Summary Report: Gibraltar City Inventory 2020

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

Report for HM Government of Gibraltar

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Customer:

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

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Contact:

Ellie Kilroy
Ricardo Energy & Environment
Gemini Building, Harwell, Didcot, OX11 0QR, United Kingdom

t: +44 (0) 1235 75 3706

e: Ellie.kilroy@ricardo.com

Ricardo-AEA Ltd is certificated to ISO9001 and ISO14001

Author:

Ellie Kilroy and Maya Rubin

Date:

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Summary of Gibraltar's 2020 City-Scale Greenhouse Gas Inventory

This summary is intended to provide an easily accessible synopsis of the main technical report accompanying Gibraltar's 2020 City-Scale Greenhouse Gas (GHG) Inventory. It provides some brief background to Gibraltar's climate commitments and inventory, the results of the 2020 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: *https://www.gibraltar.gov.gi/uploads/documents/environment/climate-change/2020_City-Level_Greenhouse_Gas_Inventory_Report_for_Gibraltar.pdf*.

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 Energy[1] (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 Strategy[2].

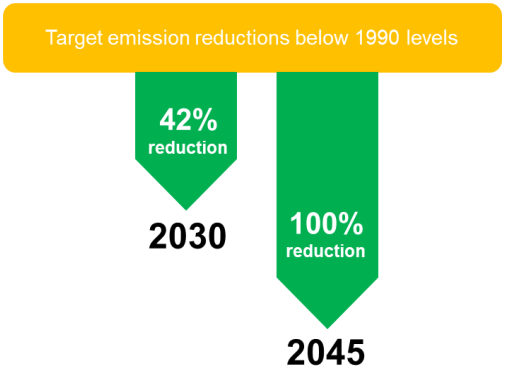


Figure SEQ Figure * ARABIC 2: Climate Change Act targets

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 SEQ Figure * ARABIC 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 Inventories[3] (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 equivalent[4] (CO_2e), and are categorised by 'scope', to distinguish where emissions physically occur:

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.

- Scope 1 emissions are directly emitted within the city boundary (**direct emissions**)

[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] CO_2e values are used to take account of different GHGs having a greater or lesser warming impact that another. A Global Warming Potential (GWP) value is used to convert quantities of different GHGs to a shared unit (CO_2e) that can then be directly compared.

- 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)**

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

Figure SEQ Figure * ARABIC 3: GHG Inventory sources and scopes

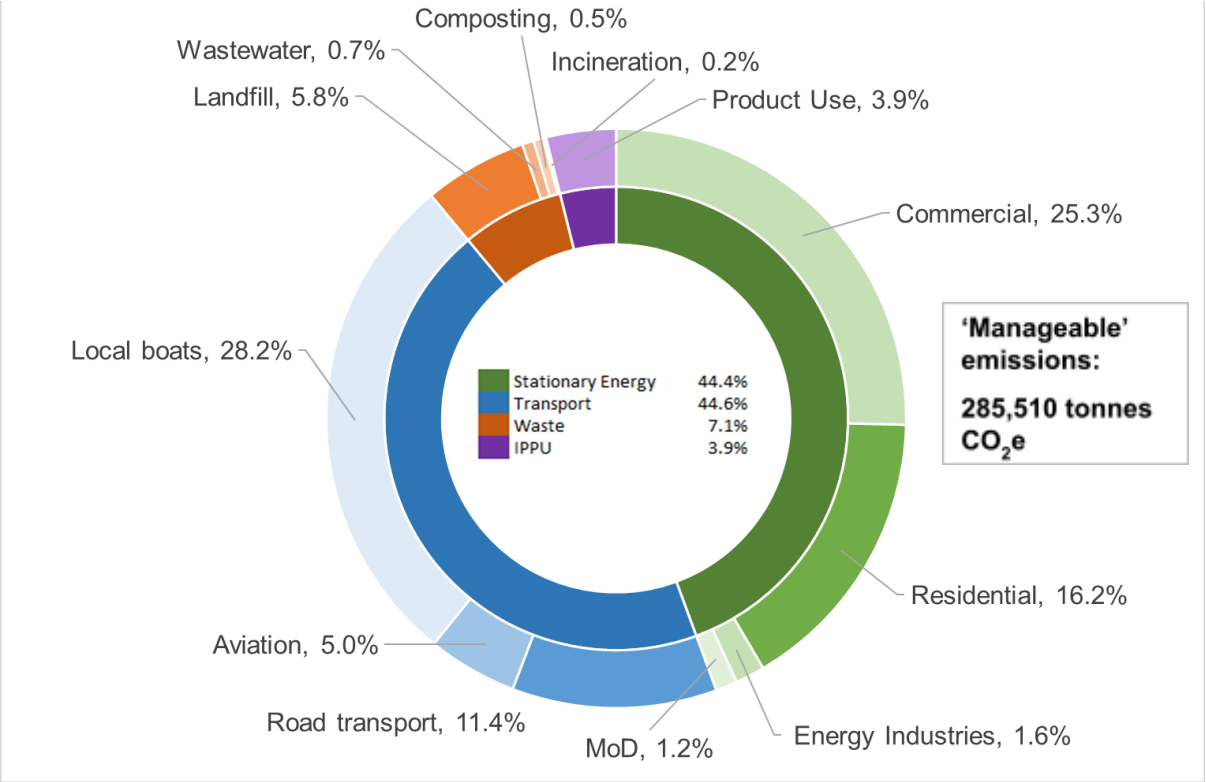
Gibraltar's 2020 inventory

Gibraltar's 2020 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 2020 city inventory.

Table 1: Gibraltar's 2020 'manageable' emissions (tonnes CO_2e) by sector

Sector	'Manageable' emissions	
	Tonnes CO_2e	% contribution
Stationary Energy	126,730	44.4%
Transportation	127,312	44.6%
Waste	20,350	7.1%
Industrial Processes and Product Use (IPPU)	11,118	3.9%
TOTAL	***285,510***	***100%***

Figure SEQ Figure * ARABIC 4: Gibraltar's 2020 'manageable' emissions



Emissions from the transport sector are the largest source of emissions in Gibraltar, accounting for almost half of the "manageable" emissions shown above. Local boats dominate transport emissions, with significant contributions from road transport and aviation also. Emissions from electricity consumption are the second largest source of emissions in Gibraltar (also accounting for almost half of Gibraltar's "manageable" emissions), 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 a dominant source of emissions in Gibraltar. The majority of electricity consumption comes from the commercial sector, followed by residential use.

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 2020 inventory

The 2020 inventory has been compared against the revised 2019 (2019r), 2018 (2018r), 2017 (2017r), 2016 (2016r) and 2015 (2015r) inventories. There are some differences between the original 2015 inventory[5], 2016 inventory[6], 2017 inventory[7], 2018[8] inventory, 2019[9] 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 2020 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 2020 inventory.

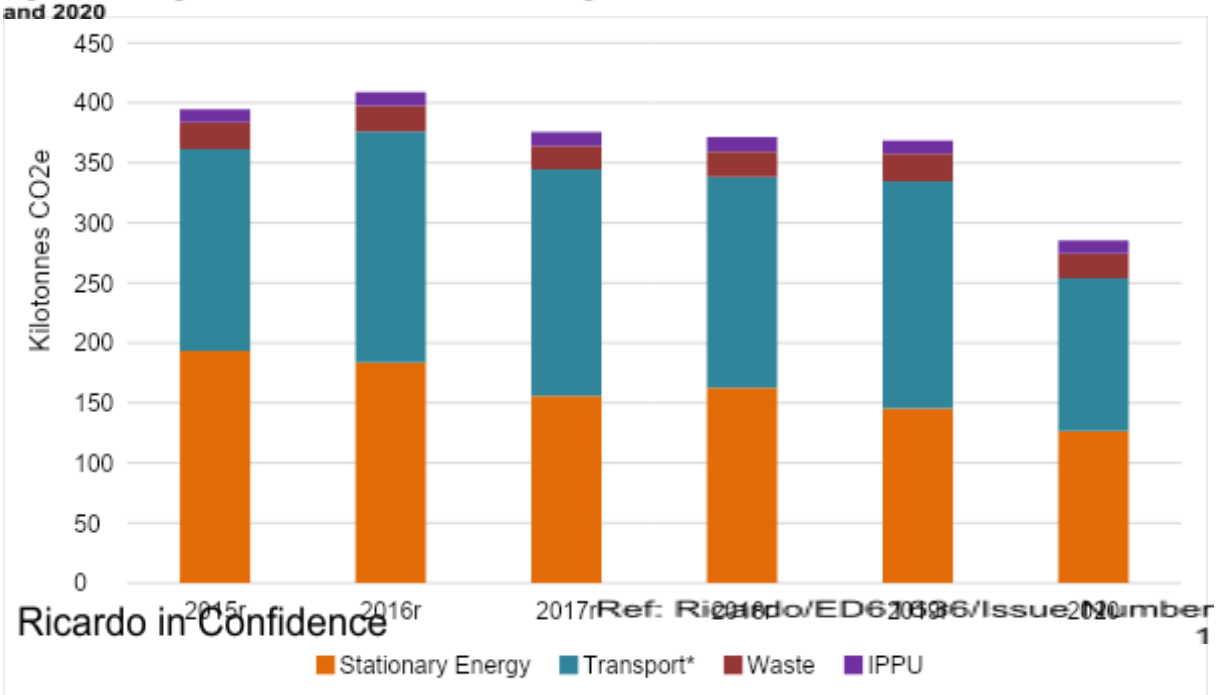
Emissions from the 2015r, 2016r, 2017r, 2018r, 2019r and 2020 inventories are presented, by sector, in **Table 2** and **Figure 5.**

Table 2: Comparison between the 2015r, 2016r, 2017r, 2018r, 2019r and 2020 inventories

Reporting sector	Emissions (tCO_2e)					
	2015r	2016r	2017r	2018r	2019r	2020
Stationary Energy	193,567	183,811	155,868	162,747	145,419	126,730
Transportation (all)*	357,005	464,296	450,441	381,598	438,578	353,966
Transportation (excluding scope 3 shipping)	168,011	192,210	188,718	175,642	189,012	127,312
Waste	22,249	21,561	19,460	20,822	23,022	20,350
IPPU	10,648	11,298	11,545	12,107	11,051	11,118
*Other Scope 3**	3,095,599	3,244,035	3,342,771	3,067,278	2,415,569	2,163,890
Total Manageable emissions	**394,475**	**408,879**	**375,591**	**371,319**	**368,504**	**285,510**

* Not included in Gibraltar's manageable emissions

Figure SEQ Figure * ARABIC 5: Gibraltar's 'manageable' emissions for 2015r, 2016r, 2017r, 2018r, 2019r and 2020



* Transport emissions excluding scope 3 shipping

Gibraltar's 2020 total manageable emissions have decreased by 28% since 2015r and by 12% since 2019r; this is a result of the following:

Emissions from electricity generation have decreased by 13% since 2019, and by 35% since 2015. This due to the introduction of natural gas (rather than gas oil only) as a fuel for North Mole Power Station. The amount of electricity produced/consumed has remained fairly static.

Emissions from road transport in Gibraltar have decreased by 51% since 2019 due to less fuel being consumed by vehicles in Gibraltar – this is likely an artefact of the COVID-19 pandemic.

Emissions from aviation decreased by 55% since 2019 as a result of reduced flights – again, this is likely a result of the pandemic in 2020.

Emissions from waste decreased by 9% since 2019, and by 12% since 2015, due to a decrease in total waste arisings sent to landfill.

Emissions from IPPU increased by 1% since 2019, and by 4% since 2015. This follows trends in UK data that is used as a proxy for Gibraltar's emissions from product use.

The Gemini Building
Fermi Avenue
Harwell
Didcot
Oxfordshire
OX11 0QR
United Kingdom

t: +44 (0)1235 753000
e: enquiry@ricardo.com

ee.ricardo.com