

# **Assurance Report**

to the Top Management of Arçelik A.Ş.

## **Executive Summary**

We, as being a global independent business services organization providing standard-based solutions in more than 140 countries, have performed an independent verification audit in respect of selected data submitted by Arçelik A.Ş for their eight production plants established in six different locations and the headquarter in Turkey.

The selected data of the greenhouse gas emissions which refer to the year ended 31.12.2019, detailed in Annex 1 has been verified with reasonable assurance.

# Respective Responsibilities

It is the responsibility of the top management of Arçelik A.Ş to collect and prepare the necessary data for verification review with high accuracy. The top management of Arçelik A.Ş is also responsible for the content of Arçelik A.Ş Sustainability Reports which refers to the selected data in accordance with the criteria set out in Annex 1.

Principles of the verification service that we perform are as follows:

- Impartiality
- Competence
- Factual approach to decision making
- Openness
- Confidentiality

Our verification audit based on reasonable assurance procedures to check whether the greenhouse gas assertion is materially correct, and the greenhouse gas data and information submitted to our verification team is prepared in all material respects in accordance with Annex 1.

The assurance engagement performed is fully in compliance with the applicable independence and competency requirements as laid down in ISO14064-3:2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements published by the International Organization for Standardization.

This report, including the Opinion Statement, has been prepared for the top managers of Arçelik A.Ş, to assist their Sustainability Reports referring to the Arçelik A.Ş.'s GHG emission monitoring and control performance.



For the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the top managers of Arçelik A.Ş. for our verification audit or this assurance report.

## Methodology Used for the Provision of Audit

We conducted this reasonable assurance engagement in accordance with ISO14064-1:2018 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals (International Organization for Standardization).

A reasonable assurance engagement provides a reasonable but not absolute level of assurance that Arçelik A.Ş.'s Greenhouse Gas assertion is materially corrected under ISO 14064-1:2018. In a reasonable assurance work, duration and extent of the procedures for gathering sufficient appropriate evidence is reasonably more than a limited assurance engagement. To perform this assurance work, we have audited Arçelik A.Ş. and checked all information submitted by Arçelik A.Ş.

Our reasonable assurance procedures require from the verification team to assess the followings:

- a) Inventory design, scope & boundary,
- b) Specific Greenhouse Gas (GHG) activity and technology,
- c) Identification and selection of GHG sources, sinks or reservoirs,
- d) Quantification, monitoring and reporting, including relevant technical and sector issues,
- e) Situations that may affect the materiality of the GHG assertion, including typical and atypical operating conditions.

The verifier or verification team have expertise to evaluate the implications of financial, operational, contractual or other agreements that may affect organization boundaries, including any legal requirements related to the GHG assertion.

#### Restrictions

The absence of a manual prepared by the national authority has led both parties to have some assumptions especially related to the grid emission factors and some measurement and calculation techniques which can result in materially different calculations and can impact the comparability. Therefore, the accuracy of different calculations may also vary from company to company. Furthermore, the nature and the methods used to determine such information, as well as the measurement criteria and the accuracy thereof, may change overtime. The methodology and references given for the selected data are documented in the context of Annex 1.

#### **Opinion Statement**

Based on the results of the verification audit we delivered according to our procedures, the Greenhouse Gas assertion of Arçelik AŞ. reported in their Sustainability Reports is materially correct and is a fair representation of the data and information and is prepared in accordance



with the related international standard on Greenhouse Gas quantification, monitoring and reporting and to relevant national standards or practices available at the time verification audit performed.

BSI (British Standards Institution)

BSI Group Eurasia Belgelendirme Hizmetleri Ltd. Şti.

BELGELENDIRME HIZMETLERI

Begüm Yurtsever

General Manager - Operations, BSI Turkey

İstanbul, 08.07.2020

#### Annex 1

# Arçelik A.Ş. Greenhouse Gas Emissions Inventory Summary Report, 2019

## General Principles and Scope

Arçelik A.Ş. calculated the greenhouse gas emissions sourced by its activities according to "ISO 14064-1: 2018 Greenhouse Gases, Part 1 - Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals Standard" and shares with all its shareholders via this report.

This report is the summary of Arçelik A.Ş.'s Greenhouse Gas (GHG) Emission Report 2019, including the general principles of the calculation methodologies and the GHG management.

This inventory includes greenhouse gas emissions sourced by 6 campuses in Turkey including production plants, storage units, administrative buildings, other facilities and the Headquarter, between 01.01.2019 - 31.12.2019.

The basis year for Arçelik A.Ş.'s Greenhouse Gas Emissions Inventory is 2019 year. Due to transition to ISO 14064-1:2018 Standard and changes in production sites, basis year of Arçelik's Greenhouse Gas Emissions Inventory has been changed from 2010 to 2019.

Arçelik A.Ş. documented the greenhouse gas emission inventory management methodology into its "GCP-16344 Greenhouse Gas Management System Procedure".

## **Greenhouse Gas Emissions Inventory Boundaries**

Arçelik A.Ş. adopted control approach into its Greenhouse Gas Emissions Inventory, 2019.

Within this scope, 6 campuses and the Headquarter under financial and administrative control of Arçelik A.Ş. in Turkey have been included in the inventory.

Abroad campuses, warehouses, service centers and dealers are not included in the Greenhouse Gas Emission Inventory.

The boundaries of the Arcelik A.S. Greenhouse Gas Inventory are as follows:

- The Headquarter (Sütlüce Campus): There are two administrative offices.
- *Çerkezköy Campus:* There are electrical motors production plant, dryer production plant and warehouses.
- *Çerkezköy Electronics Plant Campus:* There are electronics production plant and warehouses.
- *Çayırova Campus:* There are washing machine production plant, cogeneration, administrative buildings and facilities and warehouses.
- *Bolu Campus:* There are cooking appliances production plant, WEEE Recycling Plant, other facilities and warehouse.
- Eskişehir Campus: There are refrigerator and compressor production plants, WEEE Recycling Plant, cogeneration and warehouses.
- Ankara Campus: There are dishwasher production plant and warehouse.

## Greenhouse Gas Emissions and Reporting Boundaries

Arçelik A.Ş.'s greenhouse gas emissions are in 6 categories:

- 1. Direct GHG emissions,
- 2. Indirect GHG emissions from imported energy,
- 3. Indirect GHG emissions from transportation,
- 4. Indirect GHG emissions from products used by an organization,
- 5. Indirect GHG emissions associated with the use of products from the organization
- 6. Indirect GHG emissions from other sources.

#### 1. Direct GHG emissions:

Arçelik A.Ş.'s direct greenhouse gas emissions are in three categories:

- Greenhouse gas emissions sourced by the stationary combustion,
- Greenhouse gas emissions sourced by the mobile combustion,
- Greenhouse gas emissions generated during biological wastewater treatment,
- Other direct greenhouse gas emissions.

Arçelik A.Ş.'s direct emission resources are; natural gas, diesel, fuel-oil, LPG, petrol, refrigerants, acetylene, propane, industrial oil and methane generated during biological wastewater treatment.

## 2. Indirect GHG emissions from imported energy:

Arçelik A.Ş.'s energy indirect emission resource is electricity. Indirect GHG emissions from imported energy can be separated in two subgroups as:

- Location-Based Emissions: It is covered the emissions emitted from electricity consumption at Arçelik A.Ş. head quarter and production plants in Turkey and calculated by using national grid emission factor.
- Market-Based Emissions: It is covered the emissions emitted from consumption of
  electricity generated from renewable energy sources at Arçelik A.Ş. head quarter and
  production plants in Turkey. GHG emission factor of renewable energy and MarketBased Emissions are verified as zero.

# 3. Indirect GHG emissions from transportation:

The sources of Arçelik A.Ş.'s indirect GHG emissions from transportation are;

- Business travels,
- Personnel buses,
- Domestic, import and export logistics operations of Arçelik products.

GHG emissions generated by transportation are calculated by using distance, number of travelled people and weights of transported products.

#### 4. Indirect GHG emissions from products used by the organization:

The sources of indirect GHG emissions from products used by an organization are raw materials, materials and packages used in Arçelik's sold products in Turkey. The products which are taken into Arçelik's GHG inventory are washing machine, dishwasher, refrigerator, top table refrigerator, tumble dryer, oven, hob and hood produced in Arçelik's

production plants. GHG emissions caused by used materials such as plastics, metals, dyes, chemicals and other parts of the products are calculated by using weight and emission factors of used materials.

# 5. Indirect GHG emissions associated with the use of products from the organization:

Indirect GHG emissions associated with the use of Arçelik's sold products (washing machine, dishwasher, refrigerator, top table refrigerator, tumble dryer, oven, hob and hood) in Turkey are the emissions generated during use-phase of the products in 10 years life time. It is accepted that all sold cooking appliances (oven, hob and hood) use electricity during use-phase. Energy consumption in energy labels of the products are used to calculate electricity consumption during life time.

#### 6. Other indirect GHG emissions:

Arçelik A.Ş.'s other greenhouse gas emissions are the emissions generated during recycling or disposal of wastes occurred in production, recycling of product packaging wastes, recycling of products as waste electrical and electronics equipment (WEEE) after 10 years life time, and treatment of domestic wastewater in central wastewater treatment plants of municipality or in industrial zone.

Transportations of wastes occurred in production, product packaging wastes and WEEE are not included into Arçelik A.Ş.'s Greenhouse Gas Emissions Inventory.

## **Greenhouse Gas Emissions Inventory Calculations**

Arçelik A.Ş.'s Greenhouse Gas Emissions Inventory calculations are based on mainly "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories".

The calculation methodologies and emission factors are as follows:

- The "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion" is used to calculate the greenhouse gas emissions sourced by stationary combustion.
- The "IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 3: Mobile Combustion" is used to calculate the greenhouse gas emission sourced by mobile combustion.
- In the reporting period, electricity emission factor for Turkey in "International Energy Agency" (2019) has been used to calculate energy indirect greenhouse gas emissions. Certificate have been obtained from the suppliers which specify that electricity which is supplied to Arçelik A.Ş. campuses and headquarter in Turkey has been generated from renewable energy sources.
- "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 3: Industrial Processes and Product Use Chapter 7: Emissions of Fluorinated Substitutes for Ozone Depleting Substances", "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume: 5 Waste, Chapter 6: Wastewater Treatment and Discharge", "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion", "IPCC Climate Change 2014 Synthesis Report (Fifth Assessment Report-AR5) Chapter 8 Anthropogenic and Natural Radiative Forcing", "The World Bank Generic Environmental Management Plan (For

Refrigeration Manufacturing Sector)", "DEFRA Conversion Factors 2019 Full Set for Advance Users", and other literature sources are used to calculate the other direct and indirect greenhouse gas emissions.

In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions are documented in the Greenhouse Gas Emission Inventory.

## Management of Uncertainties and Materiality

The uncertainties can be caused by the measurement devices, potential record errors and deviations, possible deviations in calorific value and lower - upper values of the fuels.

Materiality is the sum of GHG inventory uncertainties and negligibles, acceptances. The company materiality has been calculated accordingly.

#### **Internal Audits and Control Methods**

With data control purposes, internal audits are performed within the scope of ISO 14064-1 Standard and the finding are managed in accordance with the "GTP-16355 Corrective and Preventive Actions Procedure".

#### **Opinion Restatement**

Arçelik A.Ş.'s Greenhouse Gas Inventory 2019 is materially correct and is a fair representation of the data and is prepared in accordance with the related international standard on greenhouse gas and to relevant national standards or practices available. It has been agreed that the materiality is under 5%.

# **Verified GHG Emissions Belonging 2019**

Direct, indirect and total greenhouse gas emissions of Arçelik A.Ş.'s 6 different campus in Turkey and the HQ were verified as follows:

- 1. Direct GHG emissions: 47,900.00 tons CO<sub>2</sub> equivalent
- 2. Indirect GHG emissions from imported energy: 0 tons CO<sub>2</sub> equivalent
- 3. Indirect GHG emissions from transportation: 214,173.00 tons CO<sub>2</sub> equivalent
  - 3.1. Business travel: 3,378 tons CO<sub>2</sub> equivalent
  - 3.2. Personnel buses: 55,151 tons CO<sub>2</sub> equivalent
  - 3.3. Domestic, import and export logistics operations of Arçelik products: 155,644 tons CO<sub>2</sub> equivalent
- 4. Indirect GHG emissions from products used by the organization: 648,775.00 tons CO<sub>2</sub> equivalent
- 5. Indirect GHG emissions associated with the use of products from the organization: 5,392,225.00 tons CO<sub>2</sub> equivalent
- 6. Indirect GHG emissions from other sources: 7,614.00 tons CO<sub>2</sub> equivalent

Total GHG emissions: 6,310,687.00 tons CO<sub>2</sub> equivalent

Materiality (%): 5





# **Assurance Report**

to the Top Management of Arçelik and Beko Electrical Appliances Co.Ltd.,

## **Executive Summary**

We, as being a global independent business services organization providing standard-based solutions in more than 140 countries, have performed an independent verification audit in respect of Selected Data submitted by Beko Electrical Appliances Co.Ltd. Plant (Beko China) of Arçelik located in China.

The selected data of the Carbon Emissions which refer to the year ended 31.12.2019, detailed in Annex 1 has been verified with reasonable assurance.

# Respective Responsibilities

It is the responsibility of the top management of Arçelik and Beko China to collect and prepare the necessary data for verification review with high accuracy. The top management of Arçelik is also responsible for the content of Arçelik Sustainability Reports which refers to the selected data in accordance with the criteria set out in Annex 1.

Principles of the verification service that we perform are as follows:

- Impartiality
- Competence
- Factual approach to decision making
- Openness
- Confidentiality

Our verification audit based on reasonable assurance procedures to check whether the Greenhouse Gas assertion is materially correct, and the Greenhouse Gas data and information submitted to our verification team is prepared in all material respects in accordance with Annex 1.

The assurance engagement performed is fully in compliance with the applicable independence and competency requirements as laid down in ISO14064-3:2006 Specification with Guidance for the Validation and the Verification of Greenhouse Gas Assertions published by the International Organization for Standardization.

W



This report, including the Opinion Statement, has been prepared for the top managers of Arçelik and Beko China, to assist their Sustainability Reports referring to the Arçelik's carbon emission monitoring and control performance.

For the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the top managers of Arçelik. for our verification audit or this assurance report.

## Methodology Used for the Provision of Audit

We conducted this reasonable assurance engagement in accordance with ISO14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals published by ISO (International Organization for Standardization).

A reasonable assurance engagement provides a reasonable but not absolute level of assurance that Beko China Plant's Greenhouse Gas assertion is materially corrected under ISO 14064-1:2006. In a reasonable assurance work, duration and extent of the procedures for gathering sufficient appropriate evidence is reasonably more than a limited assurance engagement.

To perform this assurance work, we have audited Beko China and checked all information submitted by Beko China.

Our reasonable assurance procedures require from the verification team to assess the followings:

- a) Inventory design, scope & boundary,
- b) Specific Greenhouse Gas (GHG) activity and technology,
- c) Identification and selection of GHG sources, sinks or reservoirs,
- d) Quantification, monitoring and reporting, including relevant technical and sector issues.
- e) Situations that may affect the materiality of the GHG assertion, including typical and atypical operating conditions.

The verifier or verification team have expertise to evaluate the implications of financial, operational, contractual or other agreements that may affect organization boundaries, including any legal requirements related to the GHG assertion.

#### Restrictions

The absence of a manual prepared by the national authority has lead both parties to have some assumptions especially related to the grid emission factors and some measurement and calculation techniques which can result in materially different calculations and can impact the comparability. Therefore, the accuracy of different calculations may also vary from company to company. Furthermore, the nature and the methods used to determine such information, as well as the measurement criteria and the accuracy thereof, may change overtime. The methodology and references given for the Selected Data are documented in the context of Annex 1.

## **Opinion Statement**

Based on the results of the verification audit we delivered according to our procedures, the Greenhouse Gas assertion of Beko China reported in their Sustainability Reports is materially correct and is a fair representation of the data and information and is prepared in accordance

CAU



with the related international standard on Greenhouse Gas quantification, monitoring and reporting and to relevant national standards or practices available at the time verification audit performed.

BSI (British Standards Institution)

BSI Group Eurasia Belgelendirme Hizmetleri Ltd. Şti.

Begüm Yurtsever

General Manager - Operations

İstanbul, 08.07.2020

BSI GROUP LURASIA BELGEDENDEMEMIZMETLER! LIMITED SIRKETI

Ek-1: Beko China Greenhouse Gas Emissions Inventory Summary Report, 2019

#### Annex 1

# Beko China Greenhouse Gas Emissions Inventory Summary Report, 2019

# General Principles and Scope

Beko China, calculated the greenhouse gas emissions sourced by its activities according to "ISO 14064-1: 2006 Greenhouse Gases, Part 1 - Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals Standard" and shares with all its shareholders via this report.

This report is the summary of Beko ChinaPlant's Greenhouse Gas (GHG) Emission Report 2019, including the general principles of the calculation methodologies and the GHG management.

This inventory includes greenhouse gas emissions sourced by Beko China including production plant and product warehouse between 01.01.2019 - 31.12.2019.

The basis year for Beko China Plant's Greenhouse Gas Emissions Inventory is 2017 year.

Beko China documented the greenhouse gas emission inventory management methodology into its "GCP-16347 Greenhouse Gas Management System Procedure".

# **Greenhouse Gas Emissions Inventory Boundaries**

Beko China adopted control approach into its Greenhouse Gas Emissions Inventory, 2019. Within this scope, Beko China has been included in the inventory.

The boundaries of the Beko China Plant's Greenhouse Gas Inventory are as follows:

Beko China Plant: The washing machine production plant and product warehouse

## Greenhouse Gas Emissions and Activity Boundaries

Beko China Plant's greenhouse gas emissions are in 3 categories:

- ✓ Direct greenhouse gas emissions,
- ✓ Indirect energy greenhouse gas emissions,
- ✓ Other indirect greenhouse gas emissions.

Direct greenhouse gas emissions are within the scope of Scope 1, energy indirect greenhouse gas emissions are within the scope of Scope 2 and other indirect greenhouse gas emissions are within the scope of Scope 3. Scope 1 and Scope 2 emissions are under the financial and administrative control of Beko China . Scope 3 emissions are not under financial and administrative control of Beko China, thus the Scope 3 emissions are not included in the greenhouse gas emissions inventory.

✓ Direct Greenhouse Gas Emissions:

Beko China's direct greenhouse gas emissions are in three categories:

- Greenhouse gas emissions sourced by the stationary combustion,
- Greenhouse gas emissions sourced by the mobile combustion,
- Other direct greenhouse gas emissions.

Beko China Plant's direct emission resources are natural gas, diesel, LPG, petrol, CO<sub>2</sub> fire extinguisher.

All

✓ Energy Indirect Greenhouse Gas Emissions:

Beko ChinaPlant's indirect emission resource is electricity.

✓ Other Indirect Greenhouse Gas Emissions:

Other greenhouse gas emission resources are within the scope of Scope 3 which are not under the financial and administrative control of Beko China Plant.

Beko China Plant's other greenhouse gas emissions are personnel buses, subcontractor activities which are the outside of the campuses, food and drink automats, water dispensers, logistic activities and emissions sourced by external waste disposal and recycling activities.

## **Greenhouse Gas Emissions Inventory Calculations**

Beko China Plant's Greenhouse Gas Emissions Inventory calculations are based on mainly "Intergovernmental Panel on Climate Change (IPCC) 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories".

The calculation methodologies and emission factors are as follows:

- ✓ The "IPCC-2019 Refinement to the IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion" is used to calculate the greenhouse gas emissions sourced by stationary combustion.
- ✓ The "IPCC-2006 Guidelines for National Greenhouse Energy, Chapter 3: Mobile Combustion" is used to gas emission sourced by the mobile combustion.

  Gas Inventories, Volume 2: calculate the greenhouse
- ✓ China electricity emission factor is referenced from International Energy Agency CO₂ Emissions from Fuel Combustion, 2019.
- ✓ Defra- UK Government GHG Conversion Factors for Company Reporting 2019, Version 1.2 Defra Conversion-Factors-2019-Full-set-for-advanced-users, IPCC 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7: ODS Substitutes, Volume 2 Energy Chapter 2: Stationary Combustion, IPCC Climate Change 2014 Synthesis Report (Fifth Assessment Report-AR5) Chapter 8 Anthropogenic and Natural Radiative Forcing are used to calculate the other direct greenhouse gas emissions.

In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions are documented in the Greenhouse Gas Emission Inventory.

## Management of Uncertainties and Materiality

The uncertainties can be caused by the measurement devices, potential record errors and deviations, possible deviations in calorific value and lower - upper values of the fuels.

The uncertainty is calculated regarding to Beko China Plant's direct greenhouse gas emission and indirect greenhouse gas emissions, separately.

Materiality is the sum of GHG inventory uncertainties and negligibles, acceptances. The company materiality has been calculated accordingly.

M.

#### Internal Audits and Control Methods

With data control purposes, internal audits are performed within the scope of ISO 14064-1 Standard and the finding are managed in accordance with the "GTP-16355 Corrective and Preventive Actions Procedure".

## **Opinion Restatement**

Beko China Plant's Greenhouse Gas Inventory 2019 is materially correct and is a fair representation of the data and is prepared in accordance with the related international standard on greenhouse gas and to relevant national standards or practices available. It has been agreed that the materiality is under 7%.

# **Verified GHG Emissions Belonging 2019**

Scope-1, Scope-2 and total greenhouse gas emissions of Beko China were verified as follows:

Scope – 1 GHG Emissions: 911 tons CO<sub>2</sub> equivalent

Scope – 2 GHG Emissions: 4,333 tons CO<sub>2</sub> equivalent

Total GHG Emissions: 5,244 tons CO<sub>2</sub> equivalent

Uncertainty: % 6,78

Materiality: % 7





# **Assurance Report**

to the Top Management of Arçelik and Beko LLC,

## **Executive Summary**

We, as being a global independent business services organization providing standard-based solutions in more than 140 countries, have performed an independent verification audit in respect of Selected Data submitted by Beko LLC Plant of Arçelik located in Russia.

The selected data of the Carbon Emissions which refer to the year ended 31.12.2019, detailed in Annex 1 has been verified with reasonable assurance.

## **Respective Responsibilities**

It is the responsibility of the top management of Arçelik and Beko LLC to collect and prepare the necessary data for verification review with high accuracy. The top management of Arçelik is also responsible for the content of Arçelik Sustainability Reports which refers to the selected data in accordance with the criteria set out in Annex 1.

Principles of the verification service that we perform are as follows:

- Impartiality
- Competence
- Factual approach to decision making
- Openness
- Confidentiality

Our verification audit based on reasonable assurance procedures to check whether the Greenhouse Gas assertion is materially correct, and the Greenhouse Gas data and information submitted to our verification team is prepared in all material respects in accordance with Annex 1.

The assurance engagement performed is fully in compliance with the applicable independence and competency requirements as laid down in ISO14064-3:2006 Specification with Guidance for the Validation and the Verification of Greenhouse Gas Assertions published by the International Organization for Standardization.

This report, including the Opinion Statement, has been prepared for the top managers of Arçelik and Beko LLC, to assist their Sustainability Reports referring to the Arçelik's carbon emission monitoring and control performance.

All.



For the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the top managers of Arçelik. for our verification audit or this assurance report.

# Methodology Used for the Provision of Audit

We conducted this reasonable assurance engagement in accordance with ISO14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals published by ISO (International Organization for Standardization).

A reasonable assurance engagement provides a reasonable but not absolute level of assurance that Beko LLC's Greenhouse Gas assertion is materially corrected under ISO 14064-1:2006. In a reasonable assurance work, duration and extent of the procedures for gathering sufficient appropriate evidence is reasonably more than a limited assurance engagement.

To perform this assurance work, we have audited Beko LLC Plant and checked all information submitted by Beko LLC Plant.

Our reasonable assurance procedures require from the verification team to assess the followings:

- a) Inventory design, scope & boundary,
- b) Specific Greenhouse Gas (GHG) activity and technology,
- c) Identification and selection of GHG sources, sinks or reservoirs,
- d) Quantification, monitoring and reporting, including relevant technical and sector issues,
- e) Situations that may affect the materiality of the GHG assertion, including typical and atypical operating conditions.

The verifier or verification team have expertise to evaluate the implications of financial, operational, contractual or other agreements that may affect organization boundaries, including any legal requirements related to the GHG assertion.

#### Restrictions

The absence of a manual prepared by the national authority has lead both parties to have some assumptions especially related to the grid emission factors and some measurement and calculation techniques which can result in materially different calculations and can impact the comparability. Therefore, the accuracy of different calculations may also vary from company to company in Russia. Furthermore, the nature and the methods used to determine such information, as well as the measurement criteria and the accuracy thereof, may change overtime. The methodology and references given for the Selected Data are documented in the context of Annex 1.

#### **Opinion Statement**

Based on the results of the verification audit we delivered according to our procedures, the Greenhouse Gas assertion of Beko LLC Plant reported in their Sustainability Reports is materially correct and is a fair representation of the data and information and is prepared in accordance with the related international standard on Greenhouse Gas quantification, monitoring and reporting and to relevant national standards or practices available at the time verification audit performed.

BM



BSI (British Standards Institution)

BSI Group Eurasia Belgelendirme Hizmetleri Ltd. Şti.

Begüm Yurtsever

General Manager - Operations

İstanbul, 08.07.2020

Ek-1: Beko LLC Plant Greenhouse Gas Emissions Inventory Summary Report, 2019

#### Annex 1

# Beko LLC Plant Greenhouse Gas Emissions Inventory Summary Report, 2019

## General Principles and Scope

Beko LLC, calculated the greenhouse gas emissions sourced by its activities according to "ISO 14064-1: 2006 Greenhouse Gases, Part 1 - Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals Standard" and shares with all its shareholders via this report.

This report is the summary of Beko LLC Plant's Greenhouse Gas (GHG) Emission Report 2019, including the general principles of the calculation methodologies and the GHG management.

This inventory includes greenhouse gas emissions sourced by Beko LLC Plant in Russia including production plant and product warehouse between 01.01.2019 - 31.12.2019.

The basis year for Beko LLC Plant's Greenhouse Gas Emissions Inventory is 2016 year.

Beko LLC documented the greenhouse gas emission inventory management methodology into its "GEP-047 Greenhouse Gas Management System Procedure".

## **Greenhouse Gas Emissions Inventory Boundaries**

Beko LLC adopted control approach into its Greenhouse Gas Emissions Inventory, 2019.

Within this scope, Beko LLC Campus in Russia has been included in the inventory.

The boundaries of the Beko LLC Plant's Greenhouse Gas Inventory are as follows:

• Beko LLC Campus: The Refrigerator, Freezer, and washing machine production plant and product warehouse

#### **Greenhouse Gas Emissions and Activity Boundaries**

Beko LLC's greenhouse gas emissions are in 3 categories:

- ✓ Direct greenhouse gas emissions,
- ✓ Indirect energy greenhouse gas emissions,
- ✓ Other indirect greenhouse gas emissions.

Direct greenhouse gas emissions are within the scope of Scope 1, energy indirect greenhouse gas emissions are within the scope of Scope 2 and other indirect greenhouse gas emissions are within the scope of Scope 3. Scope 1 and Scope 2 emissions are under the financial and administrative control of Beko LLC. Scope 3 emissions are not under financial and administrative control of Beko LLC, thus the Scope 3 emissions are not included in the greenhouse gas emissions inventory.

✓ Direct Greenhouse Gas Emissions:

Beko LLC's direct greenhouse gas emissions are in three categories:

- Greenhouse gas emissions sourced by the stationary combustion,
- Greenhouse gas emissions sourced by the mobile combustion,
- Other direct greenhouse gas emissions.

Beko LLC Plant's direct emission resources are natural gas, diesel, LPG, petrol, refrigerants

W

and acetylene.

✓ Energy Indirect Greenhouse Gas Emissions:

Beko LLC Plant's indirect emission resource is electricity.

✓ Other Indirect Greenhouse Gas Emissions:

Other greenhouse gas emission resources are within the scope of Scope 3 which are not under the financial and administrative control of Beko LLC Plant.

Beko LLC Plant's other greenhouse gas emissions are personnel buses, subcontractor activities which are the outside of the campuses, food and drink automats, water dispensers, logistic activities and emissions sourced by external waste disposal and recycling activities.

## **Greenhouse Gas Emissions Inventory Calculations**

Beko LLC Plant's Greenhouse Gas Emissions Inventory calculations are based on mainly "Intergovernmental Panel on Climate Change (IPCC) 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories".

The calculation methodologies and emission factors are as follows:

- ✓ The "IPCC-2019 Refinement to the IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion" is used to calculate the greenhouse gas emissions sourced by stationary combustion.
- The "IPCC-2006 Guidelines for National Greenhouse Energy, Chapter 3: Mobile Combustion" is used to gas emission sourced by the mobile combustion.

  Gas Inventories, Volume 2: calculate the greenhouse
- ✓ Russian electricity emission factor is referenced from International Energy Agency CO₂ Emissions from Fuel Combustion, 2019.
- ✓ Defra- UK Government GHG Conversion Factors for Company Reporting -2019, Version 1.2 - Defra Conversion-Factors-2019-Full-set-for-advanced-users, IPCC 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7: ODS Substitutes , Volume 2 Energy Chapter 2: Stationary Combustion, IPCC Climate Change 2014 Synthesis Report (Fifth Assessment Report-AR5) Chapter 8 - Anthropogenic and Natural Radiative Forcing are used to calculate the other direct greenhouse gas emissions.

In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions are documented in the Greenhouse Gas Emission Inventory.

## Management of Uncertainties and Materiality

The uncertainties can be caused by the measurement devices, potential record errors and deviations, possible deviations in calorific value and lower - upper values of the fuels.

The uncertainty is calculated regarding to Beko LLC Plant's direct greenhouse gas emission and indirect greenhouse gas emissions, separately.

Materiality is the sum of GHG inventory uncertainties and negligibles, acceptances. The company materiality has been calculated accordingly.

#### **Internal Audits and Control Methods**

With data control purposes, internal audits are performed within the scope of ISO 14064-1 Standard and the finding are managed in accordance with the "GTP-16355 Corrective and Preventive Actions Procedure".

## **Opinion Restatement**

Beko LLC Plant's Greenhouse Gas Inventory 2019 is materially correct and is a fair representation of the data and is prepared in accordance with the related international standard on greenhouse gas and to relevant national standards or practices available. It has been agreed that the materiality is under 7%.

# **Verified GHG Emissions Belonging 2019**

Scope-1, Scope-2 and total greenhouse gas emissions of Beko LLC Plant were verified as follows:

Scope – 1 GHG Emissions: 9,049 tons CO<sub>2</sub> equivalent Scope – 2 GHG Emissions: 7,654 tons CO<sub>2</sub> equivalent

Total GHG Emissions: 16,703 tons CO<sub>2</sub> equivalent

Uncertainty: % 6,08

Materiality: % 7

Sh





# **Assurance Report**

to the Top Management of Arçelik and Arctic SA,

#### **Executive Summary**

We, as being a global independent business services organization providing standard-based solutions in more than 140 countries, have performed an independent verification audit in respect of Selected Data submitted by Arctic Refrigerator Plant of Arçelik located in Romania.

The selected data of the Carbon Emissions which refer to the year ended 31.12.2019, detailed in Annex 1 has been verified with reasonable assurance.

## Respective Responsibilities

It is the responsibility of the top management of Arçelik and Arctic to collect and prepare the necessary data for verification review with high accuracy. The top management of Arçelik is also responsible for the content of Arçelik Sustainability Reports which refers to the selected data in accordance with the criteria set out in Annex 1.

Principles of the verification service that we perform are as follows:

- Impartiality
- Competence
- Factual approach to decision making
- Openness
- Confidentiality

Our verification audit based on reasonable assurance procedures to check whether the Greenhouse Gas assertion is materially correct, and the Greenhouse Gas data and information submitted to our verification team is prepared in all material respects in accordance with Annex 1.

The assurance engagement performed is fully in compliance with the applicable independence and competency requirements as laid down in ISO14064-3:2006 Specification with Guidance for the Validation and the Verification of Greenhouse Gas Assertions published by the International Organization for Standardization.

H



This report, including the Opinion Statement, has been prepared for the top managers of Arçelik and Arctic Refrigerator Plant, to assist their Sustainability Reports referring to the Arçelik's carbon emission monitoring and control performance.

For the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the top managers of Arçelik and Arctic for our verification audit or this assurance report.

## Methodology Used for the Provision of Audit

We conducted this reasonable assurance engagement in accordance with ISO14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals published by ISO (International Organization for Standardization).

A reasonable assurance engagement provides a reasonable but not absolute level of assurance that Arctic Refrigerator Plant's Greenhouse Gas assertion is materially corrected under ISO 14064-1:2006. In a reasonable assurance work, duration and extent of the procedures for gathering sufficient appropriate evidence is reasonably more than a limited assurance engagement.

To perform this assurance work, we have audited Arctic Refrigerator Plant and checked all information submitted by Arctic Refrigerator Plant.

Our reasonable assurance procedures require from the verification team to assess the followings:

- a) Inventory design, scope & boundary,
- b) Specific Greenhouse Gas (GHG) activity and technology,
- c) Identification and selection of GHG sources, sinks or reservoirs,
- d) Quantification, monitoring and reporting, including relevant technical and sector issues,
- e) Situations that may affect the materiality of the GHG assertion, including typical and atypical operating conditions.

The verifier or verification team have expertise to evaluate the implications of financial, operational, contractual or other agreements that may affect organization boundaries, including any legal requirements related to the GHG assertion.

#### Restrictions

The absence of a manual prepared by the national authority has lead both parties to have some assumptions especially related to the grid emission factors and some measurement and calculation techniques which can result in materially different calculations and can impact the comparability. Therefore, the accuracy of different calculations may also vary from company to company. Furthermore, the nature and the methods used to determine such information, as well as the measurement criteria and the accuracy thereof, may change overtime. The methodology and references given for the Selected Data are documented in the context of Annex 1.

AM



## **Opinion Statement**

Based on the results of the verification audit we delivered according to our procedures, the Greenhouse Gas assertion of Arctic Refrigerator Plant reported in their Sustainability Reports is materially correct and is a fair representation of the data and information and is prepared in accordance with the related international standard on Greenhouse Gas quantification, monitoring and reporting and to relevant national standards or practices available at the time verification audit performed.

BSI (British Standards Institution)

BSI Group Eurasia Belgelendirme Hizmetleri Ltd. Şti.

Begüm Yurtsever

General Managen - Operations

İstanbul, 08.07.2020

BSI GROVE EURASIA BELGELENDIRME HIZMETLERI LIMINED ŞIRKETI

Ek-1: Arctic Refrigerator Plant Greenhouse Gas Emissions Inventory Summary Report, 2019

#### Annex 1

# Arctic Refrigerator Plant Greenhouse Gas Emissions Inventory Summary Report, 2019

## General Principles and Scope

Arctic Refrigerator Plant, calculated the greenhouse gas emissions sourced by its activities according to "ISO 14064-1: 2006 Greenhouse Gases, Part 1 - Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals Standard" and shares with all its shareholders via this report.

This report is the summary of Arctic Refrigerator Plant's Greenhouse Gas (GHG) Emission Report 2019, including the general principles of the calculation methodologies and the GHG management.

This inventory includes greenhouse gas emissions sourced by Arctic Refrigerator Plant including production plant and product warehouse between 01.01.2019 - 31.12.2019.

The basis year for Arctic Refrigerator Plant's Greenhouse Gas Emissions Inventory is 2016 year.

Arctic Refrigerator Plant documented the greenhouse gas emission inventory management methodology into its "GCP-16347 Greenhouse Gas Management System Procedure".

# **Greenhouse Gas Emissions Inventory Boundaries**

Arctic Refrigerator Plant adopted control approach into its Greenhouse Gas Emissions Inventory, 2019.

Within this scope, Arctic Refrigerator Plant has been included in the inventory.

The boundaries of the Arctic Refrigerator Plant's Greenhouse Gas Inventory are as follows:

• Arctic Refrigerator Plant: The refrigerator, freezer production plant and product warehouse

#### **Greenhouse Gas Emissions and Activity Boundaries**

Arctic Refrigerator Plant's greenhouse gas emissions are in 3 categories:

- ✓ Direct greenhouse gas emissions,
- ✓ Indirect energy greenhouse gas emissions,
- ✓ Other indirect greenhouse gas emissions.

Direct greenhouse gas emissions are within the scope of Scope 1, energy indirect greenhouse gas emissions are within the scope of Scope 2 and other indirect greenhouse gas emissions are within the scope of Scope 3. Scope 1 and Scope 2 emissions are under the financial and administrative control of Arctic Refrigerator Plant. Scope 3 emissions are not under financial and administrative control of Arctic Refrigerator Plant, thus the Scope 3 emissions are not included in the greenhouse gas emissions inventory.

✓ Direct Greenhouse Gas Emissions:

Arctic Refrigerator Plant 's direct greenhouse gas emissions are in three categories:

- Greenhouse gas emissions sourced by the stationary combustion,
- Greenhouse gas emissions sourced by the mobile combustion,

AN.

• Other direct greenhouse gas emissions.

Arctic Refrigerator Plant's direct emission resources are natural gas, diesel, LPG, petrol, refrigerants, CO<sub>2</sub> fire extinguisher and acetylene.

✓ Energy Indirect Greenhouse Gas Emissions:

Arctic Refrigerator Plant's indirect emission resource is electricity.

✓ Other Indirect Greenhouse Gas Emissions:

Other greenhouse gas emission resources are within the scope of Scope 3 which are not under the financial and administrative control of Arctic Refrigerator Plant.

Arctic Refrigerator Plant's other greenhouse gas emissions are personnel buses, subcontractor activities which are the outside of the campuses, food and drink automats, water dispensers, logistic activities and emissions sourced by external waste disposal and recycling activities.

## **Greenhouse Gas Emissions Inventory Calculations**

Arctic Refrigerator Plant's Greenhouse Gas Emissions Inventory calculations are based on mainly "Intergovernmental Panel on Climate Change (IPCC) 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories".

The calculation methodologies and emission factors are as follows:

- ✓ The "IPCC-2019 Refinement to the IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion" is used to calculate the greenhouse gas emissions sourced by stationary combustion.
- ✓ The "IPCC-2006 Guidelines for National Greenhouse Energy, Chapter 3: Mobile Combustion" is used to gas emission sourced by the mobile combustion.

  Gas Inventories, Volume 2: calculate the greenhouse
- ✓ Romania electricity emission factor is referenced from International Energy Agency CO₂ Emissions from Fuel Combustion, 2019.
- ✓ Defra- UK Government GHG Conversion Factors for Company Reporting 2019, Version 1.2 Defra Conversion-Factors-2019-Full-set-for-advanced-users, IPCC 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7: ODS Substitutes, Volume 2 Energy Chapter 2: Stationary Combustion, IPCC Climate Change 2014 Synthesis Report (Fifth Assessment Report-AR5) Chapter 8 Anthropogenic and Natural Radiative Forcing are used to calculate the other direct greenhouse gas emissions.

In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions are documented in the Greenhouse Gas Emission Inventory.

## Management of Uncertainties and Materiality

The uncertainties can be caused by the measurement devices, potential record errors and deviations, possible deviations in calorific value and lower - upper values of the fuels.

The uncertainty is calculated regarding to Arctic Refrigerator Plant's direct greenhouse gas emission and indirect greenhouse gas emissions, separately.

Apr.

Materiality is the sum of GHG inventory uncertainties and negligibles, acceptances. The company materiality has been calculated accordingly.

#### Internal Audits and Control Methods

With data control purposes, internal audits are performed within the scope of ISO 14064-1 Standard and the finding are managed in accordance with the "GTP-16355 Corrective and Preventive Actions Procedure".

#### **Opinion Restatement**

Arctic Refrigerator Plant's Greenhouse Gas Inventory 2019 is materially correct and is a fair representation of the data and is prepared in accordance with the related international standard on greenhouse gas and to relevant national standards or practices available. It has been agreed that the materiality is under 5 %.

## **Verified GHG Emissions Belonging 2019**

Scope-1, Scope-2 and total greenhouse gas emissions of Arctic Refrigerator Plant were verified as follows:

Scope – 1 GHG Emissions: 8,257 tons CO<sub>2</sub> equivalent

Scope – 2 GHG Emissions: 0 tons CO<sub>2</sub> equivalent Total GHG Emissions: 8,257 tons CO<sub>2</sub> equivalent

Uncertainty: % 4,87

Materiality: % 5





Assurance Report to the Top Management of Arcelik and Defy Appliances,

## **Executive Summary**

We, a global independent business services organization providing standard-based solutions in more than 140 countries, have performed an independent verification audit in respect of Selected Data submitted by Defy Appliances (PTY) Ltd (Defy), subsidiary of Arçelik located in South Africa.

The selected data of the Carbon Emissions which refer to the year ending on 31.12.2019, detailed in Annexure 1, has been verified with reasonable assurance.

## Respective Responsibilities

It is the responsibility of the top management of Arçelik and Defy to collect and prepare the necessary data for verification review with high accuracy. The top management of Arçelik is also responsible for the content of Arçelik Sustainability Reports which refers to the selected data in accordance with the criteria set out in Annexure 1.

Principles of the verification service that we perform are as follows:

- Impartiality
- Competence
- Factual approach to decision making
- Openness
- Confidentiality

Our verification audit based on reasonable assurance procedures to check whether the Greenhouse Gas assertion is materially correct, and the Greenhouse Gas data and information submitted to our verification team is prepared in all material respects in accordance with Annexure 1.

The assurance engagement performed is fully in compliance with the applicable independence and competency requirements as laid down in ISO14064-3:2006 Specification with Guidance for the Validation and the Verification of Greenhouse Gas Assertions published by the International Organization for Standardization.

This report, including the Opinion Statement, has been prepared for the top managers of Arçelik and Defy, to assist their Sustainability Reports referring to the Arçelik's carbon emission monitoring and control performance.

For the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the top managers of Arçelik and Defy for our verification audit or this assurance report.



## Methodology Used for the Provision of Audit

We conducted this reasonable assurance engagement in accordance with ISO14064-1:2006 Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals published by ISO (International Organization for Standardization).

A reasonable assurance engagement provides a reasonable but not absolute level of assurance that Defy's Greenhouse Gas assertion is materially corrected under ISO 14064-1:2006. In a reasonable assurance work, duration and extent of the procedures for gathering sufficient appropriate evidence is reasonably more than a limited assurance engagement.

To perform this assurance work, we have audited Defy Jacobs Plant in Durban, Defy's Ezakheni Site 180 Plant in Ladysmith, Defy's Ezakheni Site 360 plant in Ladysmith, and checked all information submitted by Defy.

Our reasonable assurance procedures required from the verification team to undertake the assessment include the following:

- a) Inventory design, scope andboundary,
- b) Specific Greenhouse Gas (GHG) activity and technology,
- c) Identification and selection of GHG sources, sinks or reservoirs,
- d) Quantification, monitoring and reporting, including relevant technical and sector issues,
- e) Situations that may affect the materiality of the GHG assertion, including typical and atypical operating conditions.

The verifier or verification team have expertise to evaluate the implications of financial, operational, contractual or other agreements that may affect organization boundaries, including any legal requirements related to the GHG assertion.

#### Restrictions

The absence of a manual prepared by the national authority has lead both parties to have some assumptions especially related to the grid emission factors and some measurement and calculation techniques which can result in materially different calculations and can impact the comparability. Therefore, the accuracy of different calculations may also vary from company to company. Furthermore, the nature and the methods used to determine such information, as well as the measurement criteria and the accuracy thereof, may change overtime. The methodology and references given for the Selected Data are documented in the context of Annexure 1.





## **Opinion Statement**

Based on the results of the verification audit we delivered according to our procedures, the Greenhouse Gas assertion of Defy Appliances reported in their Sustainability Report is materially correct and is a fair representation of the data and information and is prepared in accordance with the related international standard on Greenhouse Gas quantification, monitoring and reporting and to relevant national standards or practices available at the time verification audit performed.

BSI (British Standards Institution) BSI Group Eurasia Belgelendirme Hizmetleri Ltd. Şti.

Begüm Yurtsever General Manager-Operations İstanbul, 14.07.2020

BELGELENDRIGE HIZMETLER

Ek-1: Defy Greenhouse Gas Emissions Inventory Summary Report, 2019

#### Annexure 1

# **Defy Appliances Greenhouse Gas Emissions Inventory Summary Report, 2019 General Principles and Scope**

Defy Appliances calculated the greenhouse gas emissions sourced by its activities according to "ISO 14064-1: 2006 Greenhouse Gases, Part 1 - Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals Standard" and shares with all its shareholders via this report.

This report is the summary of Defy's Greenhouse Gas (GHG) Emission Report 2019, including the general principles of the calculation methodologies and the GHG management.

This inventory includes Greenhouse Gas emissions sourced by the Defy Jacobs Plant, Defy's Ezakheni Site 180 Plant and Defy's Ezakheni Site 360 Plant, inclusive of the head office block, production plant facilities, national spares offices and product warehouse between the dates of 01.01.2019 - 31.12.2019.

The base year for Defy's Greenhouse Gas Emissions Inventory is 2019.

Defy documented the Greenhouse Gas emission inventory management methodology into its "GCP-16347 Greenhouse Gas Management System Procedure".

## **Greenhouse Gas Emissions Inventory Boundaries**

Defy adopted a controlled approach with regards to its Greenhouse Gas Emissions Inventory, 2019.

This is the scope that Defy included in its developed inventory.

The boundaries of Defy's Greenhouse Gas Inventory are as follows:

- Jacobs Plant: The cooking, laundry production plant, head office block, national spares offices and product warehouse,
- Ezakheni Site 180 Plant: The refrigeration production plant and main office block
- Ezakheni Site 360 Plant: The component manufacturing plant and product warehouse.

## **Greenhouse Gas Emissions and Activity Boundaries**

Defy's Greenhouse Gas emissions are in 3 categories:

- ✓ Direct Greenhouse Gas emissions,
- ✓ Indirect energy Greenhouse Gas emissions,
- ✓ Other indirect Greenhouse Gas emissions.

Direct Greenhouse Gas emissions are within the scope of Scope 1, energy indirect Greenhouse Gas emissions are within the scope of Scope 2 and other indirect Greenhouse Gas emissions are within the scope of Scope 3. Scope 1 and Scope 2 emissions are under the financial and administrative control of Defy Appliances. Scope 3 emissions are not under financial and administrative control of Defy, thus the Scope 3 emissions have not been included in the Greenhouse Gas emissions inventory.

✓ Direct Greenhouse Gas Emissions:

Defy's direct Greenhouse Gas emissions are in three categories:

- Greenhouse Gas emissions sourced by the stationary combustion,
- Greenhouse Gas emissions sourced by the mobile combustion,
- Other direct greenhouse gas emissions.



Defy's direct emission resources are natural gas, diesel (generator and forklifts), diesel (company (pool) and personnel cars), LPG (forklifts and production), petrol (company (pool) and personnel cars), refrigerants, CO<sub>2</sub> fire extinguisher, butane, and acetylene.

✓ Energy Indirect Greenhouse Gas Emissions:

Defy's indirect emission resource is electricity.

✓ Other Indirect Greenhouse Gas Emissions:

Other greenhouse gas emission resources are within the scope of Scope 3 which are not under the financial and administrative control of Defy.

Defy's other Greenhouse Gas emissions are subcontractor activities which are the outside of the campuses, logistic activities and emissions sourced by external waste disposal and recycling activities.

## **Greenhouse Gas Emissions Inventory Calculations**

Defy's Greenhouse Gas Emissions Inventory calculations are based on mainly "Intergovernmental Panel on Climate Change (IPCC) 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories".

The calculation methodologies and emission factors are as follows:

- ✓ The "IPCC-2019 Refinement to the IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion" is used to calculate the greenhouse gas emissions sourced by stationary combustion.
- ✓ The "IPCC-2006 Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 3: Mobile Combustion" is used to calculate the greenhouse gas emission sourced by the mobile combustion.
- ✓ South African electricity emission factor is referenced from International Energy Agency CO₂ Emissions from Fuel Combustion, 2019.
- ✓ Defra- UK Government GHG Conversion Factors for Company Reporting -2019, Version 1.2 - Defra Conversion-Factors-2019-Full-set-for-advanced-users, IPCC 2019 Refinement to the IPCC 2006 Guidelines for National Greenhouse Gas Inventories Volume 3 Chapter 7: ODS Substitutes , Volume 2 Energy Chapter 2: Stationary Combustion, IPCC Climate Change 2014 Synthesis Report (Fifth Assessment Report-AR5) Chapter 8 - Anthropogenic and Natural Radiative Forcing are used to calculate the other direct greenhouse gas emissions.
- ✓ South African AA Road Safety network which provides accurate and live Diesel and Petrol market prices.

In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions are documented in the Greenhouse Gas Emission Inventory.

#### Management of Uncertainties and Materiality

The uncertainties can be caused by the measurement devices, potential record errors and deviations, possible deviations in calorific value and lower - upper values of the fuels.

Uncertainty is calculated regarding Defy's direct Greenhouse Gas emission and indirect Greenhouse Gas emissions, separately.

Materiality is the sum of Greenhouse Gas inventory uncertainties and negligible acceptances. The company materiality has been calculated accordingly.

#### **Internal Audits and Control Methods**

With data control purposes, internal audits are performed within the scope of ISO 14064-1 Standard and the findings are managed in accordance with the "GTP-16355 Corrective and Preventive Actions Procedure."

## **Opinion Restatement**

Defy's Greenhouse Gas Inventory 2019 is materially correct and is a fair representation of the data and is prepared in accordance with the related international standard on Greenhouse Gases and to relevant national standards or practices available. It has been agreed that the materiality is under 7 %.

## **Verified GHG Emissions Belonging 2019**

Scope-1, Scope-2 and total Greenhouse Gas emissions of Defy Appliances (PTY) Ltd. were verified as follows:

Scope – 1 GHG Emissions: 3,008 tons CO<sub>2</sub> equivalent Scope – 2 GHG Emissions: 25,890 tons CO<sub>2</sub> equivalent Total GHG Emissions: 28,898 tons CO<sub>2</sub> equivalent

Uncertainty: 5,6 % Materiality: 7 %

