VERIFICATION STATEMENT

The verification is based on:

LCA report: Comparative assertion on climate change impacts of packaging solutions for solutions for beauty care and food end use applications. Technical background report, MetsäBoard, dated 19 October 2024.

EPD No: S-P-09340 MetsäBoard Prime FBB EB (Mother EPD)

Background LCA report to EPD: EPD Background report_FBB_26052023

I hereby confirm that, following detailed examination as independent 3rd party verifier, I have not been able to trace any significant deviations by examine its project LCA report, with regards to,

- the collected data and their use in the LCA calculation,
- the compliance between calculation rules in the reference PCR (PCR 2010:14 Processed paper and paperboard (3.1), EPD International) and the way the LCA-based calculation has been carried out,
- the presentation of environmental performance in the EPD,
- the quality and accuracy of the documentation on additional environmental information, and following the procedural and methodological requirements in ISO 14020/14025.

The review concerned the final LCA report as listed above. The reviewer did not review the goal and scope phase, nor the data collection phase. Primary data and calculations were not reviewed. However, the climate impact (GWP) information presented in the assessed LCA report are versions of the fully verified so called mother EPD (S-P-09340), why the two paperboards in the LCA report are regarded as align with the already verified EPD. I confirm that the company-specific data has been examined as regards to plausibility and consistency; the owner of the declaration shall be liable for the underlying information and evidence.

I confirm that I have adequate knowledge and experience of the industry and relevant standards to carry out this verification.

I confirm that I have been independent in my roles as verifier in according with requirements in ISO 14025. I have not been involved in the development of the LCA or declaration and have no conflict of interest regarding this verification. The presented results have been found to be correct and no non-conformances remain. All comment found from the verification are closed.

Name and organization of independent verifier: Martin Erlandsson, IVL Swedish Environmental Research Institute	Place: Stockholm 2025-01-09
Signature: 	

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DIALOGUE BETWEEN VERIFIER & EPD OWNER DURING THE VERIFICATION PROCESS

Dialoge closed 2021-12-09

N^{O}	CHAPTER, ARTICLE, PARAGRAPH, TABLE	TYPE OF COMMENT *	REFERENCE TO CHECKLIST OR PROGRAMME INSTRUCTIONS	VERIFIER COMMENT AND RECOMMENDATION	EPD/LCA OWNER ANSWER	FINAL VERIFIER STATEMENT
1	Section: Description of Life Cycle Inventory (LCI)	Te		Since the electricity mix is significant, please add if the market base approached or location base is used, and to my understanding is it currently a mix where your data is market based and GoO, while the generic data is location based. This is OK if you just add that this is the settings used and that it is a conservative approach for you compered to use residual mix for the generic data.	Added to the report p. 4	Approved
2	Section: Climate change impact of Metsä Board's paperboards following PCR 2010:14 Processed paper and paperboard (3.1) and in the EPD/LCA report: Table 2 Metsä customised electricity grid mix shares	Te		You state that the energy mix now (2023) is other than in the EPD (2022). Add that this is a GoO mix and add the relative reduction from 2022 to 2023 per kWh. (I would prefer that you use the mandatory concept in EPD Norway that report the energy used in the core process (kWh/DU) and its actual kg CO2 per kWh with GoO and the location based approach. You state: "Amount of latex is much higer in MB Prime FBB EB than other two grades." Correct spelling of higher. Indicate if this is significant to the over all result – that I assume -and indicate the part from Latex compered to the cradle to gate result for MB Prime FBB EB. Ok?	Added to the report p. 9 and 14 Comparison made to location based (Fi grid 2023) impacts vs MB used Grid mix. Comparison added to the report p 10,12,15 and 17 Correct spelling of higher. - done Added to the report p.9 and 14	Approved

N^{O}	CHAPTER, ARTICLE, PARAGRAPH, TABLE	TYPE OF COMMENT *	REFERENCE TO CHECKLIST OR PROGRAMME INSTRUCTIONS	VERIFIER COMMENT AND RECOMMENDATION	EPD/LCA OWNER ANSWER	FINAL VERIFIER STATEMENT
3	Result tables	Ed/Te		For some reason is the wight-% not the same when I calculate the %. Correct in all tables 	Corrected	Approved
4	Text in result tables	Ed		You state “.. The production of CTMP used in the production of Folding Box Board is electricity intensive process, this can be mitigated by the procurement of fossil free electricity” Please change text to (type); “…is by Metsä mitigated by the procurement of fossil free electricity”, so its transparent and clear to the reader that you have taken this action.	Changed	Approved
5	Front page	Ed		I suggest to add the affiliation of the authors on the front page so it’s clear that you are employed by Metsä. 	Done	Approved

Add more rows, as needed.

* Editorial (Ed), General (Ge) or Technical (Te)

Examples of on reporting data quaöity wit numbers and national codes:

	Product stage		Construction process stage			Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	NO/ EU/ GLO	NO/ SE	SE	SE	-	-	-	-	-	-	-	-	SE	SE	SE	SE	EU
Specific data	60 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	10 % or less					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	10 % or less					-	-	-	-	-	-	-	-	-	-	-	-

Table 3 Example for reporting modules declared, geography, share of specific data (in GWP-GHG indicator) and data variation.

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared																	
Geography																	
Specific data used						-	-	-	-	-	-	-	-	-	-	-	-
Variation – products						-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites						-	-	-	-	-	-	-	-	-	-	-	-

ANNEX 1: COMPARISON OF GWP CHARACTERISATION FACTORS IN DIFFERENT FRAMEWORKS

Table 5 Characterisation factors for some of the emissions contributing to some of the GWP indicators in EN 15804:A1, EN 15804:A2, and EF 3.0 (PEF). Characterisation factors for EN 15804:A1, EN 15804:A2 and EF 3.0 (PEF) are as implemented in the LCA software Gabi Professional (version 9.2.0.58) in September 2020. The EF 3.0 (PEF) indicators are initially from the JRC website (https://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml).

	PCR 2019:14 (GPI, IPCC AR5)	**EN 15804+A1 (IPCC AR4)**	**EN 15804+A2**		**EF 3.0 (PEF)**	
	GWP-GHG	GWP	GWP-fossil	GWP-biogenic	GWP-fossil	GWP-biogenic
CO_2	1	1	1	0	1	0
CO_2 biogenic	0	0/1*	0	1	0	0
CH_4 fossil	30	25	36.8	0	36.8	0
CH_4 biogenic	28	25	0	36.8	0	34
N_2O	265	298	298	0	298	0

**The European standard EN 16485 with product category rules for Round and sawn timber introduced a new approach that also made it possible to report biogenic emission and uptake of carbon dioxide. This was however never addressed as an amendment to EN 15804+A1, why different reporting approaches are applied in EPDs following EN 15804+A1.*