

4 June 2019 | 1300 hrs | 088/2019

World Environment Day is celebrated every year on June 5 and through it the United Nations aims at promoting awareness of the environment and its protection. In 2017 greenhouse gas net emissions in Malta increased by 14 per cent over 2016.

## World Environment Day: 2019

Each year, the United Nations chooses a different theme to mark the Day, focusing on a critical environmental issue. This year's chosen theme is "Beat Air Pollution".

This news release gives an overview of the local air pollution levels and of the sources from which it is generated, namely, electricity production, transport, agriculture and waste.

### Emissions

Data extracted from the Greenhouse Gas Inventory show that during 2017 the estimated net emission of greenhouse gases in Malta amounted to more than 2,155 kilotonnes. This signified a 14 per cent increase over 2016. The energy sector, contributed to slightly more than 75 per cent of the total greenhouse gas net emissions during 2017 (Table 1). Energy industries and transport activities were the two largest contributors of greenhouse gas net emissions, contributing 34 and 30 per cent of the net emissions respectively.

One can note that over the 10-year period while greenhouse gas net emissions from the energy industries fell by more than half, those from transport were on the increase (Chart 1).

The decrease in greenhouse gas net emissions from the energy industries was the result of the introduction of imported electricity by means of the interconnector in 2015 and the shift to Natural gas as the major fuel for local electricity production in 2017 (Chart 2).

**Chart 1. Greenhouse gas net emissions (CO<sub>2</sub> equivalent) by sector: 2007 and 2017**

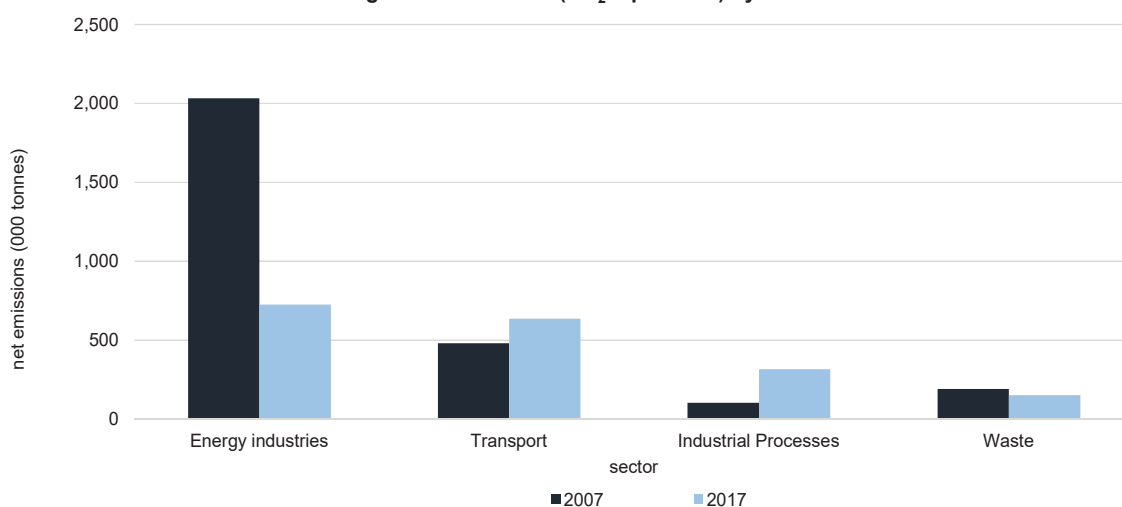
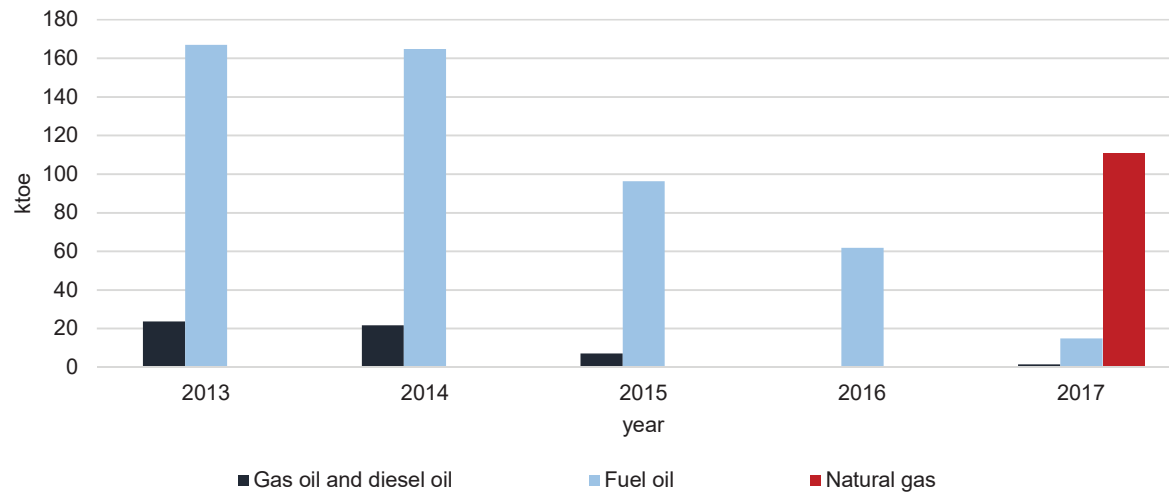


Table 1. Greenhouse gas net emissions (CO<sub>2</sub> equivalent) by sector: 2007-2017

Sector	Year										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Energy	2,692	2,769	2,539	2,540	2,619	2,779	2,439	2,427	1,717	1,414	1,618
of which:											
Energy industries	2,034	2,025	1,903	1,885	1,938	2,057	1,695	1,657	887	578	727
Manufacturing industries and construction	45	49	23	20	27	31	28	27	30	33	34
Transport	481	542	487	498	515	541	569	596	618	599	636
Other sectors	132	152	125	138	139	149	146	147	183	204	222
Industrial Processes	105	120	140	152	179	209	232	243	257	266	317
Agriculture	77	72	69	68	65	67	66	66	68	67	65
Land use, land-use change and forestry	2	2	2	2	2	2	3	3	3	3	4
Waste	193	113	130	149	134	133	124	139	146	149	151
<b>Total (net emissions)</b>	<b>3,068</b>	<b>3,076</b>	<b>2,881</b>	<b>2,912</b>	<b>3,000</b>	<b>3,190</b>	<b>2,863</b>	<b>2,878</b>	<b>2,191</b>	<b>1,899</b>	<b>2,155</b>

Source: Greenhouse gas inventory 2019 submission v.4

Chart 2. Types of fuel used for electricity production: 2013-2017



Note: ktoe - Kilotonne of oil equivalent (refer to methodological note number 3).

Source: Regulator for Energy and Water Services (REWS) and Enemalta Plc

## Transport

### Land Transport

Between 2014 and 2018 the total stock of licensed motor vehicles increased by 15 per cent from 335,249 to 385,326. The largest increase was in the passenger cars category, which expanded by 33,807, making up two-thirds of the total increase during the mentioned period (Table 2). As at the end of 2017, the average age of both passenger cars and motorcycles was 14 years (Chart 3).

Over the four-year period between 2014 and 2017 (both years included), the number of newly licensed stock of motor vehicles registered an increase of 30 per cent, from 19,212 vehicles in 2014 to 24,888 in 2017 (Chart 4).

Between 2013 and 2017 the use of gas oil and diesel oil (excluding biofuel portion) increased from 91 to 106 kilotonnes of oil equivalent (Chart 5).

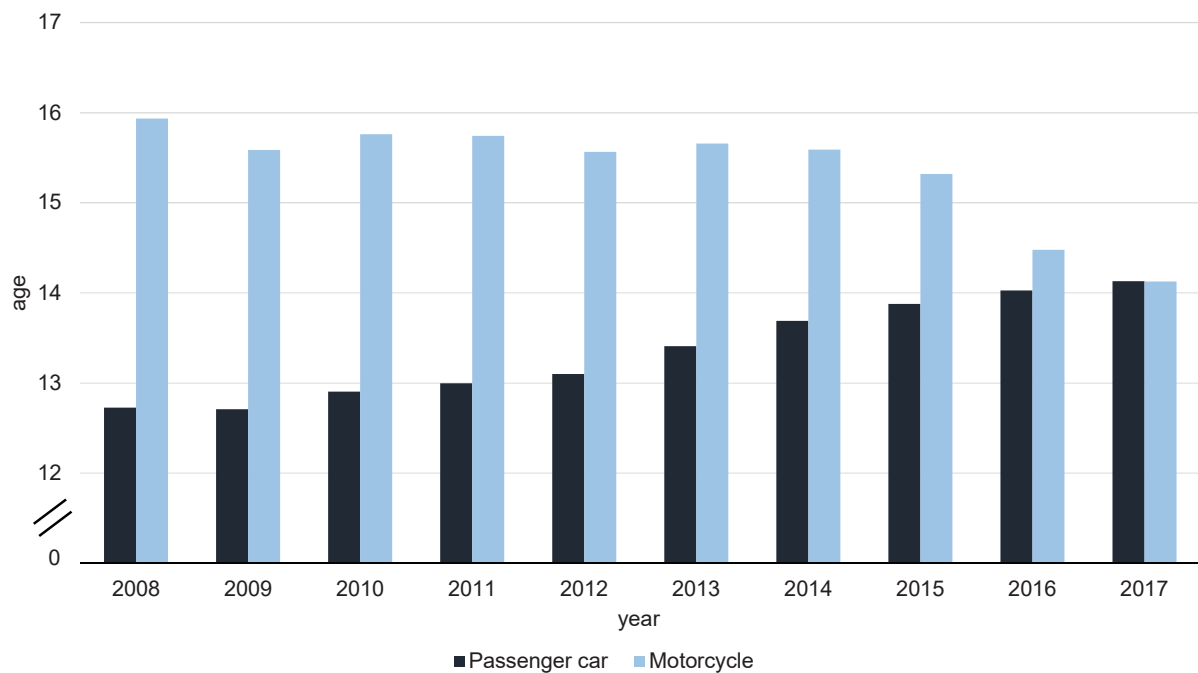
Data from the European Environment Agency shows that between 2010 and 2017, the average carbon dioxide emissions per kilometre by new passenger cars in Malta decreased from 131.2g to 111g. During the same period, the EU countries' average also decreased from 140.3g to 118.5g (Chart 6).

**Table 2. Stock of licensed motor vehicles by type: 2014-2018**

Year	Agricultural	Coach and private bus	Miribus	Route bus	Motorcycle/ E-bike	Quad and ATV	Passenger car	Commercial vehicle	Total
2014	1,830	362	1,149	284	17,555	1,003	266,335	46,731	<b>335,249</b>
2015	1,905	353	1,191	408	19,206	1,084	275,177	47,594	<b>346,918</b>
2016	1,989	363	1,228	405	22,286	1,149	282,933	48,594	<b>358,947</b>
2017	2,038	371	1,266	432	24,606	1,192	291,799	50,357	<b>372,061</b>
2018	2,116	388	1,288	436	27,329	1,207	300,142	52,420	<b>385,326</b>

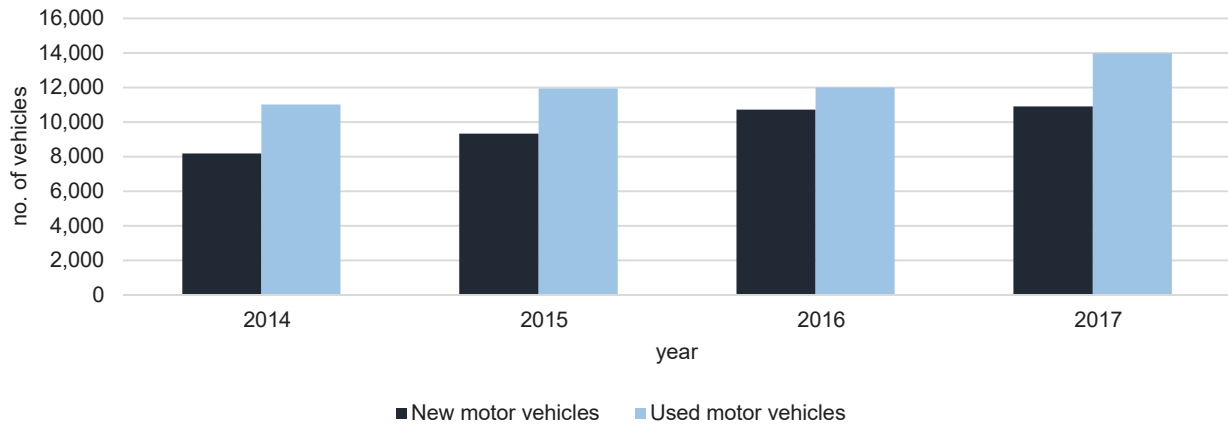
Source: Transport Malta

**Chart 3. Average age of passenger cars and motorcycles: 2008-2017**



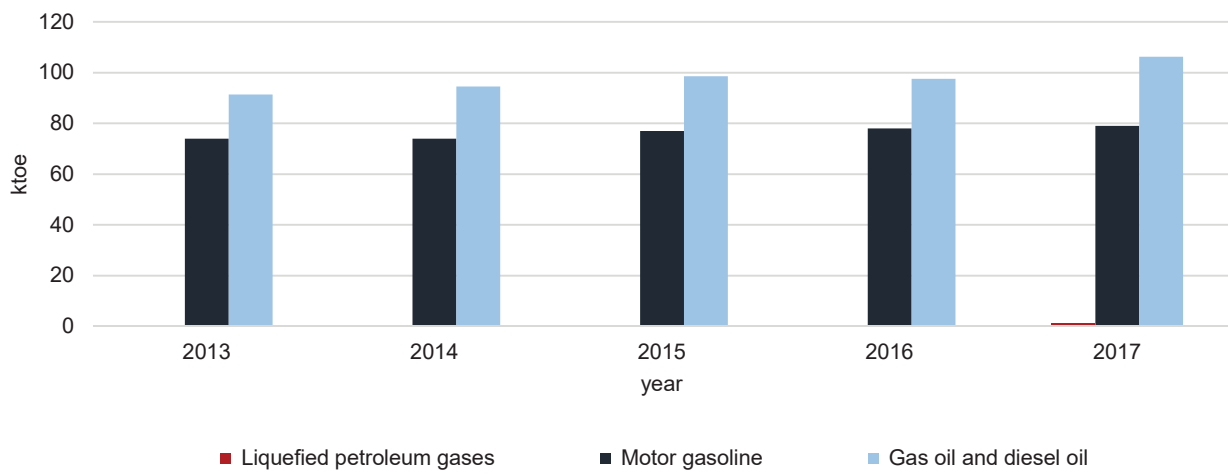
Source: Transport Malta

**Chart 4. Newly licenced stock of motor vehicles: 2014-2017**



Source: Transport Malta

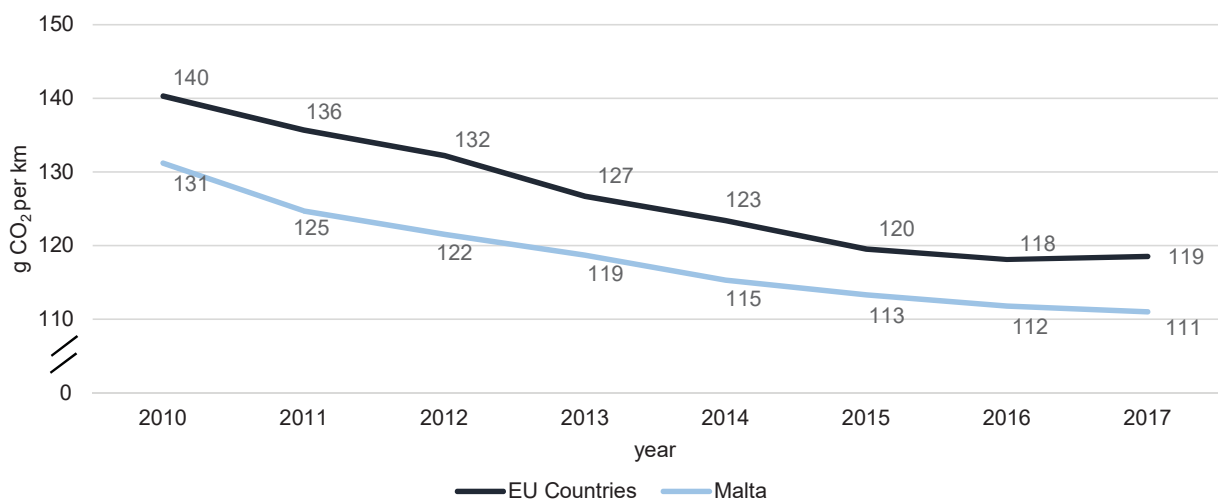
**Chart 5. Types of fuel used for road transport: 2013-2017**



Note: ktoe - Kilotonne of oil equivalent (refer to methodological note number 3).

Source: Regulator for Energy and Water Services (REWS) and Enemalta Plc

**Chart 6. Average CO<sub>2</sub> emissions per km from new passenger cars: 2010-2017**



Source: European Environment Agency, European Commission - Directorate-General for Climate Action

## Sea Transport

Between 2014 and 2018 there was an average of 316 cruise liner calls per year. During 2018 there were 310 cruise liners, visited the Maltese Islands, 32 less than the previous year. October is the peak month for cruise liner calls (Table 3).

During the same period, sea transport between Malta and Gozo increased by 19 per cent, from 19,860 trips in 2014 to 23,619 trips (including return trips) in 2018 (Chart 7).

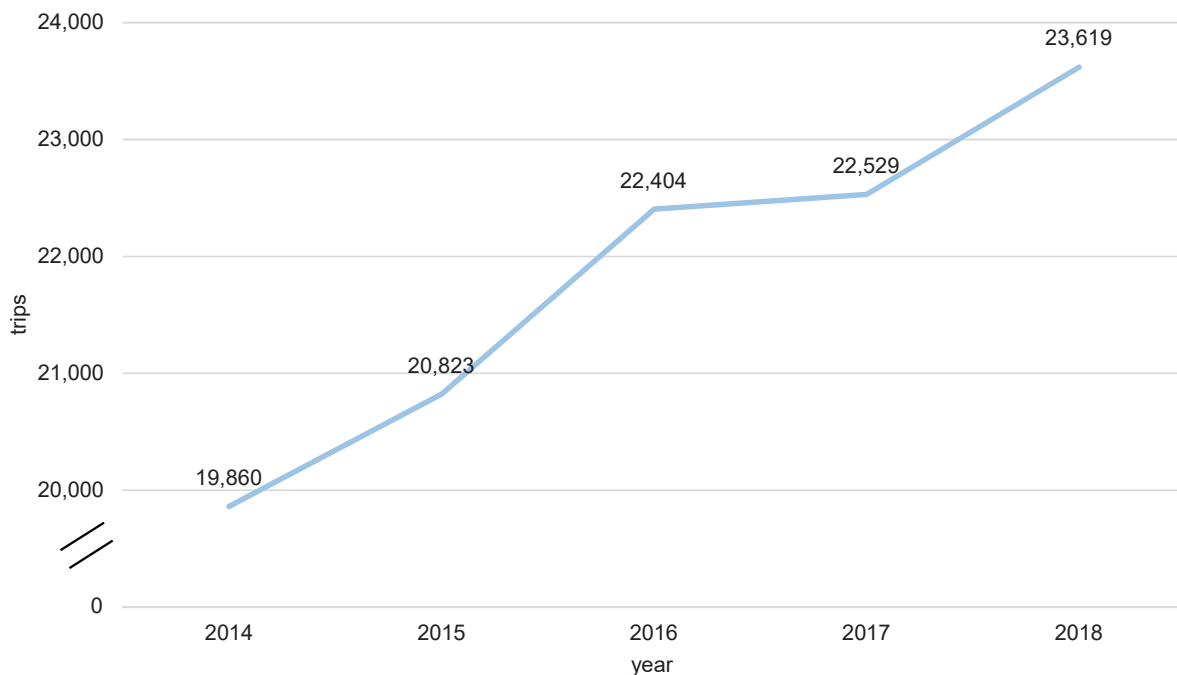
As with land transport, gas oil and diesel oil (excluding biofuel portion) is the mostly used type of fuel for sea transport. In 2017, the use of this fuel amounted to 13 kilotonnes of oil equivalent (Chart 8).

**Table 3. Number of cruise calls by year and month**

Month	Year				
	2014	2015	2016	2017	2018
January	11	5	2	9	6
February	5	1	5	12	5
March	7	3	10	13	6
April	35	40	25	41	36
May	28	39	44	44	40
June	26	29	39	30	27
July	23	24	31	31	28
August	22	29	27	30	32
September	46	49	48	38	35
October	56	53	50	61	55
November	35	28	25	25	31
December	9	7	10	8	9
<b>Total</b>	<b>303</b>	<b>307</b>	<b>316</b>	<b>342</b>	<b>310</b>

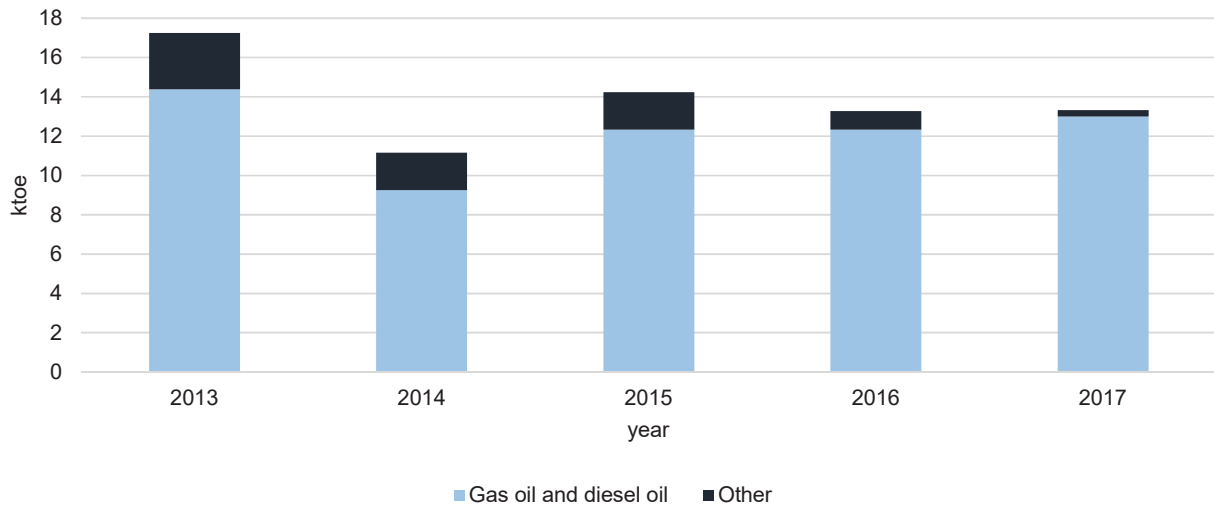
Source: Transport Malta

**Chart 7. Sea transport between Malta and Gozo: 2014-2018**



Source: Gozo Channel Co. Ltd.

**Chart 8. Types of fuel used for sea transport: 2013-2017**



**Notes:**

1. ktOE - Kilotonne of oil equivalent (refer to methodological note number 3).
2. Data refers to fuel used for Domestic Navigation.

Source: Regulator for Energy and Water Services (REWS) and Enemalta Plc

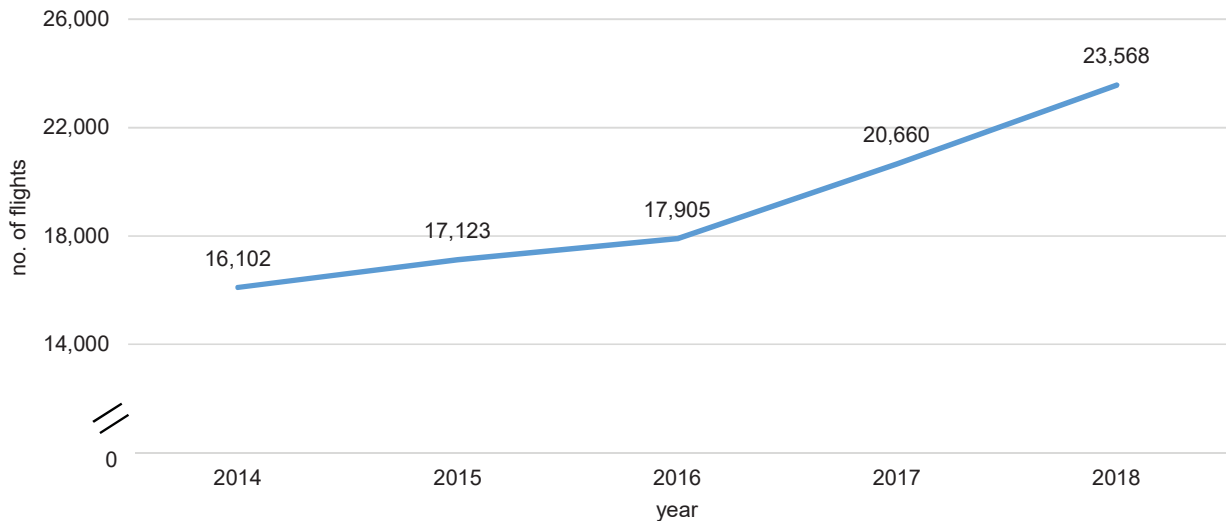
**Air Transport**

Data from the Malta International Airport shows that between 2014 and 2018 the total number of charter and scheduled flights departing from Malta increased from 16,102 to 23,568 or 46 per cent (Chart 9).

During the mentioned period, mornings and afternoons were the busiest for departures. Most of the flights left either between 6am and 9am or some time between 11am and 5pm (Chart 10).

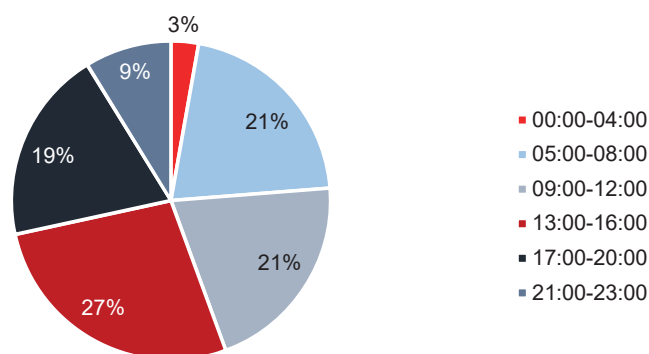
Over the period between 2013 and 2017, the air transport sector increased its use of Kerosene-type jet fuel (excluding biofuel portion) purchased in Malta by both national and international airlines from 106 to 140 kilotonne of oil equivalent, or 32 per cent (Chart 11).

**Chart 9. Number of departing flights by year: 2014-2018**



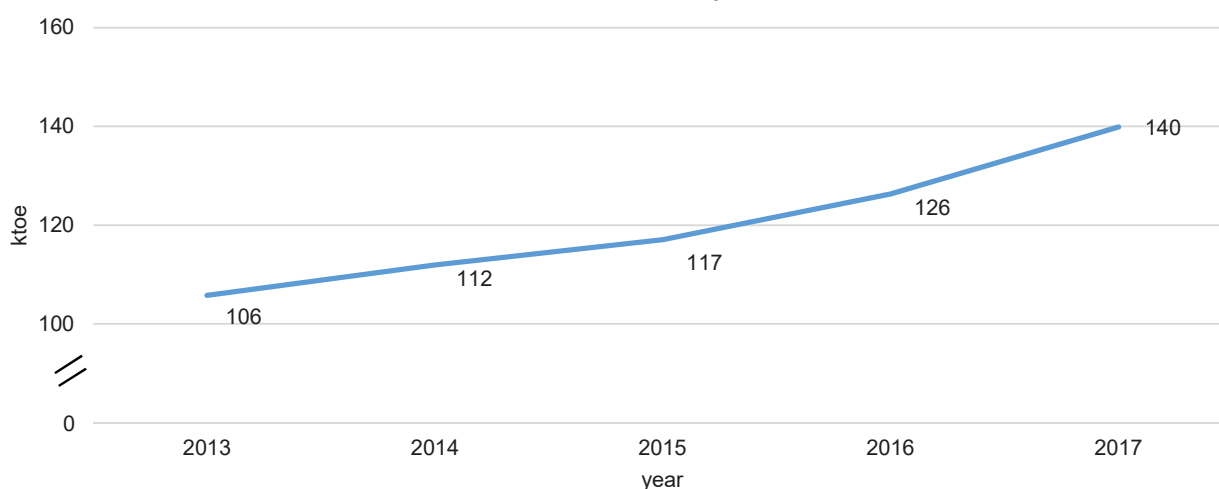
Source: Malta International Airport (MIA)

Chart 10. Departing flights by hour: 2018



Source: Malta International Airport (MIA)

Chart 11. Jet fuel used for air transport: 2013-2017



Note: ktoe - Kilotonne of oil equivalent (refer to methodological note number 3).

Source: Regulator for Energy and Water Services (REWS) and Enemalta Plc

## Agriculture

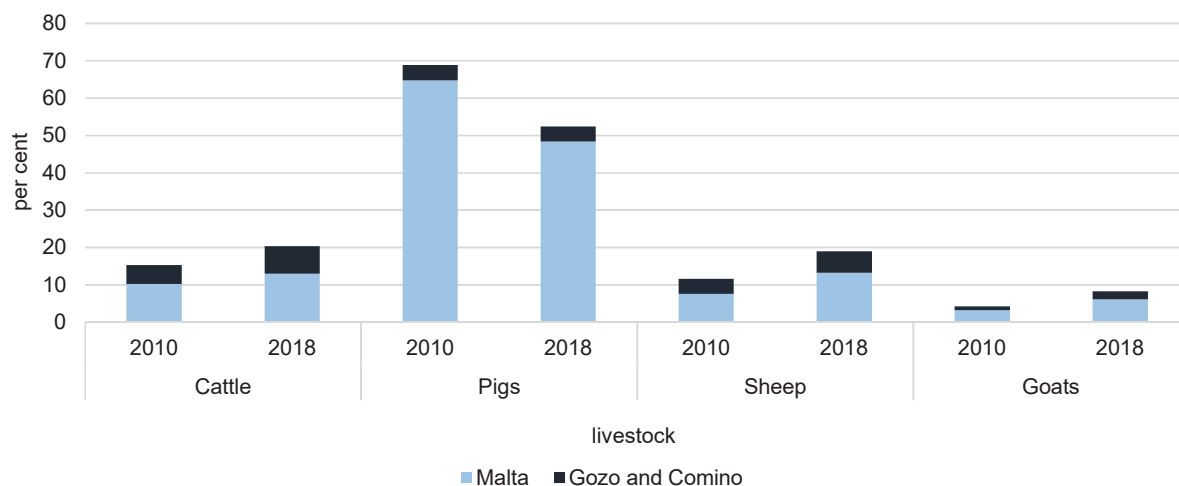
The United Nations lists ground-level ozone among the contributing factors of respiratory illnesses such as asthma. Methane (CH<sub>4</sub>) emissions contribute to ground-level ozone and, along with Ammonia (NH<sub>3</sub>), is one of the air polluting factors resulting from livestock.

Over an eight-year period between 2010 and 2018, livestock in Malta, Gozo, and Comino saw a decrease of 32 per cent from 102,538 to 69,314. During the same period, the population of pigs was almost halved and cattle fell by 10 per cent. On the contrary, the number of goats increased by more than 30 per cent, while the number of sheep increased by almost 11 per cent (Table 5). Despite the drop in numbers, pigs still made up more than half the total population of 2018 livestock, amounting to 36,294. Chart 12 depicts the livestock percentage distribution for 2010 and 2018 for Malta, and Gozo and Comino regions.

Table 5. Livestock by type: 2010-2018

Year	Cattle	Pigs	Sheep	Goats
2010	15,688	70,593	11,873	4,384
2011	15,074	46,287	11,887	4,938
2012	15,593	45,209	11,697	4,847
2013	15,220	49,451	10,930	4,598
2014	14,883	47,465	10,526	4,627
2015	15,020	43,634	11,076	4,937
2016	14,356	40,597	11,523	4,971
2017	14,184	34,011	11,739	5,160
2018	14,125	36,294	13,169	5,726

**Chart 12. Distribution of livestock heads by region: 2010 and 2018**



Source: Bovine Register

### Biodegradable Waste

Between 2010 and 2018, the total landfilled waste increased by 25 per cent reaching a total of 297,605 tonnes. During this period, landfilled biodegradable waste decreased by 14 per cent from 133,945 tonnes in 2010 to 115,861 tonnes in 2018 (Table 6, Chart 13). The decrease in landfilled biodegradable waste is a result of a process that was introduced in 2011 whereby this waste is treated with anaerobic digestion. This treatment converts biodegradable waste into digestate (a nitrogen-rich soil improver) and biogas. Biogas is then used for energy purposes.

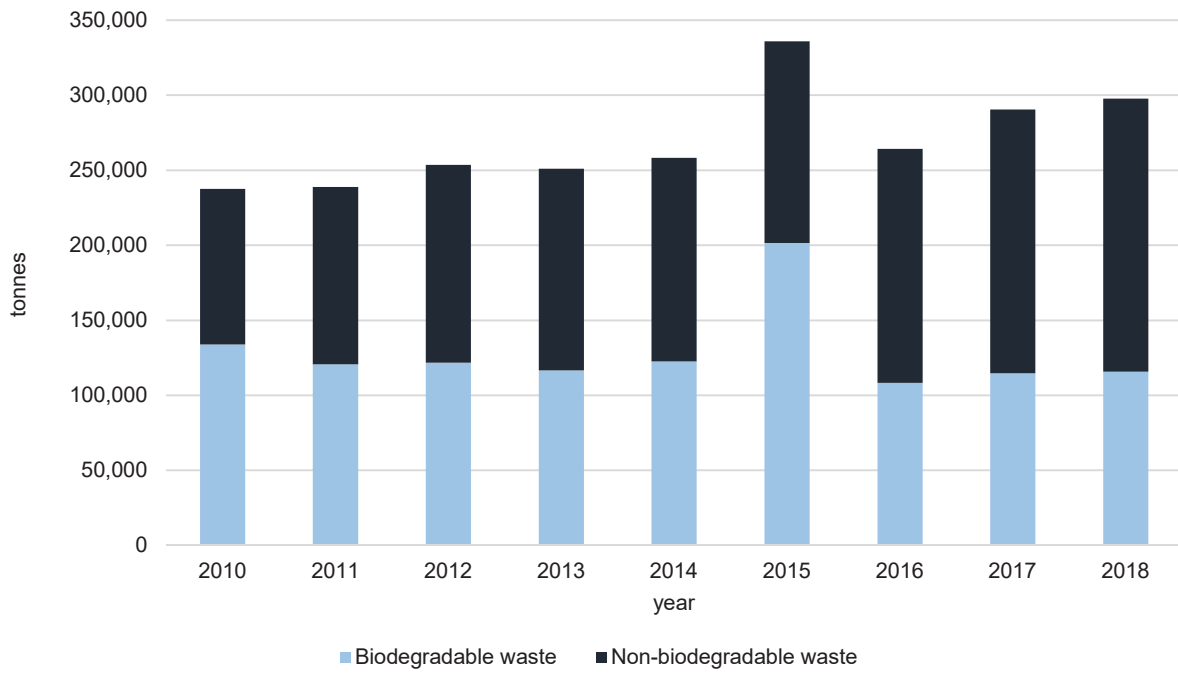
**Table 6. Landfilled waste: 2010-2018**

Year	Landfilled		
	Non-biodegradable	Biodegradable	Total
2010	103,659	133,945	237,605
2011	118,051	120,748	238,799
2012	131,684	121,800	253,484
2013	134,265	116,648	250,914
2014	135,515	122,689	258,204
2015	134,167	201,624	335,791
2016	155,866	108,340	264,206
2017	175,845	114,675	290,521
2018	181,744	115,861	297,605

Source: WasteServ Malta Ltd., Environment and Resources Authority, National Statistics Office



Chart 13. Landfilled waste: 2010-2018



Note: The high amount of biodegradable waste that was landfilled in 2015 occurred due to the disposal of wood that was held in storage from 2010 to 2015.

Source: WasteServ Malta Ltd., Environment and Resources Authority, National Statistics Office

## Methodological Notes

### Emissions

1. The UNFCCC GreenHouse Gas (GHG) emissions inventory is a set of tables and matrices which are used by countries that are Parties to the Climate Change Convention to report anthropogenic emissions by sources and removals by sinks of the six principal GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride) that are not controlled by the Montreal Protocol. The data also include activity data and implied emission factors by gas for all source categories. The GHG emission inventories are developed by Parties using comparable methodologies agreed upon by the Conference of Parties. All the Parties base their GHG emission inventories on the Intergovernmental Panel on Climate Change (IPCC) Revised Guidelines for National Greenhouse Gas Inventories (1996), IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (2000) and IPCC Good Practice Guidance on Land Use, Land-use Change and Forestry (2003).
2. Source: <https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/old-ghg-data-interface/frequently-asked-questions#eq-2>
3. The tonne of oil equivalent (toe) is a unit of energy defined as the amount of energy released by burning one tonne of crude oil. Different crude oils have different calorific values example 1 tonne of diesel - 1.01 toe; 1m3 diesel = 0.98 toe.

### Land Transport

4. Data are being presented in consistency with international counterparts (Eurostat/ITF/UNECE) according to the 4<sup>th</sup> edition of the Illustrated Glossary for Transport Statistics.  
Source: <http://www.unece.org/fileadmin/DAM/trans/main/wp6/pdfdocs/glossen4.pdf>.

#### 5. Definitions:

##### Vehicle categories and classifications

- **Agricultural:** motor vehicle, normally a tractor, designed exclusively or primarily for agricultural purposes; licensed to use roads open to public traffic.
- **Coach and private bus:** passenger road motor vehicle designed to carry more than 24 persons (including driver), and with a provision to carry seated and standing passengers.
- **Minibus/mini-coach:** passenger road motor vehicle designed to carry 10-23 seated or standing persons (including the driver).
- **Route bus:** bus licensed to operate on established bus routes.
- **Motorcycle:** two-, three- or four-wheeled road motor vehicle not exceeding 400kg of unladen weight. All such vehicles with a cylinder capacity of 50cc or over are included, as are those under 50cc which do not meet the definition of moped.
- **E-Bicycle:** cycle with supportive electrical power unit. Due to the negligible number of powered bicycles, such data is included with motorcycles.
- **Moped:** two-, three- or four-wheeled road motor vehicle which is fitted with an engine having a cylinder capacity of less than 50cc and a maximum authorised design speed in accordance with national regulations. In this news release, mopeds are included together with motorcycles.
- **Quad (Quadricycle)/ATV (All Terrain Vehicle):** four-wheeled road motor vehicle not exceeding 400kg of unladen weight. All such vehicles with a cylinder capacity of 50cc or over are included, as are those under 50cc which do not meet the definition of moped.
- **Passenger road vehicle:** a road vehicle designed, exclusively or primarily, to carry one or more persons. This category includes motorcycles, mopeds, passenger cars, vans designed and used primarily for transport of passengers, taxis, hire cars, ambulances, buses, coaches, minibuses and motor homes.
- **Passenger car:** road motor vehicle, other than a moped, motorcycle or Quad/ATV, intended for the carriage of passengers and designed to seat no more than 9 persons (including the driver). This category includes passenger cars, vans designed and used primarily for transport of passengers, taxis, hire cars, ambulances, motor homes (not caravans), hearses and microcars (needing no permit to be driven).

- **Goods-carrying vehicle:** road vehicle designed, exclusively or primarily, to carry goods. This category includes: (a) light goods vehicles with a gross vehicle weight of not more than 3,500kg designed exclusively or primarily to carry goods, such as vans and pick-ups; (b) heavy goods road vehicles with a gross vehicle weight above 3,500kg designed to carry goods.
- **Road tractor:** road motor vehicle designed, exclusively or primarily, to haul other road vehicles which are not power driven (mainly semi-trailers).
- **Special purpose vehicle:** road motor vehicle for purposes other than the carriage of passengers or goods. This category includes: fire brigade vehicles; mobile cranes; self-propelled rollers; bulldozers with metallic wheels or track; vehicles for recording film, radio and TV broadcasting; mobile library vehicles; mobile kiosks; towing vehicles for vehicles in need of repair and other special purpose road motor vehicles.
- **Garage hire:** chauffeur-driven car for hire.
- **Self-drive car/motorcycle:** passenger road motor vehicle available for hire (without chauffeur).
- **Taxi:** licensed passenger car for hire with driver without pre-determined routes. The method of hire is normally: (i) Flagging down the street; (ii) Picking up at a designated taxi rank; (iii) Telephoning for collection; (iv) Booking through mobile apps or internet.
- **Leased:** a contract under which the owner of a motor vehicle grants to another person the exclusive possession of the motor vehicle for an agreed period, in return for a consideration, and under such conditions that the possessor of the motor vehicle will be obliged to pay the full amount of the consideration, or a penalty, to the owner of the motor vehicle, should the contract be terminated before the expiration of the agreed period. A 'QZ' plate is assigned to all vehicles falling in this category.
- **Other:** this category includes any other use/ownership (mostly private), not mentioned above.

6. Newly licensed data (new and used) shows the number of vehicles licensed for the first time to be used on Maltese roads. These values approximately indicate also the local sales of vehicles during the period.

#### Sea Transport

7. Cruise liners calling at both Malta and Gozo during a single voyage are recorded as one cruise liner call.
8. The table below illustrates the passenger and vehicle capacity of each Gozo Channel vessel:

<b>Carrying capacity</b>		
<b>Vessel</b>	<b>Vehicles</b>	<b>Passengers</b>
MV Gaudos	72	900
MV Malita	138	900
MV Ta' Pinu	138	900

9. Periods when vessels were out of service for docking puposes since 2016:

MV Gaudos: 06/01/2016 - 27/01/2016 and 13/11/2017 - 30/11/2017.

MV Malita: 09/01/2017 - 02/02/2017, 14/02/2017 - 17/02/2017 and 08/05/2017 - 09/05/2017, 07/05/2018 - 11/05/2018, 09/01/2019 - 31/01/2019, 06/02/2019 - 13/02/2019 and 07/03/2019 - 08/03/2019..

MV Ta' Pinu: 03/10/2017 - 05/10/2017 and 08/01/2018 - 30/01/2018.

#### Agriculture

10. Information on the cattle, sheep and goats has been entirely compiled with information from the Bovine Register, which is under the control of the FVRD at the Civil Abattoir. The data collection is in accordance with Council Regulation No. 1165/2008.
11. The pig census is carried out every year and is in accordance with Council Regulation No.1165/2008.

#### Biodegradable waste

12. Data for landfilled biodegradable waste covers all waste that is landfilled in the Ghallis and Zwejra landfills which are the only permitted landfills in Malta. This data is not to be confused with the Biodegradable Municipal Waste landfilling indicator which is compiled by the Environment and Resources authority since the latter covers only municipal waste.

13. The high amount of biodegradable waste that was landfilled in 2015 occurred due to the disposal of wood that was held in storage from 2010 to 2015.

**Other sources:**

14. <https://ec.europa.eu/eurostat/documents/3217494/9237449/KS-01-18-656-EN-N.pdf/2b2a096b-3bd6-4939-8ef3-11cfc14b9329>
15. <https://www.unenvironment.org/news-and-stories/story/air-pollution-know-your-enemy>
16. <https://www.worldenvironmentday.global/what-causes-air-pollution>
17. References to this news release are to be cited appropriately.
18. A detailed news release calendar is available on:  
[https://nso.gov.mt/en/News\\_Releases/Release\\_Calendar/Pages/News-Release-Calendar.aspx](https://nso.gov.mt/en/News_Releases/Release_Calendar/Pages/News-Release-Calendar.aspx)