

Greece 2020 – Factsheet on Green Policies

The environmental sector in Greece is in a transition stage. The newly established environmental law (May 2020) is focusing on addressing barriers in different thematic areas, i.e. waste, wastewater, environmental permitting, renewable energy sources etc. The country has recently designed core strategies in circular economy, climate change adaptation and biodiversity. These are being supported, amongst other, by the EU LIFE programme, through three integrated projects of total budget exceeding €47 million with an expected mobilisation of additional €1.5 billion over the next years in complementary funding. However, Greece is still facing long-term challenges on different environmental areas.

Identifying investment needs for green technologies and sustainable solutions, and securing adequate funding, will be key to deliver on the climate and energy objectives and shape a new growth model. Investment is needed for sustainable growth, particularly in the energy and transport sector. EU financing has already contributed in building a greener economy in Greece, including to (i) further develop its electricity distribution network, and its electricity systems and markets, taking into account geographical and regional disparities; (ii) develop a national transport plan; and (iii) complete the mapping of the national cadastre and set up cadastre offices. New initiatives were also launched in 2019 to further tackle energy and environmental issues, including investment projects on effective waste management, and on clean energy to increase competitiveness in the renewable energy sector.

The European Commission has put forward an ambitious plan to ensure climate neutrality by 2050, the called European Green Deal, that is accompanied by at least €100 billion fresh financing over the period 2021-2027 under the Just Transition Mechanism to support most affected regions. Greece could benefit from this financing instrument, notably in the context of the ongoing effort to decommission Greece's lignite-based generation plants by 2028. To contribute to the Green Deal's ambitious targets, Greece, as all other Member States, is invited to invest in environmentally-friendly technologies, support industry to innovate, roll out cleaner, cheaper and healthier forms of private and public transport, decarbonise the energy sector, ensure buildings are more energy efficient and working with international partners to improve global environmental standards.

Circular Economy

- Greece has yet to advance in terms of integrated waste management compared to the rest of EU27. Municipal solid waste (MSW) management still relies mainly on disposal in landfills (80%). Around 15% of the collected MSW are being recycled, while 4.1% is composted. As a result, the country ranks very low in EU27 in terms of circularity of the economy.
- The timely implementation of the National Strategy for Circular Economy is a necessary step towards increasing circularity and reducing waste landfilled. Core strategic policy documents are currently being revised.

Wastewater

- Most of the population (93.4%) is connected to wastewater treatment plants, however, the remaining is located in remote areas of mainland and islands not allowing for connection to the grid.

Energy & climate change

- Greece is highly dependent on imports of key primary energy sources, such as oil and gas, with the former having relatively high use in electricity generation compared to the EU average. The sector also faces market distortions, a lack of competition, and slow development of renewable energy sources, although there has been an increase of the uptake lately.
- The per capita greenhouse gas emissions (GHG) are 3% higher than the EU27 average, due to the fossil fuels dependency of the energy sector. The country aims in full delignification of the energy system by 2028. This transition requires significant investments, especially in the lignite mining areas (Western Macedonia and the Peloponnese), where the socioeconomic impact is expected to be high. The Just Transition Fund can aim to cover energy and socioeconomic gaps.
- The transport sector is responsible for one fourth of the generated GHG emissions, that have increased by more than 20% compared to 1990. Greece has the oldest fleet of private cars significantly affecting air quality. Towards that, the National Plan for Energy and Climate foresees a 30% share of electric passenger vehicles in new registrations by 2030. Incentives are being designed towards this objective.
- Greece is among the countries expected to be hit significantly from climate change. Based on different IPCC scenarios, an increase of mean temperature between 0.15-0.48°C per decade should be expected in some of the largest Greek municipalities of the Attica region. Furthermore, a reduction in the precipitation by 4.5mm-6.5mm per decade can impact human health, air quality, demand for energy and increase the risk of peri-urban fires.
- The National Adaptation Strategy (NAS) adopted in 2016 foresees an integrated approach to identify vulnerabilities from climate change in specific economic sectors, e.g. Tourism, energy, health, insurance, agriculture, fishing, water management, transport.

Biodiversity

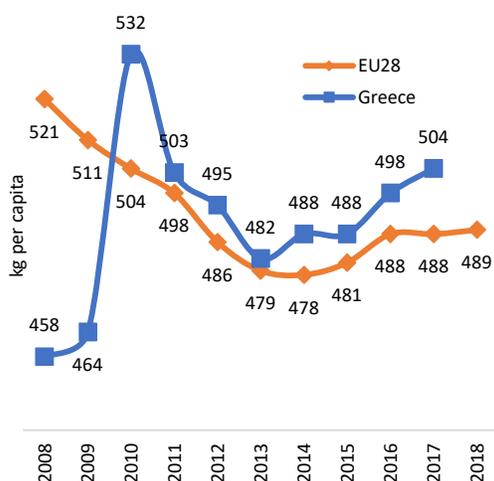
- Greece has the tenth biggest Natura 2000 network, which corresponds to 4.5% of the surface of the European ecological network. The national biodiversity strategy focuses on halting the loss of biodiversity by creating management plans in different levels.

1. FACTS & FIGURES

Waste management

The per capita generation of municipal solid waste (MSW) in Greece is above the EU average, while the significant decline in the generated volumes during the 2010-2013 period is a result of the economic slowdown than the effective implementation of waste reduction programmes. The increase of the Greek GDP, from 2015 onwards, led to a gradual increase of the per capita MSW generated annually. In contrast in the EU, the implementation of integrated waste reduction programmes led to a stabilisation of the generated per capita volumes showing a possible decoupling from economic activity.

Figure 1 Per capita generation of municipal solid waste, Greece and EU28*



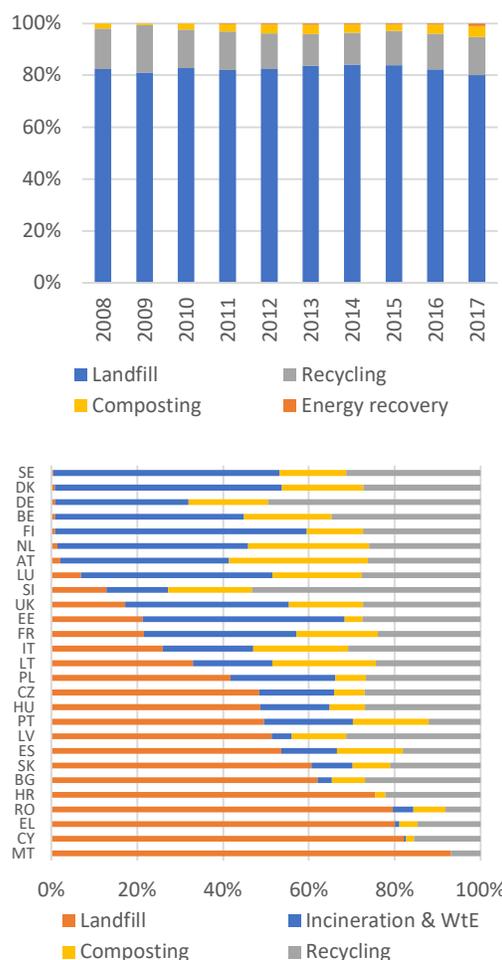
Source: Eurostat

*No data availability for Greece in 2018 or EU27 for the whole period.

In Greece, the existing waste management system relies mostly on disposal of waste in landfills (80%), while recycling accounts only for one fifth of the collected MSW. According to the European policy, disposal in land is the least preferred waste management process and not in line with the circular economy model. Materials which would otherwise be reintroduced into the value and production chains are disposed into the natural environment, causing environmental degradation and increasing the dependence of the economy on natural resources.

Even though recycling rates increase over the past few years, Greece has the 4th lowest recycling rate among the EU countries being ahead of Portugal, Romania and Malta. Only 15% of the collected MSW was recycled, while approximately 4.1% of MSW was directed to composting plants. Less than 1.1% of the collected MSW are used to recover energy.

Figure 2 Municipal Solid Waste management in Greece for 2008-2017 (up) and in the EU27 for 2017 (bottom)

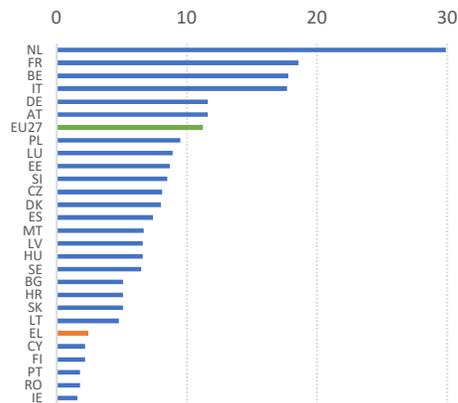


Source: Eurostat

The low performance of the waste management sector, the poor links with Greek manufacturing, the absence of a well-designed national strategy and the non-codified environmental legislation are among the reasons that led to low scoring of the Greek economy in terms of circularity. Greece ranks low in the circularity rate index followed

only by 5 Member States, which however, exhibit similar waste management characteristics (i.e. high volumes disposed in landfills, low recycling rates etc).

Figure 3 Circular material use rate*, 2016



*Defined as the share of material recovered and fed back into the economy
Source: Eurostat

In December 2018, Greece announced its National Strategy for Circular Economy as part of the wider strategy for the sustainable development of the economy. The strategy highlights the need to improve the Greek legislative framework. The objectives of the strategy are to improve governance and synergies, to accelerate processes related with waste management, to link entrepreneurship with technological innovation and green services, to develop pilot actions for circular economy and finally to identify the existing national and European funding mechanisms that can support the transition to a circular economy combined with jobs and growth. The strategy sets specific milestones of environmental and socioeconomic character for the first implementation year (2019). These range from the revision of the definition of waste and secondary derived material, the introduction of tax initiatives to promote circularity and plans to reduce food waste in the society (Ministry of Environment and Energy, 2018). Delays are noted in the achievement of the above milestones during the first implementation years.

The national and regional Waste Management Plans, prepared in the past are expected to be revised in 2020 including the additional

requirements of the European legislation (European Commission, 2020).

Since September 2019, the implementation of the National Strategy is supported by the LIFE programme, the EU funding instrument for the environment and climate action. The LIFE Integrated project "IP Circular Economy in Greece" is an 8 year project of €16 million total budget (60% EC contribution) that will support the country in the implementation of the National Strategy for Circular economy and other key strategies (National Waste Management Plan, National Strategic Plan for Waste Prevention, National Action Plan for Circular Economy). The main objective of the LIFE-IP CEI-Greece project is to reduce the amount of municipal waste sent to landfill and to promote waste prevention and re-use, based on circular economy principles (The LIFE programme, 2019). During its lifetime, the project foresees mobilisation of €800 million in complementary national and European funding.

Plastics and Single use plastics

According to Eurostat, the total quantities of plastic waste in 2016 amounted to 257k tonnes, falling by about 65% compared to 2006 (755k tonnes). In 2017, plastic packaging waste was estimated at 188k tonnes, of which approximately 78k tonnes were recycled, i.e. around 41.4%.

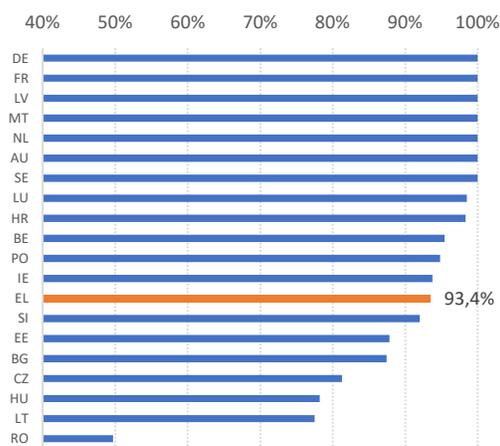
Single use plastics will be banned following the EU directive 2019/904 and the Ministry of Environment and Energy is considering an early adoption of this measure by July 2020.

As part of the National Strategic Waste Prevention Plan, Greece introduced an environmental fee on plastic lightweight carrier bags (thickness of 15-50µm), which since 2019 is set at 7 eurocents per bag. These measures led to the reduction of the consumption of lightweight bags by 80% in 2018. However, the introduction of plastic bags of thickness 50-70µm, which are exempted from the environmental fee and therefore costing less affected the consumers behaviour. The new environmental law of 4685/2020 (May 2020) expanded the use of the environmental fee in all plastic bags.

Wastewater

In terms of wastewater, most of the population is connected to wastewater treatment plants (Figure 4). Due to geographical peculiarities, more than half of the Greek agglomerations located in rural areas of the mainland and islands remain not connected. Wastewater in these cases is treated through individual systems (i.e. septic tanks), which in many cases need upgrading (European Commission, 2020). The new environmental law 4685/2020 targets the termination of septic tanks, especially in buildings located in highly populated areas. The new law imposes the need for infrastructure upgrade works with the use of national and EU funds. In addition, the existing policy foresees that communities below 2,000 inhabitants should not invest in expensive wastewater collection systems (i.e. grids) but focus on alternative solutions of similar environmental performance.

Figure 4 Population connected to wastewater treatment plans, EU27, 2016*



*Latest available data. Data for all EU27 Member States are not available

Source: Eurostat.

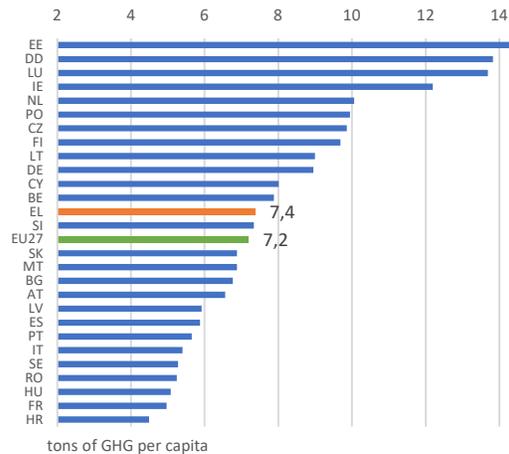
Energy and Climate change

Despite the relatively small manufacturing sector, the per capita emissions of greenhouse gases (GHG) in Greece are 3% higher than the EU27 average. This ranking is mostly attributed to the emissions from the energy sector. Almost 30% of the electricity production derives from lignite, while another 10% comes from heavy oils or

diesel used mostly in the islands and remote areas (European Commission, 2020).

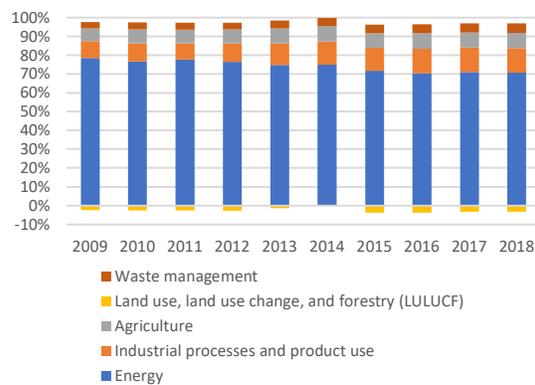
The National Energy and Climate Plan (NECP), presented at the beginning of 2019 and revised in December 2019, set a detailed roadmap for the attainment of specific energy and climate objectives by 2030. The roadmap is based on three pillars: GHG emissions reduction (42% compared to 1990), increase of renewable energy sources in gross final energy consumption at 35% and phase out of lignite in production of electricity by 2028. The latter requires significant investments in infrastructure that will be covered also by the 2021-2027 EU Just Transition Fund as part of the European Green Deal and the Just Transition Mechanism. The Fund aims to ensure that the transition towards EU climate neutrality is fair and any adverse social and economic consequences are contained. Most of these investments are expected to take place in the two lignite mining areas (Western Macedonia and the Peloponnese). The transition to a zero-emission energy system is a great challenge, since currently a significant part of the local economies is driven directly and indirectly from the activity of the lignite mines. Apart from the Just Transition Fund, the Just Transition Mechanism provides for a dedicated just transition scheme under InvestEU, and a new public sector loan facility with the European Investment Bank. According to the European Environment Agency, one fourth of the generated GHG emissions in Greece stem from the transport sector and most of them (72%) from land transport. This is the only sector that exhibits an increase in emissions compared to 1990. Greece has one of the oldest fleet of private passenger cars in Europe estimated at around 15 years. This consists of older specifications highly polluting vehicles, with minimal emission reduction systems. The NECP foresees the increase of the penetration of electric vehicles (EVs). By 2030, 30% of the new car sales is expected to be EVs.

Figure 5 Per capita greenhouse gas emissions in 2017 in EU27



Source: Eurostat

Figure 6 Emissions breakdown by activity in Greece



Source: Eurostat

The last report from the International Panel on Climate Change (IPCC) highlights the Mediterranean as one of the most vulnerable regions in the world to the impacts of global warming (IPCC, 2013). Indications from projects implemented in the wider Mediterranean area, co-funded by the LIFE programme, reveal that under some of the scenarios established by the IPCC, annual temperature may increase between 0.15-0.48°C per decade in some of the largest Greek municipalities of the Attica region. Similarly, precipitation is expected to be reduced by 4.5mm-6.5mm per decade (LIFE URBANPROOF - Climate proofing urban municipalities, 2018). Among others, the heat related impact of climate change is related with human health, air quality and also increases the

demand for energy. The above, together with the expected reduction in precipitation, increases the risk of peri-urban fires endangering human lives, biodiversity and the productivity of the Greek economy. The cost of implementing a business as usual scenario for the Greek economy has been estimated at €701 billion in 2100 (Bank of Greece, 2011).

In 2016, Greece designed the National Adaptation Strategy (NAS) and adopted it with the Law 4414/2016. The strategy identifies the need for the development of a monitoring system and the design of adaptation measures that will reduce the impact of climate change in economic sectors of high contribution to the economy which however are most vulnerable by climate change. Tourism, energy, health, insurance, agriculture, fishing, water management, transport are some of the sectors covered by the strategy. It also foresees management at a regional level through the design of Regional Adaption Action Plans (RAAPs) that will highlight the vulnerability of each region and suggest specific adaptation measures for the next implementation period. The implementation of the NAS is also facilitated by the EU LIFE integrated project "AdaptInGR - Boosting the implementation of adaptation policy across Greece", led by the Ministry of Environment and Climate change. The project's total budget is €14.2 million over 7 years and is expected to mobilise complementary funding of €446 million in climate change adaptation investments.

The ongoing transition to a green economy will create new employment opportunities. Most new jobs are expected to be in the green areas of manufacturing, construction and services sectors as well as waste management and sustainable finance. Climate action is expected to favour job creation for all skill groups, introducing in particular more low-skilled jobs in the Greek market (Eurofound 2019, European Commission, 2019). Preparation of the labour force is essential for the successful green transition. Greece needs to invest in up-skilling and re-skilling of its labour

force towards the greening of the economy and the wider use of energy efficient technologies.

Thanks to its geographical location, Greece has the potential to become an energy hub — both for gas and electricity — for Southeast Europe, but for this it would need to develop major infrastructure projects with neighbouring countries.

Biodiversity

Greek nature is characterised by rich fauna and flora, while it is also considered as one of the most important endemic centres in Europe and the wider Mediterranean region. Greece has the tenth biggest Natura 2000 network, which corresponds to 4.5% of the surface of the European ecological network. It covers 4.3 mil. hectares, or 27.2% of the Greek terrestrial area and 6.1% of territorial waters. 241 areas have been declared as Sites of Community Importance (SICs) and 202 are Special Protection Areas (SPAs).

In 2014, Greece endorsed the biodiversity strategy which focuses in halting the loss of biodiversity and in setting biodiversity as national capital. Since 2017, the implementation of the biodiversity strategy is being supported by LIFE funding through the integrated project “LIFE IP-4 NATURA” (8 years project, €17 mil., 60% co-funded).

2. Open Discussion Questions

- **Green Deal (GD) and the pandemic:** Is the pandemic a threat or opportunity for green and climate action policies?
- What is the role that the **Next Generation EU Recovery Package** can play to enhance GD implementation? Which elements of the GD for Greece can be initiated and prioritized (i.e. energy, waste, from farm to fork etc)?
- What are the green strengths of the Greek economy: e.g. biodiversity, sustainable ecosystems, and renewables? How can Greek businesses build on these strengths to gain **competitive advantage**?

- How can the Green Deal strengthen the sustainability and competitiveness of Greek farms and **agro-food** businesses?
- What are the forthcoming **policy priorities** in the climate change adaptation strategy, also in view of current infrastructure gaps and tragic incidents of the recent past, e.g. peri-urban fires, floods?

3. References

Bank of Greece. (2011). *The environmental, economic and social impact of climate change in Greece*.

Eurofound (2019). *Future of manufacturing – Energy scenario: Employment implications of the Paris Climate Agreement, Eurofound Research Report, February 2019, Ipsos-London Economics-Deloitte consortium*.

European Commission (2019). *Employment and Social Developments in Europe, Sustainable growth for all: choices for the future of Social Europe*.

European Commission. (2020). *Country Report Greece*. European Commission.

IPCC. (2013). *Climate change 2013, The Physical Science Basis*.

LIFE URBANPROOF - Climate proofing urban municipalities. (2018). *Report on historical data trends and climate change projections for the greater urban areas of interest*.

Ministry of Environment and Energy. (2018). *National Strategy for Circular Economy*.

The LIFE programme. (2019). *LIFE-IP CEI-Greece - Circular Economy Implementation in Greece*.

Additional sources

https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#documents