Resource efficiency and circular economy in Europe – even more from less

An overview of policies, approaches and targets of Portugal in 2018

July 2019

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Acknowledgements

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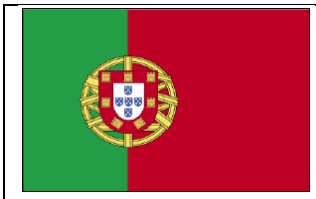
This country profile was prepared as part of the 2019 EEA review of material resource efficiency, circular economy and raw material supply policies, which aimed to collect, analyse, and disseminate information about experience with the development and implementation of these policies in EEA member and cooperating countries.

At the time of writing, a summary report is being finalised. The report reflects on trends, similarities and differences in policy responses, showcases selected policy initiatives from member countries and identifies possible considerations for the development of future policies.

These country profiles were compiled and finalised by members from the European Topic Centre on Waste and Materials in a Green Economy, namely Bart Ullstein, Bettina Bahn-Walkowiak, Jeroen Gillabel, Margareta Wahlström, Jutta-Laine Ylijoki, Dirk Nelen, Theo Geerken, Veronique Van Hoof and Evelien Dils. The responsible EEA project managers for the work were Pawel Kazmierczyk and Daniel Montalvo.

Portugal, facts and figures

Note: data in this section was sourced from Eurostat databases (April 2019), except where noted otherwise



GDP: EUR 194.6 billion (1.2 % of total EU28 in 2017)

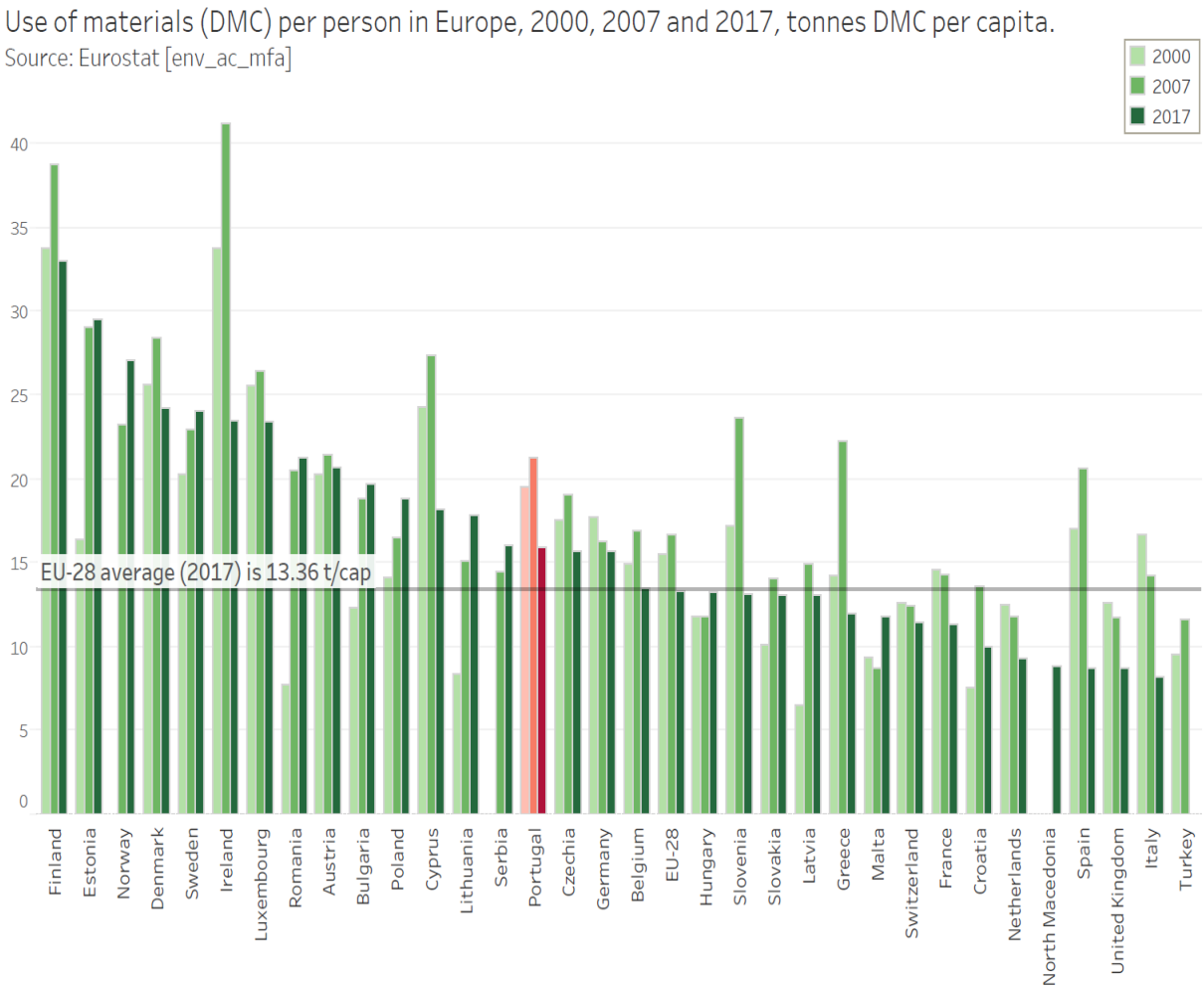
Per capita GDP: EUR 18,900 Euro (purchasing power standard) (62.9 % of EU28 average per capita figure in 2017)

Use of materials (domestic material consumption (DMC))
163.7 million tonnes DMC (2.4 % of EU28 total in 2017)
15.9 tonnes DMC/capita (119 % of EU28 average per person in 2017)

Structure of the economy:
agriculture: 2.3 %
industry: 22.4 %
services: 75.3 %

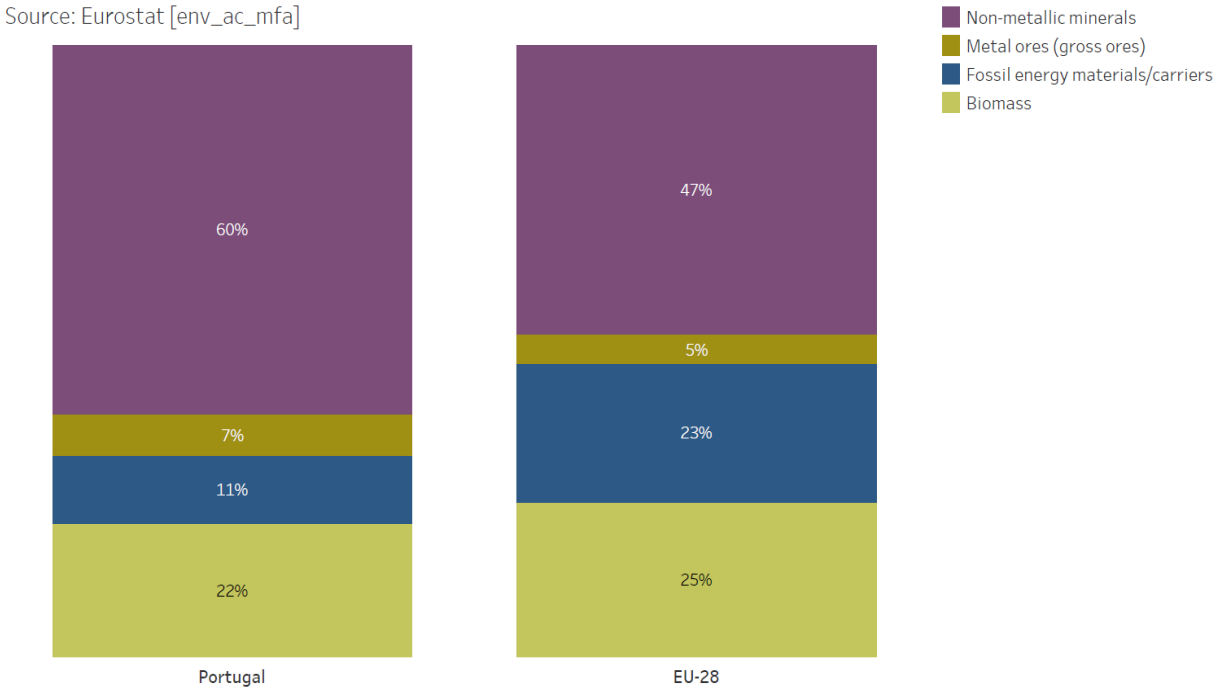
Surface area: 92.2 thousand square kilometres (km^2) (2.1 % of total EU28)

Population: 10.3 million (2.0 % of EU28 total in 2017)



Portugal & EU-28. Domestic Material Consumption by material category, 2017.

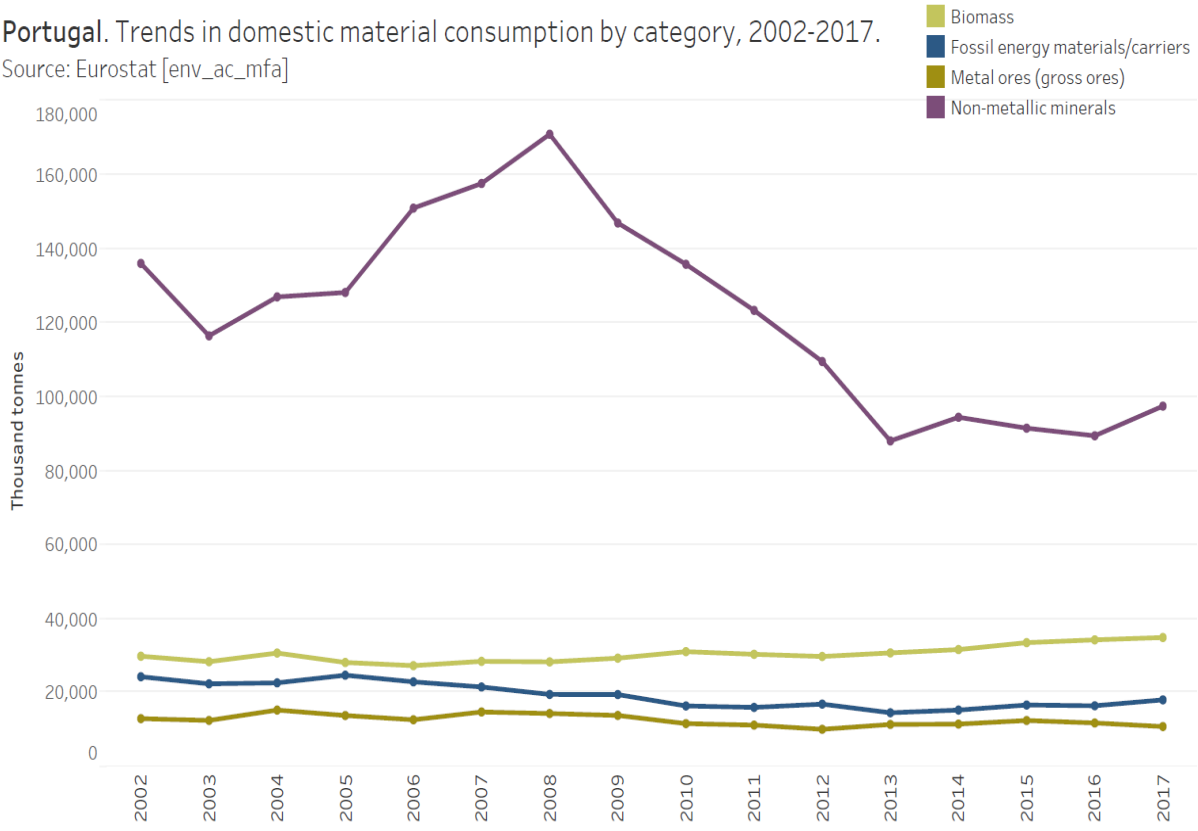
Source: Eurostat [env_ac_mfa]



Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

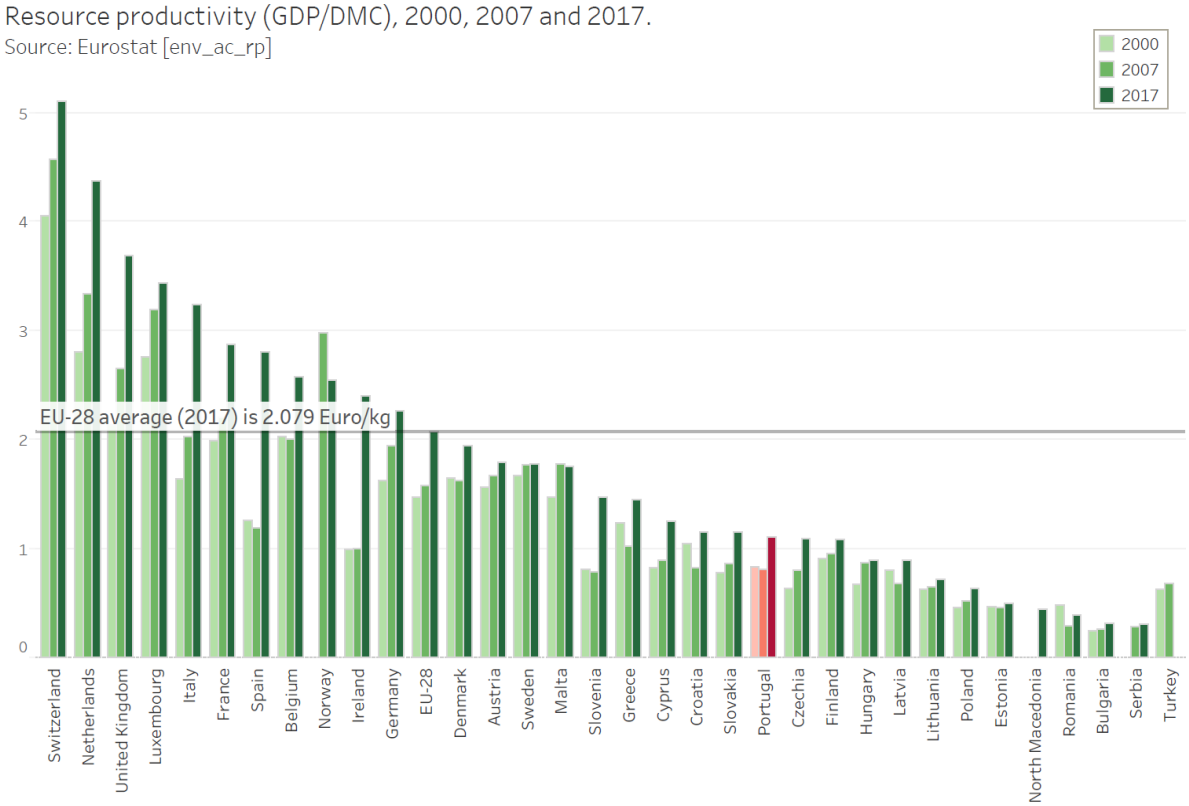
Portugal. Trends in domestic material consumption by category, 2002-2017.

Source: Eurostat [env_ac_mfa]



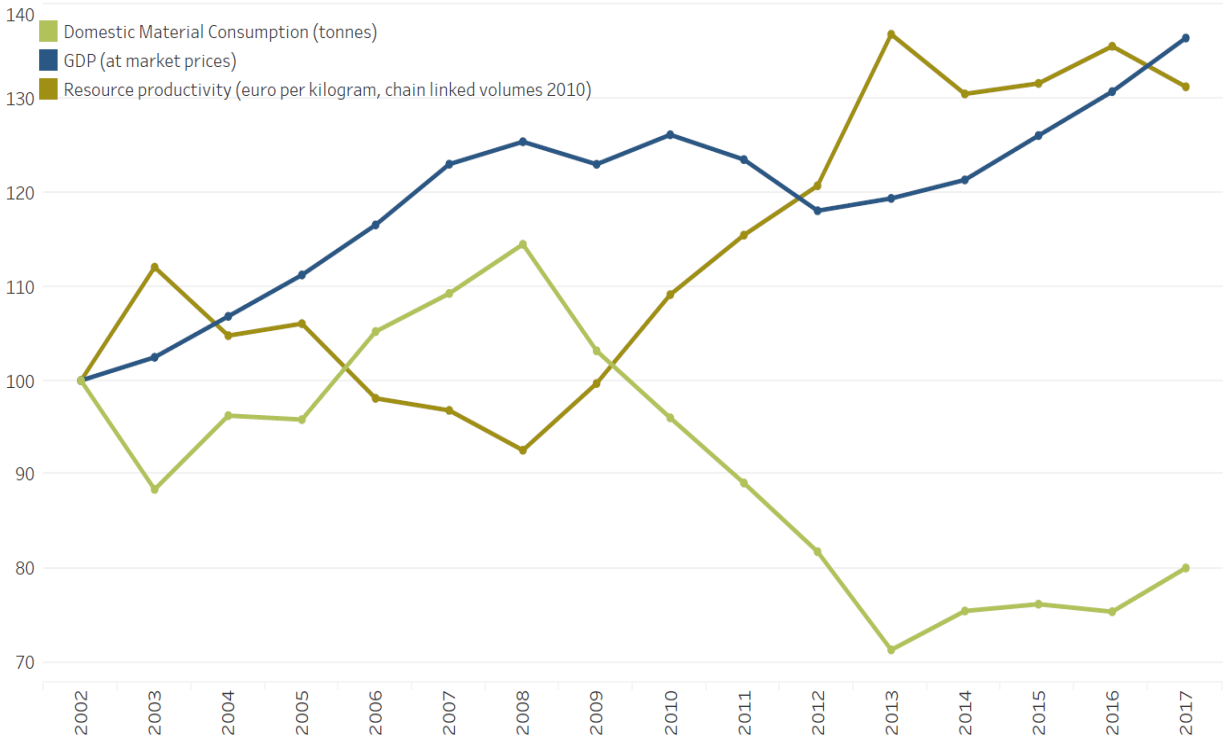
Note: The domestic material consumption categories 'other products' and 'waste for final treatment and disposal' are excluded from the figure.

Resource productivity (GDP/DMC), 2000, 2007 and 2017.
Source: Eurostat [env_ac_rp]

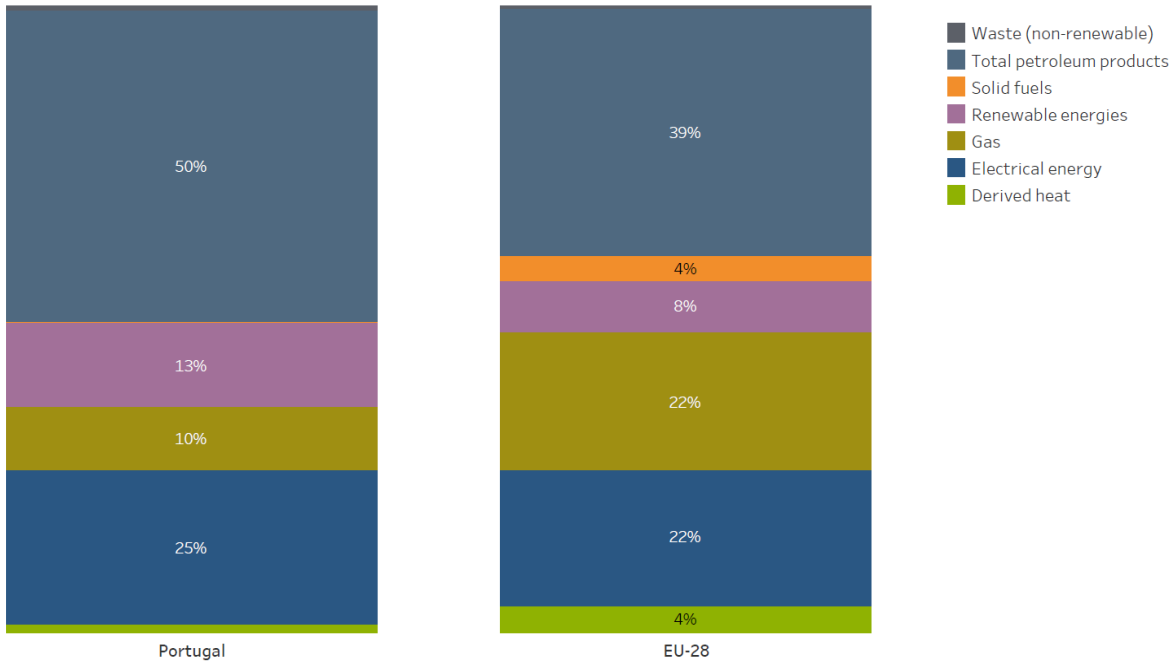


Note: GDP expressed in chain linked volumes 2010.

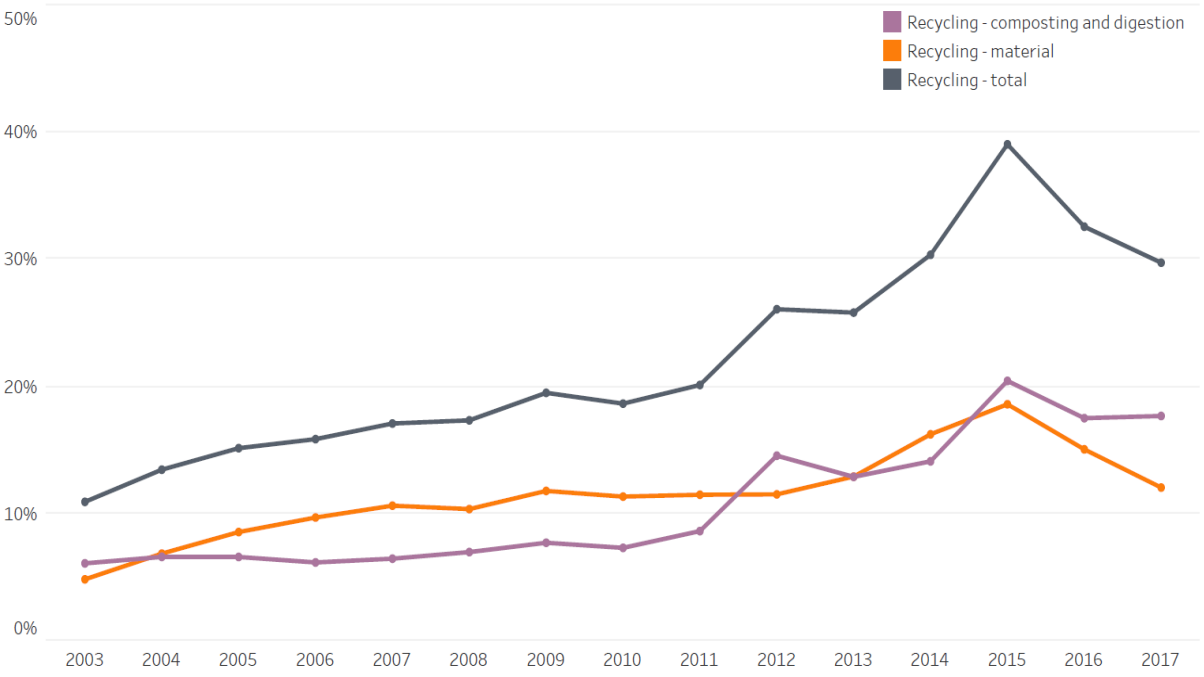
Portugal. GDP, DMC and resource productivity trends, 2002-2017, index 2002=100.
Source: Eurostat [env_ac_mfa], [env_ac_rp] & [nama_10_gdp]



Portugal & EU-28. Primary energy consumption by energy product, 2016.
Source: Eurostat [nrg_100a]



Portugal. Recycling of municipal waste, 2003-2017, as share of total waste treatment.
Source: Eurostat [env_wasmun]



Note: The amount of municipal waste treatment is reported for the treatment operations incineration (with and without energy recovery), recycling, composting and landfilling.

Please note that in the period between gathering the information for the country profile and the publication thereof, some changes have occurred. These updates are indicated as footnotes in the text.

Policy framework

Driving forces for material resource efficiency and circular economy

Portugal's strategic vision is to ensure balanced and environmentally sustainable economic development through the rational use of its resources and mitigating negative impacts on public health. Although Portugal's territory has great potential, it is dependent on third countries for its energy supply – 72.4 per cent in 2014. This obstacle, among others, has to be tackled if Portugal is to achieve economic competitiveness and sustainability.

The strategic vision is based on the following objectives:

- deep decarbonisation of the economy through the promotion of sustainable mobility and sustainable and smart cities, which will also bring about a reduction in the need for energy from third countries;
- efficiency in the use of resources, developing a circular economy in all sectors, beginning with the waste sector and the promotion of design for circularity;
- promotion of territorial cohesion and the development of low-density areas as drivers of economic competitiveness and guaranteeing territorial balance and exploitation of the distinctive resources of each territory. Low-density areas are defined through a multi-criteria approach that takes account of population density, demography, settlement patterns, physical characteristics of the territory, socio-economic characteristics and accessibility.

Dedicated national strategies or roadmaps for material resource efficiency and a circular economy

Portugal has not adopted a dedicated national material resource efficiency strategy, action plan or roadmap.

Portugal adopted a Circular Economy Action Plan, *Leading the Transition: action for the circular economy in Portugal: 2017–2020*[1], on the 23 November 2017, when it was approved by the Council of Ministers (Council of Ministers Resolution nº. 190-A/2017, December 11).

The *macro* level approach is based on the same rationale as the EU Action Plan for a Circular Economy and includes measures targeting product, consumption, waste/secondary raw materials, with knowledge as a central element in developing solutions.

The first cycle (2017–2020) of the Action Plans considers:

- measures already under implementation by the ministries concerned (for example, food waste, by-products/end-of-waste, research and innovation, and education);
- new measures were identified in key themes, such as reuse and regeneration, and consumer incentives.

At the end of 2020, an evaluation and review will be carried out and adjustments might be necessary concerning, for example, aspects such as duration and coverage, as well as changes, including new regulations, and/or new suggestions for action. This first evaluation exercise will be followed by new review cycles every three to five years.

To ensure objectivity, effectiveness and efficiency, the Action Plan outlines cross-cutting themes that were identified as having potentially the greatest impact in the short to medium term and simultaneously promoting inter-ministerial collaboration.

[1] http://eco.nomia.pt/contents/ficheiros/paec-en-version-4.pdf (English)

At the *meso* level, the focus is on industry – every sector is invited to establish its own transition agenda, and voluntary instruments such as circular agreements are foreseen to support that process.

The Action Plan identifies specific measures aiming at developing key sectors, which will become the leaders of their own transition agenda. The role of the government is to help sectors implement the transition by launching circular agreements and defining calls for financing, amongst others.

A circular agreement is a voluntary agreement between the government and interest groups, such as companies, non-governmental organisations (NGOs) and municipalities, established to identify and address existing barriers that hamper the launch of products, services or technologies that have the potential to generate positive environmental and economic impacts. Through these time-limited agreements, stakeholders should identify and propose how to address legislative barriers and regulations, support innovation, facilitate access to contact and knowledge networks and create market incentives. The circular agreements are similar to the European Union's (EU) Innovation Deals.

The agri-food sector, in addition to having a specific *macro* action, is also covered in the retail sector, which has a significant impact on consumers, especially related with packaging and food waste. The construction sector is conspicuous for its intensive use of primary resources, low material productivity and a low level of circularity. The textile and tourism sectors are notable for their exports and relevance in terms of resource efficiency – for example, fast fashion is one of the most polluting industries globally.

At the *micro* level, the focus is on the regions/territories and acceleration strategies for the circular economy that best suits their socio-economic profiles. The levels of action defined in the Action Plan assume these different dimensions and it is expected that the micro level action will be developed locally by companies, cities and other stakeholders according to regionally defined strategies.

As well as identifying relevant sectors, it is important that specific agendas are established. Some regions have come forward with their own plans, in conjunction with the Portugal 2020 Operational Programmes. Portugal 2020 is the partnership agreement between Portugal and the European Commission for the implementation of the European Structural and Investment Funds (ESIF) for 2014–2020. Portugal 2020 has 16 Operational Programmes – for example COMPETE 2020 and PO SEUR.

At the *macro* level, seven measures were defined:
- reuse and communicate: extended producer responsibility;
- encourage markets to produce, use, and consciously consume in a circular way;
- know, learn and communicate: education for the circular economy;
- food: combating waste;
- give new life to waste;
- regenerate resources: water and nutrients;
- research and innovation in a circular economy.

In respect of the action targeting reuse and communicate: extended producer responsibility, producers are requested to provide guidelines for products and consumers aiming at reducing the demand for materials and raw materials in production, increasing the reuse of products covered by extended producer responsibility and simultaneously decreasing the production of waste.

The action to encourage markets to produce, use and consciously consume in a circular way focuses on initiatives related with finance and taxes including:
- analyse of the economic and environmental potential of the progressive introduction of economic instruments to reward sustainable production and consumption;
- encouragement of the financial sector to take advantage of investment circular economy opportunities; and

- promotion of the adoption of circularity by the productive sector.

The action to know, learn and communicate: education for the circular economy intends to intervene in innovation and knowledge and increase citizen involvement with a view to establish a collaborative, strategic and cohesive commitment for the construction of environmental literacy in Portugal through a National Strategy (ENEA) and at the same time educate citizens to make environmentally conscious choices in respect of goods and services.

With regard to the action combating food waste, the guidelines focus on the consumer and waste with the main objectives of reducing the production of organic waste and increasing the productivity of the value chain, contributing to the education of producers and consumers and monitoring national food waste in the whole value chain.

The action on giving new life to waste targets normative/legal and innovation levels, and aims to increase the introduction of secondary raw materials, decrease the production of waste, reduce the demand for raw materials and companies' costs.

The action regenerate resources: water and nutrients foresees guidelines at the level of use/consumption, reutilisation and regeneration, aiming to increase water efficiency, especially the reuse of water; decrease water consumption; and increase extraction and recirculation of nutrients in their natural cycles.

For the macro action, research and innovation in a circular economy, defining key areas for research and innovation to accelerate the transition to a circular economy in Portugal, establishing, developing and empowering the necessary skills and identify and fostering knowledge networks in a circular economy is foreseen.

At the *meso* level, the following agendas have already been defined:

- built environment: more efficiency and material productivity;
- ecological (and circular) public procurement.

As referred previously, Portugal has also identified the key sectors for accelerating the transition to a circular economy, namely: tourism, textiles/footwear and retail, for which goals, measures and relevant entities have been defined.

At the *micro* level, four common regional and national themes to accelerate the transition to a circular economy that can be worked together while allowing for the socio-economic specificities of each region were proposed:

- zonas empresariais responsáveis (ZER): responsible business areas;
- industrial symbioses;
- circular cities;
- circular enterprises.

No specific goals or targets were set in the Portuguese Action Plan. Instead, a level of ambition for Portugal in 2050 was established.

- **Carbon neutrality and a resource-efficient and productive economy**: a Portuguese economy that is greenhouse-gas neutral – in which emissions are equivalent to those captured and replaced – and is resource-efficient in terms of extraction and importation of materials, has significantly reduced the amount of final waste produced and has improved the management and extraction of the value of resources in circulation.
- **A push for knowledge**: investing in research and innovation to promote solutions in products, services, business models, consumption/use and behaviour, with less intensity of emissions and resources, integrated business models that promote jobs and the efficient and effective use of resources, which prolongs their economic value.

- **Inclusive and resilient economic prosperity**: economic development across all sectors of society, resilient to price and risk volatility, progressively decoupled from negative environmental and social impacts.
- **A flourishing, responsible, dynamic and inclusive society**: an informed, participatory and more collaborative society, guided by being and caring, as opposed to wanting and possessing, and preserving and caring for its natural capital.

Portugal already has established goals and targets in other national plans that will benefit from the measures developed by this Action Plan.

The circular economy is integrated in several other Portuguese political domains through direct reference in strategic documents or, while not explicitly referred to the circular economy, contributing equally to its development.

Key activities of the plan go beyond ensuring higher levels of recycling and the use of secondary raw materials.

Resource efficiency and raw materials are covered by the adoption of recommendations in each of the different actions proposed at the *macro* level, in particular for food: combating waste, new life to waste, encouraging the market to produce consciously and regenerate resources: water and nutrients, whose objectives are to better manage resources.

Instruments of a different nature will be in place, such as education, economic, financial and fiscal measures, green deals, and public investment, among others.

Overview of dedicated national or sectoral strategies for raw materials

The National Strategy for Geological and Mineral Resources 2020 (Council of Ministers Resolution n.º 78/2012, September 11).

The National Strategy for Geological and Mineral Resources aims to promote a mining sector that:

a. is dynamic, ensuring the capture and realisation of investment and the proper exploitation of resources;
b. is economically, socially, environmentally and territorially sustainable;
c. promotes the growth of the national economy by guaranteeing the supply of essential raw materials and increasing their importance in the gross domestic product (GDP) and exports; and
d. promotes regional development, guarantees returns and employment for local people and ensures the development of communities.

Guidelines that support the Strategy's aims are based on four principles, with a set of specific measures to achieve economic, social, environmental and territorial sustainability:

- Preservation of resources and guarantee of supply of raw materials:
  a. demarcation of geological interest areas and their legal classification;
  b. understanding that minerals are non-renewable natural resources, including them as part of the national natural heritage which is important to understand, preserve and enhance;
  c. support to new activities aimed at *in situ* valorisation of resources;
  d. demarcation of areas for future exploration.

- Use of the natural life cycle and recycling:
  a. support for the use of mineral resources that are not fully utilised.

Policies which include elements of material resource efficiency[2]

Waste management and prevention

- National Plan for Waste Management (PNGR)[3]
- Framework on Waste Management (Decree-Law n.º 73/2011)[4]
- Framework on the management of specific waste streams subject to the principle of extended producer responsibility (Decree-Law n.º 152-D/2017)[5]
- Framework laying down the rules for placing on the market of fertilizers (Decrew-Law n.º 203/2015)[6]
- Ecodesign for Energy-Related Products (Decree-Law n.º 26/2009)[7]
- Construction and Demolition Waste (CDW) legislation (Decree-Law No. 46/2008 amended by Decree-Law No 73/2011)[8]
- Strategic Plan for Solid Municipal Waste (PERSU 2020)[9]
- Strategic Plan for Industrial Waste Management (PESGRI)[10]
- National Plan for Industrial Waste Prevention (PNAPRI)[11]
- Strategic Plan for Hospital Waste (PERH)[12]

Sectoral strategies

- National Renewable Energy Action Plan (PNAER)[13]
- National Energy Efficiency Action Plan (PNAEE)[14]
- National Strategy for Forests (ENF)[15]
- National Program for Climate Change 2020/2030 (PNAC 2020/2030)[16]
- Green Growth Commitment
  One of the three key ideas of the Green Growth Commitment (GGC) is that promoting the efficient use of resources implies optimised resource management aimed at increasing productivity and maximising the use of resources – for example, material efficiency, energy efficiency, water efficiency, eco-design, urban renewal.
- Operational Programme Sustainability and Efficiency in Resource Use
  The EU-funded Operational Programme Sustainability and Efficiency in Resource Use (PO SEUR) intends to contribute to the implementation of the Strategy Europe 2020, particularly in relation to the green growth priority and responding to the challenges of the transition to a low-carbon

[2] Updated information from July 2019 also allows to add the following sectoral strategy:

Roadmap for Carbon Neutrality 2050 (RNC 2050) (Council of Ministers Resolution Nº. 107/2019, 1 July 2019)

Adopted the commitment to achieve carbon neutrality in Portugal by 2050, which translates into a neutral balance between greenhouse gas emissions and carbon sequestration through land use and forests.

RNC 2050 was prepared in articulation with the principles established in other relevant strategies for circular economy.

[3] http://apambiente.pt/_zdata/Politicas/Residuos/Planeamento/RCM_11-C_2015_Aprova_PNGR.pdf (Portuguese)

[4] http://www.apambiente.pt/_zdata/Politicas/Residuos/DL_73_2011_DQR.pdf (Portuguese)

[5] https://dre.pt/application/file/a/114335775 (Portuguese)

[6] https://dre.pt/application/file/67477956 (Portuguese)

[7] http://dre.pt/pdf1sdip/2009/01/01800/0055500565.pdf (Portuguese)

[8] http://www.apambiente.pt/_zdata/Politicas/Residuos/DL_73_2011_DQR.pdf (Portuguese)

[9] http://apambiente.pt/_zdata/DESTAQUES/2014/Portaria_PlanoEstrategico_PERSU2020_final.pdf (Portuguese)

[10] http://www.apambiente.pt/index.php?ref=16&subref=84&sub2ref=108&sub3ref=208 (Portuguese)

[11] http://www.apambiente.pt/index.php?ref=16&subref=84&sub2ref=108&sub3ref=208 (Portuguese)

[12] http://www.apambiente.pt/_zdata/Politicas/Residuos/Planeamento/PERH/Portaria_43_2011_PERH.pdf (Portuguese)

[13] https://dre.pt/application/dir/pdf1sdip/2013/04/07000/0202202091.pdf (Portuguese)

[14] https://dre.pt/application/dir/pdf1sdip/2013/04/07000/0202202091.pdf (Portuguese)

[15] https://dre.pt/application/file/66432612 (Portuguese)

[16] https://www.apambiente.pt/index.php?ref=16&subref=81&sub2ref=117&sub3ref=1376 (Portuguese)

economy, based on more efficient use of resources and promoting greater resilience to climate risks and disasters.

- National Plan for Waste Management
- The National Plan for Waste Management (PNGR 2020) aims to promote a waste policy that is integrated with products' life cycles, focusing on the circular economy and guaranteeing more efficient natural resource use. It is based on two basic strategic objectives: promoting the efficient use of natural resources in the economy and preventing or reducing the adverse impacts of production and waste management.
    - Decree-law n.º 73/2011

    A priority for the government is the improvement of waste prevention and the promotion of reuse and recycling of products to extend their use before returning them to the natural environment. It also considers the full exploitation of the recently organised waste market which is important as a way to consolidate the valorisation of waste, with advantages for economic operators through the use of specific waste with high valorisation potential.
    - Decree-law n.º 267/2009

    Recycling of used edible oils, specifically for biofuel production, is an important asset in the current context of national and EU energy policies.
- Strategic Plan for Municipal Solid Waste
  The Strategic Plan for Municipal Solid Waste (PERSU 2020) considers waste management as a way to lengthen material life cycles – waste is managed as a resource, minimising its environmental impacts and taking advantage of its socio-economic value. This Plan promotes the efficient use and management of primary and secondary resources, decoupling economic growth from material consumption and waste production.
- Strategic Plan for Industrial Waste
  The Strategic Plan for Industrial Waste (PESGRI) considers the creation of an integrated treatment system for industrial waste, including the reduction, reuse and recycling of industrial waste, an absolute priority. Along with the construction of integrated recovery and disposal centres, an organised waste market has been established, supported by online trading platforms.
- National Plan for the Prevention of Industrial Waste (PNAPRI)
  The National Plan for the Prevention of Industrial Waste (PNAPRI) is a planning tool, the main purpose of which is to reduce the danger and quantity of industrial waste, not only through the implementation of prevention measures and technologies, including internal energy recovery, but also through changes in the behaviour of economic agents and consumers.
- Strategic Plan for Hospital Waste
  The Strategic Plan for Hospital Waste (PERH) aims to strengthen measures for the prevention of medical waste, going beyond mere waste management and introducing a material life-cycle approach, with a focus on reducing the environmental impacts resulting from production and management of waste and strengthening the concept of the economic value of waste. Moreover, it encourages the recovery of waste and the use of materials resulting from recovery, considering elimination as the very last treatment option.
- Strategy for Energy Efficiency
  The Strategy for Energy Efficiency (PNAEE) is an energy planning tool aiming to ensure a substantial improvement in energy efficiency throughout the country.
- National Strategic Plan for Forests
  The National Strategic Plan for Forests (ENF) aims to identify the action needed for the balanced management of forest resources to fulfil economic, social and environmental needs. The strategy provides for action to promote the judicious, responsible and efficient use of forest resources.
- Environment Financial Fund[17] (Decree-law Nº. 42-A/2016, 12 August 2016)
  The Environment Financial Fund's purpose is to support environmental policies pursuing sustainable development objectives and contributing to achieve national and international goals

[17] http://www.fundoambiental.pt (Portuguese)

and commitments, in particular those related to climate change, water resources, waste, nature conservation, biodiversity and the transition to a circular economy[18].
The Fund finances entities, activities or projects working to fulfil the following objectives:

a. climate change mitigation;
b. climate change adaptation;
c. cooperation in climate change;
d. carbon sequestration;
e. use of the carbon market to meet international goals;
f. promoting participation of entities in the carbon market;
g. efficient use of water and protection of water resources;
h. sustainability of water services;
i. prevention and correction of environmental damage;
j. compliance with national and European Union goals and targets for urban waste management;
k. transition to a circular economy;
l. protection and conservation of nature and biodiversity;
m. environmental awareness and training;
n. environmental research and development.

The Fund may establish mechanisms for liaising with other public and private entities, in particular with other public or private national, European or international funds, in order to achieve the objectives of environmental policies.

- National Environmental Education Strategy 2020 (Council of Ministers Resolution Nº. 100/2017, 11 July 2017)
  The measures envisaged in the National Environmental Education Strategy are based on the following pillars:
  - decarbonise society;
  - make the economy circular;
  - value the land.

  The make the economy circular pillar outlines action for further development.

  Action envisaged in the National Environmental Education Strategy for 2017–2020 (ENEA 2020) contributes to active citizenship in the field of sustainable development and for the construction of a just, inclusive, low-carbon, rational and resource-efficient society, which combines equity between generations, the quality of life of citizens and economic development.

  The Strategy was approved on 11 July 2017 by Council of Ministers Resolution Nº. 100/2017[19]. It aims to establish a collaborative, strategic and cohesive commitment to environmental literacy in Portugal, through the development of an inclusive and visionary citizenship that leads to sustainable models of conduct in all dimensions of human activity. This Strategy is being implemented through 16 measures framed by three strategic objectives:
  - Environmental Education + Transversal;
  - Environmental Education + Open; and
  - Environmental Education + Participation.
- National Strategy for Green Public Procurement 2020 (Council of Ministers Resolution Nº. 38/2016, 29 July 2016)

[18] http://www.fundoambiental.pt/avisos/programa-apoiar-a-transicao-para-uma-economia-circular-fase-i.aspx (Portuguese) and https://dre.pt/web/guest/pesquisa/-/search/105739275/details/normal?q=despacho+gabinete+do+ministro+538-b%2F2017 (Portuguese)
[19] https://dre.pt/application/conteudo/107669156 (Portuguese)

The National Strategy for Green Public Procurement 2020 aims to contribute to the promotion of resource efficiency and the minimisation of environmental impacts, stimulating the supply of sustainable goods and services, as well as the reduction in the environmental impacts of public works throughout their life cycle, in line with the country's environmental policies. A number of priority groups of goods and services were identified, and related environmental criteria were developed also taking into account criteria proposed at the EU level aligned with EU Ecolabel criteria.

The goals are:

A. For direct and indirect administration:
   i. Goal 1: 60 per cent of pre-contractual public procurement procedures (the acts and formalities leading to the formation of a public contract) for goods and services included in the Strategy include environmental criteria;
   ii. Goal 2: 60 per cent of finance associated with public pre-contractual procurement procedures for goods and services included in the Strategy have pre-contractual procedures that include environmental criteria.
B. For the State business sector – corporate public entities are profit-making corporate entities intended to provide goods or services of public interest, in which the State or other State public entities hold the entire capital:
   i. Goal 1: 40 per cent of public pre-contractual procedures for the acquisition of goods or services included in the Strategy include environmental criteria;
   ii. Goal 2: 40 per cent of finance associated with pre-contractual public procurement procedures for goods and services covered by the Strategy have pre-contractual procedures that include environmental criteria.

- Measures to reduce the consumption of paper and other printing consumables in public administration (Council of Ministers Resolution Nº. 51/2017, 19 April 2017)[20]

  Measures were approved to reduce paper consumption and other printing consumables in the Public Administration, promoting process optimisation and the modernisation of administrative procedures.

  Annual targets were established in order to reduce paper consumption and printing consumables. By 2017, this target will be at least 20 per cent of the amount foreseen in the budget of each of the entities and services covered by this Resolution.
- National Commission for Combating Food Waste (Order Nº. 14202-B/2016. 25 November 2016)[21]

  The mission of the National Commission for Combating Food Waste is to promote the reduction of food waste through an integrated and multidisciplinary approach.

  The Commission's goals are:
  a. proceed with diagnosis, evaluation and monitoring of food waste at the national level;
  b. identify existing good practice at national and international levels in the fight against food waste;
  c. systematise indicators of measurement of food waste, at different stages of the food chain, according to methodologies applied by the EU and Organisation for Economic Co-operation and Development (OECD);
  d. promote the participation of civil society entities in relevant initiatives;
  e. promote the creation and development of an electronic platform to facilitate interactive management of food products at risk of waste;
  f. propose measures to reduce food waste that include objectives in relation of food security, school education, public health, poverty reduction and good production practices, the agri-food industry, distribution and consumption.

[20] http://data.dre.pt/eli/resolconsmin/51/2017/04/19/p/dre/pt/html (Portuguese)
[21] https://dre.pt/application/file/105258160 (Portuguese)

- National Strategy to Combat Food Waste (presented on 8 November 2017)
  The National Strategy to Combat Food Waste shares responsibility between producers and consumers and integrates three strategic objectives: prevent, reduce and monitor.
  The National Strategy to Combat Food Waste is structured into 14 key actions:
    1. Reviewing and disseminating food safety guidelines aiming to combat waste;
    2. Promoting consumer awareness actions;
    3. Implementing awareness-raising actions for the school-age population;
    4. Developing specific training actions for different segments of the food chain;
    5. Regularly publishing a statistical panel of food waste levels, including the creation of an area dedicated to this topic in the official statistics portal;
    6. Disseminating good practices (guidelines and success stories);
    7. Promoting the development of innovative processes;
    8. Facilitating and encouraging the food donation scheme;
    9. Improving coordination and involvement of national administration in European and international regulation;
    10. Implementing a collaboration platform to identify availability by type of food;
    11. Promoting specific locations to sell products at risk of waste;
    12. Developing the methodology for calculating food waste at the different phases of the food chain;
    13. Implementing health and nutrition pilot projects;
    14. Periodic reporting to the government and the public at large.
- National Strategy for Tourism 2027 (adopted by Council of Ministers on 21 September 2017)
  One of the strategic goals of the National Strategy for Tourism 2027 is to boost the economy by stimulating the circular economy in tourism. This strategy wants to ensure that tourism increasingly becomes a sustainable activity that values the country's natural resources and contributes to the creation of employment and wealth, and promotes territorial and social cohesion.
  Priority projects are:
    - development of benchmarks regarding the sustainability of tourism in Portugal on economic, environmental and social aspects and governance, allowing circular flows of reuse, restoration and renovation in an integrated manner;
    - initiatives to promote the sustainability of tourist destinations and agents, as well as their communication and inclusion of non-financial variables (environmental, social and governance) in tourism investment projects;
    - projects that stimulate energy efficiency throughout tourism's value chain and the integration of circular economy aspirations – reduction, reuse, recovery and recycling of materials and energy;
    - inclusion of the sustainability aspect in the classification system of tourist enterprises.
- Measures aimed at the more sustainable use of resources and the adoption of circular solutions in Public Administration (Council of Ministers Resolution N° 141/2018, 26 October 2018)
  Approved measures to a more sustainable use of resources and the adoption of circular solutions in Public Administration, promoting the reduction of paper consumption, other printing consumables and plastic products, favouring environmental protection, optimising processes and modernising administrative procedures.

Institutional setup and stakeholder engagement

There is no single institution or ministry appointed for the development of material resource efficiency, circular economy and raw material supply policies.

There are specific institutions which coordinate different material resource policies related to different materials:

- water, waste, air: Portuguese Environment Agency and the Portuguese Energy Agency (ADENE);

- energy: Directorate-General for Energy and Geology and ADENE;
- biomass: Institute for Nature Conservation and Forestry;
- food waste: Agriculture Ministry.

The ministries for the environment and for the economy usually coordinate material resource efficiency policies with other ministries, such as those for agriculture, sea and health. An example of such coordination is the Green Growth Commitment.

The promotion and oversight of the Portuguese Circular Economy Strategy is being provided by an Inter-ministerial Commission on Air and Climate Change, created by the Resolution of the Council of Ministers n.º 56/2015 of 30 July 2015, now renamed the Inter-ministerial Commission on Air, Climate Change and Circular Economy.

In this context, a Portuguese Circular Economy Strategy Coordination Group was created to disseminate the principles of the circular economy in government policies, to promote and facilitate implementation of the guidelines contained in the Portuguese Circular Economy Strategy and ensure articulation of national contributions to the measures contained in the EU's Action Plan for a Circular Economy.

The Circular Economy Strategy Coordination Group includes representatives appointed by the government members responsible for European affairs, tax affairs, local authorities, science, technology and higher education, health, planning, economy, environment, agriculture, forests and the sea. It is coordinated by representatives appointed by the government members responsible for the economy and the environment.

This Coordination Group responds to and depends on the Inter-ministerial Commission on Air, Climate Change and the Circular Economy.

The Portuguese Environment Agency is responsible for administrative and logistical support to the Coordination Group.

Coordination of the work on preparing a Circular Economy Strategy was assured by the Environment Minister.

Cooperation between governmental institutions was ensured by an inter-ministerial working group that was formed by members of the following ministries:

- Environment;
- Economy represented by the General Directorate of Economic Activities;
- Agriculture, Forestry and Rural Development;
- Science, Technology and Higher Education represented by the Foundation for Science and Technology;
- Secretary of State for the Environment;
- Portuguese Environment Agency.

The first step in the development of the plan was a working visit to the Netherlands.

Understanding the importance of the cooperation between the Dutch Ministries of Infrastructure and the Environment, the Portuguese Ministry of the Environment has begun efforts to develop a similar interaction. In this context, the Portuguese government was invited to visit the Hague to interact with various interest groups that were involved in the development of the Dutch Programme for a Circular Economy.

The visit was designed to cover a wide range of actors – ministries, public institutions, industry associations, companies, NGOs, research institutions – to capture the scope of the work involved and the main subjects to take into account.

Engaging with stakeholders in the development of the Circular Economy Strategy
A period of public participation ran between 9 June and 2 October 2017 with the document *Leading the Transition: an action plan for the circular economy in Portugal 2017–2020* being made available through the Portal Participa (participa.pt). During the public participation, 38 contributions were received from entities and individuals.
Available since July 2015, Participa is the official portal through which the Ministry of the Environment operates public consultation processes. The purpose of Participa is:

- to facilitate the access of citizens and stakeholders to consultation processes;
- to encourage informed participation;
- to improve process management efficiency.

During the public participation process, three clarification sessions for stakeholders were held with the Environment Minister.

Specific debates were also promoted on different initiatives, such as the debate in the framework of the ECO.BIO workshop, organised by the environmental authorities in June 2017, or the meeting dedicated to the Circular Economy Strategy, organised by the Lisbon E-Nova agency in September 2017. Furthermore, numerous public statements were made through the media and social networks.

Approaches to resource efficiency and circular economy policy evaluation

Portugal does not evaluate the efficiency of policies for a resource-efficient circular economy. However, it is expected that this will happen within the implementation of the Circular Economy Action Plan and with the governance and monitoring model proposed.

At the end of 2020, an evaluation and review will be carried out and adjustments might be necessary, for example, for aspects such as duration and coverage, as well as changes including new regulations, and/or new suggestions for action. This first evaluation exercise will be followed by new review cycles every three to five years.

Monitoring and targets

Targets for resource efficiency and circular economy

Portugal has the following targets in place.

- Increasing productivity of materials – from EUR 1.14 GDP per kilogram (GDP/kg) materials consumed in 2013 to EUR 1.17 in 2020 and EUR 1.72 in 2030 (GGC).
- Increasing the incorporation of waste in the economy – from 56 per cent in 2012 to 68 per cent in 2020 and 86 per cent in 2030 (GGC).
- Improving energy efficiency/energy intensity: from 129 tonnes of oil equivalent (toe)/million 2011 EUR GDP in 2013, to 122 toe/million EUR GDP in 2020 and 101 toe/million EUR GDP in 2030 (GGC).
- Promoting the sustainable use of metal resources, which could reach 1 per cent of GDP and create 25 000 jobs (GGC).
- Achieving a selective waste collection rate of 47kg/year per person by 2020 (PERSU 2020, GGC).
- Increasing the volume of timber and other certified forest products traded on the market by 50 per cent between 2010 and 2020 (ENF, GGC).

- Reducing energy consumption in public administration by 30 per cent by 2020 and 35 per cent by 2030 (PNAEE 2016, GGC).
- Reducing energy consumption in buildings by 25 per cent by 2020 and 30 per cent by 2030 (PNAEE 2016, GGC).
- Reducing primary energy consumption by 30 per cent by 2020 (PNAEE 2016).
- Increasing the public transport passenger-kilometres travelled by 15 per cent between 2014 and 2020 (GGC);
- Decoupling economic growth and waste production: reducing it from 0.10 tonnes of produced waste/'000 EUR GDP in 2008–2012 to 0.082 tonnes in 2020 (PNGR 2020);
- Increasing the preparation for reuse, recycling and other forms of material recuperation of construction and demolition waste to 70 per cent by 2020 (PNGR 2020).
- Increasing the preparation for reuse, recycling and other forms of material recuperation of the recyclable fraction of municipal waste to 50 per cent by 2020 (PERSU 2020).
- Increasing the waste integration in the economy from 50 per cent in 2008–2012 to 68 per cent in 2020 (PNGR 2020).
- Reducing waste production by 15 per cent by 2020 (PNGR 2020).
- Reducing the landfill of biodegradable municipal waste by 35 per cent by 2020, relative to 1995 (PERSU 2020).
- Progressive elimination of waste disposal in landfill, with the overall aim of eradicating the direct deposition of waste in landfill by 2030 (PERSU 2020).
- Achieving a minimum 7.6 per cent reduction by weight of waste generated per person by 31 December 2016, relative to 2012 (PERSU 2020).
- Achieving a minimum 10 per cent reduction by weight of waste generated per person relative to 2012, and ensuring that this does not exceed 410 kg/year per person by 31 December 2020 (PERSU 2020);
- At a national level, ensuring recycling of at least 70 per cent of packaging waste by weight by 31 December 2020 (PERSU 2020).
- Limiting the production of Group IV medical waste to 8 per cent from total in 2016 (PERH).
- Limiting Group IV medical waste to a maximum of 10 per cent from total, subject to transboundary shipment (PERH).

Indicators used to measure targets are given in the next section 'Indicators to monitor progress towards a resource-efficient circular economy'.

- Mineral oils
  By 31 December 2011, new oil producers should guarantee:
  a. collection of waste oils – at least 85 per cent of the waste oils generated annually;
  b. regeneration of all waste oils collected as long as they comply with technical specifications for that operation, and, overall, regeneration of at least 50 per cent of waste oils collected;
  c. recycling of at least 75 per cent of waste oils collected;
  d. recovery of all waste oils collected not subject to recycling.
- Tyres
  By 31 December 2004, tyre producers should guarantee:
  a. collection of used tyres – at least 95 per cent of those placed on the market annually;
  b. rethreading of used tyres – at least 30 per cent of those placed on the market annually;
  c. recovery of all tyres collected and not rethreaded, of which at least 65 per cent should be recycled.
- Collection points for used cooking oils
  By 31 December 2015, municipalities had to provide at least[22]:
  i. 80 collection points for each municipality with more than 300,000 inhabitants;

[22] http://www.apambiente.pt/index.php?ref=16&subref=84&sub2ref=197&sub3ref=282 (Portuguese)

ii. 60 collection points for each municipality with more than 150,000 inhabitants;
iii. 30 collection points for each municipality with more than 50,000 inhabitants;
iv. 15 collection points for each municipality with more than 25,000 inhabitants;
v. 12 collection points for each municipality with fewer than 25,000 inhabitants.

- Goal for use of recycled materials – 5 per cent
  Since 2011, there is a requirement to use, when technically feasible, 5 per cent of recycled materials or incorporate 5 per cent of recycled materials relative to the total amount of raw materials used in construction and infrastructure maintenance contracts under the Public Contracts Code[23].

- Public procurement strategy goals[24]
  - For direct and indirect public administration:
    i) Goal 1 – 60 per cent of pre-contractual public procurement procedures for goods and services covered by the Green Public Procurement National Strategy for 2020 include environmental criteria;
    ii) Goal 2 – 60 per cent of the value associated with public pre-contractual procurement procedures for goods and services covered by the Green Public Procurement National Strategy for 2020 include environmental criteria.
    NOTE: Direct administration includes all the organs, services and agents that make up the state that, under the auspices of the government, develop and carry out activities for the public good.
    Indirect administration includes public entities, distinct from the legal state, with legal, administrative and financial autonomy that carry out administrative activities for the state. While statal activities are carried out, this is done by entities that are not part of the state.
  - For the state business sector:
    i) Goal 1 – 40 per cent of public pre-contractual procedures for the acquisition of goods or services covered by the Green Public Procurement National Strategy for 2020 include environmental criteria;
    ii) Goal 2 – 40 per cent of the value associated with pre-contractual public procurement procedures for goods and services covered by the Green Public Procurement National Strategy for 2020 include environmental criteria.

Indicators to monitor progress towards a resource-efficient circular economy

The measurement of progress towards circularity is not yet feasible, given the current state of knowledge and availability of data.

The Portuguese Circular Economy Action Plan foresees the development of a monitoring protocol in which the complementary indicators that can translate the evolution of the transition to the national level by sector and area of intervention will be defined.

Nevertheless, Portugal uses several indicators to monitor the evolution of the state of the environment, namely in the effective use of resources (annual reports and online comparison of trends to targets):

- Environment status website[25]: provides annual information on:
  - Economy and the environment:
    - internal material consumption;

[23] https://dre.pt/web/guest/pesquisa/-/search/670034/details/maximized (Portuguese)
[24] https://www.apambiente.pt/index.php?ref=17&subref=154&sub2ref=242 (Portuguese)
[25] https://rea.apambiente.pt/ (Portuguese)

        - taxes with environmental relevance;
        - environmental management tools (EMAS and ecolabels);
        - green patents.
    - Energy and climate:
        - energy production and consumption;
        - renewable energy;
        - energy and carbon intensity of the economy
    - Waste:
        - production and management of municipal waste;
        - recycling of packaging waste;
        - recycling of specific waste streams.
- Urban waste – annual reports and online comparison of trends with targets[26].
- Water, wastewater and urban waste – annual reports and online comparison of trends with targets[27].
- Environmental statistics – annual reports and online comparison of trends with targets[28].
- Sustainable development objectives[29].

Indicators used to measure targets (described in the previous section on Targets for resource efficiency and circular economy).

- Productivity of materials (EUR GDP/kg consumed material).
- Domestic material consumption (tonnes).
- Incorporation of waste in the economy (per cent).
- Energy intensity in the economy (toe/million EUR GDP).
- Waste used as raw materials (per cent).
- Waste introduced in production processes (per cent).
- By-products traded between industries (per cent).
- Municipal waste recycling (per cent).
- Valued sludge in relation to volume produced (per cent).
- Final energy consumption (total, by economic sector).
- Biodegradable urban waste landfilled (per cent).
- GDP/domestic material consumption ('000 EUR/tonne).
- Waste production (tonnes, tonnes/person, tonnes/'000 EUR).
- Municipal waste generated (tonne; kg/person/year).
- Municipal waste treated (total; landfill; energy recovery; mechanical and biological treatment; material recovery; mechanical treatment; and organic recovery) (tonnes; per cent of total waste generated).
- Preparation for reuse and recycling (per cent) (includes paper, card, plastic, glass, metal, wood and biodegradable municipal waste).
- Percentage of separated municipal waste collected (separated municipal waste collected/municipal waste collected) (includes packaging and paper and board, plastics, metals, glass and wood).
- Waste recovery (tonnes) by specific flows (products/waste);
- Packaging waste recovery (tonnes).
- Packaging waste recycling (tonnes).
- Recycling rates for glass waste (per cent).

[26] http://www.apambiente.pt/index.php?ref=16&subref=84&sub2ref=933&sub3ref=936 (Portuguese)
[27] http://www.ersar.pt/pt/site-publicacoes/Paginas/edicoes-anuais-do-RASARP.aspx (Portuguese)
[28] https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=277089428&PUBLICACOESmodo=2 (English)
[29] https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=292037042&DESTAQUESmodo=2 (English)

- Recycling rates for paper and board waste (per cent).
- Recycling rates for plastics packaging waste (per cent).
- Recycling rates for metallic packaging waste (per cent).
- Recycling rates for wood packaging waste (per cent).
- Medical waste treated (sent for reuse, recycling and other forms of recovery) (tonnes; per cent of total waste generated).
- Transboundary shipment of medical waste (per cent).
- Primary energy consumption (total, by economic sector).

Resource efficiency, circular economy and the 2030 Sustainable Development Goals

Most of the ongoing initiatives mentioned contribute to the attainment of the SGDs, in particular the action outlined in the Portuguese Action Plan, *Leading the transition to the circular economy – 2017–2020* and the *Plan for Combating Food Waste*.

Examples of innovative approaches and good practice

Examples of good practice and innovative approaches

Research and innovation

- System of Tax Incentives for Business Research and Development in Corporate Income Tax (SIFIDE): expenses incurred on eco-design projects benefit from tax benefits, which are to be increased by 110 per cent. This instrument aims to increase the competitiveness of companies by supporting their research and development efforts through deducting corporate income tax from the respective expenses. The state budget for 2017 predicted that expenses related to eco-design projects could be increased by 110 per cent.
- Guide for good agricultural practice to reduction of ammonia emissions, NitroPortugal Project Strengthening Portuguese research and innovation capacities in the field of excess reactive nitrogen[30], European Project coordinated by Instituto Superior de Agronomia, in partnership with Faculdade de Ciências, the Natural Environmental Research Council, Centre for Ecology and Hydrology of Edinburgh, United Kingdom and the Aarhus University Department of Agroecology, of Denmark

Education

- National Environmental Education Strategy 2020 (see section on Policies which include elements of material resource efficiency)
  The measures envisaged in this Strategy are based on the following pillars:
  - decarbonise society;
  - make the economy circular;
  - value the land.

- The ECO.NOMIA portal[31], one of the components of the Ministry of Environment and Energy Transition Action Plan for the transition to a circular economy, consists of a space for sharing knowledge. It disseminates information to consumers and companies on the advantages of the circular economy and financing opportunities and has launched an interactive forum for collaborative circular economy investment projects, promoting workshops – three have already been held covering finance, business and agriculture.

- The Entrepreneurship Now (Empreende Já) programme has been designed to support the employability of young people who neither study, work, nor attend any training and has the following objectives:

[30] http://www.isa.ulisboa.pt/proj/nitroportugal/ (English)

[31] http://eco.nomia.pt (Portuguese)

- to promote an entrepreneurial culture centred on creativity and innovation supporting the development of projects aimed at setting up companies/ social economy entities;
- support the training of young people, increasing their levels of employability;
- support incorporation of companies/social economy entities;
- support creation of jobs for young people who do not study, work or attend any training.

For 2017 the programme foresaw an opportunity to support the development of business ideas centred on the circular economy.

- The Order of Engineers[32] is a professional association working to develop a circular economy through events and through the establishment of an internal working group. The main purpose of the group is assessing prospects and contributing to the dissemination of objective information on circular economy.

- The Academy, made up of higher education institutions and universities, is also working to promote the circular economy and has already supported this objective in the following initiatives.
  - Inclusion of the circular economy in the 1st Summer School on Sustainability Initiative resulting from a partnership between the University of Lisbon, the Institute of Social Sciences, the Business Council for Sustainable Development (BCSD Portugal) and the Portuguese environmental non-governmental organisation ZERO.
  - First national Postgraduate course on circular economy resulting from a partnership between the Lusófona University and the Institute for Applied Material Flow Management (IfaS) of Trier University, Germany.

- Implementation of Shared Waste Solutions (SWS), that aims to stimulate and disseminate sustainable waste valorisation. This platform was developed by the Institute for Research and Technological Development for Construction, Energy, Environment and Sustainability (ITeCons), TecMinho (Structure of Knowledge Transfer) and the University of Aveiro.

- Other initiatives were also developed by different sectors, for example seminars/workshops and publications. Reference should be made to *Relevance and Impact of Waste Sector on Circular Economy in Portugal* developed by the Smart Waste Association.

<u>Financial support programmes</u>

- Environment Financial Fund (see section on Policies which include elements of material resource efficiency)
  Under the Environment Financial Fund, the following calls were issued in 2017 – some grants cover 100 per cent of costs and others only a part, depending on the call.
  - The Be Green Programme[33], which aims to encourage the adoption of good environmental practices that are innovative and have positive environmental, social and economic impacts at major music events, through financing of green measures to be adopted by festivals.
  - The Support the Transition to a Circular Economy[34] call is intended to finance studies, consulting and other activities that identify opportunities, promote the involvement of entities, and pre-assess economic, environmental and social gains. The beneficiaries of this programme can be differentiated over time according to the priority established at the strategic level. As previously mentioned, the definition of the scope of calls is established by the Environment Minister. This first call was addressed to companies, regardless of their legal form, and private non-profit entities/associations with specific competencies or that

[32] http://www.ordemengenheiros.pt/pt/a-ordem/ (Portuguese)
[33] http://www.fundoambiental.pt/avisos/programa-se-lo-verde.aspx (Portuguese)
[34] http://www.fundoambiental.pt/avisos/programa-apoiar-a-transicao-para-uma-economia-circular-fase-i.aspx (Portuguese)

pursue social responsibility objectives. The studies should lead to business plans, the implementation of which can be supported by the Environmental Financial Fund.
    - The Supporting a New Environmental Culture programme[35] promotes environmental education action, encourages replication of this by other agents or regions and fosters the creation of partnerships as a way of projecting a more innovative, inclusive and entrepreneurial society, and stimulating public debate on values associated with sustainable development. The programme's target group is central public administration, associations and foundations, enterprises regardless of their legal form, higher and non-higher educational institutions and environmental and similar NGOs.

- The governmental Participatory Budgeting initiative provides EUR 300,000 to be spent on projects proposed by young people between the ages of 14 and 30. In the 2017 edition the following thematic areas have been defined: inclusive sport, science education, social innovation and environmental sustainability.

Public procurement

- Since 2011, there is a requirement for construction contractors and those involved in infrastructure maintenance under the Public Contracts Code, where technically feasible, to ensure that 5 per cent of materials used are recycled or incorporate recycled materials in relation to the total amount of raw materials used on site. This obligation is not established under green pubic procurement legislation, but under waste legislation. Contractors have to fulfil this obligation in a timely manner or have technical justifications if they cannot comply. Non-compliance is an infringement to law.

Institutional and regulatory arrangements to support the transition to a resource-efficient circular economy

- The 2017 obligation to implement measures to reduce the consumption of paper and other printing consumables in public administration (see section 'Policies which include elements of material resource efficiency').

- New standards for recycling construction and demolition waste – since 2016:
    - guide for the use of recycled aggregates from recovered bituminous mixtures for uncontaminated layers of road surfaces;
    - guide for the use of waste materials from construction and demolition on rural and forestry roads;
    - guide for the use of waste materials from construction and demolition in ditch filling.

- The Lifecycle Approaches and Circular Economy Resource Centre was created in 2016 at the Energy and Geology National Laboratory (LNEG) under the Life Cycle in Practice (LCiP) project, of which LNEG is a partner (www.lifelcip.eu). Funded by the LIFE + Programme, LCiP aims to stimulate the application of life-cycle approaches – life-cycle analysis, ecodesign, ecolabels and environmental product declarations, etc. – in companies, with a sectoral perspective on construction and renewable energy[36].
  The Centre's purpose is to continue LCiP's activities in the post-project phase, supporting enterprises in life-cycle analyses, particularly small and medium-sized ones (SMEs). Training, technical support, debate, advice, software provision and other services are expected to meet the needs of companies, extend the Centre's scope to other sectors, particularly those related to geological resources, also a central area of LNEG's work. A driving force behind these approaches will be environmental management systems in accordance with ISO 14001: 2015 and/or the EMAS

[35] http://www.fundoambiental.pt/avisos/apoiar-uma-nova-cultura-ambiental.aspx (Portuguese)
[36] http://www.lneg.pt/iedt/projectos/501/paginas/185/ (Portuguese)

Regulation, which are now concentrating on strengthening life-cycle components in environmental management.

- The State Environment Portal[37] was launched to support understanding and disseminate data from the *State of Environment Report*, a national reference document. The portal houses a wide variety of indicators on the state of the environment, presented in 49 thematic pages, distributed across eight environmental domains: economy and environment, energy and climate, transport, air, water, soil and biodiversity, waste and environmental risks.
  This new digital and interactive platform, aimed at decision-makers, organisations and citizens, provides easier, faster and more transparent access to the latest data and environmental trends, helping to improve understanding of the complexity of crosscutting environmental challenges.

- The Environment Minister promoted several road shows promoting a more sustainable economy[38]. In this context, he visited several projects that incorporate circular economy principles: projects that turn waste into works of art, enable vegetable production at home using remote control, build homes that can shrink or stretch as needed and a platform that allows you to buy and sell used schoolbooks. The road shows are an *ad-hoc* series of events that promote a circular economy.

- The SIMPLEX programme aims to simplify administrative and legislative processes, making life easier for citizens and businesses in their relationship with public services and, at the same time, increasing their internal efficiency.
  a. Electronic guides to waste transport (e-GAR)
     Portugal's paper waste transport guides have been superseded by the Electronic Guide for Waste Monitoring (e-GAR).
  b. Single Environmental Licensing
     The Single Environmental Licensing (LUA) scheme incorporates several environmental permit regimes in a single document. Now an applicant for an environmental permit submits all the required information once via internet. This way less paper is used and the number of electronic processes reduced, indirectly saving resources.

Seeking synergies with other policy areas

Portugal has put some initiatives in place that deliberately seek to create synergies and co-benefits between resource efficiency, the circular economy, and other policy areas. The initiatives mentioned below deal respectively with Innovation, Technology, Training and Employment, competitiveness and internationalization, tax incentives, tourism and health.

- Innovation, Technology and Circular Economy, Training and Employment Fund – FITEC [Decree-law n.º 86-C/2016[39]]
  The Fund's purpose is to support policies for promoting scientific and technological knowledge and its transformation into innovation, stimulating cooperation between higher education institutions, technological interface centres (ITCs) and business. It aims to build capacity to improve the use of resources, preserving their utility and value throughout the entire production and use chains, through material and energy efficiency.

- COMPETE 2020 – Thematic Programme to encourage competitiveness and internationalisation (launched in 2014)[40]

[37] https://rea.apambiente.pt/ (Portuguese)
[38] http://eco.nomia.pt/pt/recursos/noticias/3 (Portuguese)
[39] https://dre.pt/web/guest/home/-/dre/105658706/details/maximized (Portuguese)
[40] http://www.poci-compete2020.pt/ (Portuguese)

Financing of the circular economy comes from the following types of investment.

- Business innovation and entrepreneurship
  Projects supported: promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public interest applications; stimulating demand, networking, clusters and open innovation through smart specialisation; support for technological and applied research, pilot lines, early product validation action, advanced production capacities and first production, etc.
- Qualification and Internationalisation of SMEs
  Projects supported: eco-innovation – incorporating the principles of eco-efficiency and the circular economy in companies, with a view to promote a more efficient use of resources, encouraging the reduction and reuse of waste and minimising extraction and use of raw materials. Includes the certification of environmental systems, services and products, and obtaining ecolabel and EMAS certification.
- Research and technological development
  Projects supported: promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public interest applications; stimulating demand, networking, clusters and open innovation through smart specialisation; support for technological and applied research, pilot lines, early product validation actions, advanced production capacities and first production, etc.

- Tax Incentive System for Business (see section on Examples of good practice and innovative approaches)
  The Tax Incentive System for Business Research and Development (SIFIDE) aims to increase the competitiveness of companies by supporting their research and development efforts through allowing the deduction of these costs from corporate income tax.

  For ecological design projects, companies may deduct 110 per cent of research and development costs. This instrument creates synergies between resource efficiency/circular economy, innovation and fiscal policy.

- The Entrepreneurship Now (Empreende Já) programme (see section on Examples of good practice and innovative approaches)
  This instrument creates synergies between resource efficiency/circular economy and work policy to increase the employment of young people without educational qualifications, work or training.

- Tourism Sustainability booklet[41]
  The Tourism Sustainability booklet, launched on 6 December 2017, is a joint strategy between the Azorean Executive (Autonomous region of the Azores) and airlines, hotel groups and tourist companies to commit themselves to the Sustainable Development Goals (SDGs) in the management of their companies and organisations, and to align their strategies with the image of the region as a sustainable tourist destination.

  Commitments assumed by the companies are:
  - to choose and work each year on at least three SDGs;
  - to report and discuss progress periodically with co-signatories of the initiative and policymakers;
  - to establish indicators and metrics that evaluate the degree of success of the proposed changes.

- Health Low Carbon Strategic Plan (PEBC)[42]

[41] http://www.azores.gov.pt/Portal/pt/novidades/Cartilha+de+Sustentabilidade+com+41+subscritores+é+a+prova+de+um+compromisso+no+setor+do+turismo.htm (Portuguese)
[42] https://dre.pt/web/guest/pesquisa/-/search/115454122/details/normal?q=Despacho+n.%C2%BA%205571%2F2018 (Portuguese)

The goals (determined in Order Nº. 5571/2018, of May 24) to be reached by public sector entities in the health sector in 2018 are the reductions of:
  - 23 % in electricity and gas consumption;
  - 16 % in consumption with water;
  - 16 % in waste production;

  compared with their results in 2011.
  To this end, entities shall implement the measures provided for in the Guide to Good Practices for Health Sector, an instrument that aims to promote reduction of energy and water consumption and costs, reduce waste production and spread the adoption of behaviours that foster low carbon economies.

- SNS Without Paper, [Council of Ministers Resolution nº. 62/2016, October 17]
  Provides a set of measures aimed at improving the relationship with citizens, reducing the costs for companies and making public administration more efficient, namely allowing the prescription and electronic dispensing of medicines, dematerialisation of the processes associated with death certificates and medical and other certificates.

Portugal does not have policy initiatives which seek to make imports of materials and products more sustainable.

Resource efficiency and circular economy policy initiatives from subnational to local level

The Alentejo Region Coordination Commission has held several conferences about the circular economy[43]. The first forum, A Circular Economy in Alentejo, brought together a wide range of regional and national partners and policymakers to reflect, discuss and outline the pillars on which a regional strategy for a transition to a circular economy should be based.

It is also important to highlight that the Alentejo Circular project was developed in a partnership between the Institute of Welding and Quality (ISQ Group) and Évora University. This project aims to sensitise and mobilise Alentejo industry (olive oil, wine and pork) to adopt a circular economy model and its benefits. This project is part of Support of Collective Actions of Qualification System, under Portugal 2020, starting in November 2016 and ending in November 2018.

The Centro Region Coordination Commission is part of the Synergic Circular Economy across European Regions (SCREEN) project funded by the European Horizon 2020 programme. SCREEN aims to define a replicable system that allows synergies between different financial instruments to support the transition to a circular economy in EU countries.

The Centro Region Strategy of Intelligent Specialisation is based on developing a circular economy. The Centro Regional Coordination Commission supported Oliveira do Hospital's Association BLC3 Technology and Innovation Campus Centro BIO project, which received the European Commission's 2016 RegioStars award in the sustainable growth category.

Other resources

Examples of policies which go beyond "material resources"

- Portuguese Water Law/National Water Plan;
  Transposing the Water Framework Directive (WFD) to national law, the Portuguese Water Law (PWL) aims to protect and manage water, as well as reconcile the different uses with availability to ensure

[43] http://www.ccdr-a.gov.pt/index.php/28-noticias/638-1-forum-da-economia-circular-do-alentejo-2 (Portuguese)

the sustainable use of water resources. The National Water Plan also pays particular attention to the issues related to efficient water use, which is one of its five strategic objectives: to increase the efficiency of water use by reducing the water footprint of production and consumption activities and to increase the physical and economic productivity of water.

- River Basin Management Plans 2016-2021;
  Within the scope of the WFD/PWL, the River Basin Management Plans 2016-2021 (RBMP) includes measures for the efficient use of water, resulting from a comprehensive consideration of the economic, environmental, technical and institutional dimensions in order to ensure the quantitative and qualitative preservation and efficient, sustainable and economically balanced use of water. The RBMP includes a programme of measures on the efficient use of water, technical measures for irrigation, industry, energy and housing aimed at encouraging a more efficient management of this resource in the urban sector, promoting efficiency in irrigation and the reuse of treated urban wastewater and rainwater harvesting for compatible purposes. It has to be noted that WFD further requires Member States to adopt a pricing policy that encourages the efficient use of water and a cost recovery, including environmental and scarcity costs.

- National Strategy/Legislation/Guide on Water Reuse
  Due to expected reductions in water availability caused by an increase of water consumption and to the climate change effects, water reuse is also becoming an important issue in Portugal, with a number of studies and projects seeking to move forward. A National Strategy, specific legislation for several uses, and a Guide for the implementation and management of water reuse projects are under finalization. These documents adopt a fit-for-purpose approach – the development of appropriate reuse projects supported by a risk assessment methodology, with the adoption of multi-barrier criteria for risk reduction/minimisation to a level considered acceptable. The Guide is intended to be the framework for the risk management model, consisting of a tool for the use of treated wastewater for different purposes, excluding those requiring quality compatible with human consumption. It defines the procedures involved in licensing the production and use of water for reuse, including guidelines for the development of the risk assessment process, as well as for the selection of the risk management measures to be taken under it, for the follow-up of the reuse projects and for information and risk communication to the public.

- National Plan for the Efficient Use of Water (2012–2020)
  The National Plan for the Efficient Use of Water 2012-2020 aims to promote the efficient use of water in Portugal, especially in the urban, agricultural and industrial sectors, helping to minimise the risks of water scarcity and to improve environmental conditions in water resources, without undermining the vital needs and quality of people's lives, as well as the socioeconomic development of a country where climatic variability generates situations of water stress. This National Plan is also an instrument for integrating environmental policies, known interdependent relationships between water and energy in the urban, agricultural and industrial sectors. The main objective of this National Plan is thus linked to improving water use efficiency and consolidation of a new water culture in Portugal, through which this resource is increasingly valued not only because of its importance for human and economic development, but also for the preservation of the natural environment in a sustainable development perspective and respect for future generations.

- Strategic Plan for Water Supply and Sanitation of Wastewater 2020
  The Strategic Plan for Water Supply and Sanitation 2020 also assigns relevance to issues related to water efficiency, including the analysis of the current state of knowledge in the definition of objectives regarding the efficient use of water for domestic consumption, as well as the management of non-domestic effluents, both agricultural and industrial. In its diagnosis of the situation in Portugal, this Strategy makes clear that despite the increase in water use efficiency, an important part of water losses remains, associated with inefficiency of use, with opportunities to achieve significant improvements in terms of water consumption in all sectors, with positive environmental, social and

economic impacts. To this end, it devotes its Axis 3 to the optimisation and efficient management of resources, defining operational objectives that include, among other aspects, reducing water losses, controlling undue influxes, efficiently managing assets and increasing its rehabilitation and by the allocation and efficient use of water resources.

- National Strategy for Adaptation to Climate Change 2020
  Issues related to water efficiency and the water-energy nexus are particularly relevant in the context of climate change. The National Strategy for Adaptation to Climate Change 2020 reflects the importance that Portugal gives to the water sector, towards increasing resilience to climate change. Among the thematic areas of this Strategy is the integration of adaptation in water resources management by promoting the introduction of the adaptation component in policy instruments, planning and management of water resources.

- National Environmental Education Strategy 2020
  The Strategy includes in its thematic priorities the sustainable use of water, including groundwater, prevention of pollution of water bodies, management of river basins, conservation of riparian ecosystems and their interconnection with the urban water cycle. This Strategy plays an important role in promoting water efficiency at different scales and levels of intervention, whose success will be decisive not only for the sensitization and empowerment of all actors, but also for behavioural changes towards more intelligent use and efficient use of water by sectors of activity and citizens.

- Efficient House 2020
  It is also worth mentioning the Efficient House 2020 programme, whose main purpose is to support operations. aims at improving the environmental performance of the Portuguese households, especially increasing energy and water efficiency as well as in other environmental domains. It is promoted by the Portuguese government, operationalised by the Portuguese Confederation of Construction and Real Estate (CPCI) and co-financed by the European Investment Bank and the participating commercial banks.

- CERTAGRI
  The CERTAGRI – Water and Energy Efficiency Labelling of the National Productive Sectors for a Circular Economy – Application to the agri-food sector, supported by the Environmental Fund, aims to create an integrated voluntary labelling system for the agri-food sector focused on water, energy and the circularity of resources along the value chain of an agri-food product. The development of the label involves the definition and monitoring of performance indicators that can be applied to any producer or industry in an understandable way as a quantitative and qualitative analysis, calibrated according to different cultures and types of product. It is promoted by ADENE and the Instituto Superior de Agronomia's (ISA) School of Agriculture.

- H2Design;
  The main objectives of the H2Design project are to design new approaches to improve water efficiency in buildings, with a strong innovation component and the full involvement of stakeholders and users of water in residential buildings, trade and services, and to develop strategic scenarios to promote the adoption of more efficient solutions, based on an open and reflective dialogue about the problems, challenges and solutions in this area, using the methodologies of prospective evaluation and design thinking. This project is promoted by ADENE with the active involvement of the Portuguese Environment Agency, among other stakeholders.

- Aqua eXperience;
  Aqua eXperience is an education, awareness raiser and action project for water efficiency and water-energy nexus supported by the Environment Financial Fund, in the context of the National Environmental Education Strategy (ENEA 2020). Its mission is to educate, sensitise and mobilise all generations for the valorisation and efficient use of water. Its objectives are to increase, in a

permanent and lasting way, the efficiency of water use in Portugal; make water saving a daily part of everyone's routine; and value water as a vital and fundamental resource for quality of life, sustainability and competitiveness. It is promoted by ADENE and EPAL, one of Portugal´s main water operators.

- National Air Strategy 2020.
- Energy efficiency programme for public administration (ECO.AP).
- Sustainable Mobility Programme for Public Administration 2015–2020 (ECO.mob).

The way forward

Reflections on future directions of policies on resource efficiency and circular economy

Portugal sees the following main challenges and ways to tackle them, when it comes to the implementation of resource efficiency, circular economy and raw materials policies:

- to avoid individual decisions and increase common ground between different policies;
- the circular economy is still very much linked with the waste aspects and is essentially invigorated by it;
- capacity of the state and its agencies to address innovation adequately, in particular as regards the response times to new issues and legal frameworks that prevent the emergence or maintenance of innovation;
- the transition from innovation processes to the mainstream;
- collaboration between companies for a shared purpose;
- citizen participation in the transition process;
- competences both within companies and within statal bodies responsible for developing and implementing policies;
- application of appropriate fiscal instruments to make circular businesses more competitive than linear ones and not allow circular businesses to die before they are born;
- legal regimes associated with consumer rights in this paradigm shift from product to service – property rights versus the provision of services, etc.
- implementation of green deals and their execution.

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