PANDORA

CARBON FOOTPRINT REPORT: PANDORA LAB-GROWN DIAMONDS

Product Carbon Footprint of Pandora Lab-Grown Diamond Portfolio: Cradle-to-Gate Assessment per Carat (ISO 14067:2018)

Prepared by Raison Consulting and Impact Business Modelling Systems™

Published by Pandora A/S

Version 1.0. May 2026

This study has been subject to independent third-party verification under limited assurance by EY (see page iii-v)

RAISON CONSULTING

IMPACT BUSINESS MODELING SYSTEM

Management Statement

This Product Carbon Footprint of Pandora Lab-Grown Diamond Portfolio: Cradle-to-Gate Assessment per Carat (ISO 14067:2018) has been approved for publication by Pandora A/S and issued as Version 1.0 in May 2026.

The report presents the Product Carbon Footprint (PCF) of Pandora's lab-grown diamond portfolio, providing a quantified cradle-to-gate assessment of greenhouse gas emissions associated with Pandora's lab-grown diamonds supplied during the period 2022–2025, reported per the functional unit of one carat polished lab-grown diamond.The results are considered representative for Pandora lab-grown diamonds supplied after 2025, subject to material changes in supply chain conditions and applicable regulatory requirements. In line with good practice, Pandora aims to periodically reassess and, as necessary, update the product carbon footprint, typically every three years.The assessment has been developed in accordance with ISO 14067:2018, supported by the life cycle assessment principles of ISO 14040:2006 and the methodological requirements of ISO 14044:2006, and is subject to the system boundaries, assumptions, and limitations described in this report.

To ensure alignment with internationally recognised standards and the application of transparent and reproducible methodologies, the PCF and its report have been developed with the support of external experts. Raison Consulting provided project oversight, expert challenge, and quality assurance, while Impact Business Modelling Systems™ acted as the technical specialist responsible for life cycle-based greenhouse gas modelling and calculations, including methodological design, data processing, and emissions quantification.

The study has been subject to independent third-party verification under limited assurance by EY – see page iii-v.

The management of Pandora A/S acknowledges its responsibility for the preparation, accuracy, and completeness of this PCF report. It is Pandora's opinion that the results presented constitute a fair and representative estimate of the carbon footprint of its lab-grown diamond portfolio, based on the methodologies, data sources, and assumptions applied.

Approved on April 22, 2026

Mads Twomey-Madsen
SVP, Sustainability
Pandora A/S

Independent auditor’s limited assurance report on the carbon footprint of a lab-grown diamond

To the stakeholders of Pandora A/S

Limited assurance conclusion

We have conducted a limited assurance engagement on the carbon footprint of a one carat polished lab-grown diamond (“the carbon footprint of a lab-grown diamond”) as presented on page 14 by Pandora A/S in the report “Carbon Footprint Report: Pandora Lab-Grown Diamonds (Product Carbon Footprint of Pandora Lab-Grown Diamond Portfolio: Cradle-to-Gate Assessment per Carat (ISO 14067:2018))” (“the report”) from May 2026, covering product carbon footprint calculated in the period 1 January 2022-31 December 2024.

The carbon footprint of a one carat polished lab grown diamond is reported to be 12.58 $kgCO_2e$/carat as presented on page 14.

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the carbon footprint of a lab-grown diamond as presented on page 14 by Pandora A/S in the report is not prepared, in all material respects, in accordance with the applied criteria in section 1: “Goal and scope” and section 2: “Life cycle inventory”, which has been prepared in accordance with ISO 14067 (pages 3-13 of the report).

Basis for conclusion

We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance engagements other than audits or reviews of historical financial information ("ISAE 3000 (Revised)") and the additional requirements applicable in Denmark.

The procedures in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion. Our responsibilities under this standard are further described in the Auditor's responsibilities for the assurance engagement section of our report.

Our independence and quality management

We have complied with the independence and other ethical requirements of the International Ethics Standards Board for Accountants' International Code of Ethics for Professional Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour as well as ethical requirements applicable in Denmark.

EY Godkendt Revisionspartnerselskab applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Emphasis of matter

We draw attention to the description of the purpose of the report in the section "Executive Summary" on page 2. As the report is prepared to support Pandora's external climate claims in line with ISO 14026, it may be unsuitable for other purpose.

Our conclusion is not modified in respect of this matter.

Management's responsibilities for the carbon footprint of a lab-grown diamond

Management of the Group is responsible for:

- The preparation of the carbon footprint of a lab-grown diamond in accordance with the applied criteria in the section 1: "Goal and scope" and section 2: "Life cycle inventory" on pages 3-13 of the report,
- Designing, implementing and maintaining such internal control that management determines is necessary to enable the preparation of the carbon footprint of a lab-grown diamond in accordance with the applied criteria in section 1: "Goal and scope" and section 2; "Life cycle inventory" that is free from material misstatement, whether due to fraud or error; and
- The selection and application of appropriate methods and making assumptions and estimates that are reasonable in the circumstances.

Auditor's responsibilities for the assurance engagement

Our objectives are to plan and perform the assurance engagement to obtain limited assurance about whether the carbon footprint of a lab-grown diamond is free from material misstatement, whether due to fraud or error, and to issue a limited assurance report that includes our conclusion. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence decisions of users taken on the basis of the selected disclosure in the report.

As part of a limited assurance engagement in accordance with ISAE 3000 (Revised) we exercise professional judgement and maintain professional scepticism throughout the engagement.

Our responsibilities in respect of the carbon footprint of a lab-grown diamond include:

- Identification of disclosures where material misstatements are likely to arise, whether due to fraud or error; and
- Designing and performing procedures responsive to assessed risks of material misstatement at the disclosures level. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

Summary of the work performed

A limited assurance engagement involves performing procedures to obtain evidence about the carbon footprint of a lab-grown diamond.

The nature, timing and extent of procedures selected depend on professional judgement, including the identification of disclosures where material misstatements are likely to arise, whether due to fraud or error, in the carbon footprint of a lab-grown diamond.

In conducting our limited assurance engagement, we:

- Obtained an understanding of the Company's reporting processes relevant to the preparation of the carbon footprint of a lab-grown diamond by obtaining an understanding of the Company's control environment, processes and information systems relevant to the preparation of the carbon footprint of a lab-grown diamond but not evaluating the design of particular control activities, obtaining evidence about their implementation or testing their operating effectiveness;

- Performed inquiries of relevant personnel and analytical procedures on the carbon footprint of a lab-grown diamond;
- Performed substantive assurance procedures on the carbon footprint of a lab-grown diamond; and
- Assessed the product carbon footprint of Pandoras selected suppliers used in the calculation of the result.
- Evaluated whether the applied criteria aligns with the criteria laid out in ISO 14067.

Other information

Management is responsible for other information. The other information comprises the remaining part of the information, which is included in the report and which is not included in the carbon footprint of a lab-grown diamond and our report thereon.

Our conclusion on the carbon footprint of a lab-grown diamond does not cover other information, and we do not express any form of assurance conclusion thereon.

In connection with our assurance engagement on the carbon footprint of a lab-grown diamond, our responsibility is to read other information and, in doing so, consider whether other information is materially inconsistent with the carbon footprint of a lab-grown diamond or our knowledge obtained during the assurance engagement, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement in this other information, we are required to report that fact. We have nothing to report in this regard.

Copenhagen, Denmark, 22 April 2026
EY Godkendt Revisionspartnerselskab
CVR no. 30 70 02 28

Jens Thordahl Nøhr
State Authorised Public Accountant
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Associate Partner, Climate change &
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Content outline

Executive Summary

Pandora has conducted a cradle-to-gate carbon footprint study of its Lab-Grown Diamonds (LGDs) in alignment with ISO 14067:2018, supported by the life cycle assessment principles and framework of ISO 14040:2006 and the methodological requirements of ISO 14044:2006.

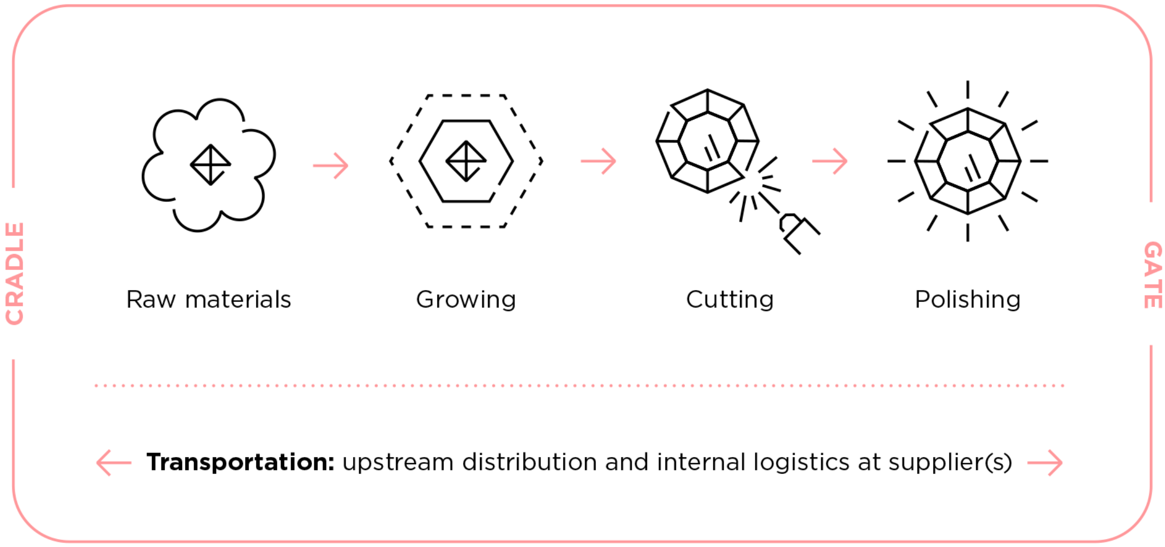

Figure A: Cradle-to-gate life cycle for Pandora Lab-Grown Diamonds.

The study (the Study) quantifies the greenhouse gas emissions associated with producing Pandora's lab-grown diamonds, from raw material extraction through to the point the diamond is ready to leave the cutting and polishing facility, reported per the functional unit of one carat polished lab-grown diamond. It does not include downstream activities such as distribution, retail, use phase, or end-of-life stages. The analysis covers multiple global suppliers of lab-grown diamonds using the Chemical Vapour Deposition (CVD) technology to produce the diamonds. This study has been subject to third-party verification through limited assurance conducted by EY, refer to p. iii.

The Study concludes that the carbon footprint of one polished carat of lab-grown diamond is 12.58 kg CO_2e/ct. This reported carbon footprint is based on the highest supplier-average footprint across Pandora's lab-grown diamond suppliers. The reported 12.58 kg CO_2e/ct is both a conservative and representative benchmark for Pandora's lab-grown diamond offering.

Electricity consumption, particularly during the diamond growth stage, accounts for approximately 72% of emissions and is the dominant source of emissions, even though all suppliers use 100% renewable electricity. This is due to the inclusion of upstream emissions from renewable electricity generation.

Sensitivity analysis highlights the critical role of clean energy in production of lab-grown diamonds, as the carbon footprint could rise significantly without renewable electricity. Sensitivity analysis also shows that extending the boundaries from cradle-to-gate to cradle-to-grave thus including downstream activities would likely have a negligible effect on the result.

The Study integrates independent third-party verified supplier-specific primary data, peer-reviewed secondary data, and harmonised emission factors to ensure methodological consistency. Minor process and production inputs and capital goods were excluded in line with ISO standards, as their contributions were judged negligible.

This carbon footprint study supports Pandora's external climate claims in line with ISO 14026 and provides a robust foundation for transparent, consumer-facing communication. While the result reflects current supply chain conditions, future updates may be needed as technologies and supplier processes evolve.

1 Goal and scope

The Pandora Lab-Grown Diamonds Collections feature lab-grown diamonds (LGD) for a wide range of jewellery including rings, earrings, necklaces, etc. These stones are optically, chemically, thermally, and physically identical to mined diamonds but they are created above ground.

This study is a cradle-to-gate carbon footprint study of lab-grown diamonds used in the Pandora Lab-Grown Diamonds Collections (the Pandora LGD Collections). It is based on the international standard for carbon footprint accounting for products, ISO 14067:2018, that in turn is based on the standard for life cycle assessment (LCA), the ISO14044:2006[1]. The study has been subject to third-party verification through limited assurance conducted by EY, refer to p. iii.

The study quantifies the carbon footprint of lab-grown diamonds used in the Pandora LGD Collections. The purpose is to transparently document product-level climate claims in accordance with ISO 14026. There are no comparative assertions in this study.

The study covers all lab-grown diamonds supplied during 2022-2025[2] to Pandora. It is based on product carbon footprint assessments completed by multiple manufacturers of lab-grown diamonds, each of whom supply lab-grown diamonds to Pandora. All individual supplier carbon footprint assessments are based on ISO 14067:2018, they use the same system boundary and cut-offs, and the methodological basis of the studies are generally internally consistent. All individual supplier assessments have been verified by independent third parties. Where methodological differences exist on material issues, this study has applied harmonisation adjustments to ensure that the consolidated results are consistent and comparable across suppliers. These adjustments do not disclose supplier-specific operational data and do not affect the conservatism of the reported footprint.

Because the Pandora LGD Collections encompass diamonds from multiple suppliers and diamonds of different sizes and cuts, and because the study intends to communicate a single footprint representative of the entire collection, the study takes a cautionary approach by reporting the highest supplier-average footprint across Pandora's lab-grown diamond suppliers.

[1] ISO 14067 "Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification", 2018, and ISO 14044 "Environmental management – Life cycle assessment – Requirements and guidelines", 2006.

[2] The results are considered representative for Pandora lab-grown diamonds supplied after 2025, subject to material changes in supply chain conditions and applicable regulatory requirements. In line with good practice, Pandora aims to periodically reassess and, as necessary, update the product carbon footprint, typically every three years.

1.1 Products assessed

The study assesses the carbon footprint of lab-grown diamonds created by multiple manufacturers of lab-grown diamonds, each of whom supply lab-grown diamonds to Pandora.

The lab-grown diamonds are produced using the Chemical Vapour Deposition (CVD) technology.

The lab-grown diamonds used in the Pandora LGD Collections spans both center and melee lab-grown diamonds. The lab-grown diamonds covered by this study are graded near-colourless brilliance (white), and the most common cut is round brilliant cut (Figure1). These characteristics provide context for the products included in the study; however, variations in cut, carat size, and clarity do not affect the consolidated carbon footprint reported in this study, which is the highest supplier-average footprint per polished carat.

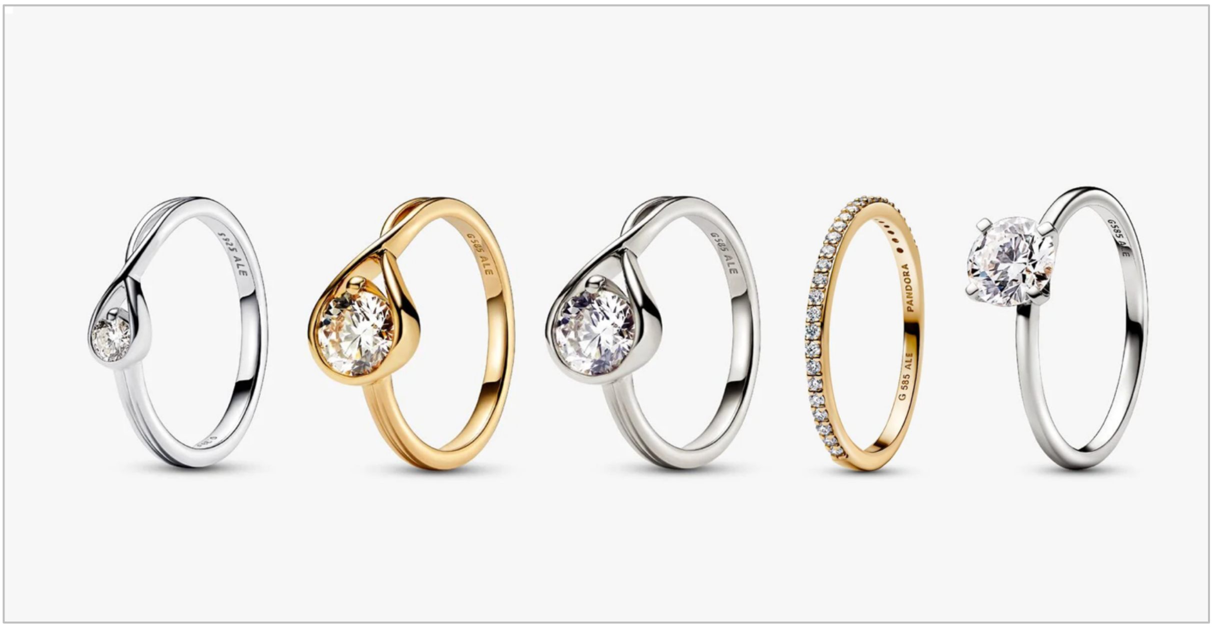

Figure 1. Example of Pandora jewellery featuring near-colourless lab-grown diamonds. The product carbon footprint assessed in this study applies to the polished lab-grown diamond component prior to integration into jewellery.

1.2 Functional unit

The functional unit for this cradle-to-gate study is one polished carat (1 ct) lab-grown diamond. It is expressed in kg CO2e/ct, i.e. kilogram carbon dioxides equivalent per one (1) carat lab-grown diamond.

1.3 System boundaries

The system boundaries are illustrated in figure 2. The study adopts a cradle-to-gate system boundary that covers raw material extraction and processing (diamond seed and process gases), diamond growth (synthesis)[3], and cutting, polishing and finishing as well as transportation between these processing steps. It excludes downstream stages like distribution to warehouses or jewellery manufacturers, retail, customer use, and end-of-life. In practice, this means the study includes all activities up to the point where the polished and finished diamond is ready to leave the cutting and polishing facility.

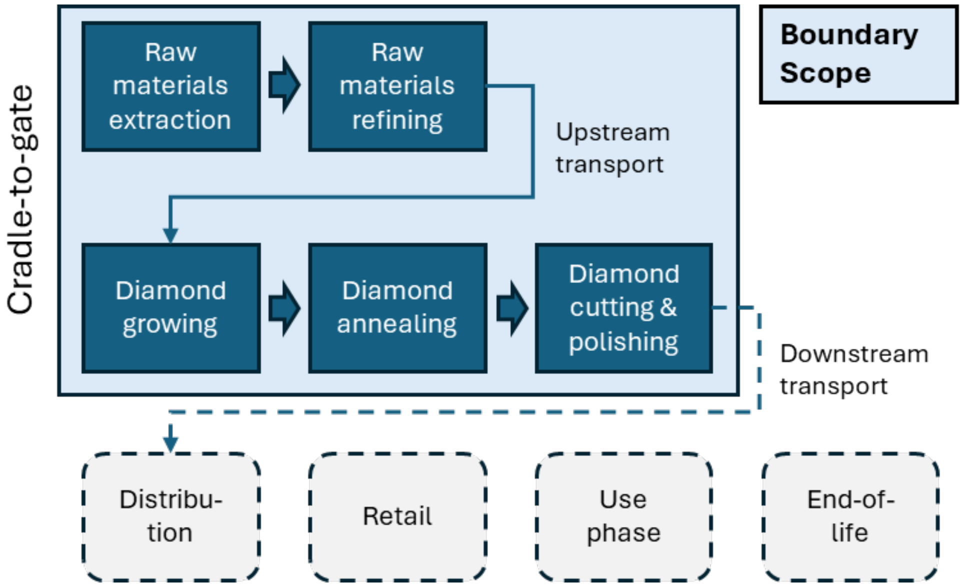

Figure 2. System boundary (cradle-to-gate). Raw material and process gas production, diamond growth (CVD), optional HPHT annealing, cutting & polishing, and internal transport between processing stages are included. Downstream distribution, retail, use, and end-of-life are excluded.

All underlying supplier product carbon footprint assessments apply the same cradle-to-gate boundary, ensuring methodological consistency across the consolidated dataset.

It is observed that small variances exist in suppliers' production set-up. Some suppliers may operate their own cutting and polishing facilities whereas others may not, and some suppliers may apply a High Pressure, High Temperature (HPHT) process step after the synthesis. Where such process variations occur, they are included in the supplier's footprint and have been incorporated into the consolidated study in a manner consistent with the applied system boundary. These differences do not affect the comparability of results across suppliers.

[3] Throughout this report, the terms "synthesis", "growing" and "production" are used interchangeably to refer to the life cycle stage of creating the lab-grown diamond rough.

1.3.1 Temporal, Geographical and Technological Representativeness

- **Temporal**: The study is based on data for lab-grown diamonds supplied to Pandora from 2022-2025[4]. This period reflects the data used in the underlying product carbon footprint studies, which were completed and/or updated during 2022–2024 and may include underlying operational reference years prior to 2023, depending on supplier and data availability. This forms the temporal basis for the consolidated footprint reported in this study.
- **Geographical**: The study is based on data from a global system of production and assembly in North America and South Asia. These regions correspond to the actual locations of the suppliers included in the consolidated dataset.
- **Technological**: The study is based on current diamond growing (CVD technology) and manufacturing conditions and practices, supplier energy configurations, and renewable electricity sourcing.

1.3.2 Allocation and Cut-off criteria

- **Allocation**: The study applies one polished carat as the functional unit, as one carat (0.2 grams) is the standard measure of a diamond. All suppliers' product carbon footprint (PCF) covers the cradle-to-gate footprint for one (1) carat of polished lab-grown diamond, averaging across all cuts (shape) and colours, clarity and carat (design). The consolidated study follows the same approach and does not model such variations explicitly, as the reported footprint reflects the highest supplier-average value per polished carat. No additional allocation procedures were required beyond normalisation to one polished carat.

- **Cut-off criteria - general**: In line with ISO 14044 and ISO 14067, insignificant contributions (by mass, energy, or expected impact) are omitted if data is lacking or the contribution judged negligible[5]. In general, items such as sandpaper, polishing cloths, and other small consumables, auxiliary materials such as coolants and minor chemicals as well as capital goods (equipment, buildings and other fixed assets) are excluded by all suppliers as their impact share allocated to one carat lab-grown diamond is judged to be minimal. When the study identified potentially material differences in suppliers' approach to the application of cut-off criteria, harmonisation adjustments were applied to ensure consistency

[4] The results are considered representative for Pandora lab-grown diamonds supplied after 2025, subject to material changes in supply chain conditions and applicable regulatory requirements. In line with good practice, Pandora aims to periodically reassess and, as necessary, update the product carbon footprint, typically every three years.

[5] Per ISO14044 §4.2.3.3 and ISO 14067 §6.4.3: All elementary flows expected to contribute ≥ 1 % individually or ≥ 5 % collectively to total mass, energy, or environmental significance must be included, unless justified otherwise.

across suppliers. Based on supplier documentation, public research, and expert judgment, the study did not identify evidence that suggests that such exclusions individually or collectively could equal or exceed 1% and 5% respectively.

- **Cut-off criteria – upstream emissions of renewable electricity generation**: Electricity consumption is the dominant contributor to lab-grown diamonds' carbon footprint. In line with ISO 14067:2018, the study has ensured that all data and results account for the full life cycle emissions of electricity generation, upstream fuel production, the generation itself, and any downstream waste handling. This means that '100% renewable electricity' is not treated as zero emissions in this study.

1.3.3 Impact Category and Reporting Metric

The study quantifies the carbon footprint of lab-grown diamonds using the climate change impact category (GWP100) defined in ISO 14067:2018. This category expresses the contribution of greenhouse gas emissions to climate change in terms of carbon dioxide equivalent (CO_2e). Greenhouse gases included in this indicator comprise CO_2, CH_4, N_2O and a broad range of fluorinated gases. It is the assessment that the significance of GHGs other than carbon dioxide is negligible and thus not reported separately.

Biogenic emissions are considered negligible and are not reported separately. Similarly, land use change emissions are considered negligible and are not reported separately.

In general, the study is based on the application of the 100-year Global Warming Potential (GWP) figures aligned with the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (IPCC, 2014) and include those required by the GHG Protocol Product Standard. However, supplier documentation shows that not all suppliers clearly disclose the source of GWP factors applied. While most suppliers use IPCC AR5, at least one supplier refers to IPCC AR4 (2007), and for others the GWP source is not explicitly stated.

The difference between AR4 and AR5 characterisation factors for the dominant greenhouse gases (CO_2, CH_4, N_2O) is modest (typically within ±10 %) and has limited influence on total results, as electricity consumption dominates the life cycle profile and because the study reports the highest supplier-average footprint as a conservative value.

To ensure consistency across suppliers, the consolidated results rely on AR5-based characterisation, consistent with ISO 14067:2018 and PAS 2050:2011. The small differences between suppliers' original GWP factors are therefore not considered material to the final reported footprint.

Other impact categories than climate change impacts are outside the scope of this study.

1.3.4 Interpretation

The findings of the inventory analysis and the impact assessment are assessed in relation to the defined goal and scope of the study to reach conclusions on the climate change impact of one carat polished lab-grown diamond. Comparative assertions are not part of this study.

Significant issues:

Electricity consumption in the diamond growth stage is the dominant contributor to the carbon footprint across all suppliers, accounting for more than 70% of total emissions. Electricity sourcing (market-based vs. location-based electricity) and electricity intensity per carat produced are therefore the key drivers of overall results.

Sensitivity and uncertainty:

In line with the goal and scope, sensitivity analysis focuses on the electricity mix used in diamond growth, and cutting and polishing. This includes evaluation of market-based versus location-based electricity and the upstream emissions of renewable electricity generation. Variations related to diamond size or cut are not modelled explicitly in the study; instead, these factors are internally averaged within suppliers' per-carat results and are addressed qualitatively in the limitations noted below.

Limitations:

The consolidated footprint is based on supplier-specific product carbon footprints with varying levels of detail. Harmonisation adjustments have been applied where necessary to ensure methodological consistency across suppliers. The study reports a conservative footprint based on the highest supplier-average result. Differences in cut, clarity, or carat size may influence individual stone footprints, but these are not modelled explicitly because the study aims to report a single representative value.

Conclusions:

Using the highest supplier-average result, the study concludes that the carbon footprint of one polished carat of lab-grown diamond used in the Pandora LGD Collections is 12.58 kg CO_2e/ct based on a cradle-to-gate system boundary and consistent application of ISO 14067:2018. The result is suitable for use as supporting technical documentation for Pandora's ISO 14026-aligned climate claims.

1.3.5 Data quality

The data quality is considered good for all suppliers. The study relies primarily on supplier-specific primary data from independent third-party verified product carbon footprint assessments of lab-grown diamonds supplied to Pandora.

All data related to electricity consumption is primary data including electricity readings or electricity invoices from the energy supplier.

Secondary data (e.g., raw materials, electricity generation, and transportation) are modelled using peer-reviewed background datasets from recognised LCA databases (such as Ecoinvent) and international reference sources including IEA and UK DEFRA, as referenced in the individual supplier PCF studies. Suppliers may use different background databases or versions, and some refer directly to DEFRA emission factors. Based on a review of these sources and the dominance of primary electricity data in the overall footprint, these differences are considered minor and not material to the consolidated result, and no re-modelling was carried out to align database versions. The data and results provided by suppliers have been verified by independent, third-party verifiers.

1.3.6 Data collection procedures

The study is attributional and focuses on quantifying the climate change impacts that can be attributed to a lab-grown diamond over its cradle-to-gate life cycle. It is based on historical, fact-based, measurable data, and it includes all processes identified to contribute to the production system of a polished lab-grown diamond within the stated boundaries.

The study is based on specific supplier data from suppliers of lab-grown diamonds to the Pandora LGD Collections, reflecting products supplied during from 2022 and onwards, with underlying supplier PCF studies and independent, third-party verification statements completed and/or updated during 2022–2024.

In Figure 3, a graphical illustration of the data collection and validation process is presented. It shows the steps taken to ensure that the underlying product carbon footprints of the individual suppliers can be assessed collectively for the purpose of presenting a consolidated result that is a relevant, complete, transparent, consistent and accurate representation of the suppliers' product carbon footprint.

To ensure consistent and comparable accounting of emissions associated with electricity use, the study applies upstream emissions to all electricity consumption, including renewable electricity, in line with ISO 14067:2018. Where supplier PCF studies did not include upstream emissions from renewable electricity generation, these were added using harmonised background emission factors.

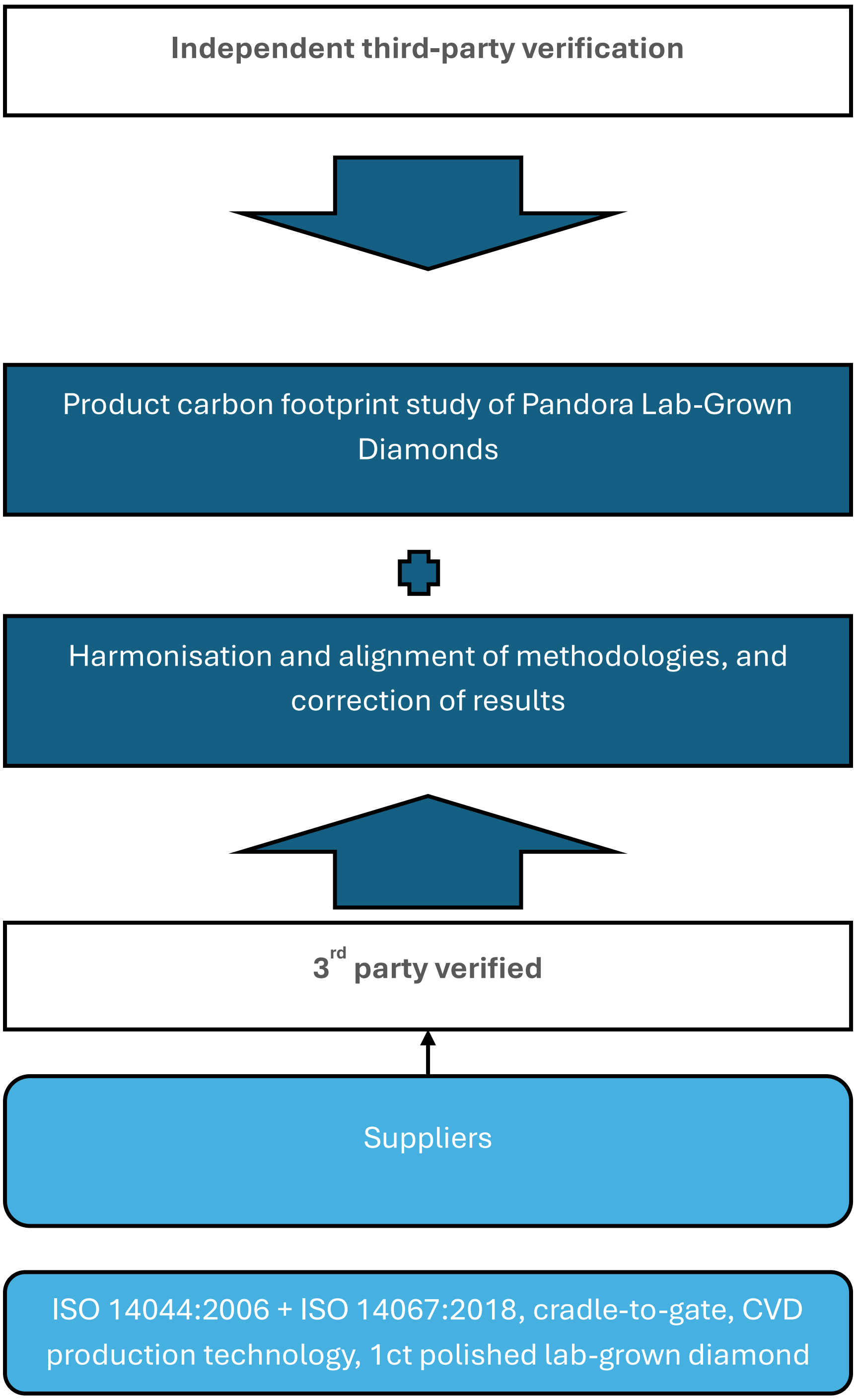

Figure 3. Overview of data collection and validation[6]

[6] Pls. refer to the assurance statement on p. iii.

2 Life cycle inventory

The cradle-to-gate life cycle of a lab-grown diamond is made up by three primary life cycle stages including acquisition and processing of the raw materials to be used in the production of the lab-grown diamond, production (growing) that results in a lab-grown diamond rough, and the life cycle stage of cutting and polishing that results in a polished, ready-to-use lab-grown diamond, see figure 2.

2.1 Acquisition and processing of raw materials

The production of lab-grown diamonds requires the use of small amounts of certain raw materials including Oxygen, Argon, Methane, Helium, Diesel, and other gasses. The study accounts for the climate change impacts of the extraction, refining and transportation of such gasses. These contributions are modelled using a combination of supplier information and secondary emission factors from authoritative databases and reference sources.

The raw materials acquisition including the lab-grown diamond seed, the process gases, and the transportation of such raw materials make up a fractional share of total carbon emissions in the lab-grown diamond growing phase.

2.2 Lab-grown diamond growing

The lab-grown diamonds are produced by suppliers. The growing takes place in North America and South Asia. The growing process results in a diamond rough.

All suppliers use the Chemical Vapour Deposition technology. The growing process (synthesis) begins by placing tiny seeds of high-quality lab-grown diamonds in a vacuum chamber with very high temperature. The chamber is filled with carbon-rich gas, typically a methane gas, that is heated to the point where the gas molecules break apart. The heating process is powered by microwave energy based on renewable electricity. Over time, typically for several weeks, the carbon atoms bond to the seeds and they grow one layer at a time. The result is a lab-grown diamond rough, see Figure 4.

In some supplier cases, the diamond rough may go through an additional process step called HPHT annealing (High Pressure, High Temperature annealing) whereby a batch of diamond rough are placed in a chamber briefly subjecting it to extreme pressure and heat. This process requires additional electricity; however, the electricity used for HPHT annealing represents a very small share of the total electricity used in the growing phase (well below 5%). When such a process step is undertaken, it is included in the relevant supplier’s product carbon footprint assessment.

Further, when creating coloured lab-grown diamonds, the diamond rough (also in batches) will go through one or more additional steps. These step(s) will vary depending on the desired colour and, like the HPHT process mentioned above, consumes electricity. This study covers only near-colourless (white) lab-grown diamonds.

The electricity used in the growing phase is the dominant source of carbon emissions.

This study relies on market-based electricity consumption data combined with emission factors from authoritative sources. All suppliers report using 100% renewable electricity for diamond growth and for cutting and polishing. This 100% renewable electricity claim is supported through the purchase of renewable energy certificates (RECs) or equivalent contractual instruments, in line with the market-based method of the GHG Protocol.

In accordance with ISO 14067:2018, this study accounts for the full life cycle emissions of electricity generation by applying emission factors that reflect the characteristics of the renewable electricity production systems. This ensures that renewable electricity is not treated as zero emissions, when supported by renewable energy certificates (RECs).

2.3 Lab-grown diamond cutting and polishing

The lab-grown diamond rough is transferred to suppliers' in-house or third-party cutting and polishing facilities based in South Asia. The cutting and polishing process turns the diamond rough into a polished diamond ready for shipping to e.g. a jewellery manufacturer.

In order to create, a one-carat polished lab-grown diamond, the cutting and polishing will require a rough larger than one carat. The difference between the diamond rough and the diamond polished carat is typically referred to as the yield factor. For instance, if it takes two carat diamond rough to produce one carat diamond polished, the yield factor is 50%.

Figure 4: Lab-grown diamond rough (upper row) and polished lab-grown diamond (lower row)

The yield factor varies from supplier to supplier reflecting production circumstances including production technology and operational efficiency. In addition, the yield factor is influenced by the carat size and cut of the polished diamond, e.g. the work processes for a ‘princess cut’ are not the same as for a ‘round brilliant cut’. In this study, such variations are internally reflected in each supplier’s per-carat product carbon footprint and are not modelled explicitly; they are discussed qualitatively in the study’s limitations.

The cutting and polishing phase covers several discrete steps including analysing the rough diamond to ensure the diamond is cut in a way that retains the most weight and maximizes the final yield. This is followed by marking, cleaving or sawing, bruting, blocking, brillianteering, and possible re-polishing, and then final grading.

The electricity used in the cutting and polishing phase is the dominant source of carbon emissions in this life cycle stage. The use of auxiliary materials like sandpaper, polishing cloths and other are judged to have negligible impact and have therefore been excluded. Variations in final cut and size are not expected to have a material effect on the carbon emissions per polished carat at this stage, as their influence is effectively embedded in the amount of rough required and reflected in the per-carat supplier-average results.

All suppliers likewise report the use of 100% renewable electricity through RECs for cutting and polishing, and the associated emissions are accounted for as in the growth stage.

3 Results

This section presents the carbon footprint for lab-grown diamonds used in the Pandora LGD Collections. The results are reported in kg CO_2-equivalent per functional unit (a one carat lab-grown diamond) using cradle-to-gate system boundaries.

This study presents the results based on the highest supplier-average footprint across Pandora's lab-grown diamond suppliers as averaged out across the supplier's supply of polished lab-grown diamonds to Pandora. Consequently, the reported result is a conservative representation of the climate change impact of lab-grown diamonds used in Pandora LGD Collections across suppliers. The study finds this to be an appropriately conservative approach.

The results are presented alongside sensitivity analyses for the electricity mix used in growing and cutting & polishing of lab-grown diamonds, and for the inclusion of downstream life-cycle stages.

3.1 The carbon footprint of one carat polished lab-grown diamond

Using the highest supplier-average result, the carbon footprint of one carat polished lab-grown diamond cradle-to-gate is calculated to be:

12.58 kg CO_2e/ct.

As depicted in Figure 5, the growing stage is the dominant contributor, accounting for approximately 85% of the total cradle-to-gate carbon footprint. Cutting and polishing contributes a significant but smaller share (~13%), while raw material extraction represents a minor contribution of around 2%. Emissions from HPHT annealing are negligible and do not materially affect the overall footprint.

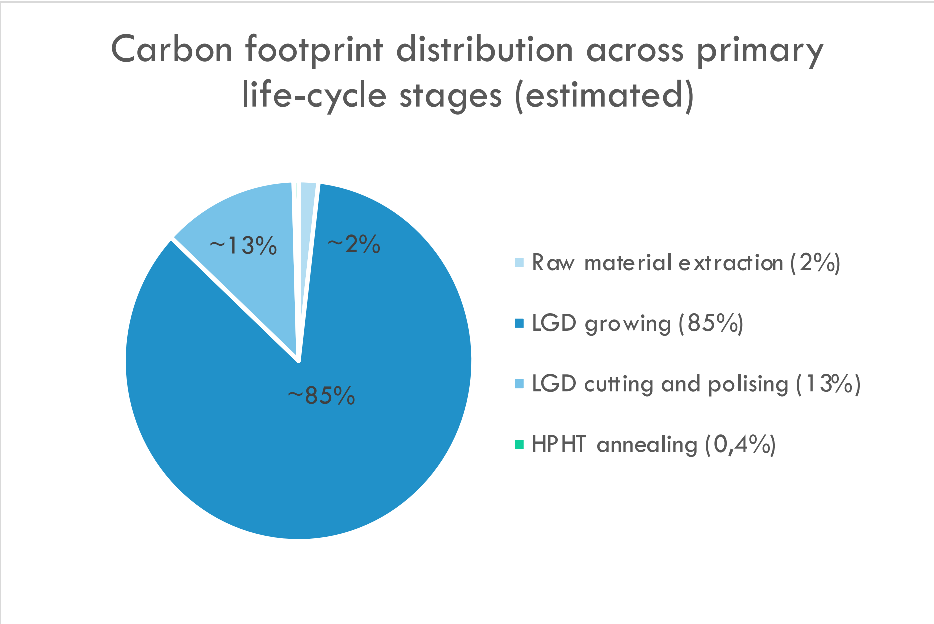

Figure 5: Estimated carbon footprint distribution across primary life-cycle stages of lab-grown diamonds. The LGD growing phase accounts for most emissions (~85%), followed by cutting and polishing (~13%) and raw material extraction (~2%). HPHT annealing contributes negligibly (~0,4%).

The exact distribution of carbon emissions across the primary life cycle stages varies to some extent for individual suppliers but not materially. The differences in individual suppliers' carbon footprint is generally a result of production efficiency (how much electricity is used to produce one carat, also referred to as 'yield') and the renewable electricity mix (solar, hydro, wind, other).

Key drivers of Carbon Footprint

The primary source of carbon emissions are the upstream emissions associated with the use of 100% renewable electricity in growing and in cutting & polishing of the lab-grown diamond, accounting for approximately 72% of all carbon emissions. Growing gem-quality diamonds in a lab (via Chemical Vapor Deposition) is an energy-intensive process that requires sustained high-power input. Similarly, the cutting and polishing of diamonds, while less energy-intensive than the growth phase, also relies on electricity.

While production processes are powered by 100% renewable electricity, emissions still occur from the life cycle of renewable electricity generation incl. upstream fuel production, the generation itself, and any downstream waste handling.

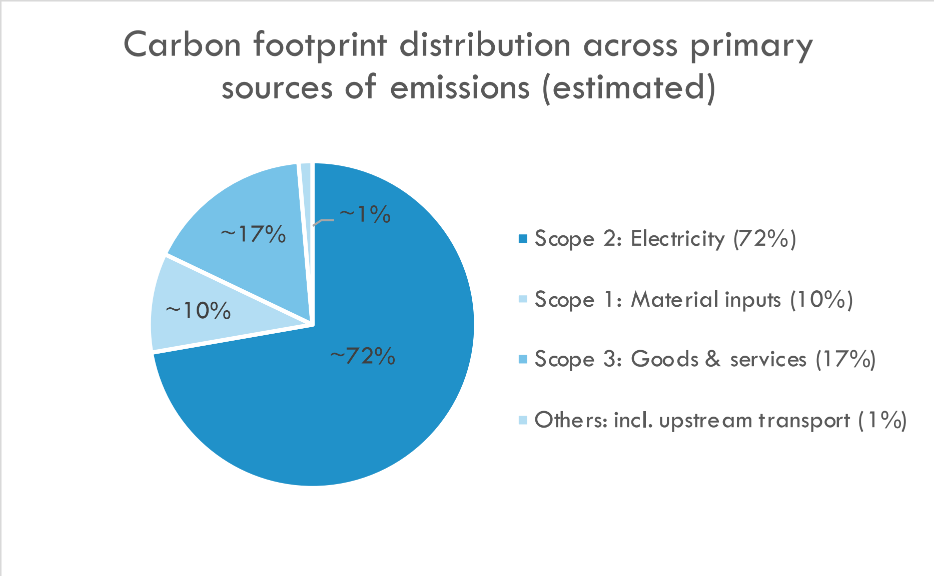

Figure 6. Estimated distribution of cradle-to-gate carbon footprint across primary sources of emissions. Electricity use (Scope 2) is the dominant source, accounting for approximately 72% of total emissions. This is followed by Scope 3 purchased goods and services (~17%), Scope 1 material inputs (~10%), and other sources including upstream transport (~1%).

The second largest contributor to the footprint is Scope 3 emissions related to the production process, accounting for 15-20%. Scope 3 contributions include indirect upstream emissions from purchased goods and services that support production. This encompasses the emissions from producing and transporting input materials (e.g. the refining and delivery of process gases like methane, hydrogen, argon, etc., as well as other consumables used in growing and finishing the diamonds).

The third largest contributor to the footprint is Scope 1 emissions, accounting for 5-10%. These cover direct emissions at the manufacturing facilities e.g. the use of fossil fuels in auxiliary activities or process gases. In Pandora's LGD supply chain, this includes fuels like diesel and gases such as methane (the carbon source for diamond synthesis) used on-site.

Together, the various Scope 1 and Scope 3 sources make up the remaining portion (25-30%) of the carbon footprint after accounting for electricity. They are secondary drivers in comparison to electricity use, but still important when considering the full cradle-to-gate impact (figure 6).

4 Sensitivity Analyses

To assess the robustness of the baseline result and identify the influence of key parameters, two sensitivity analyses were conducted addressing electricity sourcing and the inclusion of downstream life-cycle stages

4.1 Electricity Grid Mix vs. 100% Renewable Electricity

To understand the influence of electricity sourcing on the carbon footprint of lab-grown diamonds, a sensitivity analysis was conducted in which the market-based renewable electricity procurement was replaced with a location-based grid mix representative of South Asia (Figure 7).

A representative location-based grid mix factor (IEA, 2024) was applied to reflect the average electricity mix relevant to South Asian supplier locations. The location-based grid emission factor is derived from International Energy Agency (IEA) electricity mix data, widely used in professional LCA/PCF practice and consistent with ISO 14067 requirements for modelling physical grid emissions, with values comparable to those applied in open-source LCA databases such as IDEMAT[7].

When applying the emission factor reflecting the local grid, the cradle-to-gate carbon footprint increases from 12.58 kg CO_2e/ct to approximately 180 kg CO_2e/ct.

The sensitivity analysis shows that relying on the local grid electricity mix results in a substantial increase in the carbon footprint compared to market-based renewable electricity sourcing.

The result demonstrates that the choice of electricity sourcing has a very significant effect on the overall carbon footprint of lab-grown diamonds.

The magnitude of this effect varies depending on operational conditions, including local energy mix characteristics and potential use of onsite renewable electricity generation. However, across all suppliers:

- electricity use is the dominant driver of climate impact, and
- maintaining high-quality renewable procurement is critical to achieving low emissions.

[7] International Energy Agency (IEA), Emissions Factors 2024 – Database Documentation, IEA, Paris, 2024

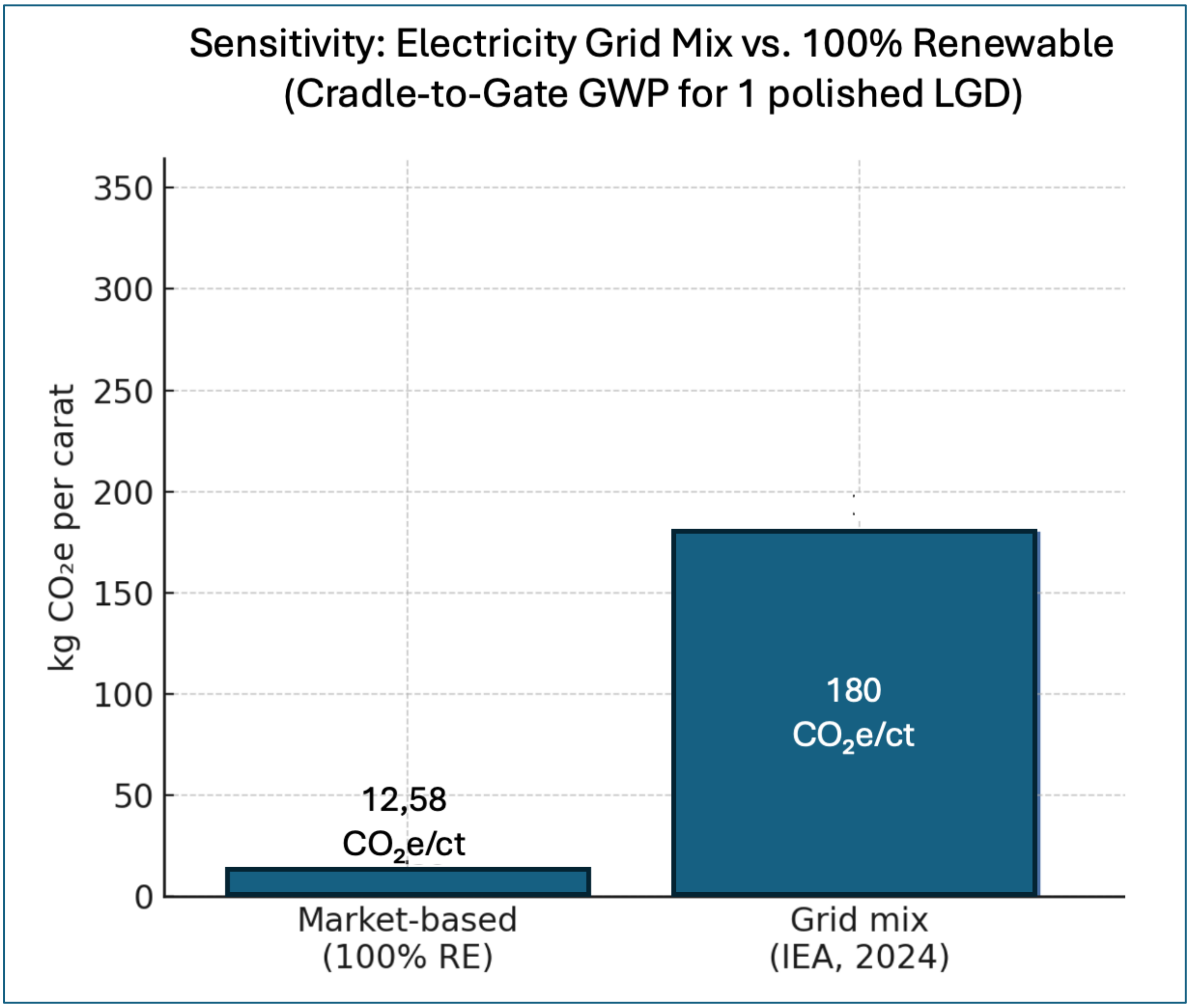

Figure 7. Sensitivity analysis of electricity sourcing. Substituting 100% renewable electricity with location-based grid mix results in a significant increase in the cradle-to-gate carbon footprint per carat of polished lab-grown diamond.

4.2 Inclusion of downstream activities in the system boundary

This sensitivity analysis focuses on determining the effect of including downstream activities such as transport to store, retail stores, use phase and end-of-life in the system boundary thus extending the boundary from cradle-to-gate to cradle-to-grave.

The results show that the inclusion of downstream life-cycle stages has a negligible impact on the carbon footprint.

In the **transport to store phase**, the sensitivity analysis uses data from a third-party carbon footprint study of the carbon footprint of the Pandora Infinite and Era collections, both of which feature lab-grown diamonds. The study estimates the carbon footprint of several 1ct lab-grown diamond bearing rings' (and their boxes) transport from South-East Asia to North America from 0.378 to 0.403 kg CO_2e/ring; however, the weight of the lab-grown diamond is likely to be less than a tenth of the total weight of the ring excl. the box.

In the **retail store phase**, the sensitivity analysis sets carbon emissions to zero as the allocation of retail store carbon emissions to individual pieces of jewellery – or components thereof – are assumed to be negligible.

In the **use phase**, the sensitivity analysis sets carbon emissions to zero as any emissions associated with the use of a piece of jewellery such as polishing are tied to the diamond bearing structure, e.g. the gold ring, the silver earring, etc.

In the **end-of-life phase**, the sensitivity analysis sets carbon emissions – conservatively – to zero as the reuse rate of the lab-grown diamond is assumed to be 0%. While there is evidence of reuse of lab-grown diamonds, there is limited large-scale data on reuse rates for lab-grown diamonds; hence to avoid overestimating the benefits of reuse in the end-of-life phase, the effect is assumed negligible.

5 Interpretation and alignment with study goals

The primary goal of this study is to quantify the cradle-to-gate carbon footprint of lab-grown diamonds (LGDs) used in Pandora's jewellery, to support product-level climate claims. In line with this goal, using the highest supplier-average result, the study determines that one polished carat of a Pandora lab-grown diamond carries a carbon footprint of 12.58 kg CO_2e per carat. By using the upper-end value, the study ensures that the reported footprint is a robust, conservative representation of the carbon footprint of the diamonds used in the Pandora Lab-Grown Diamonds Collections. The result is thereby well-aligned with the study's objective of providing a single, representative carbon footprint figure for all Pandora LGDs.

Importantly, the methodology and findings conform to ISO 14067:2018 requirements for product carbon footprint studies, as well as the broader ISO 14044:2006 LCA standards. The analysis has been subject to third-party verification through limited assurance conducted by EY, refer to p. iii. This alignment means the study's approach to data collection, emissions accounting, and interpretation meets international best practices for representativeness, completeness, and conservative assumptions. In practice, this means using primary data from Pandora's LGD suppliers, accounting for all significant cradle-to-gate emissions and adopting conservative choices (such as including upstream emissions from renewable electricity and selecting most conservative supplier values) to ensure the footprint is not understated. There are no comparative assertions made, which keeps the focus on absolute impacts in accordance with ISO guidelines.

6 Limitations

It is important to note the limitations and qualifications of this study, in line with ISO 14067/14044 requirements for interpretation:

- **Temporal Representativeness:** The results reflect Pandora's lab-grown diamond supply chain for products supplied during 2022–2025. This provides a current and robust picture of the carbon footprint. The underlying supplier PCF studies and independent, third-party verification statements were completed and/or updated during 2022–2024; underlying operational reference years may therefore differ between suppliers, depending on supplier and data availability. The reported result of 12.58 kg CO_2e/ct represents the highest average footprint among all suppliers of Pandora lab-grown diamonds and thus serves as a conservative estimate. However, as technologies and supplier processes improve, the footprint per carat could change. Future changes in production efficiency or energy sourcing may affect the validity of this value and would warrant an updated assessment to maintain accuracy.
- **Variability:** Individual LGD footprints can vary by diamond size, cut, and other characteristics. For instance, producing a larger carat stone or a particular cut might require different amounts of energy or have a different yield. Rather than reporting a range of values, this study reports a single conservative average that is meant to encompass the full range of Pandora's lab-grown diamonds. The chosen value (12.58 kg CO_2e per carat) corresponds to the highest supplier-average footprint observed.
- **Excluded Processes and Cut-offs:** Consistent with ISO cut-off criteria, the study excludes certain inputs and life cycle stages that were judged to have negligible impact on the overall results. These exclusions include capital goods (e.g. production equipment and facility infrastructure) and minor consumables such as small quantities of coolants, abrasives, or packaging materials used during manufacturing. In addition, all downstream stages beyond the "gate" of diamond production are outside the scope of this cradle-to-gate assessment. This means that impacts from Pandora's distribution, retail operations, customer use of the jewellery, and end-of-life handling are not included in the 12.58 kg CO_2e/ct figure. These downstream contributions are expected to be minimal compared to the production phase as for example, a diamond itself does not consume energy or emit greenhouse gases during use. A sensitivity check confirms that including reasonable estimates of downstream emissions would not significantly change the overall footprint result. By excluding de minimis inputs and post-manufacturing stages, the study stays focused on the core production impacts,

consistent with the study goal and scope, and avoids diverting attention to processes that have insignificant influence on the total carbon footprint.

- **Data Uncertainty and Quality:** As with any carbon footprint study, there is some uncertainty in the data and emission factors used. Variations in how different suppliers measured and reported certain data and the inherent uncertainties in emission factors can influence the results. The study manages these uncertainties through a data harmonization process and conservative assumptions. All supplier data were cross-checked and adjusted to ensure methodological consistency e.g. a uniform approach was applied to account for electricity emissions across suppliers, including upstream generation impacts. In cases where there were choices of emission factors or methodologies, the option yielding a higher carbon estimate was chosen to maintain a safety margin. Remaining data uncertainties are acknowledged, but they are not expected to alter the overall conclusions or the materiality of the result.

Overall, these limitations do not undermine the utility of the study's findings; rather, they frame the context in which the results should be understood. The footprint of 12.58 kg CO_2e/ct is a conservative, representative estimate for Pandora's lab-grown diamonds under current conditions, aligned with the defined goal and scope including aligned with ISO 14067 and ISO 14040/44. It provides Pandora and its stakeholders with a solid basis for climate-related communication and decision-making, while also indicating where future improvements or data updates could further refine the understanding of the product's carbon footprint.

END