Documentation Of circularEEE v.1 retrospective

Quick	All	Variable Link	Variable	Views	Groups	<u>Units</u>	Macros	<u>Feedback</u>	<u>Link</u>	<u>View</u>	View-Variable
Links	<u>Variables</u>	<u>Detail</u>	<u>Types</u>					<u>Loops</u>	Polarity	<u>Summary</u>	<u>Profile</u>

Model Assessment Results

Model Information	Result
Total Number Of Variables	36
Total Number Of State Variables	3 (8.3%)
Total Number Of Stocks	3 (8.3%)
Total Number Of Feedback Loops No IVV (Maximum	1 (0 1 0)
<u>Length: 30) [3, 3]</u>	
Total Number Of Feedback Loops With IVV (Maximum	0 (0 0 0)
<u>Length: 30) [0, 0]</u>	
Total Number Of Causal Links	46 (29 15 2)
Total Number of Rate-to-rate Links	0
Number Of Units Used In The Model (Basic/Combined)	6/8
Total Number Of Equations Using Macros	0 (0.0%)
Variables With Source Information	0 (0.0%)
<u>Dimensionless Unit Variables</u>	6 (16.7%)
Variables without Predefined Min or Max Values	32 (88.9%)
<u>Function Sensitivity Parameters</u>	0 (0.0%)
Data Lookup Tables	0 (0.0%)
Time Unit	Year
Initial Time	1980
Final Time	2015
Reported Time Interval	TIME STEP
Time Step	0.125
Model Is Fully Formulated	Yes
Model Defined Groups	Yes

Warnings	Result
Number Of Undocumented Variables	0 (0.0%)
Equations With Embedded Data	4 (11.1%)
Variables Not In Any View	0 (0.0%)
Nonmonotonic Lookup Functions	0 (0.0%)
Cascading Lookup Functions	0 (0.0%)
Non-Zero End Sloped Lookup Functions	1 (2.8%)
Equations With If Then Else Functions	0 (0.0%)
Equations With Min Or Max Functions	1 (2.8%)
Equations With Step Pulse Or Related Functions	0 (0.0%)
Equations With Unit Errors Or Warnings	2 (5.6%)

Potential Omissions	Result
<u>Unused Variables</u>	4 (11.1%)
Supplementary Variables	0 (0.0%)
Supplementary Variables Being Used	0 (0.0%)
Complex Variable	0 (0.0%)
Complex Stock	0 (0.0%)

Variable Types

L: <u>Level</u> (3 / 3)*	SM : Smooth (0 / 0)*	DE : <u>Delay</u> (0 / 0)*†	LI: Level Initial (2)	I: <u>Initial</u> (0 / 0)
C: Constant (11 / 11)	F: Flow (4 / 4)	A: <u>Auxiliary</u> (23 / 23)	Sub: Subscripts (0)	D : <u>Data</u> (0 / 0)
G : <u>Game</u> (0 / 0)	T: <u>Lookup</u> (1 / 1)*††			

^{* (}State Variables/Total Stocks) † Total Stocks Do Not Include Fixed Delay Variables. †† (Lookup Tables).

Views

	View: 1. Technology Adoption (28) Variables
L	
	View: 2. EEE flows (5) Variables

Groups

technology adoption (27)	circularEEE v.1		
itechnology adoption (27)	retrospective (5)		

Quick Links: A B C D E F G H I J E L M N O P Q R S T U V W X Y Z

Group	Type	Variables (36 Variables) Variable Name And Description	Thumbna
echnology	Type #1	actual adoption fraction (dmnl)	1 numona
adoption	A	= EEE adopters / total households	
adoption	_ A	Description: Actual ratio of the population (household or inhabitant) that has adopted the technology	
		Present In 1 View:	
		• 1. Technology Adoption	
		1. Technology Adoption	
		Used By	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction	
		and the actual adoption fraction multiplied by the total population (households or individuals)† Units	
		inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential	
		adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied	
		by the total households (house) defines the adoption rate at that moment in time (house/year).	
		Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
echnology	#2	adoption rate (house/Year)	
adoption	F,A	= MAX (potential adoption fraction - actual adoption fraction, 0) * total households	
•		Description: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the	
		actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the	
		structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl)	
		obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house)	
		defines the adoption rate at that moment in time (house/year).	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• <u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
		• <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households	
		or inhabitants) that adopted the technology.	
		Fredhold Learn 1 (100 09/2 (1) 0 10 01 (2) 1 12 21	
a ahmala ar	#2	FEE adoptors (house)	
echnology	#3	EEE adopters (house)	
adoption	L	$=\int \frac{1}{2} \frac{1}{dt} dt + \frac{1}{1} \frac{1} \frac$	
		Description: Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• R EEE per adopter Average number of stock in use per inhabitant considering retrospective model.	
		• <u>actual adoption fraction</u> Actual ratio of the population (household or inhabitant) that has adopted the technology	
		Fred Land 1 (100 00/2 / 1) 0 (00 / 2) 1 (2 2)	
1 1	11.4	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
echnology	#4	EEE average unit weight (kg/unit) = EXTERNAL DATA("EEE average unit weight")	
adoption			
		Description: Average unit weight of EEE.[obtained externally]	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		• kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to	
		compare with results from https://statistics-netherlands.shinyapps.io/sales and waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
echnology	#5	EEE unit price (USD/unit)	
adoption	C	= EXTERNAL_DATA("EEE unit price")	
		Description: Historial prices of flat panel television.[obtained externally, drives the model]	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		• <u>EEE unit price 1980</u> Reference value for EEE unit price. Value at initial time is used as reference.	
		• <u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	

.technology	#6	EEE unit price 1980 (USD/unit)	
adoption	A	= GET DATA AT TIME (EEE unit price, 1980) Description: Reference value for EEE unit price. Value at initial time is used as reference.	
		Present In 1 View:	
		• 1. Technology Adoption	
		 Used By normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference. 	
		<u>Feedback Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#7 A	effect of normalised PPP on average number of EEE per adopter (unit/house) = R EEE per adopter / normalised PPP	
wwopuren	••	Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit	
		(household or inhabitant) need and can afford at the point in time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
taahmalaari	#0	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] effect of normalised PPP on average number of EEE per household (unit/house)	
.technology adoption	#8 A	= R EEE per household / normalised PPP	
		Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
.Control	#9	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] FINAL TIME (Year)	
.Control	C C	= 2015	
		Description: The final time for the simulation. Present In 0 Views:	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE v.1	#10 C	historic disposal of EEE (unit/Year) = EXTERNAL DATA("historic disposal of EEE")	
retrospective		Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the model]	
		Present In 1 View: • 2. EEE flows	
		Used By	
		R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model.	
circularEEE	#11	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] historic EEE put on market (unit/Year)	
v.1	C	= EXTERNAL_DATA("historic EEE put on market")	
retrospective		Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model] Present In 1 View:	
		• <u>2. EEE flows</u>	
		Used By	
		R EEE commissioning Commissioning rate of EEE obtained from the retrospective model.	
.technology	#12	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year)	
adoption	A	= TREND(total households, TIME STEP, 0.01)	
		Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of	
		'house/year'. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		total households variation Variation of households considering the trend from historical values.	
technology	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house)	
adoption	LI,A	= <u>initial adopters fraction</u> * <u>total households</u>	
		Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
technology	#14	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters fraction (dmnl)	
	1	ı	ı

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adoption	C	Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time. Present In 1 View:	
		1. Technology Adoption	
		Used By • <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time • <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#15	initial potential adopters (house)	
adoption	LI,A	= (1 - initial adopters fraction) * total households Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View: 1. Technology Adoption	
		Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.Control	#16 C	INITIAL TIME (Year) = 1980 Description: The initial time for the simulation.	
		Present In 0 Views:	
		Used By	
.technology	#17	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] kg per inhabitant (kg/inhabitant)	
adoption	A	= R EEE per inhabitant * EEE average unit weight	
		Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#19 F,A	new potential adopters (house/Year) = total households variation	
		Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption	
		Used By • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#20 A	normalised EEE price (dmnl) = EEE unit price / EEE unit price 1980	
асторион	71	Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View:	
		• 1. Technology Adoption Used By	
		normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity.	
. 1 1	//01	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#21 A	normalised PPP (dmnl) = purchasing power parity per capta / PPP 1980	
•		Description: Normalised value of purchasing power parity considering the value at the initial time as reference. Present In 1 View: 1. Technology Adoption	
		Used By	
		effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	
		effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
		• <u>normalised ratio EEE price per PPP</u> Normalised fraction of EEE unit price and purchasing power parity.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#22 A		

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		Description: Normalised fraction of EEE unit price and purchasing power parity. Present In 1 View:	
		1. Technology Adoption	
		Used By • potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#23 C	population (inhabitant) = EXTERNAL_DATA("population") Description: Total number of inhabitants at that moment[obtained externally, drives the model] Present In 1 View: 1. Technology Adoption	
		Used By • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#24 A	potential adoption fraction (dmnl) = potential adoption fraction RSSDlookup(normalised ratio EEE price per PPP)	
adoption	A	Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings. Present In 1 View:	
		• 1. Technology Adoption	
		Used By adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#26 L	Potential EEE adopters (house)	
uuopuon	٥	= Jnew potential adopters-adoption rate dt + initial potential adopters Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Present In 1 View: 1. Technology Adoption	
		Used By	
. 1 1	#27	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#27 A	PPP 1980 (USD/Year) = GET DATA AT TIME(purchasing power parity per capta, 1980) Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference. Present In 1 View: 1. Technology Adoption	
		Used By • normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference.	
. 1 1	// 2 0	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#28 C	purchasing power parity per capta (USD/Year) = EXTERNAL_DATA("purchasing power parity per capta") Description: Reference used to measure the real purchasing power in different regions.[obtained externally, drives the model] Present In 1 View:	
		1. Technology Adoption	
		 Used By PPP 1980 Reference value for purchasing power parity per capta. Value at initial time is used as reference. normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
v.1	#29 F,A	R disposal of EEE as WEEE (unit/Year) = historic disposal of EEE	
etrospective		Description: Rate of disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows	
		Used By • R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
	110.0	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
rircularEEE	#30	R EEE commissioning (unit/Year)	
v.1	F,A	= historic EEE put on market	

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		Description: Commissioning rate of EEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows	
		Used By • R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE v.1	#31 L	R EEE in use (unit)	
retrospective	L	$= \int_{\mathbf{R}} \underbrace{\text{EEE commissioning-R disposal of EEE as WEEE}}_{\mathbf{R}} dt + 0.0$	
		Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
		Present In 2 Views:	
		• 1. Technology Adoption • 2. EEE flows	
		Used By	
		<u>R EEE per adopter</u> Average number of stock in use per inhabitant considering retrospective model.	
		 R EEE per household Average number of stock in use per household considering retrospective model. R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. 	
.technology	#32	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house)	
adoption	A	= ZIDZ (<u>R EEE in use</u> , <u>EEE adopters</u>)	
		Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• <u>effect of normalised PPP on average number of EEE per adopter</u> Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the	
		point in time.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#33	R EEE per household (unit/house)	
adoption	A	= <u>R EEE in use</u> / <u>total households</u> Description: Average number of stock in use per household considering retrospective model.	
		Present In 1 View:	
		1. Technology Adoption	
		 Used By effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power 	
		parity per capta on the average number of EEE one household need and can afford at the point in time.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#34 A	R EEE per inhabitant (unit/inhabitant) = R EEE in use / population	
adoption	A	Description: Average number of stock in use per inhabitant considering retrospective model.	
		Present In 1 View: • 1. Technology Adoption	
		 Used By kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to 	
		compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.Control	#35 A	SAVEPER (Year) = TIME STEP	
	A	Description: The frequency with which output is stored.	
		Present In 0 Views:	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.Control	#37 C	TIME STEP (Year) = 0.125	
		Description: The time step for the simulation.	
		Present In 1 View: 1. Technology Adoption	
		 Used By SAVEPER The frequency with which output is stored. 	
		• <u>household increase trend</u> Trend estimate of households through time.† Units inconsistency due to the use of TIME	
		STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#38	total households (house)	
adoption	C	= EXTERNAL_DATA("total households")	

.technology

adoption

#39

Description: Total number of households at that moment[obtained externally, drives the model] Present In 1 View: • 1. Technology Adoption

- Used By • R EEE per household Average number of stock in use per household considering retrospective model.
 - actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology
 - adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).
 - household increase trend Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'.
 - initial adopters Population number (household or inhabitant) that already adopted the technology at the initial time
 - initial potential adopters Population number (household or inhabitant) that has not yet adopted the technology at the initial time.
 - total households variation Variation of households considering the trend from historical values.

Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] total households variation (house/Year)

= total households * household increase trend

Description: Variation of households considering the trend from historical values.

Present In 1 View:

• 1. Technology Adoption

Used By

new potential adopters Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters.

Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]

(View) 1. Technology Adoption (28 Variables)

<u>Top</u>	(Vie	w) 1. Technology Adoption (28 Variables)	
Group	Type	Variable Name And Description	Thumbnai
.technology adoption	#1 A	actual adoption fraction (dmnl) = EEE adopters / total households Description: Actual ratio of the population (household or inhabitant) that has adopted the technology Present In 1 View: • 1. Technology Adoption Used By • adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
.technology adoption	#2 F,A	Teedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] adoption rate (house/Year) = MAX (potential adoption fraction - actual adoption fraction, 0) * total households Description: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
		Present In 1 View: • 1. Technology Adoption Used By • EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
.technology adoption	#3 L	EEE adopters (house) = \int \frac{\text{adoption rate } dt + \text{initial adopters}}{\text{Description:} Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Present In 1 View: • \frac{1. \text{ Technology Adoption}}{\text{Used By}}	
		 R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] 	
.technology	#4	EEE average unit weight (kg/unit)	

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adoption	C	= EXTERNAL_DATA("EEE average unit weight") Description: Average unit weight of EEE.[obtained externally] Present In 1 View: 1. Technology Adoption	
		Vised By kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#5	EEE unit price (USD/unit)	
adoption	С	= EXTERNAL_DATA("EEE unit price") Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View:	
		1. Technology Adoption	
		Used By EEE unit price 1980 Reference value for EEE unit price. Value at initial time is used as reference. normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#6	EEE unit price 1980 (USD/unit)	
adoption	A	= GET DATA AT TIME (<u>EEE unit price</u> , 1980) Description: Reference value for EEE unit price. Value at initial time is used as reference.	
		Present In 1 View:	
		1. Technology Adoption	
		 Used By normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference. 	
.technology	#7	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] effect of normalised PPP on average number of EEE per adopter (unit/house)	
adoption	A	= R EEE per adopter / normalised PPP	
		Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		<u>Feedback Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#8 A	effect of normalised PPP on average number of EEE per household (unit/house) = R EEE per household / normalised PPP	
adoption	1	Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household	
		need and can afford at the point in time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#12	household increase trend (1/Year)	
adoption	A	= TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the	
		growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of	
		'house/year'. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		total households variation Variation of households considering the trend from historical values.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#13 LI,A	initial adopters (house) = initial adopters fraction * total households	
adoption	LI,A	Description: Population number (household or inhabitant) that already adopted the technology at the initial time	
		Present In 1 View: 1. Technology Adoption	
		 Used By <u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#14	initial adopters fraction (dmnl)	
adoption	С	= 0	
		Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time	

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		• <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#15 LI,A	Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time.	
		Present In 1 View: • 1. Technology Adoption	
		 Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#17 A	kg per inhabitant (kg/inhabitant) = R EEE per inhabitant * EEE average unit weight Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales and waste/.	
		Present In 1 View: • 1. Technology Adoption	
		Used By	
technology	#19	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] new potential adopters (house/Year)	
adoption	F,A	= total households variation	
		Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		• 1. Technology Adoption	
		Vised By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#20 A	normalised EEE price (dmnl) = EEE unit price / EEE unit price 1980	
		Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View: 1. Technology Adoption	
		 Used By normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity. 	
technology	#21	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised PPP (dmnl)	
adoption	A	= <u>purchasing power parity per capta</u> / <u>PPP 1980</u>	
		Description: Normalised value of purchasing power parity considering the value at the initial time as reference. Present In 1 View: 1. Technology Adoption	
		Used By	
		effect of normalised PPP on average number of EEE per adopter. Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. One of the PPP of the ALEE of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	
		 effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity. 	
technology	#22	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised ratio EEE price per PPP (dmnl)	
adoption	A	= normalised EEE price / normalised PPP	
		Description: Normalised fraction of EEE unit price and purchasing power parity. Present In 1 View: 1. Technology Adoption	
		Used By • potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#23 C	population (inhabitant) = EXTERNAL_DATA("population") Description: Total number of inhabitants at that moment[obtained externally, drives the model]	
		Present in I view	
		Present In 1 View: • 1. Technology Adoption	

		R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#24	potential adoption fraction (dmnl)	
adoption	A	= potential adoption fraction_RSSDlookup(normalised ratio EEE price per PPP)	
		Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology	
		considering the price and their earnings.	
		Present In 1 View: • 1. Technology Adoption	
		1. Technology Adoption	
		Used By	
		• <u>adoption rate</u> Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction	
		and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential	
		adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied	
		by the total households (house) defines the adoption rate at that moment in time (house/year).	
		Foodbook I come () (0.00/) (1) (1.00 [0.01]	
.technology	#26	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] Potential EEE adopters (house)	
adoption	L	· · · · · · · · · · · · · · · · · · ·	
		$= \int_{\text{new potential adopters-adoption rate } dt + \underbrace{\text{initial potential adopters}}_{\text{new potential adopters}}$	
		Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants)	
		that adopted the technology. Present In 1 View:	
		• 1. Technology Adoption	
		H. ID	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#27	PPP 1980 (USD/Year)	
adoption	A	= GET DATA AT TIME(<u>purchasing power parity per capta</u> , 1980)	
		Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		 normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#28	purchasing power parity per capta (USD/Year)	
adoption	С	= EXTERNAL_DATA("purchasing power parity per capta") Proprietion Propries weed to measure the real numbering power in different regions (abtained externally drives the	
		Description: Reference used to measure the real purchasing power in different regions.[obtained externally, drives the model]	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		• PPP 1980 Reference value for purchasing power parity per capta. Value at initial time is used as reference.	
		• <u>normalised PPP</u> Normalised value of purchasing power parity considering the value at the initial time as reference.	
		T	
circularEEE		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
	#31	D FFF in use (unit)	
v.1	#31 L	R EEE in use (unit)	
I		$= \int_{\mathbf{R}} \underbrace{EEE \ commissioning}_{\mathbf{R}} \underbrace{disposal \ of \ EEE}_{\mathbf{d}} \ as \ WEEE}_{\mathbf{d}t} \ dt + 0.0$	
v.1		$= \int_{\mathbf{R}} \underbrace{EEE \ commissioning}_{\mathbf{R}} \underbrace{disposal \ of \ EEE \ as \ WEEE}_{\mathbf{d}t} \ dt + 0.0$ Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first	
v.1		$= \int_{\mathbf{R}} \underbrace{EEE \ commissioning}_{\mathbf{R}} \underbrace{disposal \ of \ EEE}_{\mathbf{d}} \ as \ WEEE}_{\mathbf{d}t} \ dt + 0.0$	
v.1		= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption	
v.1		$= \int_{\mathbf{R}} \underbrace{EEE \ commissioning}_{\mathbf{R}} \underbrace{disposal \ of \ EEE \ as \ WEEE}_{\mathbf{d}t} \ dt + 0.0$ $\mathbf{Description:} \ Value \ of \ EEE \ in \ use \ obtained \ from \ the \ retrospective \ model. Equivalent \ to \ all \ EEE \ in \ a \ country, \ either \ in \ first \ use, \ use, \ or \ second \ use.$ $\mathbf{Present \ In} \ 2 \ Views:$	
v.1		= \int R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows	
v.1		= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption	
v.1		= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model.	
v.1		= \int R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By R EEE per adopter Average number of stock in use per inhabitant considering retrospective model.	
v.1		= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
v.1		= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model.	
v.1 retrospective	L	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: • 1. Technology Adoption • 2. EEE flows Used By • R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. • R EEE per household Average number of stock in use per inhabitant considering retrospective model. • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters)	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model.	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: • 1. Technology Adoption • 2. EEE flows Used By • R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. • R EEE per household Average number of stock in use per inhabitant considering retrospective model. • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View:	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model.	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: • 1. Technology Adoption • 2. EEE flows Used By • R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. • R EEE per household Average number of stock in use per household considering retrospective model. • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By	
v.1 retrospective	#32	■ REEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: • 1. Technology Adoption • 2. EEE flows Used By • R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. • R EEE per household Average number of stock in use per household considering retrospective model. • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the	
v.1 retrospective	#32	■ REEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity	
v.1 retrospective	#32	■ REEF commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By Giffect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
v.1 retrospective	#32	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows Used By REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] REEE per adopter (unit/house) ZIDZ (REEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	

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		Description: Average number of stock in use per household considering retrospective model. Present In 1 View: 1. Technology Adoption	
		Used By effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#34	R EEE per inhabitant (unit/inhabitant)	
adoption	A	= R EEE in use / population	
		Description: Average number of stock in use per inhabitant considering retrospective model.	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		<u>kg per inhabitant</u> Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#38	total households (house)	
adoption	С	= EXTERNAL_DATA("total households")	
		Description: Total number of households at that moment[obtained externally, drives the model]	
		Present In 1 View: 1. Technology Adoption	
		1. Icemiology Adoption	
		 Used By R EEE per household Average number of stock in use per household considering retrospective model. actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year). household increase trend Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. initial adopters Population number (household or inhabitant) that already adopted the technology at the initial time. initial potential adopters Population number (household or inhabitant) that has not yet adopted the technology at the initial time. total households variation Variation of households considering the trend from historical values. 	
.technology	#39	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] total households variation (house/Year)	
adoption	#39 A	= total households * household increase trend	
1		Description: Variation of households considering the trend from historical values.	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		• new potential adopters Ratio of new potential adopters to the technology. Relies on the variation of the population	
		(variation of households or inhabitants). Additional households or inhabitants start as potential adopters.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
		(View) 2. EEE flows (5 Variables)	

(View) 2. EEE flows (5 Variables)

<u>Top</u>	(Vie	w) 2. EEE flows (5 Variables)	
Group	Type	Variable Name And Description	Thumbnail
circularEEE v.1	#10	historic disposal of EEE (unit/Year)	
retrospective	C	= EXTERNAL_DATA("historic disposal of EEE")	
		Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the	
		model]	
		Present In 1 View:	
		• <u>2. EEE flows</u>	
		Used By	
		• R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model.	
		Nulsposal of EEE as WEEE Male of disposal of EEE as WEEE obtained from the redospective model.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE v.1	#11	historic EEE put on market (unit/Year)	
retrospective	C	= EXTERNAL_DATA("historic EEE put on market")	
		Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model]	
		Present In 1 View:	
		• <u>2. EEE flows</u>	
		Head Dr.	
		 Used By R EEE commissioning Commissioning rate of EEE obtained from the retrospective model. 	
		K LLL commissioning Commissioning fact of LLL obtained from the fettospective model.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	

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circularEE retrospec		#29 F,A	R disposal of EEE as WEEE (unit/Year) = historic disposal of EEE Description: Rate of disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View:	
			 2. EEE flows Used By R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a 	
			country, either in first use, use, or second use.	
circularEE	EE v.1	#30	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE commissioning (unit/Year)	
retrospec	ctive	F,A	= historic EEE put on market Description: Commissioning rate of EEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows Used By	
			R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
circularEF	EF v 1	#31	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE in use (unit)	
retrospec		L	$= \int_{\mathbf{R}} \underbrace{EEE \ commissioning \cdot R \ disposal \ of \ EEE \ as \ WEEE \ dt}_{d} + 0.0$ Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views:	
			• 1. Technology Adoption • 2. EEE flows	
			Used By • R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. • R EEE per household Average number of stock in use per household considering retrospective model. • R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
	(6)		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
Top Group	Type		echnology adoption (27 Variables) Name And Description	Thumbnai
technology	#1		doption fraction (dmnl)	Thumbhai
adoption	A	Descript Present	dopters / total households tion: Actual ratio of the population (household or inhabitant) that has adopted the technology In 1 View: . Technology Adoption	
		a d fi	doption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency lue to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the otal households (house) defines the adoption rate at that moment in time (house/year).	
			<u>:k Loops:</u> 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
technology adoption	#2 F,A	= MAX Descript actual ad structure obtained defines t Present	n rate (house/Year) (potential adoption fraction - actual adoption fraction, 0) * total households tion: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the deption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the exet to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) the adoption rate at that moment in time (house/year). In 1 View: . Technology Adoption	
		• <u>P</u>	EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
.technology	#3	• E • P ir	EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Ek Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
.technology adoption	#3 L	Feedbac EEE adopt Descript Present	EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	

technology	#4	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] EEE average unit weight (kg/unit)	
adoption	C	= EXTERNAL_DATA("EEE average unit weight")	
		Description: Average unit weight of EEE.[obtained externally]	
		Present In 1 View: 1. Technology Adoption	
		1. Icemiology Adoption	
		Used By	
		• <u>kg per inhabitant</u> Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to	
		compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#5	EEE unit price (USD/unit)	
adoption	С	= EXTERNAL_DATA("EEE unit price")	
		Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View:	
		• 1. Technology Adoption	
		H. J.D.	
		 Used By EEE unit price 1980 Reference value for EEE unit price. Value at initial time is used as reference. 	
		• normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference.	
. 1 1	11.6	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#6 A	EEE unit price 1980 (USD/unit) = GET DATA AT TIME (EEE unit price, 1980)	
udoption		Description: Reference value for EEE unit price. Value at initial time is used as reference.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		<u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#7	effect of normalised PPP on average number of EEE per adopter (unit/house)	
adoption	A	= R EEE per adopter / normalised PPP	
		Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit	
		(household or inhabitant) need and can afford at the point in time. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#8	effect of normalised PPP on average number of EEE per household (unit/house)	
adoption	A	= R EEE per household / normalised PPP Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household	
		need and can afford at the point in time.	
		Present In 1 View:	
		1. Technology Adoption	
		Lised Rv	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#12	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year)	
technology adoption	#12 A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01)	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year)	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View:	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption Used By 1. total households variation Variation of households considering the trend from historical values.	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption Used By 1. Technology Adoption Used By 1. Technology O (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house)	
adoption	A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption Used By 1. total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: 1. Technology Adoption Used By 1. Technology Adoption Used By 1. Technology: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: • 1. Technology Adoption Used By • total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View:	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: • 1. Technology Adoption Used By • total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View: • 1. Technology Adoption	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: • 1. Technology Adoption Used By • total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View: • 1. Technology Adoption Used By	
adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: • 1. Technology Adoption Used By • total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View: • 1. Technology Adoption	
technology adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year) = TREND(total households, TIME STEP, 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Present In 1 View: • 1. Technology Adoption Used By • total households variation Variation of households considering the trend from historical values. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View: • 1. Technology Adoption Used By	
technology adoption technology	#13 LI,A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#13 LI,A	Reedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption technology	#13 LI,A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	

		 Used By initial adopters Population number (household or inhabitant) that already adopted the technology at the initial time initial potential adopters Population number (household or inhabitant) that has not yet adopted the technology at the initial time. 	
.technology adoption	#15 LI,A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial potential adopters (house) = (1 - initial adopters fraction) * total households Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View: 1. Technology Adoption	
		Used By • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#17 A	kg per inhabitant (kg/inhabitant) = R EEE per inhabitant * EEE average unit weight Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/ . Present In 1 View: • 1. Technology Adoption	
		Used By Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#19	new potential adopters (house/Year)	
adoption	F,A	= total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption	
		 Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] 	
.technology	#20	normalised EEE price (dmnl)	
adoption	A	= EEE unit price / EEE unit price 1980 Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View: 1. Technology Adoption Used By	
		• <u>normalised ratio EEE price per PPP</u> Normalised fraction of EEE unit price and purchasing power parity.	
.technology	#21	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised PPP (dmnl)	
adoption	A	= purchasing power parity per capta / PPP 1980	
		 Used By effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#22 A	normalised ratio EEE price per PPP (dmnl) = normalised EEE price / normalised PPP Description: Normalised fraction of EEE unit price and purchasing power parity. Present In 1 View: 1. Technology Adoption	
		 Used By potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings. 	
technology	#72	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] population (inhabitant)	
.technology adoption	#23 C	population (inhabitant) = EXTERNAL_DATA("population") Description: Total number of inhabitants at that moment[obtained externally, drives the model] Present In 1 View: • 1. Technology Adoption	

		Used Dr.	
		Vised By R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
		Foodbook I const 0 (0.00() (1) 0.10 01 (1) 0.10 01	
technology	#24	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] potential adoption fraction (dmnl)	
adoption	A	= potential adoption fraction RSSDlookup(normalised ratio EEE price per PPP)	
		Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology	
		considering the price and their earnings. Present In 1 View:	
		• 1. Technology Adoption	
		 Used By adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction 	
		and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency	
		due to the structure set to drive the technology adoption model. The comparison among the potential adoption	
		fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
		total notisenotus (notise) defines the adoption rate at that moment in time (notise/year).	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#26 L	Potential EEE adopters (house)	
adoption	L	$=\int_{\text{new potential adopters}} -a doption rate dt + initial potential adopters$	
		Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that	
		adopted the technology. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
taahmalaari	#27	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] PPP 1980 (USD/Year)	
technology adoption	#2 / A	= GET DATA AT TIME(<u>purchasing power parity per capta</u> , 1980)	
•		Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#28 C	purchasing power parity per capta (USD/Year) = EXTERNAL_DATA("purchasing power parity per capta")	
adoption	C	Description: Reference used to measure the real purchasing power in different regions. [obtained externally, drives the	
		model]	
		Present In 1 View: • 1. Technology Adoption	
		1. Technology Adoption	
		 Used By PPP 1980 Reference value for purchasing power parity per capta. Value at initial time is used as reference. 	
		• <u>normalised PPP</u> Normalised value of purchasing power parity considering the value at the initial time as reference.	
		D. H. J.Y	
technology	#32	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house)	
technology adoption	#32 A	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters)	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model.	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View:	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption Used By	
		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	
adoption		R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house)	
adoption	A	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model.	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology Adoption	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View:	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By	
adoption	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
technology	#33	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • I. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power	
technology	#33 A	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology_Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback_Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology_Adoption Used By • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. Feedback_Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per inhabitant (unit/inhabitant) = R EEE in use / population	
technology adoption	#33 A	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters) Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: • 1. Technology Adoption Used By • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] R EEE per inhabitant (unit/inhabitant)	

		c	to general inhabitant. Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
.technology	#38		useholds (house)	
adoption	C	= EXTE Descript	RNAL_DATA("total households") tion: Total number of households at that moment[obtained externally, drives the model] In 1 View:	
			. Technology Adoption	
.technology adoption	#39 A	• a • a • a • d • f • t • b • i • i • i • i • t Feedbac total ho = total h	EEE per household Average number of stock in use per household considering retrospective model. Lectual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency that the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the otal households (house) defines the adoption rate at that moment in time (house/year). Lousehold increase trend Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. Lousehold increase trend Population number (household or inhabitant) that already adopted the technology at the initial potential adopters Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Louseholds variation Variation of households considering the trend from historical values. Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
			tion: Variation of households considering the trend from historical values.	
		1	In 1 View: . Technology Adoption	
			new potential adopters Ratio of new potential adopters to the technology. Relies on the variation of the population variation of households or inhabitants). Additional households or inhabitants start as potential adopters.	
			<u>ck Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
<u>Top</u>			oup) circularEEE v.1 retrospective (5 Variables)	I
Grou circularEl	•	#10	Variable Name And Description historic disposal of EEE (unit/Year)	Thumbnail
retrospe	ctive	С	= EXTERNAL_DATA("historic disposal of EEE") Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the model] Present In 1 View: • 2. EEE flows Used By • R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEl	EE v.1	#11	historic EEE put on market (unit/Year)	
retrospe	ctive	С	= EXTERNAL_DATA("historic EEE put on market") Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model] Present In 1 View: • 2. EEE flows	
			 Used By R EEE commissioning Commissioning rate of EEE obtained from the retrospective model. 	
circularEl	FF v/ 1	#29	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year)	
retrospe		F,A	= historic disposal of EEE	
			Description: Rate of disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: 2. EEE flows	
			Used By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Foodback Loops: 0 (0.0%) (+) 0.10 (1.00)	
circularEl	EE v.1	#30	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
retrospe		F,A	= historic EEE put on market Description: Commissioning rate of EEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows	
			Used By	

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			R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
			Feedback Longs 0 (0.0%) (±) 0 [0.0] () 0 [0.0]	
circularEEE v.	1	#31	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE in use (unit)	
retrospective		L	$= \int_{\mathbf{R}} \underbrace{\text{EEE commissioning-R disposal of EEE as WEEE}}_{\mathbf{R}} dt + 0.0$	
			Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country,	
			either in first use, use, or second use.	
			Present In 2 Views:	
			• 1. Technology Adoption • 2. EEE flows	
			2. EEE Hows	
			Used By PEFF now adoptor. Average number of steels in year new inhebitant considering retresprective model.	
			 <u>R EEE per adopter</u> Average number of stock in use per inhabitant considering retrospective model. <u>R EEE per household</u> Average number of stock in use per household considering retrospective model. 	
			REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
<u>Top</u>		(Tv	pe) Level (3 Variables)	
Group		Type		Thumbnail
technology adop	tion	#3	EEE adopters (house)	
		L	$=$ $\int adoption \ rate \ dt + initial \ adopters$	
			Description: Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
			Present In 1 View: • 1. Technology Adoption	
			1. recimology Adoption	
			 Used By R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. 	
			• <u>actual adoption fraction</u> Actual ratio of the population (household or inhabitant) that has adopted the	
			technology	
			Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
technology adop	tion	#26	Potential EEE adopters (house)	
		L	$= \int_{\text{new potential adopters-adoption rate}} dt + \text{initial potential adopters}$	
			Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or	
			inhabitants) that adopted the technology.	
			Present In 1 View: • 1. Technology Adoption	
			Used By	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE v. retrospective		#31 L	R EEE in use (unit)	
retrospective		L	$=$ $\int R$ EEE commissioning- R disposal of EEE as WEEE $dt + 0.0$	
			Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
			Present In 2 Views:	
			• 1. Technology Adoption	
			• 2. EEE flows	
			Used By	
			 <u>R EEE per adopter</u> Average number of stock in use per inhabitant considering retrospective model. <u>R EEE per household</u> Average number of stock in use per household considering retrospective model. 	
			 R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. 	
			Foodback I cope; 0 (0.0%) (±) 0, [0.0] () 0, [0.0]	
T- (Type) Sn	nont	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] h (0 Variables)	
- 01	/		ame And Description Thumbnail	
			(0 Variables)	
- 01	/		ame And Description Thumbnail	
<u>Top</u>	(Typ	e) L	evel Initial (2 Variables)	
			able Name And Description	Thumbnail
	#13 LI,A		al adopters (house) tial adopters fraction * total households	
udoption	21,71		ription: Population number (household or inhabitant) that already adopted the technology at the initial time	
			ent In 1 View:	
		· •	1. Technology Adoption	
		Used	·	
		•	• <u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
			<u>back Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
	#15	initia	ıl potential adopters (house)	
adoption	LI,A	=(1-	- initial adopters fraction) * total households	
				•

Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View: • 1. Technology Adoption Used By • <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.

		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]								
т (Ту	me) I	nitial (0 Variables)								
Group Tyr	A /	riable Name And Description Thumbnail								
<u>Top</u>	(Type) Constant (8 Variables)									
Group	V #	Variable Name And Description	Thumbna							
.technology	#4	EEE average unit weight (kg/unit)								
adoption	С	= EXTERNAL_DATA(" <u>EEE average unit weight</u> ") Description: Average unit weight of EEE.[obtained externally]								
		Present In 1 View:								
		• 1. Technology Adoption								
		Used By								
		• kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to								
	compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.									
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]								
.technology	#5	EEE unit price (USD/unit)								
adoption	С	= EXTERNAL DATA(" <u>EEE unit price</u> ")								
		Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View:								
		• 1. Technology Adoption								
		Used By								
		• EEE unit price 1980 Reference value for EEE unit price. Value at initial time is used as reference.								
		• <u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference.								
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]								
circularEEE	#10	historic disposal of EEE (unit/Year)								
v.1	С	= EXTERNAL_DATA("historic disposal of EEE")								
retrospective		Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the model] Present In 1 View:								
		• 2. EEE flows								
		Used By								
		• R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model.								
		Foodbook I come 0 (0 00/) (1) 0 [0 0] (1) 0 [0 0]								
circularEEE	#11	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] historic EEE put on market (unit/Year)								
v.1	C	= EXTERNAL_DATA("historic EEE put on market")								
retrospective		Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model]								
		Present In 1 View: • 2. EEE flows								
		 Used By R EEE commissioning Commissioning rate of EEE obtained from the retrospective model. 								
4 1 1	//1.4	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]								
.technology adoption	#14 C	initial adopters fraction (dmnl) = 0								
1		Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time.								
		Present In 1 View: • 1. Technology Adoption								
		• 1. Technology Adoption								
		Used By								
		 <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at 								
		the initial time.								
		Feedback Loops: 0 (0.0%) (±) 0 [0.0] () 0 [0.0]								
.technology	#23	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] population (inhabitant)								
adoption	C	= EXTERNAL_DATA("population")								
		Description: Total number of inhabitants at that moment[obtained externally, drives the model]								
		Present In 1 View: • 1. Technology Adoption								
		 Used By R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. 								
		A DDD per minauriant Average number of stock in use per inflauriant considering retrospective model.								
. 1 1	# 2 0	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]								
.technology adoption	#28 C	purchasing power parity per capta (USD/Year) = EXTERNAL DATA("purchasing power parity per capta")								
шарион	~									

I		Documentation of circularEEE v.1 retrospective	
		Description: Reference used to measure the real purchasing power in different regions. [obtained externally, drives the	
		model]	
		Present In 1 View:	
		• 1. Technology Adoption	
		Hard D	
		Used By • DDD 1080 Perference value for purchasing power perity per cents. Value at initial time is used as reference.	
		 <u>PPP 1980</u> Reference value for purchasing power parity per capta. Value at initial time is used as reference. <u>normalised PPP</u> Normalised value of purchasing power parity considering the value at the initial time as reference. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#38	total households (house)	
adoption	C	= EXTERNAL_DATA("total households")	
		Description: Total number of households at that moment[obtained externally, drives the model]	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		R EEE per household Average number of stock in use per household considering retrospective model.	
		actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction	
		and the actual adoption fraction multiplied by the total population (households or individuals)† Units	
		inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential	
		adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied	
		by the total households (house) defines the adoption rate at that moment in time (house/year).	
		• <u>household increase trend</u> Trend estimate of households through time.† Units inconsistency due to the use of TIME	
		STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies	
		the use of '1/year' instead of 'house/year'.	
		• <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time	
		 <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time. 	
		 total households variation Variation of households considering the trend from historical values. 	
		total nouseholds variation of nouseholds considering the neith from installed variation.	
		<u>Feedback Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
Тор	(Tyr	pe) Flow (4 Variables)	
Group	Type		Thumbna
technology	#2	adoption rate (house/Year)	
adoption	F,A	= MAX (potential adoption fraction - actual adoption fraction, 0) * total households	
•	,	Description: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the	
		actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the	
		structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl)	
		obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house)	
		defines the adoption rate at that moment in time (house/year).	
,	1	D (T 4 77)	
		Present In 1 View:	
		Present In 1 View: • 1. Technology Adoption	
		1. Technology Adoption	
		• 1. Technology Adoption Used By	
		 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. 	
		 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. 	
		 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] 	
technology	#19	 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) 	
technology adoption	#19 F,A	 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation 	
		 1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of 	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters.	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters.	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		Used By • EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) = total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: • 1. Technology Adoption	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By	
		Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
adoption	F,A	Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
adoption	F,A #29	Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year)	
adoption circularEEE v.1	F,A	Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) = total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year) historic disposal of EEE	
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adoption circularEEE v.1 etrospective	#29 F,A	Ised By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0.0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: I. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] R disposal of EEE as WEEE (unit/Year) historic disposal of EEE Description: Rate of disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: 2. EEE flows Used By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0]	
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adoption circularEEE v.1 etrospective	#29 F,A	1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year) historic disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: 2. EEE flows Used By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] REEE commissioning (unit/Year) historic EEE put on market	
adoption circularEEE v.1 etrospective	#29 F,A	1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops; 1 (100.0%) (+) 0 [0.0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] R disposal of EEE as WEEE (unit/Year) historic disposal of EEE as WEEE in use obtained from the retrospective model. Present In 1 View: 2. EEE flows Used By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] R EEE commissioning (unit/Year) historic EEE put on market Description: Commissioning rate of EEE obtained from the retrospective model.	
adoption circularEEE v.1 etrospective	#29 F,A	1. Technology Adoption Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year) total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: 1. Technology Adoption Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year) historic disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: 2. EEE flows Used By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] REEE commissioning (unit/Year) historic EEE put on market	

-1/2020	I	Used By	
		R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
<u>Тор</u>	(Tyr	oe) Auxiliary (21 Variables)	
Group	Type	Variable Name And Description	Thumbnail
.technology	#1	actual adoption fraction (dmnl)	
adoption	A	= <u>EEE adopters</u> / <u>total households</u>	
		Description: Actual ratio of the population (household or inhabitant) that has adopted the technology	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction	
		and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential	
		adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied	
		by the total households (house) defines the adoption rate at that moment in time (house/year).	
. 1 1	""	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3]	
.technology adoption	#2 F,A	adoption rate (house/Year) = MAX (potential adoption fraction - actual adoption fraction, 0) * total households	
adoption	r,A	Description: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the	
		actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the	
		structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl)	
		obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house)	
		defines the adoption rate at that moment in time (house/year). Present In 1 View:	
		• 1. Technology Adoption	
		 Used By EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. 	
		Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households)	
		or inhabitants) that adopted the technology.	
		Foodback Loons 1 (100 00/\ (1) 0 00 01 (1) 1 [2 2]	
.technology	#6	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] EEE unit price 1980 (USD/unit)	
adoption	A	= GET DATA AT TIME (EEE unit price, 1980)	
•		Description: Reference value for EEE unit price. Value at initial time is used as reference.	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		• <u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#7	effect of normalised PPP on average number of EEE per adopter (unit/house)	
adoption	A	= <u>R EEE per adopter</u> / <u>normalised PPP</u>	
		Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit	
		(household or inhabitant) need and can afford at the point in time. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#8	effect of normalised PPP on average number of EEE per household (unit/house)	
adoption	A	= R EEE per household / normalised PPP Descriptions Defines the effect of the purchasing payon positive per center on the giveness number of EEE and household	
		Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#12	household increase trend (1/Year)	
adoption	A	= TREND(total households, <u>TIME STEP</u> , 0.01) Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the	
		growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of	
		'house/year'.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		total households variation Variation of households considering the trend from historical values.	
		Feedback Loops: 0 (0.0%) (±) 0 [0.0] () 0 [0.0]	
.technology	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house)	
	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

adoption	LI,A		
		Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View:	
		1. Technology Adoption	
		Used By	
		<u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
technology	#15	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial potential adopters (house)	
adoption	LI,A	= (1 - <u>initial adopters fraction</u>) * <u>total households</u>	
		Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology	#17	kg per inhabitant (kg/inhabitant)	
adoption	A	= R EEE per inhabitant * EEE average unit weight Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with	
		results from https://statistics-netherlands.shinyapps.io/sales_and_waste/. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology.	#19 F,A	new potential adopters (house/Year) = total households variation	
adoption	1,21	Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of	
		households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		1. Technology Adoption	
		Used By Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households)	
		or inhabitants) that adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#20 A	normalised EEE price (dmnl) = EEE unit price / EEE unit price 1980	
•		Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity.	
.technology	#21	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised PPP (dmnl)	
adoption	A	= purchasing power parity per capta / PPP 1980	
		Description: Normalised value of purchasing power parity considering the value at the initial time as reference. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the 	
		point in time. • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power	
		parity per capta on the average number of EEE one household need and can afford at the point in time. • normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity.	
.technology	#22	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised ratio EEE price per PPP (dmnl)	
adoption	A	= normalised EEE price / normalised PPP Description: Normalised fraction of EEE unit price and purchasing power parity.	
		Present In 1 View:	
		1. Technology Adoption	
		 Used By potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the 	
		technology considering the price and their earnings.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#24 A	potential adoption fraction (dmnl) = potential adoption fraction RSSDlookup(normalised ratio EEE price per PPP)	
F2**		,	

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		Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings. Present In 1 View: 1. Technology Adoption	
		1. recimology Adoption	
		• adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#27	PPP 1980 (USD/Year)	
adoption	A	= GET DATA AT TIME(<u>purchasing power parity per capta</u> , 1980) Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference. Present In 1 View: • 1. Technology Adoption Used By	
		<u>normalised PPP</u> Normalised value of purchasing power parity considering the value at the initial time as reference.	
circularEEE	#29	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year)	
v.1	F,A	= <u>historic disposal of EEE</u>	
retrospective		Description: Rate of disposal of EEE as WEEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows	
		Used By R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE v.1	#30 F,A	R EEE commissioning (unit/Year) = historic EEE put on market	
retrospective	г,А	Description: Commissioning rate of EEE obtained from the retrospective model. Present In 1 View: • 2. EEE flows	
		Used By • R EEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#32 A	R EEE per adopter (unit/house) = ZIDZ (R EEE in use, EEE adopters)	
adoption	A	Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption	
		 Used By effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#33 A	R EEE per household (unit/house) = R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View:	
		• 1. Technology Adoption Used By	
		• effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#34	R EEE per inhabitant (unit/inhabitant)	
adoption	A	= R EEE in use / population Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View:	
		1. Technology Adoption	
		Used By kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology	#39	total households variation (house/Year)	
		·	

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adoptio	on	A	= total households * household increase trend Description: Variation of households considering the trend from historical values. Present In 1 View: • 1. Technology Adoption Used By • new potential adopters Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters.	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	╛
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<u>Top</u>		(Ty	vpe) Lookup (1 Variables)	
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.techno adopt		#25 A,T	potential adoption fraction_RSSDlookup([(0,0)-(1,1)],(0.04,0.9),(0.09,0.2),(0.124,0.1),(0.14,0.071),(0.162,0.04),(0.194,0.02), (0.225,0.01),(0.31,0),(1,0)) Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings. Present In 1 View: • 1. Technology_Adoption Used By • potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings.	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	╝

Ouick Links:	Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Р	0	R	S	Т	U	V	W	X	Y	7.
Quien Limis.													111		_		~	1 20	_ =					4 1		

All Variables (36)

Group	Type	Variable
.technology adoption	A	actual adoption fraction (dmnl)
.technology adoption	F,A	adoption rate (house/Year)
.technology adoption	L	EEE adopters (house)
.technology adoption	С	EEE average unit weight (kg/unit)
.technology adoption	С	EEE unit price (USD/unit)
.technology adoption	A	EEE unit price 1980 (USD/unit)
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)
.Control	С	FINAL TIME (Year)
circularEEE v.1 retrospective	С	historic disposal of EEE (unit/Year)
circularEEE v.1 retrospective	С	historic EEE put on market (unit/Year)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	LI,A	initial adopters (house)
.technology adoption	С	initial adopters fraction (dmnl)
.technology adoption	LI,A	initial potential adopters (house)
.Control	С	INITIAL TIME (Year)
.technology adoption	A	kg per inhabitant (kg/inhabitant)
.technology adoption	F,A	new potential adopters (house/Year)
.technology adoption	A	normalised EEE price (dmnl)
.technology adoption	A	normalised PPP (dmnl)
.technology adoption	A	normalised ratio EEE price per PPP (dmnl)
.technology adoption	С	population (inhabitant)
.technology adoption	A	potential adoption fraction (dmnl)
.technology adoption	L	Potential EEE adopters (house)
.technology adoption	A	<u>PPP 1980</u> (USD/Year)
.technology adoption	С	purchasing power parity per capta (USD/Year)
circularEEE v.1 retrospective	F,A	R disposal of EEE as WEEE (unit/Year)
circularEEE v.1 retrospective	F,A	R EEE commissioning (unit/Year)
circularEEE v.1 retrospective	L	R EEE in use (unit)
.technology adoption	A	R EEE per adopter (unit/house)
.technology adoption	A	R EEE per household (unit/house)
.technology adoption	A	R EEE per inhabitant (unit/inhabitant)

.Control	A	SAVEPER (Year)
.Control	С	TIME STEP (Year)
.technology adoption	С	total households (house)
.technology adoption	A	total households variation (house/Year)

Variable Link Detail (36)

Group	Туре	Variable	In/Out Counts	In/Out Ratio	In Links by Polarity	Out Links by Polarity
.technology adoption	C	total households (house)	0 7	0.00	0 0 0	4 3 0
circularEEE v.1	L	R EEE in use (unit)	2 3	0.67	1 1 0	3 0 0
retrospective	-	CEBER III WAS (WILL)		0.07	1,1,0	
.technology adoption	A	normalised PPP (dmnl)	2 3	0.67	1 1 0	0 3 0
.technology adoption	F,A	adoption rate (house/Year)	3 2	1.50	1 2 0	1 1 0
.technology adoption	L	EEE adopters (house)	2 2	1.00	2 0 0	2 0 0
.technology adoption	A	total households variation (house/Year)	2 1	2.00	2 0 0	1 0 0
.technology adoption	A	R EEE per inhabitant (unit/inhabitant)	2 1	2.00	1 1 0	1 0 0
.technology adoption	A	R EEE per household (unit/house)	2 1	2.00	1 1 0	1 0 0
.technology adoption	A	R EEE per adopter (unit/house)	2 1	2.00	2 0 0	1 0 0
.technology adoption	L	Potential EEE adopters (house)	3 0	∞	2 1 0	0 0 0
.technology adoption	A	potential adoption fraction (dmnl)	2 1	2.00	0 2 0	1 0 0
.technology adoption	A	normalised ratio EEE price per PPP (dmnl)	2 1	2.00	1 1 0	0 1 0
.technology adoption	A	normalised EEE price (dmnl)	2 1	2.00	1 1 0	1 0 0
.technology adoption	LI,A	initial potential adopters (house)	2 1	2.00	1 1 0	1 0 0
.technology adoption	LI,A	initial adopters (house)	2 1	2.00	2 0 0	1 0 0
.technology adoption	A	household increase trend (1/Year)	2 1	2.00	2 0 0	1 0 0
.technology adoption	A	actual adoption fraction (dmnl)	2 1	2.00	1 1 0	0 1 0
.Control	C	TIME STEP (Year)	0 2	0.00	0 0 0	2 0 0
circularEEE v.1	F,A	R EEE commissioning (unit/Year)	1 1	1.00	1 0 0	1 0 0
retrospective	1,11	TEBER COMMISSIONING (WITH TOWN)		1.00	1,0,0	1,0,0
circularEEE v.1	F,A	R disposal of EEE as WEEE (unit/Year)	1 1	1.00	1 0 0	0 1 0
retrospective	′	<u> </u>	'			-1 1
.technology adoption	С	purchasing power parity per capta (USD/Year)	0 2	0.00	0 0 0	1 0 1
.technology adoption	A	PPP 1980 (USD/Year)	1 1	1.00	0 0 1	0 1 0
.technology adoption	F,A	new potential adopters (house/Year)	1 1	1.00	1 0 0	1 0 0
.technology adoption	A	kg per inhabitant (kg/inhabitant)	2 0	∞	2 0 0	0 0 0
.technology adoption	С	initial adopters fraction (dmnl)	0 2	0.00	0 0 0	1 1 0
.technology adoption	Α	effect of normalised PPP on average number of EEE per	2 0	∞	1 1 0	0 0 0
		household (unit/house)	,			' '
.technology adoption	A	effect of normalised PPP on average number of EEE per	2 0	∞	1 1 0	0 0 0
		adopter (unit/house)				
.technology adoption	A	EEE unit price 1980 (USD/unit)	1 1	1.00	0 0 1	0 1 0
.technology adoption	С	EEE unit price (USD/unit)	0 2	0.00	0 0 0	1 0 1
.Control	A	SAVEPER (Year)	1 0	∞	1 0 0	0 0 0
.technology adoption	С	population (inhabitant)	0 1	0.00	0 0 0	0 1 0
circularEEE v.1	С	historic EEE put on market (unit/Year)	0 1	0.00	0 0 0	1 0 0
retrospective						
circularEEE v.1	С	historic disposal of EEE (unit/Year)	0 1	0.00	0 0 0	1 0 0
retrospective						
.technology adoption	С	EEE average unit weight (kg/unit)	0 1	0.00	0 0 0	1 0 0
.Control	С	INITIAL TIME (Year)	(0 0)	∞	0 0 0	0 0 0
.Control	С	FINAL TIME (Year)	(0 0)	∞	0 0 0	0 0 0

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Supplementary Variables (0)

Group	Type	Variable
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Supplementary Variables Being Used (0)

Group	Type	Variable
oromp	1 1/1/2	, 111 111010

Quick Links:	A	В	C	D	<u>E</u>	F	G	H	I	J	<u>K</u>	L	M	N	0	<u>P</u>	Q	R	S	T	U	V	W	X	Y	Z

Unused Variables (4)

Group	Type	Variable
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)
.technology adoption	A	kg.per inhabitant (kg/inhabitant)
.technology adoption	L	Potential EEE adopters (house)

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Ouick Links:	Δ	R	С	D	F	F	G	Н	I	I	K	I	М	N	0	р	Ω	R	S	Т	II	V	W	X	V	7
Quick Links.	71	עו	-	D		1		11	1	J 3	1.7		141	1.4			V	1 1	0	1	0	, v	. **	/ X	1	

Equations With Embedded Data (4)

Group	Type	Variable
.technology adoption	A	EEE unit price 1980 (USD/unit)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	A	PPP 1980 (USD/Year)
circularEEE v.1 retrospective	L	R EEE in use (unit)

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Nonmonotonic Lookup Functions (0)

Group	Type	Variable
1	J 1	1 11 111 1

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Non-Zero End Sloped Lookup Functions (1)

Group	Type	Variable	Non-Zero
.technology adoption	A,T	potential adoption fraction_RSSDlookup (dmnl)	Left

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Cascading Lookup Functions (0)

Group	Type	Variable

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Equations With Step Pulse Or Related Functions (0)

		Group	Type	Variable
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Equations With If Then Else Functions (0)

Group	Type	Variable

Equations With Min Or Max Functions (1)

Group	Type	Variable
.technology adoption	F,A	adoption rate (house/Year)

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Complex Variable (Richardson's Rule Threshold = 3) (0)

Group	Type	Variable	Complexity
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Complex Stock (0)

Group Type Variable	
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Variables With Source Information (0)

Group	Type	Variable
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Quick Links:	<u>A</u>	B	C	D	E	F	G	H	<u>I</u>	J	K	L	M	<u>N</u>	0	<u>P</u>	Q	R	S	T	U	V	W	X	Y	Z

Variables With Dimensionless Units (6)

Group	Type	Variable
.technology adoption A		actual adoption fraction (dmnl)
.technology adoption		initial adopters fraction (dmnl)
.technology adoption	A	normalised EEE price (dmnl)
.technology adoption	A	normalised PPP (dmnl)
.technology adoption	A	normalised ratio EEE price per PPP (dmnl)
.technology adoption A		potential adoption fraction (dmnl)

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Quick Links:	A	В	C	D	E	F	G	H	I	J	K	L	M	N	О	<u>P</u>	Q	<u>R</u>	S	<u>T</u>	U	V	W	X	Y	Z	l
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Variables without Predefined Min or Max Values (32)

Group	Type	Variable
.technology adoption	A	actual adoption fraction (dmnl)
.technology adoption	F,A	adoption rate (house/Year)
.technology adoption	L	EEE adopters (house)
.technology adoption	С	EEE average unit weight (kg/unit)

.technology adoption	C	EEE unit price (USD/unit)
.technology adoption	A	EEE unit price 1980 (USD/unit)
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)
circularEEE v.1 retrospective	С	historic disposal of EEE (unit/Year)
circularEEE v.1 retrospective	С	historic EEE put on market (unit/Year)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	LI,A	initial adopters (house)
.technology adoption	С	initial adopters fraction (dmnl)
.technology adoption	LI,A	initial potential adopters (house)
.technology adoption	A	kg per inhabitant (kg/inhabitant)
.technology adoption	F,A	new potential adopters (house/Year)
.technology adoption	A	normalised EEE price (dmnl)
.technology adoption	A	normalised PPP (dmnl)
.technology adoption	A	normalised ratio EEE price per PPP (dmnl)
.technology adoption	С	population (inhabitant)
.technology adoption	A	potential adoption fraction (dmnl)
.technology adoption	L	Potential EEE adopters (house)
.technology adoption	A	<u>PPP 1980</u> (USD/Year)
.technology adoption	С	purchasing power parity per capta (USD/Year)
circularEEE v.1 retrospective	F,A	R disposal of EEE as WEEE (unit/Year)
circularEEE v.1 retrospective	F,A	R EEE commissioning (unit/Year)
circularEEE v.1 retrospective	L	R EEE in use (unit)
.technology adoption	A	R EEE per adopter (unit/house)
.technology adoption	A	R EEE per household (unit/house)
.technology adoption	A	R EEE per inhabitant (unit/inhabitant)
.technology adoption	С	total households (house)
.technology adoption	A	total households variation (house/Year)

Function Sensitivity Parameters (0)

ı	Group	Type	Variable

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Data Lookup Tables (0)

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Variable

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Variables Not In Any View (0)

Group	Type	Variable
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Equations With Unit Errors Or Warnings (2)

Group	Type	Variable	Units			
.technology adoption	F,A	adoption rate (house/Year)	LHS Units: (house/Year)			
			RHS Units: (house)			
			Complete RHS Units: (MAX ((Dmnl - Dmnl), constant) * house)			
technology adoption A <u>household increase trend</u> (1/Year)		household increase trend (1/Year)	LHS Units: (1/Year)			
			RHS Units: (house/Year)			
			Complete RHS Units: TREND (house , Year , constant)			

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Units (6/8)

Units	Туре	Alternates
1/Year	Basic	
Dmnl	Basic	[dmnl]
house	Basic	
inhabitant	Basic	
unit	Basic	
Year	Basic	
house/Year	Combined	
kg/inhabitant	Combined	
kg/unit	Combined	
unit/house	Combined	
unit/inhabitant	Combined	
unit/Year	Combined	
USD/unit	Combined	
USD/Year	Combined	

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Feedback Loops (1|0 Maximum Length: 30 [3,3] | [0,0])

Group	Туре	Variable	Loops	+	_	+/- Ratio	?	Loops (IVV)	+	_	+/- Ratio	?
.technology	A	actual adoption	1 (100.0%)	0 [0,0]	1 [3,3]	0.00	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
adoption		fraction (dmnl)						, ,				
.technology adoption	F,A	adoption rate (house/Year)	1 (100.0%)	0 [0,0]	1 [3,3]	0.00	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	L	EEE adopters (house)	1 (100.0%)	0 [0,0]	1 [3,3]	0.00	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	EEE average unit weight (kg/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	EEE unit price (USD/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	EEE unit price 1980 (USD/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	С	FINAL TIME (Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
circularEEE v.1 retrospective	С	historic disposal of EEE (unit/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
circularEEE v.1 retrospective	С	historic EEE put on market (unit/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	household increase trend (1/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	LI,A	initial adopters (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	initial adopters fraction (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	LI,A	initial potential adopters (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	С	INITIAL TIME (Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	kg per inhabitant (kg/inhabitant)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]

/24/2020					Doo	cumentation	of circula	arEEE v.1 re	etrosp	ective				
.technology adoption	F,A	new potential adopters (house/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	normalised EEE price (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	normalised PPP (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	normalised ratio EEE price per PPP (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	population (inhabitant)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	potential adoption fraction (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	L	Potential EEE adopters (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	PPP 1980 (USD/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	purchasing power parity per capta (USD/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
circularEEE v.1 retrospective	F,A	R disposal of EEE as WEEE (unit/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
circularEEE v.1 retrospective	F,A	R EEE commissioning (unit/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
circularEEE v.1 retrospective	L	R EEE in use (unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	R EEE per adopter (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	R EEE per household (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	R EEE per inhabitant (unit/inhabitant)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	A	SAVEPER (Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	С	TIME STEP (Year)	0 (0%)	0 [0,0]		NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	total households (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	total households variation (house/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]

Macros (0)

Name	Macro Definition	Expanded Macro Definition
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Quick Links:	<u>A</u>	В	С	D	<u>E</u>	F	G	<u>H</u>	I	J	K	L	M	<u>N</u>	О	<u>P</u>	Q	<u>R</u>	S	<u>T</u>	U	V	W	X	Y	Z	ĺ
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Positive Polarity Causal Links (29)

Cause	Effect	Polarity
adoption rate	EEE adopters	+
EEE adopters	actual adoption fraction	+
EEE adopters	R EEE per adopter	+
EEE average unit weight	kg per inhabitant	+
EEE unit price	normalised EEE price	+

historic disposal of EEE	R disposal of EEE as WEEE	+
historic EEE put on market	R EEE commissioning	+
household increase trend	total households variation	+
initial adopters	EEE adopters	+
initial adopters fraction	<u>initial adopters</u>	+
initial potential adopters	Potential EEE adopters	+
new potential adopters	Potential EEE adopters	+
normalised EEE price	normalised ratio EEE price per PPP	+
potential adoption fraction	adoption rate	+
purchasing power parity per capta	normalised PPP	+
R EEE commissioning	R EEE in use	+
R EEE in use	R EEE per adopter	+
R EEE in use	R EEE per household	+
R EEE in use	R EEE per inhabitant	+
R EEE per adopter	effect of normalised PPP on average number of EEE per adopter	+
R EEE per household	effect of normalised PPP on average number of EEE per household	+
R EEE per inhabitant	kg.per inhabitant	+
TIME STEP	household increase trend	+
TIME STEP	<u>SAVEPER</u>	+
total households	household increase trend	+
total households	initial adopters	+
total households	initial potential adopters	+
total households	total households variation	+
total households variation	new potential adopters	+

Quick Links:	<u>A</u>	В	С	D	<u>E</u>	F	G	Н	I	J	K	L	M	N	О	<u>P</u>	Q	<u>R</u>	S	T	U	V	W	X	Y	Z

Negative Polarity Causal Links (15)

Cause	Effect	Polarity
actual adoption fraction	adoption rate	-
adoption rate	Potential EEE adopters	-
EEE unit price 1980	normalised EEE price	-
initial adopters fraction	initial potential adopters	-
normalised PPP	effect of normalised PPP on average number of EEE per adopter	-
normalised PPP	effect of normalised PPP on average number of EEE per household	-
normalised PPP	normalised ratio EEE price per PPP	-
normalised ratio EEE price per PPP	potential adoption fraction	-
<u>population</u>	R EEE per inhabitant	-
potential adoption fraction_RSSDlookup	potential adoption fraction	-
<u>PPP 1980</u>	normalised PPP	-
R disposal of EEE as WEEE	R EEE in use	-
total households	actual adoption fraction	-
total households	adoption rate	-
total households	R EEE per household	-

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Quick Links	Δ	R	C	D	F	F	G	Н	T	T	K	I.	М	N	0	P	0	R	S	Т	11	V	W	X	V	7

Function-based Polarity Causal Links (2)

Cause	Effect	Polarity
EEE unit price	EEE unit price 1980	Function[GETDATAATTIME]
purchasing power parity per capta	PPP 1980	Function[GETDATAATTIME]

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Rate-to-rate Links (0)

Cause	Effect

View-Variable Profile

View	View-Variable Profile	
1. Technology Adoption		28 vars (71.8%)
2. EEE flows	5 vars (12.8%)	

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List Of 2 views and their 32 Variables

	1. Technology	2. EEE	
Total:	Adoption 28	flows 5	Total:
kg per inhabitant (In 1 View)	20	3	kg per inhabitant (In 1 View)
new potential adopters (In 1 View)			new potential adopters (In 1 View)
R EEE per household (In 1 View)			R EEE per household (In 1 View)
effect of normalised PPP on average number of EEE per			effect of normalised PPP on average number of EEE per
household (In 1 View)			household (In 1 View)
R EEE in use (In 2 Views)			R EEE in use (In 2 Views)
purchasing power parity per capta (In 1 View)			purchasing power parity per capta (In 1 View)
actual adoption fraction (In 1 View)			actual adoption fraction (In 1 View)
Potential EEE adopters (In 1 View)			Potential EEE adopters (In 1 View)
total households (In 1 View)			total households (In 1 View)
adoption rate (In 1 View)			<u>adoption rate</u> (In 1 View)
effect of normalised PPP on average number of EEE per			effect of normalised PPP on average number of EEE per
adopter (In 1 View)			adopter (In 1 View)
normalised PPP (In 1 View)			normalised PPP (In 1 View)
initial adopters (In 1 View)			initial adopters (In 1 View)
PPP 1980 (In 1 View)			PPP 1980 (In 1 View)
initial potential adopters (In 1 View)			initial potential adopters (In 1 View)
total households variation (In 1 View)			total households variation (In 1 View)
normalised ratio EEE price per PPP (In 1 View)			normalised ratio EEE price per PPP (In 1 View)
household increase trend (In 1 View)			household increase trend (In 1 View)
EEE unit price 1980 (In 1 View)			EEE unit price 1980 (In 1 View)
EEE average unit weight (In 1 View)			EEE average unit weight (In 1 View)
population (In 1 View)			population (In 1 View)
initial adopters fraction (In 1 View)			initial adopters fraction (In 1 View)
potential adoption fraction (In 1 View)			potential adoption fraction (In 1 View)
EEE unit price (In 1 View)			EEE unit price (In 1 View)
normalised EEE price (In 1 View)			normalised EEE price (In 1 View)
R EEE per inhabitant (In 1 View)			R EEE per inhabitant (In 1 View)
EEE adopters (In 1 View)	<u> </u>		EEE adopters (In 1 View)
R EEE per adopter (In 1 View)			R EEE per adopter (In 1 View)
R EEE commissioning (In 1 View)			R EEE commissioning (In 1 View)
historic disposal of EEE (In 1 View)			historic disposal of EEE (In 1 View)
historic EEE put on market (In 1 View)			historic EEE put on market (In 1 View)
R disposal of EEE as WEEE (In 1 View)			R disposal of EEE as WEEE (In 1 View)
R disposar of EEE as WEEE (III 1 View) Total:	28	5	Total:
Total.	1. Technology	2. EEE	Iutai.
	Adoption	flows	
	<u> </u>	110 113	

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Argonne National Laboratory.