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Summary Report: Gibraltar City Inventory 2019

A Summary of the City-Level Greenhouse Gas Emissions Inventory for
Gibraltar

Report for HM Government of Gibraltar

Customer:

Catherine Walsh, Department of the Environment, HM Government of Gibraltar

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Summary of Gibraltar's 2019 City-Scale Greenhouse Gas Inventory

This summary is intended to provide an easily accessible synopsis of the main technical report accompanying Gibraltar's 2019 City-Scale Greenhouse Gas (GHG) Inventory. It provides some brief background to Gibraltar's climate commitments and inventory, the results of the 2019 inventory, and changes between previous inventories. For more information on the background behind Gibraltar's inventories, the data and methodologies used, revisions to previous inventories and recommended future improvements, see the full report, available at: [\(insert link to full report\)](#).

Gibraltar's climate commitments

The Government of Gibraltar has been active in addressing the concerns of climate change and committing to reducing harmful GHG emissions. As well as being a signatory to the Global Covenant of Mayors for Climate and Energy¹ (GCoM) since 2015, Government has passed the Climate Emergency Motion, committed to ambitious emission reduction targets in the Climate Change Act (Figure 2) and published Gibraltar's Climate Change Strategy².

Under GCoM, Gibraltar have committed to regularly reporting a GHG inventory (which has been reported annually since 2015), assessing climate risks and vulnerabilities, defining ambitious climate mitigation, resilience and energy targets, and creating a full climate action plan outlining how targets will be delivered, as depicted in **Figure 1**.

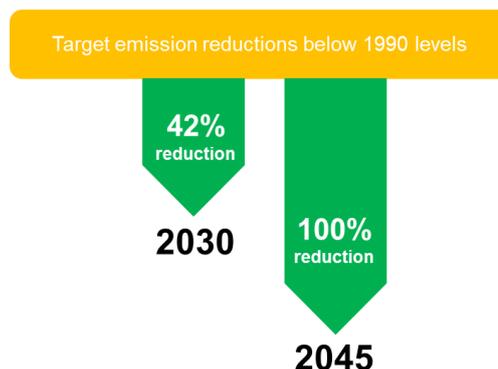
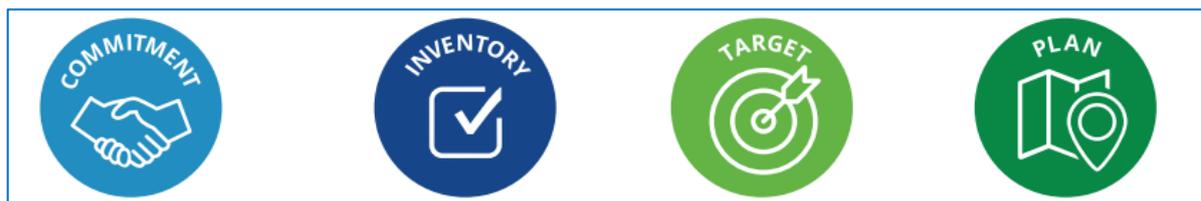


Figure 2: Climate Change Act targets

Figure 1: GCoM commitment requirements



Source: https://data.bloomberglp.com/mayors/sites/14/2015/07/Compact-of-Mayors-Full-Guide_July2015.pdf

Greenhouse gas emission inventories

Gibraltar's GHG inventory is the key tool for tracking changes in emissions over time and reporting progress towards emission reduction targets. The inventory follows the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories³ (GPC), which is a robust, transparent, and globally accepted framework to consistently identify, calculate and report on sub-national GHGs. Emissions are calculated for seven GHGs, reported as carbon dioxide equivalent⁴ (CO₂e), and are categorised by 'scope', to distinguish where emissions physically occur:

- Scope 1 emissions are directly emitted within the city boundary (**direct emissions**)
- Scope 2 emissions are indirect from in-boundary consumption of electricity (**Indirect emissions**)
- Scope 3 emissions are indirect and out of boundary emissions (**Other direct emissions**)

What is a GHG inventory?

A GHG inventory is an accounting of GHGs emitted to or removed from the atmosphere over a period of time.

Policy makers use inventories to establish a baseline for tracking emission trends, developing mitigation strategies and policies, and assessing progress.

¹ <https://www.globalcovenantofmayors.org/>

² <https://www.gibraltar.gov.gi/press-releases/gibraltars-climate-change-strategy-published-8442021-7430>

³ <http://www.wri.org/publication/global-protocol-community-scale-greenhouse-gas-emission-inventories>

⁴ CO₂e values are used to take account of different GHGs having a greater or lesser warming impact than another. A Global Warming Potential (GWP) value is used to convert quantities of different GHGs to a shared unit (CO₂e) that can then be directly compared.

The sources, and scopes, that are included within Gibraltar's GHG inventories are shown in **Figure 3**.

Figure 3: GHG Inventory sources and scopes



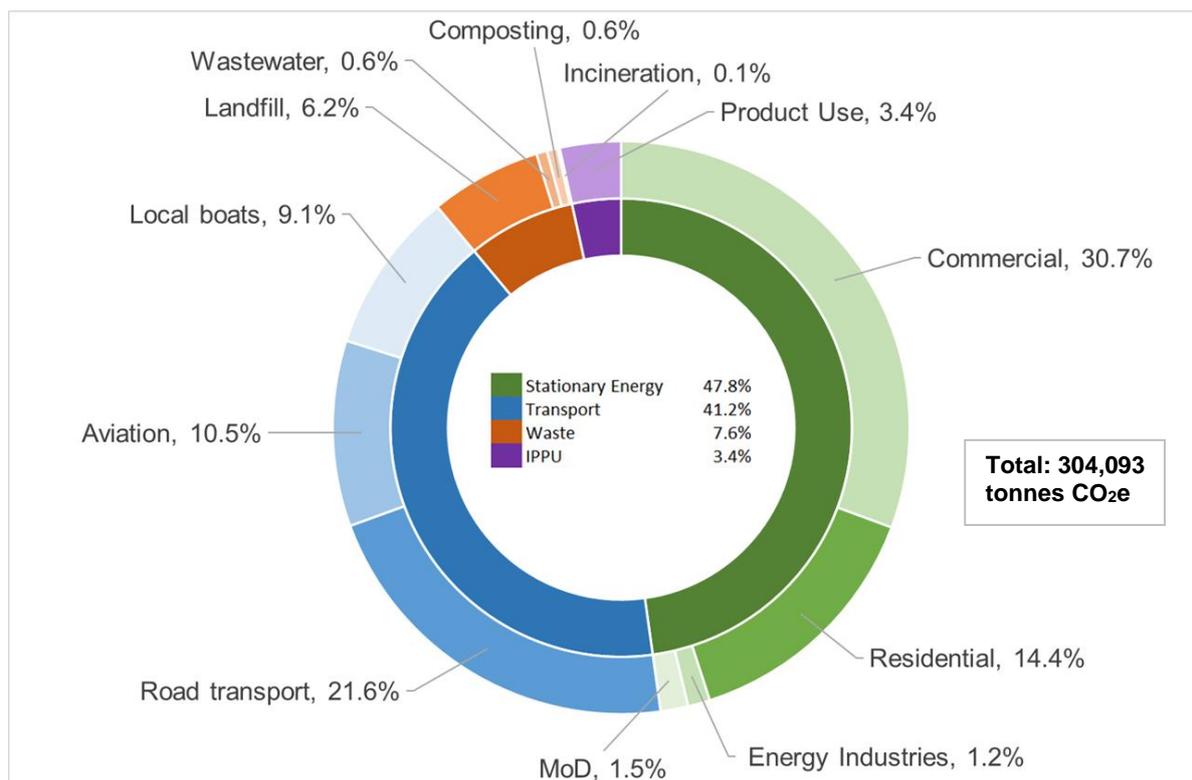
Gibraltar's 2019 inventory

Gibraltar's 2019 GHG emissions are presented, by sector, in **Table 1** and **Figure 4**. Certain sources, such as international shipping (non-bunkering), are excluded from the results presented in this report due to its very large impact on overall totals, and the lack of potential local influence; this sub-set of emissions is considered as **Gibraltar's 'manageable' emissions**. In addition to 'manageable' emissions, there are alternative reporting levels which include/exclude certain sources; these are covered in the full report accompanying Gibraltar's 2019 city inventory.

Table 1: Gibraltar's 2019 'manageable' emissions (tonnes CO₂e) by sector

Sector	'Manageable' emissions	
	Tonnes CO ₂ e	% contribution
Stationary Energy	145,408	47.8%
Transportation	125,258	41.2%
Waste	23,022	7.6%
Industrial Processes and Product Use (IPPU)	10,405	3.4%
TOTAL	304,093	100%

Figure 4: Gibraltar's 2019 'manageable' emissions



Emissions from electricity consumption are the largest source of emissions in Gibraltar, due to the reliance on electricity for nearly all energy needs, the generation technology currently used and the territory's independence from other electricity supply networks. Prior to 2019, diesel/gas oil (with high carbon intensity) was the only fuel used to generate electricity, meaning the emissions per kilowatt hour (kWh) of electricity were considerably higher than, for example, the UK and other European countries. However, in 2019, North Mole Power Station began using natural gas (with a lower carbon intensity than diesel/gas oil) to generate electricity, which has reduced emissions from electricity consumption. Having said this, electricity consumption remains the largest source of emissions in Gibraltar. The majority of electricity consumption comes from the commercial sector, followed by residential use. Transport also makes a large contribution to emissions, with over 20% of total manageable emissions coming from road transport.

Sources that are deemed to be 'outside of scopes' (i.e., they are reported for information in the full report, but are not deemed to be within the influence or responsibility of Gibraltar – such as bunker fuel) would dominate emissions overall if included in emission totals.

Changes between previous inventories and 2018 inventory

The 2019 inventory has been compared against the revised 2018 (2018r), 2017 (2017r), 2016 (2016r) and 2015 (2015r) inventories. There are some differences between the original 2015 inventory⁵, 2016 inventory⁶, 2017 inventory⁷, 2018⁸ inventory, and the revised versions used as the comparison in this section; this is due to improvements in methodologies and activity data availability during the compilation of the 2019 inventory, which have been applied retrospectively to previous year's inventories for consistency and accuracy, following international best practice. Important recalculations are explained in Appendix 2 of the full report accompanying the 2019 inventory.

Emissions from the 2015r, 2016r, 2017r, 2018r and 2019 inventories are presented, by sector, in **Table 2** and **Figure 5**.

⁵ https://www.gibraltar.gov.gi/new/sites/default/files/HMGoG_Documents/20170601-Gibraltar_City_Inventory_Report_Published.pdf

⁶ https://www.gibraltar.gov.gi/new/sites/default/files/HMGoG_Documents/2016-GibraltarCityInventory_Report_Final.pdf

⁷ https://www.gibraltar.gov.gi/uploads/environment/GHG%20Inventory/2017-GibraltarCityInventory_Report_Final.pdf

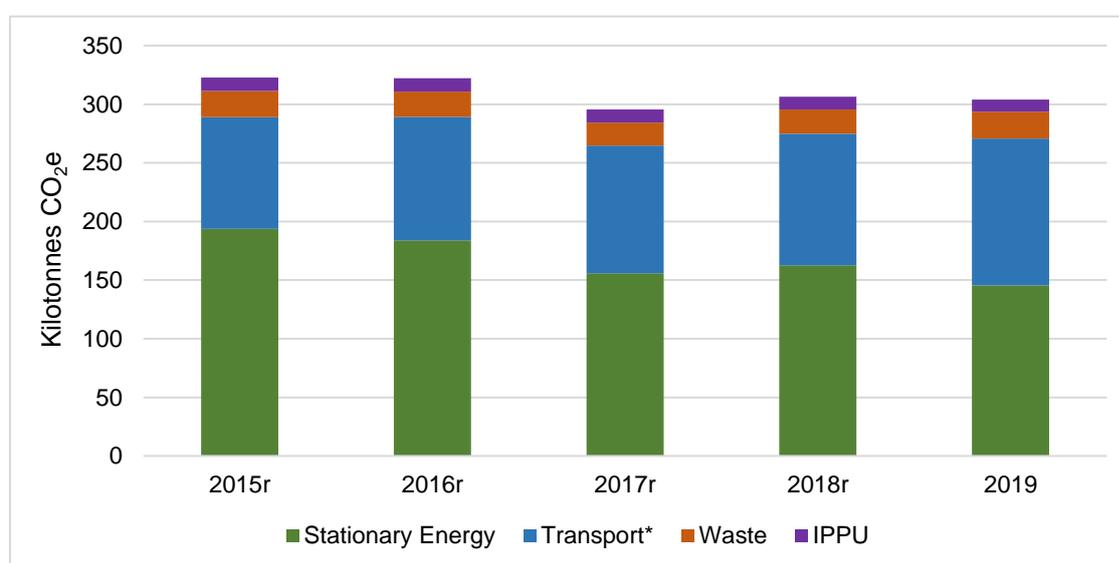
⁸ https://www.gibraltar.gov.gi/uploads/environment/GHG%20Inventory/2018-GibraltarCityInventory_Report_Final.pdf

Table 2: Comparison between the 2015r, 2016r, 2017r, 2018r and 2019 inventories

Reporting sector	Emissions (tCO ₂ e)				
	2015r	2016r	2017r	2018r	2019
Stationary Energy	193,567	183,811	155,868	162,747	145,408
<i>Transportation (all*)</i>	284,543	377,548	370,763	318,032	374,823
Transportation (excluding scope 3 shipping)	95,548	105,462	109,041	112,076	125,258
Waste	22,249	21,561	19,460	20,822	23,022
IPPU	11,536	11,532	11,233	10,671	10,405
<i>Other Scope 3*</i>	3,077,657	3,207,139	3,324,843	3,058,982	2,415,345
Total Manageable emissions	322,901	322,366	295,602	306,316	304,093

* Not included in Gibraltar's manageable emissions

Figure 5: Gibraltar's 'manageable' emissions for 2015r, 2016r, 2017r, 2018r and 2019



* Transport emissions excluding scope 3 shipping

Gibraltar's total manageable emissions have decreased by 6% since 2015r and by 1% since 2018r; this is a result of the following:

- ↓ Emissions from electricity generation have decreased by 11% since 2018r - this is not driven by a decrease in electricity generation/consumption (which has remained fairly static) but is a function of the introduction of natural gas (rather than gas oil only) as a fuel for North Mole Power Station.
- ↓ Emissions from IPPU have decreased by 10% between 2015r and 2019 (and decreased by 2% between 2018r and 2019); this follows trends in UK data that is used as a proxy for Gibraltar's emissions from product use (e.g. air conditioning and refrigeration).
- ↓ Emissions from road transport in Gibraltar have decreased by 4% since 2018r due to less fuel being consumed by vehicles in Gibraltar.
- ↑ Emissions from Waste are around 3% and 11% higher in 2019 than 2015r and 2018r (respectively) due to an increase in total waste arisings sent to landfill (and composting).
- ↑ Emissions from scope 1 waterborne navigation are 73% higher in the 2019 inventory than the 2018r inventory, due to significant increases in the overall fuel imported and used in Gibraltar.
- ↑ Emissions from aviation are around 6% higher in 2019 than 2015r (and 16% higher than 2018r), mainly as a result of increased domestic (i.e., UK) flights.

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