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%)
<u>Variables With Source Information</u>	0 (0.0%)
<u>Dimensionless Unit Variables</u>	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%)
<u>Variables Not In Any View</u>	0 (0.0%)
Nonmonotonic Lookup Functions	0 (0.0%)
Cascading Lookup Functions	0 (0.0%)
Non-Zero End Sloped Lookup Functions	1 (2.8%)
Equations With If Then Else Functions	0 (0.0%)
Equations With Min Or Max Functions	1 (2.8%)
Equations With Step Pulse Or Related Functions	0 (0.0%)
Equations With Unit Errors Or Warnings	2 (5.6%)

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

Variable Types

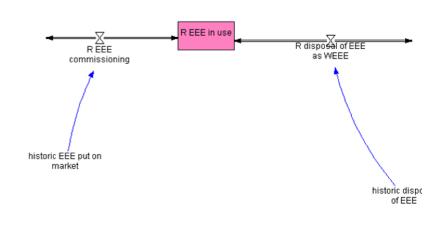
L: <u>Level</u> (3 / 3)*	SM: <u>Smooth</u> (0 / 0)*	DE : <u>Delay</u> (0 / 0)*†	LI: Level Initial (2)	I: <u>Initial</u> (0 / 0)	
C: Constant (11 / 11)	F: Flow (4 / 4)	A: <u>Auxiliary</u> (23 / 23)	Sub: Subscripts (0)	D : <u>Data</u> (0 / 0)	
G: Game (0 / 0)	T: Lookup (1 / 1)*††				

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

Views

\prod	View: 1. Technology Adoption (28) Variables
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Groups

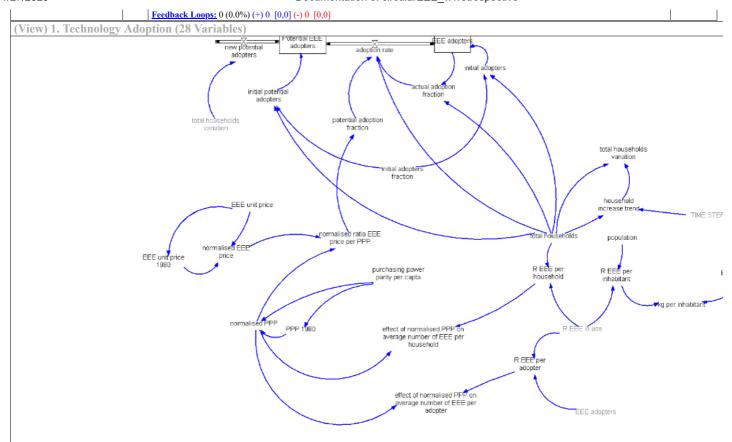
<u>Top.</u>	(All)	Variables (36 Variables)	
Group	Type	Variable Name And Description	Thumbnail
.technology adoption	#1	actual adoption fraction (dmnl)	
	A	= EEE adopters / total households	
		Description: Actual ratio of the population (household or inhabitant) that has adopted the technology	
		Present In 1 View:	
		1. Technology Adoption	

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		 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	
		 <u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. <u>Feedback Loops:</u> 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] 	
.technology adoption	#3	EEE adopters (house)	
	L	$= \int_{\text{adoption rate } dt + \text{initial adopters}}$ Description: Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology. Present In 1 View: • 1. Technology Adoption	
		Vised By REE 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)	
	С	= EXTERNAL_DATA("EEE unit price") Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View: • 1. Technology Adoption Used By • EEE unit price 1980 Reference value for EEE unit price. Value at initial time is used as reference. • normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0]	
.technology adoption	#6	EEE unit price 1980 (USD/unit)	
cemongy adoption	A	BEET 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	
to be also and action	#7	• 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] effect of normalised PPP on average number of EEE per adopter (unit/house)	
technology adoption.	A	R EEE per adopter / normalised PPP	
		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	
		·	
Ct1	40	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:	
		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	
I	I	I	ı l

1/2020		Documentation of circularEEE_v. Iretrospective	
		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	1	historic EEE put on market (unit/Year)	
	C	= EXTERNAL_DATA("historic EEE put on market") Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model]	
		Present In 1 View:	
		• 2. EEE flows	
		 Used By R EEE commissioning Commissioning rate of EEE obtained from the retrospective model. 	
.technology adoption	#12	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year)	
neemeregy adoption	A	= TREND(total households, TIME STEP, 0.01)	
		Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of 'l/year' instead of 'house/year'.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By total households variation Variation of households considering the trend from historical values.	
.technology adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house)	
	LI,A	= <u>initial adopters fraction</u> * <u>total households</u> Description: Population number (household or inhabitant) that already adopted the technology at the initial time	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		<u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
.technology adoption	#14	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters fraction (dmnl)	
.teemiology adoption	C C		
		Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time. 	
.technology adoption	#15	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial potential adopters (house)	
<i>57</i> 1	LI,A	= (1 - initial adopters fraction) * total households	
		Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.Control	#16	INITIAL TIME (Year)	
	C	= 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	new potential adopters (house/Year)	
	F,A	= total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or	
		inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that	
		adopted the technology.	
.technology adoption	#20	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised EEE price (dmnl)	-
-0,Puon	A	= EEE unit price / EEE unit price 1980	
		Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		<u>normalised ratio EEE price per PPP</u> Normalised fraction of EEE unit price and purchasing power parity.	
tachnol	#21	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	

1/21/2020		Bourner tation of Ground ELL_v. Hetrospective	
		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	normalised ratio EEE price per PPP (dmnl)	
	A	= normalised EEE price / normalised PPP Description: Normalised fraction of EEE unit price and purchasing power parity.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology	
		considering the price and their earnings.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#23 C	population (inhabitant) EXTERNAL_DATA("population")	
		Description: Total number of inhabitants at that moment[obtained externally, drives the model]	
		Present In 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)	
	_ A	Description: Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their	
		earnings.	
		Present In 1 View: 1. Technology Adoption	
		Used By adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption	
		fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the	
		technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and	
		the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
.technology adoption	#26	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] Potential EEE adopters (house)	
g,	L	= 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	
		1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#27	PPP 1980 (USD/Year)	
	A	= GET DATA AT TIME(<u>purchasing power parity per capta</u> , 1980) Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#28	purchasing power parity per capta (USD/Year)	
	С	= 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. 	
		• <u>normalised FFT</u> Pormalised value of purchasing power parity considering the value at the initial time as reference.	
oiroularEEE 1 (#20	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)	
		Description: Rate of disposal of EEE as WEEE obtained from the retrospective model.	
		Present In 1 View: • 2. EEE flows	
		Vsed By REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or	
		second use.	
		Feedback Loons: 0 (0 0%) (+) 0 [0 0] (-) 0 [0 0]	
circularEEE_v.1retrospective	#30	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE commissioning (unit/Year)	
	F,A	= historic EEE put on market	
		Description: Commissioning rate of EEE obtained from the retrospective model. Present In 1 View:	
		• 2. EEE flows	
		Used By	
		<u>R EEE in use</u> Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or	
1	I	second use.	

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circularEEE v.1retrospective	#31	Feedback Loops; 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE in use (unit)	
_ 1	L	$= \int_{\mathbf{R}} \underbrace{\mathbf{EEE} \ \mathbf{commissioning} - \mathbf{R} \ \mathbf{disposal} \ \mathbf{of} \ \mathbf{EEE} \ \mathbf{as} \ \mathbf{WEEE} \ dt + 0.0}_{\mathbf{EEE}}$	
		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	
		Vsed By REEE per adopter Average number of stock in use per inhabitant considering retrospective model.	
		<u>R EEE per household</u> Average number of stock in use per household considering retrospective model.	
		REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
.technology adoption	#32	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house)	
.technology adoption	A	= ZIDZ (<u>R EEE in use</u> , <u>EEE adopters</u>)	
		Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		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	R EEE per household (unit/house)	
	A	= 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/ .	
.Control	#35	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] SAVEPER (Year)	
Control	A	= TIME STEP	
		Description: The frequency with which output is stored. Present In 0 Views:	
		Used By	
.Control	#37	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] TIME STEP (Year)	
	С	= 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'.	
.technology adoption	#38	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] total households (house)	
.technology adoption	#38 C	= EXTERNAL_DATA("total households")	
		Description: Total number of households at that moment[obtained externally, drives the model] Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 R EEE per household Average number of stock in use per household considering retrospective model. actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology 	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption	
		fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and	
		the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
		household increase trend Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the	
		growth rate, emulating the derivative of households in at a given point in time. This justifies the use of '1/year' instead of 'house/year'. • initial adopters Population number (household or inhabitant) that already adopted the technology at the initial time	
		initial potential adopters Population number (household or inhabitant) that has not yet adopted the technology at the initial time. total households variation Variation of households considering the trend from historical values.	
		_	
.technology adoption	#39	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] total households variation (house/Year)	
	A	= total households * household increase trend Description: Variation of households considering the trend from historical values.	
		Present In 1 View:	
		· · · · · · · · · · · · · · · · · · ·	
		1. Technology Adoption	
		Used By	



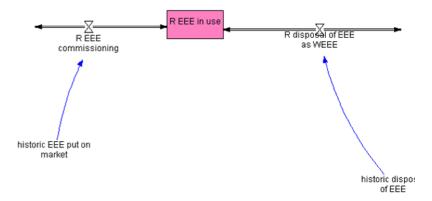
Group	Type	Variable Name And Description	Thumbi
.technology adoption	#1 A	actual adoption fraction (dmnl) = EEE adopters / total households Description: Actual ratio of the population (household or inhabitant) that has adopted the technology Present In 1 View: 1. Technology Adoption	Thumon
		Used By adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year).	
.technology adoption	#2	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] adoption rate (house/Year)	-
acciniology adoption	F,A	MAX (potential adoption fraction - actual adoption fraction, 0) * total households Description: Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time (house/year). Present In 1 View: 1. Technology Adoption	
		Used By 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	EEE adopters (house)	
	L	= Jadoption 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 • REEE 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/.	
. 1 1 1	115	Feedback Loops; 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#5	EEE unit price (USD/unit)	1

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	С	= EXTERNAL_DATA("EEE unit price") Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View: 1. Technology Adoption	
		Used By • EEE unit price 1980 Reference value for EEE unit price. Value at initial time is used as reference.	
		normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference.	
.technology adoption	#6	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] EEE unit price 1980 (USD/unit)	
	A	= GET DATA AT TIME (EEE unit price, 1980) Description: Reference value for EEE unit price. Value at initial time is used as reference.	
		Present In 1 View: • 1. Technology Adoption	
		Used By	
		<u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference.	
.technology adoption	#7	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] effect of normalised PPP on average number of EEE per adopter (unit/house)	
	A	= R EEE per adopter / normalised PPP Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or	
		inhabitant) need and can afford at the point in time. Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
.technology adoption	#8	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] effect of normalised PPP on average number of EEE per household (unit/house)	
25 1	A	= R EEE per household / normalised PPP Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at	
		the point in time. Present In 1 View:	
		1. Technology Adoption	
		Used By	
.technology adoption	#12	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (1/Year)	
.technology adoption	A A	= TREND(total households, TIME STEP, 0.01)	
		Description: Trend estimate of households through time.† Units inconsistency due to the use of TIME STEP to verify the growth rate, emulating the derivative of households in at a given point in time. This justifies the use of 'l/year' instead of 'house/year'.	
		Present In 1 View: • 1. Technology Adoption	
		Used By	
		total households variation Variation of households considering the trend from historical values.	
.technology adoption	#13	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house)	
	LI,A	= <u>initial adopters fraction</u> * <u>total households</u> Description: Population number (household or inhabitant) that already adopted the technology at the initial time	
		Present In 1 View: • 1. Technology Adoption	
		Used By	
		<u>EEE adopters</u> Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
.technology adoption	#14	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters fraction (dmnl)	
	C	= 0 Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time.	
		Present In 1 View: • 1. Technology Adoption	
		Used By	
		 <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#15 LI,A	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.	
.technology adoption	#17	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] kg per inhabitant (kg/inhabitant)	
	A	= R EEE per inhabitant * EEE average unit weight Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from	
		https://statistics-netherlands.shinyapps.io/sales_and_waste/ . Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
.technology adoption	#19	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] new potential adopters (house/Year)	
	F,A	= total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or	
		Inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		1. Technology Adoption	
		I	

		Used By	
		 <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. 	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#20 A	normalised EEE price (dmnl) = EEE unit price / EEE unit price 1980	
	A	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.	
		- normanised ratio LEE price per FFF (volumensed ratedon of LEE unit price and purchasing power parity).	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#22	normalised ratio EEE price per PPP (dmnl)	
	A	= normalised EEE price / normalised PPP Description: Normalised fraction of EEE unit price and purchasing power parity.	
		Present In 1 View:	
		1. Technology Adoption	
		Head De	
		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.	
tashnalagu adantian	#22	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.	
		Forthald Lawrence (CON) (1) O FORT (1) O FORT	
.technology adoption	#24	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] potential adoption fraction (dmnl)	
.teemiology 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:	
		Present In 1 View: • 1. Technology Adoption	
		1. Technology Adoption Used By	
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.technology adoption	#27 A	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] Potential EEE adopters (house) ■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: ■LTechnology Adoption Used By Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] PPP 1980 (USD/Vear) ■ 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: ■LTechnology 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] purchasing power parity per capta (USD/Year) = EXTERNAL DATA("purchasing, power parity, per capta") Description: Reference value to measure the real purchasing power in different regions. [obtained externally, drives the model] Present In 1 View: ■ L Technology Adoption Used By ■Dermalised to measure the real purchasing power in different regions. [obtained externally, drives the model] Present In 1 View: ■ L Technology Adoption	
.technology adoption	#27 A	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] Potential EEE adopters (house) ∫ 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 I View: • 1. Technology. Adoption Used By Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] PPP 1980 (USD/Year) GET DATA AT TIME(purchasing power parity per capta. 1980) Description: Reference value for purchasing power parity considering the value at the initial time as reference. Present In I 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] purchasing power parity per capta (USD/Year) = EXTERNAL_DATA("purchasing power parity, per capta") Description: Reference value to measure the real purchasing power in different regions. [obtained externally, drives the model] Present In I View: • 1. Technology. Adoption Used By • 1. Technology. Adoption Used By • 1. Technology. Adoption	
.technology adoption	#27 A	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] Potential EEE adopters (house) 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: L. Technology Adoption Used By Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] 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: L. 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] 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: L. 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. normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference. New Paper Paper Paper Paper Paper Pa	

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		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	
		• <u>2. EEE flows</u>	
		Used By	
		R EEE per adopter Average number of stock in use per inhabitant considering retrospective model.	
		<u>R EEE per household</u> Average number of stock in use per household considering retrospective model.	
		<u>R EEE per inhabitant</u> 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	R EEE per adopter (unit/house)	
	A	= ZIDZ (<u>R EEE in use</u> , <u>EEE adopters</u>) Description: Average number of stock in use per inhabitant considering retrospective model.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		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	R EEE per household (unit/house)	
	A	= 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 purchasing power parity	
		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/.	
.technology adoption	#38	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] total households (house)	
S7 1	C	= EXTERNAL_DATA("total households")	
		Description: Total number of households at that moment[obtained externally, drives the model] Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		REEE per household Average number of stock in use per household considering retrospective model.	
		<u>actual adoption fraction</u> Actual ratio of the population (household or inhabitant) that has adopted the technology	
		<u>adoption rate</u> Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the	
		technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and	
		the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time	
		(house/year). • 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	total households variation (house/Year)	
	A	= total households * household increase trend Description: Verigin of household accessions the trend from historical values	
		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)



	€ 7° -	2. EEE flavys (5 Variables)	
<u>Top</u>	_	w) 2. EEE flows (5 Variables)	Tr1 1
Group	Type		Thumbna
circularEEE_v.lretrospective	#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	historic EEE put on market (unit/Year)	
	C	= EXTERNAL_DATA("historic EEE put on market") Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model] Present In 1 View: • 2. EEE flows	
		REEE commissioning Commissioning rate of EEE obtained from the retrospective model. Commissioning Commissioning Commissioning rate of EEE obtained from the retrospective model.	
circularEEE v.1retrospective	#29	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R disposal of EEE as WEEE (unit/Year)	+
encularEEE_v. Hetrospective	F,A	historic disposal of EEE as WEEE (unit Fear)	
		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 REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Column Column	
circularEEE v.1retrospective	#31	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE in use (unit)	
	L	= ∫R EEE commissioning-R disposal of EEE as WEEE dt + 0.0 Description: Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use. Present In 2 Views: 1. Technology Adoption 2. EEE flows	
		Used By REE per adopter Average number of stock in use per inhabitant considering retrospective model. REE per household Average number of stock in use per household considering retrospective model. REE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
1/~		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
		logy adoption (27 Variables)	
		And Description	Thumbna
		fraction (dmnl) / total households	

27/2020		Documentation of circularEEE_V. Iretrospective	
		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. 	
technology	#3	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] EEE adopters (house)	
adoption	L	= \(\frac{\text{adoption rate } dt + \text{initial adopters} \) 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 Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (A) 1.73 (B) Foodback Logary 1 (100.0%) (A) 0.00 (B) 0.00 (B) Foodback Logary 1 (100.0%) (A) 0.00 (B) 0.00 (B) Foodback Logary 1 (100.0%) (A) 0.00 (B) 0.00 (B) Foodback Logary 1 (B) (B) 0.00 (B) Foodbac	
.technology	#4	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] EEE average unit weight (kg/unit)	
adoption	С	= EXTERNAL_DATA("EEE average unit weight") Description: Average unit weight of EEE.[obtained externally] Present In 1 View: 1. Technology Adoption	
		Used By	
.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. Description Control (Control (Contr	
.technology adoption	#6 A	Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] 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:	
		• 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	#8	effect of normalised PPP on average number of EEE per household (unit/house)	
adoption	A	= R EEE per household / normalised PPP Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time. Present In 1 View: 1. Technology Adoption	
		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. The body of the construction of the construction of the construction of the considering the trend from historical values.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	

12112020		Documentation of circularEEE_v. Iretrospective	
.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.	
technology	#14	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters fraction (dmnl)	
adoption	C	= 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.	
technology	#17	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] kg per inhabitant (kg/inhabitant)	
adoption	A	= R EEE per inhabitant * EEE average unit weight Description: Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/. Present In 1 View: 1. Technology Adoption	
		Used By	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#19 F,A	new potential adopters (house/Year) = total households variation Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View: • 1. Technology Adoption Used By • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#20 A	normalised EEE price (dmnl) = EEE unit price / EEE unit price 1980 Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View: • 1. Technology Adoption Used By	
		• <u>normalised ratio EEE price per PPP</u> Normalised fraction of EEE unit price and purchasing power parity.	
		Facility I come 0 (0.00/) (1) 0 [0.01 (1) 0 [0.01]	
.technology adoption	#21 A	Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] normalised PPF (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.	
.technology	#22	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] normalised ratio EEE price per PPP (dmnl)	
adoption	A	= normalised EEE price / normalised PPP Description: Normalised fraction of EEE unit price and purchasing power parity. Present In 1 View: • 1. Technology Adoption Used By • potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#23 C	population (inhabitant) = EXTERNAL_DATA("population") Description: Total number of inhabitants at that moment[obtained externally, drives the model] Present In 1 View: 1. Technology Adoption	
		 Used By R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. 	
technology	#24	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] potential adoption fraction (dmnl)	

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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).	
		<u>Feedback Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology adoption	#26 L	Potential EEE adopters (house)	
		= Jnew potential adopters-adoption rate dt + initial potential adopters Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology. Present In 1 View: 1. Technology Adoption Used By	
h 1	#27	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] PPP 1980 (USD/Year)	
adoption	#27 A	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.	
		<u>Feedback Loops:</u> 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. 	
technology	#32	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per adopter (unit/house)	
adoption	A	Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption	
		Used By • effect of normalised PPP on average number of EEE per adopter. Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time.	
technology	#33	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per household (unit/house)	
adoption	A	= R EEE in use / total households Description: Average number of stock in use per household considering retrospective model. Present In 1 View: 1. Technology Adoption	
		Used By • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the average number of EEE one household need and can afford at the point in time.	
technology	#34	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] R EEE per inhabitant (unit/inhabitant)	
adoption	A	= R EEE in use / population Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption	
		Used By • kg per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/.	
technology adoption	#38 C	Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] 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.	
411	ш20	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.	

	• 1.	Techno	ology Adoption	
	Used By			
	• <u>ne</u>		ntial adopters Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants).	
	A	ddition	al households or inhabitants start as potential adopters.	
	Feedbac	k Loop	<u>s:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
Top.			oup) circularEEE_v.1retrospective (5 Variables)	
Group		Type		Thumb
ircularEEE_v.1ret	trospective	#10	historic disposal of EEE (unit/Year)	
		C	= EXTERNAL_DATA("historic disposal of EEE") Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the model]	
			Present In 1 View:	
			• 2. EEE flows	
			Used By	
			R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model.	
ircularEEE_v.1ret	trospective	#11	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] historic EEE put on market (unit/Year)	
		C	= EXTERNAL_DATA("historic EEE put on market")	
			Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model]	
			Present In 1 View: • 2. EEE flows	
			Used By	
			<u>R EEE commissioning</u> Commissioning rate of EEE obtained from the retrospective model.	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
rcularEEE_v.1ret	rospective	#29	R disposal of EEE as WEEE (unit/Year) = historic disposal of EEE	
		F,A	Description: Rate of disposal of EEE as WEEE obtained from the retrospective model.	
			Present In 1 View:	
			• <u>2. EEE flows</u>	
			Used By	
			<u>R EEE in use</u> 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]	
rcularEEE_v.1ret	trospective	#30	R EEE commissioning (unit/Year)	
		F,A	= <u>historic EEE put on market</u> Description: Commissioning rate of EEE obtained from the retrospective model.	
			Present In 1 View:	
			• 2. EEE flows	
			Used By	
			REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or	
			second use.	
			Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
ircularEEE v.1ret	trospective	#31	R EEE in use (unit)	
		L	$= \int_{\mathbf{R}} \text{ EEE commissioning-R disposal of EEE as WEEE} dt + 0.0$	
			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	
			Lead D.	
			 Used By R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. 	
			 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. 	
			<u>R EEE per adopter</u> Average number of stock in use per inhabitant considering retrospective model.	
			 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. 	
Тор		(Tyr	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.	
Top. Group		(Typ	REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Redback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	Thumb
	option	Type #3	REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	Thumb
Group	option	Type	REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	Thuml
Group	option	Type #3	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] EEE adoptes (house) Variable Name And Description EEE adopters (house) ■ datoption rate dt + initial adopters Description: Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	Thuml
Group	option	Type #3	REEE per adopter Average number of stock in use per inhabitant considering retrospective model. REEE per household Average number of stock in use per household considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	Thumi
Group	option	Type #3	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] Peedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] Peedback Loops: 0 (0.0%) (+) 0 [0,0] R Eedback Loops: 0 (0.0%) (+) 0 [0,0] Peedback Loops: 0 (0.0%) (+) 0 [0,0] Peedback Loops: 0 (0.0%) (+) 0 [0,0] Peedback Loops: 0 (0.0%) (+) 0 [0,0] R Eedback Loops: 0 (0.0%) (+) 0 [0,0] Peedback L	Thuml
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Group .technology ad		Type #3 L	 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] Level (3 Variables) Variable Name And Description EEE adopters (house) ■ Jadoption 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]	Thum
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Group .technology ad		Type #3 L	 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] Level (3 Variables) Variable Name And Description 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] Potential EEE adopters (house) ∫ new potential adopters-adoption rate dt + initial potential adopters 	Thuml
Group .technology add		Type #3 L	 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] Level (3 Variables) Variable Name And Description EEE adopters (house) ■ Jadoption 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] Potential EEE adopters (house)	Thuml
Group .technology add		Type #3 L	 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] Level (3 Variables) Variable Name And Description EEE adopters (house) =	Thuml
Group .technology add		Type #3 L	 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] Level (3 Variables) Variable Name And Description EEE adopters (house) ■ Jadoption 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] Potential EEE adopters (house) Jnew potential adopters-adoption rate dt + initial potential adopters Description: Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	Thumt
Group .technology add		Type #3 L	 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] Level (3 Variables) Variable Name And Description EEE adopters (house) =	Thum
Group .technology add		Type #3 L	• 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] EV Level (3 Variables) Variable Name And Description EEE adopters (house) ■ Jadoption 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] Potential EEE adopters (house) ■ ∫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	Thumi
Group .technology add	loption	#3 L #26 L	• 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] EVEL (3 Variables) Variable Name And Description 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] Potential EEE adopters (house) = ∫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]	Thumi
Group .technology add	loption	Type #3 L	• REEE per adopter Average number of stock in use per inhabitant considering retrospective model. • REEE per inhabitant Average number of stock in use per household considering retrospective model. • REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] Deep Level (3 Variables) Fariable Name And Description EEE adopters (house) ■ Jadoption 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 ■ REEE 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] Potential EEE adopters (house) ■ _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] R EEE in use (unit)	Thum
Group .technology add	loption	#31 L #31	 R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. R EEE per inhabitant 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] Level (3 Variables) Variable Name And Description 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] Potential EEE adopters (house) ■ 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] R EEE in use (unit) ■ R EEE commissioning-R disposal of EEE as WEEE dt + 0.0	Thum
.technology add	loption	#31 L #31	• REEE per adopter Average number of stock in use per inhabitant considering retrospective model. • REEE per inhabitant Average number of stock in use per household considering retrospective model. • REEE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops; 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] Deep Level (3 Variables) Fariable Name And Description EEE adopters (house) ■ Jadoption 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 ■ REEE 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] Potential EEE adopters (house) ■ _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] R EEE in use (unit)	Thum
.technology add	loption	#31 L #31	REFE per adopter Average number of stock in use per inhabitant considering retrospective model. REFE per inhabitant Average number of stock in use per household considering retrospective model. REFE per inhabitant Average number of stock in use per inhabitant considering retrospective model. Feedback Loops: 0 (0.0%) (+) 0 [0.0] (-) 0 [0.0] 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: ■ L. Technology Adoption Used By ■ REFE 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] Potential EEE adopters (house) ■ new potential adopters, dhouse) ■ 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: ■ L. Technology Adoption Used By REFE in use (unit) ■ REFE commissioning-R disposal of EFE as WEFE 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:	Thum
Group .technology add	loption	#31 L #31	 R EEE per adopter Average number of stock in use per inhabitant considering retrospective model. R EEE per inhabitant 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] Level (3 Variables) Variable Name And Description 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 I 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] Potential EEE adopters (house) ∫ 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 I View:	Thum

1/27/	2020			Documentation of circularEEE_v.1retrospective	
				Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
				Variables)	
	(Tr)			nd Description Thumbnail	
				nd Description Thumbnail	
	<u>Top</u>			vel Initial (2 Variables)	
	Group			le Name And Description	Thumbnail
	.technology adoption	#13 LI,A		adopters (house) Ladopters fraction * total households	
				otion: Population number (household or inhabitant) that already adopted the technology at the initial time t In 1 View:	
				1. Technology Adoption	
			Used B	y	
			•	EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
				<u>ıck Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
	.technology adoption	#15 LI,A		potential adopters (house) nitial adopters fraction) * total households	
	adoption	Li,A	Descrip	otion: Population number (household or inhabitant) that has not yet adopted the technology at the initial time.	
				t In 1 View: 1. Technology Adoption	
			Used B	y <u>Potential EEE adopters</u> Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the	
				technology.	
				<u>tck Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
				ariables) Ind Description Thumbnail	
	roup Type <i>Va</i>	rtable 1	1	pe) Constant (8 Variables)	
	Group		Type	Variable Name And Description	Thumbnail
	technology ado	ption	#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/ .	
-	.technology ado	ntion	#5	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] EEE unit price (USD/unit)	
	.teemiology udo	ption	C	= EXTERNAL_DATA("EEE unit price")	
				Description: Historial prices of flat panel television.[obtained externally, drives the model] Present In 1 View:	
				1. Technology Adoption	
				Used By	
				 <u>EEE unit price 1980</u> Reference value for EEE unit price. Value at initial time is used as reference. <u>normalised EEE price</u> Normalised value of EEE unit price considering the value at the initial time as reference. 	
				Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
cir	cularEEE_v.1retro	ospectiv	e #10	historic disposal of EEE (unit/Year)	
			C	= EXTERNAL_DATA("historic disposal of EEE") Description: Historical value of annual EEE disposal in a specific country.[obtained externally, drives the model]	
				Present In 1 View:	
				• <u>2. EEE flows</u>	
				 Used By R disposal of EEE as WEEE Rate of disposal of EEE as WEEE obtained from the retrospective model. 	
cir	cularEEE_v.1retro	ospectiv	e #11	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] historic EEE put on market (unit/Year)	
			C	= EXTERNAL DATA("historic EEE put on market") Proposition Winterior Value of EEE commissioned in angular proposition with the model!	
				Description: Historical value of EEE commissioned in specific country.[obtained externally, drives the model] Present In 1 View:	
				• 2. EEE flows	
				Used By	
				R EEE commissioning Commissioning rate of EEE obtained from the retrospective model.	
-	.technology ado	ption	#14	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters fraction (dmnl)	
			C		
				Description: Population ratio (household or inhabitant) that already adopted the technology at the initial time. Present In 1 View:	
				1. Technology Adoption	
				Used By Initial adoptors Population number (bousehold or inhabitant) that already adopted the technology at the initial time	
				 <u>initial adopters</u> Population number (household or inhabitant) that already adopted the technology at the initial time <u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time. 	
				Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
	.technology ado	ption	#23	population (inhabitant)	
			C	= EXTERNAL_DATA("population") Description: Total number of inhabitants at that moment[obtained externally, drives the model]	
				Present In 1 View:	
				• 1. Technology Adoption	
				Used By	

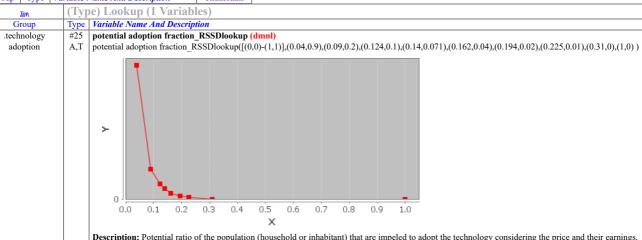
12112020		Documentation of circularEEE_v. Iretrospective	
		R EEE per inhabitant Average number of stock in use per inhabitant considering retrospective model.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#28	purchasing power parity per capta (USD/Year)	
	C	= EXTERNAL_DATA("purchasing 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	
		<u>PPP 1980</u> 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	total households (house)	
	C	= EXTERNAL_DATA("total households") Description: Total number of households at that moment[obtained externally, drives the model]	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		 R EEE per household Average number of stock in use per household considering retrospective model. actual adoption fraction Actual ratio of the population (household or inhabitant) that has adopted the technology 	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption	
		fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the	
		technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time	
		(house/year).	
		 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 'I/year' instead of 'house/year'. 	
		• initial adopters Population number (household or inhabitant) that already adopted the technology at the initial time	
		<u>initial potential adopters</u> Population number (household or inhabitant) that has not yet adopted the technology at the initial time.	
		total households variation Variation of households considering the trend from historical values.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
<u>Top.</u>	(Tyl	pe) Flow (4 Variables)	
Group	Type		Thumbnail
.technology adoption	#2 F,A	adoption rate (house/Year) = MAX (potential adoption fraction - actual adoption fraction, 0) * total households	
	1,11	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.	
.technology adoption	#19	Feedback Loops: 1 (100.0%) (+) 0 [0,0] (-) 1 [3,3] new potential adopters (house/Year)	
neemielegy adoption	F,A	= total households variation	
		Description: Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or	
		inhabitants). Additional households or inhabitants start as potential adopters. Present In 1 View:	
		1. Technology Adoption	
		Used By	
		Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that	
		adopted the technology.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
circularEEE_v.1retrospective	#29	R disposal of EEE as WEEE (unit/Year)	
	F,A	= <u>historic disposal of EEE</u> Description: Rate of disposal of EEE as WEEE obtained from the retrospective model.	
		Present In 1 View:	
		• <u>2. EEE flows</u>	
		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 • REFE in use Value of EFF in use obtained from the retrospective model Equivalent to all EFF in a country, either in first use, use, or	
		• REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
	(Ts71	<u>Feedback Loops:</u> 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
Top. Group	Type		Thumbnail
.technology adoption	#1	actual adoption fraction (dmnl)	
	A	= EEE adopters / total households Description: Actual ratio of the population (household or inhabitant) that has adopted the technology.	
		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	
		6) smooth the potential adoption faction (dilling) continue from the reacospective model and	

72020		Bocumentation of circular ELE_v. Tretrospective	
		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	
		Normalised EEE price Normalised value of EEE unit price considering the value at the initial time as reference.	
.technology adoption	#7	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] effect of normalised PPP on average number of EEE per adopter (unit/house)	
G	A	= R EEE per adopter / normalised PPP Description: Defines the effect of the purchasing power parity per capta on the average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. Present In 1 View: 1. Technology Adoption Used By	
4.1.1	110	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	
.technology adoption	#12 A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] household increase trend (I/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.	
.technology adoption	#13 LI,A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial adopters (house) = initial adopters fraction * total households Description: Population number (household or inhabitant) that already adopted the technology at the initial time Present In 1 View: • 1. Technology Adoption	
		Used By • EEE adopters Stock of adopters. Relies on the ones (households or inhabitants) that adopted the technology.	
.technology adoption	#15	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0] initial potential adopters (house)	
	LI,A	= (1 - initial adopters fraction) * total households Description: Population number (household or inhabitant) that has not yet adopted the technology at the initial time. Present In 1 View: 1. Technology Adoption	
		Used By • Potential EEE adopters Stock of potential adopters. Relies on new potential adopters minus the ones (households or inhabitants) that adopted the technology.	
.technology adoption	#17 A	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
		• 1. Technology Adoption Used By	
4.1.1.1.2	#10	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	

72020		Documentation of circularEEE_v. Iretrospective	
		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	normalised EEE price (dmnl)	
63 1	A	= EEE unit price / EEE unit price 1980	
		Description: Normalised value of EEE unit price considering the value at the initial time as reference. Present In 1 View:	
		• 1. Technology Adoption	
		Used By normalised ratio EEE price per PPP Normalised fraction of EEE unit price and purchasing power parity.	
		onormanisca ratio ELE price per 111 Normanisca raction of ELE unit price and purchasing power parity.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#21	normalised PPP (dmnl) = purchasing power parity per capta / PPP 1980	
	A	Description: Normalised value of purchasing power parity considering the value at the initial time as reference.	
		Present In 1 View:	
		• 1. Technology Adoption	
		Used By	
		effect of normalised PPP on average number of EEE per adopter Defines the effect of the purchasing power parity per capta on the	
		average number of EEE one adopter unit (household or inhabitant) need and can afford at the point in time. • effect of normalised PPP on average number of EEE per household Defines the effect of the purchasing power parity per capta on the	
		average number of EEE one household need and can afford at the point in time.	
		<u>normalised ratio EEE price per PPP</u> Normalised fraction of EEE unit price and purchasing power parity.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#22	normalised ratio EEE price per PPP (dmnl)	
6,7	A	= normalised EEE price / normalised PPP	
		Description: Normalised fraction of EEE unit price and purchasing power parity.	
		Present In 1 View: 1. Technology Adoption	
		Used By • notantial adaption fraction Potential ratio of the nonvelation (howehold or inhabitant) that are impeded to adopt the technology.	
		 potential adoption fraction Potential ratio of the population (household or inhabitant) that are impeled to adopt the technology considering the price and their earnings. 	
.technology adoption	#24	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
technology 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 Paris of adoption to the technology, Police on the difference among the notantial adoption fraction and the actual adoption	
		adoption rate Ratio of adoption to the technology. Relies on the difference among the potential adoption fraction and the actual adoption fraction multiplied by the total population (households or individuals)† Units inconsistency due to the structure set to drive the	
		technology adoption model. The comparison among the potential adoption fraction (dmnl) obtained from the retrospective model and	
		the actual adoption (dmnl) fraction multiplied by the total households (house) defines the adoption rate at that moment in time	
		(house/year).	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
.technology adoption	#27	PPP 1980 (USD/Year)	
	A	= GET DATA AT TIME(<u>purchasing power parity per capta</u> , 1980) Description: Reference value for purchasing power parity per capta. Value at initial time is used as reference.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		normalised PPP Normalised value of purchasing power parity considering the value at the initial time as reference.	
		Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
rcularEEE_v.1retrospective	#29	R disposal of EEE as WEEE (unit/Year)	
_ 1	F,A	= historic disposal of EEE	
		Description: Rate of disposal of EEE as WEEE obtained from the retrospective model.	
		Present In 1 View: • 2. EEE flows	
		Used By • P FFE in the Value of FFE in the obtained from the retrespective model Equivalent to all FFE in a country, either in first tree are	
		REEE in use Value of EEE in use obtained from the retrospective model. Equivalent to all EEE in a country, either in first use, use, or second use.	
	#20	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]	
rcularEEE_v.1retrospective	#30 F,A	R EEE commissioning (unit/Year) = historic EEE put on market	
	1,71	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	R EEE per adopter (unit/house)	
	A	= ZIDZ (<u>R EEE in use</u> , <u>EEE adopters</u>) Description: Average number of stock in use per inhabitant considering retrospective model.	
		Present In 1 View:	
		1. Technology Adoption	
		Used By	
		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	R EEE per household (unit/house)	
-0/Priori	A	= R EEE in use / total households	

/27/2020	Documentation of circularEEE_v.1retrospective
	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 R EEE per inhabitant (unit/inhabitant) A = R EEE in use / population Description: Average number of stock in use per inhabitant considering retrospective model. Present In 1 View: 1. Technology Adoption
	Used By • kg_per inhabitant Average kg equivalent of stock in use per inhabitant considering retrospective model. Used to compare with results from https://statistics-netherlands.shinyapps.io/sales_and_waste/. Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
.technology adoption	#39 total households variation (house/Year)
35 1	A = total households * household increase trend Description: Variation of households considering the trend from historical values. Present In 1 View: 1. Technology Adoption
	Used By • new potential adopters Ratio of new potential adopters to the technology. Relies on the variation of the population (variation of households or inhabitants). Additional households or inhabitants start as potential adopters.
	Feedback Loops: 0 (0.0%) (+) 0 [0,0] (-) 0 [0,0]
V 0 1 /	pts (0 Variables)
Group Type Variable National	

<u>Top</u>	(Type	e) Subscripts (0 Variables)	
Group	Type	Variable Name And Description	Thumbnail
Top	(Type	e) Data (0 Variables)	
Group	Type	Variable Name And Description	Thumbnail
<u>Top</u>	(Type	e) Game (0 Variables)	
Group	Type	Variable Name And Description	Thumbnail



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.

 $\underline{\textbf{Feedback Loops:}}\ 0\ (0.0\%)\ (+)\ 0\ \ [0,0]\ (-)\ 0\ \ [0,0]$

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All Variables (36)

Group

Group	Type	Variable
.technology adoption	A	actual adoption fraction (dmnl)
.technology adoption	F,A	adoption rate (house/Year)
.technology adoption	L	EEE adopters (house)
.technology adoption	С	EEE average unit weight (kg/unit)
.technology adoption	С	EEE unit price (USD/unit)
.technology adoption	A	EEE unit price 1980 (USD/unit)
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)
.Control	С	FINAL TIME (Year)
circularEEE_v.1retrospective	С	historic disposal of EEE (unit/Year)
circularEEE_v.1retrospective	С	historic EEE put on market (unit/Year)
.technology adoption	A	household increase trend (1/Year)
.technology adoption	LI,A	initial adopters (house)
.technology adoption	С	initial adopters fraction (dmnl)
.technology adoption	LI,A	initial potential adopters (house)
.Control	С	<u>INITIAL TIME</u> (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	<u>PPP 1980</u> (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	С	TIME STEP (Year)
.technology adoption	С	total households (house)
.technology adoption	A	total households variation (house/Year)

Variable Link Detail (36)

Group	Туре	Variable	In/Out Counts	In/Out Ratio	In Links by Polarity	Out Links by Polarity
.technology adoption	С	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 <mark>0</mark> 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 <mark>0</mark> 0
.technology adoption	A	R EEE per inhabitant (unit/inhabitant)	2 1	2.00	1 1 0	1 <mark>0</mark> 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 <mark>0</mark> 0	1 0 0
.technology adoption	L	Potential EEE adopters (house)	3 0	00	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	С	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	С	purchasing power parity per capta (USD/Year)	0 2	0.00	0 0 0	1 0 1
.technology adoption	A	PPP 1980 (USD/Year)	1 1	1.00	0 0 1	0 1 0
.technology adoption	F,A	new potential adopters (house/Year)	1 1	1.00	1 0 0	1 0 0
.technology adoption	A	kg per inhabitant (kg/inhabitant)	2 0	00	2 0 0	0 0 0
.technology adoption	С	initial adopters fraction (dmnl)	0 2	0.00	0 0 0	1 1 0
.technology adoption	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	С	EEE unit price (USD/unit)	0 2	0.00	0 0 0	1 0 1
.Control	A	SAVEPER (Year)	1 0	00	1 0 0	0 0 0
.technology adoption	С	population (inhabitant)	0 1	0.00	0 0 0	0 1 0
circularEEE v.1retrospective	С	historic EEE put on market (unit/Year)	0 1	0.00	0 0 0	1 0 0
circularEEE v.1retrospective	С	historic disposal of EEE (unit/Year)	0 1	0.00	0 0 0	1 0 0
.technology adoption	С	EEE average unit weight (kg/unit)	0 1	0.00	0 0 0	1 0 0
.Control	С	INITIAL TIME (Year)	(0 0)	∞	0 0 0	0 0 0
.Control	С	FINAL TIME (Year)	(0 0)	∞	0 0 0	0 0 0

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Supplementary Variables (0)

Group	Туре	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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Duick Links:	Α	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V	W	X	Y	Z

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)

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Variables With Source Information (0)

Group	Type	Variable

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Ouick Links: A B	$C \mid D$	EF	G	HI	J	K	L	M	N	О	P	O	R	S	T	U	V	W	X	Y	ΙZΙ

Variables With Dimensionless Units (6)

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

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Quick Links:	Α	В	С	D	Е	F	G	Н	I	J	K	L	M	N	0	P	0	R	S	T	U	V	W	X	Y	Z

Variables without Predefined Min or Max Values (32)

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

Variables Not In Any View (0)

Г	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])

						+/-		Loops			+/-	
Group	Type	Variable	Loops	+	_	Ratio	?	(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	С	EEE average unit weight (kg/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	EEE unit price (USD/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	EEE unit price 1980 (USD/unit)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	effect of normalised PPP on average number of EEE per adopter (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	effect of normalised PPP on average number of EEE per household (unit/house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	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	С	historic EEE put on market (unit/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	household increase trend (1/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	LI,A	initial adopters (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	initial adopters fraction (dmnl)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	LI,A	initial potential adopters (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	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	<u>PPP 1980</u> (USD/Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	<u>purchasing power parity per capta</u> (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	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
		(unit/inhabitant)												
.Control	A	SAVEPER (Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.Control	С	TIME STEP (Year)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	С	total households (house)	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
.technology adoption	A	total households variation	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]	0 (0%)	0 [0,0]	0 [0,0]	NA	0 [0,0]
		(house/Year)												

Macros (0)

Name	Macro Definition	Expanded Macro Definition

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Ouick Links:	Α	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	О	R	S	Т	U	V	W	X	Y	Z

Positive Polarity Causal Links (29)

Cause	Effect	Polarity
adoption rate	EEE adopters	+
EEE adopters	actual adoption fraction	+
EEE adopters	R EEE per adopter	+
EEE average unit weight	kg per inhabitant	+
EEE unit price	normalised EEE price	+
historic disposal of EEE	R disposal of EEE as WEEE	+
historic EEE put on market	R EEE commissioning	+
household increase trend	total households variation	+
initial adopters	EEE adopters	+
initial adopters fraction	<u>initial adopters</u>	+
initial potential adopters	Potential EEE adopters	+
new potential adopters	Potential EEE adopters	+
normalised EEE price	normalised ratio EEE price per PPP	+
potential adoption fraction	adoption rate	+
purchasing power parity per capta	normalised PPP	+
R EEE commissioning	R EEE in use	+
R EEE in use	R EEE per adopter	+
R EEE in use	R EEE per household	+
R EEE in use	R EEE per inhabitant	+
R EEE per adopter	effect of normalised PPP on average number of EEE per adopter	+
R EEE per household	effect of normalised PPP on average number of EEE per household	+
R EEE per inhabitant	kg per inhabitant	+
TIME STEP	household increase trend	+
TIME STEP	<u>SAVEPER</u>	+
total households	household increase trend	+
total households	<u>initial adopters</u>	+
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	-
<u>population</u>	R EEE per inhabitant	-
potential adoption fraction_RSSDlookup	potential adoption fraction	-
<u>PPP 1980</u>	normalised PPP	-
R disposal of EEE as WEEE	R EEE in use	-
total households	actual adoption fraction	-
total households	adoption rate	-
total households	R EEE per household	-

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

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	2. EEE	
	<u>Adoption</u>	flows	
Total:	28	5	Total:
kg per inhabitant (In 1 View)		<u> </u>	kg per inhabitant (In 1 View)
new potential adopters (In 1 View)			<u>new potential adopters</u> (In 1 View)
<u>R EEE per household</u> (In 1 View)	_		R EEE per household (In 1 View)
effect of normalised PPP on average number of EEE per household (In 1			effect of normalised PPP on average number of EEE per household (In 1
View)			View)
<u>R EEE in use</u> (In 2 Views)			<u>R EEE in use</u> (In 2 Views)
<u>purchasing power parity per capta</u> (In 1 View)			<u>purchasing power parity per capta</u> (In 1 View)
<u>actual adoption fraction</u> (In 1 View)	_		actual adoption fraction (In 1 View)
Potential EEE adopters (In 1 View)			Potential EEE adopters (In 1 View)
total households (In 1 View)			total households (In 1 View)
adoption rate (In 1 View)	<u> </u>		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)
<u>normalised PPP</u> (In 1 View)	<u> </u>		normalised PPP (In 1 View)
<u>initial adopters</u> (In 1 View)	<u> </u>		<u>initial adopters</u> (In 1 View)
<u>PPP 1980</u> (In 1 View)			<u>PPP 1980</u> (In 1 View)
<u>initial potential adopters</u> (In 1 View)			<u>initial potential adopters</u> (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)
<u>population</u> (In 1 View)			population (In 1 View)
<u>initial adopters fraction</u> (In 1 View)	<u> </u>		<u>initial adopters fraction</u> (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)			<u>normalised EEE price</u> (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	2. EEE	
	<u>Adoption</u>	flows	

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