Scope 1, 2 & 3
GHG Emissions Calculation Methodology

Contents

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1. About Resolute

Resolute Mining Limited ("Resolute") is an African focussed, multi-asset, gold mining, development and exploration company which trades on the Australian Securities Exchange (ASX:RSG) and the London Stock Exchange (LSE:RSG). Resolute is committed to environmental stewardship and seeks to implement robust management systems, practices and standards to mitigate impacts and safeguard natural resources for future generations.

2. Our Commitment on Climate Change

Resolute recognises the challenges that climate change presents and its role in supporting the goals of the Paris Agreement to limit the increase in global average temperatures to 2^{o}C and transition towards carbon neutrality by 2050 (or sooner). We acknowledge that gold mining is an energy-intensive process and that reducing our energy consumption and associated costs are key elements to continued business success. We also acknowledge that this will require an adaptive approach to managing our mining operations and our business more broadly.

In 2020, Resolute published a Climate Change Statement highlighting its approach to climate change, which is accompanied by a 3-year interim Climate Change Strategy in 2021 detailing targets to improve our governance of climate change, identify climate-related risks and opportunities, build resilience and improve disclosures. An integral component of Resolute's Climate Change Strategy will be a reduction of greenhouse gas (GHG) emissions at an operational level.

3. Our Approach to Scope 1, 2 & 3 GHG Emissions Calculations

During 2019, Resolute developed a methodology and calculated its Scope 1 (*direct*) and Scope 2 (*indirect*) GHG emissions initiating a pathway towards the reduction of the emissions at its operations. This pathway is aligned with best practice, international recommendations, shareholders expectations and the Company values.

During 2020, Resolute developed a methodology and calculated its Scope 3 (*all other indirect*) GHG emissions, evaluating all upstream and downstream emissions in its supply chain. Resolute is committed to refining this methodology year on year, increasing its reliance on GHG emissions data from suppliers as it becomes available.

GHG Protocol GHG Emissions Scopes

Scope 1 emissions are *direct* emissions from owned or controlled sources.

Scope 2 emissions are *indirect* emissions from the generation of purchased energy.

Scope 3 emissions are *all indirect emissions not included in Scope 2* (i.e. indirect emissions from the generation of purchased energy) that occur in the value chain of the reporting company, including upstream and downstream emissions.

This document describes the methodologies developed to estimate Resolute's Scope 1, 2 and Scope 3 GHG emissions from FY2019 to FY2022.

Organisational Boundary

The calculation of Scope 1, 2 and 3 GHG emissions is limited to mines under Resolute's operational control[1] and currently in production: the Syama gold mine in Mali and the Mako gold mine in Senegal. It does not include emissions from activities on mine sites currently under care & maintenance, exploration sites, or companies in which Resolute Mining owns a minority interest. Resolute's Total non-renewable energy consumption in 2022 was 249,570 MWh.

For its Scope 3 GHG emissions calculation, Resolute has prioritised elements of its business that are deemed to have a material impact on emission levels.

All site services directly associated with the operation of our mines, encompassing the activities of our contractors, are included under Scope 1 emissions. In particular, this includes our Mining Contractor, and Power Supply Contractor.

4. Scope 1 & 2 GHG Emissions Calculation Methodology

The calculation methodology for Scope 1 & 2 GHG emissions follows Australia's National Greenhouse and Energy Reporting (NGER) scheme with references and emission factors derived from Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories and the GHG Protocol.

The grid electricity emission factors for Mako and Syama have been obtained from recently approved United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) solar projects in Merina Dakar[2] and Mali[3].

Scope 1 GHG Emissions

Scope 1 emissions are emissions from operations that are owned or controlled by the reporting company. For this assessment, the primary source of Scope 1 emissions for Syama and Mako are non-transport diesel use for electricity generation on-site and mining activities. Other Scope 1 emissions sources come from explosives (ANFO and Innovex UG are assumed to have a diesel content of 10%), and light vehicle use.

Scope 1 GHG emissions	2019	2020	2021	2022
Syama	148,947	150,369	160,345	180,502
Mako	88,600	93,134	106,650	110,862
Total Scope 1	**237,547**	**243,503**	**266,995**	**291,364**

Scope 2 GHG Emissions

Scope 2 emissions are emissions from the generation of purchased or acquired electricity, steam, heating or cooling that the reporting company consumes. For Syama and Mako, Scope 2 emissions arise from grid electricity consumption at the reginal offices in Bamako and Dakar.

Scope 2 GHG emissions	2019	2020	2021	2022
Syama	6	6	20	8
Mako	16	20	16	17
Total Scope 2	**22**	**26**	**36**	**25**

[1] Operational control: consolidation approach whereby a company accounts for 100 % of the GHG emissions over which it has operational control. It does not account for GHG emissions from operations in which it owns an interest but does not have operational control.
[2] Solar PV project PDD - "Grid Connected Solar PV Project in Merina Dakhar" - registered 2 May 2017
(Link: https://cdm.unfccc.int/Projects/DB/RWTUV1493712660.23/view)
[3] Solar Project in Mali - "Akuo Kita Solar Project" - registered 11 Oct 2016
(Link: https://cdm.unfccc.int/Projects/DB/RWTUV1476118411.47/view)

5. Scope 3 GHG Emissions Calculation methodology

Scope 3 GHG emissions will be calculated according to methodologies featured in the *GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard*, and with reference to the additional guidance provided in the *GHG Protocol Technical Guidance for Calculating Scope 3 Emissions,* as required. Resolute will take a conservative approach to calculations that will likely result in Scope 3 emissions being overestimated.

Scope 3 emissions categories

The GHG Protocol divides Scope 3 emissions into 15 categories which were reviewed for relevance to Resolute's operations:

Scope 3 GHG Emissions Categories		Relevancy to Resolute
Upstream Emissions *(related to the purchase of goods and services)*	1.Purchased goods and services	Major significance, calculated
	2.Capital goods	Major significance, calculated (combined with Category 1)
	3.Fuel and energy related activities	Moderate significance, calculated
	4.Upstream transportation and distribution	Negligible significance, calculated
	5.Waste generated in operations	Negligible significance, calculated
	6.Business travel	Negligible significance, calculated
	7.Employee commuting	Negligible significance, calculated
	8.Upstream leased assets	Not relevant
Downstream Emissions *(related to the sale of goods and services)*	9.Downstream transportation and distribution	Negligible significance, calculated
	10.Processing of sold products	Negligible significance, calculated
	11.Use of sold products	Not relevant
	12.End-of-life treatment of sold products	Negligible significance, calculated
	13.Downstream leased assets	Not relevant
	14.Franchises	Not relevant
	15.Investments	Not relevant

Section *Scope 3 GHG Emissions Methodology per Categories*, outlines the Scope 3 GHG emissions calculation methodology for each category including the calculation rationale, calculation boundary, exclusions, detailed methods, data sources and references.

6. Resolute's Scope 1, 2 & 3 GHG Emissions from FY2019 to FY2022.

Resolute's Scope 1, 2 & 3 GHG Emissions for FY2019

Category		Resolute's 2019 GHG emissions (tCO2e)	Total Scope 3 emissions (%)	Total Scope 1, Scope 2 and Scope 3 emissions (%)
Scope 1		**237,547**	**-**	**19.8%**
Scope 2		**22**	**-**	**0.0%**
Scope 3				
Category 1	Purchased goods and services	664,355	68.9%	**55.3%**
Category 2	Capital goods	Calculated under Category 1		
Category 3	Fuel and energy related activities	281,741	29.2%	**23.4%**
Category 4	Upstream transportation and distribution	5,215	0.5%	**0.4%**
Category 5	Waste generated in operations	1,146	0.1%	**0.1%**
Category 6	Business travel	4,117	0.4%	**0.3%**
Category 7	Employee commuting	7,320	0.8%	**0.6%**
Category 8	Upstream leased assets		Not relevant	
Category 9	Downstream transportation and distribution	341	0.0%	**0.0%**
Category 10	Processing of sold products	23	0.0%	**0.0%**
Category 11	Use of sold products		Not relevant	
Category 12	End-of-life treatment of sold products	6	0.0%	**0.0%**
Category 13	Downstream leased assets		Not relevant	
Category 14	Franchises		Not relevant	
Category 15	Investments		Not relevant	
Total Scope 3		**964,263**	**100%**	**80.2%**
Total Scope 1, 2 and 3		**1,201,832**	**.**	**100%**

Resolute's Scope 1, 2 & 3 GHG Emissions for FY2020

Category		Resolute's 2020 GHG emissions (tCO2e)	Total Scope 3 emissions (%)	Total Scope 1, Scope 2 and Scope 3 emissions (%)
Scope 1		**243,503**	**.**	**18.4%**
Scope 2		**26**	**.**	**0.0%**
Scope 3				
Category 1	*Purchased goods and services*	762,066	70.7%	**57.7%**
Category 2	*Capital goods*		Calculated under Category 1	
Category 3	*Fuel and energy related activities*	300,218	27.9%	**22.7%**
Category 4	*Upstream transportation and distribution*	7,265	0.7%	**0.5%**
Category 5	*Waste generated in operations*	2,057	0.2%	**0.2%**
Category 6	*Business travel*	1,011	0.1%	**0.1%**
Category 7	*Employee commuting*	4,378	0.4%	**0.3%**
Category 8	*Upstream leased assets*			
Category 9	*Downstream transportation and distribution*	925	0.1%	**0.1%**
Category 10	*Processing of sold products*	21	0.0%	**0.0%**
Category 11	*Use of sold products*		Not relevant	
Category 12	*End-of-life treatment of sold products*	5	0.0%	**0.0%**
Category 13	*Downstream leased assets*		Not relevant	
Category 14	*Franchises*		Not relevant	
Category 15	*Investments*		Not relevant	
Total Scope 3		**1,077,946**	**100.0%**	**81.6%**
Total Scope 1, 2 and 3		**1,321,475**	**.**	**100%**

Resolute's Scope 1, 2 & 3 GHG Emissions for FY2021

Category		Resolute's 2020 GHG emissions (tCO2e)	Total Scope 3 emissions (%)	Total Scope 1, Scope 2 and Scope 3 emissions (%)
Scope 1		**266,995**	**.**	**24.8%**
Scope 2		**36**	**.**	**0.0%**
Scope 3				
Category 1	*Purchased goods and services*	545,936	67.4%	**50.7%**
Category 2	*Capital goods*		Calculated under Category 1	
Category 3	*Fuel and energy related activities*	248,409	30.6%	**23.1%**
Category 4	*Upstream transportation and distribution*	8,909	1.1%	**0.8%**
Category 5	*Waste generated in operations*	2,447	0.3%	**0.2%**
Category 6	*Business travel*	714	0.1%	**0.1%**
Category 7	*Employee commuting*	3,615	0.4%	**0.3%**
Category 8	*Upstream leased assets*		Not relevant	
Category 9	*Downstream transportation and distribution*	493	0.1%	**0.0%**
Category 10	*Processing of sold products*	17	0.0%	**0.0%**
Category 11	*Use of sold products*		Not relevant	
Category 12	*End-of-life treatment of sold products*	4.37	0.0%	**0.0%**
Category 13	*Downstream leased assets*		Not relevant	
Category 14	*Franchises*		Not relevant	
Category 15	*Investments*		Not relevant	
Total Scope 3		**810,546**	**100.0%**	**75.2%**
Total Scope 1, 2 and 3		**1,077,577**		**100%**

Note 2021 scope 3 figures have been updated from those reported in the 2022 Sustainability Report. The variance is <1% of the calculated total emissions and considered immaterial.

Resolute's Scope 1, 2 & 3 GHG Emissions for FY2022

Category		Resolute's 2020 GHG emissions (tCO2e)	Total Scope 3 emissions (%)	Total Scope 1, Scope 2 and Scope 3 emissions (%)
Scope 1		**291,364**	**.**	**23.0%**
Scope 2		**25**	**.**	**0.0%**
Scope 3				
Category 1	*Purchased goods and services*	597,728	61.1%	**47.1%**
Category 2	*Capital goods*		Calculated under Category 1	
Category 3	*Fuel and energy related activities*	354,154	36.2%	**27.9%**
Category 4	*Upstream transportation and distribution*	14,451	1.5%	**1.1%**
Category 5	*Waste generated in operations*	2,416	0.2%	**0.2%**
Category 6	*Business travel*	2,031	0.2%	**0.2%**
Category 7	*Employee commuting*	6,617	0.7%	**0.5%**
Category 8	*Upstream leased assets*		Not relevant	
Category 9	*Downstream transportation and distribution*	591	0.1%	**0.0%**
Category 10	*Processing of sold products*	19	0.0%	**0.0%**
Category 11	*Use of sold products*		Not relevant	
Category 12	*End-of-life treatment of sold products*	4.83	0.0%	**0.0%**
Category 13	*Downstream leased assets*		Not relevant	
Category 14	*Franchises*		Not relevant	
Category 15	*Investments*		Not relevant	
Total Scope 3		**978,012**	**100%**	**77.0%**
Total Scope 1, 2 and 3		**1,269,401**		**100%**

7. Scope 3 GHG Emissions Methodology per Categories

Category 1: Purchased goods and services (including capital goods)

Category 1: Purchased goods and services (including capital goods)				
Category description	Emissions from the extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 3 – 15.			
Calculation status	Major significance, Calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	664,355	762,066	545,936	597,728
Calculation rationale	Resolute relies heavily on the support of international manufacturers and suppliers for specialised goods and services that are not available in host countries. This includes mining services, operational reagents, consumables, parts and equipment. The emissions associated with the 'upstream' production and transportation of these goods and services is a significant source of Scope 3 emissions for Resolute. Additionally, they can contribute to material climate change-related supply chain risks that Resolute can minimise through direct engagement with suppliers around emissions reduction.			

Calculation boundary

This category includes all upstream (cradle-to-gate) emissions of goods and services purchased by Resolute during the reporting years and not included in Categories 3-15. This includes emissions associated with the purchase of capital goods, typically accounted for separately under Category 2 as the company's purchasing systems don't allow for these categories of goods and services to be accurately segregated.
Considering the Scope 3 standard recommendations, all the services and goods related to fuel and electricity, upstream and downstream transportation, subcontracted commuting service, business travel and refining were excluded from this category and assigned to separate and more accurate emissions categories.

Exclusions

No exclusions apart from emissions associated with good and services calculated in different categories as required by the Scope 3 Standard.

Calculation methodology

The *Spend-based method* is used to estimate emissions from data on the economic value of goods and services purchased and multiplying it by relevant emission factors (e.g. average emissions per monetary value of goods) available through the Quantis Scope 3 Evaluator Tool.

Spend data is divided by Resolute internal codes according to the nomenclature of internal procurement systems and matched to the most appropriate product category on Quantis to estimate the emissions factors. The emission factor of any spending that does not fit an existing product category or whose classification was challenging to determine is calculated by weighted average.

Data Sources

- Activity data source:
  - Resolute internal procurement system data available for all internal spend in the reporting year.
- Emission data source:
  - GHG Protocol Quantis Scope 3 Evaluator Tool for the emission factors.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter1.pdf
https://quantis-suite.com/Scope-3-Evaluator/

Category 2: Capital goods

Category 2: Capital goods				
Category description	Emissions from the extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year.			
Calculation status	Mayor significance, Calculated (included in Category 1)			
Year	2019	2020	2021	2022
2020 Emissions (tCO2e)	Included in Purchased goods and services (Category 1)			
Calculation rationale	Combined with Category 1, these emissions are a large source of Scope 3 emissions for Resolute. Additionally, they can contribute to material climate change-related supply chain risks that Resolute can minimise through direct engagement with suppliers around emissions reduction.			

Calculation boundary

This category includes all upstream (cradle-to-gate) emissions of capital goods purchased by Resolute.

Exclusions

No exclusions apart from emissions associated to good and services calculated in different categories as required by the Scope 3 Standard.

Calculation methodology

Identical to Category 1

Data Sources

- Activity data source:
  - Resolute internal procurement system data available for all internal spend in the reporting year.

- Emission data source:
  - GHG Protocol Quantis Scope 3 Evaluator Tool for the emission factors.
  -

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter2.pdf https://quantis-suite.com/Scope-3-Evaluator/

Category 3: Fuel and energy related activities

Category 3: Fuel and energy related activities				
Category description	Emissions from the extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in Scope 1 or Scope 2.			
Calculation status	Moderate significance , Calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	281,741	300,218	248,409	354,154
Calculation rationale	The primary fuel source for Resolute's operations is diesel, which is procured in-country from international suppliers and transported to the site by vehicle. The emissions associated with the extraction, production and transportation of this fuel is a significant source of Scope 3 emissions for Resolute. Additionally, Resolute purchases electricity from the grid for its in country offices.			

Calculation boundary

This category includes all upstream emissions from the extraction, production and transportation of fuels and electricity purchased by Resolute's operating assets only (inc. diesel). Note, emissions from the combustion of fuels and the generation of purchased electricity are accounted for in Scope 1 and 2 calculations.

Exclusions

Emissions from any transmission and distribution losses arising from the generation of electricity, steam, heating and cooling that is consumed (i.e. lost) by Resolute are not calculated as most are generated on-site. Therefore these are expected to be minimal.

Calculation methodology

The *Average-data method* is used to estimate emissions from data on the extraction, production, and transportation of fuels and energy purchased. Data is disaggregated by fuel type (and by supplier, grid region, and country) and multiplied by industry average Scope 3 emissions factors.

Data Sources

- Activity data source:
  - Resolute purchasing records available for quantities, sources and types of fuels bought in the reporting years by each of our mine operations.
  - Resolute purchasing records for electricity use in our country offices in Dakar and Bamako.
- Emission data source:
  - Grid electricity emission factors for Senegal and Mali will be obtained from recently approved United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) solar projects as used in Resolute's Scope 1 & 2 emissions calculations
  - Australian Scope 3 emission factors, taken from the Australian *National Greenhouse Accounts Factors – August 2019,* will be used as a proxy as life cycle emissions factors for fuel are not yet available for our countries of operations.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter3.pdf
https://cdm.unfccc.int/Projects/DB/RWTUV1493712660.23/view)
https://cdm.unfccc.int/Projects/DB/RWTUV1476118411.47/view
https://publications.industry.gov.au/publications/climate-change/system/files/resources/cf1/national-greenhouse-accounts-factors-august-2019.pdf

Category 4: Upstream transportation and distribution

Category 4: Upstream transportation and distribution				
Category description	Emissions from the transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in transport modes and facilities not owned or controlled by the reporting company); Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's facilities (in vehicles and facilities not owned or controlled by the reporting company).			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	5,215	7,265	8,909	14,451
Calculation status rationale	Although these emissions are not a significant source of Scope 3 emissions for Resolute, their calculation can contribute to minimising our supply chain impacts through direct engagement with suppliers around emission reduction.			

Calculation boundary

This category includes all emissions from heavy vehicles and air and marine freight deliveries of products, and warehousing, where transport and warehousing costs are covered directly by Resolute. The transportation and distribution of Resolute products was not determined under this category; instead, transportation and distribution emissions from company products have been allocated to Category 9.

Calculation methodology

Emissions from the transport of products were the supplier pays for delivery and/or warehousing are excluded from this calculation and are accounted for in Category 1.

Exclusions

The *Spend-based method* is used to assess emissions from upstream transportation using the value of the services purchased. Data were disaggregated by inland, water and air transport (as per the nomenclature of Quantis).

Data Sources

- Activity data source:
  - Resolute purchasing records and internal procurement system data available for upstream transport spend in the reporting year.
- Emission data source:
  - GHG Protocol Quantis Scope 3 Evaluator Tool for the emission factors.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter4.pdf
https://quantis-suite.com/Scope-3-Evaluator/

Category 5: Waste generated in operations

Category 5: Waste generated in operations				
Category description	Emissions from the disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company).			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	1,146	2,057	2,447	2,416
Calculation status rationale	Although only minimal quantities of waste-producing GHG emissions are generated and processed by third parties, emissions associated with waste management are of increasing interest, and Resolute has the ability to minimise through direct engagement with suppliers to reduce emissions.			

Calculation boundary

Minimum boundary: The scope 1 and scope 2 emissions of waste management suppliers that occur during disposal or treatment.

Exclusions

Emissions from the transportation of waste to the location of disposal.

Calculation methodology

The *Average-data method* is used to calculate the emissions from third-party disposal and treatment of waste, based on total waste going to each disposal method and average emission factors for each disposal method. Waste disposed by third parties include waste oil and lubricants which are collected by fuel suppliers for energy recovery, and scrap metal and steel balls which are recycled.

Data Sources

- Activity data source:
  - Resolute environmental management data for the total mass of waste generated by operations during the year and the proportion of this waste being treated by different methods.
- Emissions data source:
  - Protocol for the quantification of GHG emissions from waste management activities
  - Australian National Greenhouse Accounts Factors – July 2017.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter5.pdf
https://ghgprotocol.org/sites/default/files/Waste%20Sector%20GHG%20Protocol_Calculation%20Tool_Version%205_October%202013_1_0.xls
https://www.environment.gov.au/system/files/resources/5a169bfb-f417-4b00-9b70- 6ba328ea8671/files/national-greenhouse-accounts-factors-july-2017.pdf

Category 6: Business travel

Category 6: Business travel				
Category description	Emissions from the transportation of employees for business-related activities during the reporting year (in transport modes not owned or operated by the reporting company)			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	4,117	1,011	714	2,031
Calculation status rationale	Although emissions from business travel are not material for Resolute, the company has calculated them for awareness and transparency.			

Calculation boundary

This category includes emissions from international flights taken by employees for business purposes, and includes Fly-in fly-out (FIFO) flights. Emissions from the transport of employees to and from work via bus and domestic charted flights are accounted for in Category 7.

Exclusions

These include rail, bus and car travel by employees for business purposes, most of which would be trips to and from the airport, with emissions anticipated to be negligible. Emissions from hotel stays, which are optional in the Scope 3 guidance, were also be excluded. The majority of business travels are to the mines, and accommodation is provided on-site, therefore emissions from hotel stays are also anticipated to be negligible. Business travel emissions where the distance could not be adequately identified or details were not available were excluded.

Calculation methodology

The *Distance-based method* will be used to estimate emissions from flights taken for business travel by determining the flight distance, whether it is short-haul (under 3700km) or long-haul flights (over 3700km), and multiplying it by industry average emission factor. Alternatively, when available, we considered the specific Co2 emission data provided by Resolute corporate travel service.

Data Sources

- Activity data source:
  - Flight mileage from Resolute travel service providers in Australia and the UK for the reporting year.
  - Corporate Travel Service Co2 emissions data per passenger.
- Emission data source:
  - 2019 UK Government GHG conversion factors for company reporting for emission factors for flights.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter6.pdf
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/829336/2019_Green-house-gas-reporting-methodology.pdf

Category 7: Employees commuting

Category 7: Employees commuting				
Category description	Emissions from the transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company).			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	7,320	4,378	3,615	6,617
Calculation status rationale	Although emissions from employees commuting are not material for Resolute, the company has calculated them for awareness and transparency.			

Calculation boundary

This category includes emissions from employees commuting domestically to operational sites only: domestic charter flights necessary to access mine sites, and scheduled buses and minibuses services to the sites.

Exclusions

Emissions from employees commuting to and from Resolute corporate offices and from teleworking will not be accounted for in this category.

Calculation methodology

The *Spend-based method* is used to calculate these emissions, as described in the calculation methodology for the Purchased goods and services category (Category 1).

Data Sources

- Activity data source:
  - Resolute internal procurement system data available for all domestic travel spend in the reporting year.
- Emission data source:
  - GHG Protocol Quantis Scope 3 Evaluator Tool for the emission factors.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter7.pdf

Category 8: Upstream leased assets

Category 8: Upstream leased assets	
Category description	Operation of assets leased by the reporting company (lessee) in the reporting year and not included in scope 1 and scope 2 – reported by the lessee.
Calculation status	Not relevant, not calculated
Calculation status rationale	The company does not have any upstream leased assets.
Calculation boundary	
This Category includes emissions from the operation of assets that are leased by the reporting company in the reporting year and not already included in the reporting company's scope 1 or scope 2 inventories.	
Exclusions	
None	
Calculation methodology	
n/a	
Data Sources	
n/a	
References	
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter8.pdf	

Category 9: Downstream transportation and distribution

Category 9: Downstream transportation and distribution				
Category description	Emissions from the transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	341	925	493	591
Calculation status rationale	These emissions are not a significant source of Scope 3 emissions for Resolute as gold shipments are infrequent and of small quantities. The company has calculated it for awareness and transparency.			

Calculation boundary

This category includes emissions from the transport of gold from mine sites in Mali and Senegal to airports in Bamako and Dakar and commercial air transport to a European or Australian gold refining company, where costs are covered directly by Resolute.

Exclusions

Emissions from the transport of gold by domestic charter from the mine site to Bamako and Dakar airports are accounted for in Category 7. Additionally, emissions from transport of gold, where the refining company pays for transportation, distribution, and, or warehousing are excluded from this calculation. This will include the transport and distribution of refined gold products from the trading and processing company to end-users.

Calculation methodology

The *Spend-based method* will be used to assess emissions from downstream transportation and distribution using the value of the service purchased.

Data Sources

- Activity data source:
  - Resolute purchasing records available for downstream transport spend in the reporting year
- Emission data source:
  - GHG Protocol Quantis Scope 3 Evaluator Tool for the emission factors.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter9.pdf https://quantis-suite.com/Scope-3-Evaluator/

Category 10: Processing of sold products

Category 10: Processing of sold products				
Category description	Emissions from the processing of intermediate products sold in the reporting year by downstream companies (e.g., manufacturers).			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	23	21	17	19
Calculation status rationale	Resolute produces gold doré that is refined by third parties. Although refining is not an energy intensive process, and these emissions are not significant compared to other Resolute's Scope 3 Categories. The company has calculated it for awareness and transparency.			

Calculation boundary

Minimum boundary: The Scope 1 and Scope 2 emissions of downstream companies that occur during processing (e.g., from energy use).

Exclusions

None

Calculation methodology

The *Average-data* method is used to calculate these emissions, estimating emissions for processing of sold intermediate products based on average secondary data, such as average emissions per refining process.

Data Sources

Activity data source:

- Production volumes sourced from Resolute Annual Report for the mass of gold production.

Emissions data source:

- Average emission factors for gold refining processing, was sourced from the "Gold and climate change: Current and future impacts" publication. This report used emissions data reported by a major precious metals refiner based in Switzerland.

References

https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter10.pdf
https://www.gold.org/goldhub/research/gold-and-climate-change-current-and-future-impacts

Category 11: Use of sold products

Category 11: Use of sold products	
Category description	The end use of goods and services sold by the reporting company in the reporting year.
Calculation status	Not relevant, not calculated
Calculation status rationale	The end use of gold products in 2019 was for jewellery (48.5%), investments products (29%), central banks reserves (15%) and technology usage (7.5%), and none of these uses leads to significant GHG emissions.
Calculation boundary	
Minimum boundary: The direct use-phase emissions of sold products over their expected lifetime (i.e., the scope 1 and scope 2 emissions of end-users that occur from the use of products that directly consume energy (fuels or electricity) during use; fuels and feedstocks; and GHGs and products that contain or form GHGs that are emitted during use). Optional: The indirect use-phase emissions of sold products over their expected lifetime (i.e., emissions from the use of products that indirectly consume energy (fuels or electricity) during use).	
Exclusions	
None	
Calculation methodology	
n/a	
Data Sources	
n/a	
References	
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter11.pdf	

Category 12: End of life treatment of sold products

Category 12: End of life treatment of sold products				
Category description	Emissions from the waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life.			
Calculation status	Negligible significance, calculated			
Year	2019	2020	2021	2022
Emissions (tCO2e)	6	5.25	4.37	4.83
Calculation status rationale	It is estimated that most of the gold ever produced is still in circulation, as gold is not disposed of and kept as an asset or recycled/repurposed. Annually around 25% of the gold available is made up from recycling. The recycling processes (melting and smelting) is much less energy-intensive than mining, and these emissions are not a material source of Scope 3 emissions for Resolute.			
Calculation boundary				
Minimum boundary: The Scope 1 and Scope 2 emissions of waste management companies that occur during disposal or treatment of sold products.				
Exclusions				
None				
Calculation methodology				
The *Average-data method* is used to calculate the emissions from end-of-life treatment of sold products, based on the total mass of sold products, the proportion of waste being treated by different methods and industry average specific-emission factors.				
Data Sources				

- Activity data source:
  - Resolute Annual Report for the mass of gold production sold.
  - Proportion of recycled gold based on 2019 and 2020 World Gold Council data.
- Emission data source:
  - Average specific-emission factors for recycling treatment are sourced from the “Gold and climate change: Current and future impacts” publication.
  - Gold Demand Trends Full year and Q4 2020.				

References				
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter12.pdf https://www.gold.org/goldhub/research/gold-and-climate-change-current-and-future-impacts https://www.gold.org/about-gold/gold-supply https://www.gold.org/goldhub/research/gold-demand-trends/gold-demand-trends-full-year-2020/supply				

Category 13: Downstream leased assets

Category 13: Downstream leased assets	
Category description	Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in Scope 1 and Scope 2 – reported by lessor.
Calculation status	Not relevant, not calculated
Calculation status rationale	The company does not have any downstream leased assets.
Calculation boundary	
Minimum boundary: The Scope 1 and Scope 2 emissions of lessees that occur during operation of leased assets (e.g., from energy use). Optional: The life cycle emissions associated with manufacturing or constructing leased assets.	
Exclusions	
None	
Calculation methodology	
n/a	
Data Sources	
n/a	
References	
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter13.pdf	

Category 14: Franchises

Category 14: Franchises	
Category description	Operation of franchises in the reporting year, not included in Scope 1 and Scope 2 – reported by the franchisor.
Calculation status	Not relevant, not calculated
Calculation status rationale	The company does not have franchises.
Calculation boundary	
Minimum boundary: The scope 1 and scope 2 emissions of franchisees that occur during operation of franchises (e.g., from energy use). Optional: The life cycle emissions associated with manufacturing or constructing franchises.	
Exclusions	
None	
Calculation methodology	
n/a	
Data Sources	
n/a	
References	
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter14.pdf	

Category 15: Investments

Category 15: Investments	
Category description	Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in Scope 1 or Scope 2.
Calculation status	Not relevant, not calculated
Calculation status rationale	Resolute has a strategic investment portfolio in 5 listed African focussed gold exploring companies, with ownership ranging from 8% to 27%. For this initial Scope 3 assessment, these sit outside of our organisational boundary and will be excluded due to the lack of Scope 1&2 data availability.
Calculation boundary	
This category includes scope 3 emissions associated with the company's investments in the reporting year, not already included in scope 1 or scope 2.	
Exclusions	
None	
Calculation methodology	
n/a	
Data Sources	
n/a	
References	
https://ghgprotocol.org/sites/default/files/standards_supporting/Chapter15.pdf	

8. References

2019 Government greenhouse gas conversion factors for company reporting; https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904215/2019-ghg-conversion-factors-methodology-v01-02.pdf

Akuo Kita Solar Project; https://cdm.unfccc.int/Projects/DB/RWTUV1476118411.47/view

GHG Protocol Corporate Accounting and Reporting Standard; WRI/WBCSD; 2004; https://ghgprotocol.org/corporate-standard

GHG Protocol Quantis Scope 3 Evaluator tool; https://quantis-suite.com/Scope-3-Evaluator/

GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (version 1.0); Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; https://ghgprotocol.org/scope-3-technical-calculation-guidance

Gold and climate change: Current and future impacts; https://www.gold.org/goldhub/research/gold- and-climate-change-current-and-future-impacts

Gold Demand Trends Full year and Q4 2020; https://www.gold.org/goldhub/research/gold-demand-trends/gold-demand-trends-full-year-2020/supply

Gold supply; https://www.gold.org/about-gold/gold-supply

Grid-connected Solar PV project in Mérina Dakhar; https://cdm.unfccc.int/Projects/DB/RWTUV1493712660.23/view

National Greenhouse Accounts Factors. Australian National Greenhouse Accounts; https://www.environment.gov.au/system/files/resources/5a169bfb-f417-4b00-9b70-6ba328ea8671/files/national-greenhouse-accounts-factors-july-2017.pdf

Protocol for the quantification of GHG emissions from waste management activities; https://ghgprotocol.org/sites/default/files/Waste%20Sector%20GHG%20Protocol_Calculation%20Tool_Version%205_October%202013_1_0.xls