Documentation Of circularEEE_v.1retrospective

Quick Links | All Variables | Variable Link Detail | Variable Types | Views | Groups | Units | Macros | Feedback Loops | Link Polarity | View Summary | View-Variable Profile

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 Length: 30) [3, 3]	1 (0|1|0)
Total Number Of Feedback Loops With IVV (Maximum Length: 30) [0, 0]	0 (0|0|0)
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%)
Dimensionless Unit Variables	6 (16.7%)
Variables without Predefined Min or Max Values	32 (88.9%)
Function Sensitivity Parameters	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
Unused Variables	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%)

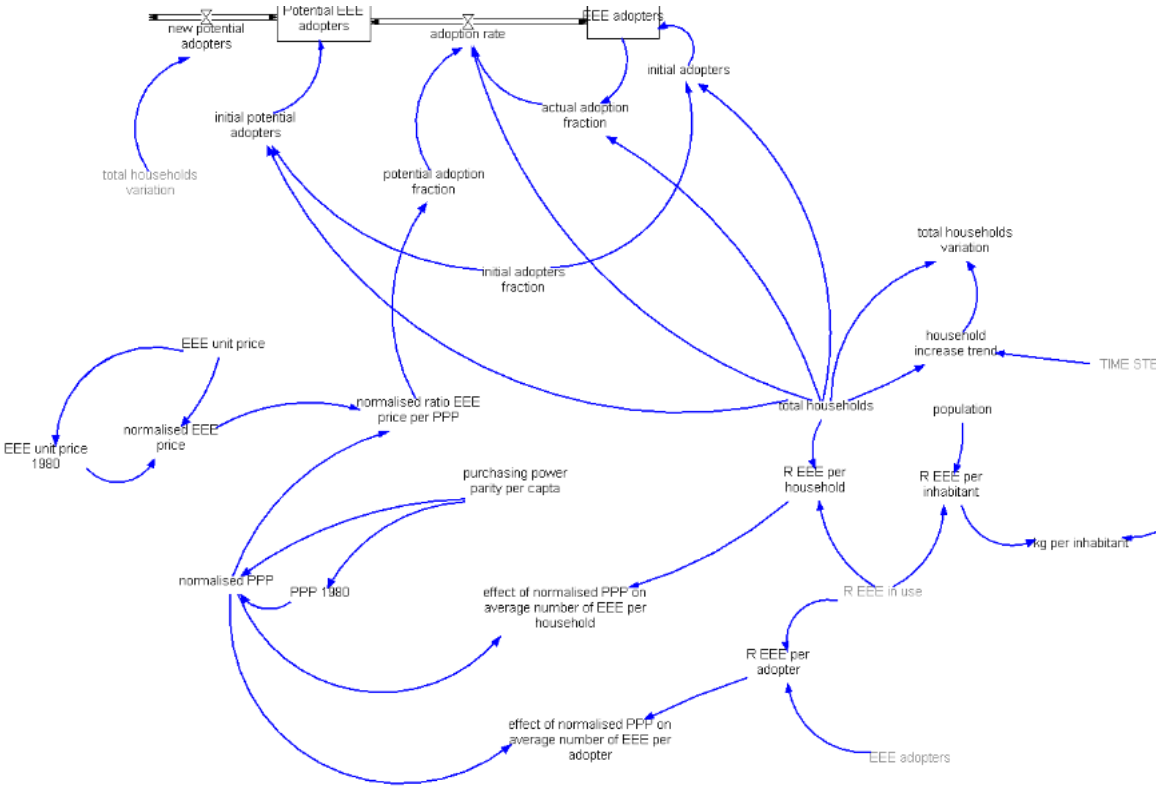
Variable Types

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

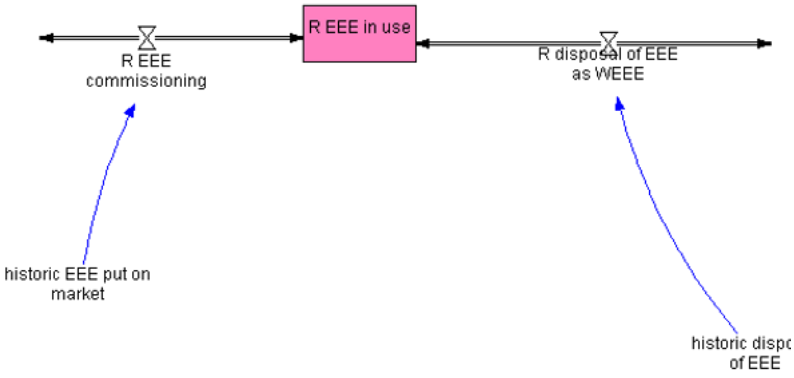
* (State Variables/Total Stocks) † Total Stocks Do Not Include Fixed Delay Variables. †† (Lookup Tables).

Views

View: 1. Technology Adoption (28) Variables



View: 2. EEE flows (5) Variables



Groups

.technology adoption (27)	circularEEE_v.1retrospective (5)			

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

top	(All) Variables (36 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail
.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). **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 **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)** = ∫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 **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 adoption	#4 C	**EEE average unit weight (kg/unit)** = EXTERNAL_DATA("EEE average unit weight") **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 adoption	#5 C	**EEE unit price (USD/unit)** = 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 adoption	#6 A	**EEE unit price 1980 (USD/unit)** = 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. **Feedback Loops:** 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 **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 adoption	#8 A	**effect of normalised PPP on average number of EEE per household (unit/house)** = 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** **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.Control	#9 C	**FINAL TIME (Year)** = 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.1retrospective	#10 C	**historic disposal of EEE (unit/Year)** = 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

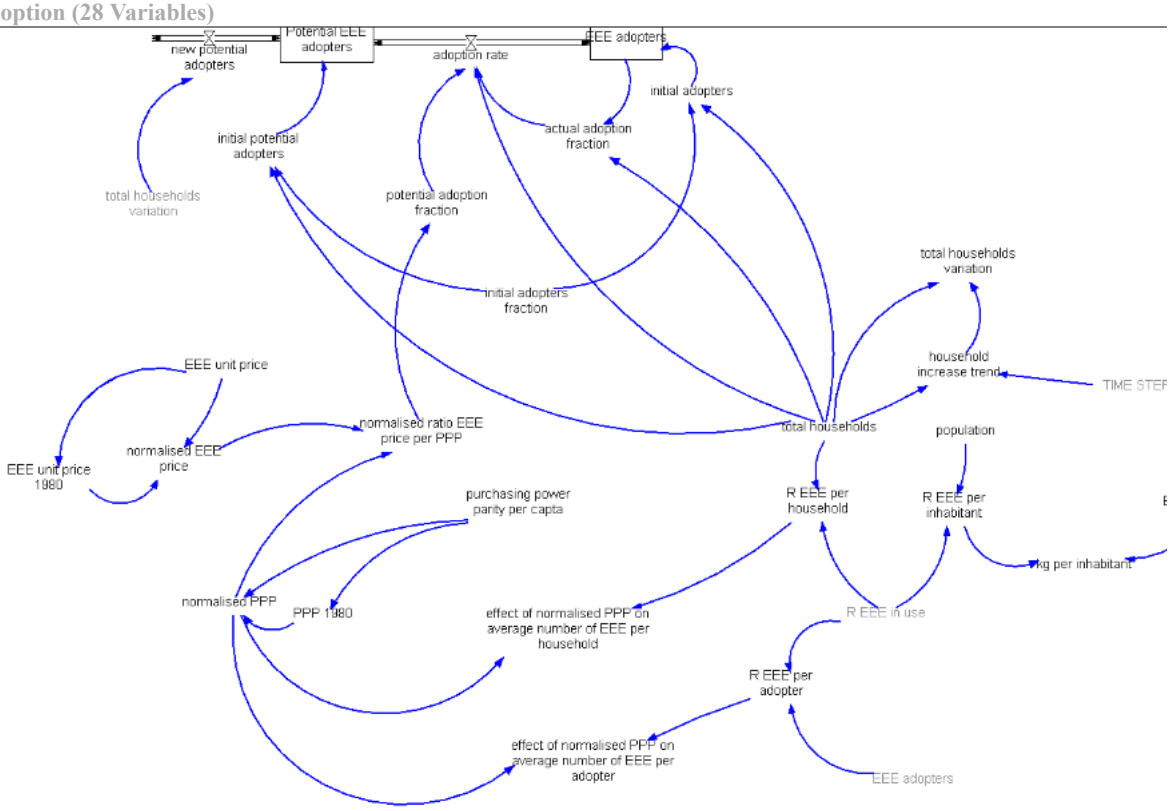
		Used By • R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#11 C	**historic EEE put on market (unit/Year)** = EXTERNAL_DATA("historic EEE put on market") **Description:** Historical value of EEE commisioned 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#12 A	**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]
.technology adoption	#13 LI,A	**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** • EEE adopters 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 adoption	#14 C	**initial adopters fraction (dmnl)** = 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** • 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#15 LI,A	**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]
.Control	#16 C	**INITIAL TIME (Year)** = 1980 **Description:** The initial time for the simulation. **Present In 0 Views:** **Used By** **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 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 **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. **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. • 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. **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) **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)** = $\int$(new 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** **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. **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]
circularEEE_v.1retrospective	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#30 F,A	**R EEE commissioning (unit/Year)** = 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.

		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#31 L	**R EEE in use (unit)** = ∫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]
.technology adoption	#32 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]
.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 adoption	#34 A	**R EEE per inhabitant (unit/inhabitant)** = 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]
.Control	#35 A	**SAVEPER (Year)** = TIME STEP **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. • 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'. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#38 C	**total households (house)** = 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). • 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]
.technology adoption	#39 A	**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)



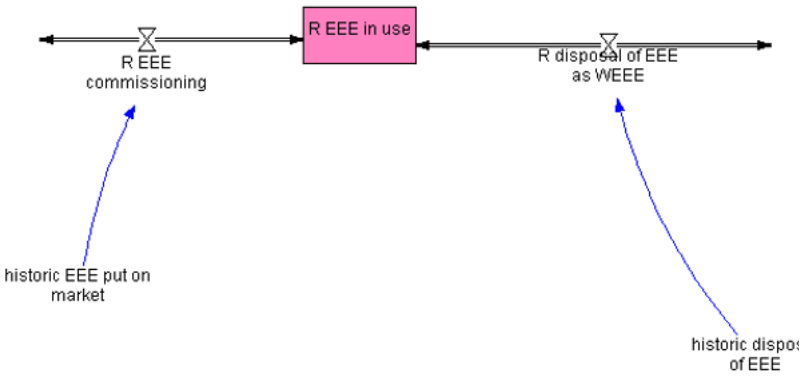
Top	(View) 1. Technology Adoption (28 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail
.technology adoption	#1 A	**actual adoption fraction (dmnl)** = EEE adopters / total households **Description:** Actual ratio of the population (household or inhabitant) that has adopted the technology **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). **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 **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)** = $\int$ 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 **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 adoption	#4 C	**EEE average unit weight (kg/unit)** = EXTERNAL_DATA("EEE average unit weight") **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 adoption	#5	**EEE unit price (USD/unit)**	

	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** • 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 adoption	#6 A	**EEE unit price 1980 (USD/unit)** = 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. **Feedback Loops:** 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 **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 adoption	#8 A	**effect of normalised PPP on average number of EEE per household (unit/house)** = 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** **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#12 A	**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]
.technology adoption	#13 LI,A	**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** • EEE adopters 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 adoption	#14 C	**initial adopters fraction (dmnl)** = 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** • 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#15 LI,A	**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 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 **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. **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. • 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. **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) **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)** = $\int$(new 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** **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. **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]
circularEEE_v.1retrospective	#31 L	**R EEE in use (unit)** = $\int$(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. • 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]	
.technology adoption	#32 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]	
.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 adoption	#34 A	**R EEE per inhabitant (unit/inhabitant)** = 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 adoption	#38 C	**total households (house)** = 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). • 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]	
.technology adoption	#39 A	**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) 2. EEE flows (5 Variables)



Top	(View) 2. EEE flows (5 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail
circularEEE_v.1retrospective	#10 C	**historic disposal of EEE (unit/Year)** = 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]	
circularEEE_v.1retrospective	#11 C	**historic EEE put on market (unit/Year)** = EXTERNAL_DATA("historic EEE put on market") **Description:** Historical value of EEE commisioned 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#30 F,A	**R EEE commissioning (unit/Year)** = 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#31 L	**R EEE in use (unit)** = $\int$(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. • 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]	

Top	(Group) .technology adoption (27 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail
.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). **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 **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)** = $\int$(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 **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 adoption	#4 C	**EEE average unit weight (kg/unit)** = EXTERNAL_DATA("EEE average unit weight") **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 adoption	#5 C	**EEE unit price (USD/unit)** = 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 adoption	#6 A	**EEE unit price 1980 (USD/unit)** = 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. **Feedback Loops:** 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 **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 adoption	#8 A	**effect of normalised PPP on average number of EEE per household (unit/house)** = 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** **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#12 A	**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]

.technology adoption	#13 LI,A	**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** • EEE adopters 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 adoption	#14 C	**initial adopters fraction (dmnl)** = 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** • 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#15 LI,A	**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 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 **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. **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. • 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. **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	#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 **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)** = $\int$(new 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** **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. **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]
.technology adoption	#32 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]
.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 adoption	#34 A	**R EEE per inhabitant (unit/inhabitant)** = 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 adoption	#38 C	**total households (house)** = 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). • 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]
.technology adoption	#39 A	**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]

Top

(Group) circularEEE_v.1retrospective (5 Variables)

Group	Type	*Variable Name And Description*	Thumbnail
circularEEE_v.1retrospective	#10 C	**historic disposal of EEE (unit/Year)** = 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]	
circularEEE_v.1retrospective	#11 C	**historic EEE put on market (unit/Year)** = EXTERNAL_DATA("historic EEE put on market") **Description:** Historical value of EEE commisioned 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#30 F,A	**R EEE commissioning (unit/Year)** = 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#31 L	**R EEE in use (unit)** = $\int$(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. • 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]	

Top

(Type) Level (3 Variables)

Group	Type	*Variable Name And Description*	Thumbnail
.technology adoption	#3 L	**EEE adopters (house)** = $\int$(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 **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 adoption	#26 L	**Potential EEE adopters (house)** = $\int$(new 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** **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#31 L	**R EEE in use (unit)** = $\int$(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.
- 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]

(Type) Smooth (0 Variables)

Group	Type	*Variable Name And Description*	Thumbnail

(Type) Delay (0 Variables)

Group	Type	*Variable Name And Description*	Thumbnail

(Type) Level Initial (2 Variables)

Group	Type	*Variable Name And Description*	Thumbnail
.technology adoption	#13 LI,A	**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** • EEE adopters 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 adoption	#15 LI,A	**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]	

(Type) Initial (0 Variables)

Group	Type	*Variable Name And Description*	Thumbnail

(Type) Constant (8 Variables)

Group	Type	*Variable Name And Description*	Thumbnail
.technology adoption	#4 C	**EEE average unit weight (kg/unit)** = EXTERNAL_DATA("EEE average unit weight") **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 adoption	#5 C	**EEE unit price (USD/unit)** = 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]	
circularEEE_v.1retrospective	#10 C	**historic disposal of EEE (unit/Year)** = 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]	
circularEEE_v.1retrospective	#11 C	**historic EEE put on market (unit/Year)** = EXTERNAL_DATA("historic EEE put on market") **Description:** Historical value of EEE commisioned 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#14 C	**initial adopters fraction (dmnl)** = 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** • 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. **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	#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]
.technology adoption	#38 C	**total households (house)** = 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). • 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]
top	**(Type) Flow (4 Variables)**	
Group	Type	***Variable Name And Description*** Thumbnail
.technology adoption	#2 F,A	**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	#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]
circularEEE_v.1retrospective	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#30 F,A	**R EEE commissioning (unit/Year)** = 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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
top	**(Type) Auxiliary (21 Variables)**	
Group	Type	***Variable Name And Description*** Thumbnail
.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). **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 **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	#6 A	**EEE unit price 1980 (USD/unit)** = 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. **Feedback Loops:** 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 **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 adoption	#8 A	**effect of normalised PPP on average number of EEE per household (unit/house)** = 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** **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#12 A	**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]
.technology adoption	#13 LI,A	**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** • EEE adopters 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 adoption	#15 LI,A	**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 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**

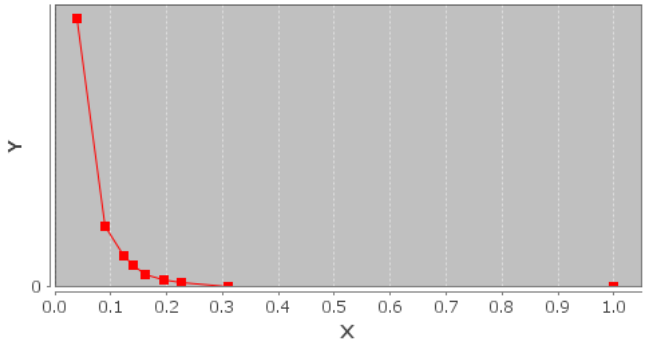
		• Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#20 A	**normalised EEE price (dmnl)** = EEE unit price / EEE unit price 1980 **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. **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. • 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. **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) **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	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#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. **Feedback Loops:** 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
circularEEE_v.1retrospective	#30 F,A	**R EEE commissioning (unit/Year)** = 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. **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) **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 adoption	#34 A	**R EEE per inhabitant (unit/inhabitant)** = 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 adoption	#39 A	**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]	

Top	(Type) Subscripts (0 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail

Top	(Type) Data (0 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail

Top	(Type) Game (0 Variables)		
Group	Type	*Variable Name And Description*	Thumbnail

Top	(Type) Lookup (1 Variables)	
Group	Type	*Variable Name And Description*
.technology adoption	#25 A,T	**potential adoption fraction_RSSDlookup (dmnl)** 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]

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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	C	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)
.Control	C	FINAL TIME (Year)
circularEEE_v.1retrospective	C	historic disposal of EEE (unit/Year)
circularEEE_v.1retrospective	C	historic EEE put on market (unit/Year)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	LI,A	initial adopters (house)
.technology adoption	C	initial adopters fraction (dmnl)
.technology adoption	LI,A	initial potential adopters (house)
.Control	C	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	C	population (inhabitant)
.technology adoption	A	potential adoption fraction (dmnl)
.technology adoption	L	Potential EEE adopters (house)
.technology adoption	A	PPP 1980 (USD/Year)
.technology adoption	C	purchasing power parity per capta (USD/Year)
circularEEE_v.1retrospective	F,A	R disposal of EEE as WEEE (unit/Year)
circularEEE_v.1retrospective	F,A	R EEE commissioning (unit/Year)
circularEEE_v.1retrospective	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	C	TIME STEP (Year)
.technology adoption	C	total households (house)
.technology adoption	A	total households variation (house/Year)

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Variable Link Detail (36)

Group	Type	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.1retrospective	L	R EEE in use (unit)	2 | 3	0.67	1| 1| 0	3| 0| 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.1retrospective	F,A	R EEE commissioning (unit/Year)	1 | 1	1.00	1| 0| 0	1| 0| 0
circularEEE_v.1retrospective	F,A	R disposal of EEE as WEEE (unit/Year)	1 | 1	1.00	1| 0| 0	0| 1| 0
.technology adoption	C	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	C	initial adopters fraction (dmnl)	0 | 2	0.00	0| 0| 0	1| 1| 0
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)	2 | 0	∞	1| 1| 0	0| 0| 0
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)	2 | 0	∞	1| 1| 0	0| 0| 0
.technology adoption	A	EEE unit price 1980 (USD/unit)	1 | 1	1.00	0| 0| 1	0| 1| 0
.technology adoption	C	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	C	population (inhabitant)	0 | 1	0.00	0| 0| 0	0| 1| 0
circularEEE_v.1retrospective	C	historic EEE put on market (unit/Year)	0 | 1	0.00	0| 0| 0	1| 0| 0
circularEEE_v.1retrospective	C	historic disposal of EEE (unit/Year)	0 | 1	0.00	0| 0| 0	1| 0| 0
.technology adoption	C	EEE average unit weight (kg/unit)	0 | 1	0.00	0| 0| 0	1| 0| 0
.Control	C	INITIAL TIME (Year)	(0| 0)	∞	0| 0| 0	0| 0| 0
.Control	C	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

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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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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.1retrospective	L	R EEE in use (unit)

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Nonmonotonic Lookup Functions (0)

Group	Type	Variable

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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

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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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Variables With Dimensionless Units (6)

Group	Type	Variable
.technology adoption	A	actual adoption fraction (dmnl)
.technology adoption	C	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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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	C	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.1retrospective	C	historic disposal of EEE (unit/Year)
circularEEE_v.1retrospective	C	historic EEE put on market (unit/Year)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	LI,A	initial adopters (house)
.technology adoption	C	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	C	population (inhabitant)
.technology adoption	A	potential adoption fraction (dmnl)
.technology adoption	L	Potential EEE adopters (house)
.technology adoption	A	PPP 1980 (USD/Year)
.technology adoption	C	purchasing power parity per capta (USD/Year)
circularEEE_v.1retrospective	F,A	R disposal of EEE as WEEE (unit/Year)
circularEEE_v.1retrospective	F,A	R EEE commissioning (unit/Year)
circularEEE_v.1retrospective	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	C	total households (house)
.technology adoption	A	total households variation (house/Year)

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Function Sensitivity Parameters (0)

Group	Type	Variable

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Data Lookup Tables (0)

Group	Type	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	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	Type	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	Type	Variable	Loops	+	-	+/- Ratio	?	Loops (IVV)	+	-	+/- Ratio	?
.technology adoption	A	actual adoption fraction (dmnl)	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	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	C	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	C	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	C	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.1retrospective	C	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.1retrospective	C	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	C	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	C	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]
.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	C	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	C	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.1retrospective	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.1retrospective	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.1retrospective	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	C	TIME STEP (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	C	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]

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Macros (0)

Name	Macro Definition	Expanded Macro Definition

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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	initial adopters	+
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	SAVEPER	+
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	+

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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	-
population	R EEE per inhabitant	-
potential adoption fraction_RSSDlookup	potential adoption fraction	-
PPP 1980	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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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

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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 Adoption	2. EEE flows	
Total:	**28**	**5**	**Total:**
kg per inhabitant (In 1 View)			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 household (In 1 View)			effect of normalised PPP on average number of EEE per 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)			adoption rate (In 1 View)
effect of normalised PPP on average number of EEE per adopter (In 1 View)			effect of normalised PPP on average number of EEE per 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)			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)
Total:	**28**	**5**	**Total:**
	1. Technology Adoption	2. EEE flows	

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