

# Suriname's experience in calculating e-waste data

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**Meeting/Venue: 12<sup>th</sup> meeting of the EG-ECCS, London, UK**

**Date: 23-25 September 2025**



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6. Estimated E-waste for Suriname
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# 1.Introduction

**2018**

- Introduction of the E-waste tool was presented by Kees Balde at the Fifth meeting of the EGES in New York.
- E-waste was also a topic in the Chapter Waste in the FDES 2013.

**2019**

- May 2019: Jordan and Tanzania presented their experience in calculating E-waste for their respective countries at the Sixth meeting of the EGES in New York.
- June 2019: Studied the UNU manuals and tools.
- July-August: Received assistance from the UNU team regarding the calculated methods, the E-6 categories, the HS-codes, and the tools.
- September-October: Recalculated the E-waste estimates.
- November 2019: Presented my first E-waste calculation at a Regional Workshop in Grenada.
- December 2019: Received feedback from the UNU team and revised the data.

**2023**

- The updated E-Waste estimates were shared with Mr. Balde, who reviewed and revised the data.
- The E-waste estimates were published in the 10th and 11th Environment Statistics Reports. (1996-2021 data)

**2025**

- Calculate 2022-2024 E-waste estimates (still in progress).

# 2. Workplan

## Step 1

- Select the E-waste categories for your country according to the UNU manual. [https://collections.unu.edu/eserv/UNU:6477/RZ\\_EWaste\\_Guidelines\\_LoRes.pdf](https://collections.unu.edu/eserv/UNU:6477/RZ_EWaste_Guidelines_LoRes.pdf)
- GBS used the 7 categories of the EU-6 to collect and report on e-waste statistics using the UNU-KEYS.

## Step 2

- Request the Import, Export, and Re-export data from the Trade Statistics Division.
- Make sure to subtract the Re-exports data from the Imports data.

## Step 3

- Start by putting the Import and Export data in the **“EEE\_Put\_on\_Market\_Tool”** Excel file. [https://academy-ce.info/wp-content/uploads/2024/02/ENG-E-waste-Calculation-Tool\\_Manual.pdf](https://academy-ce.info/wp-content/uploads/2024/02/ENG-E-waste-Calculation-Tool_Manual.pdf).
- Make sure to put the right codes. These codes will link the right categories and the right weights.

## Step 4

- Open the **“E-waste\_generated\_Tool”**.
- Copy the data from the **“EEE\_PUT\_on\_Market\_Tool”**.
- The E-waste will be calculated and can be seen in a table format and a graph format.
- After calculating the E-waste estimations, the data was sent to Kees Balde, UNITAR, for validation.
- This data was published in the 10<sup>th</sup> and 11<sup>th</sup> Environment Statistics Publication.

# 3: E-waste categories

A. Classification of EEE under the six categories (EU-6) as set out in Annex III of the WEEE Directive 2012/19/EU and in the Statistical Guidelines from the Partnership on Measuring ICT for Development (Baldé, 2015).

EU-6	Type of electrical and electronic equipment
1	Temperature exchange equipment
2	Screens, monitors, and equipment containing screens
3	Lamps
4a	Large equipment (excluding photovoltaic panels)
4b	Photovoltaic panels (incl. converters)
5	Small equipment
6	Small IT and telecommunication equipment

[https://collections.unu.edu/eserv/UNU:6477/RZ\\_EWaste\\_Guidelines\\_LoRes.pdf](https://collections.unu.edu/eserv/UNU:6477/RZ_EWaste_Guidelines_LoRes.pdf)

EU-6	Type of electrical and electronic category	EE category	Description
1	Temperature exchange equipment	0108	Fridges (incl. combi-fridges)
		0109	Freezers
		0111	Air Conditioners (household installed and portable)
		0112	Other Cooling (f.i. dehumidifiers, heat pump dryers)
		0113	Professional Cooling (f.i. large airconditioners, cooling displays)
		1002	Cooled Dispensers (f.i. for vending, cold drinks)
2	Screens, monitors, and equipment containing screens	0303	Laptops (incl. tablets)
		0308	Cathode Ray Tube monitors
		0309	Flat Display Panel Monitors (LCD, LED, Plasma)
		0407	Cathode Ray Tube TVs
		0408	Flat Display Panel TVs (LCD, LED, Plasma)
3	Lamps	502	Compact Fluorescent Lamps (incl. retrofit & non-retrofit)
		503	Straight Tube Fluorescent Lamps
		504	Special Lamps (f.i. professional mercury, high & low pressure sodium)
		505	LED Lamps (incl. retrofit Led Lamps)
4a	Large equipment (excluding photovoltaic panels)	0001	Central heating (household installed)
		0101	Professional Heating & Ventilation (excl. cooling equipment)
		0102	Dishwashers
		0103	Kitchen equipment (e.g. large furnaces, ovens, cooking equipment)
		0104	Washing Machines (incl. combined dryers)
		0105	Dryers (wash dryers, centrifuges)
		0106	Household Heating & Ventilation (f.i. hoods, ventilators, space heaters)
		0307	Professional IT (f.i. servers, routers, data storage, copiers)
		0602	Professional Tools (f.i. for welding, soldering, milling)
		0703	Leisure (f.i. large exercise, sports equipment)
		0802	Professional Medical (f.i. hospital, dentist, diagnostics)
		0902	Professional Monitoring & Control (f.i. laboratory, control panels)
		1001	Non Cooled Dispensers (f.i. for vending, hot drinks, tickets, money)
4b	Photovoltaic panels (incl. converters)	0002	Photovoltaic Panels (incl. inverters)
5	Small equipment	0114	Microwaves (incl. combined, excl. grills)
		0201	Other Small Household (f.i. small ventilators, irons, clocks, adapters)
		0202	Food (f.i. toaster, grills, food processing, frying pans)
		0203	Hot Water (f.i. coffee, tea, water cookers)
		0204	Vacuum Cleaners (excl. professional)
		0205	Personal Care (f.i. tooth brushes, hair dryers, razors)
		0401	Small Consumer Electronics (f.i. headphones, remote controls)
		0402	Portable Audio & Video (f.i. MP3, e-readers, car navigation)
		0403	Music instrument, Radio, HiFi (incl. audio sets)
		0404	Video (f.i. Video recorders, DVD, Blue Ray, set-top boxes)
		0405	Speakers
		0406	Cameras (f.i. camcorders, foto & digital still cameras)
		0501	Lamps (f.i. pocket, christmas, excl. LED & incandescent)
		0506	Household Luminaires (incl. household incandescent fittings)
		0507	Professional Luminaires (offices, public space, industry)
		0601	Household Tools (f.i. drills, saws, high pressure cleaners, lawn mowers)
		0701	Toys (e.g. car racing sets, electric trains, music toys, biking computers, drones)
		0801	Household Medical (f.i. thermometers, blood pressure meters)
		0901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)
		6	Small IT and telecommunication equipment
0302	Desktop PCs (excl. monitors, accessoires)		
0304	Printers (f.i. scanners, multifunctionals, faxes)		
0305	Telecom (f.i. (cordless) phones, answering machines)		
0306	Mobile Phones (incl. smartphones, pagers)		
0702	Game Consoles		

# 4: Imports and Exports

IMPORTEN VAN DE OPGEVRAAGDE HS CODES IN			
Year	Final imprt	Final imprt	Final imprt
Period	2022	2023	2024
GSCODE \ Indicators	NETTOGEW	NETTOGEW	NETTOGEW
84511000:— machines voor het droog reinigen	940	379	1,179
84513000:— strijkmachines en strijpersen	3,164	48	219
84221100:— — voor huishoudelijk gebruik	11,790	14,413	15,707
84501110:— — — voor huishoudelijk gebruik	191,690	170,264	249,902
84512100:— — met een capaciteit van niet meer	40,869	71,259	541
84512900:— — andere	165,637	64,789	22,455
84146000:— afzuigkappen waarvan de langste	93,259	54,665	35,140
85162100:— — accumulatie radiatoren	-	2	-
85162900:— — andere	484	3,590	12,265
84183000:— vrieskasten met een capaciteit van	261,478	313,860	483,216
84184000:— vrieskasten met een capaciteit van	27,779	56,872	108,884
84151000:— van de soort die aan muren of	149,916	86,781	187,077
84158100:— — uitgerust met een koeltechnische	394	518	750
84158200:— — andere, voorzien van een	6,249	23,681	61,516
84186100:— — compressiemachines waarvan de	4,311	3,392	8,949
84158300:— — niet voorzien van een	7,202	1,786	7,640

EXPORTEN VAN DE OPGEVRAAGDE HS CODES IN			
Year	2022	2023	2024
GSCODE \ Indicators	NETTOGEW	NETTOGEW	NETTOGEW
84511000:— machines voor het droog reinigen			350
84221100:— — voor huishoudelijk gebruik			270
84501110:— — — voor huishoudelijk gebruik	20		77
84512100:— — met een capaciteit van niet			150
84512900:— — andere		10	40
84146000:— afzuigkappen waarvan de langste		7	465
85162900:— — andere	962		51
84183000:— vrieskasten met een capaciteit van			30
84184000:— vrieskasten met een capaciteit van	1,476	569	
84151000:— van de soort die aan muren of			
84158100:— — uitgerust met een	500		
84158200:— — andere, voorzien van een			
84186100:— — compressiemachines waarvan	400	90	
84158300:— — niet voorzien van een	16		20
84185000:— andere kisten, kasten, vitrines,	20	415	612
84186900:— — andere	15		2,133
85165000:— microgolfovens	3,603	3,850	2,212
84231000:— personenweegtoestellen,	5	315	
84521000:— naaimachines voor huishoudelijk			

The “EEE Put on Market” can be calculated as:  
 Imports – Exports + Domestic Production. Since Suriname did not have Domestic Production data of EEE, only the Import and Export data were used.  
 The data period is from 1996 to 2024 (28 years).

# 5: EEE\_Put\_on\_Market\_Tool (1)

## EEE Put on Market Tool

Institutions Name	UNU-ViE Scycle
Current version	V1
Contact	Kees Balde (balde@vie.unu.edu)

### Goal

The tool assist the user in the following steps:

- 1) Inserting available country data on Imports and Exports of EEE per year and per HS code
- 2) Linking the available country data on Imports and Exports of EEE in HS codes to the international
- 3) Converting the data on Imports and Exports that is expressed in number of pieces into weight; calculating the Put on Market of EEE in the country from the Imports and Exports and converting them in the right unit (tonnes)
- 4) Restructuring the data in a PIVOT table
- 5) Restructuring the data in the same format as it needs to be inserted in the E-waste generated Tool (sheet "POM")

*For further information and more detailed instructions please refer to the EEE Put on Market Tool Manual.*




### Contents

Sheet name	Contents
RAW_DATA	Working file where to insert available country data on Imports and Exports, link data to the UNU_KEYS, convert to correct unit and calculate EEE Put on
PIVOT	Results of the calculations performed in the excel sheet "RAW_DATA" by UNU_KEY, EU-6
POM_to_Tool	Results of the calculations performed in the excel sheet "RAW_DATA" in the same format as they need to be inserted in the E-waste generated Tool (sheet
HS_UNU_KEYS_year	Correlation table between HS codes and UNU_KEYS per year
Unique_HS codes	List of unique HS codes with descriptions
Weight_year	Relative weight per UNU_KEY per year
UNU_KEYS_EU-6	Correlation table between UNU_KEYS and EU-6

### About this File

The EEE Put on Market Tool has been developed by UNU-VIE-SCYCLE to help the user to prepare, adjust and convert the available country data on EEE Put on Market (POM) of new electronics prior to inserting them in the E-waste generated Tool.

### Cell legend

	Available country data on Imports and Exports of EEE
	Conversion of HS codes in UNU_KEYS and EU-6
	Calculation of EEE Put on Market in the country (Imports-Exports)

The **EEE Put on Market Tool** has been developed by **UNU-ViE-SCYCLE** to help the user prepare, adjust, and convert the available country data on EEE Put on Market (POM) of new electronics before inserting them in the **E-waste generated Tool**.

Note: The Excel tools were provided by Kees Balde and his team

<https://ewastemonitor.info/>

Developed by:

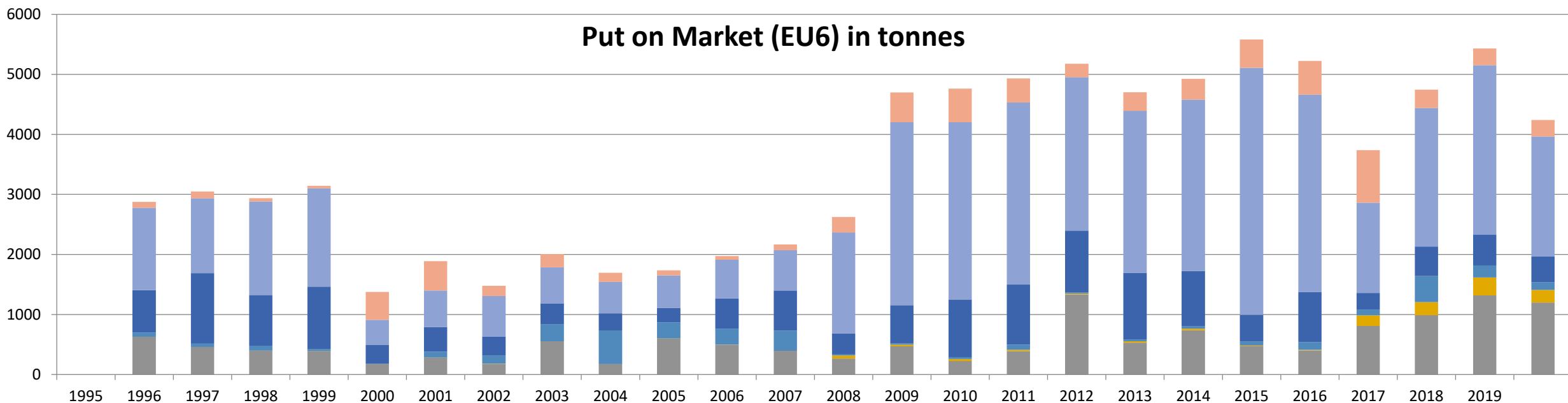
# 5: EEE\_Put\_on\_Market\_Tool-Data (2)



1	Raw data											
2												
3	RAW COUNTRY DATA				CONVERSIONS			CALCULATION OF EEE PUT ON MARKET (POM)				
4	YEAR	HS_6_digit	QUANTITY_UNIT	IMPORT_QUANTITY	EXPORT_QUANTITY	UNU_KEY	EU-6	AVWEIGHT	POM (kg)	POM (kg)	POM (t)	
65	1998	841510	KGM	83109	9652	0111	1	26.7	73457	73457	73	
66	1999	841510	KGM	33013	205	0111	1	26.7	32808	32808	33	
67	2000	841510	KGM	35400	350	0111	1	26.7	35050	35050	35	
68	2001	841510	KGM	21770	1262	0111	1	26.7	20508	20508	21	
69	2002	841510	KGM	34614	233	0111	1	26.7	34381	34381	34	
70	2003	841510	KGM	48474	146	0111	1	26.7	48328	48328	48	
71	2004	841510	KGM	50683	375	0111	1	26.7	50308	50308	50	
72	2005	841510	KGM	16552	551	0111	1	26.7	16001	16001	16	
73	2006	841510	KGM	12234	24	0111	1	26.7	12210	12210	12	
74	2007	841510	KGM	23358	67	0111	1	26.7	23291	23291	23	
75	2008	841510	KGM	28934	72	0111	1	26.7	28862	28862	29	
76	2009	841510	KGM	1907	0	0111	1	26.7	1907	1907	2	
77	2010	841510	KGM	3088	0	0111	1	26.7	3088	3088	3	
78	2011	841510	KGM	117535	0	0111	1	26.7	117535	117535	118	
79	2012	841510	KGM	659726	334	0111	1	26.7	659392	659392	659	
80	2013	841510	KGM	226233	637	0111	1	26.7	225596	225596	226	
81	2014	841510	KGM	199775	266	0111	1	26.7	199509	199509	200	
82	2015	841510	KGM	55434	184	0111	1	26.7	55250	55250	55	
83	2016	841510	KGM	65686	123	0111	1	26.7	65563	65563	66	
84	2017	841510	KGM	160378	1970	0111	1	26.7	158408	158408	158	
85	2018	841510	KGM	266079	2173	0111	1	26.7	263906	263906	264	
86	2019	841510	KGM	281399	0	0111	1	26.7	281399	281399	281	
87	2020	841510	KGM	303910	2458	0111	1	26.7	301452	301452	301	
88	2021	841510	KGM	140571	300	0111	1	26.7	140271	140271	140	
89	2022	841510	KGM	149916	1476	0111	1	26.7	148440	148440	148	
90	2023	841510	KGM	86781	569	0111	1	26.7	86212	86212	86	
91	2024	841510	KGM	187077	51	0111	1	26.7	187026	187026	187	



## Put on Market (EU6) in tonnes

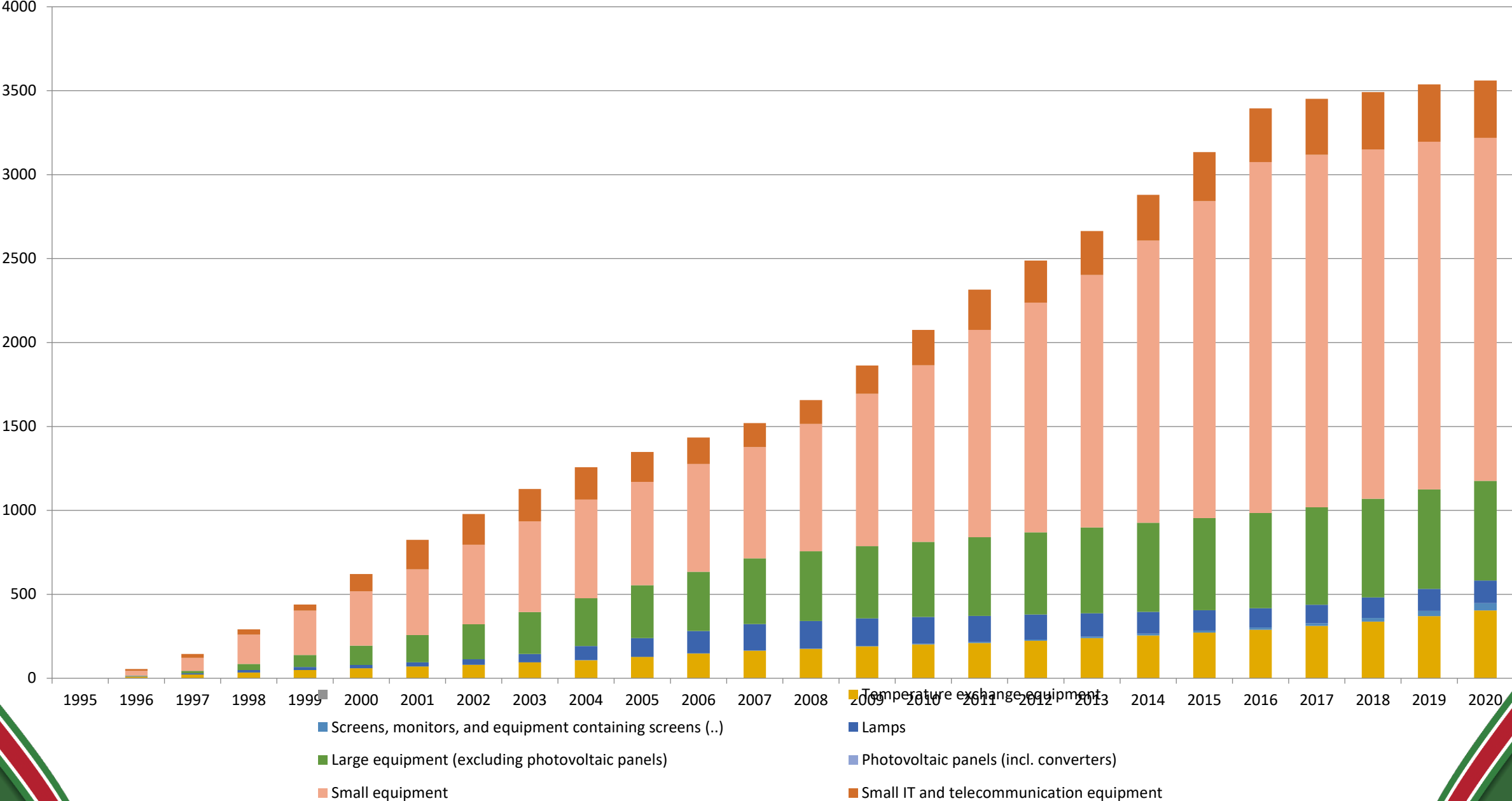


- Small IT and telecommunication equipment
- Small equipment
- Large equipment (excluding photovoltaic panels)
- Temperature exchange equipment
- Lamps
- Screens, monitors, and equipment containing screens (..)
- Photovoltaic panels (incl. converters)

E-waste generated																													
RESULTS Consolidated																													
		Weight in tonnes																											
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
1	Temperature exchange equipment		11	23	35	50	60	71	81	95	108	128	148	165	175	190	201	211	224	239	255	273	289	311	337	370	405	443	
2	Screens, monitors, and equipment containing screens (..)			0	0	0	0	0	0	0	0	0	0	0	1	2	4	5	7	9	10	12	13	16	22	31	43	57	
3	Lamps		3	8	14	18	19	24	33	50	84	111	134	158	166	160	155	148	140	130	121	115	111	122	131	134	133		
4a	Large equipment (excluding photovoltaic panels)		2	14	38	72	115	162	208	249	285	316	352	391	415	430	448	469	490	511	531	549	567	580	588	593	594	592	
4b	Photovoltaic panels (incl. converters)																												
5	Small equipment		28	77	174	264	324	392	474	541	588	615	642	663	759	907	1052	1236	1367	1504	1680	1888	2090	2100	2081	2071	2044	2010	
6	Small IT and telecommunication equipment		10	23	32	36	104	176	183	192	192	178	158	143	141	169	211	239	251	262	273	292	320	333	341	342	342	348	
<b>TOTAL</b>			<b>55</b>	<b>145</b>	<b>291</b>	<b>439</b>	<b>621</b>	<b>825</b>	<b>978</b>	<b>1127</b>	<b>1257</b>	<b>1348</b>	<b>1434</b>	<b>1520</b>	<b>1657</b>	<b>1864</b>	<b>2075</b>	<b>2315</b>	<b>2488</b>	<b>2665</b>	<b>2880</b>	<b>3134</b>	<b>3394</b>	<b>3451</b>	<b>3492</b>	<b>3537</b>	<b>3561</b>	<b>3582</b>	

In Suriname, E-waste is mostly caused by small and large electrical equipment.

# E-waste generated (EU6) in tonnes



# 6. Challenges, Advantages & Recommendations

## Challenges

- Work Overload
- Putting the data in the tools is time-consuming
- We have E-waste estimates, but not an E-waste report with analysis

## Advantages

- The Manuals and the tool are user-friendly
- The data was available at the Trade Division
- UNU/UNITAR assists when needed
- Estimates are prepared by the country itself and are therefore “**country owned**,” which are then used to compile data on SDGs indicators 12.4.2 and 12.5.1
- Suriname provided E-waste data for the UNSD waste questionnaire.

## Recommendations

- To have a national E-waste model (for Suriname), there is a need for a stakeholders meeting.
- Training is needed in analysing the data for Suriname.

*BEDANKT*

*Gran Tangi*

*Thank You*

*Gracias*

*Merci Beaucoup*

