

**05.07.2023****Cover letter: 'Towards a Fossil Free Malta' report**

Friends of the Earth Malta have recently published a report on Malta's energy system, and its climate impacts, the proposed Melita TransGas pipeline, and a vision for a future without fossil fuels. The 'Towards a Fossil Free Malta' report was compiled and written by Dr Suzanne Maas (Climate Campaign Coordinator at Friends of the Earth Malta) alongside contributors Prof. Edward Mallia, Prof. Luciano Mule'Stagno, Dr John Paul Cauchi and Dr Michael Borg.

Hereby, we would like to present this report for consideration in the documentation used by the Public Accounts Committee for their investigation of the ElectroGas contract. In particular, we want to highlight the following points, further elaborated and supported by sources in the report:

- In 2013, Enemalta awarded a contract for the operation of an LNG facility and power plant to the ElectroGas Malta consortium. The agreement contains an early termination option for Enemalta, the "GSA Exit" clause designed to enable the transition to gas supply from the proposed Melita gas pipeline between Sicily and Malta.
- While the shift from heavy fuel oil to gas is generally attributed to lowering emissions per unit, in reality, gas remains a fossil fuel, contributing to further climate change. Fossil gas is a major emitter of carbon dioxide and gas extraction and transport are also associated with leaking methane throughout the supply chain. Methane (CH<sub>4</sub>) is a potent greenhouse gas: 86 times more damaging than CO<sub>2</sub> over a time span of 20 years. When properly accounted for, methane leakage makes gas as bad a fossil fuel as coal, in terms of its greenhouse gas emissions. This is particularly the case for LNG, because of its long complex supply chain, which makes it more prone to methane leaks and emissions, as well as the emissions from the transport itself. The International Energy Agency found that energy-related methane emissions are 70% higher than reported.
- There is a risk that the Melita TransGas pipeline will result in Maltese taxpayer money and EU funding - used for the studies, construction and eventual operation of the Melita TransGas pipeline - ending up in the pockets of ElectroGas shareholders. This includes Yorgen Fenech, former director of ElectroGas, who stands accused of being the mastermind behind the murder of Daphne Caruana Galizia. The journalist was investigating the ElectroGas deal and corruption allegations involving the business groups behind ElectroGas as well as local politicians, at the time she was assassinated.
- In line with the European Green Deal, EU funding can no longer be allocated to fossil fuel projects, including gas. It can now only be spent on electricity projects, including interconnectors and smart grids, as well as infrastructure for gases such as biogas, biomethane, and hydrogen. It is now a condition that the gas pipeline will be adapted to a hydrogen pipeline by 2029 latest. To this end, the Melita TransGas pipeline was subsequently rebranded as a 'hydrogen-ready' pipeline. However, while hydrogen may be presented as a type of 'green' energy, currently 99% of hydrogen is produced from fossil fuels. The main type of hydrogen available today, 'grey' hydrogen, is created via steam-reforming from natural gas or coal. 'Green' hydrogen, currently available only in experimental pilot projects, is produced via electrolysis. This is still only as green as the electricity powering it: it is only 'green' if produced using renewable energy. In addition, hydrogen is not an efficient energy carrier; the electricity from renewable sources needed to create 'green' hydrogen can be used more efficiently directly as electricity. Therefore, the EU hydrogen strategy emphasises the importance of targeting the use of hydrogen only in specific processes for which there are limited or no climate-neutral energy alternatives, such as for the shipping and aviation industries.



Friends of the Earth Malta  
Xatt lo-Cangatura  
Floriana, Malta FRN 1260

[info@foemalta.org](mailto:info@foemalta.org)  
[www.foemalta.org](http://www.foemalta.org)

In conclusion, as Friends of the Earth Malta we demand that no new infrastructure is built for fossil fuels and a phase-out for fossil gas is planned, by 2035 latest. We need to ensure that hydrogen is not used as a veil to greenwash the fossil gas pipeline project. If green hydrogen is to be part of Malta's future energy mix, we demand a national plan that outlines a timeline and information about the sourcing and production of green hydrogen and its foreseen use in sectors. The Melita TransGas pipeline project will trigger the payment of an exit price from the Maltese government to ElectroGas, to compensate for the infrastructure assets the energy company would hand over. We ask for assurance that taxpayers' money does not end up in the pockets of shareholders being investigated for corruption and criminal offences.

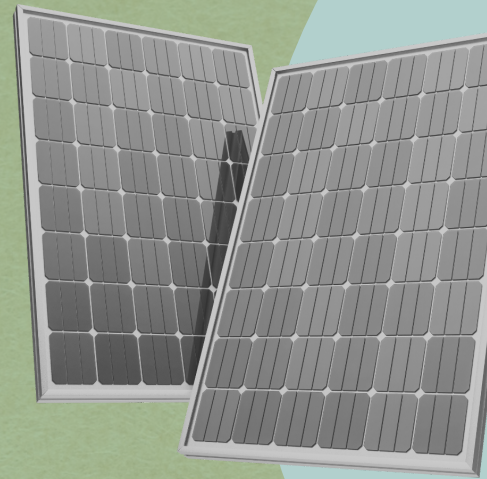
Thank you for your time and work.

Best regards,

Dr Suzanne Maas

# TOWARDS A FOSSIL FREE MALTA

*A report on the energy system  
in Malta, its climate impacts,  
and a vision for the future*



# CONTENT

<b>About Friends of the Earth Malta's Climate campaign</b>	1
<b>Summary for policymakers</b>	2
<b>Abbreviations</b>	3
<b>Energy in Malta</b>	5
Introduction	5
Malta's energy history	6
Greenhouse gas emissions from energy	9
Climate and energy policy in Malta	10
Current and future electricity generation and energy consumption	17
Current and future energy use in transport	19
The proposed Melita TransGas pipeline	21
<b>Recommendations for a fossil free future for Malta</b>	23
<b>References</b>	27



Friends of the Earth Malta, June 2023

*Author* Dr Suzanne Maas, Climate Campaign Coordinator, Friends of the Earth Malta

*Contributors* Ann Bugeja, Martin Galea De Giovanni, Dr John Paul Cauchi, Dr Michael Borg, Prof Edward Mallia, Prof Luciano Mule'Stagno

*Proofreading* Raisa Galea

*Design* Anastasia Finkel, Elina Medvedeva; Illustrations by Black Pepper CY



Friends of the Earth Malta gratefully acknowledges the support of the European Climate Foundation. The contents of this document are the sole responsibility of Friends of the Earth Malta and cannot be regarded as reflecting the position of the funders mentioned above. The funders cannot be held responsible for any use which may be made of the information this document contains.



# ABOUT FRIENDS OF THE EARTH MALTA'S CLIMATE CAMPAIGN

Over 10 years ago, Friends of the Earth Malta was actively campaigning for a Climate Bill in Malta, as part of the campaign 'The Big Ask'. In this European campaign, Friends of the Earth groups in 16 Member States were calling on their governments to create climate change laws. In Malta, this goal was achieved via the adoption of the Climate Action Act, in 2015! The Act transposes the legally binding commitments that Malta has as an EU Member State under the 2015 Paris Agreement. Sadly, since that successful win, we have not seen the ambitious climate policy that we were hoping for.



Left: Images from the 'Big Ask' campaign // Right: Banner for a protest in 2019

The Maltese government issued a Climate Emergency in 2019, but since then it's been business as usual. As Friends of the Earth Malta, we believe we need bold and ambitious climate policy to reduce our carbon emissions and ensure we live within the planetary boundaries. Malta may be small but was actually the country that first tabled the issue of climate change at the United Nations in 1988. Friends of the Earth Malta is pushing the Maltese government to live up to that legacy and ensure a future for our country and planet, our only home.

To push for a clean energy future for our islands, in 2022 we started building a new climate campaign. As Friends of the Earth Malta, we oppose further investment in fossil fuels, including the proposed Melita TransGas pipeline, and we promote investment in energy savings, renewable energy sources, and community energy, with the vision of a fossil free future for Malta!

– Dr Suzanne Maas, Climate Campaign Coordinator  
Friends of the Earth Malta

Find out more about our Climate Campaign at [www.foemalta.org/climate](http://www.foemalta.org/climate)  
& support our work through [www.foemalta.org/donate](http://www.foemalta.org/donate)



# SUMMARY FOR POLICYMAKERS

"New fossil fuel infrastructure is incompatible with international climate goals", have both the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) clearly and explicitly stated in their most recent reports.

As Friends of the Earth Malta, locally and within the international Friends of the Earth network, we are fighting to move away from fossil fuels - oil, coal, and gas - as soon as possible. New fossil fuel infrastructure is incompatible with global, EU, and national greenhouse gas emission reduction targets. Therefore, we are deeply concerned about the proposed Melita TransGas pipeline, which would lock Malta into a fossil fuel future.

This report represents an overview of the energy system in Malta, its history and where we stand today, and our recommendations towards a fossil free future for Malta:

- 1 ACT LIKE YOUR HOUSE IS ON FIRE!**  
We must take ambitious action to reduce greenhouse gas emissions now to address the climate crisis.
- 2 NO NEW INFRASTRUCTURE FOR FOSSIL FUELS!**  
We must ensure that any public investment in our energy system is compatible with climate targets and avoid funding any new fossil fuel infrastructure at all costs.
- 3 INVEST IN THE ENERGY OF THE FUTURE!**  
We must invest public money in energy savings, renewables (like solar and wind), and community energy.
- 4 ENVISION A FOSSIL FREE FUTURE FOR MALTA!**  
We must prepare the country for a climate-proof future and move away from fossil fuels as fast as possible, through a clear renewable energy policy supported by data, and a phase-out plan for gas by 2035 latest.



# ABBREVIATIONS

A/C	Air conditioner	kWp	Kilowatt peak
CCGT	Combined cycle gas turbine	LCDS	Low Carbon Development Strategy
CCS	Carbon capture and storage	LNG	Liquefied Natural Gas
CEC	Citizen Energy Cooperatives	LPG	Liquefied Petroleum Gas
CH <sub>4</sub>	Methane	LULUCF	Land use, land use change and forestry
CO <sub>2</sub>	Carbon dioxide	MECP	Ministry for the Environment, Climate Change and Planning (until 2022)
CoE	Council of Europe	MEEE	Ministry for the Environment, Energy and Enterprise (since 2022)
DSO	Distribution System Operator	MRA	Malta Resources Authority
EPBD	Energy Performance in Buildings Directive	MW	Megawatt
ESR	Effort Sharing Regulations	MWh	Megawatt hour
ETD	Energy Taxation Directive	NECP	National Energy and Climate Plan
ETS	Emissions Trading System	N <sub>2</sub> O	Nitrous oxide
EU	European Union	NSO	National Statistics Office
EV	Electric Vehicle	OPM	Office of the Prime Minister
EWA	Energy and Water Agency	PCI	Projects of Common Interest
FAME	Fatty Acid Methyl Ester (biodiesel)	PSO	Public Service Obligation
FSU	Floating Storage Unit	PV	Photovoltaic
Gg	Gigagram	REC	Renewable Energy Community
GHCAP	Grand Harbour Clean Air Project	RED II	Renewable Energy Directive (second revision)
GHG	Greenhouse gas	RES	Renewable Energy Sources
GW	Gigawatt	RES-T	Renewable Energy Sources in Transport
GWh	Gigawatt hour	REWS	Regulator for Energy and Water Services
HFCs	Hydrofluorocarbons	RO	Reverse osmosis
HFO	Heavy Fuel Oil	RRF	Recovery and Resilience Facility
HVO	Hydro-treated Vegetable Oil	SUMP	Sustainable Urban Mobility Plan
IC	Interconnector	SWH	Solar Water Heater
ICE	Internal Combustion Engine	WSC	Water Services Corporation
IEA	International Energy Agency		
IPCC	Intergovernmental Panel on Climate Change		
IPPU	Industrial Processes and Product Use		
kt	Kilotonne		
kW	Kilowatt		
kWh	Kilowatt hour		

# ENERGY IN MALTA

## Introduction

The Maltese Islands – Malta, Gozo, and Comino – cover an area of around 316 km<sup>2</sup> and are home to a population of nearly 520,000 people (NSO, 2022a). Malta is the most densely populated country in the EU, with 1,649 persons per square kilometer. There is only one supplier of electricity in Malta, Enemalta plc, an enterprise with a majority shareholding by the Government, alongside Shanghai Electric Power. Enemalta plc is the only electricity Distribution System Operator (DSO) in Malta (EWA, 2019).

The total electricity supply in Malta has been growing over the past decade, from around 2,200 GWh in 2012, to nearly 2,700 GWh in 2021 (see Figure 1). The energy mix has changed drastically, from almost complete reliance on imported oil to fuel the local power plants, to a mix of sources, including the shift to LNG for power generation, the import of electricity through the interconnector with Sicily, and an increase in energy from renewable sources (NSO, 2022b). To support the growing demand for electricity, Enemalta announced a €90 million investment in 2022 to reinforce the electricity distribution grid (Grech, 2022).

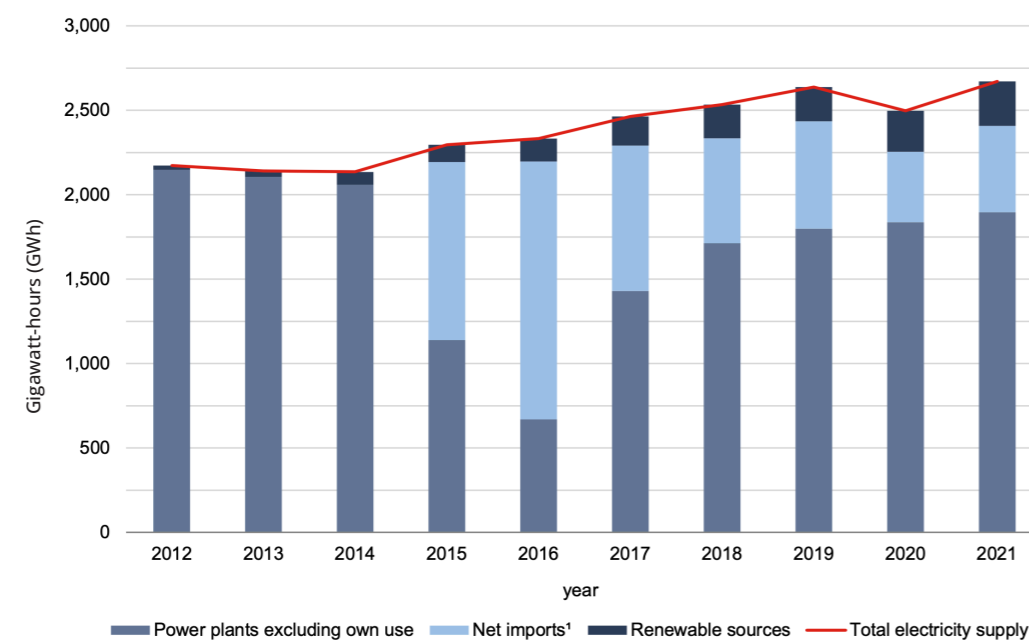


Figure 1: Total electricity supply in Malta by type and year (NSO, 2022b)

Malta has the second lowest final energy consumption per capita across all EU Member States, only slightly above half of the EU average. This can be explained by a combination of factors, including climatic conditions (relatively mild winters, but hot summers) and a lack of energy-intensive industry. Heating requirements in Malta are on the lower end of the scale when compared to other Member States. Malta does not have any district heating (or cooling) networks (EWA, 2019).

Delimara power station, Roberto via Canva.com

The final energy demand by sector in Malta shows the dominance of two sectors: transport (55% of total energy demand) and buildings (45% of total energy demand). This is shown broken down in Figure 2.

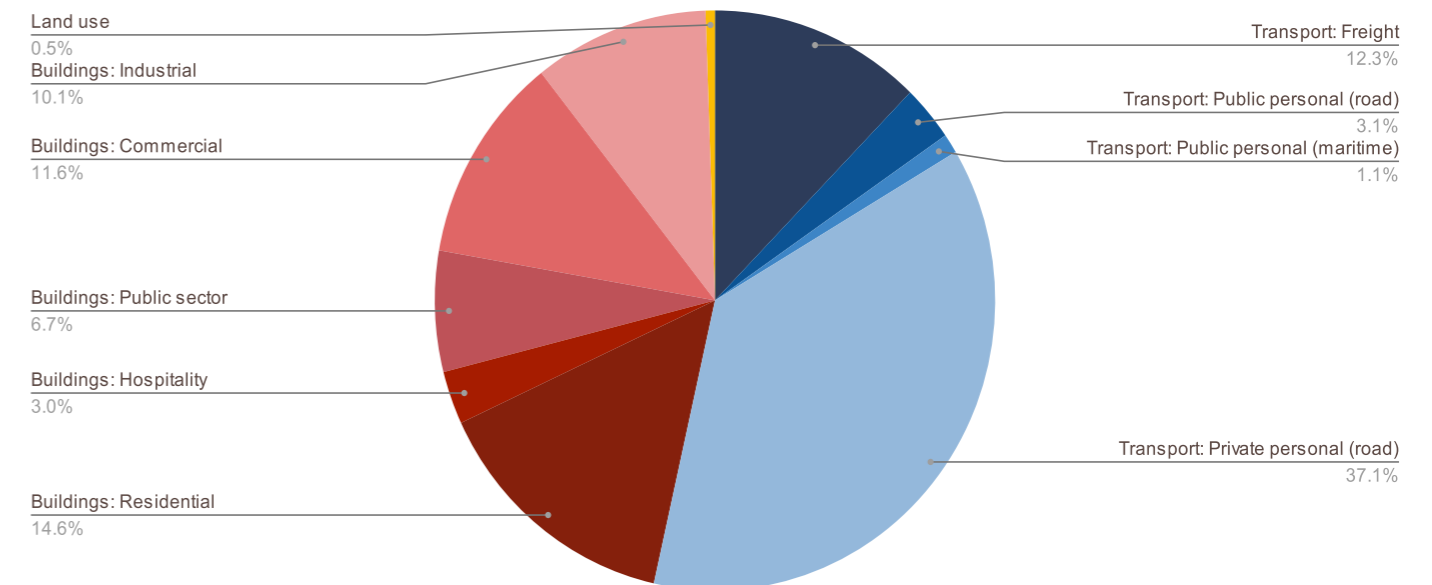


Figure 2: Total energy demand in Malta by sector (adapted from MECP, 2021a)

## Malta's energy history

Until the mid-2010s, Heavy Fuel Oil (HFO) was the main source of energy used to generate electricity in Malta, alongside coal from the early 1980s to the mid-90s, in power plants at Delimara and Marsa (Franzitta et al., 2016). In 1994, the Marsa A station was decommissioned and all coal-fired generating units at Marsa were converted to oil (MaltaToday, 2015).

In 2013, Enemalta awarded a contract for the operation of an LNG facility and power plant to the ElectroGas Malta consortium. ElectroGas Malta comprises three companies, all holding 33.3% ownership: Siemens Project Ventures GmbH, Socar Trading SA, and GEM Holding Limited (a partnership between local shareholders Gasan Group, Tumas Group and CP Holdings) (ElectroGas, 2018a). Socar is Azerbaijan's state-owned energy company. The ElectroGas Malta Facilities were completed in 2017 (ElectroGas, 2018b). LNG is imported via marine carriers and held in a Floating Storage Unit (FSU), a cargo vessel supplying LNG to a regasification plant, and subsequently to the Delimara 3 and Delimara 4 power plants (EWA, 2019):

- Delimara 3 (D3): 8 gas-fired turbines with a maximum rated capacity of 152 MW. 4 of the 8 engines are dual fuel and can also run on gas-oil.
- Delimara 4 (D4): 205 MW gas-fired high-efficiency combined cycle gas turbine (CCGT) commissioned in 2017.

The Enemalta Marsa plant was closed in 2015 (MaltaToday, 2015). In 2015, Malta was connected to the European electricity grid through the Sicily-Malta interconnector with a capacity of 200MW (EWA, 2019). The last HFO plant, Delimara 1, was switched off in 2017 (Enemalta, 2022).

Since 2017, the electricity supply has been generated from the Enemalta plants at Delimara, the D3 Power Generation Ltd and ElectroGas plant in Delimara powered by LNG, imported via the Sicily-Malta interconnector, and generated locally from renewable sources (NSO, 2021). ElectroGas Malta owns and operates the combined cycle gas turbine (CCGT) at D4 running on gas.

The licence to generate electricity from this plant was issued by the Regulator for Energy and Water Services (REWS) to ElectroGas Malta in 2017 (EWA, 2019). The LNG is procured on the international market, with LNG delivered from 8 different countries in 2017 and 2018 (EWA, 2019). Since 2017, Malta has also been exporting electricity through the electricity interconnector (EWA, 2019). There is emergency capacity through the gasoil-fired Delimara 2 plant (Enemalta, 2022).

ElectroGas Malta has been entrusted with a Public Service Obligation (PSO) to make available electricity and gas to Enemalta. As part of the agreements between the Government of Malta, Enemalta and ElectroGas Malta, there is an 18-year agreement securing the supply of up to 215 MWh to Enemalta from D4 CCGT and securing a sufficient supply of gas provided by ElectroGas to meet the demand of both D3 and D4. The agreement contains an early termination option for Enemalta, the "GSA Exit" clause designed to enable the transition to gas supply from the proposed Melita gas pipeline between Sicily and Malta (EWA, 2019).

As part of the agreements, ElectroGas Malta has also agreed to procure LNG on a fixed and indexed price basis for consumption as gas (EWA, 2019). The price at which ElectroGas buys gas from Socar was fixed at €9.40 per unit for five years, until April 2022. Enemalta is contractually bound to purchase a minimum of €131.6 million worth of LNG from ElectroGas every year. After the five-year fixed price period, Enemalta will pay an index-linked price set at 14 percent of Brent oil (Borg, 2018). In 2022, Enemalta signed an agreement with the Italian energy company Enel for an undisclosed

amount of LNG to be purchased by ElectroGas Malta, with the price indexed against the price of Brent crude oil (Martin, 2022).

Following a decade of incentives for households and businesses to invest in renewable energy sources (RES) such as solar PV (photovoltaic), solar water heaters, and heat pumps, the RES share increased from nearly 0 in 2010 to 8% of the total electricity supply in 2020 (MECP, 2021a). The potential for wind energy has been assessed in the past but was found to be unsuitable for Malta - on shore due to high population density and limited land area, as well as challenges with logistics on the tight road network, and offshore, due to restrictions imposed by deep bathymetry, limited wind speeds, the sites of marine protected areas, and competing commercial activities (EWA, 2019). However, now that the technology behind floating offshore wind (as well as solar) is developing, this is being proposed as the pathway for RES for Malta. In 2022, Malta's Energy Minister announced that Malta will be seeking investors to generate a minimum of 50 MW from offshore wind farms or 65 MW from offshore solar plants by 2030 (Azzopardi, 2022). However, despite previous assurances that Malta is shifting its focus from a fossil-fuel-based energy system towards renewable energy, the Finance Ministry granted a new exploration licence to an oil and gas drilling company for exploration in two maritime zones off southeast Malta in early 2023 (Times of Malta, 2023).

Figure 3 provides a timeline of Malta's energy history and proposed future pathway.

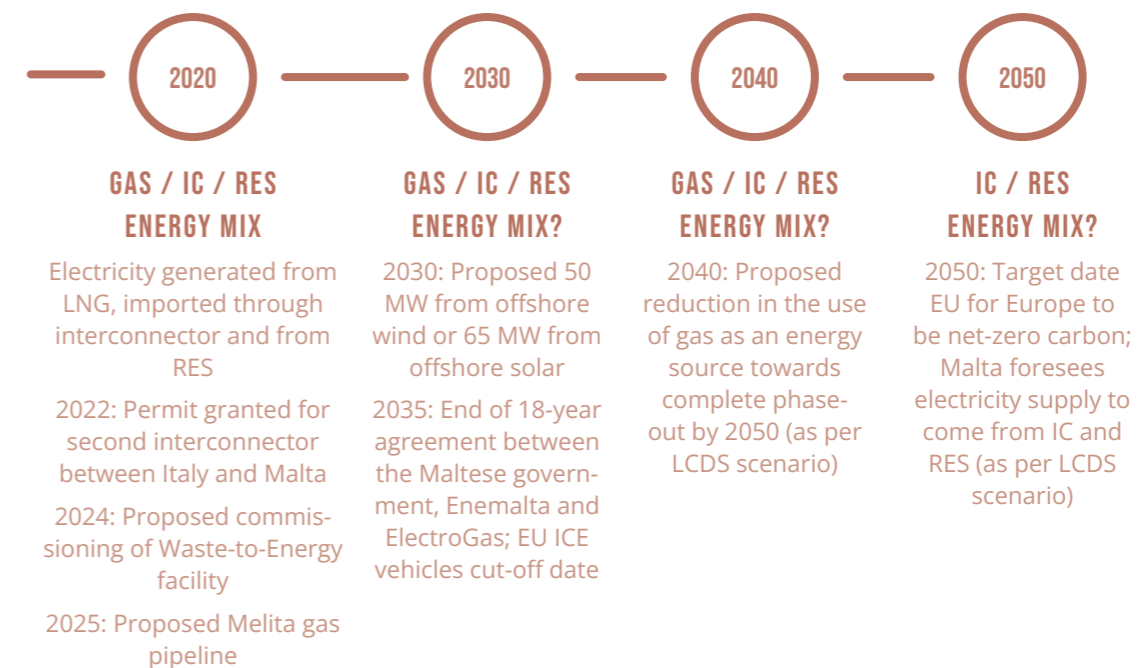
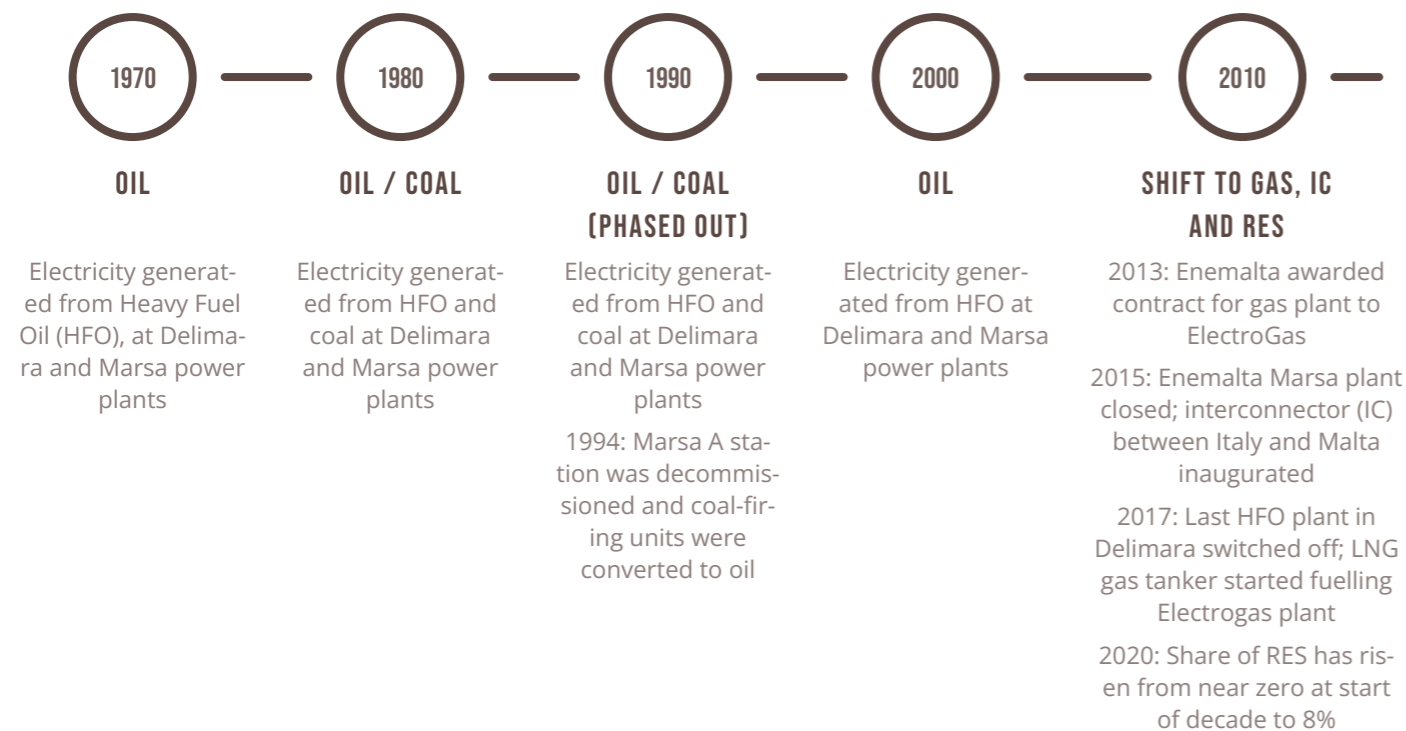


Figure 3: Timeline of Malta's energy history and proposed future pathway

## Greenhouse gas emissions from energy

The vast majority of CO<sub>2</sub> (carbon dioxide) emissions in Malta are attributable to the energy sector, responsible for 99.7% of total national CO<sub>2</sub> emissions. Other sectors, such as industrial processes, land use change, and waste, only contribute small shares to the total. In 2017, energy industries (responsible for the generation of electricity) represented a share of 45% of total national CO<sub>2</sub> emissions in the energy sector, while transport had a share of 39% (EWA, 2019).

Total greenhouse gas (GHG) emissions include not only CO<sub>2</sub> but also methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases (most notably hydrofluorocarbons; HFCs). The energy sector, comprising energy industries responsible for electricity generation, and transport, including national road transport, aviation, and navigation (excluding international aviation and navigation), was responsible for over 75% of national GHG emissions in 2018 (MRA, 2020). In 2019, with total GHG emissions of 2,131 Gg CO<sub>2</sub> equivalent (eq.), energy industries were responsible for 44% of total emissions, transport for 33.5%, with the remainder contributed by the IPPU (Industrial Processes and Product Use) sector, responsible for 11.3% of total GHG emissions, waste for 7.5%, and the agriculture sector for 3.7% (MRA, 2022). The contribution from the IPPU sector to total national GHG emissions has grown over the past 2 decades, almost exclusively due to an increase in refrigeration and air-conditioning processes (MRA, 2020).

The reduction in GHG emissions after 2012, as can be seen in Figure 4, is mainly due to changes in the energy sector, with the shift from heavy fuel oil to gas, and the creation of the interconnector between Malta and Sicily (EWA, 2019). The first emissions reductions in the period 2012-2014 are likely the result of the decommissioning of the old power station in Marsa. The drop in emissions in 2016 (compared to 2015) and the increase in emissions in 2017 (compared to 2016) can be explained by the majority of electricity in 2016 deriving from the interconnector, whereas from 2017 onwards there was increased reliance on local electricity generation (EWA, 2019; NSO, 2022b). Since the carbon footprint of imported electricity is not taken into account in the official emissions inventory of the importer (Muenchrath & Weissenbacher, 2014; MECP, 2021a), the share of electricity imported through the interconnector has a significant impact on the total national GHG emissions.

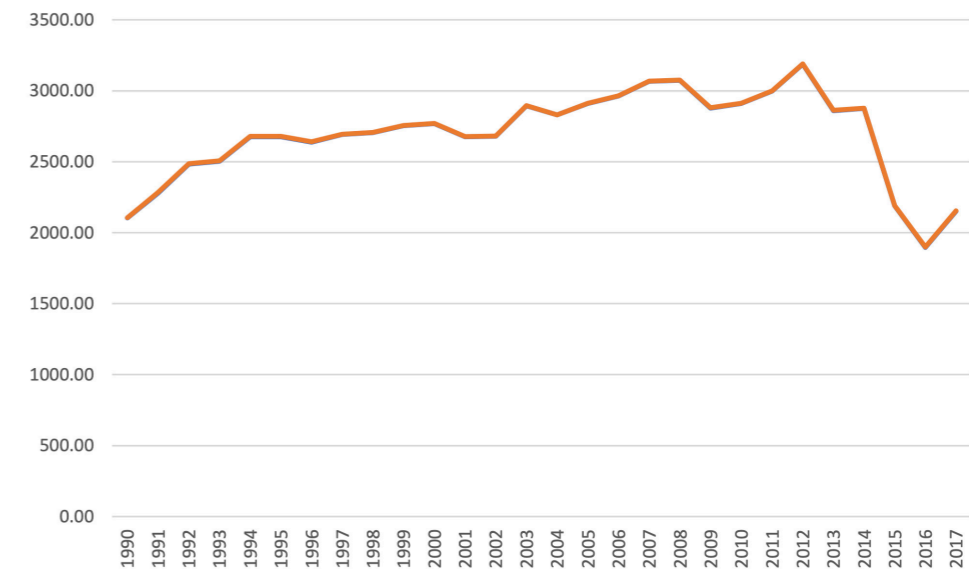


Figure 4: Total GHG emissions per year 1990-2017 (in Gg CO<sub>2</sub> eq.) (adapted from EWA, 2019)

While the shift from heavy fuel oil to gas is generally attributed to lowering emissions per unit, in reality, gas remains a fossil fuel, contributing to further climate change. Fossil gas is a major emitter of carbon dioxide and gas extraction and transport are also associated with leaking methane throughout the supply chain. Methane (CH<sub>4</sub>) is a potent greenhouse gas: 86 times more damaging than CO<sub>2</sub> over a time span of 20 years. When properly accounted for, methane leakage makes gas as bad a fossil fuel as coal, in terms of its greenhouse gas emissions. This is particularly the case for LNG, because of its long complex supply chain, which makes it more prone to methane leaks and emissions, as well as the emissions from the transport itself (Howarth, 2014; Kieninger & Robb, 2022). The International Energy Agency found that energy-related methane emissions are 70% higher than reported (IEA, 2022).

## Climate and energy policy in Malta

As an EU member state, climate and energy policy in Malta is shaped by EU regulations and directives. EU climate policy is implemented through two main tools: the EU Emissions Trading System (ETS) and the Effort Sharing Regulation (ESR). The Emissions Trading System is a cap and trade system that limits emissions in the electricity and heat generation sectors, energy-intensive industry sectors, as well as the European aviation sector. The ETS covers around 40% of total EU GHG emissions (DG Climate Action, 2022a). The Effort Sharing Regulation on the other hand concerns emissions from sectors not included in the ETS, such as transport, buildings, agriculture, and waste. However, change is on the horizon, with the EU communicating the intention to create an extension to the ETS (sometimes referred to as ETS II) which will include the CO<sub>2</sub> emissions from fuel and energy for road transport, buildings, and other sectors in the carbon pricing mechanism, to go into effect in 2027 or 2028 (Göss, 2023). The ESR sets national emission reduction targets for 2030 for all Member States, ranging from 0% to -40% from 2005 levels (DG Climate Action, 2022b). Under the 40% reduction target, Malta's target was a 19% reduction in GHG emissions in 2030 (relative to 2005), in terms of the EU's effort sharing regulations (ESR), the net territorial non-ETS emissions (MECP, 2021a).

In the last few years, in light of the climate crisis, the European Union has increased its climate and energy targets, through a number of regulations and policy packages, including the European Green Deal (2020), the European Climate Law (2021), the Fit for 55 package and the RePowerEU plan. The European Green Deal (2020) presented a package of measures to cut greenhouse gas emissions and preserve Europe's natural environment. As a climate action measure, the European Climate Law was adopted in 2021, setting the target of climate neutrality by 2050, including an intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels (European Climate Law, 2021), also known as the 2030 Climate Target Plan. The Fit for 55 package is a set of proposals to ensure EU legislation and policies are in line with the 55% reduction target for 2030 under the Climate Law. In 2022, following the Russian invasion of Ukraine, the EU published the REPowerEU plan, to reduce dependence on Russian gas and invest in energy supply diversification, energy savings, and acceleration of the clean energy transition.

Climate policy in Malta is guided by the 2015 Climate Action Act. The Act seeks to mitigate climate change by reducing and preventing emissions from anthropogenic sources in all sectors namely: energy, transport, industry, agriculture, land-use and forestry, and waste management, and also includes the obligation to create a national adaptation strategy. The Act further stipulates the requirements to prepare a Low Carbon Development Strategy and the creation of the Climate Action Board, tasked with the implementation of the act (Climate Action Act, 2015).

In order to meet the EU's energy and climate targets for 2030, in 2018 Member States were tasked with the creation of a 10-year National Energy and Climate Plan (NECP) for the period from 2021 to 2030. These National Plans include how countries intend to address energy efficiency, renewables, and greenhouse gas emissions reductions. Malta's NECP was published in 2019 (EWA, 2019), but is currently being revised in light of increasingly ambitious energy and climate targets under the European Green Deal, the European Climate Law, the Fit for 55 package, and the RePowerEU plan. Member States are required to update their NECPs and send a draft by June 2023 to the European Commission (EC, 2022).

In their feedback on Malta's first NECP, the European Commission commented that Malta should "significantly increase the level of ambition for 2030 to a renewable energy share of at least 21%, as Malta's contribution to the Union's 2030 target for renewable energy", and additionally should "substantially increase the ambition towards reducing final and primary energy consumption in 2030 in view of the need to increase the level of efforts to reach the Union's 2030 energy efficiency target" (EWA, 2019). EU Member States were obliged to cut out environmentally harmful subsidies, including fossil fuel subsidies, by 2020, as stipulated in the European Commission communication 'Roadmap to a resource-efficient Europe' (EC, 2011), and were requested to outline how they plan to do so in their NECP. In response to the prompt in the National Energy and Climate Plan to plan a phase-out of energy subsidies, particularly for fossil fuels, Malta's NECP document states that "while remaining committed to encourage the adoption of technologies that can help reduce greenhouse gas emissions, there are no plans to phase out any energy subsidies at this particular juncture" (EWA, 2019).

In May 2020, the European Commission proposed the Recovery and Resilience Facility (RRF) as the main pillar under the NextGenerationEU funding programme for member states to recover from the Covid-19 pandemic, while furthering goals related to sustainability and digitalisation. Malta's Recovery and Resilience Plan was accepted in July 2021, and included the following objectives relating to energy: 1) addressing climate neutrality through enhanced energy efficiency, clean

energy, and a circular economy, including the development of a long-term renovation strategy, a new waste governance framework and investments in renovations, retrofitting and renewable energy in public and private buildings, and 2) addressing carbon-neutrality by decarbonising transport, through the publication of a sustainable urban mobility plan (SUMP) for the urban area around Valletta, encouraging the use of collective and multimodal transport with the general public and in the public service, and increasing the shift to electric vehicles (OPM, 2021).

The Low Carbon Development Strategy (LCDS) published in 2021 is Malta's response to the requirements of the Paris Agreement, EU legislation, and the obligations under the Climate Action Act (EWA, 2019). The LCDS presents the key policy initiatives proposed to reduce greenhouse gas emissions and contribute towards the European goal of climate neutrality by 2050. The measures mainly target the two main sectors responsible for energy demand and greenhouse gas emissions in Malta: energy and transport. In the energy sector, that is translated into continued investment in solar PV and solar water heaters, as well as a second interconnector in the short term, large-scale deployments of offshore floating wind and/or solar in the medium term, and an energy system based on a mix of renewables, electricity through the interconnector(s) and use of hydrogen to power the CCGT plant by 2050. The use of gas to generate electricity is foreseen to remain a significant part of the energy mix until at least 2040 in the LCDS (around 1,200 GWh in 2040 compared to 2,100 GWh in 2020), despite the document stating that the new planned electricity interconnector would be "heavily reducing the further use of gas for electricity generation". The LCDS foresees the construction of a second, and possibly a third interconnector, to be able to meet electricity demand and reduce GHG emissions by 2050, and also proposes the construction of a hydrogen pipeline, to be able to import green hydrogen when an EU supply network would be in place (MECP, 2021a). The second electricity interconnector, also linking Malta and Sicily, was approved by the Maltese Cabinet in 2021 and is expected to be operational in 2025 (Martin, 2021). The proposed targets for renewable energy in total supply, of which the majority in the short term would be solar, are 14% in 2030 and 21% in 2050 (baseline of 8% in 2020). For transport, in the short term the priority would be on the promotion of teleworking / remote working, measures to promote the uptake of active transport (walking, cycling), offering free public transport, and promoting electrification of vehicles, including investments in the required charging infrastructure. In the longer term, up until 2050, the policy measures foresee increased uptake across all these measures: improved public transport, the majority of vehicles electrified, increases in remote working, and increased uptake of active transport. However, the LCDS assumes a continued high reliance on the use of private vehicles as, in their words, "there is lack of data on a possible mass transport system", and consequently foresees a large increase in electricity demand (around 3000 GWh by 2050) to power a large fleet of electric vehicles (MECP, 2021a).

Table 1 presents the main goals and measures, as well as specific targets, related to energy and climate in key policy documents published in Malta in the past decade, 2012-2022.



Table 1: Policy documents 2012-2022

Policy	Energy goals/measures	Targets
Malta's Sustainable Development Strategy for 2050 (2022)	<ul style="list-style-type: none"> <li>Incentivising the public, private, and civil society sectors to reduce emissions by adopting innovative low carbon and energy-efficient technologies;</li> <li>Incentivising the use of electric vehicles and alternative modes of transport;</li> <li>Give priority to projects that promote the use of renewable energy and are climate-neutral;</li> <li>Promote further the adoption of renewable sources of energy;</li> <li>Investing in waste-to-energy facilities;</li> <li>Enhancing power and water distribution networks and infrastructure to conserve energy and water.</li> </ul>	<p>By 2030:</p> <ul style="list-style-type: none"> <li>Achieve an 11.5% share of renewable energy in gross final energy consumption;</li> <li>Reduce the modal share of car drivers to 41% compared to 1990;</li> <li>Introduce around 65,000 electric vehicles, including plug-in-hybrid EV.</li> </ul> <p><i>Further targets are expected in the Action Plan 2030, to be published later in 2023.</i></p>
Low Carbon Development Strategy (2021)	<ul style="list-style-type: none"> <li>Measures in seven different sectors: Energy, Transport, Buildings, Industry, Waste, Water and Agriculture and land-use, land-use change, and forestry (LULUCF).</li> <li>The main measures focus on a shift to renewable energy, building efficiency and renovations, industrial energy efficiency, water-related measures, a shift to active and public transport, and electrification of transport.</li> </ul>	<ul style="list-style-type: none"> <li>Control GHG emission growth to max. 5% of 2005 levels by 2020.</li> <li>A 19% reduction in net territorial non-ETS GHGs (relative to 2005) by 2030.</li> <li>Malta carbon neutral by 2050 (indicative milestones for 2040 and 2050: 60% and 80% reduction over 1990 levels).</li> <li>RES targets: 14% in 2030 and 21% in 2050.</li> <li>65,000 EVs and 6,500 electric charging points by 2030.</li> </ul>
Long Term Waste Management Strategy 2021-2030 (2021)	<ul style="list-style-type: none"> <li>Commitment to create a new Waste-to-Energy facility ('ECO'HIVE Energy'), with a capacity of 192kt annually with flexibility to use only one line (96kt x 2 lines);</li> <li>Recovery of energy currently from anaerobic digestion of organic waste, from the planned waste-to-energy plant.</li> </ul>	<ul style="list-style-type: none"> <li>Investment in Waste-to-Energy plant in second implementation period (2024-2027).</li> <li>Projected approximate 52,800 tonnes of municipal solid waste will be treated through energy recovery by 2030.</li> <li>Malta's collection fleet should consist of 10% electric vehicles and increase to 20% by 2025.</li> </ul>
Long Term Renovation Strategy 2050 (2021)	<ul style="list-style-type: none"> <li>Shift design, build and purchasing choices towards more efficient buildings;</li> <li>Increase the energy efficiency of existing buildings through minimum requirements for retrofit products;</li> <li>Ensure standards are applied consistently;</li> <li>Increase the energy efficiency of buildings closer to near zero net energy (beyond minimum standards).</li> </ul>	<ul style="list-style-type: none"> <li>3% annual renovation rate for public authority buildings.</li> </ul>

Policy	Energy goals/measures	Targets
Solar Farm Policy (2017)	<ul style="list-style-type: none"> <li>Defines a solar farm for policy interpretation purposes: A commercial installation with a footprint larger than 1000m<sup>2</sup>;</li> <li>Provides guidance for the location of new solar farms: solar farms should be sited in the vicinity of urban areas, or areas with high electrical consumption, should not take up virgin land, or agricultural land, with preferred locations between large scale rooftops, industrial sites, disused landfills, and quarries.</li> <li>Identifies environmentally-relevant specifications that need to be integrated into solar farm development.</li> </ul>	<ul style="list-style-type: none"> <li>10% target of renewable energy share in the final energy consumption by 2020.</li> </ul>
Renewable Energy Action Plan 2015-2020 (2017)	<ul style="list-style-type: none"> <li>Retain the SWH (Solar Water Heater) support scheme;</li> <li>Educational campaigns to encourage a reduction in energy consumption and changeover to alternative sources;</li> <li>Publish guidelines for the development of solar parks;</li> <li>Fiscal incentives on the purchase of PV panels;</li> <li>Create a mechanism to provide households access to solar energy from PV panels. whether or not they have space to accommodate them;</li> <li>Create schemes whereby space on residential or industrial rooftops are offered to Government or the private sector for the installation of PV panels;</li> <li>Actively encourage the installation of systems that generate green energy in new projects and buildings.</li> <li>Biofuel mixing in transport fuels through the 'substitution obligation', up to 10% biofuel content in 2020;</li> <li>Encourage energy efficiency in road transport, through a shift to public transport and use of more efficient vehicles;</li> <li>Promotion of electric vehicles, as well as a shift to LPG.</li> </ul>	<ul style="list-style-type: none"> <li>10% target of renewable energy share in the final energy consumption by 2020.</li> <li>At least 10% RES share in the final consumption of energy in transport by 2020.</li> </ul>

Policy	Energy goals/measures	Targets
Transport Master Plan 2025 (2016) <i>Currently under revision</i>	<ul style="list-style-type: none"> <li>Reduce the energy use and carbon emissions of land transport by providing alternatives to private vehicles to encourage sustainable travel (promoting the use of public transport, active travel, shared mobility, and multimodal and intermodal travel, while reducing private car use);</li> <li>Reduce the environmental impact of ports and provide alternative fuel infrastructure the maritime sector;</li> <li>Mitigate the impact of the airport on the environment and provide alternative fuel infrastructure in the aviation sector.</li> </ul>	<ul style="list-style-type: none"> <li>80% conventionally fuelled cars by 2025.</li> <li>50% zero-emission urban logistics by 2025.</li> <li>47% modal share (car drivers) [back to 1990 level] by 2025.</li> <li>11.5% modal share of non-motorised trips by 2025.</li> </ul>
National Transport Strategy 2050 (2016) <i>Currently under revision</i>	<p>Guiding principles:</p> <ul style="list-style-type: none"> <li>Creating modal shift;</li> <li>Encouraging use of greener vehicles and fuel;</li> <li>Developing and improving the effectiveness and quality of the strategic transport network.</li> </ul> <p>Goals:</p> <ul style="list-style-type: none"> <li>Transport to promote environmental and urban sustainability, by reducing and mitigating greenhouse gas emissions; ensuring efficient and sustainable use and management of resources; and adapting to climate change.</li> <li>Transport to support social development and inclusion, by ensuring travel options and journey quality suitable for all user groups; increasing societal awareness of the need for sustainable travel choices.</li> <li>Transport to provide accessibility and mobility, by ensuring an equitable and sustainable approach to all transport modes; managing freight and urban logistics.</li> <li>Transport to work towards public health, by promoting active lifestyles, and reducing pollution (air quality, noise, and light levels).</li> </ul>	<ul style="list-style-type: none"> <li>50% conventionally fuelled cars by 2030; 0% conventionally fuelled cars by 2050.</li> <li>95% zero-emission urban logistics by 2030.</li> <li>41% modal share (car drivers) by 2030; 10% modal share (car drivers) by 2050.</li> <li>15% modal share of non-motorised trips by 2030; 20% modal share of non-motorised trips by 2050.</li> </ul>
Nearly Zero-Energy Buildings Plan from Malta (2015)	<p>Definition of nearly zero-energy buildings as buildings with very high energy performance:</p> <ul style="list-style-type: none"> <li>The primary energy balance will not exceed 220 kWh/m<sup>2</sup> per year;</li> <li>The mean primary energy demand requirement for dwellings shall be 75kWh/m<sup>2</sup> per year.</li> <li>The little amount of energy used should be covered to a significant extent by energy from RES.</li> </ul>	<ul style="list-style-type: none"> <li>All buildings occupied by public authorities will be nearly zero-energy buildings by 2018.</li> <li>All buildings will be nearly zero-energy buildings by 2020.</li> </ul>

Policy	Energy goals/measures	Targets
National Energy Efficiency Plan (MRA, 2014)	<ul style="list-style-type: none"> <li>National action plan to show how the country intends to generate energy savings, to demonstrate results achieved so far through energy efficiency measures, and to raise awareness of the effectiveness of schemes, incentives, and information to assist interested stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>27% savings in primary energy consumption by 2020 under a business-as-usual scenario.</li> </ul>
Malta National Electromobility Action Plan (2013)	<ul style="list-style-type: none"> <li>The first national action plan to promote electromobility, to promote the uptake of electric vehicles, and to ensure that the required charging infrastructure is put in place.</li> </ul>	<ul style="list-style-type: none"> <li>Limit GHG emission increase to 5% above 2005 levels by 2020.</li> <li>10% of transport fuels from renewable sources by 2020.</li> <li>5,000 Battery Electric Vehicles on the road in Malta by 2020.</li> <li>25% of all vehicles purchased by the government will be Battery Electric Vehicles.</li> </ul>
National Energy Policy (2012)	<ul style="list-style-type: none"> <li>A set of measures to enable Malta's transition from total dependency on fossil fuels, towards an energy mix scenario to ensure: Energy efficiency and affordability; Sustainability; Energy Security; Diversification of sources; Flexibility.</li> </ul>	<ul style="list-style-type: none"> <li>Energy efficiency target 22% savings by 2020.</li> <li>RES target 10% by 2020.</li> <li>10% RES in transport by 2020.</li> <li>Construct a 200MW interconnector to Sicily by 2014.</li> </ul>



LNG tanker in Marsaxlokk bay, Daniela Sala for ReCommon



## *Current and future electricity generation and energy consumption*

The total gross electricity production in Malta amounted to 2,671 GWh in 2021. Of the total supply, 71% consisted of net generation from local power plants, with 19.1% of the total electricity supply imported through the interconnector. Renewable energy represented 9.9% of the total electricity supply, almost completely (97.2%) from photovoltaic (PV) cells (NSO, 2022b). With the interconnector to Italy, Malta is able to meet the EU's interconnectivity target of 15% minimum; the target for 2030 (EWA, 2019).

In 2021, renewable energy production from grid-connected PV systems was estimated at 255.9 GWh. The total kilowatt peak (kWp) amounted to 203,728.1 kWp, an increase of 9.1 percent compared to 2020. Of that total, 51.5 percent was generated by installations from the commercial sector, followed by 46.1 percent by households and just 2.4 percent from the public sector (NSO, 2022c). Support for solar PV is regulated through Subsidiary Legislation S.L. 545.27 (Feed-in Tariffs Scheme (Electricity Generated from Solar Photovoltaic Installations) Regulations) and Subsidiary Legislation S.L. 545.31 (Competitive Bidding Rules for Renewable Sources of Energy Installations Regulations) which incentivize and support new solar PV installations which are connected to the grid in order to support investors in both residential and non-residential sectors to overcome cost barriers" (EWA, 2019). The current feed-in tariff (€) for PV systems in Malta is 10.5c/kWh for 20 years for households that make use of the 50% investment grant. If a PV system is self-financed, the feed-in tariff is 15c/kWh for 20 years (REWS, 2022a).

A challenge in Malta, particularly in light of rampant building and construction activity, is the absence of a legal framework for 'solar rights', to protect the investment made in solar PVs, where increased shading due to increased building heights could render previous investment in PV panels economically unfeasible (Camilleri, 2018). To incentivise energy saving, the Energy and Water Agency (EWA) offers free professional advice to vulnerable and low-income households on energy-efficient appliances and behaviour. In addition, in collaboration with the Foundation for Social Welfare Services, they offer financial schemes aimed at reducing energy and water consumption in low-income and vulnerable households through the replacement of old and inefficient appliances (EWA, 2019).

The government's Solar Farm Policy was published in 2017, outlining guidance for the location of new solar farms; any commercial installation of PV panels larger than 1000 m<sup>2</sup> (PA, 2017). In recent years, the Ministry for the Environment, Energy and Enterprise (MEEE)

together with REWS have opened bidding for private investors to take up medium to large-scale PV projects, from 40 kWh to 1 MW in size, with 36 projects in 2021 with a total maximum capacity of 10 MW having been accepted (Times of Malta, 2022). The government is also promoting the uptake of solar PV on the roofs of industrial buildings and factories, as well as public buildings (EWA, 2022; INDIS, 2020).

In other EU countries, the majority of energy use in residential dwellings is for space heating, representing an average of 64.6% of total household energy use. In contrast, in Malta, space heating is limited, whereas the majority of energy in Maltese households in 2016 was used for 1) lighting and appliances (39.1%), 2) water heating (24.6%), 3) space heating (16%), 4) cooking (12.6%), and 5) space cooling (6.7%) (EWA, 2019). Lighting and appliances, as well as the majority of water heating, are powered through electricity, alongside some renewable energy through the uptake of solar water heaters and heat pumps in the past decade. In terms of fossil fuel use for heating and cooling, 802 GWh of fossil fuels were consumed in Malta, with the largest contributions coming from LPG (40%) and gasoil (40%). More than half of the LPG share is attributed to households for cooking and space heating. The majority of space cooling is done through air conditioning (A/C) units using heat pump technology, which is a relatively efficient technology. Regardless, cooling represents a large share of the final electricity consumption in Maltese households that use A/C for space cooling; about half of the Maltese households. In their case, cooling represents the second largest end-use of electricity (after lighting and appliances); around a quarter of their total average electricity consumption of around 4,200 kWh/year per household, in 2018 (EWA, 2019).

Malta has some of the lowest household electricity prices in the EU. In 2022, the residential tariffs (€) were 10.5c/kWh for the first 2,000 kWh, and 13c/kWh for the next band up to 6,000 kWh (REWS, 2022b). In light of rising energy prices across Europe and the world, following the pandemic and the Russian invasion of Ukraine, the government of Malta decided to apply a blanket subsidy to prevent increases in local electricity, LPG, and fuel prices (Sansone, 2022). The government has mandated Enemalta to freeze energy prices at their 2014 levels, with the costs for subsidies for fuel and energy adding up to €508 million in the 2023 budget (Taylor, 2022). However, this type of state aid will no longer be permitted after 2023, with the European Temporary Crisis Framework expiring on 31 December 2023 (EC, 2023), allowing only subsidies targeting vulnerable users at risk of energy poverty. In addition, Malta obtained a derogation for both the EU mandatory reduction in energy consumption, as well as the 15% mandatory reductions in gas consumption agreed on by other member states, on the basis that as a small island state, Malta does not have other alternatives and would be negatively affected (The Malta Independent, 2022).

Other significant sectors consuming electricity and fuels include the hospitality sector and the water and waste sectors. Hospitality is a significant consumer of both electricity and fuels (31% of energy consumption in the services sector in 2017), and the sector's energy use is expected to continue to grow further, based on projected increases in tourist arrivals. Water supply, sewage, and waste management in Malta are also closely linked with the energy system due to the country's dependency on reverse osmosis (RO) for desalination (EWA, 2019). Almost 60% of potable water in Malta is produced by 3 RO plants (WSC, 2022). Energy is also required for wastewater treatment, pumping, and distribution. However, while the overall demand for potable water is expected to increase, along with the volume of wastewater requiring treatment; the electricity demand for these end-uses seems to be decoupling from both population and economic growth (EWA, 2019). In 2018, the reverse osmosis process required 2.8 kWh per cubic meter of water produced, compared to 6 kWh a decade before (EEA, 2018).

As part of the waste management investment plans under the 'ECOHIVE' project at Magħtab Environmental Complex, the Maltese government is in the process of realising a waste-to-energy plant, which will incinerate non-recyclable waste and recover energy in the process (MECP, 2021a). However, while waste-to-energy is sometimes presented as a low-carbon energy solution, a report by Zero Waste Europe (2019) has shown that the carbon intensity of energy produced through waste incineration (580g CO<sub>2</sub>eq/kWh) is about two times greater than the EU average electricity grid carbon intensity was at the time of writing in 2019. The project description statement for the waste-to-energy plant at Magħtab did not include any estimation of GHG emissions from the incineration (FoEM, 2020).

National electricity demand projections, developed for the NECP, indicate a growth in demand, with peak demand growing from around 450MW in 2018 to over 600MW in 2030, and gross electricity consumption increasing from around 2,500 GWh in 2018 to around 3,500 GWh by 2030 (EWA, 2019). The LCDS further extends this growth projection to around 5,500 GWh overall electricity demand by 2040 and nearly 6,000 GWh by 2050. This projected growth is primarily foreseen as a result of the shift from internal combustion engine (ICE) vehicles to electric vehicles (EV) (MECP, 2021a).

## *Current and future energy use in transport*

The transport sector contributes to more than half of the total energy consumption (55%) in Malta (EWA, 2019). Within the transport sector, private vehicle use is responsible for the majority of energy demand, at 69% of the total demand. The remainder of energy consumption is for freight transport (23%), public road transport (6%), and public maritime transport (2%) (MECP, 2021a). The modal share of private car use is very high in Malta, with the latest National Household Travel Survey showing that 84% of all trips are done by private car (as a driver and as a passenger) (NSO, 2022d). At the end of 2022, the total number of vehicles registered in Malta amounted to 424,904 vehicles, close to the country's resident population (NSO, 2023). The lack of a mass transport system, limited uptake of active transport options, and challenges for the public transport system due to traffic and narrow roads are cited as the main reasons for the high car dependence in Malta (EWA, 2019; MECP, 2021a). In October 2022, the public bus service was made free of charge to all users with a Tallinja public transport card. The Low Carbon Development Strategy has identified measures to promote active transport as a high priority for the short term to reduce greenhouse gas emissions from transport, alongside measures to promote teleworking and remote working, electrification of transport, and improved public transport. The LCDS set a target of 65,000 EVs and 6,500 electric charging points by 2030 (MECP, 2021a).

In 2017, only 2.1% of the transport sector's total energy consumption was attributed to RES. Malta has pushed to achieve the 10% RES-T (renewable energy sources in transport) target in 2020, which was reached primarily through the use of biofuels, with renewable electricity in transport having a minimal role so far. The dominant biofuels used in Malta are Hydro-treated Vegetable Oil (HVO) and FAME (Fatty Acid Methyl Ester) biodiesel (EWA, 2019). Malta has a substitution obligation in place for importers of petrol and diesel to blend in an increasing share of biofuel, with a target of 10% in 2020, as per Subsidiary Legislation 545.17. In line with Article 25 of Directive (EU) 2018/2001, this will be extended to 14% in 2030 (EWA, 2019).

Up until September 2022, electric and plug-in hybrid motor vehicles accounted for 2.6 per cent of the entire motor vehicle stock, with a total of 10,805 electric/plug-in hybrid motor vehicles. Passenger cars made up around half of the total electric/plug-in hybrid vehicles, in addition to commercial vehicles, motorcycles, pedelecs, and e-kick scooters and (mini)buses (NSO, 2022e). The transport authority Transport Malta has been offering grants for private persons, voluntary organisations, and businesses to purchase electric or plug-in hybrid vehicles, including cars, vans, pedelecs, and e-cargo bikes, offering, for example, €11,000 for a new electric car and €500 for the purchase of a pedelec (Transport Malta, 2022). Demand management with more advantageous tariffs in off-peak hours is used to mitigate the impact of increased electricity demand in peak hours (EWA, 2019). The EV charging tariff is 0.1298/kWh during off-peak hours; at night, in the afternoon, and on Sundays (REWS, 2022b). EU-wide discussions about the transition from ICE to battery-powered vehicles have led to the adoption of an ICE vehicle cut-off date by 2035 (Transport & Environment, 2022). The cut-off date for Malta was up for discussion in the Green Paper 'Towards Cleaner Vehicles on Our Roads' (MECP, 2021b), but a specific cut-off date for Malta has not yet been decided. While electric vehicles are presented as a clean transport alternative, to date the majority of Malta's electricity is generated using fossil fuels: LNG to fuel the power station, and coal, gas and oil as part of the energy mix imported through the interconnector. This would mean electrification of transport without increasing the share of renewable energy, especially in light of the foreseen increase in electricity demand, which simply means shifting the emissions from the tailpipe to a power station, commonly referred to as the 'long tailpipe problem'.

As a peripheral island state, there are limited links between the Maltese Islands and the rest of mainland Europe and the world. There are aviation links from the Malta International Airport, and ferry connections with Sicily (Italy). Aviation within Europe falls under the current emission trading system (ETS) of the EU, which will also start including the maritime sector, another important transport sector for Malta. Under the Fit for 55 package of the EU, Malta negotiated an increased share of allowances for the maritime sector, and legal provisions that alleviate the impact of flight costs on peripheral member states like Malta (Department of Information, 2022). Malta is also a key destination for the cruise industry, as well as a shipping hub. Fuel for both the aviation and commercial shipping sectors is thus far exempt from taxes under the Energy Taxation Directive (ETD) (CAN Europe, 2023). Malta does not impose any conditions on the type of fuel used in the harbours, and as a result, suffers from air pollution from the heavy fuel oil used in the shipping and cruise industry. The Grand Harbour Clean Air Project (GHCAP), currently under development, seeks to reduce the emissions from these highly polluting industries by shifting from gasoil- or heavy-fuel-oil engines to plug into shoreside electricity instead. The shore-to-ship electricity project states that it can reduce CO<sub>2</sub> emissions by almost 40%, and is projected to be operational by 2023 (IM, 2022), but is not operational yet.



## The proposed Melita TransGas pipeline

The Melita TransGas bi-directional pipeline is planned to cross from Gela in Sicily to Delimara, Malta (see Figure 5), to transport fossil gas to fuel Malta's power station to generate electricity. The proposed gas pipeline will measure 159 kilometres, with a 22-inch diameter and a maximum operational capacity of 1.2 billion cubic metres per year (Melita TransGas, 2022). The total cost of the pipeline is estimated at 400 million euros, which Malta has agreed to pay in full (Sansone, 2019).



Figure 5: The proposed Melita TransGas pipeline route between Sicily and Malta (Melita TransGas, 2022)

The Malta-Sicily gas pipeline project is described in the NECP as a project that would provide access to the European gas grid, for the purpose of “diversifying gas supply sources” and “increasing security of supply”, but also states that the intention is “to replace the present LNG supply”. The document further states that “the pipeline would also allow for the possibility of scaling up the gas-fired power generation facilities at Delimara so as to meet the growing electricity demand” (EWA, 2019). The potential construction of the Melita TransGas pipeline was already known at the time of entering the ElectroGas deal for the supply of LNG, and the contractual agreement between Enemalta and the suppliers of LNG in fact makes provisions for a gas-exit clause after 10 years of operation, to coincide with the projected commissioning of the Melita TransGas pipeline (EWA, 2019). This would mean that there is a risk that the Melita TransGas pipeline will result in Maltese taxpayer money and EU funding - used for the studies, construction and eventual operation of the Melita TransGas pipeline - ending up in the pockets of ElectroGas shareholders. This includes Yorgen Fenech, former director of ElectroGas, who stands accused of being the mastermind behind the murder of Maltese journalist Daphne Caruana Galizia. The journalist was investigating the ElectroGas deal and corruption allegations involving the business groups behind ElectroGas as well as local politicians, at the time she was assassinated (Leroux and Rankin, 2021).

To support the connections between electricity networks in Europe, Projects of Common Interest (PCI) enable the creation of trans-European energy infrastructure. Every two years, the priority trans-European energy projects, which will benefit from fast-tracked permitting and access to European funding, are put forward on the so-called PCI List. In 2018, Melita TransGas Company Limited was

established as a public undertaking to succeed the obligations of the Ministry for Energy and Water Management (as the previous Project Promoter of PCI 5.19) for the implementation, construction, and commissioning of the Melita TransGas pipeline (EWA, 2019). The Melita TransGas pipeline was included on the latest 5th PCI List, which was approved by the European Parliament in March 2022. These Projects of Common Interest are intended to promote affordable, secure, and sustainable energy for European citizens and to achieve the EU's energy and climate objectives. For that reason, the 5th list from 2022, as well as the 4th list from 2020, have been heavily criticised by the Greens and environmental groups for still including fossil gas projects (EURACTIV, 2022; Simon, 2020). A Maltese energy analyst who was the lead energy system modeller at the time of writing of the NECP, also criticised the inclusion of fossil gas projects on the PCI list and warned of the economic, geopolitical, and climate consequences of a continuing reliance on gas (Cremona, 2021).

In line with the European Green Deal, EU funding can no longer be allocated to fossil fuel projects, including gas. It can now only be spent on electricity projects, including interconnectors and smart grids, as well as infrastructure for gases such as biogas, biomethane, and hydrogen. However, island states Malta and Cyprus managed to obtain a derogation, on the basis that they are not connected to the trans-European gas network. Under this derogation, their gas pipeline projects may still be included on the PCI List until the interconnection is complete. The European Council said the purpose of this exception is to end the isolation of these two member states and to give them access to future energy markets, including hydrogen. It is now a condition that the gas pipeline will be adapted to a hydrogen pipeline by 2029 latest (Vella, 2021). To this end, the Melita TransGas pipeline was subsequently rebranded as a ‘hydrogen-ready’ pipeline, accompanied by a name change for the Melita TransGas company to InterConnect Malta Limited in 2022, despite the website and project still carrying the name Melita TransGas (Melita TransGas, 2022). However, while hydrogen may be presented as a type of ‘green’ energy, currently 99% of hydrogen is produced from fossil fuels (IEA, 2019). The main type of hydrogen available today, ‘grey’ hydrogen, is created via steam-reforming from natural gas or coal. ‘Blue’ hydrogen is based on the same process as ‘grey’, but includes carbon capture and storage (CCS) mechanisms to reduce carbon emissions, which have yet to be proven to work. ‘Green’ hydrogen, currently available only in experimental pilot projects, is produced via electrolysis. This is still only as green as the electricity powering it: it is only ‘green’ if produced using renewable energy. In addition, hydrogen is not an efficient energy carrier; the electricity from renewable sources needed to create ‘green’ hydrogen can be used more efficiently directly as electricity. Therefore, the EU hydrogen strategy emphasises the importance of targeting the use of hydrogen only in specific processes for which there are limited or no climate-neutral energy alternatives, such as for the shipping and aviation industries (EC, 2020).

In the 2020 National Reform Programme of the Maltese government, the Ministry for Finance stated that “the Government remains committed to work actively on the development and implementation of the Melita TransGas Pipeline” (Ministry for Finance, 2020). This was changed to incorporate the plans for transporting hydrogen in the 2022 revision, with reference made to further studies on the Melita TransGas hydrogen-ready Pipeline PCI to upgrade the design of the pipeline infrastructure to accommodate pure hydrogen (Ministry for Finance, 2022). However, experts state it is not that straightforward to make gas infrastructure suitable for hydrogen transport, as it is a much smaller molecule and needs at least 3 times more energy to be transported through a pipeline, as well as posing greater risks for leakages (Gerebizza & Taglieri, 2022; Kieninger & Robb, 2022).

# RECOMMENDATIONS FOR A FOSSIL FREE FUTURE FOR MALTA

To make a fossil free future a reality, Friends of the Earth Malta is putting forward the following demands:

## ACT LIKE YOUR HOUSE IS ON FIRE!

Climate change is here, now! The climate crisis is now universally recognised as the biggest threat that our planet faces, with overarching impacts on ecosystems, biodiversity, and human societies. The Maltese government issued a Climate Emergency in 2019, but since then it's been business as usual. We need bold and ambitious climate policy to reduce our carbon emissions and ensure we live within the planetary boundaries. Malta may be small but was actually the country that first tabled the issue of climate change on the political agenda at the United Nations in 1988. Let's live up to that legacy and ensure a future for our country and planet, our only home.



## NO NEW INFRASTRUCTURE FOR FOSSIL FUELS!

We need to move away from fossil fuels - oil, coal, and gas - as soon as possible. Exploration for further fossil fuel reserves, as well as investment in new fossil fuel infrastructure, is incompatible with global, EU, and national carbon emission reduction targets. This was stressed by both the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) in their latest reports: "New fossil fuel infrastructure is incompatible with international climate goals" (IEA, 2021; IPCC, 2022). We need a commitment to move away from fossil fuels, with a phase-out plan in place, and immediately abolish any fossil fuel subsidies.

We need to ensure that any public investment is compatible with climate targets and avoid funding any new fossil fuel infrastructure at all costs. The proposed Melita TransGas pipeline would lock Malta in a fossil fuel future and signify a climate-incompatible investment, leading to stranded assets (Cremona, 2021). The construction of the pipeline would also impact the seagrass beds of *Posidonia oceanica* around Delimara. Known as the 'lungs of the Mediterranean', this seagrass can capture up to 15 times as much carbon dioxide as the same area of rainforest (Keeley, 2021). It should be protected as a carbon sink, not destroyed.

Gas is often promoted as a transition fuel, with lower carbon emissions per unit than dirty fossil fuels, such as the heavy fuel oil that was Malta's main source of energy. However, when taking methane leakage and the emissions along the LNG supply chain into account, the real GHG emissions of gas usage in Malta seem to be underestimated. Investment in new gas projects diverts funds away from cleaner, renewable energy sources and locks Malta further in a fossil-based energy system. The 400 million euros of Maltese taxpayers' money that would be spent on the Melita TransGas pipeline should instead be invested in renewable energy production in Malta, to speed up the green energy transition.



The project promoters say the pipeline will end gas isolation in Malta and connect our islands to the trans-European gas network, in line with a 2011 communication by the European Council that "no EU Member State should remain isolated from the European gas and electricity networks" (EC, 2014). As a small island state, Malta faces high energy costs and energy supply challenges. However, a fossil gas pipeline is a false solution to increasing Malta's energy security. Malta is not isolated from the European energy grid; the first electricity interconnector was laid between Sicily and Malta in 2015, with the second interconnector approved. Gas prices are currently skyrocketing across Europe and the world. To increase energy security, we need to diversify energy sources, by moving away from fossil fuels and investing in (local) renewable energy production, instead of investing in the diversification of gas supplies!

Since its inception, the description of the Melita TransGas pipeline has been changed to a 'hydrogen-ready' pipeline. Importing electricity is possible through the interconnector(s) and is more efficient and affordable than hydrogen, which today is still produced from fossil fuels. This begs the question of why the Maltese government is pushing so hard for a 'hydrogen-ready' pipeline. If the Melita pipeline is truly a bid to be able to import green hydrogen for specific sectors, then this needs to be supported by the development of a national plan that outlines the local demand for hydrogen and the proposed parameters for production, storage, and use of green hydrogen, in collaboration with local stakeholders in the environmental and energy fields. We need to ensure that hydrogen is not used as a veil to greenwash the fossil gas pipeline project. If green hydrogen is to be part of Malta's future energy mix, we demand a national plan that outlines a timeline and information about the sourcing and production of green hydrogen and its foreseen use in sectors.

The Melita TransGas pipeline project will trigger the payment of a gas exit price from the Maltese government to ElectroGas, to compensate for the infrastructure assets the energy company would hand over. The ElectroGas deal has been described as a "highly irregular procedure" by the Council of Europe (CoE) assessment (Omtzigt, 2019), and was being investigated by journalist Daphne Caruana Galizia when she was murdered. Taxpayers' money should not end up in the pockets of shareholders being investigated for corruption and criminal offences.

## INVEST IN THE ENERGY OF THE FUTURE!

Public money should be invested in renewables (like solar and wind), energy savings, and community energy. Energy saving, in buildings, operations, and transport, is the cheapest and fastest way to reduce energy use and save money. To reduce overall energy consumption and to reduce the negative financial impacts of rising energy prices on individuals, households, and small businesses, the government of Malta should introduce a strong policy measure to promote energy savings and the adoption of energy-efficient appliances and practices. Local planning and building regulations need to be brought in line with the Energy Performance in Buildings Directive (EPBD), accompanied by effective checks and balances to ensure compliance. There is an urgent need to reduce the car dependence and fuel consumption of private vehicles, and create a shift to more sustainable modes of transport; public transport, shared mobility, and active transport. To enable this shift, we need to dedicate space to efficient and reliable public transport and create safe infrastructure for walking and cycling while regulating and reducing private car use in urban centres.



Instead of using public funds to provide a blanket subsidy on energy and fuel prices, financial support should be limited to protect individuals and households at risk of energy poverty. To support other electricity users, financial support and progressive pricing mechanisms can be used to incentivise users to reduce their energy consumption, through energy savings and energy efficiency. The current mechanism doesn't differentiate and essentially subsidises users who waste energy.

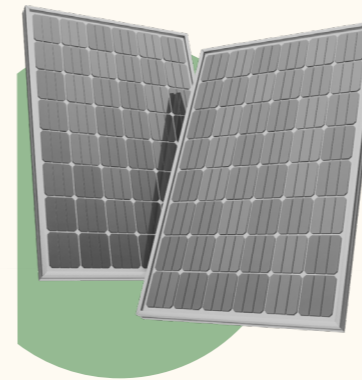
Malta needs to urgently increase the share of renewable energy – only 10% in 2020 – to ensure we can cover our essential electricity needs in the short term and become fully renewable-powered in the future. An assessment should be made to determine what is the baseline requirement of the country to provide electricity to essential needs such as the reverse osmosis plants, hospitals, and other basic needs. A secure and reliable supply of energy should be available locally, including investment in energy storage, to meet these essential needs, to ensure Malta can withstand external shocks.

Malta faces a growing electricity demand, particularly in light of the proposed shift away from internal combustion engine vehicles towards hybrid and electric vehicles. National and European funds should be invested in renewable sources: directed to further connection to the mainland electricity network and improving the local grid. Rather than focusing on imported energy, Malta should be investing in energy sources that enhance the country's resilience and autonomy, such as energy savings, local renewables, and community energy projects.

Imported electricity should come from renewable sources. Global climate change cannot be mitigated by outsourcing our emissions to another country. Electricity demand is expected to increase, because of the shift to electrification of sectors such as transport. Any contracts for the import of energy through the interconnector should include specifications regarding the production technologies used for the electricity, demanding 100% renewable energy, proven by 'guarantees of origin'; European certificates for the source and quantities of electricity produced. Another option could be to use the Connecting Europe Facility mechanism for cross-border renewable energy projects, to jointly invest in renewable energy projects and cooperate with other Member States and third countries, to reach the EU's GHG emission reduction targets (CINEA, 2022). If such projects were undertaken, we should ensure that this is done with respect to local communities and environments.

We need to create a legal framework for renewable energy communities to enable citizens to supply, share and save energy and have a say in our energy system. Large-scale energy projects are vulnerable to corruption and big business interests. Community energy initiatives are essential in the transition to renewable energy and the creation of a democratic and decentralized energy system. The Maltese government had the obligation to transpose the definitions of renewable energy communities (REC) and citizen energy cooperatives (CEC) as part of the second revision of the EU Renewable Energy Directive (RED II). The government did so in 2021, through the legislation on the Promotion of Energy from Renewable Sources Regulations (S.L. 545.35). However, an assessment of the transposition by the European federation of renewable energy cooperatives, REScoop.eu, shows that there are still shortcomings in the transposition into Maltese law, such as the lack of translation to what terms mean in the local context (e.g. in terms of proximity) and the lack of clarity about the difference between CECs and RECs (REScoop.eu, 2022). The next steps as laid down in the law are for the Ministry of Energy to carry out an assessment of the existing barriers and potential for the development of renewable energy communities and to remove justified regulatory and administrative barriers to renewable energy communities. We urge that this assessment should be

done as soon as possible, by the end of 2023, so that the necessary steps can be taken to enable the uptake and promotion of community energy in Malta.



### **ENVISION A FOSSIL FREE FUTURE FOR MALTA!**

Our country should prepare for a climate-proof future and move away from fossil fuels as fast as possible. While the LCDS foresees the use of gas at least up until 2040, we are deeply concerned about the climate impacts, particularly considering the underestimation of the GHG emissions of LNG. We demand a gas phase-out by 2035 latest, in line with demands by European environmental organisations (CAN Europe / EEB, 2020; Roche & Simon, 2017), which gives us over a decade to prioritise and invest in renewable energy, both locally and through importation.

We need to discuss the concept of 'energy sufficiency', as a balance between excessive energy use and energy poverty (FoEI, 2016; Potočník et al., 2018). The LCDS only foresees growth in energy demand, without adequately discussing policies to reduce energy demand and promote energy savings first. On our finite planet, the idea of continued and unbridled economic growth and associated growth in energy consumption is unrealistic and destructive. Research has shown that 'decoupling' only works to a certain extent, and that there are undesired consequences such as the 'rebound' effect; increased energy consumption as a result of actions that increase energy efficiency (Potočník et al., 2018). We should use the energy transition as an opportunity to rethink our broader economic paradigm and shift to an 'economics of enough'.

To enable effective policy and informed decision-making, we need to invest in a study researching potential pathways to a 100% renewable energy future for Malta. To this end, we need open, up-to-date, and accurate data on energy production and consumption, to monitor our progress as a country and step-up efforts when needed.

In the short term, we need a new National Energy Policy, outlining the pathway to rapidly shift to clean renewable energy for the Maltese Islands, including solar, wind, and other renewables, as well as a section on green hydrogen. This policy can be used to operationalise and improve on the ambitions set out in the Low Carbon Development Strategy, while consolidating and harmonising policies in relation to energy savings and energy efficiency, improving the energy performance of buildings, and enabling decarbonisation and modal shift in the transport sector, land, sea and air-based.

As an island nation, densely populated and with limited resources, we need to ensure we are building a climate-resilient country, for a liveable, healthy future.

# REFERENCES

Azzopardi, K., 2022. [WATCH] Floating offshore renewables best solution for Malta, Miriam Dalli reiterates. MaltaToday, Newspaper article, 17 May 2022. [https://www.maltatoday.com.mt/news/national/116837/watch\\_floating\\_offshore\\_renewables\\_best\\_solution\\_for\\_malta\\_miriam\\_dalli\\_reiterates#.Y7abvn3MLIV](https://www.maltatoday.com.mt/news/national/116837/watch_floating_offshore_renewables_best_solution_for_malta_miriam_dalli_reiterates#.Y7abvn3MLIV)

Borg, J., 2018. Watch: Malta losing tens of millions from 'poor' \$1 billion Azerbaijan energy deal. Times of Malta, Newspaper article, 25 April 2018. <https://timesofmalta.com/articles/view/watch-malta-losing-tens-of-millions-from-poor-1-billion-azerbaijan.677432>

Camilleri, E.M., 2018. Solar rights and Maltese legislation. Engineering Sustainability & Sustainable Energy 2018 (ESSE '18) Conference. 8 May 2018, St. Paul's Bay, Malta. [https://www.um.edu.mt/library/oar/bitstream/123456789/30538/1/Solar\\_rights\\_and\\_Maltese\\_legislation.pdf](https://www.um.edu.mt/library/oar/bitstream/123456789/30538/1/Solar_rights_and_Maltese_legislation.pdf)

CAN Europe / EEB, 2020. Building a Paris Agreement Compatible (PAC) energy scenario. CAN Europe / EEB technical summary of key elements. Climate Action Network Europe and European Environmental Bureau, June 2020. [https://caneurope.org/content/uploads/2020/06/PAC\\_scenario\\_technical\\_summary\\_29jun20.pdf](https://caneurope.org/content/uploads/2020/06/PAC_scenario_technical_summary_29jun20.pdf)

CAN Europe, 2023. Fossil Fuel Subsidies in the EU. Climate Action Network Europe, March 2023. <https://caneurope.org/content/uploads/2023/03/Fossil-Fuels-Subsidies-Report.pdf>

CINEA, 2022. Cross-border renewable energy projects (CEF Energy). European Climate, Infrastructure and Environment Executive Agency. [https://cinea.ec.europa.eu/programmes/connecting-europe-facility/energy-infrastructure-connecting-europe-facility-0/cross-border-renewable-energy-projects-cef-energy-new\\_en](https://cinea.ec.europa.eu/programmes/connecting-europe-facility/energy-infrastructure-connecting-europe-facility-0/cross-border-renewable-energy-projects-cef-energy-new_en)

Climate Action Act, 2015. Chapter 543 of the Laws of Malta. ACT XVII of 2015, as amended by Act XXXVI of 2020, 7 July, 2015.

Cremona, E., 2021. The flawed black box deciding Europe's energy infrastructure. EURACTIV, Newspaper article, 25 November 2021. <https://www.euractiv.com/section/energy/opinion/the-flawed-black-box-deciding-europes-energy-infrastructure/>

Department of Information, 2022. Malta negotiates a better deal for the Fit-for-55 package. Ministry for the Environment, Energy and Enterprise, Press Release, 29 June 2022. <https://www.gov.mt/en/Government/DOI/Press%20Releases/Pages/2022/06/29/pr220883en.aspx>

DG Climate Action, 2022a. EU Emissions Trading System (ETS). European Commission, Directorate General for Climate Action. [https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets\\_en](https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en)

DG Climate Action, 2022b. Effort sharing: Member States' emission targets. European Commission, Directorate General for Climate Action. [https://climate.ec.europa.eu/eu-action/effort-sharing-member-states-emission-targets\\_en](https://climate.ec.europa.eu/eu-action/effort-sharing-member-states-emission-targets_en)

EC, 2011. Roadmap to a resource efficient Europe. Communication from the European Commission, COM(2011) 571 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0571>

EC, 2014. Progress towards completing the Internal Energy Market. Communication from the European Commission, COM(2014) 0634 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52014DC0634>

EC, 2020. EU Hydrogen Strategy. Communication from the European Commission, COM(2020) 301 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0301>

EC, 2022. National energy and climate plans. EU countries' 10-year national energy and climate plans for 2021-2030. European Commission. [https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans\\_en](https://commission.europa.eu/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en)

EC, 2023. Competition Policy, Temporary Crisis and Transition Framework. European Commission. [https://competition-policy.ec.europa.eu/state-aid/ukraine\\_en](https://competition-policy.ec.europa.eu/state-aid/ukraine_en)

EEA, 2018. Interview — Malta: water scarcity is a fact of life. European Environment Agency, Article, 30 August 2018. <https://www.eea.europa.eu/signals/signals-2018-content-list/articles/interview-2014-malta-water-scarcity>

ElectroGas, 2018a. <https://www.electrogas.com.mt/about-us/>

ElectroGas, 2018b. <https://www.electrogas.com.mt/about-delimara-power-plant/>

Enemalta, 2022. <https://www.enemalta.com.mt/history/last-heavy-fuel-oil/>

EURACTIV, 2022. The road to European energy independence could start this week. EURACTIV, Newspaper article, 7 March 2022. <https://www.euractiv.com/section/energy/opinion/the-road-to-european-energy-independence-could-start-this-week/>

European Climate Law, 2021. Regulation (EU) 2021/1119, 29 July 2021.

EWA, 2019. Malta's 2030 National Energy and Climate Plan. Energy and Water Agency, December 2019. <https://energywateragency.gov.mt/2030-necp/>

EWA, 2022. Installation of PV Panels on Government Owned and Occupied Buildings. <https://energywateragency.gov.mt/wp-content/uploads/2022/09/Installation-of-PV-on-Government-Buildings-Initiative.pdf>

FoEM, 2020. NGOs put forward recommendations on Waste to Energy Plant. Friends of the Earth Malta and Moviment Graffiti, Press release, 22 October 2020. <https://foemalta.org/press-releases/waste-to-energy>

FoEI, 2016. Energy: Access and Sufficiency. Enough is enough: understanding 'energy sufficiency' as an integral part of delivering energy access. Friends of the Earth International, Publication, November 2016. <https://www.foei.org/publication/enough-is-enough-understanding-energy-sufficiency-as-an-integral-part-of-delivering-energy-access/>

Franzitta, V., Curto, D., Milone, D. and Rao, D., 2016. Assessment of Renewable Sources for the Energy Consumption in Malta in the Mediterranean Sea. *Energies* 2016, 9(12), 1034. <https://doi.org/10.3390/en9121034>

Gerebizza, E. and Taglieri, F., 2022. The illusion of green hydrogen. *ReCommon*. <https://www.recommon.org/en/the-illusion-of-green-hydrogen/>

Göss, S., 2023. Understanding the new EU ETS (Part 2): Buildings, Road Transport, Fuels. And how the revenues will be spent. *Energy Post*, Newspaper article, 6 February 2023. <https://energypost.eu/understanding-the-new-eu-ets-part-2-buildings-road-transport-fuels-and-how-the-revenues-will-be-spent/>

Grech, H., 2022. Government announces €90 million action plan for Enemalta to reinforce electricity distribution system. *BusinessNow*, Newspaper article, 21 February 2022. <https://businessnow.mt/government-announces-e90-million-action-plan-for-enemalta-to-reinforce-electricity-distribution-system/>

Howarth, R.W., 2014. A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas. *Energy Science and Engineering* 2(2): 47–60. <https://doi.org/10.1002/ese3.35>

IEA, 2019. The future of hydrogen. International Energy Agency, Report. <https://www.iea.org/reports/the-future-of-hydrogen>

IEA, 2021. Net Zero by 2050: A Roadmap for the Global Energy Sector. International Energy Agency, Report. <https://www.iea.org/news/pathway-to-critical-and-formidable-goal-of-net-zero-emissions-by-2050-is-narrow-but-brings-huge-benefits>

IEA, 2022. Methane emissions from the energy sector are 70% higher than official figure. Press release, 23 February 2022, International Energy Agency. <https://www.iea.org/news/methane-emissions-from-the-energy-sector-are-70-higher-than-official-figures>

IM, 2022. Laying the high voltage cables for shore-to-ship electricity in the Grand Harbour. *Infrastructure Malta*, Luqa, Malta. <https://www.infrastructuremalta.com/news/laying-high-voltage-cables-shore-ship-electricity-grand-harbour>

INDIS, 2020. Use of factory roofs for solar panels being encouraged. *INDIS Malta*, Press release, 27 March 2020. <https://indismalta.com/use-of-factory-roofs-for-solar-panels-being-encouraged/>

IPCC, 2022. Mitigation of Climate Change, Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf)

Kieninger, F & Robb, E., 2022. LNG: The Liquid Path to Climate Chaos. Briefing by Friends of the Earth Europe and Food & Water Action Europe.

Leroux, M. & Rankin, J., 2021. EU could fund gas project linked to man charged over Maltese journalist's murder. *The Guardian*, Newspaper article, 21 November 2021. <https://www.theguardian.com/world/2021/nov/21/eu-could-fund-gas-project-linked-to-man-charged-in-maltese-journalist-murder-daphne-caruana-galizia>

Keeley, G., 2021. One man's battle to preserve the 'lungs of the Mediterranean'. *Euronews*, Newspaper article, 1 June 2021. <https://www.euronews.com/green/2021/06/01/one-man-s-battle-to-preserve-the-lungs-of-the-mediterranean>

MaltaToday, 2015. Marsa power station ends 62 years of electricity generation. *MaltaToday*, Newspaper article, 9 March 2015. <https://www.maltatoday.com.mt/news/national/50515/marsaopowerstaiongoodbye#.YyvtfX1BzIU>

Martin, I., 2021. Malta to get a second electricity interconnector to Sicily. Times of Malta, Newspaper article, 8 June 2021. <https://timesofmalta.com/articles/view/malta-to-get-a-second-electricity-interconnector-to-sicily.877790>

Martin, I., 2022. Malta signs new deals to lock in price of LNG. Times of Malta, Newspaper article, 29 April 2022. <https://timesofmalta.com/articles/view/malta-signs-new-deals-to-lock-in-price-of-lng.951223>

MECP, 2021a. Low Carbon Development Strategy, September 2021. Ministry for the Environment, Climate Change and Planning, Government of Malta.

MECP, 2021b. Towards Cleaner Vehicles on Our Roads. Green Paper: Consultation Brief, June 2021. Ministry for the Environment, Climate Change and Planning, Government of Malta.

Melita TransGas, 2022. MELITA TRANSGAS PIPELINE: The Project. <https://melitatransgas.com/mt/>

Ministry for Finance, 2020. Malta: National Reform Programme - 2020. Ministry for Finance and Financial Services, Valletta, Malta.

Ministry for Finance, 2022. Malta: National Reform Programme - 2022. Ministry for Finance and Financial Services, Valletta, Malta.

MRA, 2014. Malta's national energy efficiency action plan. Malta Resources Authority, Government of Malta.

MRA, 2020. Malta's National Inventory of Greenhouse Gas Emissions and Removals. Annual Report for Submission under the United Nations Framework Convention on Climate Change and the European Union Monitoring Mechanism. Malta Resources Authority on behalf of the Ministry for the Environment, Climate Change and Planning, Marsa, Malta.

MRA, 2022. Malta's Greenhouse Gas Inventory. Malta Resources Authority, Marsa, Malta. <https://mra.mt/climate-change/ghg-mitigation/>

Muenchrath, J. & Weissenbacher, M., 2014. From Oil to Gas: An Analysis of Malta's Power Sector Transition with regard to CO2 Emissions, the Integration of Renewables, and the Role of Energy Storage. Sustainable Energy 2014: The ISE (Institute for Sustainable Energy) Annual Conference, Thursday 20th March 2014, Dolmen Hotel, Qawra, Malta.

NSO, 2021. Electricity Supply 2016-2020. News Release: 181/2021. National Statistics Office, Valletta, Malta.

NSO, 2022a. Census of Population and Housing 2021 (Preliminary Report). National Statistics Office, Valletta, Malta.

NSO, 2022b. Electricity Supply: 2021. News Release: 177/2022. National Statistics Office, Valletta, Malta.

NSO, 2022c. Renewable Energy from Photovoltaic Panels (PVs): 2021. News Release: 106/2022. National Statistics Office, Valletta, Malta.

NSO, 2022d. National Household Travel Survey 2021. National Statistics Office, Valletta, Malta. <https://nso.gov.mt/en/nso/Media/Salient-Points-of-Publications/Documents/2022/NHTS/National%20Household%20Travel%20Survey%20Publication.pdf>

NSO, 2022e. Motor Vehicles: Q3/2022. News Release: 190/2022. National Statistics Office, Valletta, Malta.

NSO, 2023. Motor Vehicles: Q4/2022. News Release: 023/2023. National Statistics Office, Valletta, Malta.

Omtzigt, P., 2019. Daphne Caruana Galizia's assassination and the rule of law in Malta and beyond: ensuring that the whole truth emerges. Report, Doc. 14906, Committee on Legal Affairs and Human Rights, Council of Europe, June 2019. <https://pace.coe.int/pdf/d966c763685a757b0986f480a15bc9046c50ff69badcbded930b6a2864dedcc9/doc.%2014906.pdf>

OPM, 2021. Malta's Recovery & Resilience Plan. Office of the Prime Minister (OPM), Parliamentary Secretary for European Funds, Valletta, Malta.

PA, 2017. Solar Farm Policy. Planning Authority, Floriana, Malta.

Potočník, J., Spangenberg, J., Alcott, B., Kiss, V., Coote, A., Reichel, A., Lorek, S. & Mathai, M.V., 2018. Sufficiency: moving beyond the gospel of eco-efficiency. Friends of the Earth Europe, Publication, March 2018. <https://friendsoftheearth.eu/news/sufficiency-a-call-for-transformative-and-systemic-change/>

REScoop.eu, 2022. Malta - REC/CEC definitions. REScoop.eu, the European federation of citizen energy cooperatives. <https://www.rescoop.eu/policy/malta-rec-cec-definitions>

REWS, 2022a. Feed-in Tariffs Schemes. FIT Tables Scheme Update. Regulator for Energy and Water Services. <https://www.rews.org.mt/#/en/a/17-feed-in-tariffs-schemes>

REWS, 2022b. Regulated Electricity Tariffs. Regulator for Energy and Water Services. <https://www.rews.org.mt/#/en/fa/31>

Roche, C. & Simon, A., 2017. Can the climate afford Europe's gas addiction. Friends of the Earth Europe, November 2017. [https://friendsoftheearth.eu/wp-content/uploads/2017/11/can\\_the\\_climate\\_afford\\_europes\\_gas\\_addiction\\_report\\_november2017.pdf](https://friendsoftheearth.eu/wp-content/uploads/2017/11/can_the_climate_afford_europes_gas_addiction_report_november2017.pdf)

Sansone, K., 2019. Malta agrees with Italy to fund gas pipeline to Sicily. MaltaToday, Newspaper article, 26 July 2019. <https://www.maltatoday.com.mt/news/national/96447/malta-agrees-with-italy-to-fund-gas-pipeline-to-sicily#.ZDQLPi8RrBK>

Sansone, K., 2022. Government energy subsidies costing a conservative €400 million. MaltaToday, Newspaper article, 12 September 2022. <https://www.maltatoday.com.mt/news/national/118700/energy-subsidies-costing-a-conservative-400-million#.Y7WtH33MLIU>

Simon, F., 2020. Parliament backs EU list of energy projects, ignoring Greens. EURACTIV, Newspaper article, 12 February 2020. <https://www.euractiv.com/section/climate-environment/news/parliament-backs-eu-list-of-energy-projects-ignoring-greens/>

WSC, 2022. Water Services Corporation: About Us: Our History. <https://www.wsc.com.mt/about-us/our-history/>

Taylor, A., 2022. Malta unveils deficit-busting, energy-focussed budget. EURACTIV, Newspaper article, 25 October 2022. [https://www.euractiv.com/section/all/short\\_news/malta-unveils-deficit-busting-energy-focussed-budget/](https://www.euractiv.com/section/all/short_news/malta-unveils-deficit-busting-energy-focussed-budget/)

The Malta Independent, 2022. Malta gets derogation from EU on mandatory reductions in energy consumption. The Malta Independent, Newspaper article, 30 September 2022. <https://www.independent.com.mt/articles/2022-09-30/local-news/Malta-seals-deal-on-derogation-from-EU-regulation-on-mandatory-reductions-in-energy-consumption-6736246282>

Times of Malta, 2022. Bids invited for renewable energy systems up to 1MW. Times of Malta, Newspaper article, 31 August 2022. <https://timesofmalta.com/articles/view/bids-invited-renewable-energy-systems-1mw.977723>

Times of Malta, 2023. Oil & gas firm granted offshore exploration licence. Times of Malta, Newspaper article, 25 January 2023. <https://timesofmalta.com/articles/view/oil-gas-firm-granted-offshore-exploration-licence.1009374>

Transport & Environment, 2022. EU Parliament backs 2035 end date for combustion engine cars. Transport & Environment, Article, 8 June 2022. <https://www.transportenvironment.org/discover/te-reaction-to-meps-vote-on-eu-clean-car-rules/>

Transport Malta, 2022. Financial incentives in the form of grants to promote greener and sustainable transport. Transport Malta, Land Transport Directorate, Malta.

Vella, M., 2021. Dalli secures derogation for €400 million gas pipeline to be eligible for EU funding. MaltaToday, Newspaper article, 12 June 2021. <https://www.maltatoday.com.mt/environment/energy/110202/dalli-secures-derogation-for-400-million-gas-pipeline-to-be-eligible-for-eu-funding#.ZDQZhi8Rpaq>

Zero Waste Europe, 2019. Waste-to-Energy is not Sustainable Business, the EU says. Zero Waste Europe, Policy briefing, September 2019. [https://zerowasteurope.eu/wp-content/uploads/edd/2019/09/ZWE\\_Policy-Briefing\\_Sustainable-Finance.pdf](https://zerowasteurope.eu/wp-content/uploads/edd/2019/09/ZWE_Policy-Briefing_Sustainable-Finance.pdf)



**WANT TO KNOW MORE?**

Check out what we are up to at Friends of the Earth Malta  
[www.foemalta.org](http://www.foemalta.org)