

Ernst & Young Ltd Avenue de Malley 10 P.O. Box 611 CH-1001 Lausanne Phone: +41 58 286 51 11 www.ey.com/en\_ch

To the Board of Directors of Tetra Pak International SA, Switzerland

Lausanne, 14 April 2025

# Independent Assurance Report on selected Indicators in the greenhouse gas emissions inventory and methodology report for 2024

We have been engaged to perform assurance procedures to provide limited assurance on selected indicators (including GHG emissions) in Tetra Pak International SA's (the Company's) greenhouse gas emissions inventory and methodology report for the year ended 31 December 2024 (the Report).

Our limited assurance engagement focused on selected indicators (including GHG emissions) as presented on pages 1 and 2 in Tetra Pak's greenhouse gas emissions inventory and methodology report for the reporting years 2019 and 2024.

We did not perform assurance procedures on other information included in the Report, other than as described in the preceding paragraph, and accordingly, we do not express a conclusion on that information.

#### Applicable criteria

The Company defined as applicable criteria (the Applicable Criteria):

> Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard

The GHG Protocol standard is available on the respective homepage.

#### **Inherent limitations**

The accuracy and completeness of selected indicators (including GHG emissions) are subject to inherent limitations given their nature and methods for determining, calculating and estimating such data. In addition, the quantification of the indicators is subject to inherent uncertainty because of incomplete scientific knowledge used to determine factors related to the emissions factors and the values needed to combine, e.g. emissions of different gases. Additionally, GHG procedures are subject to estimation (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge. Our assurance report should therefore be read in connection with the methodology section of the Report, its definitions and procedures on non-financial matters reporting therein.

#### **Responsibility of the Board of Directors**

The Board of Directors is responsible for the selection of the Applicable Criteria and for the preparation and presentation, in all material respects, of the selected indicators (including GHG emissions) in accordance with the Applicable Criteria. This responsibility includes the design, implementation, and maintenance of internal control relevant to the preparation of the selected indicators that are free from material misstatement, whether due to fraud or error.



#### Independence and quality control

We have complied with the independence and other ethical requirements of the *International Code* of *Ethics for Professional Accountants (including International Independence Standards)* of the International Ethics Standards Board for Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm 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.

#### **Our responsibility**

Our responsibility is to express a conclusion on the selected indicators (including GHG emissions) based on the evidence we have obtained.

We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3410 Assurance Engagements on Greenhouse Gas Statements. This standard requires that we plan and perform this engagement to obtain limited assurance about whether the selected indicators are free from material misstatement, whether due to fraud or error.

#### Summary of work performed

Procedures performed 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. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

Our limited assurance procedures included, amongst others, the following work:

- Assessment of the suitability of the Applicable Criteria and their consistent application
- Interviews with relevant personnel to understand the business and reporting process, including the sustainability strategy, principles and management
- Interviews with the Company's key personnel to understand the sustainability reporting system during the reporting period, including the process for collecting, collating and reporting of the selected indicators
- Checking that the calculation criteria have been correctly applied in accordance with the methodologies outlined in the Applicable Criteria
- Analytical review procedures to support the reasonableness of the data
- Identifying and testing assumptions supporting calculations
- Testing, on a sample basis, underlying source information to check the accuracy of the data
- Recalculations, on a sample basis, of selected indicators underlying calculation documents



We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusion.

#### Conclusion

Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the selected indicators (including GHG emissions) in the Report of Tetra Pak have not been prepared, in all material respects, in accordance with the Applicable Criteria.

Ernst & Young Ltd

Executive in charge

Manager



# **Tetra Pak Greenhouse Gas Emissions Inventory &** Methodology Report, January 1<sup>st</sup> to December 31<sup>st</sup>, 2024

# Inventory

|  | 2019 base<br>year <sup>1</sup>     | 2022 reference<br>year | 2023 reference<br>year | 2024 inventory<br>year <sup>1</sup> |
|--|------------------------------------|------------------------|------------------------|-------------------------------------|
| Scope 1 GHG emissions  |                                    |                        |                        |                                     |
| Gross Scope 1 GHG emissions<br>(ktCO2eq)                               | 64                                 | 59                     | 48                     | 42                                  |
| Scope 2 GHG emissions  |                                    |                        |                        |                                     |
| Gross location-based Scope 2 GHG<br>emissions (ktCO2eq)                | 347                                | 361                    | 353                    | 357                                 |
| Gross market-based Scope 2 GHG<br>emissions (ktCO2eq)                  | 113                                | 58                     | 43                     | 28                                  |
| Scope 3 emissions  |                                    |                        |                        |                                     |
| Total Gross indirect (Scope 3) GHG<br>emissions market-based (ktCO2eq) | 12844                              | 12275                  | 10437                  | 9738                                |
| 1 Purchased goods & services <sup>2</sup>                              | 4331                               | 3892                   | 3362                   | 3683                                |
| 2 Capital goods  | Excluded                           |                        |                        |                                     |
| 3 Fuel and energy-related activities (location-based, LB)              | 99                                 | 106                    | 97                     | 100                                 |
| 3 Fuel and energy-related activities<br>(market-based, MB)             | 54                                 | 37                     | 29                     | 26                                  |
| 4 Upstream transportation & distribution                               | 549                                | 649                    | 531                    | 643                                 |
| 5 Waste generated in operations  | 3                                  | 2                      | 2                      | 2                                   |
| 6 Business travelling  | 43                                 | 15                     | 22                     | 31                                  |
| 7 Employee commuting   | Excluded                           |                        |                        |                                     |
| 8 Upstream leased assets   | Reported under scope 1 and scope 2 |                        |                        |                                     |
| 9 Downstream transportation  | 36                                 | 41                     | 37                     | 47                                  |
| 10 Processing of sold equipment  | Reported under category 11         |                        |                        |                                     |
| 11 Use of sold equipment   | 6986                               | 6824                   | 5655                   | 4582                                |
| 12 End-of-life treatment of sold products                              | 842                                | 815                    | 799                    | 726                                 |
| 13 Downstream leased assets  | Reported under category 11         |                        |                        |                                     |
| 14 Franchises  | Not applicable                     |                        |                        |                                     |
| 15 Investments   | Not applicable                     |                        |                        |                                     |
| Total GHG emissions <sup>3</sup>                                       |                                    | L.                     | Γ                      | L.                                  |
| Total GHG emissions (LB) (ktCO2eq)                                     | 13 301                             | 12764                  | 10906                  | 10213                               |
| Total GHG emissions (MB) (ktCO2eq)*                                    | 13 021                             | 12393                  | 10528                  | 9809                                |

<sup>1</sup> Assured by EY to the level of limited assurance in 2025.
<sup>2</sup> From 2022 paperboard and aluminium foil GHG emissions are based on supplier provided emission factors from the previous year and purchased volumes from the inventory year. This change was necessary due to a shift in reporting cycles.
<sup>3</sup> Due to rounding, numbers presented in the table may not add up precisely to the totals provided

|  | 2024 inventory year<br>(kt CO2) |
|--|---------------------------------|
| Direct biogenic CO2 emissions from combustion of bio-based fuels <sup>1</sup>                        | 2                               |
| Indirect biogenic CO2 emissions from landfills and incineration without energy recovery <sup>1</sup> | 135                             |
| Indirect biogenic CO2 removals referring to the biogenic content of the raw materials purchased      | 2840                            |
| <sup>1</sup> Assured by EY to the level of limited assurance in 2025.                                |                                 |

|                                    | 2024 inventory year<br>(%) |
|------------------------------------|----------------------------|
| Renewable electricity <sup>1</sup> | 94                         |

<sup>1</sup> Assured by EY to the level of limited assurance in 2025.

#### Methodology

Tetra Pak's value chain greenhouse gas (GHG) emissions, scope 1, scope 2 and scope 3, are calculated in accordance with the World Resource Institute (WRI) and World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (2004) and Corporate Value Chain (Scope 3), Accounting and Reporting Standard (2011), and its guidance documents.

We apply the operational control approach when defining our organizational boundary. A total of 164 production and non-production sites, including converting factories, additional material factories, equipment production facilities, sales offices and support centers are in scope.

We apply three selection criteria when setting the operational boundary. Firstly, significance. The Life Cycle Assessments commissioned by Tetra Pak over the past decades are used as a knowledge base, providing a deep understanding of the climate impact of the value chain of our packaging solutions. Secondly, activities over which we have large influence. Thirdly, the activity's business and customer value.

We use, due to the varying characteristics of the activities in our value chain, a range of calculation methods and supplier-specific product level GHG data in our accounting. Both published general emission factors and/or supplier specific emission factors calculated based on primary data are used for the emissions calculations. We, acknowledge that there is a wide range of emission factors from different sources that could be applied and that these could be updated at various points in time. To maintain consistency in our GHG accounting and reporting and to facilitate management of GHG reduction initiatives, historical emission factors are not updated unless there are updates in calculation methodologies or improvement in data accuracy. We apply a significance threshold of 5% but also recalculate emissions if the relevance of the comparison between reporting year and base year is affected.

We consider the greenhouse gases covered by the UNFCCC/Kyoto protocol (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>) and use the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) Global Warming Potential (GWP) values on a 100-year period (GWP100).

We have chosen 2019 as base year since the performance is considered representative of Tetra Pak operations and the value chain. A base year emissions recalculation is triggered by the cases defined in the GHG Protocol standards such as structural (acquisition, divestments, merges) or methodology changes (error correction or calculation adjustments). We apply a significance threshold of 5% but also recalculate base year emissions if the relevance of the comparison between reporting year and the base year is affected. A base year emissions recalculation is not triggered by an update of historical emission factors or GWP.

We use an environmental data management system to periodically collect activity data from our production and non-production sites and from a selection of suppliers. The system is also used to calculate GHG emissions, and to consolidate our value chain GHG emissions inventory. Emissions are reported in carbon dioxide equivalents (ktCO2e) which is the common unit of measurement to indicate global warming potential of greenhouse gases.

Our GHG inventory is assured annually by an external third party to the level of limited assurance. The assurance is in accordance with the International Standards on Assurance Engagements ISAE 3000.

### **Data and Methodology Adjustments**

In a few cases, errors in reported data (current and historic) have been identified and corrected, for both reporting year and the historic years. This improves data quality and allows for more meaningful comparisons between years. There have also been methodology changes when new data or emission factors of higher quality have become available. Consequently, data presented in previous reports may differ slightly. The impact of the error correction on the combined Scope 1, 2 and 3 emissions of the base year 2019 is below 0,1%. The impact of the method changes is less than 0,5%.

#### Scope 1

For Tetra Pak, Scope 1 includes emissions from combustion of fuels, unintentional releases of e.g. hydrofluorocarbon from refrigeration and air conditioning equipment, and incineration of Volatile Organic Compounds (VOCs).

Direct fuel combustion emissions are calculated using fuel consumption data and emission factors from the GHG Protocol calculation tool Stationary combustion v4.1. The impact of fugitive emissions of refrigerants are calculated based on the mass of refrigerant refills due to unintentional releases. The composition of refrigerant blend is retrieved from United States Environmental Protection Agency, EPA, and GWP from IPCC AR6. Emissions from the incineration of VOCs are calculated based on mass of incinerated VOCs and the carbon content of the organic solvent.

Scope 1 emissions resulting from use of fleet vehicles are currently not included in the reporting. Work is underway to calculate these emissions.

# Scope 2

For Tetra Pak, Scope 2 includes emissions from the generation of electricity and district heating purchased by Tetra Pak. We report both location-based and market-based scope 2 emissions. The market-based scope 2 emissions are used to report our aggregated scope 1, scope 2 and scope 3 GHG emissions.

In the scope 2 location-based accounting country-specific emission factors are used for production and non-production sites. One exception is the production sites in United States for which regional factors are used. The factors are primarily obtained from Sphera LCA Managed Content and secondarily from the International Energy Agency (IEA).

The scope 2 market-based accounting reflects the use of renewable electricity in Tetra Pak operations. For our own operations, the purchased renewable electricity must meet the Climate Group's RE100 initiative's criteria to be included in the accounting. These criteria are more restrictive than the Scope 2 Quality Criteria specified in the GHG Protocol Scope 2 Guidance. In the absence of available contractual instrument or where available information does not meet the RE100 criteria, a residual mix emission factors used, and if not available a country average emission factor is used.

Alongside Scope 2 emissions resulting from electricity use, Tetra Pak also utilises a smaller amount of district heating. Supplier-specific emission factors are used where available, otherwise it is assumed that natural gas is combusted with 90% efficiency.

If an office doesn't report its electricity consumption the GHG emissions calculation is based on the median of other offices' reported electricity consumption. Scope 2 emissions resulting from use of fleet vehicles are currently not included in the reporting. Work is underway to calculate these emissions.

# Scope 3

# Category 1: Purchased goods and services

This category includes upstream emissions from the production of liquid packaging board, aluminium foil, polymer granulates and films, and inks used in Tetra Pak's production of packaging material and additional material. Only materials that are physically segregated are included in the GHG reporting, since there is currently no explicit support in the GHG Protocol standards to include the climate impact of material produced using a mass balance model or a book and claim model.

For category 1 the percentage of emissions calculated using primary activity data or product level GHG data calculated by suppliers is around 65%. The emissions calculation is, unless otherwise stated in below descriptions, based on invoiced volume of material.

As per our operational boundary selection criteria, emissions associated with purchase of goods for production of processing and filling line solutions are excluded from reporting. Work is

underway to investigate data collection and emission calculation approaches for goods considered to be of business or customer value.

#### Aluminum foil

The minimum scope of the aluminium foil emissions calculation includes bauxite mining, alumina production, anode production, primary smelting, casting, hot rolling, foil stock production and foil rolling. Other activities may be included by the supplier in their product level GHG data.

Suppliers are requested to annually report either product level GHG data or activity data such as quantity of electricity and natural gas consumed. If data isn't reported, secondary data is used to close gaps and obtain complete cradle-to-gate data. Secondary data for bauxite mining, alumina production, anode production, smelting and casting are sourced from the latest LCI report by the International Aluminium Institute (IAI) and if data is available based on geography.

Primarily country or region-specific life cycle electricity emission factors obtained from Sphera Managed LCA Content are used. In case the supplier provides reliable emissions data including underlying documentation from their electricity supplier, this data may be used. Any claim of purchased renewable electricity must be supported by documentation such as GoO (Guarantees of Origin), RECs (renewable electricity certificates), International RECs, contracts or similar.

#### Liquid packaging board and paper

The minimum scope of the liquid packaging board and paper production includes forestry operation, transport of wood, chemical pre-chains and mill operations, and if relevant purchase and transport of external pulp. Other activities may be included by the supplier in their product level GHG data.

Suppliers are requested to annually report either product level GHG data or activity data such as quantity of purchased electricity, fossil fuels, chemicals and pulp. If data isn't reported, secondary data is used to close gaps and obtain complete cradle-to-gate data. Secondary data for forest operation, transport of wood, production of chemicals is obtained from Ecoinvent.

Primarily country or region-specific life cycle electricity emission factors obtained from the Sphera Managed LCA Content are used. In case the supplier provides reliable emissions data including underlying documentation from their electricity supplier, this data may be used. Any claim of purchased renewable electricity must be supported by documentation such as GoO (Guarantees of Origin), RECs (renewable electricity certificates), International RECs, contracts or similar.

#### Polymer granules, adhesives and masterbatches

The minimum scope of the polymer granules and adhesives emissions calculation includes raw material extraction, refinery, cracker, and polymerization. The minimum scope of the masterbatch emissions calculation includes polymer granulate production, titanium dioxide production and masterbatch production. Other activities may be included by the supplier in their product level GHG data.

The emissions are calculated using product level GHG data provided by the supplier or public LCA data. Polymer specific LCA data is obtained from Plastics Europe, adhesive specific LCA data from Sphera Managed LCA Content and LCA data for titanium dioxide from Ecoinvent.

#### Polymer films

The minimum scope of the polymer films emissions calculation includes polymer granulate production and film production. The emissions are calculated using LCA data for polypropylene, polyethylene and PET granulates from Plastics Europe and film production data from a Tetra Pak owned film production site in combination with global electricity emission factor obtained from Sphera Managed LCA Content.

#### Inks

Product level cradle-to-gate GHG data, including at least the emissions from production of raw materials, grinding and mixing of ingredients and product packaging, is obtained from ink suppliers. If the data is incomplete LCA data for a generic ink product from the European Printing Ink Association (EuPIA) is used.

# **Category 2: Capital goods**

As per our operational boundary selection criteria, emissions associated with capital goods purchased by Tetra Pak are excluded from reporting.

# Category 3: Fuel and energy activities not included in Scope 1 or Scope 2

This category includes emissions related to production of fuels, district heating and electricity purchased by Tetra Pak production and non-production sites and not included in scope 1 and scope 2. We report two set of category 3 emissions, one based on scope 2 location-based accounting, and one based on scope 2 market-based accounting. The category 3 emissions based on market-based accounting is used to report our aggregated scope1, scope 2 and scope 3 GHG emissions.

The GHG emissions are calculated using primary activity data reported by the sites under scope 1 and scope 2 in combination with emission factors obtained from Sphera Managed LCA Content representing indirect emissions.

# Category 4: Upstream transportation and distribution

This category includes emissions from inbound and outbound transports (air, rail, road and sea) contracted by Tetra Pak. Inbound transports include inbound transports of raw materials, spare parts, and air freights of all supply chains. Outbound transports include outbound transports of packaging material, additional material, processing and filling line solutions and spare parts.

The distance-based methodology is applied to calculate emissions associated with inbound (rail, road and sea) transport of raw materials and outbound (rail, road and sea) transport of packaging material and additional material. For transport of raw materials, the calculation is based on the distance between the supplier and the production site and includes pre-carriage,

main carriage, and on-carriage and the weight of invoiced volumes. For transport of packaging material and additional material, the calculation is based on the distance between the production site and the customer and weight of sold or produced volume of material. Distance data is mainly obtained from online distance measuring apps. The emissions are calculated using emission factors from The Network for Transport and Environment (NTM). Emissions generated by air transport of base materials and packaging and additional materials is retrieved from logistics providers.

As per our operational boundary selection criteria, emissions associated with inbound transport of parts and modules for processing and filling line solutions are excluded from reporting. Emissions data for outbound (air, rail, road and sea) transports of processing and filling line solutions is obtained from logistics providers.

# Category 5: Waste generated in operations

This category includes emissions from treatment of solid waste generated at Tetra Pak production sites. Waste volumes and waste disposal routes (recycling, incineration with and without energy recovery and landfill) are reported by Tetra Pak sites.

Nearly all factory waste is recycled. In line with the recommendation in the GHG Protocol Scope 3 Calculation Guidance the recycled content method is applied and emissions from recycling of factory waste are not included in category 5. For calculating the emissions associated with incineration without energy recovery and landfill of waste from offices, canteens, construction work etc. emission factors representing 'municipal solid waste in the EU' is used. The factors are obtained from Sphera Managed LCA Content and Ecoinvent.

# Category 6: Business travel

This category includes emissions from air travel and car rentals. Air travel emissions data is primarily obtained from Tetra Pak's credit card service provider. The emissions are calculated according to the CO<sub>2</sub> Calculation for Business Travel VDR Standard, and includes factors such as distance and route, flight profile and flight altitude, detours and airplane type. Car rental emissions data is primarily obtained from our global mobility service providers and calculated according to fuel-based or distance-based method. The third parties' emission data do not fully represent the business travel of Tetra Pak employees. Therefore, expenditure-based proportional factors are used to scale the third parties' emission data to represent all business travels. The factor applied for air travel is 71% and the factor for car rentals is 81%. Emissions from train travels are excluded due to limited impact and data availability.

# Category 7: Employee commuting

As per our operational boundary selection criteria, emissions associated with employee commuting are excluded from reporting.

# Category 8: Upstream leased assets

Emissions from upstream leased assets are reported in scope 1 and scope 2, as the operational control approach is applied.

# Category 9: Downstream transportation and distribution

This category includes emissions from transports of packaging material to customers, not contracted by Tetra Pak. These transports are assumed to have a similar emissions profile as outbound transports contracted by Tetra Pak. The emissions are estimated based on emissions from contracted transports (as reported in category 4) and the share of contracted and non-contracted transports.

# **Category 10: Processing of sold products**

For Tetra Pak the 'Processing of sold products' would include the forming and filling of the package, at the customers' sites. In order not to double count between category 10 and category 11, the forming and filling of the package is included in category 11, where the impact of the sold filling machines is captured.

# Category 11: Use of sold products

This category includes the emissions associated with the use of processing and filling line solutions sold or leased to customers by Tetra Pak in the reporting year.

Tetra Pak processing portfolio includes a large variety of equipment such as direct UHT units, indirect UHT units, pasteurizer, homogenizers, and aseptic tanks. The performance of these units is affected by the production line set-up. Hence, a 'line perspective' is used to model the lifetime emissions associated with the use of processing solutions. There are two main reasons for using a line perspective instead of modelling the GHG impact of the processing solutions unit by unit:

• The units work in a line, and the performance of the units are affected by the line set-up. A line perspective captures both the performance of the units in an actual production scenario, and it captures the synergies between the units in a line (such as heat recovery). Also, the indirect usage of energy is captured.

• A line perspective is likely to generate a higher absolute GHG impact than if the processing equipment was modelled unit by unit. However, a key focus when developing and selling processing solutions is to reduce the operational cost of the customer, which includes energy savings and minimized waste for the line. By using a line perspective in the modelling, the improvements relating to line performance will be included.

The GHG calculation considers electricity and heat consumption, number of lines dispatched in the reporting year, and lifetime production volume. A line's electricity and heat consumption are modelled for pre-defined production scenario in e.g. Tetra Pak Global TCO tool.

For each line, a unit of equipment has been selected as key energy intensive unit. At the moment that unit is dispatched to the customer, it is assumed that the full line is dispatched, meaning that the full line is included in the GHG inventory of the reporting year. This means that the number of non-key energy intensive units included in the GHG inventory in some cases may be overrepresented and in other cases underrepresented compared to the number of dispatched units.

This approach gives an estimation based on available data. It has the advantages listed but also inherent limitations. We acknowledge that this approach brings a level of uncertainty regarding completeness and accuracy. However, it provides the possibility to measure the progress of climate impact on a line level giving a more representative estimate than a unit approach.

The filling line solutions lifetime emissions are calculated based on number of new and refurbished units dispatched in the reporting year, technical data i.e., electricity, steam, compressed air and hydrogen peroxide consumption per unit and the expected lifetime.

A global electricity factor is used in all calculations to enable meaningful comparisons of GHG emissions over time, and to serve internal decision-making needs. This factor is obtained from the International Energy Agency. The factor for heat and steam is obtained from the Sphera Managed LCA Content and the hydrogen peroxide factor from Ecoinvent. The expected lifetime is assumed to be 30000h for all units in processing and filling line solutions.

# Category 12: End of life treatment of sold products

This category includes emissions associated with the treatment of Tetra Pak carton packages at the end-of-life. The emissions are calculated based on volume used beverage cartons (UBC) per market and per disposal route (recycling, incineration with and without energy recovery and landfill) in combination with Tetra Pak market share (as volume data represents UBC from both Tetra Pak and other companies). Any volume of UBC not allocated to a disposal route is assumed to be sent to landfill. Data is reported by Tetra Pak market companies following an Internal Carton Recycling Reporting Guideline.

In line with the recommendation in the GHG Protocol Scope 3 Calculation Guidance, the recycled content method is applied and emissions from recycling and incineration with energy recovery are not included in category 12. However, the emissions associated with incineration without energy recovery and landfill of PolyAI (a mixture of aluminium foil and polymers remaining after fiber recovery in the beverage carton recycling process) are included in category 12.

Material-specific (liquid paperboard, polymer, aluminium) emission factors for incineration without energy recovery and landfill are obtained from Sphera Managed LCA Content and Ecoinvent. These factors are then combined with the average material composition of a beverage carton to set a UBC factor per disposal route.

Emissions associated with the end-of-life treatment of processing and filling line solutions sold to customers are excluded, as these mostly consist of recyclable and reusable high-quality steel. Customers are, via instructions in equipment manuals, informed about the importance of separate, recycle or dispose of all material and components in safe and environmentally responsible way and to follow local and national regulations.

# Category 13: Downstream leased assets

Tetra Pak leases processing equipment, filling machines and distribution equipment to customers. Emissions associated with the use of these are, in line with Scope 3 Calculation Guideline, reported in category 11 (Use of sold products).

# Category 14: Franchises

This category is not applicable to Tetra Pak.

# **Category 15: Investments**

This category is not applicable to Tetra Pak.

# **Outside of Scopes**

We report 'outside of scope' emissions associated with use of biogas and HVO (Hydrotreated Vegetable Oil) diesel. Both are used to a limit extent. The direct biogenic CO2 emissions generated at combustion of biogas and HVO diesel are calculated based on the energy content of the gas/fuel. It is assumed that the direct CO2 emissions from biogas are the same as those from natural gas (per energy unit) and from HVO diesel are the same as those from light fuel oil/diesel (per energy unit). The emission factors for combustion of natural gas and combustion of light fuel oil are both obtained from the GHG Protocol tool for stationary combustion (version 4.1). The estimated CO2 removal related to the use of biogas and HVO refers to the mass of biogenic carbon in the gas/fuel.

We also report the indirect biogenic CO2 emissions from landfills and incineration without energy recovery and indirect biogenic CO2 removals referring to the biogenic content of the raw materials purchased. We recognize that it is a requirement in the GHG Protocol Scope 3 Standard to include emissions of biogenic CO2 as they occur in the value chain and make a report for each category. However, when looking at the databases supporting our GHG accounting, comprehensive information on biogenic emissions is often missing. Also, it is difficult to model biogenic carbon flows in an appropriate way, properly capturing the balance between uptake and release.