



**SUSTAINABILITY.
MORE THAN A WORD.**

INDEPENDENT LIMITED ASSURANCE STATEMENT FOR GREENHOUSE GAS, ENVIRONMENT AND HEALTH & SAFETY DISCLOSURES 2021/22

Avieco Ltd has prepared this assurance statement for Johnson Matthey, through which it confirms that Johnson Matthey's global reported scope 1, 2 and 3 greenhouse gas (GHG) emissions, specified environmental performance indicators related to total energy consumption, waste disposed, water consumption, emissions to air; and specified health and safety indicators have received limited assurance. The engagement was performed in accordance with the requirements of the ISAE 3000 (revised) standard including the specificities of ISAE 3410 for assuring GHG emissions data, and key health and safety definitions from the OSHA regulations.

The assurance covers Johnson Matthey's stated historic emissions, energy, waste, water, emissions to air and key health and safety data in scope (hereafter called EHS data) for one reporting year – 12 months ending 31st March 2022, as will appear in Johnson Matthey's annual reporting, and in disclosures to both CDP and the Down Jones Sustainability Index.

RESPONSIBILITIES OF JOHNSON MATTHEY AND AVIECO

Johnson Matthey was responsible for the preparation of the GHG, environmental and health and safety assertions, the internal management controls governing the data collection process and for production of the final data via EHS software and spreadsheets.

Avieco was responsible for carrying out the limited assurance engagement for the required scope of assurance in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (revised) 'Assurance Engagements other than the Audits or Reviews of Historical Financial Information' and for the GHG assessment applied the principles of the ISAE 3410, Assurance Engagements on Greenhouse Gas Statements standard.

AVIECO'S INDEPENDENCE, TEAM COMPETENCIES AND QUALITY CONTROL

We can confirm our independence, ethics and competence as follows:

- We are independently appointed by Johnson Matthey and no member of the assurance team has a business reason for bias regarding the limited assurance engagement.
- We have complied with the ethical requirements relevant for the performance of the ISAE 3000 engagement in respect of professional experience in environmental reporting and disclosure of limited health and safety indicator. We have acted with the integrity, objectivity, professional competence, due care, and confidentiality to be expected of a professional services provider and the rigor of our work is sufficient to the level required by the ISAE 3000 standard.
- Our team has extensive experience in GHG reporting to WRI / WBCSD GHG corporate Accounting and Reporting Standard (revised) standard, use of EHS (environment health and safety) software for sustainability index disclosures and the assurance and verification standards ISAE 3000, ISAE 3410 (GHGs) and ISO 1406:3.

Avieco applies quality control and management approaches equivalent to ISO 9001 International Standard and as encompassed in the Avieco Quality and Ethics Policies. Our commitment to ethical conduct is appropriate for that required for environmental and sustainability professionals in respect of conducting the ISAE 3000 engagement.

ORGANISATIONAL SCOPE AND SUBJECT MATTER

The boundary of the assurance process includes all Johnson Matthey entities and facilities over which Johnson Matthey has financial control. As with previous years, a suitable number of Johnson Matthey sites were selected for detailed review, virtual site visits and interviews. The sites included in this year's review process were as follows; Devon CA, Panki ENR, Gliwice CA, Redwitz CA, Royston R&CE, Zhangjiagang ENR, Shanghai Chemicals ENR, Zhangjiagang CA (electricity only) global sites, on a financial control basis, for which the following EHS data have been included in scope:

GHG SOURCES

- **Scope 1:** Natural gas, fuel oil, gasoline/petrol, diesel, LPG, refrigerants, emissions to air (direct CO₂ and other GHGs from manufacturing). The fuels reported are from mobile combustion only and represent the majority of scope 1 emissions
- **Scope 2:** Electricity usage and generation (including location and market-based emissions), steam.
- **Scope 3:** Electricity, fuel and steam transmissions and distribution losses (including WTT for fuel), waste.
- **Intensity metrics and other indicators**
 1. Scope 1 + 2 tCO₂e intensity per tonne of manufactured product sold
 2. Year on year % change in emissions (Scope 1, 2 and 3) and intensity

ENVIRONMENTAL INDICATORS

- **Total energy consumption:** (natural gas, electricity, non-renewable energy consumption) (fuels purchased or consumed, electricity purchased, steam/heating/cooling and other non-renewable energy purchased), (renewable energy purchased or generated, and percentage of renewable electricity consumed)
- **Total water:** Withdrawal, net freshwater consumption (municipal and consumption), discharged, direct Chemical Oxygen Demand (wastewater) and percentage coverage),
- **Total waste:** Total sent off site, total sent to landfill, hazardous waste sent off site and total waste disposed (total generated and used/recycled/sold/incinerated),
- **Emissions to air:** Total emissions and percentage coverage (NO_x, SO_x and VOC)

HEALTH AND SAFETY INDICATORS

- Annual TRIR employees and contractors
- Annual LTIR employees
- International Council of Chemical Association's (ICCA) Process Safety Severity Rate
- LTIFR employees
- LTIFR contractors
- OIFR (Occupational illness frequency rate)
- Teir 1 process safety events
- Annual OSHA severity rate

JOHNSON MATTHEY'S ASSURED 2021/22 EHS ASSERTIONS

Greenhouse gas emissions (tCO₂e):

Year	Total tCO ₂ e FY2019/20	Total tCO ₂ e FY2020/21	Total tCO ₂ e FY2021/22	% change from FY2020/21
Scope 1	199,125	203,930	219,846	8%
Scope 2 (market-based)	192,334	181,525	180,060	-1%
Scope 2 (location-based)	252,757	227,381	240,897	6%
Scope 3 Electricity (T&D only)	20,461	18,819	19,730	5%
Scope 3 Electricity, Fuel and Steam (WTT and T&D) and Waste	45,181	44,981	52,876	18%
Energy intensity per production output (kWh/Tonne)	10,989	11,548	12,089	5%

Operational intensity (S1+S2) tCO2e/ tonne of manufactured product sold	3.2	3.4	3.5	1%
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Energy (GJ)

Indicator	Total	UOM	Total	UOM
1. Total energy consumption	4,968,843	GJ	1,380,234.1	MWh
2. Total natural gas consumption	2,554,495	GJ	575,869.9	MWh
3. Total electricity consumption	2,073,132	GJ	709,581.8	MWh
4. Total non-renewable energy consumption	4,271,633	GJ	1,186,572.9	MWh
a) Non-renewable fuels purchased and consumed	2,891,002	GJ	803,056.9	MWh
b) Non-renewable electricity purchased	1,256,376	GJ	348,993.3	MWh
c) Steam/heating/cooling and other (non-renewable) purchased	87,457	GJ	24,293.5	MWh
5. Total renewable energy purchased or generated	697,180	GJ	193,661.2	MWh
6. Percentage renewable electricity consumed	33.63%	GJ	33.63%	MWh

Water (M³)

Indicator	Total	UOM
1. Water withdrawal	2,275,553	M ³
2. Total net freshwater consumption (municipal supply and extraction)	2,159,752	M ³
a) Withdrawal: Total municipal water supplies	2,107,609	M ³
b) Withdrawal: Fresh surface water	39,220	M ³
c) Withdrawal: Fresh groundwater	128,713	M ³
d) Discharge: Water returned to the source of extraction at similar or higher quality as raw water extracted	115,790	M ³
3. Direct chemical oxygen demand (wastewater) and coverage	182 mg/l 65%	M ³

Waste (tonnes)

Indicator	Total	UOM
1. Total Waste sent off site (tonnes)	96,286	tonnes
a) Total Waste to reuse (tonnes)	1692	tonnes
b) Total waste to recycling (tonnes)	40,526	tonnes
c) Total waste to Incineration with Energy recovery (tonnes)	4,380	tonnes
d) Total waste to incineration or treatment without energy recovery (tonnes)	45,446	tonnes

2. Total Waste to landfill (tonnes)	4,242	tonnes
a) Total Non-Hazardous Waste sent offsite (tonnes)	35,816	tonnes
3. Total Hazardous Waste sent off site (tonnes)	60,470	tonnes
a) Total Hazardous waste sent offsite excluding hazardous waste to reuse (tonnes)	59,574	tonnes
4. Total Solid Waste disposed (tonnes)	5,707	tonnes
a) Total waste generated (tonnes)	19,440	tonnes
b) Total waste used/recycled/sold (tonnes)	13,733	tonnes

Emissions to air (kg)

Indicator	Total	UOM	Percentage coverage
1. Nitrogen Oxides (NOx)	378,711	kg	79.3%
2. Sulphur Oxides (SOx)	79,298	kg	34%
3. Volatile Organic Compounds (VOC)	91,946	kg	62.3%

Health and safety indicators

Indicator	Total	UOM
1. Annual TRIR employees and contractors	0.59	n/200,000 hrs worked
2. Annual LTIIR employees	0.29	n/200,000 hrs worked
3. International Council of Chemical Association's (ICCA) Process Safety Severity Rate	1.367	n/200,000 hrs worked
4. LTIFR employees	1.52	n/million hrs worked
5. LTIFR contractor	1.33	n/million hrs worked
6. OIFR (Occupational illness frequency rate)	0.16	n/million hrs worked
7. Teir 1 process safety events	0.334	n/200,000 hrs worked
8. Annual OSHA severity rate	11.25	n/200,000 hrs worked

ASSURANCE STANDARDS AND METHODOLOGIES

Johnson Matthey's EHS disclosures have been assured to a limited assurance level using ISAE 3000 (including ISAE 3410 for GHGs) against its chosen GHG and environmental disclosure methodology the WRI/WBCSD GHG Corporate Accounting and Reporting Standard (revised) and the key health and safety definitions from the OSHA Regulations. In addition, Johnson Matthey's global data collection processes have also been evaluated against its own internal EHS procedures.

Johnson Matthey's GHG inventory and quantification of environmental performance indicators have been completed in accordance with the WRI best practice reporting principles of relevance, completeness, consistency, transparency, accuracy and the subject matter adheres to the ISAE 3410 principles related to both the quantification of emissions and presentation of disclosures.

OBJECTIVE

The objective of the engagement was to ensure the above Johnson Matthey GHG, environmental and health and safety assertions are free of material misstatement to an acceptable materiality threshold of 5% at an activity and organisational level; and to ensure the environmental data and health and safety incident rates provide the relevant, material information required by stakeholders for the purposes of decision making.

AVIECO'S ASSURANCE PROCESS

Our assurance conclusions are based on the following activities:

- Agreement on the assurance level, objectives, criteria, organisational scope, relevance and materiality thresholds
- Review of the processes and procedures for establishing the organisational and operational boundary, ensuring relevance to the EHS assertions
- Development of the assurance project plan and data sampling plan (based on risk and materiality)
- Assessment of the EHS data collection systems and controls through interviews on video conferencing
- Assessment of the data collection process from raw data comparison with primary evidence, through to local and global collation in the central EHS tools and software
- Review of the appropriateness and application of the methodologies and calculations used for conversion of activity data or other GHGs to CO₂e emissions; and of relevant and recognised health and safety incident rates
- Comparative assessment of year-on-year performance change
- Evaluation of the internal quality assurance procedures and results
- Our activities included in depth interviews and virtual site visits with nine of Johnson Matthey's material sites: Devon CA, Panki ENR, Gliwice CA, Redwitz CA, Royston R&CE, Zhangjiagang ENR, Shanghai Chemicals ENR, Zhangjiagang CA (electricity only)

LIMITATIONS AND EXCLUSIONS

Avieco worked on the premise that Johnson Matthey has disclosed all the information available to the best of its knowledge and capability. We have excluded the assurance of other activities and emissions sources outside of reporting period and scope of work.

Avieco has provided a limited level of assurance for Johnson Matthey – which limits the level of review of procedures and information required to achieve assurance, as compared to the substantially greater rigor of 'reasonable' assurance. It should also be recognised in this engagement that GHG quantification contains inherent uncertainty due to the application of average conversion factors, amongst other commonly acknowledged limitations of GHG calculation.

RECOMMENDATIONS FOR IMPROVEMENT

Avieco has provided Johnson Matthey with a separate management report containing specific findings. However, Avieco recommends that Johnson Matthey improve on the following issues:

- Improve the reporting of emissions associated with waste by encouraging sites to report waste data as it is produced rather than when waste is removed from sites. This will further reduce any potential inaccuracies and variance in the reported waste data.
- Improve documentation of actual invoiced data inputs into Enablon for energy data. A standardised approach to replacing estimated energy data with actual data should be developed so that monthly reported data is accurate.
- Currently some sites store emissions to air calculations locally and use varying methods of calculating emissions to air. This reduces the level of transparency and consistency between Johnson Matthey group and its operational sites. Include calculation process for emissions to air data within Enablon to ensure consistency across all sites.
- Provide protocol to all sites to ensure NO_x and process CO₂ emissions data are calculated consistently across all sites in the upcoming transition to a newly updated method of reporting NO_x and process CO₂ emissions across Johnson Matthey.

LIMITED ASSURANCE CONCLUSION

Based on the assurance procedures followed by Avieco of Johnson Matthey's EHS data across the 2021/22 reporting period, Avieco has found no material evidence to suggest that the data is not:

- Prepared in accordance with the WRI/WBCSD GHG corporate accounting and reporting standard (revised) and the OSHA regulations as relevant
- Prepared in accordance with Johnson Matthey's relevant internal health and safety and environmental data guidelines
- Materially correct and a fair representation of Johnson Matthey's GHG emissions, specified environmental impacts and health and safety incident rates
- Worthy of the award of limited assurance

Avieco declares that Johnson Matthey has therefore received limited assurance for reporting year starting 1st April 2021 and ending 31st March 2022.

Laura Jordan, ACA Director



Signature:

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