TÜRK LOYDU

VERIFICATION REPORT

20566

Issuance Date: 02.01.2023
Report No: 2022-0405-0030

Türk Loydu Uygunluk Değerlendirme A.Ş. performed verification of conformity of the PCF Report of Türkiye Halk Bankası A.Ş. for the period 1st October 2021 and 31st December 2021 to "*ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification*" at a limited assurance level regarding verification activities with process analysis.

These studies had been carried out in order to provide a verification opinion for the PCF Report of Türkiye Halk Bankası A.Ş. which includes direct and indirect greenhouse gas emissions in accordance with "*ISO 14064-3:2019 Greenhouse Gases–Part 3:"Specification with guidance for the validation and verification of greenhouse gas assertions*".

Engagement Summary

Scope of verification engagement / System boundaries

The functional unit is defined as 1 piece of Recycled PVC containing Bank Card to customer.

The life cycle inventory and respective Product Carbon Footprint of 1 piece of Recycled PVC containing bank card product manufactured by sub-manufacturers were calculated from the acquisition of input material until the completion of the life cycle process. Life cycle processes includes emissions from raw material production to packaging, transportation to the customers, use phase and waste disposal phases ("cradle to grave").

The cradle-to-grave PCF Peport is calculated based on six emission sources:

- Raw Card Production
- Personalization (Thermal) Process
- Packaging Process
- Transport to End User
- Use Phase
- End of Life Phases

The scope of including verification:

- Whether calculation methodologies applied are consistent with the requirements of ISO 14067:2018 & ISO 14040/44:2006 and are applied correctly to the data.
- Whether sufficient and appropriate evidence is available to support the information within the PCF Report, including whether the data contained within the calculation has been accurately collected and reported and is supported by evidence.
- No direct GHG removals or storages were present at the time of the verification.

Calculation methodology / Data source

- Two different data classifications has been used as primary (site-specific activity data) and secondary (estimated activity data from literature or recognized database) data. All primary data has been collected from Halkbank's sub-suppliers' production plants. For secondary data Ecoinvent v3.7.1 database have been used.
- Primary data was used for the upstream and gathered from the Halkbank's sub-manufacturers located in different countries which includes actual product weights, amounts of raw materials used, product contents, energy consumptions, transport figures, and water consumptions.
- Emission factors for raw materials production, transportation, fossil fuels and country electricity mix data have been obtained from Ecoinvent v3.7.1 as secondary data. All manufacturing data in core processes has been gathered from sub-manufacturers.

	▪ The use phase emissions includes the paper used for receipts and energy used at the data center of Halkbank. The energy and paper use of one transaction has been calculated with primary data of Halkbank. ▪ The GHG emissions accounted in the PCF inventory were based on GWP100 figures of IPCC 5th Assessment Report and contains the specified greenhouse gases with information as CO_2 equivalents. ▪ The PCF was modelled with SimaPro v9.2 software with Ecoinvent v3.7.1 database for secondary data. ▪ In addition to these calculations, the negligible emissions and acceptances are calculated, and the assumptions ara documented in the PCF Report of Türkiye Halk Bankası A.Ş.
Verification criteria	▪ WRI & WBCSD GHG Protocol ▪ ISO 14040:2006 "Environmental management - Life cycle assessment - Principles and framework" ▪ ISO 14044:2006 "Environmental management - Life cycle assessment - Requirements and guidelines" ▪ ISO 14067:2018 "Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification"
Verification standard	ISO 14064-3:2019 "Specification with guidance for the verification and validation of greenhouse gas statements"
Assurance level	Limited Assurance
Materiality level	A materiality threshold is set at five percent (for both understatements and overstatements)
Roles and responsibilities	The determination and reporting of GHG emissions of PCF Report are the sole responsibility of our client. Our role and responsibility was to independently verify the adequacy of the GHG emissions reported by our client, as well as the underlying systems and processes for data collection, analysis and control, in accordance with the requirements of ISO 14064-3.

Verification Activities

Türk Loydu planned and performed the following studies to obtain the information, explanations and evidence that considered necessary to provide a basis for our verification conclusions.

A team of GHG Lead Verifier and Technical Manager performed the following key activities:

- Interviews with relevant staff to understand and evaluate:
  - The internal reporting processes, quantification methodology, including sampling approach, and the emission calculation workbooks.
  - The data management systems and processes (including data collection and internal review processes) used for collecting and reporting data.
- A review of the calculations of the product carbon footprint (PCF) model.
- A review of documentation, procedure and methodologies, including PCF Report ,
- A review of samples of evidence for the underlying data used in calculations of the GHG emissions, and a check of the emission factors used.
- Assessment of findings and outstanding issues in PCF Report.
- Assessment and review of resolutions to outstanding issues in PCF Report.
- Internal technical review and determination of assurance by Türk Loydu,
- Issuance of verification statement and completion of verification.

Assurance Level and Materiality

The level of assurance agreed is that of limited assurance. A materiality level of five percent was applied. Note that assessment of compliance and materiality was undertaken against the stated calculation methodology. The uncertainties can be sourced by the measurement devices, potential record errors and deviations. Materiality is the sum of the PCF inventory uncertainties, negligibility and acceptances.

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Verification Opinion and Conclusion

Based on the results of our verification process, we confirm the reported emissions and the achievement of the agreed level of assurance and compliance with materiality thresholds. This statement is issued in accordance with the agreement reached with the client and within the framework of our validation and verification regulations.

This assessment included the collection of evidence supporting of the reported data and multiple cross checks, reporting standard and calculation methodologies referenced in the assurance criteria. This statement is only to be interpreted together with the Product Carbon Footprint Report of Türkiye Halk Bankası A.Ş. as a whole.

Türk Loydu's approach is risk-based, drawing on an understanding of the risks associated with calculating GHG emission information and the controls in place to mitigate these risks. Our studies included assessment, on a sample basis, of evidence relevant to the reporting of emission information.

The life cycle emissions verified for PCF Report of Türkiye Halk Bankası A.Ş. are given following:

PRODUCT CARBON FOOTPRINT (PCF) INVENTORY LIFE CYCLE EMISSIONS		
Raw Card Production	0,015	$kgCO_2e$
Personalization (Thermal) Process	0,0023	$kgCO_2e$
Packaging Process	0,025	$kgCO_2e$
Transport to End User	0,0055	$kgCO_2e$
Use Phase	2,91	$kgCO_2e$
End of Life Phases	0,0008	$kgCO_2e$
TOTAL:	**2,96**	**$kgCO_2e$**

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