according to the macroeconomic scenarios in REA 2014 (PNGR 2014-2020 used GDP growth according to the macroeconomic scenarios for Portugal in REA 2013).

Given these assumptions, and applying the methodology proposed in the PNGR 2014-2020, productivity for 2020 is estimated at between 1.13 euros and 1.22 euros GDP/ kg of materials consumed (high scenario for GDP). The target for 2020 is the average of these values — 1.17 euros GDP/kg – and it corresponds to the goal defined for 2020. A productivity figure of between 1.5 euros and 1.94 euros GDP/ kg of materials consumed was obtained for 2030 (high scenario for GDP). The target for 2030 is the average of these values — 1.72 euros GDP/kg. Considering the different starting values mentioned above, the PNGR 2014-2020 figure for 2020 is 0.98 euros GDP/kg of materials consumed. These targets will ensure the goal of European Material Productivity growth of 30% by 2030[cx].

GOAL 5: Increase the incorporation of waste into the economy (68% in 2020 and 86% in 2030)

2008-2012	2012	2020	2030	CAGR 2030
50%	56%	68%	86%	+ 2.3%

Unit: percentage [recovered waste (excluding energy recovery) / waste output]

Starting point: the rate of waste incorporation into the economy is the ratio of total waste subject to recovery (excluding energy recovery) to total waste produced. The starting point (56%) is the 2012 value.

Note: energy produced from waste incinerators or contact combustion chambers (cement furnaces) is excluded from this rationale. In fact, in the waste legal framework, the definition of combustion processes as "energy recovery" presupposes the fulfilment of technical criteria associated with the efficiency of the process. However, since energy is produced by this operation, even though it does not meet the requirements with regard to waste, the production of energy considered as incorporation of waste into the economy, with the target being reformulated accordingly in the future.

Reasoning behind the aspirations for 2020: there are three assumptions behind the figure for 2020 (68%): meeting the goals for reuse, recycling and other forms of material recovery for construction and demolition waste (70% in 2020); the PERSU 2020 target for municipal waste (53% of recyclable municipal waste); and a 5% increase in the ability to recover non-municipal waste (excluding energy recovery and construction and demolition waste).[cxi]

Reasoning behind the aspirations for 2030: the linearization of the 2012-2020 trend (CAGR,+2.3%).

GOAL 6: Prioritise urban rehabilitation (increase of 17% in 2020 and 23% in 2030)

2009-2013	2013	2020	2030	CAGR 2030
8.4%	10.3%	17%	23%	+ 4.9%

Unit: percentage (proportion of rehabilitation throughout the construction sector calculated on the basis of the total volume of production by the civil construction sector and the rehabilitation sub-sector)

Starting point: the evolution of the civil construction sector over the years was systematised based on data from official sources and associations representing the sector.[6] The proportion of renovation in the construction industry as a whole is calculated as the ratio of general output to the output of the renovation sub-sector. The figure for 2013 (10.3%) was used as a starting point. [Primary sources: INE-BdP, INE, INCI, AECOPS]

Reasoning behind the aspirations for 2020: based on the elements and trends above, the target for renovation in 2020 is 17% as a proportion of the construction sector as a whole, calculated on the basis of the sector's output, which corresponds to a CAGR of 7.5% between 2013 and 2020.

Reasoning behind the aspirations for 2030: based on the elements and trends above, the target for renovation in 2030 is 23% as a proportion of the construction

[6] The construction sector includes the following sub-sectors: 1 - Civil Engineering (roads, railways, airports, bridges, tunnels, dams, water supply and treatment infrastructure, the power grid, maritime and fluvial schemes); 2 - New non-residential construction; 3 - New residential construction; 4 - Building maintenance and renovation. The relative weight of each sub-sector across the EU27 in 2009 was: 1 - Civil Engineering: 22%; 2 – New construction of non -residential buildings: 32%; 3 – New construction of residential buildings: 18%; 4 – Building maintenance and renovation: 28%.

sector as a whole, calculated on the basis of the sector's output, which corresponds to a CAGR of 3.1% between 2020 and 2030. Faster growth is assumed for the 2013-2020 period than for 2020-2030.

The CAGR for 2013-2030 on which this goal is based is 4.9%. The existence of contingencies that may significantly influence these long-term developments is recognised. Examples: demographic trends, economic developments and changes in the rental market.

GOAL 7: Improve energy efficiency (energy intensity: 122 toe/M€ GDP in 2020 and 101 toe/M€ GDP in 2030)

2009-2013	2013	2020	2030	CAGR 2030
129	129	122	101	- 1.4%

Unit: toe/€M GDP

Starting point: energy intensity is the ratio between primary energy consumption and gross domestic product (GDP). GDP was set at constant 2011 prices. In the future it will be possible to break this indicator down by sector.

Reasoning behind the aspirations for 2020: PNAEE compliance by 2020; that is, a 25% reduction in primary energy consumption by 2020 compared to the PRIMES projections from 2007 (maximum ~22.5 Mtoe consumption in 2020).[cxii] GDP growth follows the average in the macroeconomic scenarios for Portugal.[7]

Reasoning behind the aspirations for 2030: 30% reduction in 2030 compared to the energy baseline.

[7] Macroeconomic scenarios for Portugal outlined in the REA 2014. This is an update of the scenarios contained in the RNCB 2050 (APA, 2012).

GOAL 8: Increase water efficiency (from 35% of unbilled water in 2020, to a maximum of 25% in 2020 and 20% in 2030)

2008-2012	2012	2020	2030	CAGR 2030
n.a.	35%	25%	20%	- 3.1%

Unit: percentage (unbilled water/water placed in the urban supply network)
not available: n.a.

Starting point: unbilled water is water which has been collected, treated, transported, stored and distributed but which has not been sold to customers. This unbilled water includes real losses (through cracks, breakages and bursts), apparent losses (inaccurate water measurement, theft or illicit use) and losses resulting from authorized unbilled consumption, including water used for street cleaning, watering municipal green spaces, fountains, cleaning pipelines and drains, and firefighting.

The starting point is the proportion of unbilled water in 2012 (on average, 35% of collected, treated and distributed water in 2012 was not billed. Of this, approximately 23% relates to real losses and the remaining 12% to apparent losses and authorised unbilled consumption.[cxiii]

Reasoning behind the aspirations for 2020 and 2030: the acceptable technical threshold for real loss of water entering the urban supply system is considered to be 20%. The National Programme for the Efficient Use of Water (PNUEA) has set national targets for inefficient (wasteful) use of water by 2020, per sector: 20% for the urban sector, 35% for the agricultural sector and 15% for the industrial sector.

GOAL 9: Increase the use of public transport (from 10,894 million pkm transported on public passenger transport services in 2013, to 12,528 million in 2020 and 15,926 million in 2030)

2009-2013	2013	2020	2030	CAGR 2030
n.a.	10 894	12 528	15 296	+ 2.0%

Unit: million passengers per kilometre transported on public passenger transport services
not available: n.a.

Starting point: 2013 reference value (10,894 million passengers per kilometre (pkm)) [Source: Ministry of the Economy].

Reasoning behind the aspirations for 2020: the Strategic Plan for Transport and Infrastructure – Horizon 2014-2020 (PETI3+) has established a 15% increase in the number of passengers per kilometre carried on public transport as the target for 2020.

Reasoning behind the aspirations for 2030: to approach the linearization of the 2013-2020 linearization trend, using the CAGR.

GOAL 10: Reducing CO_2 emissions (from 68.9 Mt CO_2 equivalent in 2012, to 68.0-72.0 Mt CO_2 equivalent in 2020 and 52.7-61.5 Mt CO_2 equivalent in 2030, contingent on the results of European negotiations)

2008-2012	2012	2020	2030	CAGR 2030
72.4	68.9	68.0-72.0	52.7-61.5	- 0.6% / - 1.5%

nit: Mt CO_2 equivalent

Starting point: 2012 reference value (68.9 Mt CO_2 eq.) [Source: *Portuguese National Inventory Report on Greenhouse Gases*, 1990-2012 (APA, 2014)].

Reasoning behind the aspirations for 2020:

> 18% (72.0 Mt CO_2 eq.) or 22.5% (68.0 Mt CO_2 eq.) reduction in 2020 compared to (2005 = 87.8 Mt CO_2 eq.);

> Aligned with the trend in emissions reduction reported by the National Climate Change Programme (PNAC);

> Greater ambition regarding the of goals for 2020, in line with the potential for medium to long-term cost-effectiveness reduction potential.

Reasoning behind the aspirations for 2030:

> 30% (61.5 Mt CO_2 eq.) or 40% (52.7 Mt CO_2 eq.) reduction in 2030 compared to 2005 (2005 = 87.8 Mt CO_2 eq.), contingent on interconnections;

> Aligned with EU goals for 2030 and the emission reductions reported by PNAC and the EU's 2050 Roadmap;

> Assuming more ambitious penetration levels for renewables and more ambitious energy efficiency at the European level by 2030.

The 2030 goals can be adjusted along with the national values emerging from the application of the 2030 Climate and Energy package, which establishes an EU target of at least a 40% reduction in 1990 greenhouse gas emissions by 2030. This will be achieved collectively by the EU, with each Member State being allocated a target for those sectors not covered by the EU ETS as a contribution towards achieving the overall target.

GOAL 11: Increase share of renewable energy (31% of gross final energy consumption by 2020 and 40% by 2030)

2009-2013	2013	2020	2030	CAGR 2030
24.8%	25.7%	31%	40%	+ 2.6%

Unit: percentage on the gross final consumption of energy

Starting point: the rate of incorporation of renewables into gross final energy consumption in 2013, taking into consideration the DGEG energy balances that contribute to PNAER monitoring, was 25.7%

Reasoning behind the aspirations for 2020: compliance with the PNAER 2020 (approved by RCM No. 20/2013 of 10 April) which establishes a goal for the incorporation of 31% renewables in gross final energy consumption by 2020, and in so doing complying with the Energy-Climate package.

Reasoning behind the aspirations for 2030: to approach the linearization of the 2013-2020 trend, using the CAGR.

GOAL 12: Improve the condition of water bodies (raising the number of national bodies of water rated "good" or higher from 52% in 2010 to 79.8% in 2021 and 100% in 2027)

2006-2010	2010	2021	2027	CAGR 2030
n.a.	52%	79.8%	100%	+ 3.3%

Unit: % of water bodies rated "Good" or higher
not available: n.a.

Starting point: evaluation of the condition of bodies of water bodies listed in the first series of River Basin Management Plans (PGRH 2009-2015).[cxiv] PO SEUR data for 2010.

Reasoning behind the aspirations for 2020: the 2014 APA projection for the proportion of water bodies expected to achieve the environmental goal (a "good" or higher rating) by 2021, taking planned activities into account and based on information from the first part of the PGRH planning cycle (2009-2015).

Reasoning behind the aspirations for 2030: to achieve the PO SEUR and PGRH (2016-2021) goal of having all water bodies rated as "good" by 2027.

GOAL 13: Improve air quality (reducing the no. of days rated "poor" or "bad" in the Air Quality Index from 14 in 2013 to a maximum average of 9 by 2020 and a maximum average of 2 by 2030)

2009-2013	2013	2020	2030	CAGR 2030
18	14	9	2	- 10.9%

Unit: the average number of days with an Air Quality Index of "weak" or "poor", in urban areas

Starting point: across all areas monitored in 2013, a total of 140 days were rated "poor" or "bad". By excluding non-urban areas, this number falls to 86. With six urban areas being monitored, the average number of days with "poor" or "bad" urban air quality was 14.3. (Source: IQAr (APA, 2014).

Reasoning behind the aspirations for 2020: compliance with EU 2020 targets for the protection of human health.

Reasoning behind the aspirations for 2030: alignment with the 2030 goals and objectives for health and environmental protection set out in the Cleaner Air For Europe (CAFE)[xcii] Directive and the Clean Air for Europe Programme.[xciii]

GOAL 14: Valorize biodiversity (Improve the conservation status of species and habitats protected under the Habitat Directive: from 81 species and 46 habitats with "favourable" conservation status per biogeographical region in 2012 to 96 species and 53 habitats with "favourable" conservation status per biogeographical region by 2030, ensuring that, in 2020, all existing species and habitats retain or improve their conservation status)

2007-2012	2012	2020	2030	CAGR 2030
81 and 46	81 and 46	81 and 46	96 and 53	+ 0.9% and + 0.8%

Unit: number of assessments of species and of habitats with a "favourable" conservation status by biogeographic region

Starting point: 2007-2012 report.

Reasoning behind the aspirations for 2020: the first goal of the European Biodiversity Strategy deals with the full implementation of the Habitat Directive and includes overall goals at the European level. The starting point for measuring progress is the number of habitats and species with a "favourable" conservation status in the 2001-2006 report. Portugal reported assessments for 55 species and 47 habitats with this "favourable" status. The positive change from 2007 to 2012 (81 species) was due to improvements in knowledge and it will take several years before investment in the recovery of species and habitats will have any measurable effect on their conservation status. The priority for 2020 is to consolidate this success, with a forecast that the Portugal 2013-2018 report will show that at least 81 assessments of species and 46 habitats will receive a "favourable" conservation status.

Reasoning behind the aspirations for 2030: if investment takes place in the recovery of species and habitats with "non-favourable" conservation status and if the conservation status of the remaining species and habitats protected by the Habitat Directive can be maintained for the next 15 years, then the report for the 2025-2030 period foresees that in the 2025-2030 period there will be assessments of 96 species and 53 habitats will receive a "favourable" conservation assessment for the same period.

List of acronyms

ABS – Access and Benefit-Sharing (access to genetic resources and fair and equitable sharing of the benefits arising from their use – related to the Nagoya Protocol/Convention on Biological Diversity)
ACAP – Automobile Trade Association
ADENE – Energy Agency
AdP – Águas de Portugal, S.G.P.S., S.A
AECOPS – Association of Construction, Public Works and Services Companies
AEP – Portuguese Business Association
AEPSA – Association of Portuguese Companies for the Environment Sector
AHETA – Association of Algarve Hotels and Tourist Enterprises
AML – Lisbon Metropolitan Area
ANI – National Innovation Agency
ANIET – National Association of the Extractive Industry and Manufacturing
ANQIP – Association for Quality in Building Installations
APA – Portuguese Environment Agency
APCRI – Portuguese Association of Venture Capital and Development
APE – Portuguese Energy Association
APETRO – Portuguese Association of Oil Companies
APREN – Portuguese Renewable Energy Association
APVE – Portuguese Electric Vehicle Association
AQI – Air Quality Index
ASECE – Extraordinary Social Support for Energy Consumers
ASSIMAGRA – Portuguese Association of Manufacturers of Marbles, Granites and Related Enterprises
ATIC – Cement Industry Technical Association
AWU – annual work units
BdP – Bank of Portugal
CAFE – Cleaner Air for Europe (CAFE Directive)
CAGR – compound annual growth rate
CAISL – Carlucci American International School of Lisbon

CAP – Portuguese Farmers Confederation
CAP – Common Agricultural Policy
CBD – Convention on Biological Diversity
CCP – Portuguese Confederation of Trade and Services
CCPI – Climate Change Performance Index
CEGER – Management Centre for the Electronic Government Network
CEHIDRO – Centre for Hydro-Systems Studies
CEVALOR – Technology Centre for Portuguese Natural Stone
CFP – Common Fisheries Policy
CMEC – costs for the maintenance of contractual equilibrium
CNG – compressed natural gas
CO_2 – carbon dioxide
CONFAGRI – Confederation of Agricultural Cooperatives and Agricultural Credit of Portugal
CPCI – Portuguese Confederation of Construction and Real Estate
CTCP – Footwear Technology Centre of Portugal
CTCV – Technological Centre for Ceramics and Glass
CTP – Portuguese Confederation of Tourism
DGADR – Directorate-General for Agriculture and Rural Development
DGAE – Directorate-General for Economic Activities
DGEG – Directorate-General for Energy and Geology
DGPM – Directorate-General for Maritime Policy
DGRM – Directorate-General of Natural Resources, Security and Maritime Services
DGT – Directorate-General of the Territory
DMC – domestic material consumption
DQEM – Marine Strategy Framework Directive
EAFRD – European Agricultural Fund for Rural Development
EC – European Commission
ECB – European Central Bank
ECOPOL – Public innovation partnership for better policies and instruments in support of eco-innovation.
EDM – Mining Development Company
EEA – European Environment Agency
EEZ – Exclusive Economic Zone
EFAP – Economic and Financial Assistance Programme
EFICE – Industrial Development Strategy for Growth and Employment 2014-2020
EGF – Empresa Geral de Fomento, S.A.
EGSRA – Association of Waste Management Systems
EIB – European Investment Bank
EIP – European Innovation Partnership on Water
ENAAC – National Strategy for Adaptation to Climate Change
ENAR – National Air Strategy 2020

ENCNB – National Strategy for Nature Conservation and Biodiversity
ENEI – National Research and Innovation Strategy for Smart Specialisation 2014-2020
ENF – National Strategy for Forests
ENM – National Strategy for the Seas
EPBSA – Environmental Goods and Services Producing Companies
ERSAR – Regulatory Authority for Water and Waste Services
ERSE – Energy Services Regulatory Entity
ERTMS – European Rail Traffic Management System
ESCO – Energy Services Companies
ESE – energy services enterprises
ESPAP – Public Administration Shared Services Authority
EU ETS – European Emissions Trading Scheme
EVEF – economic and financial feasibility studies
FENAREG – Portuguese Federation of Local Irrigation Associations
FEPICOP – Portuguese Federation of the Construction Industry and Public Works
FP – focal point
FPCUB – Portuguese Federation of Cycle Tourism and Bicycle Users
FTE – full-time equivalent
GAEC – good agricultural and environmental conditions
GDP – gross domestic product
GEOTA – Group of Spatial Planning and Environmental Studies
GES – Good Environmental Status
GGC – Green Growth Commitment
GHG – greenhouse gases
GMAOTE – Office of the Minister of Environment, Spatial Planning and Energy
GPP – Office of Planning, Policy and General Administration
GSEA – Office of the Secretary of State for the Environment
GSEE – Office of the Secretary of State for Energy
GSEITC – Office of the Secretary of State for Infrastructure, Transport and Communications
GSEOTCN – Office of the Secretary of State for Spatial Planning and Nature Conservation
GVA – gross value added
ha – hectares
HSE – Health, Safety and Environment
IABT – food, beverages and tobacco industries
IAPMEI – Institute for the Support of Small and Medium-Sized Enterprises
ICNF – Institute for Nature Conservation and Forestry
IGO – Gulbenkian Oceans Initiative
IGT – Territorial Management Instruments
IHRU – Institute for Housing and Urban Rehabilitation
IMF – International Monetary Fund
IMI – municipal property tax

IMO – International Maritime Organisation
IMT (Tax) – municipal property transfer tax
IMT (Organisation) – Institute for Mobility and Land Transport
InCI – Institute of Construction and Real Estate
INE – National Statistics Institute
IPCC – Intergovernmental Panel on Climate Change
IPPC – Integrated Pollution Prevention and Control
IQAr – Air Quality Index
IRC – corporation tax
IRS – income tax
ISBSA – Environmental Goods and Services Sector Survey
ISV – motor vehicle tax
LBOGEM – Basic Law on Maritime Spatial Planning and Management
LNG – liquefied natural gas
LPG – liquefied petroleum gas
LPN – League for the Protection of Nature
LU – livestock unit
LULUCF – land use, land-use change and forestry
MADR – Ministry of State and Regional Development
MAES – Mapping and Assessment of Ecosystems and their Services
MAM – Ministry of Agriculture and the Sea
MAOTE – Ministry of Environment, Spatial Planning and Energy
MoU – Memorandum of Understanding
MT – mechanical treatment
MBT – mechanical and biological treatment
MW – megawatt
NGO – non-governmental organisations
N_2O – nitrous oxide
NOx – nitrogen oxides
OECD – Organisation for Economic Cooperation and Development
PA – Public Administration
PANCD – National Action Programme to Combat Desertification
PAPVL – Action Plan to Protect and Improve the Coast
PDR 2020 – Mainland Rural Development Programme 2014-2020
PENSAAR 2020 – Strategic Plan for Water Supply and Waste-Water Sanitation Plan 2020
PENT – National Strategic Plan for Tourism 2013-2015
PERSU 2020 – Strategic Plan for Urban Waste
PETI3+ – Strategic Plan for Transport and Infrastructure 2014-2020
PGF – Forest Management Plans
PGRH – River Basin Management Plans
pkm – passenger-km

PM_{10} – particulate matter (particles) with a diameter of less than 10 µm
$PM_{2.5}$ – particulate matter (particles) with a diameter of less than 2.5 µm
PMI – Integrated Maritime Policy
PMP – Mar-Portugal Plan
PNA – National Water Plan
PNAC – National Climate Change Programme
PNAEE – National Energy Efficiency Action Plan
PNAER – National Renewable Energy Action Plan
PNDFCI – National Plan for Forest Protection Against Fires
PNGR – National Waste Management Plan
PNUEA – National Programme for the Efficient Use of Water
PO SEUR – Operational Programme - Sustainability and Efficiency in the Use of Resources
PPA – Portuguese Water Partnership
R&D – Research and Development
RD&I – Research, Development and Innovation
REA – Portuguese State of Environment Report 2014 (PT-SoER)
RERU – Exceptional Urban Redevelopment Regime
RGCE – Energy Consumption Management Regulations
RIS3 – Research and Innovation Strategies for Smart Specialisations
RJUE – Legal Regime for Urban Planning and Construction
RNAAT – National Register of Tourist Entertainment Agents
RNAE – Association of Energy and Environment Agencies
RNBC – National Low Carbon Roadmap
SAAVN – High Nature Value Farming Systems
SEP – single environmental permit
SCE – Building Energy Certification System
SEA – Secretary of State for the Environment
SEAMIND – National Strategy for Sea Monitoring and Support Indicators
SEE – Secretary of State for Energy
SEIIC – Secretary of State for Innovation, Investment and Competitiveness
SEITC – Secretary of State for Infrastructure, Transport and Communications
SEN – National Electricity System
SET – Secretary of State for Tourism
SGCIE – Intensive Energy Consumption Management System
SG MAOTE – General Secretariat of the Ministry of Environment, Spatial Planning and Energy
Sirplaste – Recovered Plastic Industrial Society
SNIC – National Property Register Information System
SUMA – Urban Services and the Environment
TEEB – The Economics of Ecosystems and Biodiversity
TEU – twenty-foot equivalent unit

TGR – Waste Management Tax
tkm – tonne per kilometre
TM – Mechanical Treatment
TMB – Mechanical and Biological Treatment
Toe – Tonne of oil equivalent
TTIP – Transatlantic Trade and Investment Partnership
UAA – utilised agricultural area
UN – United Nations
UNEP – United Nations Environment Programme
UNESCO – United Nations Educational, Scientific and Cultural Organisation
UNFF – UN Forum on Forests
UNWTO – United Nations World Tourism Organisation
USI – Urban Sustainability Index
VAT – value added tax
VOC – volatile organic compounds
WFD – Water Framework Directive
ZER – Responsible Business Zones
ZIF – Forest Intervention Zones

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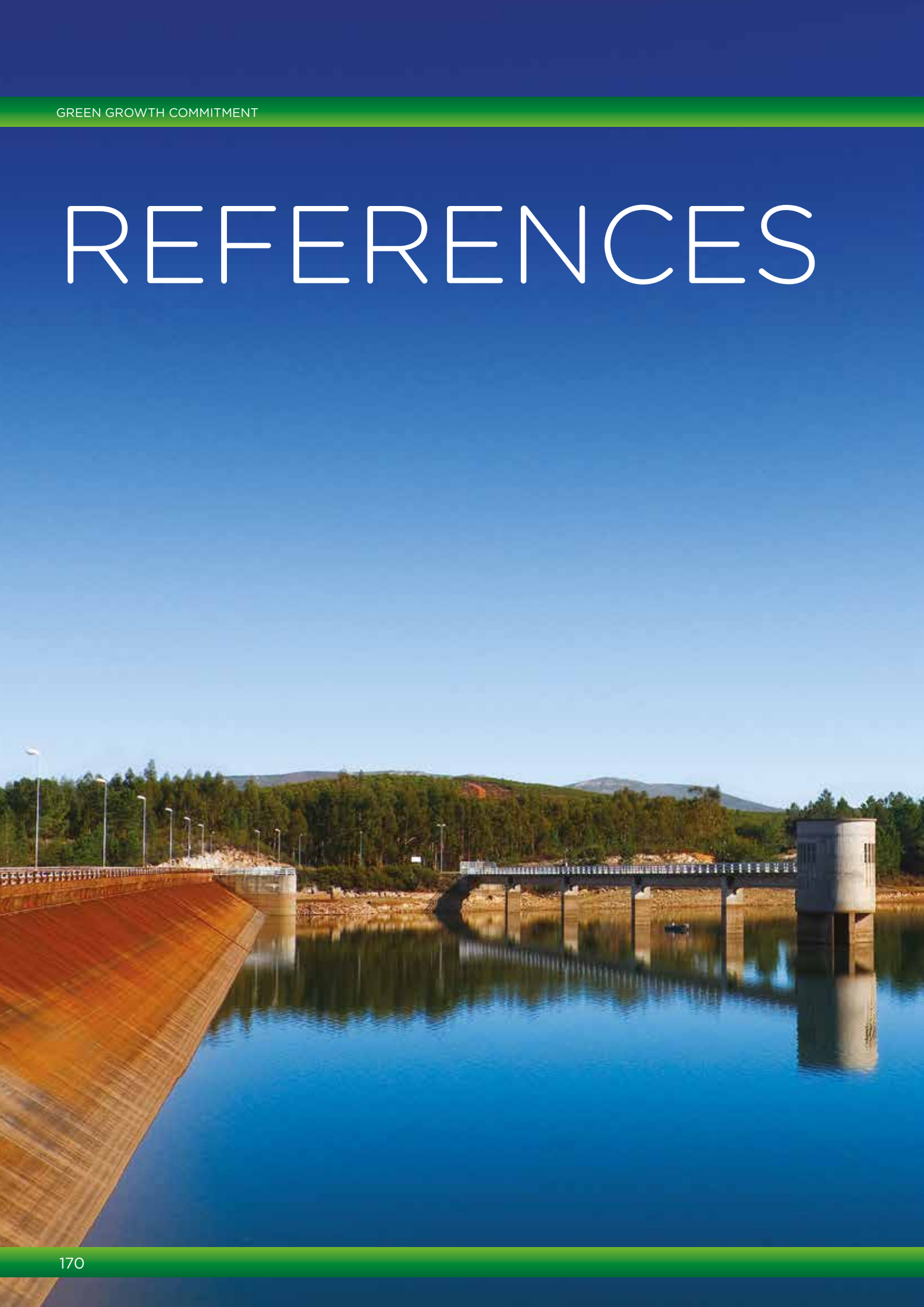

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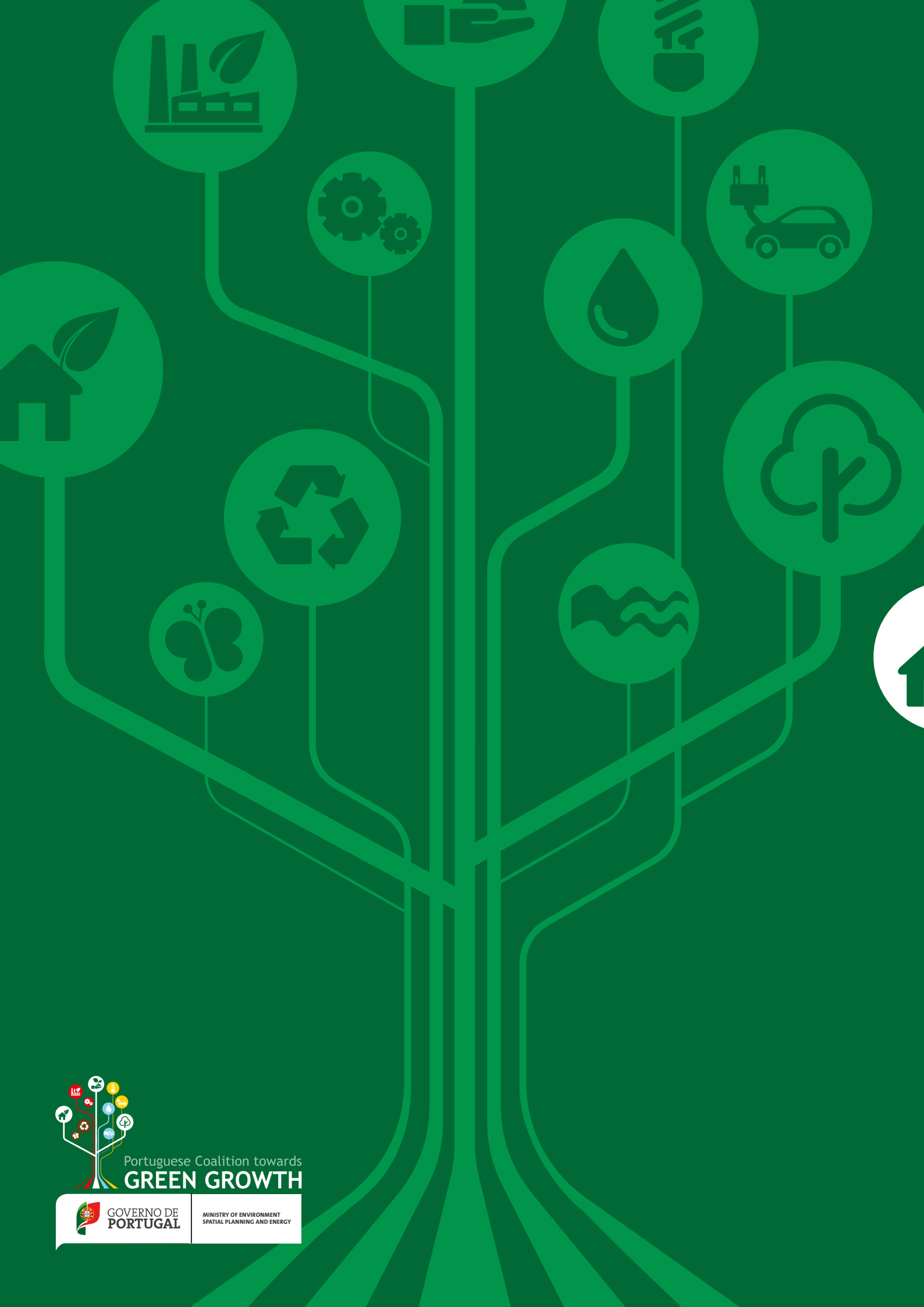

Portuguese Coalition towards
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