China

Product Carbon Footprint Accounting Platform Input Data Verification Statement

Client:	TES-AMM (SINGAPORE) PTE. LTD. 9 Benoi Sector Singapore 629844 SINGAPORE
Responsible Party:	SK TES PTE. LTD. 9 Benoi Sector, Singapore 629844, SINGAPORE
Platform Related to Verified Input Data:	Carbon Loop Calculator
Verification Criteria:	The input data used to calculate the metric "Avoided GHG emission associated with TES-AMM circular service from Recycling and reuse" used in responsible party's platform Carbon Loop Calculator, including quantity of raw materials, virgin material extraction emission factor, recycling rate, asset weight, landfill emission factor, combustion emission factor, downstream processing emission factor, and years of 1st and 2nd life, are verified in compliance with the requirements of ISO 14067:2018,ISO 14040:2006,ISO 14044:2006 ; The input data used to calculate metrics "Emissions from site processing", "Emissions from transport", and "Energy used for processing" used in responsible party's platform Carbon Loop Calculator in compliance with the requirements of the GHG Protocol Corporate Standard
Materiality:	Deviation is less than 5% of total emissions
Level of Assurance:	Reasonable assurance level
Verification Conclusion:	- The input data used to calculate the metric "Avoided GHG emission associated with TES-AMM circular service from Recycling and reuse" used in responsible party's platform Carbon Loop Calculator from 2024-01-01 to 2024-12-31 meet the requirements of ISO 14067:2018,ISO 14040:2006,ISO 14044:2006, and that the data and information are based on historical fact and reliable source and there is no major discrepancy. - The input data used to calculate the metrics "Emissions from site processing", "Emissions from transport", and "Energy used for processing" used in responsible party's platform Carbon Loop Calculator from 2024-01-01 to 2024-12-31 meet the requirements of GHG Protocol Corporate Standard, and that the data and information are based on historical fact and there is no major discrepancy.

The objective of product carbon footprint accounting platform input data verification is to confirm the accuracy and conformity of the input data in the verification scope according to verification criteria. The product carbon footprint accounting platform input data verification statement is issued by TÜV SÜD, acting as the third-party, based upon the information provided from the responsible party. The data and information supporting the verified input data were historical and from reliable source in nature. The responsible party is responsible for the verified input data and its conformity with the applicable specified requirements. This statement does not relieve the responsible party from compliance with any bylaws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations.

Issue Date: 2025-12-19

(April He)

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Verification Scope:	The input parameters of the metrics (the metrics referenced herein are detailed in Table 1) used in responsible party's platform Carbon Loop Calculator from 2024-01-01 to 2024-12-31. The site-specific input data used to calculate "Emissions from site processing", "Emissions from transport", and "Energy used for processing" metrics has been independently verified by TÜV SÜD, verification scope is detailed in report No.: 64.405.25.35844.01 Rev.00.

Table 1 Metrics and input parameters used in responsible party's platform Carbon Loop Calculator

No.	Metric	Input Parameter
1	Avoided GHG emission associated with TES-AMM circular service: Recycling	*quantity of raw materials; virgin material extraction EF; recycling rate; asset weight; landfill EF; combustion EF; emissions from site processing; downstream processing EF*
2	Avoided GHG emission associated with TES-AMM circular service: Reuse	*manufacturing EF; years of 1st life; years of 2nd life; emissions from site processing*
3	Emissions from site processing: Used in No.1&2 Metrics	*scope1 emissions; scope2 emissions; scope3 emissions; total volume processed*
4	Emissions from transport	*scope 1 mobile emissions; scope 3 category 4 emissions; total distance travelled*
5	Energy used for processing	*total energy used; total volume processed*

*Scope1 emission parameter in the "Emissions from site processing" excludes scope 1 mobile emissions
*Scope3 emission parameter in the "Emissions from site processing" excludes and scope 3 category 4 emissions
*The method for selecting site-specific data used by the platform to calculate the metrics "Emissions from site processing", "Emissions from transport", and "Energy used for processing" is detailed in the Research Manual On the Lifecycle Assessment of Information Technology Devices Including Analysis of Their First and Second Life (Revision No. 1.2), which has been independently validated by TÜV SÜD.

Verification Findings:

- The input data used to calculate the metrics "Emissions from site processing", "Emissions from transport", and "Energy used for processing" is defined as site-specific data. The specific values for each site are presented in Tables 2 to Table 4.

Table 2 Input Parameters for "Emissions from Site Processing" metrics for each site

Site	Total asset processed by site (kg)	Scope 1 Emissions (kgCO₂e)	Scope 2 Emissions (kgCO₂e)	Scope 3 Emissions (kgCO₂e)
TES-AMM Australia Pty Limited (NSW (Sydney))	3371379.2	0.0	152095.4	326597.6
TES-AMM Australia Pty Limited (Queensland)	561256.9	0.0	15214.9	30785.8
TES-AMM Australia Pty Limited (Victoria)	2908563.0	0.0	66700.0	237240.7

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Site	Total asset processed by site (kg)	Scope 1 Emissions (kgCO$_2$e)	Scope 2 Emissions (kgCO$_2$e)	Scope 3 Emissions (kgCO$_2$e)
TES-AMM (Beijing) Co. Limited	12161386.5	3.0	383241.8	333445.7
TES-AMM (Guangzhou) company Limited	11913888.7	0.0	120944.0	121063.2
Shanghai TES-AMM Waste Products Recycle Company Limited	40808875.9	50.8	1677252.1	2253300.9
TES-AMM (Suzhou) E-waste Solutions Co. Limited	19085564.0	75028.5	627153.0	1995978.9
TES-AMM Central Europe GmBH (Herten)	4159788.9	9679.6	89389.9	179631.5
TES-AMM Central Europe GmBH (Recklinghausen)	721127.0	6036.8	149342.0	586911.7
TES-AMM Espana Asset Recovery and Recycling SL	465963.2	0.0	10325.3	71467.6
TES Sustainable Battery Solutions France	689092.8	2754.0	23430.0	141841.0
TES-AMM SAS Integrations Et Services	238997.0	0.0	23892.0	737543.9
TES-AMM (H.K) Limited (Lung Fung)	22398.7	0.0	3009.2	1459.4
TES-AMM (H.K) Limited (On Luk Mun)	1549232.6	281.8	42511.6	62531.4
PT TES-AMM Indonesia	680248.9	3023.6	33909.1	46796.3
TES-AMM Italia SRL	81138.4	0.0	8829.5	20163.8
TES-AMM Japan K.K.	619926.8	0.0	168690.6	306277.5
TES-AMM (Cambodia) Co. Limited	8552.5	35.5	1756.2	9838.7
TES-AMM (Malaysia) Sendirian Berhad (Johor Bahru)	491465.4	7845.6	222106.1	153277.2
TES-AMM (Malaysia) Sendirian Berhad (Penang)	269419.0	12.0	19834.3	32812.1
TES Netherlands B.V	1386917.0	0.0	11900.4	2353851.9
TES-AMM Philippines Inc	182945.1	0.0	11521.9	25289.2
TES Total Environmental Solutions AB	121188.1	0.0	0.0	50436.9
TES-AMM (Singapore) Private Limited (Benoi sector)	5784011.1	100606.8	476793.3	1938563.0
TES-AMM (Singapore) Private Limited (Pionner Place)	501785.0	0.0	84421.4	66800.8

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Tes B Private Limited	724632.0	20886.6	435624.4	668067.8
Total Environmental Solutions Co. Limited	6462315.4	13.6	46344.0	512952.6
TES-AMM (Taiwan) Co. Limited	657925.1	0.0	10668.1	59573.0
TES UK Limited	1097930.0	48327.7	149666.8	15907598.4
TES-AMM (Europe) Limited	3603045.5	7310.6	44564.0	332734.8
TES USA Inc (Altanta)	1062684.8	14258.9	55113.6	641019.6
TES USA Inc (Las Vegas)	1124484.9	2023.7	82938.8	612926.0
TES USA Inc (Seattle)	4727303.2	54755.4	50455.9	653489.9
TES USA Inc (Virginia)	3420458.1	135165.7	0.0	891855.3
TES-AMM (Vietnam) Company Limited (Hanoi)	57519.4	0.0	3944.6	6222.3
TES-AMM (Vietnam) Company Limited (HoChiMinh)	4657669.5	10.0	5335.0	18907.5

Table 3 Input Parameters for "Energy used for processing" metrics for each site

Unit: kJ

Site	Total Non-renewable Energy Used (scope 1 - fuels)	Total Non-renewable Energy Used (scope 2 - electricity/heat)	Total Renewable Energy Used (electricity/heat)
TES-AMM Australia Pty Limited (NSW (Sydney))	281751	836212	0
TES-AMM Australia Pty Limited (Queensland)	70710	62587	0
TES-AMM Australia Pty Limited (Victoria)	281023	279597	224766
TES-AMM (Beijing) Co. Limited	496551	2355995	0
TES-AMM (Guangzhou) company Limited	377810	743508	0
Shanghai TES-AMM Waste Products Recycle Company Limited	1385971	10310976	0
TES-AMM (Suzhou) E-waste Solutions Co. Limited	277789	3855449	0
TES-AMM Central Europe GmBH (Herten)	147400	2722727	0
TES-AMM Central Europe GmBH (Recklinghausen)	4841094	746814	0
TES-AMM Espana Asset Recovery and Recycling SL	96924	230875	0
TES Sustainable Battery Solutions France	0	738274	0
TES-AMM SAS Integrations Et Services	88575	752834	0

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Site	Total Non-renewable Energy Used (scope 1 - fuels)	Total Non-renewable Energy Used (scope 2 - electricity/heat)	Total Renewable Energy Used (electricity/heat)
TES-AMM (H.K) Limited (Lung Fung)	33848	17473	0
TES-AMM (H.K) Limited (On Luk Mun)	266314	246841	0
PT TES-AMM Indonesia	129820	152591	0
TES-AMM Italia SRL	0	63500	0
TES-AMM Japan K.K.	958440	1304309	0
TES-AMM (Cambodia) Co. Limited	0	18912	0
TES-AMM (Malaysia) Sendirian Berhad (Johor Bahru)	1714345	1054858	0
TES-AMM (Malaysia) Sendirian Berhad (Penang)	33060	94200	0
TES Netherlands B.V	78688	726126	0
TES-AMM Philippines Inc	22943	59811	0
TES Total Environmental Solutions AB	102576	0	376340
TES-AMM (Singapore) Private Limited (Benoi sector)	426080	4166155	2705134
TES-AMM (Singapore) Private Limited (Pionner Place)	0	737663	0
Tes B Private Limited	0	3806426	1405933
Total Environmental Solutions Co. Limited	992954	417096	421284
TES-AMM (Taiwan) Co. Limited	666392	77586	0
TES UK Limited	740372	1820272	0
TES-AMM (Europe) Limited	1127183	541994	0
TES USA Inc (Altanta)	0	487372	0
TES USA Inc (Las Vegas)	0	844638	0
TES USA Inc (Seattle)	4721553	660994	0
TES USA Inc (Virginia)	0	0	1534026
TES-AMM (Vietnam) Company Limited (Hanoi)	0	20988	0
TES-AMM (Vietnam) Company Limited (HoChiMinh)	0	28386	0

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Table 4 Input Parameters for "Emissions from transport" metrics for each site

Site	Emissions (kgCO$_2$e)		Distance (km)	
	Scope 1 mobile	Scope 3 Category 4	Scope 1 mobile	Scope 3 Category 4
TES-AMM Australia Pty Limited (NSW (Sydney))	18709.88	56565.832	44675.16	4280138.934
TES-AMM Australia Pty Limited (Queensland)	4695.58	2153.057	11241.5	139782.211
TES-AMM Australia Pty Limited (Victoria)	18661.51	145447.198	44559.66	10221162.76
TES-AMM (Beijing) Co. Limited	31899.22	70782.753	97804	100707
TES-AMM (Guangzhou) company Limited	23104.26	76574.557	101884.6	69709
Shanghai TES-AMM Waste Products Recycle Company Limited	85438.12	1153840.850	382250	1158589.877
TES-AMM (Suzhou) E-waste Solutions Co. Limited	17634.00	800796.293	56958	1200347
TES-AMM Central Europe GmBH (Herten)	0.00	393143.659	0	789165.035
TES-AMM Central Europe GmBH (Recklinghausen)	314848.89	482531.611	893703.4	1102363.033
TES-AMM Espana Asset Recovery and Recycling SL	6112.40	748165.667	45679	976687.828
TES Sustainable Battery Solutions France	0	40969.974	0	41870.183
TES-AMM SAS Integrations Et Services	5881.913704	181628.399	21630	194570.5709
TES-AMM (H.K) Limited (Lung Fung)	2247.69	24.991	4951	25.54
TES-AMM (H.K) Limited (On Luk Mun)	17684.76	383.634	31597	595.4
PT TES-AMM Indonesia	8452.13	22521.125	38732	39200.68102
TES-AMM Italia SRL	0.00	73839.517	0	96662.5
TES-AMM Japan K.K.	61835.86	7213.217	176380	6331.1
TES-AMM (Cambodia) Co. Limited	0.00	3105.583	0	3173.82
TES-AMM (Malaysia) Sendirian Berhad (Johor Bahru)	113546.72	49116.612	129294	63622.555

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Site	Emissions (kgCO$_2$e)		Distance (km)	
	Scope 1 mobile	Scope 3 Category 4	Scope 1 mobile	Scope 3 Category 4
TES-AMM (Malaysia) Sendirian Berhad (Penang)	2021.70	222.568	7868	288.3
TES Netherlands B.V	4811.98	6847.087	37851	16033.845
TES-AMM Philippines Inc	1523.57	8654.774	2235	94927.515
TES Total Environmental Solutions AB	6768.73	226210.829	28193	201606.632
TES-AMM (Singapore) Private Limited (Benoi sector)	29277.49	204114.446	82220.78	650529.7726
TES-AMM (Singapore) Private Limited (Pionner Place)	0.00	151.135	0	485.17
Tes B Private Limited	0.00	764.092	0	36260.5937
Total Environmental Solutions Co. Limited	65497.08	146368.953	237563.63	143095.89
TES-AMM (Taiwan) Co. Limited	42586.48	763.869	148457	839.79
TES UK Limited	49164.92	64274.306	156823.4	200620.723
TES-AMM (Europe) Limited	74851.34	27401.280	465521.37	26848.708
TES USA Inc (Altanta)	0.00	686408.455	0	806727.9876
TES USA Inc (Las Vegas)	0.00	574880.555	0	781923.651
TES USA Inc (Seattle)	300161.27	168600.760	466248	248836.295
TES USA Inc (Virginia)	0.00	1042447.555	0	1588067.438
TES-AMM (Vietnam) Company Limited (Hanoi)	0.00	12533.588	0	26537.723
TES-AMM (Vietnam) Company Limited (HoChiMinh)	0.00	1995.424	0	9641.67556

- For the input parameters of secondary data and emission factors, the data mainly consists of recognized reliable databases (e.g., the Ecoinvent database). However, due to the limited availability of internationally recognized datasets for certain secondary data inputs, responsible party has relied on a combination of publicly available literature and internal expertise to source these parameters. They have been checked as relevant and representative for the verification period. Please refer to Table 5 for details.

- The input parameter "asset weight" has not been checked back to its primary data sources (e.g., weighing records, on-site documents). However, this parameter has been confirmed to be derived from responsible party's internal asset management system, Circle, which ensures the traceability of weight data for all incoming assets processed by the organization.

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Table 5 The information of the input parameter of secondary data and emission factors

Input Parameter Name	Data Source
quantity of raw materials	Extract the percentage of each raw material component corresponding to the assets from the ecoQuery 3.10 database, scientific studies and internal research. Then multiply this percentage by the weight of the asset.
virgin material extraction EF	Ecoinvent 3.9.1 cutoff database
recycling rate	1. Basic metals (aluminum, zinc, etc.): External research. 2. Plastics: Primarily sourced from the U.S. Department of Energy website. 3. Complex components: The percentage table of constituent components obtained from the ecoQuery 3.10 database, scientific studies and internal research was multiplied by the basic material recovery rate to obtain.
downstream processing EF	Ecoinvent database 3.10 and external scientific studies
landfill EF and combustion EF	GHG Conversion Factors from Department for Energy Security and Net Zero in UK
manufacturing EF	Ecoinvent 3.9.1 cutoff database and external scientific studies
years of 1st and 2nd life	Internal TES Circle system data and external research

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