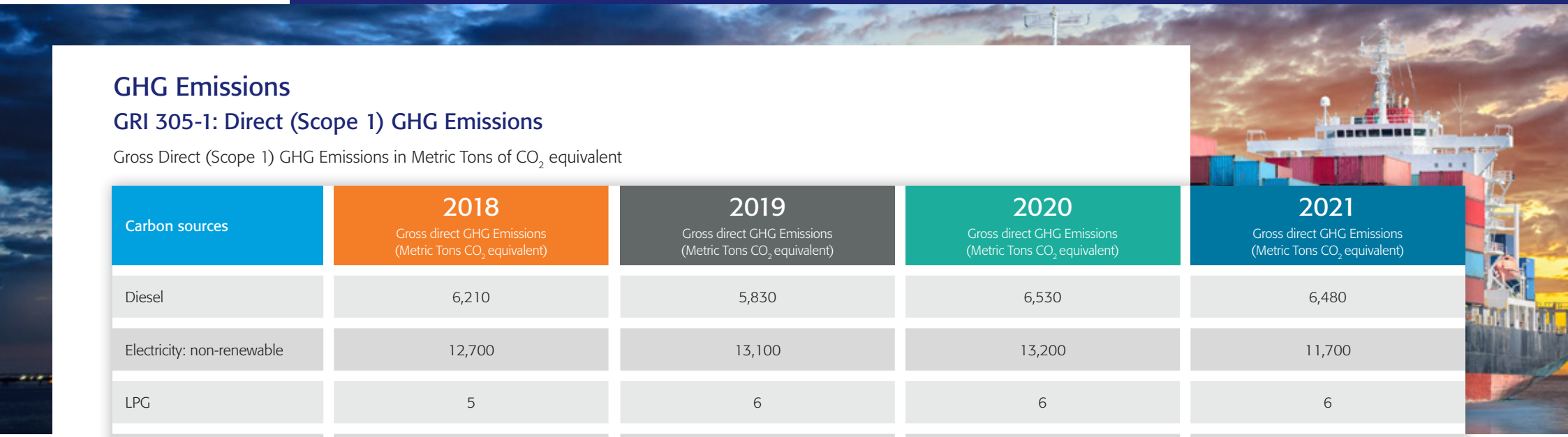
Infineum

Sustainability Report 2021

Key Figures

Protecting the Environment



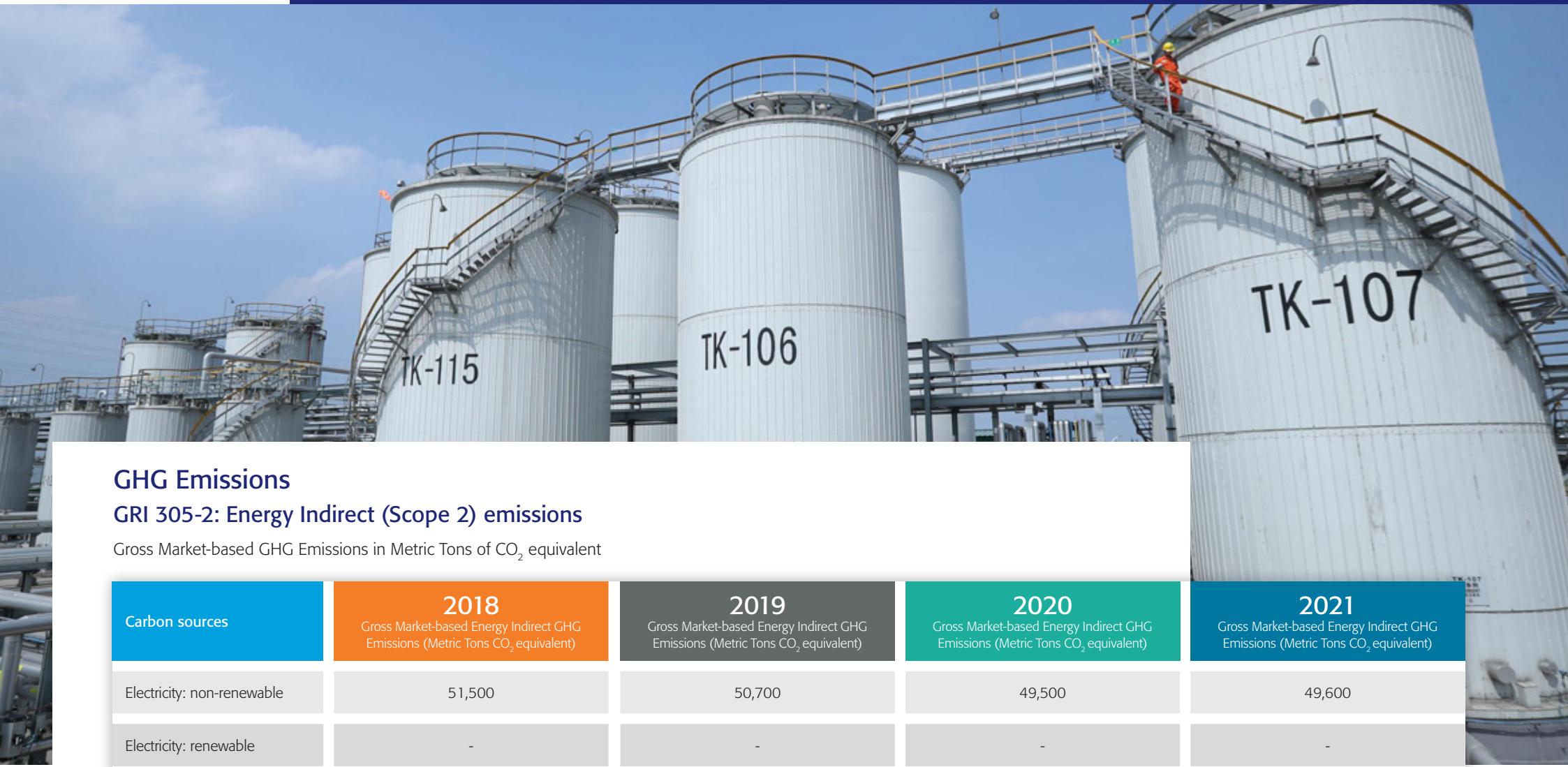
GHG Emissions

GRI 305-1: Direct (Scope 1) GHG Emissions

Gross Direct (Scope 1) GHG Emissions in Metric Tons of CO_2 equivalent

Carbon sources	2018 Gross direct GHG Emissions (Metric Tons CO_2 equivalent)	2019 Gross direct GHG Emissions (Metric Tons CO_2 equivalent)	2020 Gross direct GHG Emissions (Metric Tons CO_2 equivalent)	2021 Gross direct GHG Emissions (Metric Tons CO_2 equivalent)
Diesel	6,210	5,830	6,530	6,480
Electricity: non-renewable	12,700	13,100	13,200	11,700
LPG	5	6	6	6
Gasoline	77	126	105	109
Natural gas	15,700	14,500	14,400	15,100
Vehicles: distance travelled	234	239	80	128
Propane	32	28	28	31
Refinery fuel gas	1,160	1,130	1,170	1,490
Refrigerants	22,600	17,700	1,730*	10,300
Steam	15,600	15,100	15,200	15,400
Process emissions	6,120	7,490	5,040	6,770
Grand Total	80,400	75,200	57,500	67,500

*Increase in refrigerant due to improved data quality

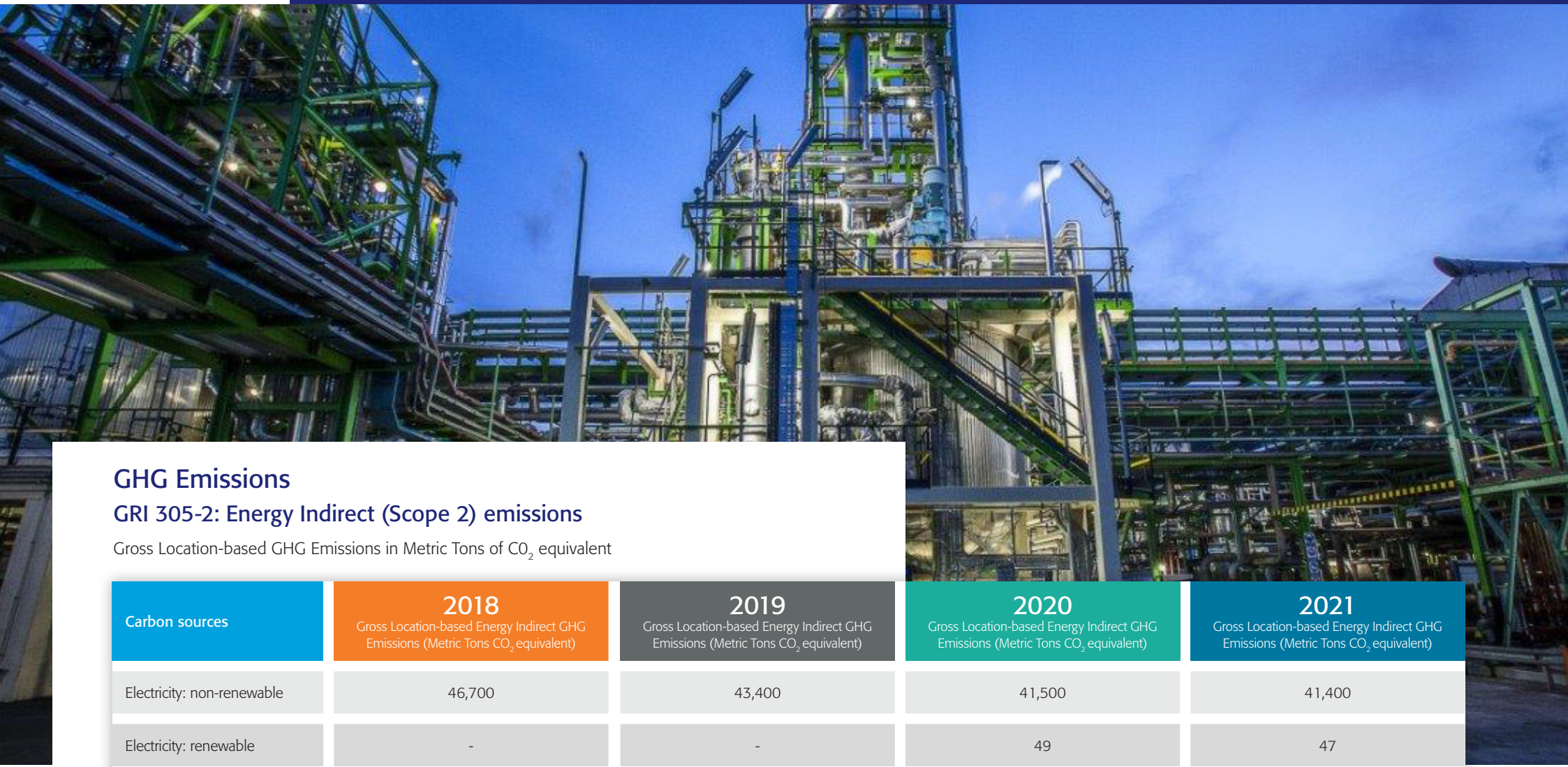


GHG Emissions

GRI 305-2: Energy Indirect (Scope 2) emissions

Gross Market-based GHG Emissions in Metric Tons of CO_2 equivalent

Carbon sources	2018 Gross Market-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2019 Gross Market-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2020 Gross Market-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2021 Gross Market-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)
Electricity: non-renewable	51,500	50,700	49,500	49,600
Electricity: renewable	-	-	-	-
Steam	78,900	80,800	75,100	72,800
Grand Total	130,000	132,000	125,000	122,000

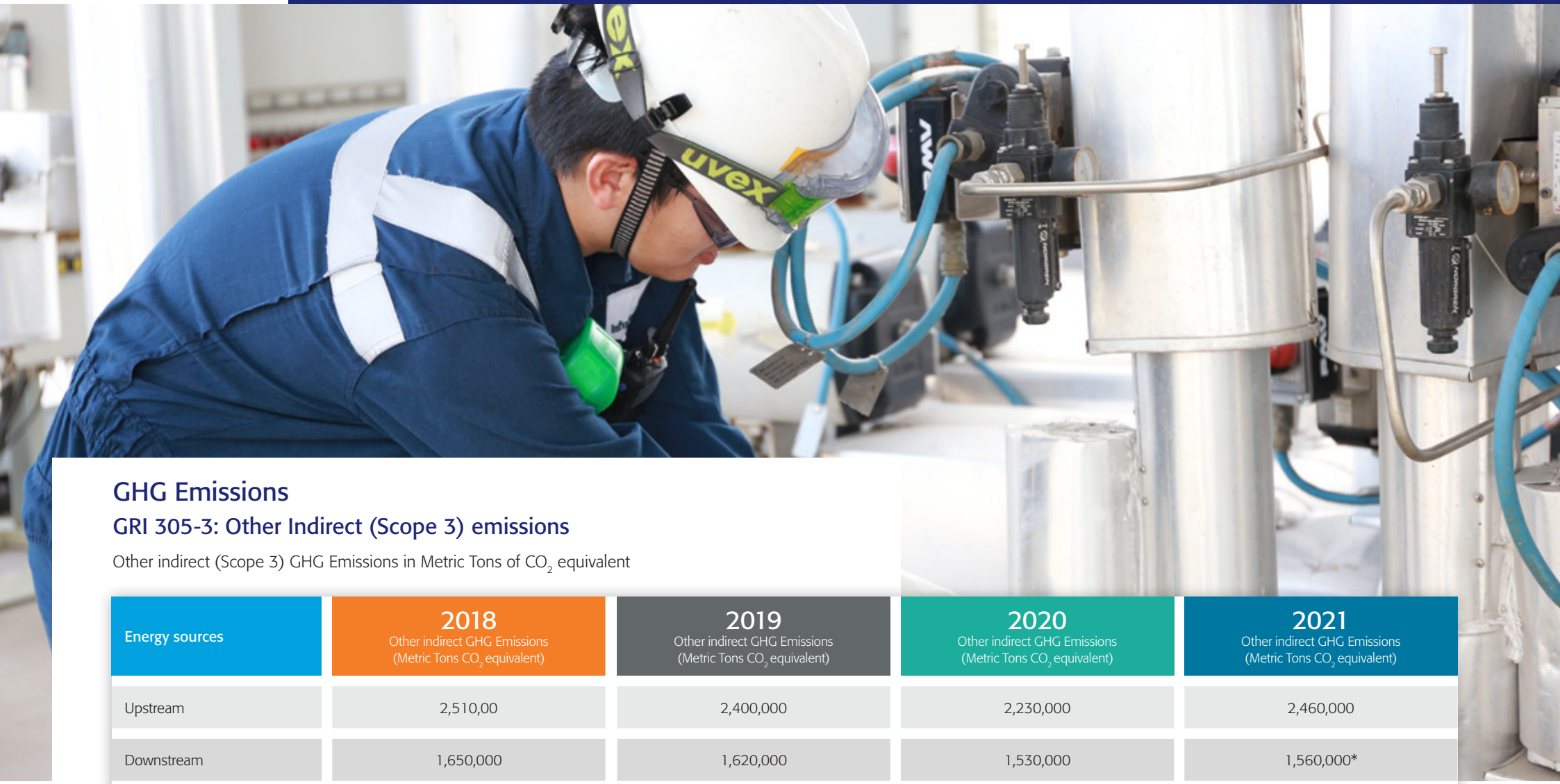


GHG Emissions

GRI 305-2: Energy Indirect (Scope 2) emissions

Gross Location-based GHG Emissions in Metric Tons of CO_2 equivalent

Carbon sources	2018 Gross Location-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2019 Gross Location-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2020 Gross Location-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)	2021 Gross Location-based Energy Indirect GHG Emissions (Metric Tons CO_2 equivalent)
Electricity: non-renewable	46,700	43,400	41,500	41,400
Electricity: renewable	-	-	49	47
Steam	78,900	80,800	75,100	72,800
Grand Total	126,000	124,000	117,000	114,000



GHG Emissions

GRI 305-3: Other Indirect (Scope 3) emissions

Other indirect (Scope 3) GHG Emissions in Metric Tons of CO_2 equivalent

Energy sources	2018 Other indirect GHG Emissions (Metric Tons CO_2 equivalent)	2019 Other indirect GHG Emissions (Metric Tons CO_2 equivalent)	2020 Other indirect GHG Emissions (Metric Tons CO_2 equivalent)	2021 Other indirect GHG Emissions (Metric Tons CO_2 equivalent)
Upstream	2,510,00	2,400,000	2,230,000	2,460,000
Downstream	1,650,000	1,620,000	1,530,000	1,560,000*
Grand Total	4,150,000	4,020,000	3,760,000	4,020,000

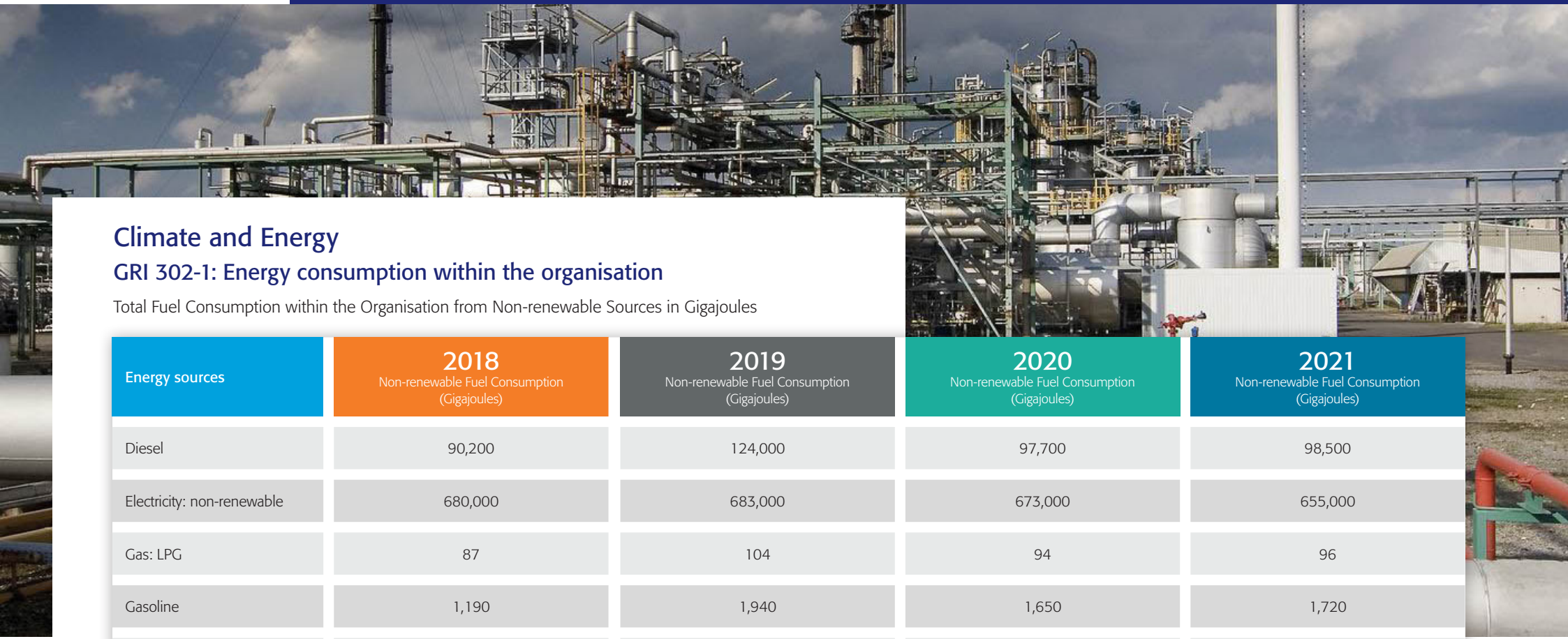
*excludes Category 15, Investments. Data not available at time of publication.

GRI 305-4: GHG Emissions Intensity

GHG Emissions Intensity Ratio for the Organisation in Metric Tons of CO_2 equivalent/ Tons of Production

Carbon sources	2018 Gross Direct GHG Emissions (Metric Tons CO_2 equivalent/ Production Tons)	2019 Gross Direct GHG Emissions (Metric Tons CO_2 equivalent/ Production Tons)	2020 Gross Direct GHG Emissions (Metric Tons CO_2 equivalent/ Production Tons)	2021 Gross Direct GHG Emissions (Metric Tons CO_2 equivalent/ Production Tons)
Diesel	0.005	0.005	0.006	0.005
Electricity: non-renewable	0.048	0.047	0.048	0.044
LPG	0.000	0.000	0.000	0.000
Gasoline	0.000	0.000	0.000	0.000
Natural gas	0.013	0.012	0.013	0.013
Vehicles: distance travelled	0.000	0.000	0.000	0.000
Process emissions	0.005	0.006	0.004	0.006
Propane	0.000	0.000	0.000	0.000
Refrigerants	0.018	0.015	0.002	0.009
Steam	0.076	0.080	0.080	0.074
Refinery fuel gas	0.001	0.001	0.001	0.001
Grand Total	0.166	0.167	0.153	0.152

The Organisation-specific metric (the denominator) chosen to calculate the ratio was tons (t) of production. Scope 1 and 2 GHG emissions have been included in the intensity ratio.



Climate and Energy

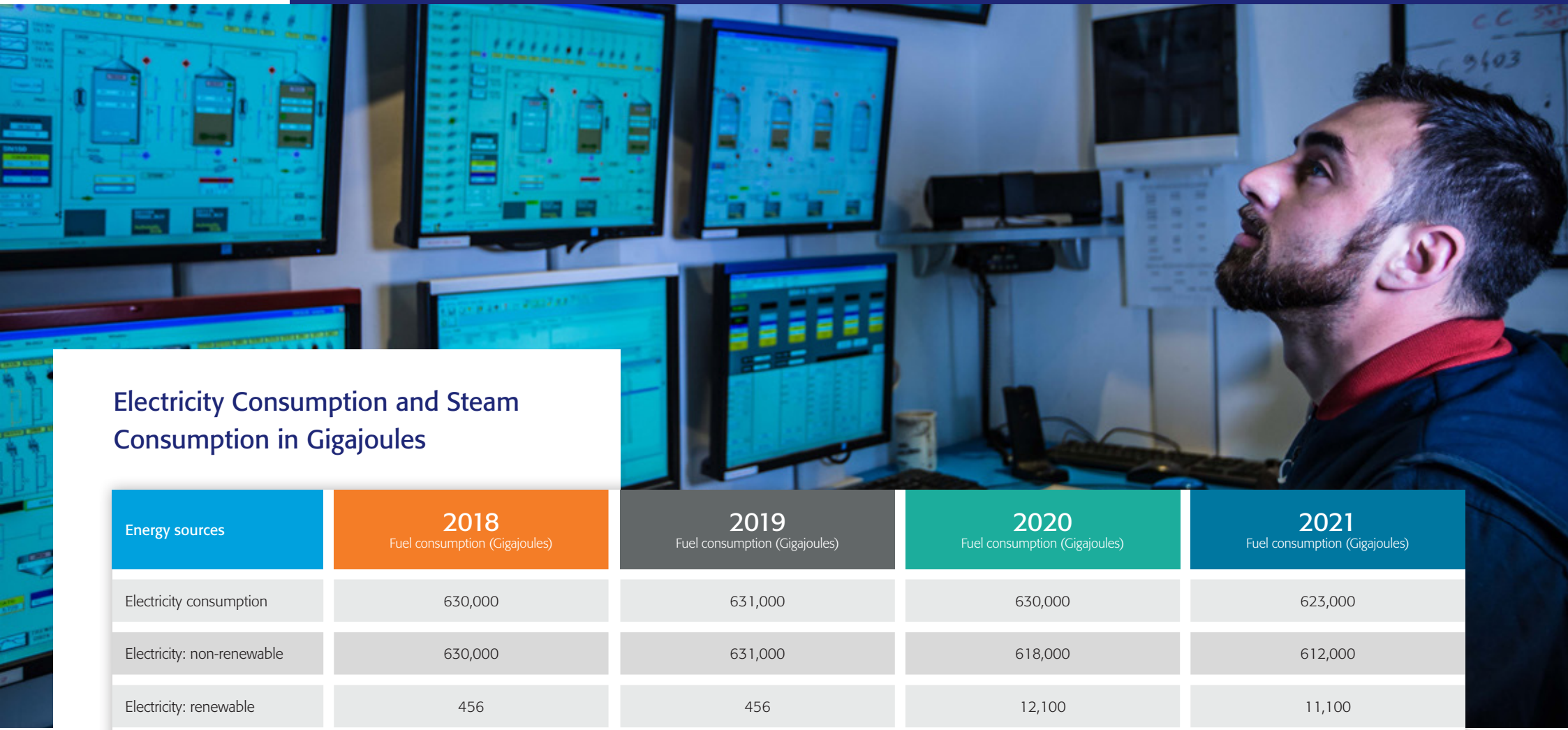
GRI 302-1: Energy consumption within the organisation

Total Fuel Consumption within the Organisation from Non-renewable Sources in Gigajoules

Energy sources	2018 Non-renewable Fuel Consumption (Gigajoules)	2019 Non-renewable Fuel Consumption (Gigajoules)	2020 Non-renewable Fuel Consumption (Gigajoules)	2021 Non-renewable Fuel Consumption (Gigajoules)
Diesel	90,200	124,000	97,700	98,500
Electricity: non-renewable	680,000	683,000	673,000	655,000
Gas: LPG	87	104	94	96
Gasoline	1,190	1,940	1,650	1,720
Natural gas	305,000	284,000	282,000	297,000
Propane	544	464	461	516
Steam	1,820,000	1,950,000	1,860,000	1,830,000
Refinery fuel gas	84,200	84,300	84,800	86,800
Grand Total	2,980,000	3,130,000	3,000,000	2,970,000

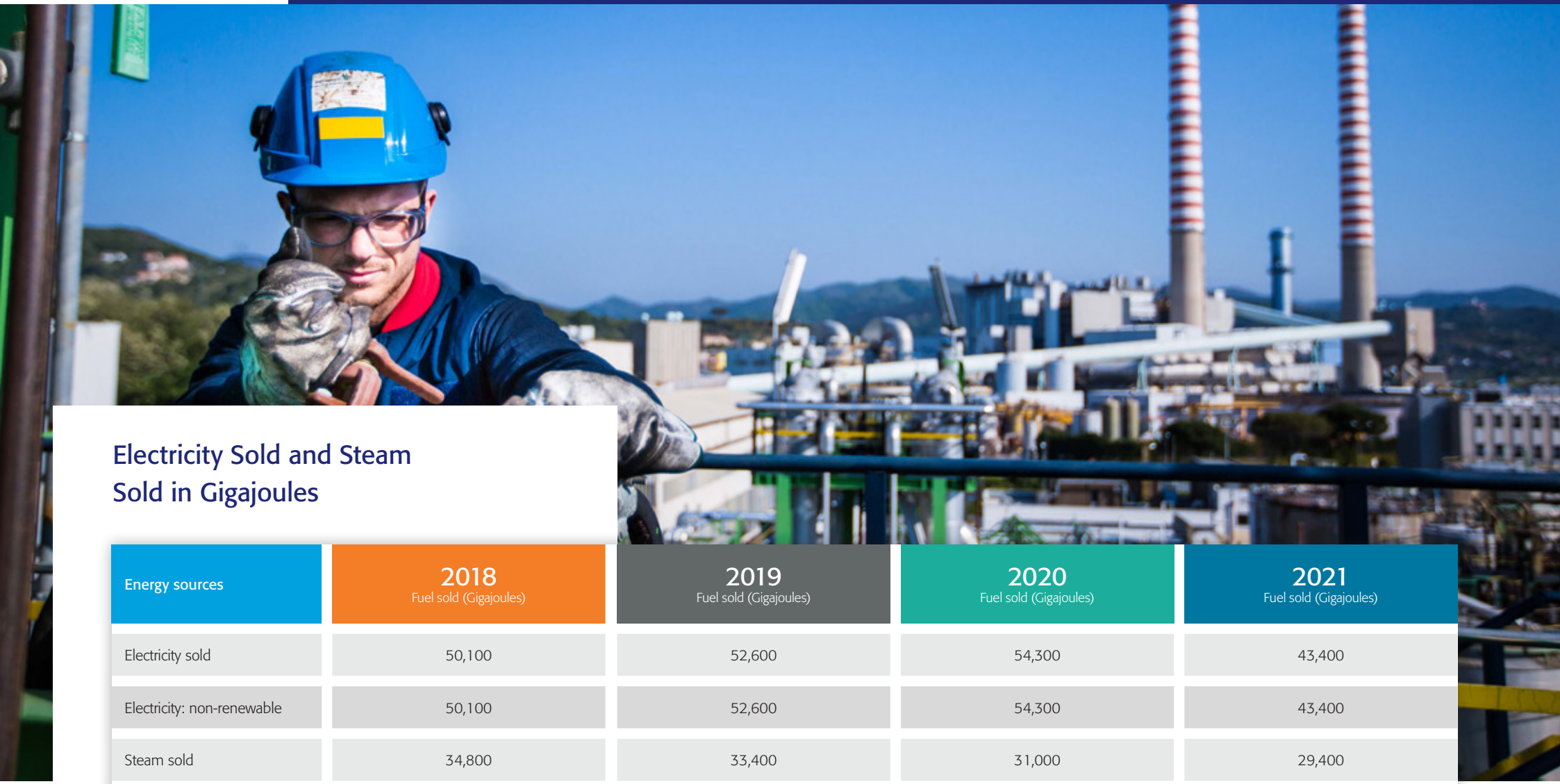
Total Fuel Consumption within the Organisation from Renewable Sources in Gigajoules

Energy sources	2018 Renewable Fuel Consumption (Gigajoules)	2019 Renewable Fuel Consumption (Gigajoules)	2020 Renewable Fuel Consumption (Gigajoules)	2021 Renewable Fuel Consumption (Gigajoules)
Electricity: renewable	456	456	12,100	11,100
Grand Total	456	456	12,100	11,100



Electricity Consumption and Steam Consumption in Gigajoules

Energy sources	2018 Fuel consumption (Gigajoules)	2019 Fuel consumption (Gigajoules)	2020 Fuel consumption (Gigajoules)	2021 Fuel consumption (Gigajoules)
Electricity consumption	630,000	631,000	630,000	623,000
Electricity: non-renewable	630,000	631,000	618,000	612,000
Electricity: renewable	456	456	12,100	11,100
Steam consumption	1,780,000	1,910,000	1,830,000	1,800,000
Steam	1,780,000	1,910,000	1,830,000	1,800,000
Grand Total	2,410,000	2,540,000	2,460,000	2,420,000



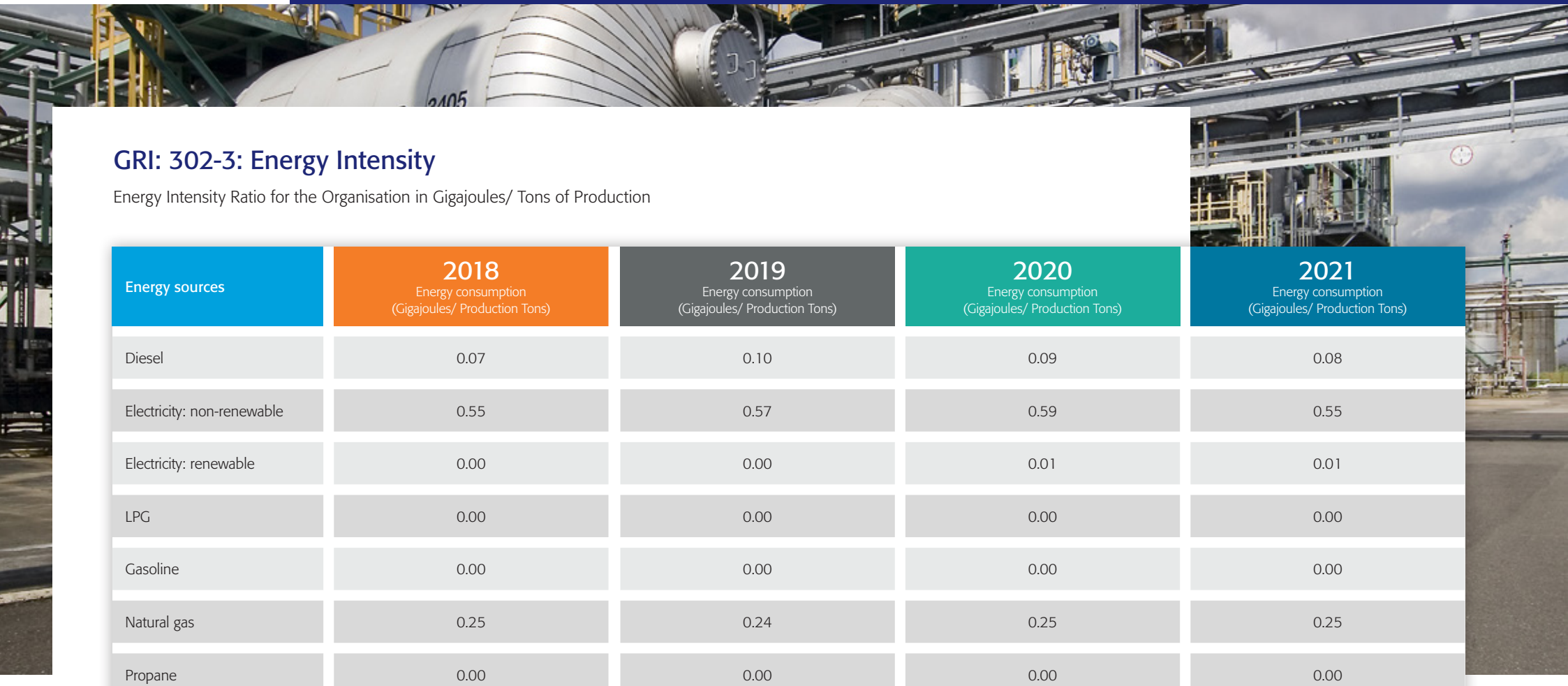
Electricity Sold and Steam Sold in Gigajoules

Energy sources	2018 Fuel sold (Gigajoules)	2019 Fuel sold (Gigajoules)	2020 Fuel sold (Gigajoules)	2021 Fuel sold (Gigajoules)
Electricity sold	50,100	52,600	54,300	43,400
Electricity: non-renewable	50,100	52,600	54,300	43,400
Steam sold	34,800	33,400	31,000	29,400
Steam	34,800	33,400	31,000	29,400
Grand Total	84,900	86,000	85,300	72,800

Total Energy Consumption within the Organisation in Gigajoules

Energy sources	2018 Energy Consumption (Gigajoules)	2019 Energy Consumption (Gigajoules)	2020 Energy Consumption (Gigajoules)	2021 Energy Consumption (Gigajoules)
Diesel	90,200	124,000	97,700	98,500
Electricity: non-renewable	680,000	683,000	673,000	655,000
Electricity: renewable	456	456	12,100	11,100
Gas: LPG	87	104	94	96
Gasoline	1,190	1,940	1,650	1,720
Natural gas	305,000	284,000	282,000	297,000
Propane	544	464	461	516
Steam	1,820,000	1,950,000	1,860,000	1,830,000
Refinery fuel gas	84,200	84,300	84,800	86,800
Grand Total	2,980,000	3,130,000	3,010,000	2,980,000

We have used the following sources for conversion factors:
Calorific values used for Diesel, LPG, Gasoline, Propane etc - DBEIS
Steam – using calorific value available online via engineering toolbox website based on the pressure of steam used by sites
Remaining – general conversions taken primarily from DBEIS



GRI: 302-3: Energy Intensity

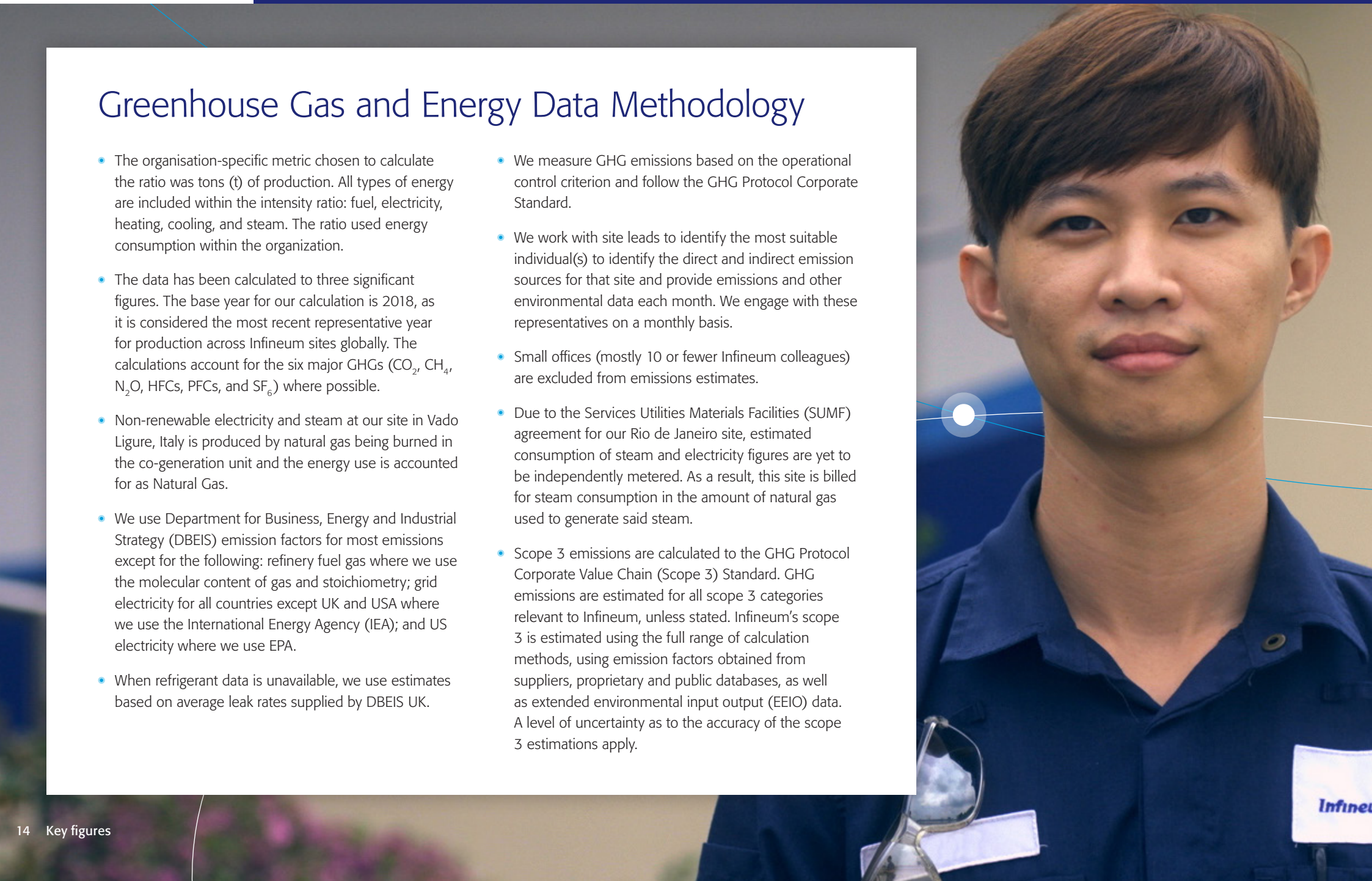
Energy Intensity Ratio for the Organisation in Gigajoules/ Tons of Production

Energy sources	2018 Energy consumption (Gigajoules/ Production Tons)	2019 Energy consumption (Gigajoules/ Production Tons)	2020 Energy consumption (Gigajoules/ Production Tons)	2021 Energy consumption (Gigajoules/ Production Tons)
Diesel	0.07	0.10	0.09	0.08
Electricity: non-renewable	0.55	0.57	0.59	0.55
Electricity: renewable	0.00	0.00	0.01	0.01
LPG	0.00	0.00	0.00	0.00
Gasoline	0.00	0.00	0.00	0.00
Natural gas	0.25	0.24	0.25	0.25
Propane	0.00	0.00	0.00	0.00
Steam	1.46	1.63	1.64	1.53
Refinery fuel gas	0.07	0.07	0.07	0.07
Grand Total	2.40	2.61	2.65	2.49

Some changes to previous years due to improved data quality.

Greenhouse Gas and Energy Data Methodology

- The organisation-specific metric chosen to calculate the ratio was tons (t) of production. All types of energy are included within the intensity ratio: fuel, electricity, heating, cooling, and steam. The ratio used energy consumption within the organization.
- The data has been calculated to three significant figures. The base year for our calculation is 2018, as it is considered the most recent representative year for production across Infineum sites globally. The calculations account for the six major GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) where possible.
- Non-renewable electricity and steam at our site in Vado Ligure, Italy is produced by natural gas being burned in the co-generation unit and the energy use is accounted for as Natural Gas.
- We use Department for Business, Energy and Industrial Strategy (DBEIS) emission factors for most emissions except for the following: refinery fuel gas where we use the molecular content of gas and stoichiometry; grid electricity for all countries except UK and USA where we use the International Energy Agency (IEA); and US electricity where we use EPA.
- When refrigerant data is unavailable, we use estimates based on average leak rates supplied by DBEIS UK.
- We measure GHG emissions based on the operational control criterion and follow the GHG Protocol Corporate Standard.
- We work with site leads to identify the most suitable individual(s) to identify the direct and indirect emission sources for that site and provide emissions and other environmental data each month. We engage with these representatives on a monthly basis.
- Small offices (mostly 10 or fewer Infineum colleagues) are excluded from emissions estimates.
- Due to the Services Utilities Materials Facilities (SUMF) agreement for our Rio de Janeiro site, estimated consumption of steam and electricity figures are yet to be independently metered. As a result, this site is billed for steam consumption in the amount of natural gas used to generate said steam.
- Scope 3 emissions are calculated to the GHG Protocol Corporate Value Chain (Scope 3) Standard. GHG emissions are estimated for all scope 3 categories relevant to Infineum, unless stated. Infineum's scope 3 is estimated using the full range of calculation methods, using emission factors obtained from suppliers, proprietary and public databases, as well as extended environmental input output (EEIO) data. A level of uncertainty as to the accuracy of the scope 3 estimations apply.



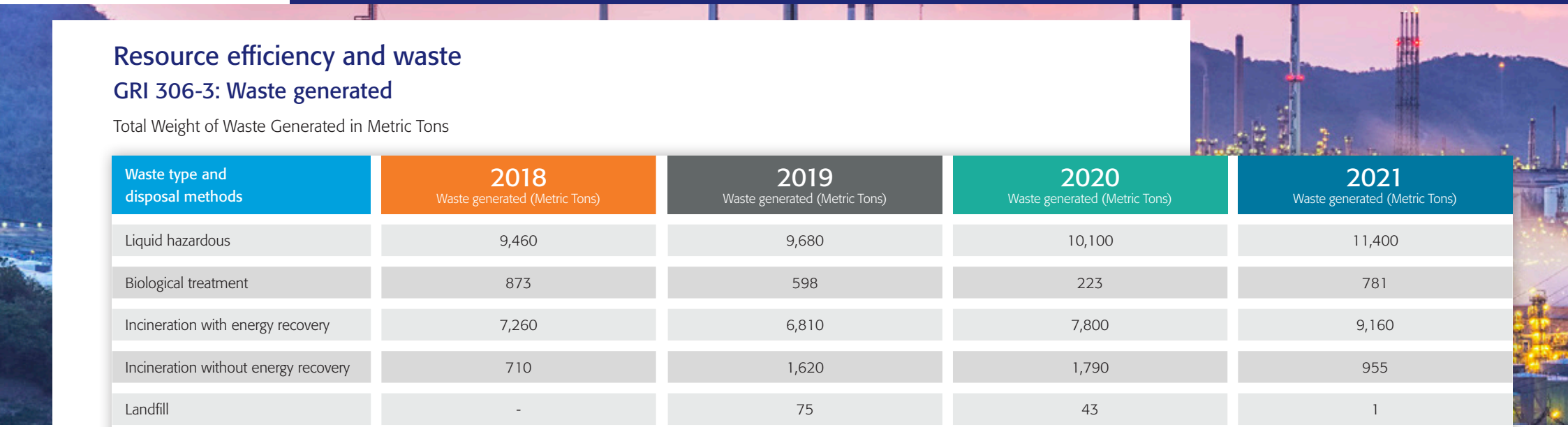
Water

GRI 303-1: Water withdrawal by source

Total Volume of Water Withdrawn in Megalitres

Water sources	2018 Water Used (Megalitres)	2019 Water Used (Megalitres)	2020 Water Used (Megalitres)	2021 Water Used (Megalitres)
Groundwater	333	322	293	318
Municipal supply	1,220	1,270	1,260	1,300
Sea	14,100	11,900	15,500*	16,500
Grand Total	15,700	13,500	17,100	18,100

*Increase in figure due to improved data quality
Sea water is used at our Bayway, New Jersey site for cooling and firefighting only. Under normal operating conditions this is safely returned to sea.



Resource efficiency and waste

GRI 306-3: Waste generated

Total Weight of Waste Generated in Metric Tons

Waste type and disposal methods	2018 Waste generated (Metric Tons)	2019 Waste generated (Metric Tons)	2020 Waste generated (Metric Tons)	2021 Waste generated (Metric Tons)
Liquid hazardous	9,460	9,680	10,100	11,400
Biological treatment	873	598	223	781
Incineration with energy recovery	7,260	6,810	7,800	9,160
Incineration without energy recovery	710	1,620	1,790	955
Landfill	-	75	43	1
Recycling	618	483	173	377
Reuse	-	91	83	2
Water treatment	-	-	6	113
Liquid non-hazardous	2,020	3,200	4,500	5,360
Biological treatment	-	-	-	194
Incineration with energy recovery	0	1,550	1,460	1,350
Incineration without energy recovery	43	47	188	34
Landfill	-	-	1,220	2,090
Recycling	38	0	0	4
Reuse	-	-	-	-
Water teatment	1,940	1,600	1,630	1,690

This data is externally audited. 'Biological treatment' uses natural processes to help with the decomposition of organic substances, to remove them from wastewater for proper disposal.

Resource efficiency and waste (countinued)

GRI 306-3: Waste generated

Total Weight of Waste Generated in Metric Tons

Waste type and disposal methods	2018 Waste generated (Metric Tons)	2019 Waste generated (Metric Tons)	2020 Waste generated (Metric Tons)	2021 Waste generated (Metric Tons)
Solid hazardous	3,310	3,090	3,010	2,940
Biological treatment	156	13	-	-
Incineration with energy recovery	2,160	2,480	2,060	2,150
Incineration without energy recovery	169	335	130	55
Landfill	612	69	665	555
Recycling	208	191	164	180
Reuse	-	2	-	-
Solid non-hazardous	3,790	4,020	3,750	3,570
Biological treatment	0	542	232	108
Incineration with energy recovery	722	605	425	571
Incineration without energy recovery	172	200	0	1
Landfill	2,460	2,260	2,810	2,520
Recycling	439	417	279	371
Reuse	-	-	-	2
Grand Total	18,600	20,000	21,400	23,300

This data is externally audited. 'Biological treatment' uses natural processes to help with the decomposition of organic substances, to remove them from wastewater for proper disposal.

Independent limited assurance statement

To the Stakeholders of Infineum International Limited

Introduction and Objectives of Work

Apex Companies, LLC (Apex) has been engaged by Infineum International Limited (Infineum) to provide reasonable assurance of its 2021 Scope 1 Greenhouse Gas (GHG) emissions and Scope 2 (Location-Based and Market-Based) GHG emissions. Apex has also been engaged to provide limited assurance of Infineum's Scope 3 GHG emissions (Purchased Goods and Services, Capital Goods, Fuel and Energy-Related Activities, Upstream Transportation and Distribution, Waste in Operations, Business Travel, Employee Commuting, Upstream Leased Assets, Downstream Transportation and Distribution, Processing of Sold Products, Use of Sold Products, and End of Life Treatment of Sold Products), Water Withdrawals, and Waste Production listed in the following tables. This assurance statement applies to the Subject Matter included within the scope of work described below.

This information and its presentation are the sole responsibility of the management of Infineum. Our sole responsibility was to provide independent assurance on the accuracy of the Subject Matter.

Scope of Work

The scope of our work was limited to assurance of GHG Emissions (Scope 1, Scope 2 [location-based and market-based], Scope 3 [Purchased Goods and Services, Capital Goods, Fuel and Energy-Related Activities, Upstream Transportation and Distribution, Waste in Operations, Business Travel, Employee Commuting, Upstream Leased Assets, Downstream Transportation and Distribution, Processing of Sold Products, Use of Sold Products, and End of Life Treatment of Sold Products]), Water Withdrawals, and Waste Production for the period January 1, 2021 to December 31, 2021 (the 'Subject Matter'). The metrics assured by Apex are included in the attached table.

Data and information supporting the Subject Matter were mostly historical in nature and in some cases estimated.

Reporting Boundaries

The following are the boundaries used by Infineum for reporting sustainability data:

- Operational Control
- Worldwide

Reporting Criteria

- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) GHG Protocol Corporate Accounting and Reporting Standard (Scope 1 and 2 GHG emissions)
- WRI/WBCSD Corporate Value Chain Accounting and Reporting Standard (Scope 3 GHG emissions)
- 2021 GRI Standards
- Infineum's Inventory Management Plan and Scope 3 Inventory Management Plan

Limitations and Exclusions

Excluded from the scope of our work is any assurance of information relating to:

- Activities outside the defined assurance period;
- Material outside the scope of work.

This assurance engagement relies on a risk based selected sample of sustainability data and the associated limitations that this entails. The reliability of the reported data is dependent on the accuracy of metering and other production measurement arrangements employed at site level, not addressed as part of this assurance. This independent statement should not be relied upon to detect all errors, omissions or misstatements that may exist.

Responsibilities

The preparation and presentation of the Subject Matter are the sole responsibility of the management of Infineum.

Apex was not involved in the development of the Subject Matter or of the Reporting Criteria. Our responsibilities were to:

- obtain assurance about whether the Subject Matter has been prepared in accordance with the Reporting Criteria;
- form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- report our conclusions to the Stakeholders of Infineum.

Assessment Standards

- We performed our work in accordance with Apex's standard procedures and guidelines for external Assurance of Sustainability Reports and International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information (effective for assurance reports dated on or after Dec. 15, 2015), issued by the International Auditing and Assurance Standards Board. A materiality threshold of ±5-percent was set for the assurance process.
- ISO 14064-3 Second Edition 2019-04: Greenhouse gases -- Part 3: Specification with guidance for the verification and validation of greenhouse gas statements.

Summary of Work Performed

As part of our independent assurance, our work included:

1. Assessing the appropriateness of the Reporting Criteria for the Subject Matter;
2. Queried information and data related to the Subject Matter from relevant personnel;
3. Reviewing the data collection and consolidation processes used to compile Subject Matter, including assessing assumptions made, and the data scope and reporting boundaries;
4. Reviewing documentary evidence provided by relevant personnel; and,
5. Agreeing on a selection of the Subject Matter to the corresponding source documentation.

Conclusion

On the basis of our methodology and the activities described above, we conclude that the Scope 1 and 2 GHG emissions statement in the table below:

- iis materially correct and is a fair representation of the GHG emissions data and information; and
- is prepared in accordance with the WRI/WBCSD GHG Protocol (Scope 1 and 2).

We further conclude that based on the process and procedures conducted, there is no evidence that the Scope 3 GHG emissions, water data and waste data statement in the table below is not:

- a fair representation of the GHG emissions, water and waste data and information; and
- prepared in accordance with the WRI/WBCSD Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard (Scope 3).

Statement of Independence, Integrity and Competence

Apex is an independent professional services company that specializes in Health, Safety, Social and Environmental management services including assurance with over 30 years history in providing these services.

Apex has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

No member of the assurance team has a business relationship with Infineum, its Directors or Managers beyond that required of this assignment. We have conducted this verification independently, and there has been no conflict of interest.

The assurance team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, and has over 20 years combined experience in this field and an excellent understanding of Apex's standard methodology for the assurance of sustainability data.

Cody Lorentson
Lead Assuror
Project Manager
Apex Companies, LLC
Lakewood, CO

Trevor Donaghu
Technical Reviewer
Program Manager
Apex Companies, LLC
Pleasant Hill, CA

March 17, 2022

Infineum International Limited

GHG Emissions	Units	2021
Scope 1	Metric Tons CO_2e	67,500
Scope 2 (location-based)	Metric Tons CO_2e	114,000
Scope 2 (market-based)	Metric Tons CO_2e	122,000
Scope 3: Upstream Emissions (Purchased goods and services, capital goods, fuel and energy-related activities, upstream transportation and distribution, waste in operations, business travel, employee commuting, upstream leased assets)	Metric Tons CO_2e	2,460,000
Scope 3: Downstream Emissions (Downstream transportation and distribution, processing of sold products, use of sold products, end of life treatment of sold products)	Metric Tons CO_2e	1,560,000

Water Withdrawal	Units	2021
Total seawater withdrawal	Liters (Millions)	16,500
Total municipal and groundwater withdrawal	Liters (Millions)	1,620

Waste Production	Units	2021
Liquid hazardous biological treatment	Metric Tons	781
Liquid hazardous incineration with energy recovery	Metric Tons	9,160
Liquid hazardousincineration without energy recovery	Metric Tons	955
Liquid hazardous landfill	Metric Tons	1
Liquid hazardous recycling	Metric Tons	377
Liquid hazardous reuse	Metric Tons	2
Liquid hazardous water treatment	Metric Tons	113
Liquid non-hazardous biological treatment	Metric Tons	194
Liquid non-hazardous incineration with energy recovery	Metric Tons	1,350
Liquid non-hazardous incineration without energy recovery	Metric Tons	34
Liquid non-hazardous landfill	Metric Tons	2,090
Liquid non-hazardous recycling	Metric Tons	4
Liquid non-hazardous reuse	Metric Tons	0
Liquid non-hazardous water treatment	Metric Tons	1,690
Solid hazardous biological treatment	Metric Tons	0
Solid hazardous incineration with energy recovery	Metric Tons	2,150
Solid hazardous incineration without energy recovery	Metric Tons	55
Solid hazardous landfill	Metric Tons	555
Solid hazardous recycling	Metric Tons	180
Solid hazardous reuse	Metric Tons	0
Solid non-hazardous biological treatment	Metric Tons	108
Solid non-hazardous incineration with energy recovery	Metric Tons	571
Solid non-hazardous incineration without energy recovery	Metric Tons	1
Solid non-hazardous landfill	Metric Tons	2,520
Solid non-hazardous recycling	Metric Tons	371
Solid non-hazardous reuse	Metric Tons	2

*These values may be impacted by rounding