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2023 Country Report - Malta

Accompanying the document

Recommendation for a COUNCIL RECOMMENDATION

on the 2023 National Reform of Malta and delivering a Council opinion on the 2023 Stability Programme of Malta

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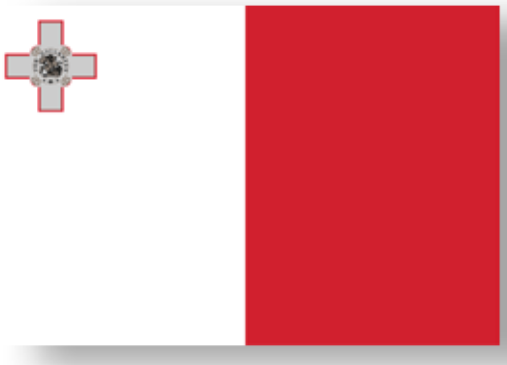
European Commission

Malta

2023 Country Report



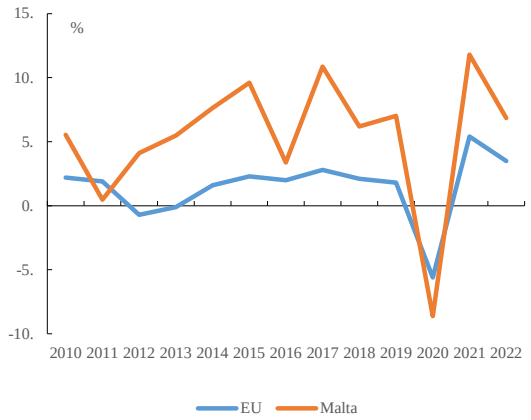
Malta is maintaining its growth momentum in an uncertain environment

After the pandemic, Malta's economy has returned to robust economic growth. With the exception of 2020, the Maltese economy has grown faster in recent years than most of the other EU Member States. The drivers of the strong economic performance before the pandemic – and also of the swift recovery afterwards (Graph 1.1) – were fast-growing export-oriented services in finance, gaming, and tourism.

Malta has recovered rapidly since the COVID-19 crisis and appears resilient overall. In 2021, the economy grew by 10.3% on the back of improved business and consumer sentiment, strong investment, and the reopening of the country to tourism. In 2022, real GDP (i.e. GDP adjusted for inflation) grew by 6.9%, driven by growth in investment, consumer spending and public consumption. Contributing to the growth in services in general, tourism services rebounded quickly in 2022, both in terms of the total number of visitors and in terms of spending by tourists. Due its low exposure to both Russia and Ukraine, Malta experienced only limited direct impact from trade disruptions caused by Russia's invasion of Ukraine. The Maltese banking sector appears resilient overall, with strong liquidity and capitalisation.

Growth is expected to slow in 2023 and 2024. In 2023, real GDP growth is forecast to moderate to 3.9% (from 6.9% in 2022), following a wider economic slowdown in Malta's main trading partners. In 2024, growth is expected to climb slightly to 4.1%. Throughout 2022-2024, growth is also being supported by implementation of the recovery and resilience plan (RRP) ([1]) (see Annex 3).

Graph 1.1: **Economic growth, 2011-2022 (% per year)**



* 2023 Winter Interim Forecast
Source: Eurostat

Inflation in Malta has been limited by government intervention. Inflation in 2022 reached 6.1%, less than in most EU Member States. This is because energy prices are currently being kept at 2020 levels by government intervention. The Maltese authorities have announced that they will continue to limit energy prices in 2023 and 2024. Nonetheless, inflation in 2023 is still set to reach 5.4%, driven by prices for food, transport, and imported goods. In 2024, inflation is expected to slow to 2.8% as growth in import prices are set to moderate. Nominal wage growth (i.e. wage growth that is not adjusted for inflation) stood at 2.8% in 2022. However, as a result of the high inflation, real

([1]) For more information, see https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/maltas-recovery-and-resilience-plan_en.https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/maltas-recovery-and-resilience-plan_en

wages decreased by 2.4% in 2022. In spite of the adjustment to cost-of-living mechanisms in place, nominal wages are expected to increase only moderately in 2023.

Malta's employment rate surpassed pre-pandemic levels in the second half of 2021 and further improved in 2022. On the back of the strong post-pandemic recovery, the employment rate (for those aged 20-64) reached 82.1% by Q4-2022. Due to favourable conditions and positive net migration, annual employment growth reached 6% in 2022 and is expected to moderate to 2.3% in 2023 and 2024. The unemployment rate (for those aged 15-74) reached a new historical low in Q4-2022 of 2.9% and is expected to remain close to this level in 2023. In this robust but tight labour market, the share of young people not in education, employment or training and the long-term unemployment rate were both well below the EU average in 2022 as shown in the Social Scoreboard supporting the European Pillar of Social Rights (see Annex 14).

Women and people with disabilities still experience difficulties in the labour market. The gap between the employment rates of men and women in Malta, despite narrowing considerably in recent years and women's overall employment rate now exceeding the EU average, remains one of the largest in the EU at 13.1 pps in 2022 and widens with age (see Section 3 and Annex 14). The employment rate of women aged 55-64 has been persistently low. People with disabilities face difficulties in finding work, with the disability employment gap standing at 27 pps (vs an EU average of 23.1 pps in 2021).

Malta has been experiencing shortages of skilled labour for a number of years, and has a large share of low-skilled adults. Due to a tight jobs market and poor education outcomes, shortages of workers and skills have increased in recent years (see Annexes 12 and 14). Workers with specialist skills in information and communications technology remain in particularly short supply (see Annex 10). According to the EU survey on access to finance for enterprises ([2]), 35% of small and medium-sized enterprises say that the lack of skilled staff is one of their most pressing problems. The job vacancy rate increased from 1.4% in the first quarter of 2021 to 2.7% in the second and third quarters of 2022. This vacancy rate has been exacerbated by the departure of skilled foreign workers during the pandemic. There are higher vacancy rates in the information and communications technology sector, in construction, and in trade. Despite recent changes to the law on architects and civil engineers, the regulatory restrictiveness of regulated professions in Malta remains greater than the EU average for accountants, estate agents, and tourist guides. This impedes competition on quality/prices and productivity growth in the regulated sectors (see Annex 12). Additionally, Malta has a large share of low-skilled adults (33.1% of those aged 15-64 in 2022). Among the low-skilled aged 18-64, only 3.8% participated in learning activities over the previous 4 weeks in 2021 against an EU average of 13.3%. In 2022, the share of adults aged 25 to 64 with less than upper secondary education having at least basic overall digital skills is above the EU average (43.7% vs 28.4%). Thus, while noting Malta's effective achievements, further inclusive upskilling and reskilling measures for all would help to achieve Malta's 2030 target on skills.

The social situation in Malta has remained broadly stable, but needs monitoring for certain groups. In 2021, the at-risk-of-poverty-or-social-exclusion rate was 20.3%, higher than the 19.9% of the previous year but below the 2019 value of 20.7%. However, this rate was especially high among non-EU nationals, low-skilled adults, people with disabilities and people over 65, especially older women. Children of single parents or children of low-skilled parents were at particular risk of poverty or social exclusion (see Section 3). The at-risk-of-poverty rate in 2021 was much higher among workers with temporary contracts, part-time workers, and the self-employed. Since 2020, Malta has seen

([2]) European Commission (2022). Survey on access to finance of enterprises (SAFE), Analytical Report 2022.

a significant increase in expenditure on social protection as a share of GDP.

The government deficit is set to decrease but remains one of the highest in the EU. Malta's government deficit has reached 5.8% of GDP in 2022. The increase in public expenditure related to measures to mitigate the impact of high energy prices is the main reason for this high deficit, despite strong nominal GDP growth and the phasing out of pandemic-related support measures. The general government deficit is set to decrease to 5.1% of GDP in 2023 and to 4.5% in 2024. The government-debt-to-GDP ratio is set to increase to 53.4% of GDP in 2022 and reach 56.1% in 2024.

Demographic changes and the high reliance on corporate-tax revenues weigh on the sustainability of government finances in the long term. Ageing costs in Malta are projected to rise by 8.0% of GDP between 2019 and 2070 due to an expected increase in expenditure on pensions, healthcare, and long-term care. Tax revenues remain highly reliant on corporate taxes, making the country more vulnerable to future economic shocks. Furthermore, Malta's tax system may facilitate aggressive tax-planning practices. The country's commitments to curb these practices are a step in the right direction (see Section 3).

Malta is highly dependent on energy imports and its economic growth risks being environmentally unsustainable. Fossil fuels still play a major role in Malta's economy, making it highly dependent on energy imports and highly exposed to global price developments. Malta has one of the lowest 2030 targets (11.5%) for renewables in energy consumption in the EU. However, the government's commitment in 2022 to adopt offshore renewable-energy technologies is a major policy shift. Malta has scope to scale up its energy-efficiency measures, especially in its residential and building sectors. Due to continued high reliance on private cars, traffic congestion and high emissions from road transport persist. Existing measures may not be enough for a pronounced shift in the modes of transport used away from cars. With groundwater over-extraction and risks of increasingly heavy storms, effective water management remains crucial. The rapid economic development and over-construction in the country threaten biodiversity and generate significant waste. This is exacerbated by low recycling rates. There is room for targeted measures to develop and use innovative digital technologies to tackle these environmental challenges (e.g. applications to support energy efficiency, water management, smart mobility, etc.).

Research and innovation offer significant potential to increase productivity and competitiveness. Malta's research and innovation performance remains weak, and continues to deteriorate. Its overall ranking on the index for research and innovation is 84.7% of the EU average. The greatest obstacles are low investments in research and innovation, both by businesses and the public sector, and the lack of skilled workers. Growth in labour productivity in recent years followed a similar path as in the rest of the EU, albeit with a lower growth rate in 2021 (4.3% vs 7.0% in the EU).

Court proceedings are very lengthy. Administrative cases at first instance in Malta are estimated to take the longest time to be resolved of any country in the EU. The clearance rate for non-criminal cases has also deteriorated and is particularly concerning for civil and commercial cases. The lack of resources (including skilled staff and infrastructure) and the prevalence of outdated work practices are among the causes of the delays. A more formalised stakeholder consultation process could also increase the quality of the justice system.

Although overall Malta performs well on the UN's Sustainable Development Goals (SDGs), challenges remain in environmental sustainability and inequalities. Malta performs well on decent work and economic growth (SDG 8) and on macroeconomic stability (SDG 16). It is also improving on SDG indicators on productivity (SDGs 4 and 9). In addition, it performs well (SDGs 3 and 8) or is improving (SDGs 4 and 5) on most indicators related to fairness.

Box1

Energy-policy response in Malta

Malta took significant measures to mitigate the impact of energy-price hikes and support households and businesses. These measures were mostly untargeted and did not preserve the price signal necessary to ensure the efficient use of energy. Malta has adopted various support measures to cushion the impact of energy-price inflation on households and businesses. For 2023, the gross budgetary costs of these support measures are projected in the Commission's 2023 spring forecast to amount to 1.7% of GDP. Most measures do not preserve the price signal (i.e. they do not keep prices sufficiently high to act as an incentive to encourage people to use less energy) and are not targeted at the most vulnerable.

In addition to government support on energy prices, food (grains and cereals) is also subsidised to cushion the impact of higher inflation. In 2022, Malta distributed a one-time bonus cheque of EUR 100 to students and workers whose yearly income does not exceed EUR 60 000, and a cheque of EUR 200 to pensioners and people receiving social benefits. Several benefits (allowances, pensions) targeting vulnerable people were also adjusted to reflect the higher cost of living.

Malta reported to the Commission that it has no companies that fall under Chapter III of Council Regulation (EU) 2022/1854, which imposes a 'windfall' tax on the profits of certain fossil-fuel companies and refineries that benefited from higher energy prices.

Malta has a high level of security for its gas supply, with a predictable medium-term contract for the delivery of liquefied natural gas. Liquefied natural gas is imported to a terminal to fully supply natural gas to two electricity-generation plants covering 70% of electricity demand.

Malta is aiming to build a gas interconnection pipeline with Italy (Project of Common Interest) to connect to the European gas network.

However, though status is still better than the EU average, it is moving away from addressing poverty and inequalities (SDGs 1 and 10). Although Malta is improving on some of the indicators related to environmental sustainability (SDGs 2, 9, 11, 12), it is moving away from SDG 7 (affordable and clean energy). Malta performs well on life below water (SDG 14), but it needs to catch up with the EU average on climate action (SDG 13) (see Annex 1).

THE RECOVERY AND RESILIENCE PLAN IS UNDERWAY

Malta's RRP aims to address the key challenges related to climate, the digital transition, health, employment, education, skills, social policies, justice, taxation, the fight against corruption, and the fight against money laundering. The RRP consists of 30 reforms and 17 investments that are supported by EUR 258.3 million in grants, representing 1.7% of Malta's 2021 GDP (see Annex 3 for more details).

The implementation of Malta's recovery and resilience plan is well underway. Malta submitted one payment request, corresponding to 19 milestones and targets in the plan and resulting in an overall disbursement of EUR 52.3 million (in grants) on 8 March 2023. Nearly all milestones and targets linked to Malta's first payment request are complemented by future commitments in the RRP. These will be assessed under subsequent payment requests.

Malta submitted an amendment of its plan together with a REPowerEU chapter in April 2023. The newly proposed REPowerEU chapter is expected to address the challenges related to energy supply and security, and to speed up the transition to renewable energy sources. Furthermore, Malta is proposing some modifications in view of the decreased total allocation and to adjust to objective circumstances. These amendments are currently being assessed by the Commission, and once adopted, are then subject to Council approval.

The following, more detailed review of measures being implemented under the RRP in no way implies formal Commission approval or rejection of any payment requests.

Supporting the green transition

With 54% of the RRP's total allocation dedicated to climate and environmental objectives, Malta's plan includes several measures that support the green transition. As part of the first set of milestones that were assessed positively, Malta: (i) adopted legislation aiming to improve the regulatory framework for the construction industry; (ii) adopted a strategy to manage construction and demolition waste; and (iii) carried out energy-performance audits of two public school buildings. In addition, to make transport greener and reduce emissions, Malta: (i) set up remote-working office facilities for public-service officials; (ii) completed a national household travel survey; and (iii) entered into an agreement with the Local Councils Association to create regeneration areas in urban areas. In addition to these actions, further commitments in the RRP in this area include: (i) a commitment to carry out energy-performance audits of selected public buildings (including schools, a hospital and offices); and the publication of a Sustainable Urban Mobility Plan for the Valletta region.

Strengthening the rule of law

The RRP played a key role in strengthening the rule of law in Malta in 2021-2022. Several targets and milestones under the first payment request strengthened judicial independence. For example, Malta introduced legal amendments to change the method for appointing and dismissing judges and magistrates. This changed procedure was applied in 2021 when four judges and four magistrates were appointed to the bench. Other milestones aimed at strengthening

prosecution services and the investigative branch. Legal amendments were also made to provide legislative clarity on the possibility for the Attorney General to bring prosecutions before the Court of Magistrates. In addition, Malta introduced legal amendments to ensure that the decision of the Public Prosecutor to not prosecute a case is subject to judicial review. Through these amendments, five anti-corruption bodies were given the status of the injured party at law in cases referred by them to the Attorney General. Furthermore, the investigative branch as strengthened through a reform that introduced a transparent and competitive process for appointing police commissioners. Two milestones were also fulfilled that strengthen Malta's fight against fraud and corruption. These are the adoption of a revised National Anti-Fraud and Corruption Strategy (updating the 2008 version) and legal amendments providing statutory reinforcement to the Permanent Commission Against Corruption. Upcoming RRP reforms in this area focus mainly on further strengthening the prosecution services and the anti-corruption framework.

Accelerating the digital transition

The Maltese RRP dedicates 26% of its total allocation to digital objectives. Under the first payment request, Malta implemented legislative amendments permitting: (i) people to be 'present' in court through live video conferencing links; and (ii) the electronic filing of judicial documents. This will pave the way for a EUR 10 million digitalisation investment in the justice system. In addition to these achievements, upcoming commitments in the RRP in the digital area include, for example, the launch of calls for applications for the digitalisation of companies and further investments in the digital hardware and software of the public administration.

Boosting research and innovation

To accelerate research and innovation, Malta adopted the EU's smart specialisation strategy as part of the first payment request. The strategy focuses on a number of key initiatives related to research and innovation, such as: (i) investment in research infrastructure; (ii) support for internationalisation including through participation in Horizon Europe; (iii) the promotion of inter-agency collaboration to support businesses; and (iv) incentives for industry stakeholders to innovate. As a follow-up to the strategy, Malta has also committed to providing, by 2024, support to companies on R&D and internationalisation by participating in European programmes.

Fostering socioeconomic sustainability

The RRP strengthens the resilience and sustainability of Malta's labour market, pension system, and healthcare systems. Although no measures in these areas were part of the first payment request, upcoming commitments in the RRP in this area include: (i) measures to improve the sustainability and adequacy of the current pension and unemployment benefits systems; (ii) the implementation of key measures of the country's Employment Strategy and (iii) the implementation of key measures of Malta's action plan and strategy on gender equality and on taking gender into account in all sectoral policies. On health, the resilience of the healthcare system will be strengthened by both: (i) the reform promoting the integration and well-being of foreign health workers; and (ii) the investment in setting up a centre on blood, tissue and cells.

Supporting quality inclusive education

Malta is introducing important measures to support quality inclusive education. As part of the first payment request, two new autism units have been set up in middle schools. These new units have been given new operational equipment and trained personnel to promote the further integration of pupils with special needs into the mainstream school environment. Furthermore, teachers and learning-support educators are receiving continuous training in how to teach in an inclusive way. Beyond this, further commitments in the RRP in this area include the setting up of two new multi-sensory learning rooms in colleges and the launch of an e-college.

Tackling aggressive tax planning and fighting money laundering

A number of milestones and targets fulfilled under the first payment request will help to curb aggressive tax planning, money laundering, and financial crime. On taxation, Malta introduced the legal provision enabling the introduction of transfer pricing rules in Malta's legislative framework, aiming to reduce opportunities for corporate profit shifting. To fight money laundering and financial crime, Malta introduced legislative amendments in 2021 to increase the powers and capacity of its Asset Recovery Bureau, while reinforcing the Bureau's independence from the government. Further commitments in the RRP in this area include: (i) the entry into force of transfer-pricing rules; (ii) the creation of a more comprehensive corporate tax return; and (iii) spontaneous exchange of information on new applicants for the country's citizenship scheme. In addition, Malta has already implemented all the actions required by the evaluation of the Financial Action Task Force, and was taken off the Task Force's list of jurisdictions under increased monitoring (grey list) in June 2022.

A Box 2: **Key deliverables under the RRP in 2023-2024**

- Contracts signed and renovation works ongoing to increase the energy efficiency of selected public buildings (including schools, offices and a hospital) [Component 1]
- Entry into force of a new regulatory framework for the management of construction and demolition waste [Component 1]
- Award of 1 000 grants to purchase electric vehicles and pedelecs by the private sector [Component 2]
- Support of at least 1 000 individuals from low-income families to mitigate the digital divide [Component 3]
- Launch of the bespoke tool for workforce planning in the health sector [Component 4]
- The set-up of two new multi-sensory learning rooms (physical spaces equipped with equipment and trained education personnel) in schools [Component 5]
- Legislation addressing aggressive tax planning concerns stemming from inbound and outbound dividend, interest and royalty payments [Component 6]
- Capacity building within the Attorney General's Office [Component 6]

FURTHER PRIORITIES AHEAD

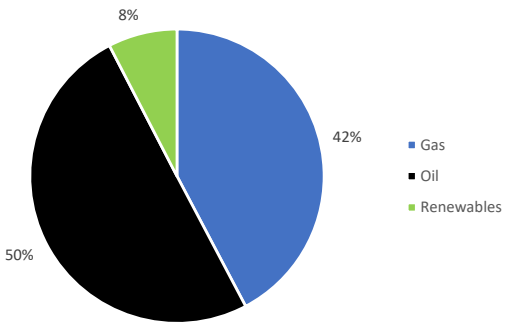
In addition to the challenges addressed by the RRP, Malta faces other challenges not sufficiently covered in the plan. These include: (i) the country's low share of renewable energy; (ii) insufficient energy efficiency; (iii) traffic congestion; (iv) the risks of over-extraction of groundwater; (v) high rates of municipal-waste generation and landfill; (vi) low levels of research and innovation; (vii) a lack of equal opportunities for all; (viii) risks to fiscal sustainability; (ix) risks from aggressive tax planning; and (x) inefficiencies in the justice system. Addressing these challenges will also help Malta to make further progress in achieving the Sustainable Development Goals (SDGs), such as the SDGs on affordable and clean energy (SDG 7), ending poverty (SDG 1), gender equality (SDG 5), reduced inequalities (SDG 10), and quality education (SDG 4) (see Annex 1).

Promoting the green transition

Although Malta does not import oil or gas from Russia, fossil fuels still play an outsized role in Malta's economy, making its energy mix highly dependent on energy imports. In 2021, fossil fuels accounted for 98% of the country's energy mix (natural gas provided 12%; oil and petroleum products provided 86%) (Graph 3.1). Fossil fuels are used for most of Malta's electricity generation. Although they are increasing in share, renewables generate only 11.9%. Subsidies for fossil fuels have helped to cushion price fluctuations due to Russia's war of aggression against Ukraine, but these subsidies reduce incentives for a swifter energy transition, including by demand reduction. While energy prices have decreased, uncertainty remains regarding next winter, which requires continued efforts to structurally reduce gas demand.

Malta has one of the lowest shares of renewables in energy consumption in the EU (see Annexes 1, 6 and 7). Malta's target to reach an 11.5% share of renewables in all energy consumption is below the 2030 EU target of 32%. The government has plans to explore offshore renewable-energy technologies, but specific projects have yet to be identified ([3]). Grid capacity and flexibility is already proving to be a bottleneck for the integration of renewables and for increasing the efficiency, reliability and security of the country's power supply. The further deployment of solar panels on non-residential buildings, such as by making installation of the panels mandatory on all new buildings, would also be a significant step forward. It would also be beneficial if Malta addressed challenges that prevent the installation of solar panels on the rooftops of private buildings, and providing additional economic incentives to house-owners to install the panels.

Graph 3.1: **Energy mix in Malta, 2021**



Source: Eurostat

Malta has scope to scale up its energy efficiency measures (see Annexes 6 and 7). Malta's contribution (1.5 toe per capita, compared with 2.2 toe per capita in Germany)

([3]) According to the Global Wind Energy Council, Malta has an estimated technical potential of 25 GW in offshore wind/floating-solar power capacity.

to the EU's energy efficiency targets for 2030 is low. Energy consumption in residential buildings continues to increase ([4]). Malta would benefit from a nationwide system to monitor CO_2 emissions from public buildings. The use of digital technology, such as applications to monitor and regulate energy use, could help to increase energy efficiency. Effective implementation of the construction industry's newly adopted regulatory framework, including the licensing of general contractors, would increase the quality, safety and energy efficiency of construction.

Shortages of skilled workers in some key sectors have increased in recent years due to a lack of relevant skills. This has created bottlenecks in the green transition. In 2022, shortages of workers were reported in Malta for six occupations that required specific skills or knowledge for the green transition, including manufacturing workers and building-construction labourers ([5]). The job-vacancy rate recently increased in manufacturing (from 1.7% in 2015 to 2.2% in 2021), although it fell in construction (from 4.8% in 2015 to 1.7% in 2021) ([6]). In 2022, shortages of skilled workers were reported as a factor constraining production in industry (for 33% of companies) and construction (for 36.4% of companies) ([7]). Upskilling and reskilling for the green transition, including for people most affected, and promoting inclusive labour markets are essential policy levers to accelerate the green transition and ensure its fairness (see Annex 8).

There continues to be traffic congestion, high emissions from road transport, and a high reliance on private cars. Private cars are used for 84% of all trips and Malta's licensed motor-vehicle stock reached 817 vehicles per 1 000 persons in 2022, with only a small proportion of these being zero emissions (see Annex 6). While Malta's road licence fee is based on engine size and vehicle emissions, smart road-pricing systems that consider the time of day and distance travelled would be more closely tied to the 'polluter pays' principle. Other tools to disincentivise private car use, such as congestion charges and parking fees, are not used in Malta. Initial data on the uptake of free bus transport are encouraging, yet bus use remains low overall, covering only 5.2% of all trips. A pronounced shift in transport modes away from private cars and towards public transport is unlikely until service quality (punctuality, journey-duration time) is improved. Malta announced an increase in the number of buses and in the frequency of its bus services. Reserved bus lanes and enforceable rules to push delivery services outside key commuting time-periods would also be beneficial.

Although the stock of e-scooters has increased considerably, poor quality footpaths and cycling infrastructure discourage walking and cycling. Walking and cycling represent 7% and 0.5% of all trips respectively. Increasing numbers of road-traffic accidents involving pedestrians and cyclists highlight the dangers of using these two modes of transport in Malta. The deployment and maintenance of safe, segregated and interconnected pavements and cycling/e-scooter routes could promote walking, cycling and the safer use of e-scooters. Space for this infrastructure could be made by removing road-parking spaces. Increased enforcement of road-traffic rules, to accompany increased fines, would also be beneficial. The timely deployment of mobility-related IT tools could also improve traffic flows, safety, and the enforcement of traffic rules.

There is a risk that groundwater will be over-extracted, and groundwater quality in Malta is deteriorating. Groundwater in Malta is under strain from municipal water supply, the agricultural sector, and the broader

([4]) From 77 600 tonnes of oil equivalent in 2016 to 95 800in 2018 and 118 800 in 2021.

([5]) Data on shortages are based on European Labour Authority (2023), *EURES Report on labour shortages and surpluses 2022*. Definition of shortages differs across countries. Skills and knowledge requirements are based on the ESCO (European Skills Competences and Occupations) taxonomy of skills for the green transition.

([6]) Eurostat (JVS_A_RATE_R2).

([7]) European Business and Consumer Survey.

commercial sector ([8]). Population growth and tourism increase this strain. Measures that disincentivise the extraction of groundwater by the commercial sector and incentivise a shift to reclaimed water (such as groundwater consumption fees), would be beneficial. More sustainable construction policies to limit soil sealing (see Annex 6) could aid groundwater replenishment. It would also be useful for Malta to: (i) better enforce obligations for new buildings to have water reservoirs and to re-use water run-off; and (ii) integrate rainwater-harvesting objectives in the design of infrastructure projects (roads, bridges, etc.). The need for measures of this sort is especially pressing given that Malta will increasingly face severe storms in the future.

Malta generates a very large amount of municipal waste and most of it is landfilled. Municipal-waste generation stood at 611 kg per capita in 2021, among the highest in the EU (EU average of 530 kg per capita). The recycling rate for municipal waste was only 13.5% in 2021, far below both the EU average of 50% and the 2020 target of 50%. If current trends are maintained, Malta is on course to miss: (i) the 2025 target of preparing 55% of its municipal solid waste for re-use and recycling; and (ii) the 2025 target of recycling 65% of its packaging waste. Landfill rates are high and on an increasing trend, having risen from 79.5% of municipal waste in 2017 to 85% in 2021 (well above the EU average of 23%). The recently adopted waste-management plan (2021-2030) provides the statutory framework to increase both waste recycling and the preparation of waste for re-use.

Malta's biodiversity continues to decline. The share of habitats in bad conservation status dramatically increased from 6.7% to 58.6% in 2013-2018, while the share of species in bad conservation status slightly increased from 7.7% to 8.9%. The main causes of this are rapid development and over-construction. The illegal hunting of birds and illegal trapping practices create further problems for wildlife. In 2020, only 0.6% of Malta's agricultural land area was under organic farming, far below the EU average of 9.1% and what is deemed necessary to meet the target of having 25% of the EU's agricultural land under organic farming by 2030.

Fiscal sustainability and taxation

The projected future growth in pension expenditure poses risks to the long-term fiscal sustainability of Malta's economy ([9]). In 2019, public pension expenditure in Malta stood at 7.1% of GDP, among the lowest in the EU. However, while the burden of pension spending is expected to remain stable until 2045, this is projected to increase in the long-term to 10.9% of GDP by 2070, one of the highest projected increases in the EU. This is mainly due to: (i) significant gains in life expectancy; (ii) an increase in the share of the elderly population above the age of 80; and (iii) an insufficient adjustment to the early retirement age.

Public spending on health and long-term care is also expected to increase in the long run. Government expenditure on health care, relatively low at 5.4% of GDP in 2019, is projected to surge to 8% of GDP by 2070, well above the projections for the EU average (7.5%) by this date. Public spending on long-term care is expected to increase from 1.1% of GDP in 2019 to 3% by 2070.

Malta's tax revenues remain low and are highly reliant on corporate income taxes, making the fiscal position sensitive to economic shocks (see Annex 19). The share of corporate income tax in total tax revenue (16.9% in 2021) continues to be among the highest in the EU. This can be partly explained by international companies being attracted by Malta's tax-refund system, which allows companies to reduce their effective tax rate from 35% (nominal tax rate) to between 0%

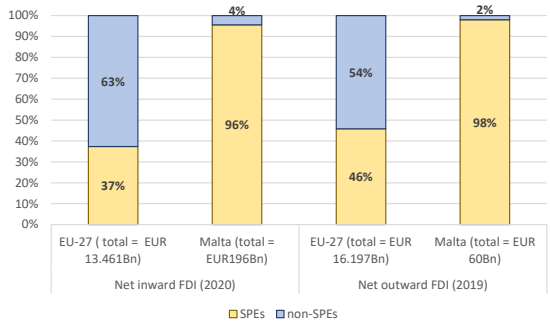
([8]) Extraction by the concrete sector increased from 3 996 m^3 in 2014 to 62 231 m^3 in 2021, and extraction by the drinks sector increased from 7 643m^3 in 2016 to 36 310 m^3 in 2021.

([9]) See Annex 21. The debt-sustainability analysis shows that risks to the sustainability of Malta's government finances are high in the long-term.

and 10% through tax credits and refunds. The implementation of the EU Minimum Tax Directive, ensuring a minimum 15% effective rate of corporate taxation for large corporations, requires Malta to implement changes to its tax system to diversify tax revenues and safeguard the overall stability of government finances.

Certain indicators suggest that companies are using Malta's tax system for aggressive tax planning. These include the persistently high level of foreign direct investment compared to the size of the Maltese economy (which is almost exclusively held by legal entities that have little or no employment, operations or physical presence in Malta) (Graph 3.2); and (ii) the large payments of royalties, interest and dividends.

Graph 3.2: **Share of net inward and outward foreign direct investment (FDI) stock held by entities with no or little presence in Malta (SPE)**



(1) Net stock data have been used because data on assets and liabilities are unavailable for Malta.
(2) 2020 data on net outward FDI is unavailable for Malta.
Source: European Commission

Malta has taken significant steps and commitments to fight aggressive tax planning, but more is needed to close the existing loopholes. Malta has implemented international and European agreed initiatives, and further commits to tackle the issue in its RRP. The commitments to introduce transfer pricing rules and to commission an independent study on inbound and outbound payments to be followed-up by legislation are steps in the right direction, yet many challenges remain. Until Malta applies withholding taxes on interest, dividends and royalty payments to low-tax or zero-tax jurisdictions (or until Malta takes equivalent defensive measures) to ensure that profits of firms are not shifted untaxed to countries outside the EU, the risks of double non-taxation on these profits remain high. Furthermore, the Maltese treatment of resident non-domiciled companies continues to provide multinational firms with opportunities for double non-taxation both: (i) between Malta and tax havens; and (ii) between Malta and most countries with which Malta has concluded a bilateral tax treaty ([10]). The issue is only partly addressed by the EU's Minimum Tax Directive, which applies only to large corporations.

Malta's investor citizenship scheme continues to raise serious concerns. These concerns relate in particular to security, money laundering, tax evasion, and corruption. Since January 2022, Malta has allowed the spontaneous exchange of information on successful applicants of the citizenship scheme with the authorities of the applicants' original jurisdiction of tax residence, in line with its RRP commitment, but this is limited to new applicants. In September 2022, the European Commission decided to refer Malta to the Court of Justice of the EU for its investor citizenship scheme.

Increasing research and innovation to support productivity and competitiveness

Malta is falling further behind the EU average in research and innovation. Although Malta is ranked as a 'moderate innovator' in the 2022 European Innovation Scoreboard, its innovation performance is below the EU average and the gap is becoming larger (see Annex 11). Despite Malta's good performance in areas such as the digital

([10]) A 'resident non-domiciled company' refers to a company incorporated in a given country but effectively managed in Malta. Because the firm is incorporated abroad, Malta only taxes profits realised in or remitted to Malta, while foreign profits that are not remitted to Malta are not subject to tax in Malta, leading to a situation of double non-taxation.

transformation of businesses, including the use of advanced digital technologies (see Annex 10), Malta's performance in research and innovation continues to suffer in particular from low levels of investment in research and innovation and a lack of skilled workers. As laid out in the Green Deal industrial plan, to strengthen industrial competitiveness it will be crucial for Malta to: (i) make advances in research and innovation; (ii) accelerate its industries' transition towards net zero; and (iii) invest in manufacturing capacities for clean technologies.

Low levels of investment in R&D, both by public institutions and businesses, remain an endemic issue in Malta. Malta has one of the lowest R&D intensities in the EU. Its gross domestic expenditure on R&D was only 0.64% of its GDP in 2021 against the EU average of 2.26%. Public expenditure on R&D has been stagnant since 2010, while business enterprise expenditure on R&D grew only slightly over the last decade and decreased in 2021. The share of small and medium-sized enterprises introducing product innovations also decreased between 2015 and 2022. Moreover, the level of government financial support for private R&D is low in Malta, and has decreased over the last decade. The Maltese RRP does not include any R&D investments, with the Maltese authorities intending to use cohesion funds instead. However, the R&D investments that Malta plans to support with money from cohesion funds appear insufficient to address underinvestment in R&D in Malta.

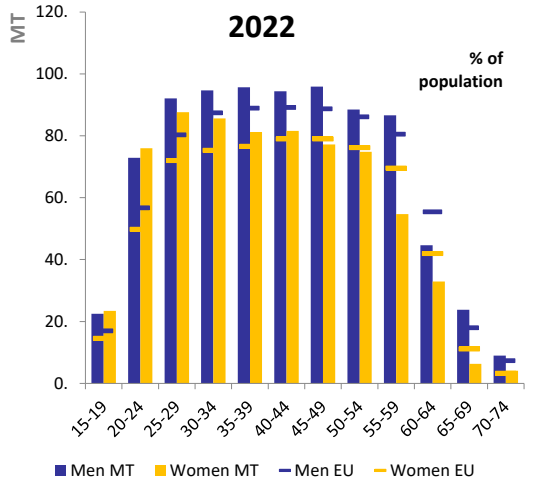
The lack of skilled talent continues to hamper the performance of the Maltese research and innovation system. Although the country boasts a high share of ICT graduates and ICT specialists, its number of new graduates in science and engineering per thousand population aged 25-34 has dropped since 2010 and is now well below the EU average (Malta ranks 26th among EU Member States on this measure). Similarly, Malta's share of R&D personnel as a percentage of its active population was less than half of the EU average (see Annex 1). Difficulty in finding skilled workers, including ICT specialists, is reported as a significant concern for Maltese businesses (see Annexes 10 and 12). The lack of skilled workers could be alleviated by improving the quality of the education system (see Annex 14), reducing requirements for regulated professions, and developing an effective and comprehensive education system (starting in primary school and going all the way up to the highest education levels) to attract talented people into scientific and technological careers, retain them in these areas, and develop their skills.

There is scope for stronger cooperation between academia and business. Malta is one of the EU Member States with the lowest share of public research and innovation financed by businesses. Moreover, public-private scientific co-publications in Malta as a share of all publications, although have increased in 2021, are still below their 2019 level and slightly below the EU average.

Ensuring equal opportunities

Despite favourable employment conditions, women and people with disabilities still experience difficulties in the labour market. The gender employment gap, although shrinking fast in the last decade, remains one of the largest in the EU (13.1 pps vs EU 10.6 pps in 2022) and this gap increases with age. The employment rate of women aged 55-64 is particularly low (see Graph 3.3). This translates into one of the widest gender pension gaps in the EU (with Maltese women receiving pensions that are 46% smaller than Maltese men vs an EU average gap of 25.9% in 2021). People with disabilities face difficulties in finding jobs, with the disability-employment gap standing at 27 pps (vs an EU average of 23.1 pps in 2021). There is scope for strengthening targeted policies to help women and people with disabilities to find work. The implementation of measures in the updated Employment Strategy; and actions to both improve quality education for pupils with special needs and boost the employability in Malta's RRP go in the right direction and contribute to Malta's progress towards its 2030 employment target.

Graph 3.3: **Employment rate by detailed age group and sex**



Source: Eurostat, Labour Force Survey

Poverty indicators in Malta are below the EU average in general, but remain high for specific disadvantaged groups. The share of Maltese people at risk of poverty or social exclusion stood at 20.3% in 2021, slightly below the EU average (21.7%). However, this rate remained high among non-EU nationals (30.4%), low-skilled adults (30.3%), people aged over 65 (29.9%), women (32.3%), and people with disabilities (33.4%). Although the share of children in Malta at risk of poverty or social exclusion remains below the EU average, children of single parents or children with low-skilled parents face greater risk. Measures that aim to reduce the risk of poverty among disadvantaged groups would further help Malta to reach its 2030 poverty-reduction target.

Income inequality has increased over the last decade and is now above the EU average. In 2021, the share of total income received by the 20% of the population with the highest income was 5.03 times higher (EU: 4.97 in 2021) than the share received by the 20% of the population with the lowest income, against 4.69 times in 2020 and 4.01 times in 2011. The poverty-reducing impact of social transfers (excluding pensions) improved in 2021 but remains at 26.2% (vs EU 37.1%), one of the lowest in the EU (see Annex 14).

Participation in early childhood education and care (ECEC) is decreasing, and underachievement by students remains considerable. The free-childcare scheme launched in 2014 for working or studying parents led to a significant improvement ([11]) in participation in formal ECEC of children below the age of 3. However, the pandemic reversed this trend and the rate stood at 24% in 2021, significantly below both the EU average (36.6%) and Malta's own ECEC participation rate in 2019 (38.3%). Similarly, the participation of children aged 3 and older in ECEC saw one of the greatest decreases in the EU to 89.1% in 2020 (EU: 93%) from 96.9% in 2015. The proportion of 15-year-olds in Malta underachieving in all three PISA (Programme for International Student Assessment) domains is among the highest in the EU (22.6% vs 13.2%). Students' socioeconomic background has a considerable impact on education outcomes in Malta (see Annex 15). Extending the free-childcare scheme to all, regardless of their working status, while investing in high-quality teaching could contribute to improved education outcomes and a more equitable education system.

Improving the efficiency and quality of the justice system

The efficiency of the Maltese justice system, evidenced by the length of proceedings, has continued to deteriorate. The estimated time needed to resolve administrative cases at first instance in Malta (1 356 days) is the longest in the EU, and the estimated time needed to resolve litigious civil and commercial cases remains well above the EU average (see Annex 13).

A lack of resources is hindering the efficiency and quality of justice. Since early 2021, the number of judges and magistrates increased by nine (from a total of 42); five of whom were added under Malta's RRP. Notwithstanding this, the judiciary is calling for more appointments due to an increasing caseload, particularly on civil and

([11]) The rate increased from 18.2% in 2014 to 38.3% in 2019.

criminal cases. In addition, the lack of office and courtroom space ([12]) and a shortage of skilled staff supporting the judiciary continue to cause problems. These concerns led the Commission to issue a recommendation to Malta in its 2022 Rule of Law Report.

Outdated work practices and restricted hours for court sittings are cited as a cause of court delays. The use of alternative dispute-resolution mechanisms ([13]) that could help to alleviate the number of incoming cases in courts remains very limited in Malta.

Malta lacks a formalised procedure for public participation in the legislative process ([14]). Allowing for the meaningful consultation of relevant stakeholders would also improve the quality of legislation.

([12]) Malta's Association of Judges and Magistrates commented on 'the acute lack of adequate space, [...] and defined the situation as critical'; Rule of Law Report 2022, European Commission.

([13]) Alternative dispute resolution (ADR) makes it possible to settle a dispute complaint out of court with the assistance of an impartial dispute-resolution body. Examples of ADR include: mediation, conciliation, arbitration, and complaints boards.

([14]) Rule of Law Report 2022, European Commission.

KEY FINDINGS

Malta's RRP includes measures to address a series of its structural challenges through:

- strengthening judicial independence, strengthening the police and public-prosecutor services, and improving the anti-corruption and anti-money-laundering frameworks;
- reducing the high shares of early school leavers and low-skilled adults and increasing the quality, labour market relevance and inclusiveness of the education system;
- strengthening the digitalisation of the public sector;
- fostering the resilience of the health system;
- alleviating traffic congestion, improving the quality of public transport, improving infrastructure for cycling and walking, and electrifying road transport;
- improving the management of construction and demolition waste and reorganising waste collection;
- renovating commercial and public buildings, including one hospital and two schools.

Malta should continue the steady implementation of its recovery and resilience plan and swiftly finalise the addendum, including the REPowerEU chapter, with a view to rapidly initiating its implementation.

Beyond the reforms and investments in the RRP, Malta would benefit from:

- improving energy independence, reducing greenhouse-gas emissions (in particular from transport and by improving energy efficiency in buildings), increasing the share of renewable energy, and modernising the power grid;
- curbing the over-extraction of groundwater, increasing rainwater harvesting, increasing waste prevention, increasing the recycling of municipal waste, and improving biodiversity;
- addressing the remaining features of the tax system that may facilitate aggressive tax planning;
- strengthening the fiscal sustainability of the pension, health, and long-term care systems, while maintaining their adequacy;
- fostering research and innovation by increasing investments and improving human resource capacity;
- promoting skills needed for the green transition;
- strengthening targeted policies to help women and people with disabilities to find work;
- ensuring adequate and effective social protection for disadvantaged groups and fostering the social inclusion of children;
- making the justice system more efficient to reduce the length of court proceedings.

ANNEXES

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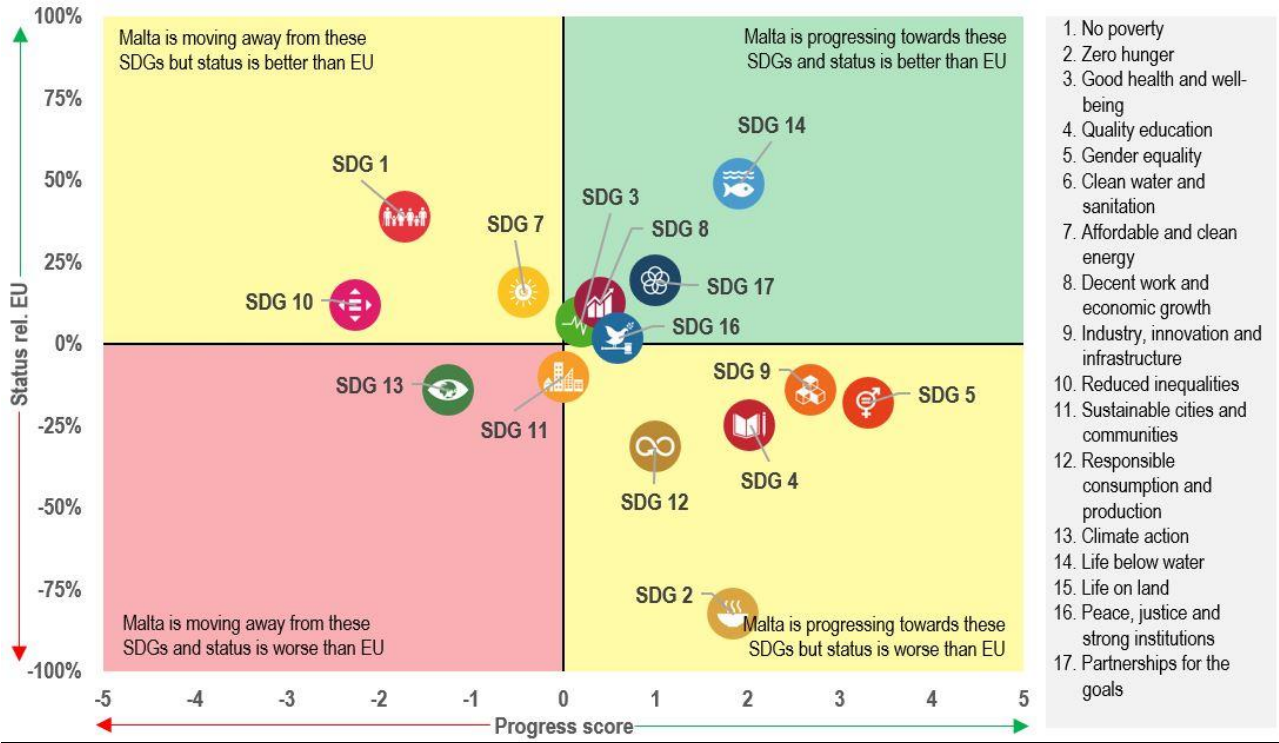
ANNEX 1: SUSTAINABLE DEVELOPMENT GOALS

This Annex assesses Malta's progress on the Sustainable Development Goals (SDGs) along the four dimensions of competitive sustainability. The 17 SDGs and their related indicators provide a policy framework under the UN's 2030 Agenda for Sustainable Development. The aim is to end all forms of poverty, fight inequalities and tackle climate change and the environmental crisis, while ensuring that no one is left behind. The EU and its Member States are committed to this historic global framework agreement and to playing an active role in maximising progress on the SDGs. The graph below is based on the EU SDG indicator set developed to monitor progress on the SDGs in an EU context.

While Malta is improving on some of the SDG indicators related to *environmental sustainability* (SDGs 2, 9, 11, 12), it is moving away from SDG 7 (Affordable and clean energy). Malta performs well on SDG 14 (Life below water). However, it needs to catch up with the EU average on SDG 13 (Climate action). Although Malta's energy consumption per capita is below the EU average, the share of renewable energy in gross final energy consumption (12.2%) is far below the EU average (21.8% in 2021). As for affordable energy (SDG 7), the percentage of the Maltese population unable to keep their homes adequately warm is higher (7.8% in 2021) than the EU average (6.9%) and has deteriorated since 2016 (6.6%). Waste generation per capita was significantly higher than the EU average in 2020 (5.823 kg vs. 4.813 kg) and the rate of recycling for municipal waste is less than a third of the EU average (13.6% against 49.6% for the EU in 2021). Various measures in the recovery and resilience plan (RRP) aim to contribute to better energy efficiency, clean energy, sustainable transport, and a circular economy. Examples include energy-efficiency renovations of private and public buildings, renewable energy investments in roads and public

Graph A1.1: **Progress towards the SDGs in Malta in the last 5 years**



For detailed datasets on the various SDGs, see the annual Eurostat report 'Sustainable development in the European Union': for details on extensive country-specific data on the short-term progress of Member States: Key findings - Sustainable development indicators - Eurostat (europa.eu). The status of each SDG in a country is the aggregation of all the indicators for the specific goal compared to the EU average. A high status does not mean that a country is close to reaching a specific SDG, but signals that it is doing better than the EU on average. The progress score is an absolute measure based on the indicator trends over the past 5 years. The calculation does not take into account any target values as most EU policy targets are only valid for the aggregate EU level. Depending on data availability for each goal, not all 17 SDGs are shown for each country.

Source: Eurostat, latest update of early April 2023, except for the EU Labour Force Survey (LFS) indicators released on 27 April 2023. Data mainly refer to 2016-2021 or 2017-2022.

spaces, measures to promote sustainable mobility, and measures to improve waste management and increase recycling and reuse, including of construction and demolition waste.

While on most SDG indicators related to *fairness* Malta performs well (SDGs 3 and 8) or is improving (SDGs 4 and 5), it is moving away from SDGs on addressing poverty and inequalities (SDGs 1 and 10). Malta performs well on health-related indicators (SDG 3) with very low self-reported unmet medical needs (0.1% in 2021 against 2% for the EU). On SDG 4 (Quality education), Malta has significantly decreased its share of early leavers from education and training, which fell from 14% (2017) to 10.1% in 2022, although it remains higher than the EU average (9.6%). There is still room for improvement in increasing basic skills levels (35.9% of low-achieving 15-year-olds in reading literacy against 22.5% for the EU in the OECD Programme for International Student Assessment (PISA) 2018). The share of children over 3 years old in early childhood education considerably decreased from 96.9% in 2015 to 89.1% in 2020 and is now below the EU average (93%). Furthermore, the gender employment gap (SDG 5) is particularly wide in Malta (13.1 percentage points (pps) against 10.7 pps for the EU in 2022). Reforms and investments in the Maltese RRP help strengthen measures to prevent early school leaving and high-quality inclusive education, expanding opportunities for upskilling and reskilling for all adults, and in particular for people who are low-skilled, as well as promoting female labour market participation.

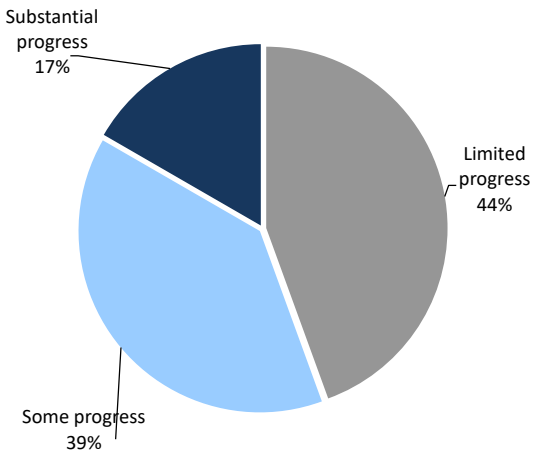
On SDG indicators related to *productivity,* Malta performs well (SDG 8) or is improving (SDGs 4 and 9). Malta steadily increased its tertiary education rate from 34.9% in 2017 to 42.4% in 2022 (against 42% for the EU). In addition, both adult participation in learning (12.8%) and the percentage of adults with at least basic digital skills (SDG 4; 61.2%) are above the EU average (11.9% and 53.9%, respectively). However, regarding innovation (SDG 9), the Maltese research and innovation system suffers from underinvestment as shown by the indicator on gross domestic expenditure on R&D (0.64% of GDP in 2021 compared to the EU average of 2.26%) and the share of R&D personnel (0.69% of the active population in 2021 compared to the EU average of 1.5%). The RRP targets bottlenecks regarding digitalisation to improve progress on meeting SDG 9 (Industry, innovation and infrastructure).

Malta performs well on SDG indicators related to *macroeconomic stability* (SDGs 8 and 16). Malta further increased the employment rate from 73% in 2017 to 81.1% in 2022, which is very high compared to the EU average (74.6% in 2022). The share of young people not in education, employment or training is, with 7.2% in 2022, below the EU average (11.7%) and long-term unemployment is very low (1% against 2.4% for the EU in 2022). Furthermore, Malta is above the EU average and further improving as regards SDG 16 (Peace, justice, and strong institutions). However, Malta scores worse than the EU as regards the Corruption Perceptions Index (51 compared to 64 in the EU, with 0 being highly corrupt and 100 being very clean). The RRP includes reforms to address several long-standing institutional challenges in the areas of justice as well as the fight against corruption and money laundering.

As the SDGs form an overarching framework, any links to relevant SDGs are either explained or depicted with icons in the other Annexes.

The Commission has assessed the 2019-2022 country-specific recommendations (CSRs) ([29]) addressed to Malta as part of the European Semester. These recommendations concern a wide range of policy areas that are related to 13 of the 17 Sustainable Development Goals (see Annexes 1 and 3). The assessment considers the policy action taken by Malta to date ([30]) and the commitments in its recovery and resilience plan (RRP) ([31]). At this stage of RRP implementation, 56% of the CSRs focusing on structural issues from 2019-2022 have recorded at least 'some progress', while 44% recorded 'limited progress' (see Graph A2.1). As the RRP is implemented further, considerable progress in addressing structural CSRs is expected in the years to come.

Graph A2.1: **Malta's progress on the 2019-2022 CSRs (2023 European Semester)**



Source: European Commission.

([29]) 2022 CSRs: EUR-Lex - 32022H0901(18) - EN - EUR-Lex (europa.eu)

2021 CSRs: EUR-Lex - 32021H0729(18) - EN - EUR-Lex (europa.eu)

2020 CSRs: EUR-Lex - 32020H0826(18) - EN - EUR-Lex (europa.eu)
2019 CSRs: EUR-Lex - 32019H0905(18) - EN - EUR-Lex (europa.eu)

([30]) Including policy action reported in the national reform programme and in Recovery and Resilience Facility (RRF) reporting (twice a year reporting on progress in implementing milestones and targets and resulting from the payment requests assessment).

([31]) Member States were asked to effectively address all or a significant subset of the relevant country-specific recommendations issued by the Council in 2019 and 2020 in their RRPs. The CSR assessment presented here considers the degree of implementation of the measures included in the RRP and of those carried out outside of the RRP at the time of assessment. Measures laid down in the Annex of the adopted Council Implementing Decision on approving the assessment of the RRP, which are not yet adopted or implemented but considered credibly announced, in line with the CSR assessment methodology, warrant 'limited progress'. Once implemented, these measures can lead to 'some/substantial progress or full implementation', depending on their relevance.

Table A2.1:**Summary table on 2019-2022 CSRs**

Malta	Assessment in May 2023*	RRP coverage of CSRs until 2026**	Relevant SDGs
2019 CSR 1	**Limited progress**		
Ensure the fiscal sustainability of the healthcare and pension systems, including by restricting early retirement and adjusting the statutory retirement age in view of expected gains in life expectancy.	Limited progress	Relevant RRP measures planned as of 2022 to 2025.	SDG 3,8
2019 CSR 2	**Some progress**		
Address features of the tax system that may facilitate aggressive tax planning by individuals and multinationals, in particular by means of outbound payments.	Limited progress	Relevant RRP measures planned as of 2022 to 2024.	SDG 8, 16
Strengthen the overall governance framework, including by continuing efforts to detect and prosecute corruption.	Some progress	Relevant RRP measures planned as of 2020 to 2026.	SDG 16
Continue the ongoing progress made on strengthening the anti-money-laundering framework, in particular with regard to enforcements.	Substantial progress	Relevant RRP measures planned as of 2022 to 2023.	SDG 8, 16
Strengthen the independence of the judiciary, in particular the safeguards for judicial appointments and dismissals, and establish a separate prosecution service.	Some progress	Relevant RRP measures planned as of 2021 to 2026.	SDG 16
2019 CSR 3	**Some progress**		
Focus investment-related economic policy on research and innovation,	Limited progress	Relevant RRP measures planned as of 2022 to 2026.	SDG 9
natural resources management,	Limited progress	Relevant RRP measures planned as of 2021 to 2025.	SDG 6, 12, 15
resource and energy efficiency,	Some progress	Relevant RRP measures planned as of 2021 to 2026.	SDG 7, 9, 13
sustainable transport, reducing traffic congestion and	Some progress	Relevant RRP measures planned as of 2021 to 2025.	SDG 11
inclusive education and training.	Some progress	Relevant RRP measures planned as of 2021 to 2025.	SDG 4, 8, 10
2020 CSR 1	**Some progress**		
Take all necessary measures, in line with the general escape clause of the Stability and Growth Pact, to effectively address the COVID-19 pandemic, sustain the economy and support the ensuing recovery. When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment.	Not relevant anymore	Not applicable	SDG 8, 16
Strengthen the resilience of the health system with regard to the health workforce, critical medical products and primary care.	Some progress	Relevant RRP measures planned as of 2021 to 2026.	SDG 3
2020 CSR 2	**Limited progress**		
Consolidate short-time work arrangements and ensure the adequacy of unemployment protection for all workers.	Some progress	Relevant RRP measures planned as of 2022.	SDG 1, 2, 8, 10
Strengthen the quality and inclusiveness of education and skills development.	Limited progress	Relevant RRP measures planned as of 2021 to 2025.	SDG 4, 8, 10
2020 CSR 3	**Some progress**		
Ensure effective implementation of liquidity support to affected businesses, including the self-employed.	Substantial progress	Not applicable	SDG 8, 9
Front-load mature public investment projects	Substantial progress	Not applicable	SDG 8, 16
and promote private investment to foster the economic recovery.	Some progress	Not applicable	SDG 8, 9
Focus investment on the green and digital transition, in particular on clean and efficient production and use of energy,	Some progress	Relevant RRP measures planned as of 2021 to 2026.	SDG 7, 9, 13
waste management,	Some progress	Relevant RRP measures planned as of 2021 to 2025.	SDG 11
research and innovation.	Limited progress	Relevant RRP measures planned as of 2022 to 2026.	SDG 6, 12, 15
as well as reinforced digital infrastructure to ensure the provision of essential services.	Limited progress	Relevant RRP measures planned as of 2021 to 2026.	SDG 9
2020 CSR 4	**Some progress**		
Complete reforms addressing current shortcomings in institutional capacity and governance to enhance judicial independence.	Some progress	Relevant RRP measures planned as of 2020 to 2026.	SDG 16
Continue efforts to adequately assess and mitigate money-laundering risks and to ensure effective enforcement of the anti-money-laundering framework.	Substantial progress	Relevant RRP measures planned as of 2022 to 2023.	SDG 8, 16
Step up action to address features of the tax system that facilitate aggressive tax planning by individuals and multinationals.	Limited progress	Relevant RRP measures planned as of 2022 to 2024.	SDG 8, 16

(Continued on the next page)

Table (continued)

2021 CSR 1	**Some progress**		
In 2022, maintain a supportive fiscal stance, including the impulse provided by the Recovery and Resilience Facility, and preserve nationally financed investment.	Substantial progress	Not applicable	SDG 8, 16
When economic conditions allow, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions and ensuring fiscal sustainability in the medium term.	Some progress	Not applicable	SDG 8, 16
At the same time, enhance investment to boost growth potential. Pay particular attention to the composition of public finances, on both the revenue and expenditure sides of the national budget, and to the quality of budgetary measures in order to ensure a sustainable and inclusive recovery. Prioritise sustainable and growth-enhancing investment, in particular investment supporting the green and digital transition.	Some progress	Not applicable	SDG 8, 16
Give priority to fiscal structural reforms that will help provide financing for public policy priorities and contribute to the long-term sustainability of public finances, including, where relevant, by strengthening the coverage, adequacy and sustainability of health and social protection systems for all.	Limited progress	Not applicable	SDG 8, 16
2022 CSR 1	**Some progress**		
In 2023, ensure that the growth of nationally financed primary current expenditure is in line with an overall neutral policy stance, taking into account continued temporary and targeted support to households and firms most vulnerable to energy price hikes and to people fleeing Ukraine. Stand ready to adjust current spending to the evolving situation.	Substantial progress	Not applicable	SDG 8, 16
Expand public investment for the green and digital transitions, and for energy security taking into account the REPowerEU initiative, including by making use of the Recovery and Resilience Facility and other Union funds.	Limited progress	Not applicable	SDG 8, 16
For the period beyond 2023, pursue a fiscal policy aimed at achieving prudent medium-term fiscal positions.	Some progress	Not applicable	SDG 8, 16
2022 CSR 2			
Proceed with the implementation of its recovery and resilience plan, in line with the milestones and targets included in the Council Implementing Decision of 5 October 2021.	RRP implementation is monitored by assessing RRP payment requests and analysing reports published twice a year on the achievement of the milestones and targets. These are to be reflected in the country reports.		
Submit the 2021-2027 cohesion policy programming documents with a view to finalising their negotiations with the Commission and subsequently starting their implementation.	Progress on the cohesion policy programming documents is monitored under the EU cohesion policy.		
2022 CSR 3	**Limited progress**		
Take action to effectively address features of the tax system that may facilitate aggressive tax planning by individuals and multinational companies, including by ensuring sufficient taxation of outbound payments of interests, royalties, and dividends, and amending the rules for non-domiciled companies.	Limited progress		SDG 8, 16
2022 CSR 4	**Limited progress**		
Reduce overall reliance on fossil fuels.	Some Progress		SDG 7, 9, 13
Accelerate the deployment of renewables, promoting and enabling investments in wind and solar energy, including in floating offshore energy,	Limited Progress		SDG 7, 9, 13
further upgrading Malta's electricity transmission and distribution grids, and creating incentives for electricity storage to supply firm, flexible and fast-responding energy.	Limited Progress		SDG 7, 9, 13
Reduce energy demand through improved energy efficiency, particularly in residential buildings.	Limited Progress		SDG 7
Reduce emissions from road transport by addressing traffic congestion through improved service quality in public transport, intelligent transport systems and investing in soft mobility infrastructure.	Limited Progress		SDG 11

Note:

* See footnote ([31]).

** RRP measures included in this table contribute to the implementation of CSRs. Nevertheless, additional measures outside the RRP are necessary to fully implement CSRs and address their underlying challenges. Measures indicated as 'being implemented' are only those included in the RRF payment requests assessed by the European Commission.

Source: European Commission.

The Recovery and Resilience Facility (RRF) is the centrepiece of the EU's efforts to help it recover from the COVID-19 pandemic, speed up the twin transition and strengthen resilience against future shocks. The RRF also contributes to implementation of the SDGs and helps to address the Country Specific Recommendations (see Annex 4). Malta submitted its initial recovery and resilience plan (RRP) on 13 July 2021. The Commission's positive assessment on 16 September 2021 and Council's approval on 5 October 2021 paved the way for disbursing EUR 316 million in grants under the RRF over the 2021-2026 period.

Table A3.1:**Key elements of the Maltese RRP('s)**

	Current RRP
Scope	Initial plan
CID adoption date	5 October 2021
Total allocation	EUR 316 million in grants (2.15% of 2021 GDP)
Investments and reforms	17 investments and 30 reforms
Total number of milestones and targets	138

Source: European Commission

Since the entry into force of the RRF Regulation and the assessment of the national recovery and resilience plans, geopolitical and economic developments have caused major disruptions across the EU. In order to effectively address these disruptions, the (adjusted) RRF Regulation allows Member States to amend their recovery and resilience plan for a variety of reasons. In line with article 11(2) of the RRF, the maximum financial contribution for Malta was moreover updated on 30 June 2022 to an amount of EUR 258 million in grants.

In this context, Malta submitted an amended RRP to the Commission on 26 April 2023 to take account of the revised maximum financial contribution, in line with Article 18 of the RRF Regulation and due to objective circumstances that make it no longer possible to achieve certain milestones and targets in the RRP in line with Article 21 of the RRF Regulation. To cater for the revised maximum financial contribution, Malta has proposed to reduce the amount of one investment and to remove three investments included in the initial plan related to the ferry landing site, the digitalisation of the outpatient facility in the main hospital, and the Institute for Tourism Studies campus. In line with Article 21 of the RRF Regulation, two investments related to the renovation of private sector buildings and the uptake of electric vehicles are modified because of delays due to objective circumstances (e.g., in light of supply shortages).

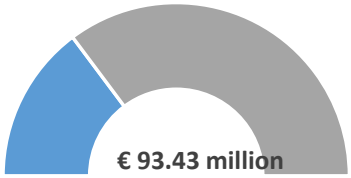
The revised RRP includes a new REPowerEU chapter with additional reforms and investments. These include a reform to accelerate the permitting of renewable energy projects and to introduce an obligation to install rooftop solar panels on certain new buildings. The revised RRP also includes an investment targeted at upgrading and expanding the capacity of Malta's electricity grid, including battery storage solutions. This is part of the EU's efforts to respond to the economic hardship and global energy market disruptions caused by Russia's invasion of Ukraine.

Malta's progress in implementing its plan is published in the Recovery and Resilience Scoreboard ([18]). The Scoreboard also gives an overview of the progress made in implementing the RRF as a whole, in a transparent manner. The graphs in this Annex show the current state of play of the milestones and targets to be reached by Malta and subsequently assessed as satisfactorily fulfilled by the Commission.

EUR 93,43 million has so far been disbursed to Malta under the RRF. The Commission disbursed EUR 41.1 million to Malta in pre-financing on 17 December 2021, equivalent to 13% of the financial allocation.

([18]) https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/country_overview.html

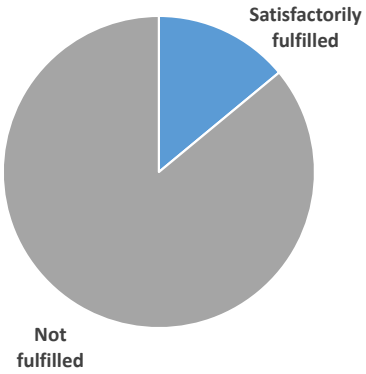
Graph A3.1: **Total grants disbursed under the RRF**



Note: This graph displays the amount of grants disbursed so far under the RRF. Grants are non-repayable financial contributions. The total amount of grants given to each Member State is determined by an allocation key and the total estimated cost of the respective RRP.
Source: Recovery and Resilience Scoreboard https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html

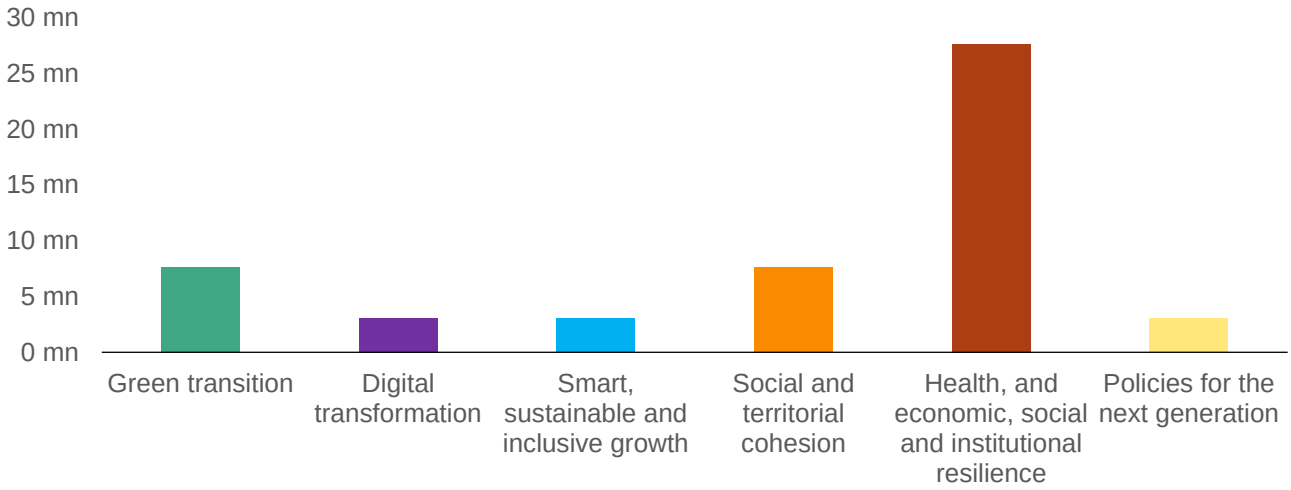
Malta's first payment request was positively assessed by the Commission, taking into account the opinion of the Economic and Financial Committee, leading to EUR 52.3 million being disbursed in financial support (net of pre-financing) on 8 March 2023. The related 19 milestones and targets cover important measures such as the adoption of a strategy to reduce waste through recycling in the construction sector, the establishment of office facilities to enable civil servants to work remotely across the country, reforms to boost industrial research and investments, a national anti-fraud and corruption strategy and reforms to digitalise the justice system.

Graph A3.2: **Fulfilment status of milestones and targets**



Note: This graph displays the share of satisfactorily fulfilled milestones and targets. A milestone or target is satisfactorily fulfilled once a Member State has provided evidence to the Commission that it has reached the milestone or target and the Commission has assessed it positively in an implementing decision.
Source: Recovery and Resilience Scoreboard https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html

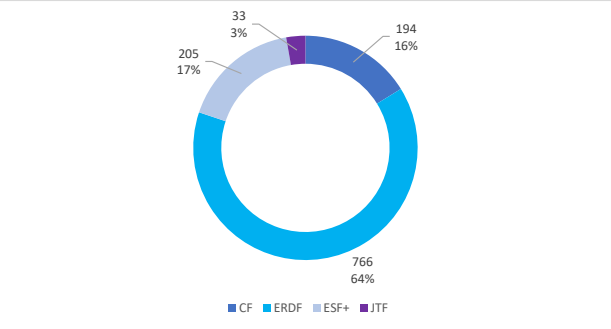
Graph A3.3: **Disbursements per pillar**



Note: Each disbursement reflects progress in the implementation of the RRF, across the six policy pillars. This graph displays how disbursements under the RRF (excluding pre-financing) relate to the pillars. The amounts were calculated by linking the milestones and targets covered by a given disbursement to the pillar tagging (primary and secondary) of their respective measures.
Source: Recovery and Resilience Scoreboard: https://ec.europa.eu/economy_finance/recovery-and-resilience-scoreboard/index.html

The EU budget of over EUR 1.2 trillion for 2021-2027 is geared towards implementing the EU's main priorities. Cohesion policy investment amounts to EUR 392 billion across the EU and represents almost a third of the overall EU budget, including around EUR 48 billion invested in line with REPowerEU objectives.

Graph A4.1: **Cohesion policy funds 2021-2027 in Malta: budget by fund**

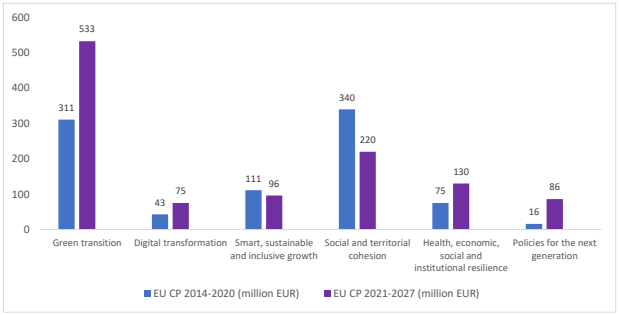


(1) million EUR in current prices, % of total; (total amount including EU and national co-financing)
Source: European Commission, Cohesion Open Data

In 2021-2027, in Malta, cohesion policy funds ([19]) **will invest EUR 533 million in the green transition and EUR 75 million in the digital transformation as part of the country's total allocation of EUR 1.2 billion.** In particular, the European Regional Development Fund (ERDF) will strengthen R&I, digitalisation and SMEs' competitiveness. It will also improve business infrastructure for over 600 firms and provide incubation services for 50 companies. 40% of investments in the green transition will go towards energy, contributing to the country's energy security and stability. A notable project is the development of a second electricity interconnector to Italy in the form of a high-voltage cable running under the sea. The Just Transition Fund will focus on the decarbonisation of the maritime sector, helping to alleviate the social and economic consequences of the transition to climate neutrality. Actions will aim to improve the health and wellbeing of the communities living in the affected areas. By providing an environmentally-friendly alternative for ships while berthing, this investment will help Malta reduce its greenhouse gas emissions. The European Social Fund Plus (ESF+) will enhance the quality and inclusiveness of education, training, and lifelong learning with EUR 53.5 million, and develop of digital skills with EUR 13.5 million. This funding will help reduce early school leaving and address skills shortages through innovative digital teaching and learning tools, inclusive education for vulnerable children, and education and lifelong learning in key areas, including the green and digital economy.

Of these investments, EUR 220 million will be invested in line with REPowerEU objectives. This is on top of the EUR 26 million dedicated to REPowerEU under the 2014-2020 budget. EUR 10 million (2021-2027) and EUR 12 million (2014-2020) is for improving energy efficiency; EUR 10 million (2021-2027) and EUR 14 million (2014-2020) is for renewable energy and low-carbon R&I; and EUR 200 million (2021-2027) is for smart energy systems.

Graph A4.2: **Synergies between cohesion policy funds and the RRF with its six pillars in Malta**



(1) million EUR in current prices (CP funds: total amount, including EU and national co-financing)
Source: European Commission

In 2014-2020, cohesion policy funds made EUR 0.9 billion available to Malta ([20]) with an absorption of 75% ([21]). Including national financing, the total investment amounts to EUR 1 billion - representing around 0.7% of GDP for 2014-2020.

Malta continues to benefit from cohesion policy flexibility to support recovery, step up convergence and provide vital support to

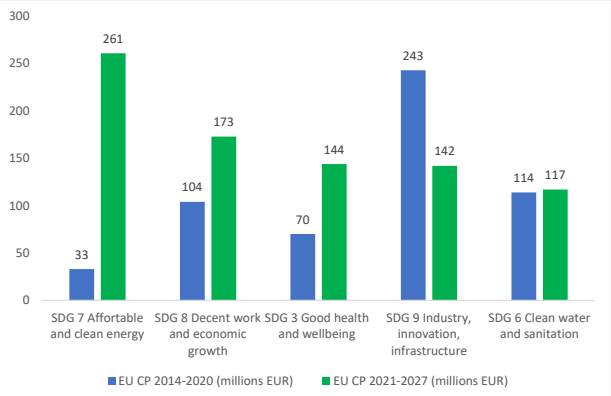
([19]) European Regional Development Fund (ERDF), European Social Fund+ (ESF+), Just Transition Fund (JTF). Interreg programmes are excluded. Total amount includes national and EU contributions. Data source: Cohesion Open Data.

([20]) Cohesion policy funds include the ERDF, CF, ESF and the Youth Employment Initiative (YEI). ETC programmes are excluded here. According to the 'N+3 rule', the funds committed for 2014-2020 must be spent by 2023. REACT-EU is included in all figures. Data source: Cohesion Open Data.

([21]) 2014-2020 Cohesion policy EU payments by MS is updated daily on Cohesion Open Data.

regions following the COVID-19 pandemic. The Recovery Assistance for Cohesion and the Territories of Europe instrument (REACT-EU) ([22]) under NextGenerationEU provides EUR 122 million on top of the 2014-2020 cohesion policy allocation for Malta. REACT-EU will finance investments in healthcare infrastructure, equipment, technologies and services for improving healthcare resilience. With SAFE (Supporting Affordable Energy), the 2014-2020 cohesion policy funds may also be mobilised by Malta to support vulnerable households, jobs and companies particularly affected by high energy prices.

Graph A4.3: **Cohesion policy funds contribution to the SDGs in 2014-2020 and 2021-2027 in Malta**



(1) 5 largest contributions to SDGs in million (EUR) current prices

Source: European Commission

In both the 2014-2020 and 2021-2027 periods, cohesion policy funds have contributed substantially to the Sustainable Development Goals' (SDGs). These funds support 11 of the 17 SDGs, notably SDG 7 'affordable and clean energy' and SDG 8 'decent work and economic growth' ([23]).

Other EU funds make significant resources available for Malta. The common agricultural policy (CAP) made EUR 149 million available in 2014-2022, and will continue to support Malta with EUR 122 million in 2023-2027. The two CAP Funds (European Agricultural Guarantee Fund and European Agricultural Fund for Rural Development), contribute to the European Green Deal while ensuring long-term food security. They promote social, environmental and economic sustainability and innovation in agriculture and rural areas, in coordination with other EU Funds. The European Maritime and Fisheries Fund made EUR 23 million available to Malta in 2014-2020 and the European Maritime, Fisheries and Aquaculture Fund will make available EUR 22 million in 2021-2027.

Malta also benefits from other EU programmes, notably the Connecting Europe Facility, which under CEF 2 (2021-2027) has so far allocated EU funding of EUR 21.76 million to one specific project on strategic transport networks. Similarly, Horizon Europe has so far allocated nearly EUR 19 million to Maltese R&I actors, while Horizon 2020 earmarked EUR 37 million. The Public Sector Loan Facility established under the Just Transition Mechanism makes EUR 1.8 million of grant support available in 2021-2027, which will be combined with EIB loans.

Malta received support under the European instrument for temporary support to mitigate unemployment risks in an emergency (SURE) to finance similar measures to short-time work schemes to mitigate the impact of COVID-19. The Council granted financial assistance to Malta of EUR 420 million in loans, which supported around 35% of workers and 42% of firms in 2020, and around 35% of workers and firms in 2021.

The Technical Support Instrument (TSI) supports Malta in designing and implementing growth-enhancing reforms, including the implementation of its recovery and resilience plan (RRP). Malta has received significant support since 2017, including for: the implementation of the Directive on Administrative Cooperation through measures targeting the more efficient use of tax data, the design of a sustainable aquaculture strategy, and the development of a digital strategy for the justice sector ([24]).

([22]) REACT-EU allocation on Cohesion Open Data.

([23]) Other EU funds contribute to the implementation of the SDGs. In 2014-2022, this includes both the European Agricultural Fund for Rural Development (EARDF) and the European Maritime and Fisheries Fund (EMFF).

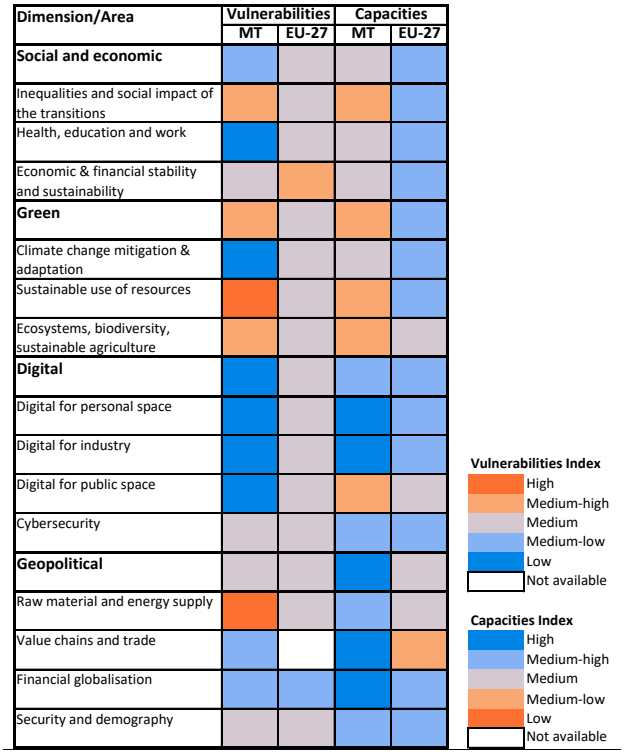
([24]) Country factsheets on reform support are available here.

This Annex illustrates Malta's relative resilience capacities and vulnerabilities using the Commission's resilience dashboards (RDB) ([25]). Comprising a set of 124 quantitative indicators, the RDB provide broad indications of Member States' ability to make progress across four interrelated dimensions: social and economic, green, digital, and geopolitical. The indicators show vulnerabilities ([26]) and capacities ([27]) that can become increasingly relevant, both to navigate ongoing transitions and to cope with potential future shocks. To this end, the RDB help to identify areas that need further efforts to build stronger and more resilient economies and societies. They are summarised in Table A5.1 as synthetic resilience indices, which illustrate the overall relative situation for each of the four dimensions and their underlying areas for Malta and the EU-27 ([28]).

According to the set of resilience indicators under the RDB, Malta generally displays a similar level of vulnerabilities compared to the EU average. Malta shows medium-high vulnerabilities in the green dimension of the RDB, medium vulnerabilities in the geopolitical dimension, and medium-low and low vulnerabilities in the social and economic dimension, respectively the digital dimension. It has higher vulnerabilities than the EU average in the areas of 'raw material and energy supply' and 'sustainable use of resources', among others. Malta has low vulnerabilities in relation to 'health, education and work', 'climate change mitigation and adaptation', and 'digitalisation for personal space, industry and public space'.

Compared to the EU average, Malta shows a slightly lower level of capacities across all RDB indicators. It has overall medium-low resilience capacities in the green dimension, medium capacities in the social and economic dimension, and medium-high and high capacities in the digital and geopolitical dimensions. Malta shows stronger capacities than the EU average in the areas of 'value chains and trade', 'financial globalisation' and 'digitalisation for industry and for personal space', among others. Compared to the EU, there is room for improving capacities in the areas 'sustainable use of resources', 'inequalities and social impact of the transitions', 'ecosystems, biodiversity, sustainable agriculture' and 'digitalisation for the public space'.

Table A5.1: **Resilience indices summarising the situation across RDB dimensions and areas**



Data are for 2021, and EU-27 refers to the value for the EU as a whole. Data underlying EU-27 vulnerabilities in the area 'value chains and trade' are not available as they comprise partner concentration measures that are not comparable with Member States' level values.

Source: JRC Resilience Dashboards - European Commission

([25]) For details see https://ec.europa.eu/info/strategy/strategic-planning/strategic-foresight/2020-strategic-foresight-report/resilience-dashboards_en; see also 2020 Strategic Foresight Report (COM(2020) 493).

([26]) Vulnerabilities describe features that can exacerbate the negative impact of crises and transitions, or obstacles that may hinder the achievement of long-term strategic goals.

([27]) Capacities refer to enablers or abilities to cope with crises and structural changes and to manage the transitions.

([28]) This Annex is linked to Annex 1 on SDGs, Annex 6 on the green deal, Annex 8 on the fair transition to climate neutrality, Annex 9 on resource productivity, efficiency and circularity, Annex 10 on the digital transition and Annex 14 on the European pillar of social rights.

Malta's green transition requires continued action on several aspects including renewable energy and energy efficiency, sustainable transport, and water and waste management. Implementation of the European Green Deal is underway in Malta; this Annex provides a snapshot of the key aspects involved ([29]).

Malta has not yet identified measures it needs to contain greenhouse gas emissions in the effort sharing sectors ([30]). Data for 2021 on greenhouse gas emissions in these sectors are expected to show Malta generated considerably less than its annual emission allocations ([31]). Current policies in Malta are expected to increase greenhouse gas emissions by 50% relative to 2005 levels in 2030, while its effort sharing target requires it to reduce emissions by 19% in 2030 ([32]). In its recovery and resilience plan, Malta has allocated 53.8 % of its Recovery and Resilience Facility grants to key reforms and investments to attain climate objectives ([33]).

Graph A6.1: **Thematic – greenhouse gas emissions from the effort sharing sectors in Mt CO2eq, 2005-2021**

Source: European Environmental Agency.

Malta has potential to boost the capacity of its land use sector to achieve net carbon removals. For 2030, Malta's target for net removals by the land use, land use change and forestry sector (LULUCF) implies net removals of 2 $ktCO_2eq$ (see Table A6.5). ([34]) Net removals have fallen since 2016, and then partially recovering in 2021.

Fossil fuels still play a strong role in Malta's energy mix. In 2021, fossil fuels provided 92% of the energy mix, of which natural gas provided 42% and 50% came from oil and petroleum products. Renewable sources accounted for 8%. Fossil fuels also made up the bulk of Malta's electricity mix in 2021 with gas providing 86%, oil and petroleum products providing 2% and renewables providing 12%. Malta´s target of 11.5% of share of energy from renewable sources in gross final energy consumption by 2030 included in the NECP was considered unambitious in the 2020 assessment by the Commission. Malta will need to substantially strengthen its renewable

([29]) The overview in this Annex is complemented by Annex 7 on energy security and affordability, Annex 8 on the fair transition to climate neutrality and environmental sustainability, Annex 9 on resource productivity, efficiency and circularity, Annex 11 on innovation, and Annex 19 on taxation.

([30]) Member States' greenhouse gas emission targets for 2030 ('effort sharing targets') were increased by Regulation (EU) 2023/857 (the Effort Sharing Regulation) amending Regulation (EU) 2018/842, aligning the action in the concerned sectors with the objective to reach EU-level, economy-wide greenhouse gas emission reductions of at least 55% relative to 1990 levels. The Regulation sets national targets for sectors outside the current EU Emissions Trading System, notably: buildings (heating and cooling), road transport, agriculture, waste, and small industry. Emissions covered by the EU ETS and the Effort Sharing Regulation are complemented by net removals in the land use sector, regulated by Regulation (EU) 2018/841 (the Land Use, Land Use Change and Forestry (LULUCF) Regulation) amended by Regulation (EU) 2023/839.

([31]) Malta's annual emission allocations for 2022 were some 1.2 Mt CO2eq, while its approximated emissions in 2020 were 1.3 Mt (see European Commission, *Accelerating the transition to climate neutrality for Europe's security and prosperity: EU Climate Action Progress Report 2022*, SWD(2022)343).

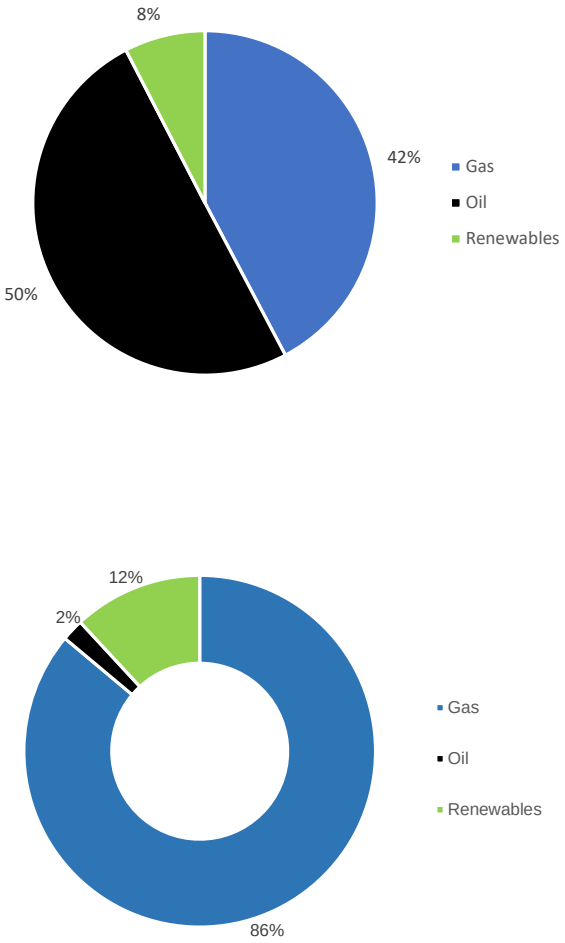
([32]) See the information on the distance to the 2030 climate policy target in Graph A6.1. Existing and additional measures as of 15 March 2021. In late 2021, Malta adopted a low carbon development strategy, aimed to achieve emission reductions in line with its effort sharing target.

([33]) For example, milestones and reforms that aim to promote climate neutrality (component 1) include projects on building stock renovation, energy efficiency and renewable energy. Component 2 on sustainable and decarbonised transport has projects on the promotion of clean and multimodal public transport and improving public road transport and includes the adoption and implementation of measures from the Sustainable Urban Mobility Plan (SUMP) for the Valletta Region.

([34]) This value is indicative and will be updated in 2025 (as mandated by Regulation (EU) 2023/839).

energy target in the updated NECP to reflect the more ambitious EU climate and energy targets in the Fit for 55 Package and in the REPowerEU Plan.

Graph A6.2: **Energy mix (top) and Electricity mix (bottom), 2021**



The energy mix is based on gross inland consumption, and excludes heat and electricity. The share of renewables includes biofuels and non-renewable waste.
Source: Eurosta
Source:

Malta has potential to accelerate the roll-out of renewables, especially since the share of renewables in energy consumption is one of the lowest in the EU. The only form of renewable energy in the 12% share in the electricity mix is solar photovoltaic. Malta has no wind electricity generation capacity installed. Neither onshore nor offshore wind energy projects are planned in Malta's national energy and climate plan. Malta's proposed investments in its recovery and resilience plan include EUR 5 million to promote renewable energy generation and use in buildings, roads and public spaces. The plan includes investments in rooftop photovoltaic systems in buildings, roads, footpaths, and other public spaces, supporting the 'power up' flagship initiative. These photovoltaic systems are designed to feed in renewable energy for street lighting, pedestrian crossings, charging points for electric cars and e-bikes, USB charging points, security cameras, Wi-Fi hotspots and other road technologies.

Scaling up actions on energy efficiency will contribute to reducing Malta´s dependency on fossil fuels. In its national energy and climate plan (NECP), Malta's national indicative contribution to the EU's energy efficiency targets towards 2030 is also low compared to the EU's energy efficiency target for 2030. It will need to increase its level of ambition in the updated NECP in line with the EU's higher objectives set in the REPowerEU Plan and the Fit for 55 Package. ([35]) Malta's recovery and resilience plan includes investments in the renovation of a number of public buildings, public schools and hospitals, and the renovation of private buildings. Each renovation is expected to reduce direct and indirect greenhouse gas emissions by at least 30% and yield a reduction of greenhouse gas emissions by limiting the use of electricity from the national grid.

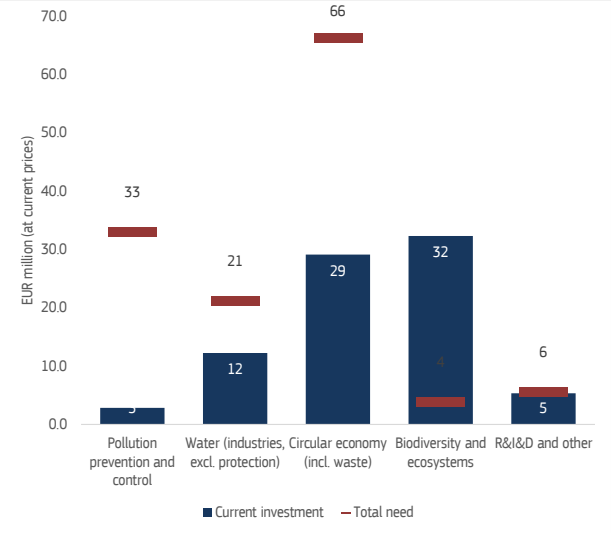
The envisaged ambitious investments and reforms on building renovation have the potential to boost job creation and support the development of green skills in the renovation and construction sector. The investments are complemented by reforms to strengthen the regulatory framework in the building sector and ensure a sufficient and diversified pool of professionals with the requisite expertise (by launching a training and certification programme). The reforms and investments are also complemented by schemes and financial instruments supported by other EU funds that target residential and commercial renovations, given that Malta's recovery and resilience plan does not support the renovation of existing residential building stock.

The move to sustainable mobility remains a significant challenge in Malta. Individual transport (private cars) is the main form of

([35]) After the conclusion of the negotiations for a recast EED, the ambition of both the EU and national targets as well as of the national measures for energy efficiency to meet these targets is expected to increase

transport. Only limited safe and interconnected soft mobility infrastructure exists, and Malta's road network is inefficient. This causes congestion, greenhouse gas emissions, noise, and air pollution. In 2021, domestic transport (without aviation) provided for 42 % of Malta's effort sharing emissions, against the EU average of 36 %. The external costs of transport in Malta are estimated at EUR 400 million or about 3.6% of GDP per year and rising. The share of zero-emission vehicles, at 0.8%, is lower than the EU average (1.2%), and it is increasing very slowly (see Table A6.1). Investments in sustainable transport are a significant part of Malta's recovery and resilience plan including a grant and scrappage scheme encouraging the purchase of zero-emission vehicles in the private sector, renewing the public-sector vehicle fleet with zero-emission electric vehicles, and the purchase of zero-emission electric buses for public transport. The plan sets out reforms designed to improve transport planning, expand the use of public transport, and implement the measures set out in the sustainable urban mobility plan for Valletta. The reforms also include designating regeneration areas and promoting remote working in the public sector. Air pollutant emissions are no longer rising in step with GDP, but NOx and PM10 emissions are still high.

Graph A6.3: **Thematic – environmental investment needs and current investment, p.a. 2014-2020**



Source: European Commission.

Malta would benefit from bridging the investment gap on the circular economy, on preventing and reducing pollution, and on water management. Between 2014 and 2020, Malta's environmental investment needs ([36]) were estimated to be EUR 129.7 million per year, while Malta invested EUR 81.9 million per year, leaving a gap of EUR 47.8 million per year (see Graph A6.3) ([37]). For 2021-2027, Malta needs to meet the needs stemming from the higher ambitions set in the EU's 2030 biodiversity strategy and meet the financing gaps on biodiversity protection and restoration, which are estimated at EUR 25.9 million per year. It needs annual investments of EUR 39 million to reach the air emission-reduction requirements in the National Emission Ceilings Directive, EUR 4.9 million to promote circularity and waste prevention, and EUR 9 million for drinking water and sanitation, over 90% of which is for wastewater.

Climate change poses many threats to Malta, a small island state ([38]). Malta's climate action act from 2015 sets out the obligation to adopt and regularly update a national adaptation strategy. Malta is currently carrying out a vulnerability risk assessment which will identify the key economic sectors that would need adaptation action. ([39]). Of these, water sources and water management are key ([40]); other sectors at risk are infrastructure and transport, land use and

([36]) Environmental objectives include pollution prevention and control, water management and industries, circular economy and waste, biodiversity and ecosystems (European Commission, 2022, Environmental Implementation Review, country report Malta)

([37]) When also accounting for needs estimated at EU level only (e.g. water protection, higher circularity, biodiversity strategy).

([38]) See Malta's low-carbon development strategy, pp. 72 ff. The main climate change-driven threats are higher temperatures, change in precipitation patterns, sea level rise, acidification and warming.

([39]) See Malta's low carbon development strategy (above) and, more recently, the 8th National Communication of Malta to the UNFCCC:.

([40]) Malta lacks rainfall in summer and exploitable surface waters. Groundwater is the only natural freshwater source available all year round, but its quality is being degraded due to nitrate pollution and sea water intrusion. Malta has desalinated sea water to provide drinking water since the 1980s. Also see European Environment Agency, Europe's groundwater - a key resource under pressure, and L. Hartfiel, M. Soupir and R. S. Kanwar, Malta's water scarcity challenges: past, present, and future mitigation strategies for sustainable water supplies, 24 November 2020. In 2018, Malta's rate of soil sealing was 19.4% of its total land area (European Environment Agency, Soil sealing and ecosystem impacts). Malta ranks worst in the EU for land take, with net land take of 485.8 m^2 per km^2 (EU-27 average: 83.8 m^2 /km^2) (European Commission, 2022, Environmental Implementation Review, country report Malta).

buildings, natural ecosystems and agriculture ([41]), fisheries, health and civil protection, and tourism. Malta has planned adaptation measures for these sectors ([42]).

Malta provides fossil fuel and other environmentally harmful subsidies that could be considered for reform, while ensuring food and energy security and mitigating social effects. Fossil fuel subsidies in Malta amounted to EUR 22 million in 2020, a 151% increase since 2015, which puts low carbon alternatives at a disadvantage. Environmentally harmful subsidies have been identified, via an initial assessment, in the agriculture, forestry and fishing, electricity, gas, steam and air conditioning, mining and quarrying, and professional, technical and scientific sectors ([43]). A mapping of all environmentally harmful subsidies by Malta would help prioritise candidates for reform.

([41]) Climate change entails many risks to agriculture and ecosystems. Sea level rise may increase the concentration of salt and negatively affect other soil parameters. Soil erosion reduces carbon stocks and carbon sequestration in soils. Higher temperatures are exacerbating biodiversity loss, ecosystem and habitat loss. The increase in demand for water for agriculture exerts pressure on tight water supply.

([42]) For water management, these measures include surveying the status of rainwater harvesting infrastructure and users; effective enforcement of legislation mandating rainwater capture reservoirs or wells; increasing incentives to help farmers and landowners increase the presence and use of reservoirs; a comprehensive study of the current hydrological cycle monitoring capacity and new hydrological data modelling and management. For agriculture and ecosystems, the measures include promoting the use of EU funds as a complement to national and private-sector funding and initiatives to adopt innovative technologies.

([43]) Fossil fuel figures in EUR of 2021 from the 2022 State of the Energy Union report. Initial assessment of environmentally harmful subsidies done by the Commission in the 2022 toolbox for reforming environmentally harmful subsidies in Europe, using OECD definitions, and based on the following datasets: OECD Agriculture Policy Monitoring and Evaluations; OECD Policy Instruments for the Environment (PINE) Database; OECD Statistical Database for Fossil Fuels Support; IMF country-level energy subsidy estimates. Annex 4 of the toolbox contains detailed examples of subsidies on the candidates for reform.

Table A6.1:**Indicators tracking progress on the European Green Deal from a macroeconomic perspective**

									'Fit for 55'		
			2005	2017	2018	2019	2020	2021	2030 target/value	Distance WEM	Distance WAM
Progress to policy targets	Greenhouse gas emission reductions in effort sharing sectors [1]	Mt CO2eq; %; pp	1.1	28%	24%	28%	17%	-	-19%	-69	-69
	Net carbon removals from LULUCF [2]	kt CO2eq	0	1	0	6	8	1	2	n/a	n/a
			2005	2017	2018	2019	2020	2021	National contribution to 2030 EU target		
	Share of energy from renewable sources in gross final consumption of energy [3]	%	0%	7%	8%	8%	11%	12%	12%		
	Energy efficiency: primary energy consumption [3]	Mtoe	0.9	0.8	0.8	0.9	0.7	0.8	1.1		
	Energy efficiency: final energy consumption [3]	Mtoe	0.5	0.6	0.7	0.7	0.5	0.6	0.8		
			Malta						EU		
			2016	2017	2018	2019	2020	2021	2019	2020	2021
Fiscal and financial indicators	Environmental taxes (% of GDP)	% of GDP	2.6	2.5	2.5	2.4	2.3	1.9	2.35	2.23	2.24
	Environmental taxes (% of total taxation) [4]	% of taxation	8.6	8.4	8.2	8.3	7.7	6.5	5.89	5.57	5.52
	Government expenditure on environmental protection	% of total exp.	2.9	2.8	3.8	3.4	3.1	3.0	1.70	1.61	1.6
	Investment in environmental protection [5]	% of GDP	0.1	0.1	0.2	0.2	-	-	0.4	0.4	0.4
	Fossil fuel subsidies [6]	EUR2021bn	0.0	0.0	0.0	0.0	0.0	-	53.0	50.0	-
	Climate protection gap [7]	score 1-4					2.3	1.4			1.5
Climate	Net greenhouse gas emissions	1990 = 100	91.0	89.0	90.0	96.0	81.0	84.0	76.0	69.0	72.0
	Greenhouse gas emission intensity of the economy	kg/EUR'10	0.25	0.24	0.24	0.24	0.21	-	0.31	0.30	0.26
	Energy intensity of the economy	kgoe/EUR'10	0.08	0.08	0.08	0.08	0.07	-	0.11	0.11	-
Energy	Final energy consumption (FEC)	2015=100	100.0	106.9	113.8	120.7	94.8	101.7	102.9	94.6	-
	FEC in residential building sector	2015=100	97.1	114.1	120.0	130.4	134.5	148.7	101.3	101.3	106.8
	FEC in services building sector	2015=100	97.8	106.1	100.1	106.0	96.8	103.0	100.1	94.4	100.7
Pollution	Smog-precursor emission intensity (to GDP) [8]	tonne/EUR'10	0.9	0.7	0.6	0.6	0.6	-	0.9	0.9	-
	Years of life lost due to air pollution by PM2.5	per 100.000 inh.	412.5	438.4	499.1	465.4	337.8	-	581.6	544.5	-
	Years of life lost due to air pollution by NO_2	per 100.000 inh.	87.0	103.0	32.0	38.5	26.4	-	309.6	218.8	-
	Nitrates in ground water	mg NO3/litre	59.9	60.0	53.4	59.4	59.4	-	21.0	20.8	-
Biodiversity	Land protected areas	% of total	26.6	28.2	-	28.7	28.7	29.0	26.2	26.4	26.4
	Marine protected areas	% of total	4.6	-	-	5.5	-	5.5	10.7	-	12.1
	Organic farming	% of total utilised agricultural area	0.2	0.4	0.4	0.5	0.6	0.6	8.5	9.1	-
			2017	2018	2019	2020	2021	2021	2020	2021	2022
Mobility	Share of zero-emission vehicles [9]	% in new registrations	0.4	1.4	2.3	1.2	1.5	1.9	5.4	8.9	10.7
	Number of AC/DC recharging points (AFIR categorisation)		-	-	-	100	98	97	188626	330028	432518
	Share of electrified railways	%	-	-	-	-	-	-	56.6	n/a	56.6
	Hours of congestion per commuting driver per year		80.5	79.0	83.5	82.2	n/a	n/a	28.7	n/a	n/a

Sources: (1) Historical and projected emissions, as well as Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Decision (for 2020) are measured in global warming potential (GWP) values from the 4th Assessment Report (AR4) of the Intergovernmental Panel on Climate Change (IPCC). Member States' climate policy targets and 2005 base year emissions under the Effort Sharing Regulation (for 2030) are in GWP values from the 5th Assessment Report (AR5). The table above shows the base year emissions 2005 under the Effort Sharing Decision, using AR4 GWP values. Emissions for 2017-2021 are expressed in percentage change from 2005 base year emissions, with AR4 GWP values. 2021 data are preliminary. The table shows the 2030 target under Regulation (EU) 2023/857 that aligns it with the EU's 55% objective, in percentage change from 2005 base year emissions (AR5 GWP). Distance to target is the gap between Member States' 2030 target (with AR5 GWP values) and projected emissions with existing measures (WEM) and with additional measures (WAM) (with AR4 GWP values), in percentage change from the 2005 base year emissions. Due to the difference in global warming potential values, the distance to target is only illustrative. The measures included reflect the state of play as of 15 March 2021.
(2) Net removals are expressed in negative figures, net emissions in positive figures. Reported data are from the 2023 greenhouse gas inventory submission. 2030 value of net greenhouse gas removals as in Regulation (EU) 2023/839 amending Regulation (EU) 2018/841 (LULUCF Regulation) – Annex IIa, kilotons of CO2 equivalent, based on 2020 submissions.
(3) Renewable energy and energy efficiency targets and national contributions are in line with the methodology established under Regulation (EU) 2018/1999 (Governance Regulation).
(4) Percentage of total revenue from taxes and social contributions (excluding imputed social contributions). Revenue from the EU Emissions Trading System is included in environmental tax revenue.
(5) Expenditure on gross fixed capital formation for the production of environmental protection services (abatement and prevention of pollution) covering government, industry, and specialised providers.
(6) European Commission, Study on energy subsidies and other government interventions in the European Union, 2022 edition.
(7) The climate protection gap refers to the share of non-insured economic losses caused by climate-related disasters. This indicator is based on modelling of the current risk from floods, wildfires and windstorms as well as earthquakes, and an estimation of the current insurance penetration rate. The indicator does not provide information on the split between the private/public costs of climate-related disasters. A score of 0 means no protection gap, while a score of 4 corresponds to a very high gap (EIOPA, 2022).
(8) Sulphur oxides (SO2 equivalent), ammonia, particulates < 10 µm, nitrogen oxides in total economy (divided by GDP).
(9) Battery electric vehicles (BEV) and fuel cell electric vehicles (FCEV).

Before Russia invaded Ukraine, Malta had very limited exposure to Russian gas. However, it is highly dependent on imported fossil fuels in general. It uses more gas in electricity production (86%) than any other Member State ([44]). This makes Malta's economy particularly sensitive to global price developments, requiring it to step up efforts on the energy transition. This Annex ([45]) sets out actions carried out by Malta to achieve the REPowerEU objectives, including through the implementation of its recovery and resilience plan, in order to improve energy security and affordability while accelerating the clean energy transition, and contributing to enhancing the EU's competitiveness in the clean energy sector ([46]).

Malta has a high level of gas supply security. Since 2017, liquefied natural gas (LNG) is imported through an LNG facility consisting of an LNG floating storage unit and an onshore regasification unit on the Delimara site ([47]), both operational since 2017. Natural gas in Malta is used solely to generate electricity, with the only source of natural gas being imported LNG. The capacity of the LNG terminal is fully contracted to supply natural gas to two electricity generation plants. No action is required to secure access to additional LNG cargoes, because Malta has an LNG supply contract that runs until August 2026 ([48]). It would typically experience peak energy demand in summer (the cooling season), not winter.

The security of supply of the gas and electricity systems are closely interlinked given Malta's high dependency on gas to produce electricity. It imports approximately 20% of its electricity from Italy, in turn dependent on Russia for 43% of its gas ([49]). The demand for natural gas to generate electricity for the next 4 years is forecast to remain stable. Malta has put some demand reduction measures in place. It has implemented energy saving initiatives in the public sector, energy audits of companies, energy efficiency schemes for industry, and renewable energy schemes for the residential sector. No gas is used in industry, services, or agri-horticultural sectors. Malta has experienced a gas demand increase of about 13% over the period August 2022 – March 2023 when compared to the previous 5-years average ([50]).

Malta is relatively well interconnected to its neighbours in terms of electricity. It has reported progress on studies and permits required to develop the second Malta-Italy electricity interconnector, an investment of EUR 280 million, including a contribution of EUR 165 million from Cohesion Policy, aimed at making Malta's supply more secure while providing spare capacity and resilience so Malta can handle fluctuations in supply from existing and future wind and solar energy sources. It has committed itself to investing EUR 80 million in upgrading its land grid to facilitate the accommodation of additional quantities of renewables. In the 2023 draft budget, EUR 14 million have been earmarked for modernising the electricity grid. Investments in grid modernisation and energy storage solutions are on the horizon. There is room to improve the grids to integrate renewables and make the energy system more efficient to avoid energy losses. On cross-border gas projects, Malta intends to build a hydrogen-ready gas pipeline between Italy and Malta. Nevertheless, Malta already has installed a floating storage unit with onshore regassification, which secures already its gas supply. Malta does not have any domestic gas distribution networks, or any district heating networks and there are no end-use gas customers apart from two electricity producers at the Delimara Power Station.

To address increasing energy prices, Malta has taken vigorous, but untargeted, measures to protect households and businesses and kept retail prices stable.

([44]) The Member State with the next highest share of gas is 47%

([45]) It is complemented by Annex 6 as the European Green Deal focuses on the clean energy transition, by Annex 8 on the actions taken to mitigate energy poverty and protect the most vulnerable ones, by Annex 9 as the transition to a circular economy will unlock significant energy and resource savings, further strengthening energy security and affordability, and by Annex 12 on industry and single market complementing ongoing efforts under the European Green Deal and REPowerEU.

([46]) in line with the Green Deal Industrial Plan COM(2023) 62 final, and the proposed Net-Zero Industry Act COM(2023) 161 final

([47]) The floating storage unit has an LNG storage capacity of 125 000 m3 and the regasification plant has a maximum natural gas output rate of 89 000 Nm3/hr of natural gas.

([48]) Malta imports LNG delivered by tanker vessels which is usually sourced from [North and central America].

([49]) If electricity cannot be imported from Italy because gas is in short supply there, a supply of diesel would last 14 days on average.

([50]) Malta benefits from an exemption to Regulation 2022/1369.

During 2022, retail electricity prices were maintained at pre-crisis levels, fully shielding its households and businesses from the market's soaring energy prices. The 2023 budget plans to maintain its energy and fuel price stability policy throughout 2023. The 2023 budget support for energy and fuel prices is forecasted to reach EUR 607 million in 2023, amounting to 9.3% of current government expenditure, net of interest. Targeting measures to low-income households would help ensure the long-term sustainability of such support. Furthermore, without mechanisms to limit the amount of energy consumption covered, such universal below-cost tariffs may lessen incentives to reduce energy demand. Malta also gives households and small and medium-sized enterprises free professional advice on energy-efficient appliances and behaviour and offers support schemes to promote photovoltaic (PV) installations and battery storage. For vulnerable households and to address energy poverty, this support is complemented by a financial scheme designed to replace old and inefficient household appliances (Annex 8).

Graph A7.1: **Malta´s retail energy prices for industry (top) and households (bottom)**

(1) On electricity, the band consumption is DC for households and ID for industry
(2) On gas, the band consumption is D2 for households and I4 for industry
Source: Eurostat

Challenging though it is, the government's commitment to adopting offshore renewable energy technologies is a major policy shift. The implementation phase of such offshore energy projects in Malta's exclusive economic zone is expected to start in 2023 ([51]). The share of electricity generated by renewable sources has increased from 7.5% in 2019 to almost 9.5% in 2020, mainly driven by solar PV ([52]). Malta has committed itself to addressing permitting bottlenecks for the installation of PV panels on the rooftops of building blocks by making them compulsory to install them on specific buildings and providing increased financial incentives to house owners for residential solar PV with the aim of installing 8-9 MW of solar PV per year. Malta has two support schemes: a feed-in tariff for smaller PV installations, and another scheme for larger RES systems (>40kWp) which is being changed to a two-sided feed-in premium. ([53]). Malta is incentivising the onshore deployment of renewables (solar panels, solar water heaters, heat pumps) through grants for households. It produces 200 MW of renewables a year. Smart meters are fully deployed, and the Maltese authorities are starting to support energy storage in households.

Energy efficiency measures have the potential to significantly contribute to energy security and affordability in Malta. In Malta, there are no district heating systems. Heating demand is satisfied primarily by means of LPG cylinders (also used by households for cooking), with some gas oil and fuel oil used by the industrial and services sectors. Malta has also registered a large increase in the number of air-to-air heat pumps to meet heating and cooling needs across all end-use sectors without any public support or policy intervention. Regarding market

([51]) According to the Global Wind Energy Council, Malta has an estimated technical potential for offshore wind in terms of installed power capacity of 25 GW of floating solar energy within 200 kilometres of the shoreline.

([52]) https://data.europa.eu/doi/10.2833/12592

([53]) Feed-in tariffs to promote the purchase of PV systems are made available to both residential and commercial systems. In 2021 Malta's solar PV capacity reached around 205-megawatt peak (MWp). From 2021 on, competitive bidding was extended to all schemes providing support for renewable installations with a capacity of at least 40 kW, making it possible for a wider range of installations to compete for a tariff above the administratively set tariff. Of 1252 beneficiaries of the solar PV grant scheme in 2021, 78 also availed of a battery storage scheme to install a battery storage system. In 2021, the gross electricity production in Malta from solar panels was 256 GWh, significantly offsetting electricity produced from fossil fuels. Based on a five-year average from 2017 to 2021, Malta installs approximately 23 MWp of solar PV capacity per year.

surveillance activities, Malta is carrying out a low number of checks on products covered by eco-design and energy labelling. This implies concerns as to the compliance levels of the concerned products, and therefore possible missed energy and CO2 savings ([54]).

Malta invests very little in research and innovation (R&I) to support Energy Union priorities. Public R&I investments ([55]) decreased from EUR 0.4 million in 2018 (equivalent to a 0.003% share of GDP) to EUR 0.3 million in 2019 (or a 0.002% share of GDP). At the same time, private R&I investments ([56]) were EUR 3.2 and 3.8 million respectively. The number of patent families filed in 2019 for clean technologies was 2 ([57]), representing around 3.4 patent families per million inhabitants. This is six times less than the EU average. Malta is lagging behind in the production of renewable technologies. For instance, it is importing new technologies it is installing, such as heat pumps, solar panels and batteries, without a specific plan to promote producing some onsite. This is even though Malta has in place a national strategy for research and innovation in energy and water. ([58])

([54]) The internet-supported information and communication system for the pan-European market surveillance

([55]) JRC SETIS (2022), https://setis.ec.europa.eu/publications/setis-research-and-innovation-data_en, where the figures do not include EU funding.

([56]) Idem.

([57]) Ibidem.

([58]) https://www.energywateragency.gov.mt/wp-content/uploads/2020/07/National-Strategy-for-Research-and-Innovation-in-Energy-and-Water-2021-2030-EWA-web.pdf

Table A7.1:**Key energy indicators**

		MALTA				EU			
		2018	2019	2020	2021	2018	2019	2020	2021
ENERGY DEPENDENCE	**Import Dependency [%]**	98%	97%	98%	97%	58%	61%	57%	56%
	of Solid fossil fuels	0%	0%	0%	0%	44%	44%	36%	37%
	of Oil and petroleum products	97%	98%	99%	98%	95%	97%	97%	92%
	of Natural Gas	109%	104%	96%	103%	83%	90%	84%	83%
	Dependency from Russian Fossil Fuels [%]								
	of Hard Coal	-	-	-	-	40%	44%	49%	47%
	of Crude Oil	-	-	-	-	30%	27%	26%	25%
	of Natural Gas	0%	0%	0%	0%	40%	40%	38%	41%

		2015	2016	2017	2018	2019	2020	2021	2022
ELECTRICITY	**Gross Electricity Production (GWh)**	1,305	857	1,652	1,962	2,060	2,143	2,215	-
	Combustible Fuels	1,210	729	1,489	1,772	1,864	1,906	1,959	-
	Nuclear	0	0	0	0	0	0	0	-
	Hydro	0	0	0	0	0	0	0	-
	Wind	0	0	0	0	0	0	0	-
	Solar	95	128	162	190	195	237	256	-
	Geothermal	0	0	0	0	0	0	0	-
	Other Sources	0	0	0	0	0	0	0	-
	Net Imports of Electricity (GWh)	1,054	1,527	861	621	636	416	511	-
	As a % of electricity available for final consumption	50%	72%	37%	26%	26%	18%	20%	-
	Electricity Interconnection (%)	-	-	24.20%	29.41%	29.0%	31.0%	44.5%	42.3%

		2015	2016	2017	2018	2019	2020	2021	2022*
DIVERSIFICATION OF GAS SUPPLIES	**Gas Consumption (in bcm)**	0.0	0.0	0.3	0.3	0.4	0.4	0.4	0.4
	Gas Imports - by type (in bcm)	0.0	0.0	0.6	0.8	0.8	0.7	0.8	-
	Gas imports - pipeline	0.0	0.0	0.3	0.4	0.4	0.4	0.4	-
	Gas imports - LNG	0.0	0.0	0.3	0.4	0.4	0.4	0.4	-
	Gas Imports - by main source supplier (in bcm) (1)								
	Trinidad and Tobago	0.0	0.0	0.4	0.3	0.6	0.6	0.5	-
	United States	0.0	0.0	0.0	0.1	0.0	0.1	0.3	-
	Equatorial Guinea	0.0	0.0	0.1	0.1	0.0	0.0	0.0	-
	Egypt	0.0	0.0	0.0	0.0	0.1	0.0	0.0	-
	Others	0.0	0.0	0.0	0.2	0.0	0.0	0.0	-

		2019	2020	2021	2022
	LNG Terminals				
	Number of LNG Terminals (2)	1	1	1	1
	LNG Storage capacity (m3 LNG)	125,000	125,000	125,000	125,000
	Underground Storage				
	Number of storage facilities	0	0	0	0
	Operational Storage Capacity (bcm)	0	0	0	0

		2019	2020	2021	2022
CLEAN ENERGY	**VC investments in climate tech start-ups and scale-ups (EUR Mln) (3)**				
	as a % of total VC investments in Malta	n.a.	n.a.	n.a.	n.a.
	Research & Innovation spending in Energy Union R&i priorites (2)				
	Public R&I (EUR mln)	0.3	0.1	n.a.	n.a.
	Public R&I (% GDP)	0.002%	0.001%	n.a.	n.a.
	Private R&I (EUR mln)	3.8	n.a.	n.a.	n.a.
	Private R&I (% GDP)	0.03%	n.a.	n.a.	n.a.

(1) The ranking of the main supliers is based on the latest available figures (for 2021)
(2) FSRU included
(3) Venture Capital investments include Venture Capital deals (all stages) and Private Equity Growth/Expansion deals (for companies that have previously been part of the portfolio of a VC investment firm).

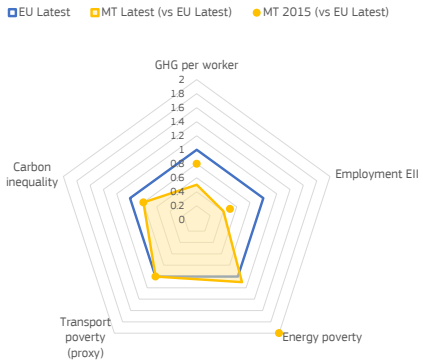
Source: Eurostat, Gas Infrastructure Europe (Storage and LNG Transparency Platform), JRC SETIS (2022), JRC elaboration based on PitchBook data (06/2022)

This Annex monitors Malta's progress in ensuring a fair transition towards climate neutrality and environmental sustainability, notably for workers and households in vulnerable situations. The number of jobs in Malta's green economy has risen quickly. To ensure a fair green transition in line with the Council Recommendation ([59]), Malta's recovery and resilience plan (RRP) ([60]) outlines reforms and investments including the renovation of public buildings such as hospitals and schools, decarbonisation of and enhanced access to public transport, support for purchasing zero-emission electric vehicles in the private sector and the development of green skills in the construction sector. This helps support the implementation of REPowerEU, complements the territorial just transition plans and actions supported by the European Social Fund Plus (ESF+).

Employment in Malta's sectors most affected by the green transition declined, although the green economy is expanding. The greenhouse gas (GHG) emissions intensity of Malta's workforce fell from 10.6 to 7.5 tonnes per worker between 2015 and 2021, which is below the EU average of 13.7 in 2021 (see Graph A8.1 and Table A8.1). Employment in Malta's energy-intensive industries (EII) represented 1.3% of total employment in 2020, down from 1.3% in 2015 and well below the EU average of 3.0%. The total number of jobs in the environmental goods and services sector grew by 18.6% (to 4 013) in 2015-2019 (EU: 8.3%), reaching 1.6% of total employment (below the EU average of 2.2%) (see Annex 9 for circular jobs specifically). However, the job vacancy rate in construction, which is key for the green transition, is relatively low (3.1% vs 4.0% in the EU) ([61]). Measures under the RRP, such as the introduction of a skills certificate for the construction industry help overcoming existing skills shortages.

Upskilling and reskilling in declining and transforming sectors are key to tackling labour shortages. Skills are key for smooth labour market transitions and preserving jobs in transforming sectors. In Malta, only 20% of citizens believe they do not have the necessary skills to contribute to the green transition (EU: 38%) ([62]). Specific measures under the Just Transition Mechanism provide training to help reskill workers affected by the transition, together with a broader training offer at national level and flexibility mechanisms to encourage in-company training. In Malta, 2.3% of ESF+ funding contributes to green skills and jobs. Several programmes co-financed by the ESF+ provide training and professional guidance for vulnerable people as well as lifelong learning measures to step up the creation of green and related jobs.

Graph A8.1: **Fair transition challenges in Malta**



Source: Eurostat, EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (see Table A8.1).

In Malta, residential energy and transport fuel prices have not increased recently due to government-regulated retail prices. Amidst the energy crisis, the Maltese government maintained a freeze on energy and fuel prices that had been in place since the outbreak of the COVID-19 pandemic in 2020, sparing business and households the inflationary surge seen in other Member States. Consequently, the effects of the energy crisis on poverty including energy poverty and distributional effects related to changes of gas and electricity, as well as transport fuel prices, are minimal or absent.

Energy poverty indicators have improved in recent years. The share of the total population unable to keep their homes adequately warm fell

([59]) Council Recommendation of 16 June 2022 on ensuring a fair transition towards climate neutrality (2022/C 243/04) covers employment, skills, tax-benefit and social protection systems, essential services and housing.

([60]) See 2022 Country Report (Annex 6).

([61]) Eurostat (JVS_A_RATE_R2)

([62]) Special Eurobarometer 527. Fairness perceptions of the green transition (May – June 2022). https://europa.eu/eurobarometer/surveys/detail/2672

Table A8.1:**Key indicators for a fair transition in Malta**

Indicator	Description	MT 2015	MT Latest	EU Latest
GHG per worker	Greenhouse gas emissions per worker - CO2 equivalent tonnes	10.6	7.5 (2021)	13.7 (2021)
Employment EII	Employment share in energy-intensive industries, including mining and quarrying (NACE B), chemicals (C20), minerals (C23), metals (C24), automotive (C29) - %	1.6	1.3 (2020)	3 (2020)
Energy poverty	Share of the total population living in a household unable to keep its home adequately warm - %	14.1	7.8 (2021)	6.9 (2021)
Transport poverty (proxy)	Estimated share of the AROP population that spends over 6% of expenditure on fuels for personal transport - %	38.4	37.6 (2023)	37.1 (2023)
Carbon inequality	Average emissions per capita of top 10% of emitters vs bottom 50% of emitters	3.8	3.9 (2020)	5 (2020)

Source: Eurostat (env_ac_ainah_r2, nama_10_a64_e, ilc_mdes01), EU Labour Force Survey (break in time series in 2021), EMPL-JRC GD-AMEDI/AMEDI+ projects and World Inequality Database (WID).

from 14.1% in 2015 to 7.8% in 2021 ([63]). In particular, 18.6% of the population at risk of poverty (AROP) was affected in 2021 (EU: 16.4%), as were 7.8% of lower middle-income households (in deciles 4-5) (EU: 8.2%). Before the energy price hikes, an estimated 2.6% of the total population and 9.8% of the (expenditure-based) at-risk-of-poverty (AROP) population had residential expenditure budget shares on electricity, gas and other fuels ([64]) above 10% of their household budget. These shares are, however, still much less than the estimated EU averages of 26.9% and 48.2%, respectively.

Households' budgets were not affected by energy prices, given their stability. As a result of energy price changes during the August 2021 to January 2023 period relative to the 18 months prior (cf. Annex 7), the fraction of individuals living in households which spend more than 10% of their budget on energy has remained stable for the whole population and for the (expenditure-based) AROP population (16.4 pps and 19.1 pps in the EU, respectively) ([65]). Similarly, among the (expenditure-based) AROP population, the share of individuals living in households with budget shares for private transport fuels ([66]) above 6% would have decreased by 0.8 pps (the EU average increased by 5.3 pps) to 37.6% in January 2023, yet standing at a level above the EU average (37.1%).

While public transport is considered relatively affordable, Malta is among the EU countries that rely most heavily on private cars. More than two thirds (69%) of citizens in Malta indicate that a car is their most common mode of daily transport. ([67]) At the same time, they perceive public transport to be relatively available (59% vs 55% in the EU), affordable (71% vs 54% in the EU) and of good quality (59% vs 60% in the EU). ([68]) As regards these perceptions, rural areas in Malta perform better than urban areas, and also better when compared to rural areas in the EU overall ([69]). The average carbon footprint of the top 10% of emitters among the population in Malta is about 3.9 times higher than that of the bottom 50% (see Graph A8.1), i.e. slightly less pronounced than the EU average (5.0 times). Malta's RRP includes measures to tackle mobility challenges through decarbonisation of and enhanced access to public transport. In Malta, the average levels of air pollution in 2020 stood below the EU average (10.1 vs 11.2 µg/m PM2.5), with all regions exposed to critical levels of air pollution ([70]). This has led to significant health impacts, in particular on vulnerable groups, and to 153 premature deaths annually ([71]).

([63]) Energy poverty is a multi-dimensional concept. The indicator used focuses on an outcome of energy poverty. Further indicators are available at the Energy Poverty Advisory Hub.

([64]) Products defined according to the European Classification of Individual Consumption according to Purpose (ECOICOP): CP045.

([65]) EMPL-JRC GD-AMEDI/AMEDI+ ; see details in the related technical brief.

([66]) ECOICOP: CP0722.

([67]) Special Eurobarometer 527.

([68]) The 2021 National Household Travel Survey indicates that private cars were used for 84% of all trips and reports concerns regarding service quality (including punctuality and journey duration time).

([69]) EU (rural): 46%, 48%, 56% respectively. Special Eurobarometer 527.

([70]) Twice higher the recommendations in the WHO Air Quality Guidelines. (annual exposure of 5µg/m3)

([71]) EEA- Air Quality Health Risk Assessment

ANNEX 9: RESOURCE PRODUCTIVITY, EFFICIENCY AND CIRCULARITY

The circular economy transition is key to delivering on the EU's climate and environmental goals and provides large socio-economic benefits. It spurs job growth, innovation and competitiveness and fosters resilience and resource security. The circularity transition of industry, the built environment and agri-food can generate significant environmental improvements (see Annex 6), as they rank among the most resource-intensive systems.

Despite recent progress, Malta's circular economy transition is insufficient and needs accelerating to meet the EU's circular economy goals. The EU's 2020 circular economy action plan (CEAP) ([72]) aims at doubling the circular material use rate between 2020 and 2030. Malta's circular material use rate increased from 4.2% in 2016 to 11.4% in 2021. However, this rate is still below the EU 2021 average of 11.7%. The CEAP also aims to significantly decrease the EU's material footprint. In 2020, Malta's material footprint (18.1 tonnes per capita) was above the 2021 EU-27 average (13.7 tonnes per capita).

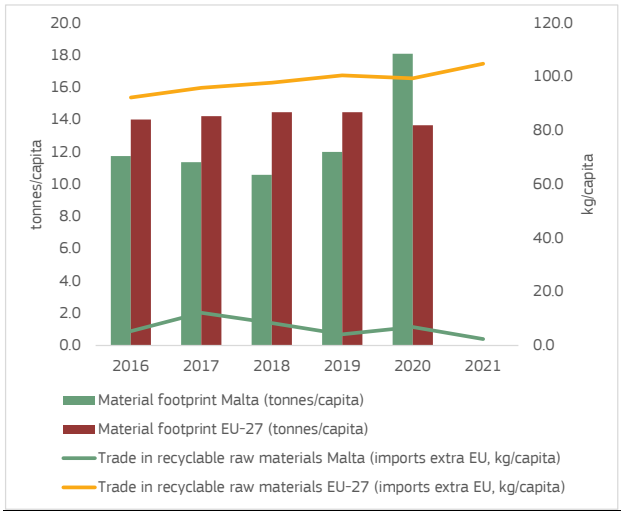
Malta's recently adopted circular economy policies need to show results on the ground. In 2020, Malta adopted the country's circular economy strategy for 2020-2030 ([73]) with a strong waste management component (including curbing landfilling and boosting recycling). It also covers issues related to extended producer responsibility and green financing. Malta's recently adopted new waste management plan (2021-2030) ([74]) provides the statutory framework to move waste management up the waste hierarchy.

Malta's waste management performance is critically poor. With a 13.6% recycling rate in 2021, Malta missed the EU 2020 50% municipal waste recycling target. Malta is at serious risk of missing the 2025 target of 55% preparation for re-use and recycling of municipal solid waste and the 2025 target of 65% of packaging waste recycling. The distance to the 2035 target of 10% landfilling of municipal waste is also considerable. Malta needs to improve separate-waste collection rates and subsequent recycling rates, in particular for packaging and biowaste.

The industrial system in Malta is circular, especially in resource productivity where Malta fares above the EU average. The economy in Malta, particularly industry, is efficient at using materials to produce wealth. In 2021, Malta generated 2.7 purchasing power standard per kg of material consumed, putting Malta's resource productivity above the EU average of 2.3. Malta has introduced sectorial strategies for both construction and plastics.

The built environment system remains critical as construction grows at a rapid rate. This is causing major environmental challenges such as land sealing, environmental impacts and increasing generation of construction and demolition waste. For instance, the share of habitats in bad conservation status has dramatically increased from 6.7% to 58.6% in 2013-2018. Malta has taken steps to counterbalance the situation by making the Building and Construction Authority fully operational and by adopting a strategy for construction and demolition waste ([75]).

Graph A9.1: **Trend in material use**



Source: Eurostat

([72]) A new Circular Economy Action Plan (europa.eu)

([73]) RRRA, 2019, Towards a circular economy 2020-2030

([74]) ERA, 2021, Long-term waste management plan 2021-2030, link

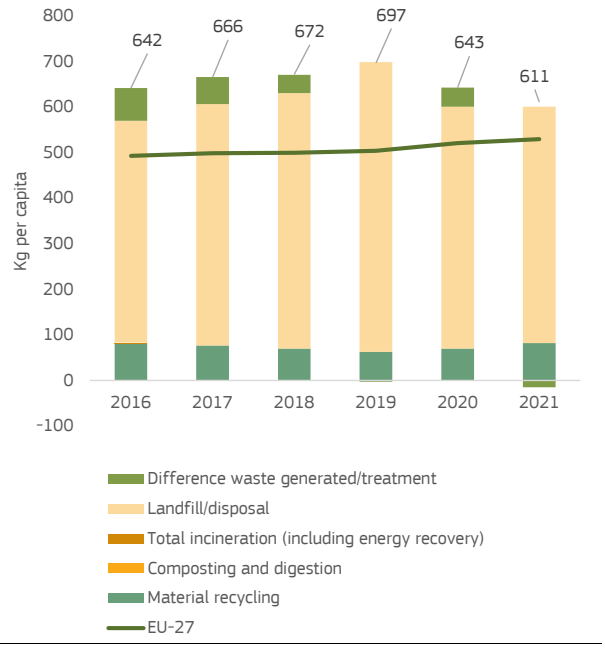
([75]) ERA, 2020, Construction and demolition waste strategy for Malta, link

Table A9.1: **Overall and systemic indicators on circularity**

AREA	2016	2017	2018	2019	2020	2021	EU-27	Latest year EU-27
Overall state of the circular economy								
Material footprint (tonnes/capita)	11.7	11.4	10.6	12.0	18.1	-	13.7	2020
YoY growth in persons employed in the circular economy (%)[1]	-	-	-	-	-	-	2.9	2019
Water exploitation index plus (WEI+) (%)	42.5	35.2	26.1	29.6	-	-	3.6	2019
Industry								
Resource productivity (purchasing power standard (PPS) per kilogram)	2.0	2.6	2.4	2.7	2.3	2.8	2.3	2021
Circular material use rate (%)[2]	4.2	6.5	8.3	7.7	13.3	11.4	11.7	2021
Recycling rate (% of municipal waste)	12.7	11.5	10.4	9.1	10.9	13.6	49.6	2021
Built environment								
Recovery rate from construction and demolition waste (%)[3]	100.0	-	100.0	-	100.0	-	89.0	2020
Soil sealing index (base year = 2006)[4]	100.8	-	106.1	-	-	-	108.3	2018
Agri-food								
Food waste (kg per capita)[5]	-	-	-	-	154.0	-	131.0	2020
Composting and digestion (kg per capita)	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2021

(1) Persons employed in the circular economy only tracks direct jobs in selected sub-sectors of NACE codes E, C, G and S; (2) the circular material use rate measures the share of material recovered and fed back into the economy in overall material use; (3) the recovery rate of construction and demolition waste includes waste which is prepared for reuse, recycled or subject to material recovery, including through backfilling operations; (4) soil sealing: 2016 column refers to 2015 data; (5) food waste includes primary production, processing and manufacturing, retail and distribution, restaurants and food services, and households.
Source: Eurostat, European Environment Agency

Graph A9.2: **Treatment of municipal waste**



Source: Eurostat

The agri-food system has yet to design out food waste and pollution and efficiently manage water resources. Although food waste statistics are not available for Malta, municipal waste generation in Malta can be used as a proxy to reach conclusions in that field. Municipal waste has continued to increase in recent years, reaching 611 kg/year/inhabitant in 2021, well above the EU average (530 kg/year/inhabitant). No data is available on composting and anaerobic digestion of organic waste in Malta; however, considering the very low recycling rate in Malta (13.6% in 2021), the levels of treatments of organic waste are considered to be equally low. In Malta, the water-exploitation index plus (WEI+) was 29.6% in 2019, indicating water scarcity ([76]). There remains scope to use more efficient farming techniques, promote water reuse and spread good practices in water-scarce areas. 0.62% of Malta's land area was under organic farming in 2020 (see table A6.1 in Annex 6), far from the EU average of 9.1%.

There remains a financing gap in the circular economy, including waste management. Additional investments are required to address growing needs. The financing gap was estimated at EUR 37 million per year between 2014 and 2020. Over this period, investment needs were estimated to be at least EUR 66 million per year while investment baselines were EUR 29 million per year (see Annex 6). Additional investments are needed to improve separate collection of waste and recycling infrastructure to divert waste from landfilling.

([76]) The water-exploitation index plus (WEI+) is a measure of total fresh water use as a percentage of renewable fresh water resources (groundwater and surface water) at a given time and place. It quantifies how much water is abstracted and how much water is returned after use to the environment"

Digital transformation is key to ensuring a resilient and competitive economy. In line with the Digital Decade Policy Programme, and in particular with the targets in that Programme for digital transformation by 2030, this Annex describes Malta's performance on digital skills, digital infrastructure/connectivity and the digitalisation of businesses and public services. Where relevant, it makes reference to progress on implementing the Recovery and Resilience Plan (RRP). Malta allocates 26% of its total RRP budget to digital (EUR 80 million) ([77]).

The Digital Decade Policy Programme sets out a pathway for Europe's successful digital transformation by 2030. The Programme provides a framework for assessing the EU's and Member States' digital transformation, notably via the Digital Economy and Society Index (DESI). It also provides a way for the EU and its Member States to work together, including via multi-country projects, to accelerate progress towards the Digital Decade digital targets and general objectives ([78]). More generally, several aspects of digital transformation are particularly relevant in the current context. In 2023, the European Year of Skills, building the appropriate skillset to make full use of the opportunities that digital transformation offers is a priority. A digitally skilled population increases the development and adoption of digital technologies and leads to productivity gains ([79]). Digital technologies, infrastructure and tools all play a role in the fundamental transformation needed to adapt the energy system to the current structural challenges ([80]).

Malta performs above the EU average on digital skills, but shortages in the labour market persist. The percentage of ICT specialists in the Maltese workforce is, at 4.9%, slightly above EU average. However, 69% of enterprises report hard-to-fill vacancies for jobs requiring ICT specialist skills, above the EU average of 63% ([81]). As part of its RRP, Malta launched a scholarship scheme in 2021 to support students studying artificial intelligence, cybersecurity, data science and information studies, among others. There is room for more targeted measures to ensure that skilled talent can support the increasing uptake of advanced technologies and facilitate more research and innovation by Maltese enterprises.

Progress on 5G and fibre coverage strengthens Malta's performance on connectivity. Since 2019, all Maltese households are being reached by very high capacity networks (VHCNs) offering speeds of 1Gbps and more. Fibre-to-the-premises (FTTP) coverage caught up with the EU average of 56% in 2022. Malta has achieved nationwide overall 5G coverage in 2022, but there is room for improving coverage on essential bands for enabling advanced applications requiring large spectrum bandwidth. As of 2022, 5G coverage on the 3.4-3.8 GHz pioneer spectrum band stands at 20%, significantly below the EU average of 41%. While spectrum in all three 5G pioneer bands was made available in 2021, Malta has to date not assigned spectrum in the 700 MHz and 26 GHz bands, pointing to the small size of its territory and market.

Maltese enterprises, including SMEs, have a high level of digitalisation. The use of advanced digital technologies is significantly more widespread among enterprises in Malta than in the EU overall, specifically the use of big data analytics (30% vs 14%) and cloud computing (47% vs 34%). Use of artificial intelligence is slightly above EU average (10% vs 8%). There is still room for SMEs to catch up with their larger peers. The Maltese RRP supports investments in the digitalisation of businesses with two grant schemes launched in 2022. One of these is specifically designed to stimulate the uptake of ICT hardware and software by SMEs. Beyond uptake, there are ample opportunities for stronger cooperation between the public sector, businesses, and academia to strengthen research and innovation in emerging digital technologies. Malta's RRP partly addresses this challenge with the 2021-2027 Smart Specialisation Strategy

([77]) The share of financial allocations that contribute to digital objectives has been calculated using Annex VII of the RRF Regulation.

([78]) The Digital Decade targets as measured by DESI indicators and complementary data sources are integrated to the extent currently available and/or considered particularly relevant in the MS-specific context.

([79]) See for example OECD (2019): OECD Economic Outlook, Digitalisation and productivity: A story of complementarities, OECD Economic Outlook, Volume 2019 Issue 1 | OECD iLibrary (oecd-ilibrary.org).

([80]) The need and possible actions for a digitalisation of the energy system are laid out in the Communication 'Digitalisation the energy system – EU action plan' (COM(2022)552.

([81]) Eurostat: ICT specialists - statistics on hard-to-fill vacancies in enterprises (as % of enterprises which recruited,/tried to recruit ICT specialists), 2022.

adopted as part of its RRF. The strategy identifies digital technologies (e.g. artificial intelligence, the Internet of Things, high performance computing, distributed ledger technologies) as one of six priority areas for investment in research infrastructure. Considering Malta's environmental challenges, there is an opportunity to invest in the development and use of innovative digital technologies in support of the green transition (e.g. applications to support energy efficiency, water management, smart mobility, etc.).

Malta is a leader in digital public services. Citizens and businesses can access nearly all public services online through the government's one-stop-shop portal servizz.gov. Malta's RRP includes several investments to further improve digital public services, such as artificial intelligence solutions to improve the user experience on servizz.gov and measures to strengthen the overall security and capacity of the government's IT infrastructure. The country's electronic identification (eID) scheme, notified under the eIDAS Regulation ([82]), can be used to log in to 91% of online public services ([83]), but not yet to access electronic health records, hence there is room for improving citizen access to electronic health records (Malta scores 77 out of 100).

([82]) Regulation (EU) No 910/2014

([83]) 2022 eGovernment Benchmark

Table A10.1:**Key Digital Decade targets monitored by DESI indicators**

	DESI 2021	DESI 2022	DESI 2023	DESI 2023	(EU)
Digital skills					
At least basic digital skills	**NA**	**61%**	**61%**	**54%**	**80%**
% individuals		2021	2021	2021	2030
ICT specialists ([1])	**4.4%**	**4.9%**	**4.9%**	**4.5%**	**20 million**
% individuals in employment aged 15-74	2020	2021	2021	2021	2030
Digital infrastructure/connectivity					
Fixed Very High Capacity Network (VHCN) coverage	**100%**	**100%**	**100%**	**73%**	**100%**
% households	2020	2021	2022	2022	2030
Fibre to the Premises (FTTP) coverage ([2])	**41%**	**48%**	**56%**	**56%**	**-**
% households	2020	2021	2022	2022	2030
Overall 5G coverage	**0%**	**20%**	**100%**	**81%**	**100%**
% populated areas	2020	2021	2022	2022	2030
5G coverage on the 3.4-3.8 GHz spectrum band	**NA**	**NA**	**20%**	**41%**	**-**
% populated areas			2022	2022	2030
Digitalisation of businesses					
SMEs with at least a basic level of digital intensity	**NA**	**NA**	**78%**	**69%**	**90%**
% SMEs			2022	2022	2030
Big data ([3])	**30%**	**30%**	**30%**	**14%**	**75%**
% enterprises	2020	2020	2020	2020	2030
Cloud ([3])	**NA**	**48%**	**48%**	**34%**	**75%**
% enterprises		2021	2021	2021	2030
Artificial Intelligence ([3])	**NA**	**10%**	**10%**	**8%**	**75%**
% enterprises		2021	2021	2021	2030
Digitalisation of public services					
Digital public services for citizens	**NA**	**100**	**100**	**77**	**100**
Score (0 to 100)		2021	2022	2022	2030
Digital public services for businesses	**NA**	**97**	**97**	**84**	**100**
Score (0 to 100)		2021	2022	2022	2030
Access to e-health records	**NA**	**NA**	**77**	**71**	**100**
Score (0 to 100)			2023	2023	2030

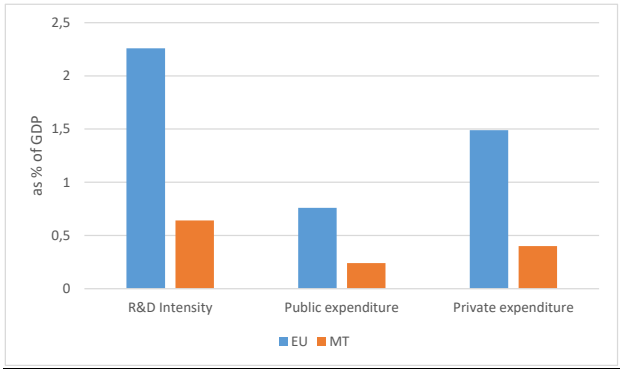
(1) The 20 million target represents about 10% of total employment.
(2) The Fibre to the Premises coverage indicator is included separately as its evaluation will also be monitored separately and taken into consideration when interpreting VHCN coverage data in the Digital Decade.
(3) At least 75 % of Union enterprises have taken up one or more of the following, in line with their business operations: (i) cloud computing services; (ii) big data; (iii) artificial intelligence.

Source: Digital Economy and Society Index

This Annex provides a general overview of the performance of Malta's research and innovation system, which is essential for delivering the twin green and digital transition.

Malta remains a 'moderate innovator', and the gap between its performance and the EU average continues to widen. According to the 2022 edition of the European Innovation Scoreboard ([84]), Malta's innovation performance is below the EU average (84.7% against 89.7% of the EU average for the moderate innovators) and continues to decline, with a sharp fall in 2021. This performance is mainly attributed to low R&D expenditure, especially in the public sector, and a lack of skilled talent, notably graduates in science and engineering.

Graph A11.1: **R&D intensity in 2021**

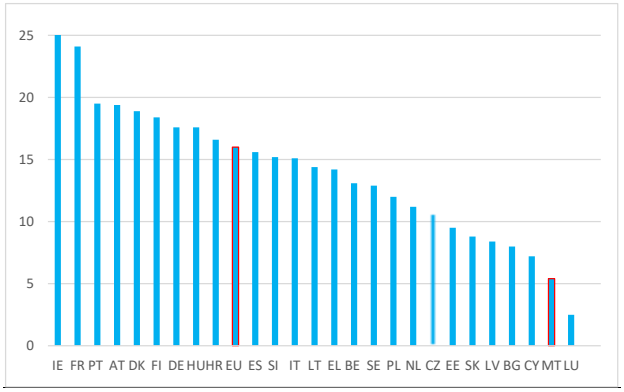


Source: Eurostat

Both public and private investment in R&D remains critically low. Total R&D intensity ([85]) is one of the lowest in Europe. Despite the slight increase in the last decade, in 2021 it stood at 0.64% against the EU average of 2.26% and was lower than in 2020. Public expenditure on R&D has been stagnant since 2010 (0.24% of GDP against EU average of 0.76% in 2021), while business enterprise expenditure on R&D, despite a slight upswing in 2020, decreased to 0.40% in 2021, remaining well below the EU average of 1.49%. The Maltese recovery and resilience plan did not tackle this underinvestment as the plan contained no planned investment in R&D.

The lack of human resources for research and innovation (R&I) continues to weigh on the performance of the Maltese R&I system. The number of new graduates in science and engineering per thousand population aged 25-34 dropped from 8.1 in 2010 to 5.4 in 2020 and is well below the EU average of 16. This challenge has been a growing concern for several years in Malta, especially for businesses that suffer from the shortage of skilled workers ([86]). Attracting and retaining new talent, including foreign talent, remains of utmost importance. In this respect, it is encouraging that the share of foreign doctoral students has significantly increased in recent years (35.3% of all doctorates in 2020 compared to 12.4% in 2015 ([87]).

Graph A11.2: **New graduates in science and engineering per thousand population aged 25-34 in 2020**



Source: Eurostat

The private sector's potential to contribute to Malta's innovation performance remains untapped. According to the European Innovation Scoreboard, between 2015 and 2022, the performance of Malta with regards to small and medium-sized enterprises introducing product innovations has decreased, with a particularly significant drop in 2021-22 ([88]). The level of public support for private R&D is low in Malta and decreased over the last decade, from 0.04% in 2010 to 0.037% in 2019. Moreover, the schemes available to companies engaged in R&D have a

([84]) 2022 European Innovation Scoreboard, Country profile: Malta https://ec.europa.eu/assets/rtd/eis/2022/ec_rtd_eis-country-profile-mt.pdf The EIS provides a comparative analysis of innovation performance in EU countries, including the relative strengths and weaknesses of their national innovation systems (also compared to the EU average).

([85]) Defined as gross domestic expenditure on R&D as a percentage of GDP.

([86]) 2022 Report: Ensuring the Skills for Future Competitiveness, published by the Malta Employers' Association https://www.maltaemployers.com/wp-content/uploads/FINAL-DOSSIER-report_2.pdf.

([87]) Source: Eurostat.

([88]) 2022 European Innovation Scoreboard, Country profile: Malta https://ec.europa.eu/assets/rtd/eis/2022/ec_rtd_eis-country-profile-mt.pdf.

low take-up, which might be due to a number of factors: a lack of capacity and resources to prepare successful applications and make use of funding opportunities; the administrative burden involved in making applications, which often involve red tape and paperwork; and insufficient awareness of the schemes available ([89]). Regarding technology and innovation outputs, while Malta's patenting activity (number of patents filed under the Patent Cooperation Treaty (PCT)) remains well below the EU average, Malta performs particularly well when it comes to the share of environment-related patents in total PCT patent applications. This suggests Malta has great potential to mobilise its R&I capacities to foster and accelerate the green transition through the development of green technologies. Moreover, Malta performs above the EU average in terms of employment in fast-growing companies in the 50% most innovative sectors (8.2% in 2019 against the EU average of 5.5%).

Over the last decade, academia-business cooperation has slightly improved but remains modest. Indeed, while the share of public-private scientific co-publications increased to 6.9% in 2021, compared to 5.7% in 2020, it is still below its 2019 levels and slightly below the EU average. Moreover, public expenditure on R&D financed by businesses remains remarkably low, ranking last in the EU (0.003% in 2019 against the EU average of 0.054%). Academia-business cooperation is identified as a priority in the Maltese smart specialisation strategy for 2021-2027, but this has not yet translated into concrete measures.

Table A11.1:**Key innovation indicators**

Malta	2010	2015	2019	2020	2021	EU average (1)
Key indicators						
R&D intensity (GERD as % of GDP)	0.59	0.72	0.56	0.65	0.64	2.26
Public expenditure on R&D as % of GDP	0.23	0.35	0.22	0.24	0.24	0.76
Business enterprise expenditure on R&D (BERD) as % of GDP	0.36	0.37	0.35	0.42	0.40	1.49
Quality of the R&I system						
Scientific publications of the country within the top 10% most cited publications worldwide as % of total publications of the country	6.8	8.6	5.1	:	:	9.8
Patent Cooperation Treaty (PCT) patent applications per billion GDP (in PPS)	0,3	1.0	1.3	:	:	3.3
Academia-business cooperation						
Public-private scientific co-publications as % of total publications	4.9	5.2	7.5	5.7	6.9	7.1
Public expenditure on R&D financed by business enterprise (national) as % of GDP	0.003	0.002	0.003	:	:	0.054
Human capital and skills availability						
New graduates in science & engineering per thousand pop. aged 25-34	8.1	9.7	6.3	5.4	:	16.0
Public support for business enterprise expenditure on R&D (BERD)						
Total public sector support for BERD as % of GDP	0.04	0.045	0.037	:	:	0.194
R&D tax incentives: foregone revenues as % of GDP	0.031	0.019	0.027	:	:	0.100
Green innovation						
Share of environment-related patents in total patent applications filed under PCT (%)	15.4	44.0	23.1	:	:	13.3
Finance for innovation and economic renewal						
Venture capital (market statistics) as % of GDP	0.01	0.01	0.006	0.006	0.007	0.074
Employment in fast-growing enterprises in 50% most innovative sectors	5.9	7.3	8.2	:	:	5,5

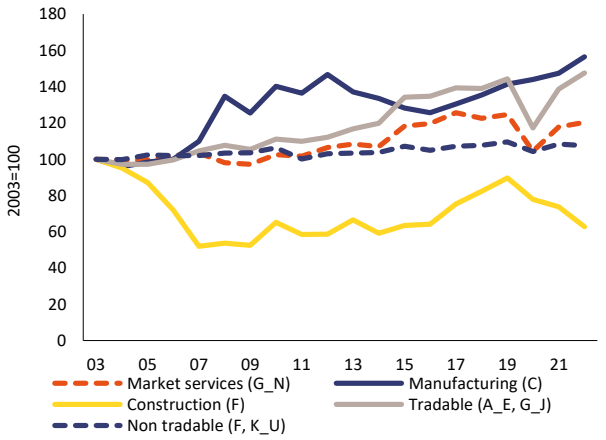
(1) EU average for the latest available year of the year with the highest number of country data.

Source: Eurostat, OECD, DG RTD, Science Metrix (Scopus database and EPO's Patent Statistical database), Invest Europe

innovation/en/statistics/policy-support-facility/peer-review-maltese-research-and-innovation-system

Labour productivity has evolved at a similar pace as the EU average in recent years, although differences between sectors are considerable. Labour productivity per person employed has been mainly driven by high productivity sectors in manufacturing and services such as information and communication, gambling and betting as well as professional, scientific and technical services. Labour productivity growth per person in industry was steadily improving in recent years and in 2022 it reached 5.4% (see table A12.2).

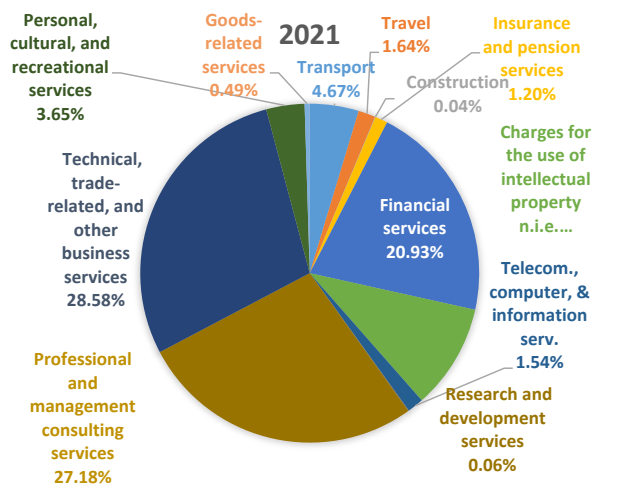
Graph A12.1: **Productivity per person by sector**



Source: European Commission.

Due to its size and geographical position, Malta is highly dependent on global markets and therefore strongly exposed to supply disruptions and volatility of prices. Although Malta has relatively low dependency on Russia, it is among the EU countries with the highest energy import dependency (97.6% in 2020). The current situation may encourage Malta to invest in renewable energy since the country currently has one of the lowest shares of renewables in energy consumption (10.7%) in the EU (see also Annex 6). According to the 2022 EIB Investment Survey, Maltese firms reported the highest share of investment in measures to improve energy efficiency (16% vs. 10% EU) in the past year ([90]). Malta's industrial production capacity relies to a large extent on machinery, energy and chemical imports from EU Member States and Asia. Concerning additional challenges for industry, manufacturing firms in particular are reporting shortages of raw materials and components (42% in 2022 vs 47% EU) as their main production constraint (see table A12.2). Moreover, 64% of Malta's international companies interviewed by Ernst and Young have listed supply chain concerns in the coming months and 74% of them stated that the rising cost of raw materials and components, together with the increase in freight costs, is heavily impacting firms in Malta. ([91]) These external dependencies might explain the high level of the Economic Uncertainty indicator (EUI) ([92]) in the second half of 2022.

Graph A12.2: **Shares of services exports**



(1) Trade in services – share in total world exports (%)
Source: Commission Services.

Malta is well integrated into the Single Market for services, while certain restrictions persist. Malta's services trade integration represents 57.1% of GDP, ([93]) the second highest of all Member States and far ahead of the EU average (14.5%). Services exports are mainly dominated by "other business services", financial services and intellectual property charges (see graph A12.2). However, the weakening of external demand from European trading partners, such as Germany and Italy, will restrict services trade performance. In contrast to the services trade integration, Malta's trade integration in the Single Market for goods (13.7%) remains below EU average (29% according to Eurostat.

Delays in public procurement decisions and transposition delays are challenges for

([90]) EIB Investment Survey 2022.

([91]) EY Future of manufacturing 2022.

([92]) The EUI is a composite indicator which shows how difficult it is for managers/consumers to make predictions of the future business/financial situation.

([93]) Measured as average value of imports and exports as a share of GDP (https://single-market-scoreboard.ec.europa.eu/competitiveness/integration_en)

Malta's overall business conditions, despite its generally sufficient performance in Single Market indicators. According to the Single Market Scoreboard, Malta is among the best-performing Member States in transposing directives (1.1% vs 1.6% EU) and in the correctness of its transpositions. In recent years, Malta has considerably improved its average delay in transposing directives, which stands currently at 3.7 months compared to EU average at 8.6 months ([94]). Yet transposition delays have occurred, possibly due to Covid-19 pandemic constraints. Furthermore, in public procurement the rate of single bids (only one submitted offer) is 15% (9% in 2021) which is below the EU average (25%) and shows the functioning competition between bidding companies during public tender procedures. However, firms are criticising some arbitrary practices and rules in admitting firms to tenders and flag the challenges of price setting in times of supply shortages and volatile price developments ([95]). Additionally, it takes a relatively long time (156 days) for the public authorities to reach a decision on a tender (the EU average is 99 days) ([96]). Compared to 2020, Malta's SOLVIT resolution rate dropped 7 points in 2021 (87% vs 94%) but the handling time, specifically the time taken to close cases, increased ([97]).

Tackling long-term barriers such as strengthening the regulatory framework and reducing payment delays would improve the Maltese business environment further. Reforming its regulatory framework and strengthening its institutional framework would considerably improve Malta's business environment, especially by increasing transparency, improving bankruptcy rules and reducing payment delays. This last issue was identified by 61% of SMEs as a pressing problem, compared to the EU average of 43%. Investment under the recovery and resilience plan focuses on improving digitalisation in public administration, public services, companies and the justice system. Although, Malta has recently introduced new regulation to offer more transparency to legal professions, the regulatory restrictiveness of regulated professions in Malta is higher than the EU average for some professions, such as accountants, estate agents, and tourist guides ([98]). Lawyers in Malta are subject to specific requirements, incompatibility rules and multidisciplinary restrictions. Also tourist guides would benefit from a clearer, focussed definition of the reserved activities as well as from a revision of the list of sites reserved for holders of specific tourist guide qualifications. Overall, reducing regulatory barriers in professional services can promote entry and may encourage competition on quality and prices, as well as productivity increases in the regulated sectors.

Maltese SMEs would benefit from better access to finance, especially to alternative financing and the use of equity. SMEs in Malta are the backbone of the economy and represent the main contributors to economic growth and employment. In 2022, SMEs' value added in Malta grew by 13.1%, after dropping 15.5% in 2021 ([99]). Various government initiatives had been created to support Maltese businesses during the COVID-19 pandemic, such as loan guarantees, tax deferrals and a wage supplement scheme. These are mirrored by a low level of bankruptcies compared to the 2021 EU average of 74.5 vs 63.6 in Malta. Improving access to finance for SMEs is crucial for the Maltese business environment, since, according to the overall EIF index, Malta is in the bottom of the EU ranking for this. In 2021, the share of leasing or hire purchase represented only 6%, still below the EU share (22%). Other loans based on personal ties, such as loans from family, friends or shareholders with close connections to the firm decreased from 13% to 10%. Meanwhile, domestic firms made no use of equity or debt securities. Other financing channels such as business angels and crowdfunding remain unexploited. Malta's venture capital investment's share of GDP is among the lowest in the European Union. ([100])

Malta faces considerable shortages of skilled workers and skills mismatches across sectors. Maltese firms are increasingly facing labour shortages, especially in high-value service sectors such as financial services, information and

([94]) EC, Single Market Scoreboard, forthcoming. Country data: Malta | Single Market Scoreboard (europa.eu)

([95]) The Malta Chamber (2022). Recommendations for the 2023 National Budget.

([96]) EC, Single Market Scoreboard, forthcoming. Country data: Malta | Single Market Scoreboard (europa.eu)

([97]) Single Market Scoreboard – SOLVIT

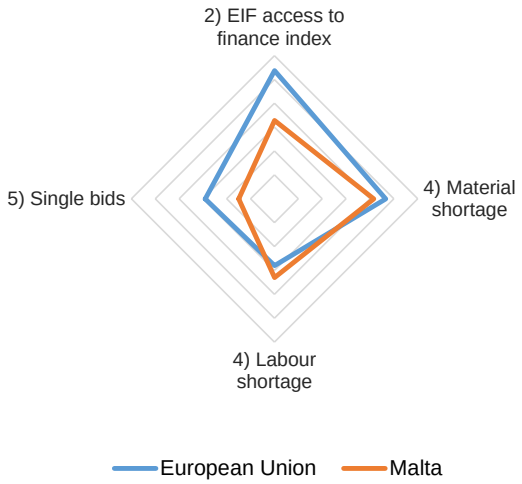
([98]) Communication on updating the reform recommendations for regulation in professional services, COM(2021)385).

([99]) Malta SME Factsheet (2021).

([100]) Access-to-Finance-2021.pdf (centralbankmalta.org)

communication and gaming. This situation has worsened in recent years. In the Ernst & Young Attractiveness Survey, 54% of respondents reported they were looking for staff with specialist skills ([101]). According to the SAFE survey, 35% of SMEs indicate "availability of skilled staff or experienced managers" as one of their most pressing problems ([102]). The tight Maltese labour market situation is exacerbated due to its geographical position and size. The increased employment of foreign workers only partially alleviated the situation.

Graph A12.3: **Business environment and productivity drivers**



Source: 1) % of GDP, 2021 Eurostat;
2) composite indicator, 2021 European Investment Fund access to finance index;
3) average payment delay in number of days, 2022 Intrum;
4) % of firms in manufacturing facing constraints, 2022 European Commission business consumer survey;
5) proportion of contracts awarded with a single bidder, 2022 Single Market Scoreboard.

([101])EY Attractiveness Survey 2022.

([102])European Commission (2022). Survey on access to finance of enterprises (SAFE), Analytical Report 2022.

Table A12.1:**Industry and the single market**

	POLICY AREA	INDICATOR NAME	2018	2019	2020	2021	2022	EU27 average (*)
HEADLINE INDICATORS	Economic Structure	Net private investment, level of private capital stock, net of depreciation, % GDP [(1)]	6	6.5	5.1	6.2	11.6	**3.7**
		Net public investment, level of public capital stock, net of depreciation, % GDP [(1)]	1.5	1.9	2	1.7	1.2	**0.4**
		Real labour productivity per person in industry (% yoy)[(2)]	4.5	6	-0.6	4.6	5.4	**1.4**
	Cost competitive-ness	Nominal unit labour cost in industry (% yoy)[(2)]	4.7	-1.4	n.a.	n.a.	n.a.	**2.9**
RESILIENCE	Shortages	Material shortage (industry), firms facing constraints, % [(3)]	5	3	9	47	42	**47**
		Labour shortage using survey data (industry), firms facing constraints, % [(3)]	46	46	16	27	33	**28**
		Vacancy rate (business economy)[(4)]	2.9	2.8	1.7	2.4	3	**3.1**
	Strategic dependencies	Concentration in selected raw materials, Import concentration index based on a basket of critical raw materials [(5)]	0.21	0.17	0.15	0.16	0.19	**0.18**
		Installed renewables electricity capacity, % of total electricity produced [(6)]	0	0	0	0	n.a.	**50.9**
SINGLE MARKET	Single Market integration	EU trade integration, % [(7)]	n.a.	n.a.	n.a.	71.4	70.1	**45.8**
	Restrictions	EEA Services Trade Restrictiveness Index [(8)]	n.a.	n.a.	n.a.	n.a.	n.a.	**0.05**
	Public procurement	Single bids, % of total contractors [(9)]	11	13	15	9	15	**29**
BUSINESS ENVIRONMENT - SMEs	Investment obstacles	Impact of regulation on long-term investment, % of firms reporting business regulation as major obstacle [(10)]	16.7	10.1	16.2	15.7	14.7	**29.6**
	Business demography	Bankruptcies, Index (2015=100)[(11)]	54.5	127.3	81.8	63.6	n.a.	**86.8**
		Business registrations, Index (2015=100) [(11)]	117.3	101.9	96.9	104.6	88.4	**121.2**
	Late payments	Payment gap - corporates B2B, difference in days between offered and actual payment [(12)]	n.a.	n.a.	n.a.	n.a.	n.a.	**13**
		Payment gap - public sector, difference in days between offered and actual payment [(12)]	n.a.	n.a.	n.a.	n.a.	n.a.	**15**
		Share of SMEs experiencing late payments in past 6 months, % [(13)]	n.a.	71.5	73.8	64.4	60.9	**43**
	Access to finance	EIF Access to finance index - Loan, Composite: SME external financing over last 6 months, index values between 0 and 1 [(14)]	0.72	0.74	0.55	0.45	n.a.	**0.46**
		EIF Access to finance index - Equity, Composite: VC/GDP, IPO/GDP, SMEs using equity, index values between 0 and 1 [(14)]	0.27	0.17	0.05	0.05	n.a.	**0.23**

(*) last available year

Source: (1) AMECO, (2) Eurostat, (3) ECFIN BCS, (4) Eurostat, (5) COMEXT and Commission calculations, (6) Eurostat, (7) Eurostat, (8) OECD, (9) Single Market Scoreboard, (10) EIB survey, (11) Eurostat: (12) Intrum, (13) SAFE Survey, (14) EIF SME Access to Finance Index.

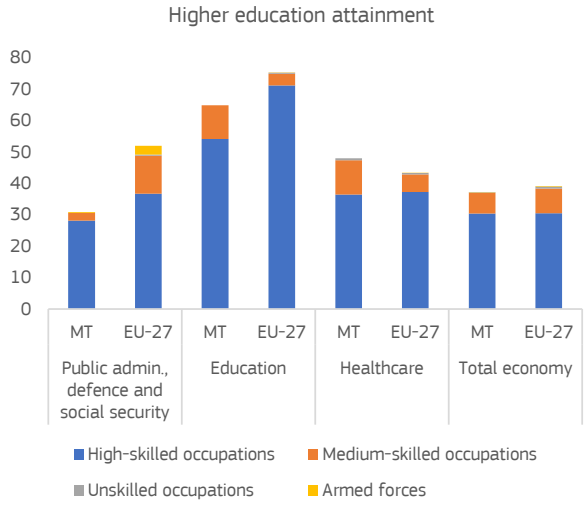
This Annex outlines the performance of Malta's public administration, which is essential for providing services and carrying out reforms. The effectiveness of Malta's public administration ranks below the EU-27 average ([103]). The 5-year public service strategy ([104]) focuses on improving the quality, accountability and sustainability of public services. Its action plan contains 45 initiatives, with a particular emphasis on digitalisation.

Malta's public service has a young profile, but one of the lowest shares in the EU of public servants with higher education. People working in public administration, defence and social security, especially those in high-skilled occupations, have a younger profile relative to the total economy, as well as to the EU-27 average (Graph A13.1). The share of women in senior civil service positions reached 45% in 2022. The public service management code has been revised to provide clearer information on public appointment procedures, salaries, working conditions, conduct and discipline. Staff surveys of civil servants are conducted on an ad hoc basis. The recovery and resilience plan led to the setting up of remote offices across Malta to be used by public service employees in all ministries.

The quality of the Maltese regulatory framework is weakened by the limited use of evidence-based instruments. While impact assessment reports are mandatory for all primary and secondary legislation, there is no systematic review of achievement of policy goals. *Ex post* evaluations are not systematic, nor standardised, and responsibility for regulatory policy is spread across various government bodies ([105]). Stakeholders repeatedly raise concerns about the lack of consultation in the preparation of a number of legislative proposals ([106]), in particular in the early stages of the process.

Malta continues to be a leader in providing digital public services to people and businesses. In 2022, 79% of Maltese people found the provision of public services to be good, a 10 percentage point increase compared to 2021 and well above the EU-27 average of 52% ([107]). All digital public services are accessible through the government's one-stop-shop portal for people and businesses (servizz.gov), which includes a chatbot. Malta also scores well in reusing information previously gathered from administrations in pre-filled forms. However, the country scores the lowest in the EU-27 on facilitating access to and use of open data (Graph A13.2). This reduces the potential for publicly available information to hold institutions accountable to citizens. Further initiatives to accelerate the digital transformation of government are under way, including on cybersecurity and use of data ([108]).

Graph A13.1: **Higher education attainment level (in percent) of 25-64 year-olds by sector and occupation**



(1) 2022 data
Source: European Commission, based on the Labour Force Survey

The justice system faces serious challenges to its efficiency. The estimated time needed to resolve administrative cases at first instance is 1356 days, the longest in the EU. The clearance rate for civil, commercial, administrative and other cases remained below 100% (around 89% in 2020) and it is especially low for litigious civil and commercial cases (around 78% in 2021). The number of incoming cases, in particular civil, commercial and administrative cases, has

([103]) Worldwide Governance Indicators, 2021.

([104]) Achieving a Service of Excellence: A 5-year strategy for the public service.

([105]) The OECD report on Better Regulation Practices across the European Union 2022 indicates that Malta is well below the OECD average in terms of the *ex post* evaluation of regulations.

([106]) Rule of Law Report 2022, European Commission

([107]) Standard Eurobarometer 97

([108]) Malta Information Technology Agency (MITA) Strategy 2021-2023

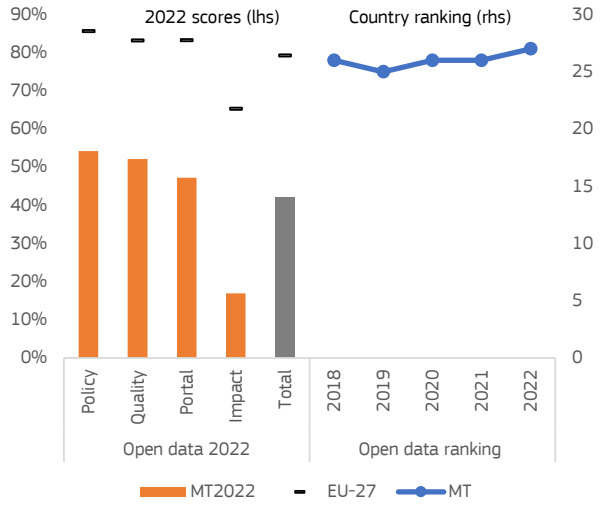
Table A13.1: **Public administration indicators**

MT	Indicator ([1])	2017	2018	2019	2020	2021	2022	EU-27([2])
E-government and open government data								
1	Share of individuals who used the internet within the last year to interact with public authorities (%)	56.2	56.8	58.0	63.4	72.3	n/a	64.8
2	E-government benchmark overall score ([3])	n/a	n/a	n/a	96.3	95.5	95.7	72.9
3	Open data and portal maturity index	n/a	0.2	0.4	0.5	0.5	0.4	0.8
Educational attainment level, adult learning, gender parity and ageing								
4	Share of public administration employees with tertiary education (levels 5-8, %)	30.1	29.2	33.0	33.1	29.0 (b)	30.9	52.0
5	Participation rate of public administration employees in adult learning (%)	14.3 (b)	18.1	23.1	15.2	22.2 (b)	22.1	16.9
6	Gender parity in senior civil service positions ([4])	22.6	23.0	16.4	13.8	10.8	10.0	11.0
7	Ratio of 25-49 to 50-64 year olds in NACE sector O	2.8	2.4	2.7	2.9	3.1 (b)	2.8	1.5
Public financial management								
8	Medium term budgetary framework index	0.8	0.8	0.8	0.8	0.8	n/a	0.7
9	Strength of fiscal rules index	1.3	1.3	1.3	1.3	1.3	n/a	1.5
Evidence-based policy making								
10	Regulatory governance	1.44	n/a	n/a	n/a	1.44	n/a	1.7

([1]) High values denote a good performance, except for indicator # 6. ([2]) 2022 value. If not available, the 2021 value is shown. ([3]) Measures the user centricity (including for cross-border services) and transparency of digital public services as well as the existence of key enablers for the provision of those services. ([4]) Defined as the absolute value of the difference between the percentage of men and women in senior civil service positions.
Flags: (b) break in time series; (d) definition differs; (u) low reliability.
Source: ICT use survey, Eurostat (# 1); E-government benchmark report (# 2); Open data maturity report (# 3); Labour Force Survey, Eurostat (# 4, 5, 7), European Institute for Gender Equality (# 6); Fiscal Governance Database (# 8, 9); OECD Indicators of Regulatory Policy and Governance (# 10).

significantly increased (from 2.1 cases per 100 inhabitants in 2020 to 2.3 in 2021). The overall quality of the justice system is good, but the low number of judges per inhabitant and the lack of clerical staff remain a concern. The level of digitalisation in the justice system is advanced. A new national digital justice strategy was adopted and will be carried out in part through a EUR 10 million investment financed by the Recovery and Resilience Facility. No systemic deficiencies in judicial independence have been reported ([109]).

Graph A13.2: **Open government data maturity indicator: 2022 scores (% of the total maximum score) (rhs); country ranking, overall score (lhs)**



(1) Right hand side chart: low values denote a good performance
Source: Open Data Maturity | data.europa.eu

([109]) For more a detailed analysis of the performance of the justice system in Malta, see the 2023 EU Justice Scoreboard (forthcoming) and the country chapter for Malta in the 2023 Rule of Law Report (forthcoming).

ANNEX 14: EMPLOYMENT, SKILLS AND SOCIAL POLICY CHALLENGES IN LIGHT OF THE EUROPEAN PILLAR OF SOCIAL RIGHTS

The European Pillar of Social Rights is the compass for upward convergence towards better working and living conditions in the EU. This Annex provides an overview of Malta's progress in implementing the Pillar's 20 principles and EU headline and national targets for 2030 on employment, skills and poverty reduction.

Table A14.1:**Social Scoreboard for Malta**

Policy area	Headline indicator	
Equal opportunities and access to the labour market	Early leavers from education and training (% of population aged 18-24, 2022)	10.1
	Share of individuals who have basic or above basic overall digital skills (% of population aged 16-74, 2021)	61.23
	Youth NEET rate (% of population aged 15-29, 2022)	7.2
	Gender employment gap (percentage points, 2022)	13.1
	Income quintile ratio (S80/S20, 2021)	5.03
Dynamic labour markets and fair working conditions	Employment rate (% of population aged 20-64, 2022)	81.1
	Unemployment rate (% of active population aged 15-74, 2022)	2.9
	Long term unemployment (% of active population aged 15-74, 2022)	1
	GDHI per capita growth (2008=100, 2021)	131.71
Social protection and inclusion	At risk of poverty or social exclusion rate (% of total population, 2021)	20.3
	At risk of poverty or social exclusion rate for children (% of population aged 0-17, 2021)	23.2
	Impact of social transfers (other than pensions) on poverty reduction (% reduction of AROP, 2021)	26.2
	Disability employment gap (percentage points, 2021)	27
	Housing cost overburden (% of total population, 2021)	2.7
	Children aged less than 3 years in formal childcare (% of population under 3-years-old, 2021)	24
	Self-reported unmet need for medical care (% of population 16+, 2021)	0.1

Critical situation | To watch | Weak but improving | Good but to monitor | On average | Better than average | Best performers

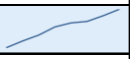
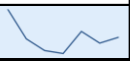
Update of 27 April 2023. Members States are classified on the Social Scoreboard according to a statistical methodology agreed with the EMCO and SPC Committees. It looks jointly at levels and changes of the indicators in comparison with the respective EU averages and classifies Member States in seven categories. For methodological details, please consult the Joint Employment Report 2023. Due to changes in the definition of the individuals' level of digital skills in 2021, exceptionally only levels are used in the assessment of this indicator; NEET: neither in employment nor in education and training; GDHI: gross disposable household income.
Source: Eurostat

The Maltese labour market is performing well, but the employment rate of women, especially those aged 55-64, is low. On the back of strong economic growth in 2021 and 2022, Malta's employment rate, which was already high before the COVID-19 crisis, had surpassed pre-crisis levels as early as Q3-2021 (79.2%) and further improved after that (82.1% in Q4-2022 vs 74.9% in the EU). However, the gender employment gap remains one of the widest in the EU (13.1 percentage points (pps) vs EU 10.6 pps in 2022) despite halving over the last decade (from 28.6 pps in 2013). The employment rate of women aged 55-64 remains particularly low (43.3% vs EU 56.3% in 2021). Over time, this has led to the widest gender pension gap in the EU for people aged 65-74 (45.7% in 2021). The disability employment gap is also above the EU average (27 pps vs 23 pps) despite some improvements since 2020 (29.4 pps). In response to these challenges, the European Social Fund Plus (ESF+) will support active labour market and active inclusion measures, with a special focus on young people and persons with disabilities. The ESF+ will also finance actions, studies and campaigns to foster gender equality in the labour market. These will give women the resources, skills, and support to be active citizens and reduce the gender pay gap. These measures, together with the recovery and resilience plan (RRP) reforms targeting senior female workers and reducing the gender employment gap, should help Malta progress towards its national target of at least 84.6% of adults being employed by 2030.

Insufficient educational outcomes, low participation in learning among low-skilled adults as well as skills gaps and shortages in many sectors pose interlinked challenges. The early school leaving rate (10.1% in 2022), though on a long-term downward trend, remains higher than the EU average (9.6%), and this increases an already large pool of low-skilled adults (33.1% at age 15-64 in 2022). Among low-skilled adults aged 18-64, only 3.8% (EU 13.3%) participated in learning activities (over the past 4 weeks) in 2022, against 21.3% of the medium-skilled and 23.9% of those with a tertiary education. While 61.2% of adults have at least basic digital skills in Malta (EU 54%), the differences by skill levels are significant. Of those with less than an upper secondary education, 43.7% have at least basic or above basic digital skills (EU 28.4%), against 60.2% of the medium-skilled and 92.8% of those with a higher education level. Insufficient overall outcomes, especially related to basic skills (see also Annex 15), hinder efforts to tackle persisting labour shortages and skills mismatches in different sectors (including digital, financial services, and manufacturing). Thus, there is further

scope for policy action, in particular to strengthen the quality and inclusiveness of education and training. To foster progress in this area, the ESF+ will strongly support: (i) innovative teaching and learning tools, including digital technologies; (ii) capacity building for educators; (iii) new vocational pathways; (iv) preventive and active measures across the education cycle; (v) inclusive education support; and (vi) higher education and lifelong learning in key and emerging sectors. Together with RRP reforms aimed at skills development and early school leaving prevention and reduction, these will contribute to improving the situation and progress towards the national 2030 target of at least 57.6% of adults participating in learning each year.

Table A14.2:**Situation of Malta on 2030 employment, skills and poverty reduction targets**

Indicators	Latest data	Trend (2015-2022)	National target by 2030	EU target by 2030
Employment (%)	81.1 (2022)		85	78
Adult learning[1] (%)	32.8 (2016)		58	60
Poverty reduction[2,3] (thousands)	0 (2021)		-3	-15 000

(1) Adult Education Survey, adults in learning in the past 12 months
(2) The EU headline target is expressed as a reduction in the number of persons at risk of poverty or social exclusion (AROPE), reference year 2019
(3) Malta expresses its national target as a reduction of the share of persons at risk of poverty or social exclusion (AROPE) by 3.1 percentage points, reference year 2019
Source: Eurostat, DG EMPL

Poverty indicator results are below the EU average in general but remain high for specific vulnerable groups. The share of people at risk of poverty or social exclusion was 20.3% in 2021, close to the EU average (21.7%). However, this was much higher for non-EU nationals (30.4%), low-skilled adults (30.3%), people aged 65 and over (29.9%), and persons with disabilities (33.4%). Income inequalities, measured by the ratio of the average income of the 20% richest to the 20% poorest (S80/S20), increased between 2020 and 2021 by 0.34 pps to reach 5.03 pps (above the EU average), hence flagging Malta as 'to watch' on the Social Scoreboard. The impact of social transfers on reducing poverty improved substantially in 2021 but is also flagged as 'to watch' due to being the sixth lowest in the EU at 26.2% (EU average 37.1%). The share of children at risk of poverty or social exclusion (23.2% in 2021) remains below the EU average of 24.4%. However, some groups of children are at a greater risk of poverty or social exclusion, including those with single (52.6%) or low-skilled parents (51.5%). Free childcare is available to children with parents in employment or education. Nevertheless, the share of children aged less than 3 years in formal childcare is flagged as 'to watch' on the Social Scoreboard due to a low level at 24% (EU average: 36.2%) and a substantial decrease in 2021 (by 5.7 pps), which is one of the biggest in the EU ([110]). Malta continues to have one of the lowest housing cost overburden rates in the EU (2.7% vs EU average 8.3%). The indicator has more than doubled since 2015, reflecting the tightening of the rental market brought about by changes in the country's demographics. The Maltese population is generally in good health (self-perceived health was good or very good for 73% of the population in 2021 vs the EU average of 69%). In addition, life expectancy in the country is among the highest in the EU. Disparities in self-reported good or very good health by income (30.6 pps difference in 2021 between the first and the fifth income quintile) are much higher than the EU average (20.2 pps). At the same time, unmet needs for medical care are relatively low, with little variation between income groups. The government plans ESF+ measures and RRP reforms and investments in healthcare and long-term care infrastructure and workforce, as well as ESF+ measures to boost social protection systems and address children's needs. These will all help Malta make progress towards its 2030 target of reducing the share of persons at risk of poverty or social exclusion by 3.1 pps compared to the 2019 value.

([110]) This result may be explained by the COVID-19 pandemic and the health restrictions in place in childcare centres; these may have affected provision and participation. See: Education and training monitor 2022: Malta.

This Annex outlines the main challenges for Malta's education and training system in light of the EU-level targets and other contextual indicators under the European Education Area strategic framework, based on the 2022 Education and Training Monitor.

Participation in early childhood education and care (ECEC) continues to decrease. The proportion of children over 3 in early childhood education stood at 89.1% in 2020, compared with an EU average of 93% and below the EU-level target of 96% set for 2030. The rate has decreased by 7.8 pps since 2015.

Efforts to ensure high quality ECEC are underway. In the 2022/23 school year, after being put on hold due to the COVID-19 pandemic, implementation of the reform of the learning outcomes framework has restarted. As part of this, teacher training on the new curriculum for early years pupils also resumed. The new national standards for private and public childcare centres for children below 3 years have been in place since October 2021.

Although still slight above the EU average, Malta has significantly reduced its rate of early leaving from education and training (ELET). It has decreased by 11.3 pps since 2010; the decrease is more significant for boys (-16.6 pps) than for girls (-5.7 pps). This positive trend is the result of a series of measures undertaken in recent years. For example, with the support of EU funds, Malta has strengthened vocational education and training to provide pupils with an alternative to the more academically oriented school programmes. Efforts to curb the ELET rate continue. The data warehouse project envisaged in the national recovery and resilience plan will collect data of students in public schools, covering their whole educational career. It may help in investigating national specificities of the phenomenon of early school leaving, facilitating more targeted actions to support children early on, and to address gaps in the current provision.

Ensuring high teaching quality is key to addressing the basic skills challenge. The proportion of 15-year-olds underachieving in all three PISA (Programme for International Student Assessment) domains combined is among the highest in the EU (22.6% vs 13.2%) and it is particularly high among disadvantaged pupils (36.7% vs 23.5% at EU level). Implementation of the 2017 learning outcomes framework has started at primary level. Nevertheless, the government plans to revise the curriculum to react to changing labour market needs. In addition, the 2018 Teaching and Learning International Survey highlights that a high proportion of teachers (60.7%) consider that they do not receive sufficient incentives for continuing professional development (CPD) ([111]). Participation in CPD is not required for career progression. Schools are not required to develop a CPD plan to balance individual and organisational learning needs, improve teaching quality and help to better target teacher and student needs.

The take-up of vocational education and training (VET) at upper secondary level remains below the EU average. Despite a high employment rate of recent VET graduates (89.0% vs 75.7% at EU level in 2020) and recent significant investments in infrastructure and quality, the share of learners enrolled in 2020 in upper secondary VET in Malta remained at 27.6%, (27.7% in 2019 and 28.5% in 2018) still well below the EU average (48.7% in 2020). The share of VET graduates benefiting from exposure to work-based learning during their vocational education and training was 52.7% in 2022, below the EU average (60.1%).

Tertiary educational attainment remained stable in 2022. The proportion of 25-34-year-olds with tertiary education stood at 42.4% in 2022. The attainment rate among the EU-born population from outside Malta (51.5%) surpasses that of the Maltese population (43.0%). A relatively high employment rate for recent graduates continues to be a key factor in attracting qualified people to Malta. The proportion of people aged between 15 and 64 with a low level of education in 2022, while decreasing, stood at 33.1% compared with 24.9% for the EU. Several measures are planned to increase participation in adult learning, particularly for the low-skilled, including measures supported by the European Social Fund Plus. Malta's recovery and resilience plan includes starting an 'e-college', a digital learning platform for adults that includes mentoring and guidance services, with a particular focus on the low-skilled.

([111])European Commission (2019), Education and Training Monitor 2019 – Malta.

Table A15.1:**EU-level targets and other contextual indicators under the European Education Area strategic framework**

				2015		2022	
Indicator			**Target**	**Malta**	**EU27**	**Malta**	**EU27**
[1]Participation in early childhood education (age 3+)			**96%**	**96.9%**	**91.9%**	**89.1%** [2020]	**93.0%** [2020]
[2]Low achieving 15-year-olds in:		**Reading**	**< 15%**	**35.6%**	**20.0%**	**35.9%** [2018]	**22.5%** [2018]
		Mathematics	**< 15%**	**29.1%**	**22.3%**	**30.2%** [2018]	**22.9%** [2018]
		Science	**< 15%**	**32.5%**	**21.1%**	**33.5%** [2018]	**22.3%** [2018]
Early leavers from education and training (age 18-24)	**[3]Total**		**< 9 %**	**16.3%**	**11.0%**	**10.1%**	**9.6%**
	[3] By gender	*Men*		19.2%	12.5%	11.7%	11.1%
		Women		13.0%	9.4%	8.4%	8.0%
	[4] By degree of urbanisation	*Cities*		20.8%	9.6%	13.2%	8.6%
		Rural areas		12.0% [u]	12.2%	: [u]	10.0%
	[5] By country of birth	*Native*		16.5%	10.0%	6.1%	8.3%
		EU-born		: [u]	20.7%	: [u]	20.3%
		Non EU-born		: [u]	23.4%	28.8%	22.1%
[6]Equity indicator (percentage points)				**:**	**:**	**25.4** [2018]	**19.3** [2018]
[7]Exposure of VET graduates to work based learning	**Total**		**≥ 60% (2025)**	**:**	**:**	**52.7%**	**60.1%**
Tertiary educational attainment (age 25-34)	**[8]Total**		**45%**	**31.9%**	**36.5%**	**42.4%**	**42.0%**
	[8] By gender	*Men*		27.3%	31.2%	37.8%	36.5%
		Women		36.9%	41.8%	47.9%	47.6%
	[9] By degree of urbanisation	*Cities*		31.9%	46.2%	38.5%	52.2%
		Rural areas		29.8%	26.9%	49.7%	30.2%
	[10] By country of birth	*Native*		31.5%	37.7%	43.0%	43.0%
		EU-born		54.5% [u]	32.7%	51.5%	39.5%
		Non EU-born		31.0%	27.0%	36.2%	35.7%
[11]Share of school teachers (ISCED 1-3) who are 50 years or over				13.7%	38.3%	15.7% [2020]	39.2% [2020]

Source: (1,3,4,5,7,8,9,10,11) = Eurostat; 2 = OECD (PISA); 6 = European Commission (Joint Research Centre). Notes: Data is not yet available for the remaining EU-level targets under the European Education Area strategic framework, covering underachievement in digital skills and participation of adults in learning. The equity indicator shows the gap in the share of underachievement in reading, mathematics and science (combined) among 15-year-olds between the lowest and highest quarters of socio-economic status.

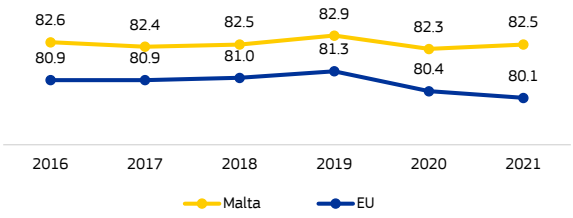
Enrolments in tertiary programmes continue to increase. However, a better alignment with labour market needs may help address skills shortages and future needs. Entrants at master's level to ICT fields only accounted for 2.7% ([112]) of total new entrants in 2020, while it was 4.2% in 2016. This is despite the fact that the share of firms reporting hard-to-fill vacancies for jobs requiring ICT specialist skills is above the EU average (66.1% vs 55.4% in 2020). Malta is working on the National Strategic Action Plan for Further and Higher Education 2022-2030. It aims at achieving more synergies among education, research and business.

([112])About 19% of new ICT entrants were women in 2020, a decrease of about 10 pps compared with 2016 data.

A healthy population and an effective, accessible and resilient health system are prerequisites for a sustainable economy and society. This Annex provides a snapshot of population health and the health system in Malta.

Life expectancy in Malta is higher than the EU average and has partially rebounded after it fell in 2020. Life expectancy slightly increased in 2021, despite an increase in the reported number of COVID-19 deaths between 2020 and 2021 ([113]). Malta fares comparatively well in avoiding deaths from treatable causes. Cardiovascular diseases and cancer are the leading causes of mortality. Malta has comparatively high mortality rates from diabetes and ischaemic heart disease which correspond with the high prevalence of overweight and obesity. Malta has the highest obesity rates in the EU, also amongst children; the topic is high on the public health agenda.

Graph A16.1: **Life expectancy at birth, years**

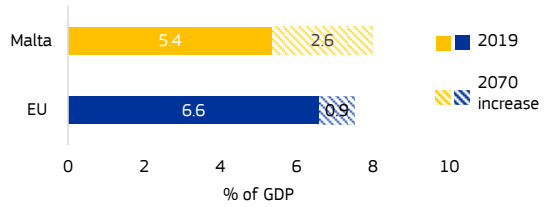


Source: Eurostat

Health spending relative to GDP significantly increased from 2019 to 2020 and is now near the EU average. This is in line with the upward trend in all Member States in 2020. In the case of Malta, this increase results from both a sharp GDP contraction (more than 8%, compared to 5.7% for the EU overall) and an increase of healthcare spending in nominal terms. The share of public spending is historically low (but increased from 2019 to 2020). Household out-of-pocket payments are among the highest in the EU (especially for private primary and outpatient care and for medicines). Nevertheless, Malta reports one of the lowest levels of self-reported unmet needs in the EU (see Annex 14).

Spending on outpatient care is low in relation to total healthcare spending, also compared to other Member States. Strengthening primary care in general and also shifting treatment of chronic diseases from cost-intensive care in hospitals to primary care and community-care settings are ongoing challenges. These are also addressed by Malta's European Structural and Investment Funds programmes. Public spending on health is projected to increase by 2.6 percentage points (pps) of GDP by 2070 (compared to 0.9 pps for the EU overall), raising long-term fiscal sustainability concerns (see Annex 21).

Graph A16.2: **Projected increase in public expenditure on healthcare over 2019-2070**



AWG reference scenario
Source: European Commission / EPC (2021)

Spending on preventive care remained stable during the pandemic, while most other countries raised this expenditure drastically. Across the EU, this increase was primarily driven by spending on disease detection, surveillance, control and response programmes as part of the public health response to COVID-19. In 2020, spending on prevention in Malta amounted to 1.5% of total spending on healthcare (compared to 3.4% for the EU overall).

Malta has implemented a number of reforms to tackle shortages of health workers. The numbers of doctors and nurses per population are near the EU average and have been on the rise in the last few years. However, there are shortages in certain specialties and Malta relies on foreign-trained nurses, especially in hospitals. In the past, shortages have been exacerbated by an increased number of nurses leaving Malta to work in other (English-speaking) countries that offer more attractive working conditions. In addition, demographic change is estimated to be more severe in Malta than in most other EU

([113])Based on data provided directly by Member States to ECDC under the European Surveillance System (data current as of 13 April 2023)

Table A16.1:**Key health indicators**

	2017	2018	2019	2020	2021	EU average (latest year)
Treatable mortality per 100 000 population (mortality avoidable through optimal quality healthcare)	85.1	91.8	85.0	89.3	NA	91.7 (2020)
Cancer mortality per 100 000 population	221.1	237.3	203.5	212.5	NA	242.2 (2020)
Current expenditure on health, % GDP	8.7	8.6	9.2	10.8	NA	10.9 (2020)
Public share of health expenditure, % of current health expenditure	62.9	63.5	62.5	66.7	NA	81.2 (2020)
Spending on prevention, % of current health expenditure	1.3	1.3	1.5	1.5	NA	3.4 (2020)
Acute care beds per 100 000 population	318	319	312	319	NA	387.4 (2019)
Doctors per 1 000 population *	4.0	4.0	4.0	4.2	NA	3.9 (2020)
Nurses per 1 000 population *	8.0	7.8	7.7	8.0	NA	8.3 (2020)
Consumption of antibacterials for systemic use in the community, daily defined dose per 1 000 inhabitants per day (total consumption for CY and CZ) **	19.8	18.0	18.7	14.4	14.1	14.5 (2021)

Note: The EU average is weighted for all indicators, except for (*) and (**), for which the EU simple average is used. The simple average for (*) uses data for 2020 or most recent year if former not available. Doctors' density data refer to practising doctors in all countries except EL, PT (licensed to practice) and SK (professionally active). Nurses' density data refer to practising nurses in all countries except FR, PT, SK (professionally active) and EL (nurses working in hospitals only).
Source: Eurostat; except: ** ECDC

countries ([114]). Therefore, having an appropriate number of health workers is even more relevant to ensuring that the health system is accessible and resilient in the long run.

Through its recovery and resilience plan (RRP), Malta plans to invest EUR 69.9 million (22.1% of the plan's total value) in healthcare. Investments under the RRP focus mainly on setting up a Blood, Tissue and Cell Centre, digitalisation and new technologies. But there are also measures that aim to tackle some of the above-mentioned challenges, such as workforce-related issues (including a bespoke workforce planning tool and better integration of foreign health workers) and the prevalence of obesity among children.

([114])Source: https://economy-finance.ec.europa.eu/system/files/2021-10/ip148_en.pdf.

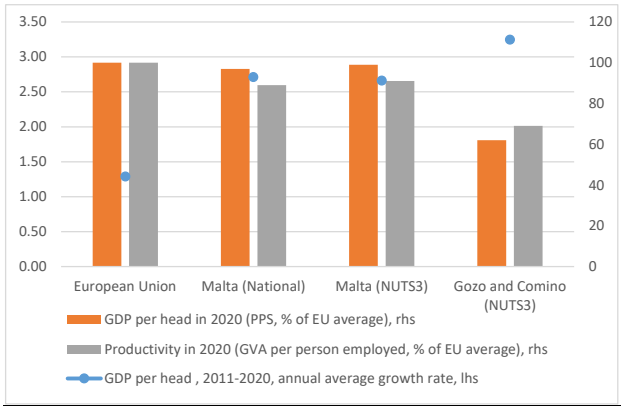
This Annex showcases the economic and social territorial dynamics in Malta, providing an update on the economic, social and territorial cohesion in Malta compared with the EU as a whole and the main regional economic recovery challenges.

Malta rapidly recovered from the COVID-19 pandemic. Despite the strong impact of Covid-19 with the drop in GDP per capita (in PPS) from 100% in 2019 to 97% of the EU-27 average in 2020, Malta's mitigating measures cushioned the shock with GDP per capita (in PPS) reaching 102% of the EU-27 average in 2021. Significant disparities remain: GDP per capita on the main island is 105% of the EU-27 average but only 65% on Gozo and Comino. Data unavailability does not permit to analyse internal disparities in the island of Malta.

The labour market continues to perform well in Malta, but marked territorial disparities in labour productivity remain. Despite the COVID-19 outbreak, Malta's employment rate continued to improve in 2020 for ages 20-64 (77.3%) and 2021 (79.1%). The unemployment rate of 3.5% in 2021 remained significantly below the EU average (7%). Labour productivity (measured as gross value added per person employed) was 91% of the EU average on the main island in 2020 and 69% on Gozo and Comino, and increased to 96% and 74% respectively in 2021 – thus highlighting persisting territorial disparity among the Maltese islands.

Investment in R&D remains limited. Investments in R&D as a percentage of GDP was just 0.7% in 2020, and only 0.4% in the business enterprise sector. This is far below the 2% EU target (see Annex 11). The underinvestment in terms of R&D in the business enterprise sector is also reflected in the 2022 Regional Competitiveness Index under the Business Sophistication Pillar, where Malta scores below EU average with a score of 90. In 2021, 6.1% of employment was in high-technology sectors and 50.2% of employment was in knowledge-intensive services (both figures are above the EU average). The 2021-2027 EU funds will help addressing Malta's low innovation performance by supporting R&I capacity and creating a supportive environment for R&I in the public and private sectors.

Graph A17.1: **GDP per capita (2021), productivity (2021) and GDP per capita growth (2011-2020) - Malta**



Source: EUROSTAT, European Commission

Malta continues to reduce greenhouse gas (GHG) emissions, with a 41% cut in terms of tCO_2 equivalent per capita in 1990-2021. It still has a long way to go to meet its 2030 and 2050 GHG reduction target, however. The

Table A17.1:**Selected indicators at region level in Malta**

NUTS region name	GDP per head (PPS) (2021)	Employment rate, ages 20-64 (2021)	Unemployment rate (2021)	Productivity (GVA (PPS) per person employed) (2021)	R&D expenditure (2020)	R&D expenditure in the business enterprise sector (BERD) 2020	Employment in high-technology sectors (2021)	Employment in knowledge-intensive services (2021)
	Index, EU27 = 100	% of population aged 20-64	% of active population	Index, EU27 = 100	% of GDP	% of GDP	% of total employment	% of total employment
European Union	100.0	73.1	7.0	100.0	2.3	1.5	4.8	41
Malta	102.0	79.1	3.5	95.1	0.7	0.4	6.1	50.2
Malta	105.0			96.2				
Gozo and Comino/Għawdex u Kemmuna	65.0			73.7				

Source: EUROSTAT, European Commission

2021-2027 EU funds will support Malta in its transition to a low-carbon economy, including with investments in energy efficiency, renewable energy and sustainable mobility. Particularly, the Just Transition Fund's interventions in the maritime sector, entailing the connection of vessels to onshore electricity power supply whilst berthing at Grand Harbour and Malta Freeport, will further strengthen Malta's decarbonisation efforts, accompanying the country in its transition process towards climate-neutrality.

ANNEX 18: KEY FINANCIAL SECTOR DEVELOPMENTS

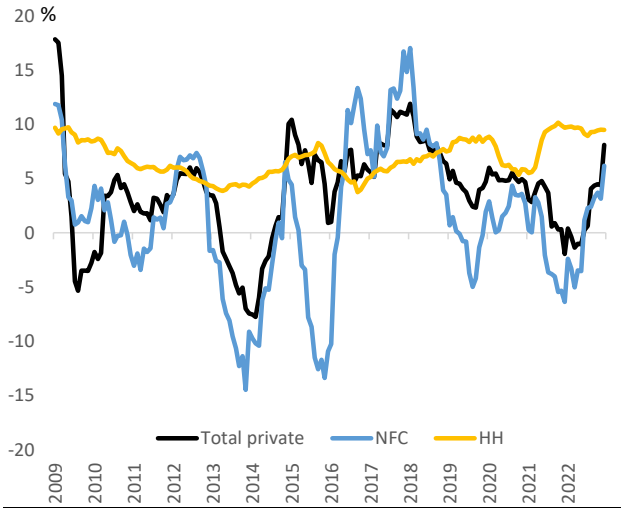
Malta has a predominantly bank-based financial sector, with a high concentration rate. The concentration of the banking sector is significant, as the five largest banks held 75.6% of the sector's total assets at the end of 2021. The ratio of total assets to the country's GDP continues to narrow and stood at 257.8% in Q3-2022. Malta's specificity is its role as an international banking centre. A sizable part of its banking sector is composed of foreign institutions with no exposure to the domestic economy. However, the share of domestic credit institutions has been continuously increasing, and these institutions accounted for 62.7% of total banking-sector assets in Q3-2022, compared to 33.5% in 2015.

Maltese banks have performed solidly despite the adverse macroeconomic developments that followed the pandemic. Banks maintained their capital levels well above the regulatory requirements during the COVID-19 pandemic, in part supported by the temporary restriction on dividend pay-outs. Asset quality deteriorated only moderately due to government support measures, with the ratio of non-performing loans declining to 2.6% in Q3-2022. The non-performing-loan ratio for core domestic banks stood at 2.9% in the same period, less than in 2019 when it stood at 3.2%. The increase in interest rates and the erosion of disposable income is likely to negatively affect the debt-servicing capacity of borrowers and consequently the banks' asset quality.

The profitability of Maltese banks took a large hit in 2020, but banks subsequently improved their profitability. The improvement in profits stemmed from higher earnings from intermediation, fees, and commissions. However, the profitability for the domestically relevant banks was lower in the first half of 2022 than in 2021, and this profitability could be further pressured by lower credit volumes or possible additional provisioning. Direct exposures to Russia and Ukraine were relatively limited, but the indirect effects stemming from the worsening global macroeconomic outlook and high inflation affected bank balance sheets and bank performance. Nevertheless, lending activity in the domestic core banks picked up in the first half of 2022 for both households (up 3.8% compared to the first half of 2021) and businesses (up 3.1% compared to the first half of 2021). The main driver behind the growth in resident lending was mortgage activity, with the value of new mortgage drawdowns up 5.4% in the first half of 2022 compared with the first half of 2021. House prices continued to rise, up 6.3% in the third quarter of 2022 compared with the third quarter of 2021.

The Maltese financial sector appears overall resilient. The European Systemic Risk Board (2022) has identified several key vulnerabilities including elevated mortgage-credit growth and elevated household indebtedness. Against this background, the current limits on loan-to-value ratios, debt-to-income ratios, and loan maturities (together with the measures allowed by Article 124 of the Capital Requirements Regulation) are appropriate and sufficient.

Graph A18.1: **Evolution of credit activity by sector**



Source: ECB.

FATF acknowledged in June 2022 that Malta had strengthened its system for anti-money laundering and countering the financing of terrorism (AML/CFT) and removed Malta from its 'grey list'. At its June 2022 plenary, the FATF decided that Malta had made significant progress in addressing the strategic AML/CFT deficiencies previously identified by the FATF and included in its action plan. As a result, Malta is no longer subject to the FATF's increased monitoring process and will work with FATF regional partners to continue strengthening its AML/CFT regime. Furthermore, Malta has implemented key reforms in the area of beneficial ownership information and financial intelligence units. These reforms are also part of Malta's commitments under the RRP.

Table A18.1:**Financial Soundness Indicators**

	2017	2018	2019	2020	2021	2022	EU	Median
Total assets of the banking sector (% of GDP)	402.4	342.8	294.8	308.8	290.1	257.8	276.8	207.9
Share (total assets) of the five largest banks (%)	80.9	77.5	75.1	74.8	75.6	-	-	68.7
Share (total assets) of domestic credit institutions (%)[1]	42.1	47.8	53.5	58.7	61.7	62.7	-	60.2
NFC credit growth (year-on-year % change)	14.8	3.5	2.0	2.7	-6.4	6.2	-	9.1
HH credit growth (year-on-year % change)	6.5	7.5	8.7	5.8	9.7	9.5	-	5.4
Financial soundness indicators:[1]								
- non-performing loans (% of total loans)	3.1	3.1	3.2	3.6	3.0	2.6	1.8	1.8
- capital adequacy ratio (%)	21.1	22.3	23.4	25.1	24.5	23.2	18.6	19.8
- return on equity (%)[2]	7.2	5.2	6.0	0.3	3.5	1.7	6.1	6.6
Cost-to-income ratio (%)[1]	40.6	40.5	50.3	49.3	63.8	48.1	60.6	51.8
Loan-to-deposit ratio (%)[1]	61.4	75.2	57.4	59.6	56.1	68.7	88.6	78.0
Central bank liquidity as % of liabilities	0.5	0.2	0.1	0.6	2.4	0.8	-	2.9
Private sector debt (% of GDP)	124.3	121.5	122.9	137.7	129.2	-	-	120.7
Long-term interest rate spread versus Bund (basis points)	96.4	99.0	92.5	99.2	87.3	126.7	-	93.3
Market funding ratio (%)	32.8	32.9	35.8	34.4	37.8	-	50.8	40.0
Green bonds issued to all bonds (%)	-	-	-	-	-	-	3.9	2.3

1-3 **4-10** **11-17** **18-24** **25-27** Colours indicate performance ranking among 27 EU Member States.

(1) Last data: Q3 2022.
(2) Data is annualized.
Source: ECB, Eurostat, S&P Global Capital IQ Pro.

Malta has not yet tapped into the growing demand for ESG (Environmental, social, and corporate governance) compliant products. So far, there have been no issuances of green bonds nor has a green instrument been listed on the Malta Stock Exchange. The findings of a recent Maltese central-bank study on green finance suggest that the main issue is an informational mismatch between investors and issuers. The study recommends that the government kickstart the new market by issuing its own green bonds and implementing tax incentives.

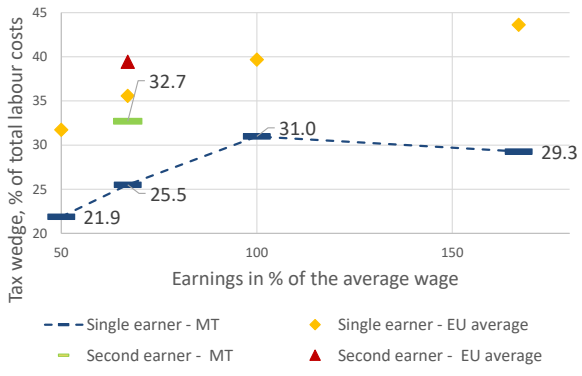
Domestically relevant insurers continue to operate on healthy capital and liquidity levels, although risks remain. Only 9 out of the 71 licensed insurance companies underwrite risks that are prevalent in Malta and are classified as domestically relevant. The assets of these 9 licensed insurance companies fell in the first half of 2022 by 9.3% compared to the first half of 2021 to EUR 3.7 bn, equivalent to 23.6% of GDP. Their profitability also fell in the first half of 2022, particularly in the non-life sector, due to rising claims and operational expenses. By June 2022, the solvency ratios of the domestically relevant insurance companies had fallen compared to June 2021, but they remain solid at 205.3% for the life sector and 241.5% for the non-life sector. As is the case with other counties, the uncertain external economic outlook and high inflation may generate short-term losses for insurance businesses in Malta.

The assets of domestically relevant investment funds fell in the first 6 months of 2022. The assets of 38 funds classified as domestically relevant decreased by 13.5% to EUR 1.6 bn (equivalent to 10.3% of GDP) in the first 6 months of 2022 compared with the first 6 months of 2021. This fall was mainly due to the price declines in the equity and bond markets. Those investment funds remain highly liquid with low leverage. Because bonds account for almost two-thirds of their total assets, the continued increase in interest rates may put further pressure on asset prices and might provoke a rebalancing of their portfolio structure towards equities.

This annex provides an indicator-based overview of Malta's tax system. It includes information on the tax structure (the types of tax that Malta derives most of its revenue from), the tax burden on workers, and the progressivity and redistributive effect of the tax system. It also provides information on tax collection and compliance and on the risks of aggressive tax planning activity.

Malta's tax revenues are relatively low in relation to its GDP, but Malta remains highly reliant on corporate income taxes. Table A19.1 shows that Malta's tax revenues as a percentage of GDP remained relatively stable at 30.5% and considerably below the EU aggregate of 40.6% in 2021. Its tax system relies almost equally on labour taxation and growth-friendly taxes. In 2021, Malta's labour tax revenues as a percentage of GDP were, at 12.4%, well below the EU aggregate of 20.9%. Both consumption tax revenues and environmental taxes as a percentage of GDP were slightly below the EU aggregate. Corporate taxes, however, remain the predominant source of tax revenues in Malta. Revenues from property taxes were relatively low as a percentage of both GDP and total tax revenues. Malta does not have recurrent property taxes, which are among the taxes least detrimental to growth.

Graph A19.1: **Tax wedge for single and second earners as a % of total labour costs, 2022**



Second earner tax wedge assumes first earner at 100% of the average wage and no children
Source: European Commission

The labour tax burden is much lower than the EU average, but it is also less progressive. Graph A19.1 shows that the labour tax wedge for Malta in 2022 was much lower than the EU average for single people at 50% of the income level of the average wage and at higher levels of income. Second earners at a wage level of 67% of the average wage, whose spouses earn the average wage, were also subject to a tax wedge that was lower than the EU average. The level of progressivity, expressed by the shape of the curve, is below the EU average. For higher incomes than

Table A19.1:**Taxation indicators**

		Malta					EU-27				
		2010	2019	2020	2021	2022	2010	2019	2020	2021	2022
Tax structure	Total taxes (including compulsory actual social contributions) (% of GDP)	30.9	29.8	29.5	30.5		37.9	39.9	40.0	40.6	
	Labour taxes (as % of GDP)	9.9	10.9	12.2	12.4		20.0	20.7	21.3	20.9	
	Consumption taxes (as % of GDP)	11.9	10.7	10.3	10.1		10.8	11.1	10.7	11.2	
	Capital taxes (as % of GDP)	9.1	8.0	6.9	7.4		7.1	8.1	8.0	8.5	
	Total property taxes (as % of GDP)	1.0	1.1	0.7	0.8		1.9	2.2	2.2	2.2	
	Recurrent taxes on immovable property (as % of GDP)	0.0	0.0	0.0	0.0		1.1	1.2	1.2	1.1	
	Environmental taxes as % of GDP	2.8	2.4	2.3	1.9		2.4	2.4	2.2	2.2	
Progressivity & fairness	Tax wedge at 50% of average wage (Single person) (*)	18.9	22.1	22.4	21.7	21.9	33.9	32.3	31.9	32.1	31.7
	Tax wedge at 100% of average wage (Single person) (*)	26.4	30.7	31.0	30.8	31.0	41.0	40.1	39.9	39.7	39.7
	Corporate income tax - effective average tax rates (1) (*)		28.4	28.4	28.4			19.5	19.4	19.1	
	Difference in Gini coefficient before and after taxes and cash social transfers (pensions excluded from social transfers) (2) (*)	7.2	6.0	6.3	6.2		8.6	7.7	8.1	7.8	
Tax administration & compliance	Outstanding tax arrears: total year-end tax debt (including debt considered not collectable) / total revenue (in %) (*)		113.0	174.9				31.6	40.7		
	VAT Gap (% of VAT total tax liability, VTTL)		26.0	24.1				11.0	9.1		

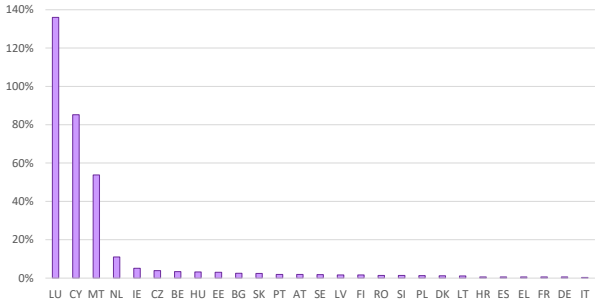
(1) Forward-looking effective tax rate (OECD).
(2) A higher value indicates a stronger redistributive impact of taxation.
(*) EU-27 simple average
For more data on tax revenues as well as the methodology applied, see European Commission, Directorate-General for Taxation and Customs Union, *Taxation trends in the European Union: data for the EU Member States, Iceland, Norway and United Kingdom: 2021 edition*, Publications Office of the European Union, 2021, https://data.europa.eu/doi/10.2778/843047 and the *Data on Taxation* webpage, https://ec.europa.eu/taxation_customs/taxation-1/economic-analysis-taxation/data-taxation_en.
For more details on the VAT gap, see European Commission, Directorate-General for Taxation and Customs Union, *VAT gap in the EU: report 2022*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2778/109823.
Source: European Commission, OECD.

the average wage, the tax wedge even decreases, suggesting regressive taxation. The limited progressivity of the tax system is also reflected in the lower impact of the tax and benefit system in reducing income inequality, expressed by the Gini-coefficient, than the EU average in 2021 (Table A19.1).

There is room to improve the performance of the tax authority in terms of tax compliance and tax administration. In 2020, outstanding tax arrears increased by 61.9 percentage points (pps) to 174.9% of total net revenue. This remains significantly above the EU-27 average of 40.7%. On-time filing for personal income tax improved to almost 90% in 2020, but almost 50% of corporate income tax returns were filed late and the on-time filing rate for VAT fell to 61.7% in 2020 ([115]). In 2020, the VAT gap (the gap between revenues actually collected and the theoretical tax liability) decreased by 1.9 pps to 24.1%, which is significantly above the EU-wide gap of 9.1%.

Aggressive tax planning is still a key challenge. The high foreign direct investment flows and the high level of dividend (Graph A19.2), interest and royalty payments as a percentage of GDP indicates that aggressive tax planning is taking place in Malta. This is also indicated by the high use of special purpose entities, which account for 96% and 98% of net inward and outward foreign direct investment (FDI) respectively (compared to an EU average of 37% and 46%). While challenges remain to be addressed (e.g. non-domiciled company rules; the citizenship and residence schemes; and the absence of withholding taxes), Malta's RRP includes four reforms that target aggressive tax planning and these measures are a step in the right direction.

Graph A19.2: **Total outgoing dividends by Member States in % of GDP, 2021**



Source: European Commission

([115])5711f734-en.pdf (oecd-ilibrary.org)

Table A20.1:**Key economic and financial indicators**

	2004-07	2008-12	2013-19	2020	2021	2022	forecast 2023	forecast 2024
Real GDP (y-o-y)	2.7	2.5	7.1	-8.6	11.8	6.9	3.9	4.1
Potential growth (y-o-y)	2.8	3.2	6.3	4.3	3.2	5.9	4.5	4.4
Private consumption (y-o-y)	2.8	1.3	4.3	-10.5	8.1	10.1	3.8	4.0
Public consumption (y-o-y)	1.0	3.3	4.5	15.8	6.9	2.4	5.0	3.3
Gross fixed capital formation (y-o-y)	6.2	-1.3	10.2	-6.6	10.9	30.4	-5.0	3.5
Exports of goods and services (y-o-y)	7.7	7.4	8.0	-1.6	6.3	6.4	3.6	3.0
Imports of goods and services (y-o-y)	7.7	6.3	7.3	2.0	3.8	9.7	2.2	2.7
Contribution to GDP growth:								
Domestic demand (y-o-y)	3.3	1.2	4.9	-3.5	7.2	10.9	1.4	3.2
Inventories (y-o-y)	-0.3	-0.2	0.2	0.5	-0.3	-0.1	0.0	0.0
Net exports (y-o-y)	-0.5	1.5	2.0	-5.7	4.9	-4.0	2.6	0.9
Contribution to potential GDP growth:								
Total Labour (hours) (y-o-y)	0.5	0.7	3.2	2.1	0.5	2.1	1.4	1.4
Capital accumulation (y-o-y)	1.4	1.0	1.6	1.4	1.6	2.7	2.0	1.9
Total factor productivity (y-o-y)	0.9	1.4	1.5	0.8	1.1	1.1	1.1	1.1
Output gap	-0.1	-1.1	2.4	-9.1	-1.4	-0.6	-1.1	-1.4
Unemployment rate	6.9	6.5	4.7	4.4	3.4	2.9	2.9	2.9
GDP deflator (y-o-y)	2.1	2.3	2.5	1.6	1.9	5.2	4.2	3.1
Harmonised index of consumer prices (HICP, y-o-y)	2.1	2.9	1.2	0.8	0.7	6.1	5.4	2.8
HICP excluding energy and unprocessed food (y-o-y)	1.8	2.1	1.3	0.8	0.7	6.2	5.8	3.1
Nominal compensation per employee (y-o-y)	2.9	3.3	4.1	-0.4	4.6	2.8	5.6	3.1
Labour productivity (real, hours worked, y-o-y)	1.6	1.8	1.3	-3.8	8.6	2.7	1.1	1.3
Unit labour costs (ULC, whole economy, y-o-y)	1.6	2.7	2.5	12.0	-3.7	2.1	3.9	1.3
Real unit labour costs (y-o-y)	-0.5	0.4	0.0	10.3	-5.5	-3.0	-0.3	-1.7
Real effective exchange rate (ULC, y-o-y)	0.3	0.7	1.4	7.6	-4.0	-1.4	-1.5	-2.1
Real effective exchange rate (HICP, y-o-y)	1.4	-0.2	0.2	1.1	-1.0	-2.5	.	.
Net savings rate of households (net saving as percentage of net disposable income)	.	.	.	.	.	.	.	.
Private credit flow, consolidated (% of GDP)	12.2	9.8	7.4	6.5	9.2	.	.	.
Private sector debt, consolidated (% of GDP)	140.0	163.7	131.7	137.6	129.0	.	.	.
of which household debt, consolidated (% of GDP)	46.8	57.7	50.7	54.7	52.2	.	.	.
of which non-financial corporate debt, consolidated (% of GDP)	93.2	106.0	80.9	82.9	76.8	.	.	.
Gross non-performing debt (% of total debt instruments and total loans and advances) (1)	1.7	1.6	2.4	2.7	2.3	.	.	.
Corporations, net lending (+) or net borrowing (-) (% of GDP)	.	.	.	.	.	.	.	.
Corporations, gross operating surplus (% of GDP)	29.4	31.3	36.4	37.3	.	.	.	.
Households, net lending (+) or net borrowing (-) (% of GDP)	.	.	.	.	.	.	.	.
Deflated house price index (y-o-y)	13.5	-0.9	3.2	2.2	3.8	1.2	.	.
Residential investment (% of GDP)	7.4	4.1	3.4	4.5	4.6	4.3	.	.
Current account balance (% of GDP), balance of payments	-5.3	-3.8	4.2	2.2	1.2	-5.8	2.4	2.7
Trade balance (% of GDP), balance of payments	-1.6	1.4	13.2	17.0	14.5	8.6	.	.
Terms of trade of goods and services (y-o-y)	-0.1	0.0	0.7	0.2	0.0	-0.1	0.1	0.1
Capital account balance (% of GDP)	2.3	1.3	1.2	0.6	1.0	1.1	.	.
Net international investment position (% of GDP)	30.6	10.7	45.3	60.2	51.3	52.3	.	.
NENDI - NIIP excluding non-defaultable instruments (% of GDP) (2)	86.8	168.7	216.8	269.1	255.6	239.1	.	.
IIP liabilities excluding non-defaultable instruments (% of GDP) (2)	452.3	698.9	465.5	289.6	267.7	229.6	.	.
Export performance vs. advanced countries (% change over 5 years)	.	36.3	13.9	31.7	19.7	.	.	.
Export market share, goods and services (y-o-y)	-0.7	2.3	5.0	8.7	-9.6	2.4	0.9	-0.7
Net FDI flows (% of GDP)	-154.7	-77.5	-80.5	-74.1	-65.4	-61.5	.	.
General government balance (% of GDP)	-2.9	-3.2	0.3	-9.7	-7.8	-5.8	-5.1	-4.5
Structural budget balance (% of GDP)	.	.	-0.8	-5.3	-7.1	-5.5	-4.6	-3.9
General government gross debt (% of GDP)	66.8	66.1	53.0	52.9	55.1	53.4	54.8	56.1

(1) Domestic banking groups and stand-alone banks, EU and non-EU foreign-controlled subsidiaries and EU and non-EU foreign-controlled branches.
(2) Net international investment position (NIIP) excluding direct investment and portfolio equity shares.
Source: Eurostat and ECB as of 2 May 2023, where available; European Commission for forecast figures (Spring forecast 2023).

This Annex assesses fiscal sustainability risks for Malta over the short, medium and long term. It follows the same multi-dimensional approach as the European Commission's 2022 Debt Sustainability Monitor, updated based on the Commission's 2023 spring forecast.

1 - Short-term risks to fiscal sustainability are low overall. The Commission's early-detection indicator (S0) does not signal major short-term fiscal risks (Table A21.2). ([116]) Gross financing needs are expected to remain limited at around 12% of GDP in the short-term (i.e. over 2023-2024, although declining compared with the recent peak in 2020 (Table A21.1, Table 1). Financial markets' perceptions of sovereign risk are positive, as confirmed by the spread and the medium-grade 'A2/A-/A+' rating that the three major rating agencies assigned to Maltese government debt.

2 - Medium-term risks to fiscal sustainability are medium overall.

The DSA for Malta shows that, under the baseline, the government debt-to-GDP ratio is expected to increase over the medium-term, while remaining just below 60% of GDP by 2033 (Graph 1). **(**[117]**)**, ([118]) The assumed structural primary balance (a deficit of 2.4% of GDP) contributes to these developments. It seems low compared to past fiscal performance, indicating ample room for corrective action. At the same time, the baseline projections up to 2033 benefit from a very favourable (although diminishing) snowball effect, notably thanks to the favourable impact of NextGenerationEU, with real GDP growth at around 3.8% of GDP over 2025-2033. Government gross financing needs are expected to stabilise over the projection period, around 12% of GDP in 2033, close to the level forecast for 2024.

The baseline projection is stress-tested against four alternative scenarios to assess the impact of changes in key assumptions (Graph 1). For Malta, reverting to historical trajectories under the 'historical structural primary balance (SPB)' scenario would support debt reduction. If the SPB gradually converged to a broadly balanced budget (its historical 15-year average), it would result in a lower projected debt-to- (by around 15 pps.) than in the baseline in 2033. Reducing the SPB level permanently by half of the cumulative forecast change under the 'lower structural primary balance scenario' would lead to a higher government debt-to-GDP ratio by 2033 (about 9 pps.) as compared with the baseline. A permanent worsening of the macro-financial conditions, as reflected under the 'adverse interest- growth rate differential' scenario (i.e. 1 pp. higher than the baseline) would also lead to higher government debt-to-GDP ratio (about 4 pps.) by 2033, as compared with the baseline. A temporary worsening of financial conditions, as reflected in the 'financial stress 'scenario (i.e. temporarily increase of interest rates by 1 pp.), would provide a broadly similar, though slightly higher, public debt-to-GDP ratio by 2033 compared with the baseline.

Additionally, stochastic projections show a low risk associated to these projections against plausible unforeseen events (Graph 2)**. (**[119]**)** These stochastic simulations point to a 64% probability of the debt ratio in 2027 being greater than in 2022, entailing low risk given the initial low debt level. In addition, such shocks point to low uncertainty (i.e. the difference between the 10th and 90th debt distribution percentiles)

([116])The S0 is a composite indicator of short-term risk of fiscal stress. It is based on a wide range of macro-financial and fiscal variables that have proven to perform well in the past in detecting situations of upcoming fiscal stress.

([117])The assumptions underlying the Commission's 'no-fiscal policy change' baseline notably comprise: (i) a structural primary deficit, before ageing costs, of 2.4% of GDP as of 2024; (ii) inflation converging linearly towards the 10-year forward inflation-linked swap rate 10 years ahead (which refers to the 10-year inflation expectations 10 years from now); (iii) the nominal short- and long-term interest rates on new and rolled over debt converging linearly from current values to market-based forward nominal rates by T+10; (iv) real GDP growth rates from the Commission 2023 spring forecast until 2024, followed by EPC/OGWG 'T+10 methodology projections between T+3 and T+10, i.e. for 2025-2033 (on average 3.8%); (v) ageing costs in line with the 2021 Ageing Report (European Commission, Institutional Paper 142, November 2020). For information on the methodology, see the 2022 Debt Sustainability Monitor.

([118])Table 1 shows the baseline debt projections and its breakdown into the primary balance, the snowball effect (the combined impact of interest payments and nominal GDP growth on the debt dynamics) and the stock-flow adjustment.

([119])The stochastic projections show the joint impact on debt of 2000 different shocks affecting the government's budgetary position, economic growth, interest rates and exchange rates. The cone covers 80% of all the simulated debt paths, therefore excluding tail events.

surrounding the government debt baseline projections.

3 - Long-term risks to fiscal sustainability are high overall. ([120])

The S2 indicator (at 9.3 pps of GDP) points to high fiscal sustainability risks. The indicator shows that, relative to the baseline, the SPB would need to substantially improve to ensure debt stabilisation over the long term. This result is underpinned by the projected increase in ageing-related costs (contribution of 6.6 pps. of GDP) and the unfavourable budgetary position (contribution of 2.7 pps. of GDP). Ageing costs' developments are driven by the increase of pension expenditure (contribution of 3.1 pps. of GDP) as well as health and long-term care spending (joint contribution of 3.6 pps. of GDP) (Table 2).

Combined with debt vulnerabilities, as highlighted by the S1 indicator, overall long-term risks are assessed as high. Indeed, the S1 sustainability gap indicator signals that a significant consolidation effort of 4.6 pps. of GDP would be needed to reduce debt to 60% of GDP by 2070. This result is mainly driven by the projected increase of ageing-related public expenditure (contribution of 2.6 pps. of GDP) and the unfavourable budgetary position (contribution of 2.1 pps. of GDP). (Table 2).

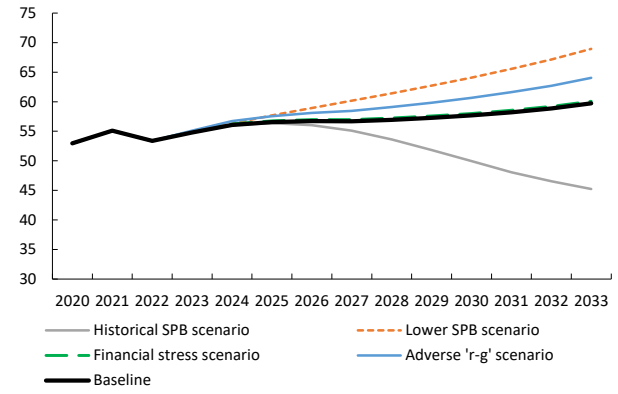
Finally, several additional risk factors need to be considered in the assessment. On one hand, several factors aggravate sustainability risks such as the recent increase in interest rates. Despite a lengthening of debt maturity in recent years, the share of short-term debt remains significant (more the 8% of total debt). Some contingent liability risks linked to State guaranteed credit lines, including granted to firms and the self-employed during the COVID-19 crisis. However, this risk remains limited due to relatively low take-up. On the other-hand, risk-mitigating factors include Malta's positive net international investment position, the lengthening of debt maturity in recent years, relatively stable financing sources (with a diversified and large investor base) a well-capitalised banking sector with a strong liquidity position and the currency denomination of debt. In addition, the structural reforms under the NGEU/RRF, if fully implemented, could have a further positive impact on GDP growth in the coming years, and therefore further mitigate the debt sustainability risks.

([120])The S2 fiscal sustainability gap indicator measures the permanent fiscal effort (SPB adjustment) in 2024 that would be required to stabilise public debt over the long term. It is complemented by the S1 fiscal sustainability gap indicator, which measures the permanent fiscal effort required in 2024 to bring the debt-to-GDP ratio to 60% in the long term (by 2070). For both the S1 and S2 indicators, the risk assessment depends on the amount of fiscal consolidation needed: 'high risk' if the required effort exceeds 6 pps. of GDP, 'medium risk' if it lies between 2 pps. and 6 pps. of GDP, and 'low risk' if the effort is negative or below 2 pps. of GDP. The overall long-term risk classification brings together the risk categories derived from S1 and S2. S1 may notch up the risk category derived from S2 when it signals a higher risk than S2. See the 2022 Debt Sustainability Monitor for further details.

Table A21.1:**Debt sustainability analysis - Malta**

Table 1. Baseline debt projections	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Gross debt ratio (% of GDP)	**52.9**	**55.1**	**53.4**	**54.8**	**56.1**	**56.5**	**56.7**	**56.7**	**56.9**	**57.3**	**57.7**	**58.2**	**58.9**	**59.7**
Changes in the ratio	12.6	2.1	-1.7	1.4	1.3	0.5	0.2	0.0	0.3	0.3	0.4	0.5	0.7	0.9
of which														
Primary deficit	8.4	6.7	4.8	3.9	3.1	2.8	2.4	2.2	2.1	2.1	2.1	2.0	2.1	2.1
Snowball effect	4.4	-5.3	-5.1	-2.9	-2.2	-2.4	-2.2	-2.2	-1.9	-1.8	-1.6	-1.5	-1.4	-1.3
Stock-flow adjustments	-0.1	0.8	-1.4	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs (% of GDP)	16.0	15.4	10.5	11.7	11.5	11.1	10.9	10.8	11.0	11.1	11.3	11.5	11.8	12.0

Graph 1. Deterministic debt projections



Graph 2. Stochastic debt projections 2023-2027

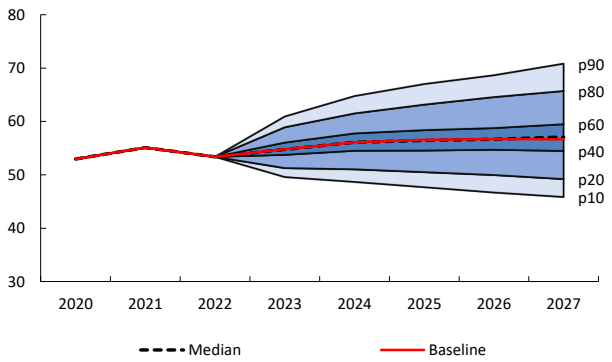


Table 2. Breakdown of the S1 and S2 sustainability gap indicators

		S1	S2
Overall index (pps. of GDP)		**4.6**	**9.3**
of which			
Initial budgetary position		2.1	2.7
Debt requirement		-0.1	
Ageing costs		2.6	6.6
of which	*Pensions*	1.0	3.1
	Health care	1.2	2.2
	Long-term care	0.7	1.4
	Others	-0.3	-0.1

Source: Commission services.

Table A21.2:**Heap map of fiscal sustainability risks - Malta**

Short term	Medium term - Debt sustainability analysis (DSA)								Long term		
			Deterministic scenarios								
Overall (S0)	Overall		Baseline	Historical SPB	Lower SPB	Adverse 'r-g'	Financial stress	Stochastic projections	S2	S1	Overall (S1 + S2)
LOW	MEDIUM	Overall	LOW	LOW	MEDIUM	MEDIUM	MEDIUM	LOW	HIGH	MEDIUM	HIGH
		Debt level (2033), % GDP	59.7	45.2	68.9	64.0	60.1				
		Debt peak year	2033	2025	2033	2033	2033				
		Fiscal consolidation space	64%	50%	82%	64%	64%				
		Probability of debt ratio exceeding in 2027 its 2022 level						64%			
		Difference between 90th and 10th percentiles (pps. GDP)						25.0			

(1) *Debt level* in 2033. Green: below 60% of GDP. Yellow: between 60% and 90%. Red: above 90%. (2) The *debt peak year* indicates whether debt is projected to increase overall over the next decade. Green: debt peaks early. Yellow: peak towards the middle of the projection period. Red: late peak. (3) *Fiscal consolidtation space* measures the share of past fiscal positions in the country that were more stringent than the one assumed in the baseline. Green: high value, i.e. the assumed fiscal position is plausible by historical standards and leaves room for corrective measures if needed. Yellow: intermediate. Red: low. (4) *Probability of debt ratio exceeding in 2027 its 2022 level*. Green: low probability. Yellow: intermediate. Red: high (also reflecting the initial debt level). (5) the *difference between the 90th and 10th percentiles* measures uncertainty, based on the debt distribution under 2000 different shocks. Green, yellow and red cells indicate increasing uncertainty.

Source: Commission services (for further details on the Commission's multidimensional approach, see the 2022 Debt Sustainability Monitor).