Overview of the results of the household CHR15 Multigenerational Home: working couple, 2 children, 2 seniors 0

Calculation Time Freitag, 1. Januar 2016 - Sonntag, 1. Januar 2017

Energy Intensity: Random

Seed 4895

LoadProfileGenerator 5.8.0.16019

by Noah Pflugradt

http://www.loadprofilegenerator.de

Rendering date:16.12.2016 09:16:22

Table of Contents

Totals	3
Persons	5
Activity Frequency Charts	6
Activity Distribution per Person	10
Time Use per Person per Affordance Per Person	14
Energy use per person per affordance	24
Time Use per Person Per Affordance according to different category definitions	26
Overview of the actions of each member of the household	28
Overview of the time of the use per load type per device	32
Energy/Resource use distribution per load type per affordance	34
Energy use for each load type for each device	39
Duration curve for each device for each load type	43
Duration curve for each load type	45
Grouped energy use for each load type for each device	47
Example of the device profiles for each load type	51
Overview of the time and power of the use per load type per device	65
Energy use per load type during different seasons, split by weekday/saturday/sunday	67
Location Distribution per Person	69
Actions.csv	73
Sum Profiles	74
Time Profiles	78
Variables	79

Totals

Totals for each Loadtype

Load Type	Value	Unit
Cold Water	78273.22	L
Electricity	8179.47	kWh
Warm Water	209671.15	L

Totals for each Loadtype per Day

Load Type	Value	Unit
Cold Water	213.86	L
Electricity	22.35	kWh
Warm Water	572.87	L

Minimum and Maximum for each Loadtype

Household	Minimum	Maximum	Unit
Cold Water	0.00	14.00	L/Min
Electricity	0.50	13624.86	Watt
Warm Water	0.00	16.55	L/Min

Totals for each Loadtype per Person

Load Type	Value	Unit
Cold Water	13045.54	L
Electricity	1363.24	kWh

Totals for each Loadtype per Person per Day

Load Type	Value	Unit
Cold Water	35.64	L
Electricity	3.72	kWh
Warm Water	95.48	L

Persons

• HH0

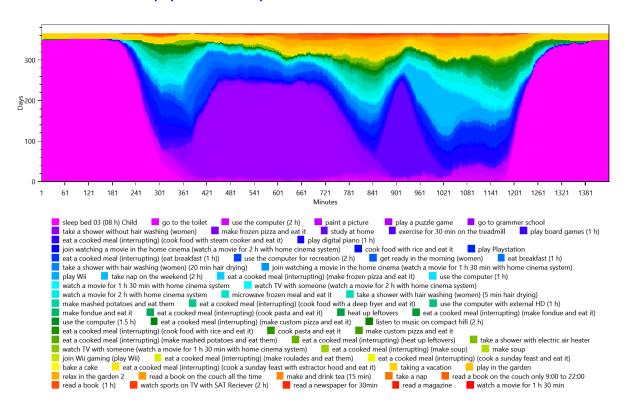
- CHR15 Abby (15/Female)(15/Female)
- o CHR15 Adam (4/Male)(4/Male)
- o CHR15 Eddie (70/Male)(70/Male)
- o CHR15 Myra (68/Female)(68/Female)
- o CHR15 Nick (40/Male)(40/Male)
- o CHR15 Rebekah (32/Female)(32/Female)

Activity Frequency Charts

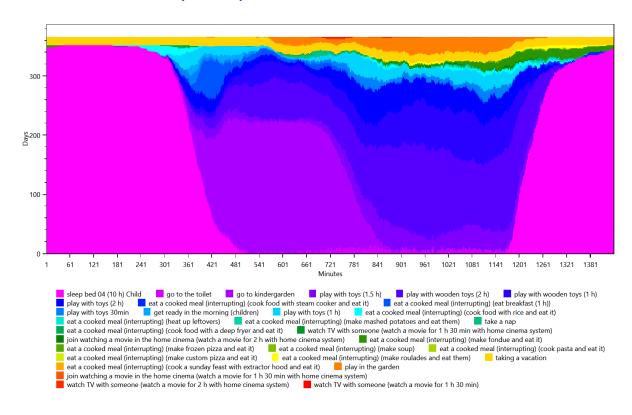
This is made from the files starting with: ActivityFrequenciesPerMinute

These charts show an ordered distribution of times of the activities of each person. This helps with judging quickly if a person is sleeping correctly and if they are going to work regularly.

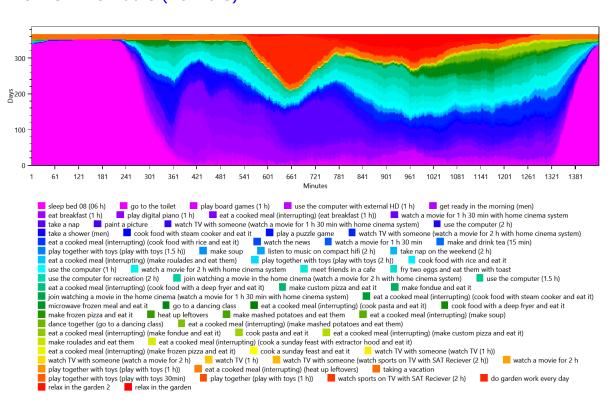
HH0 - CHR15 Abby (15 Female)



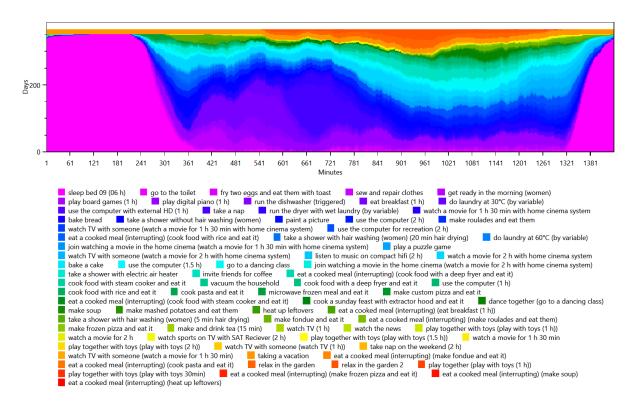
HH0 - CHR15 Adam (4 Male)



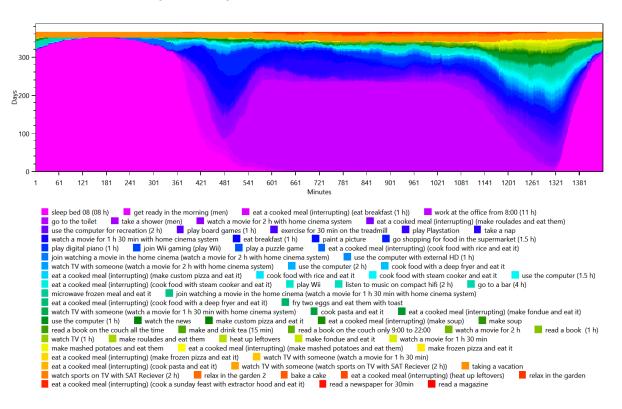
HH0 - CHR15 Eddie (70 Male)



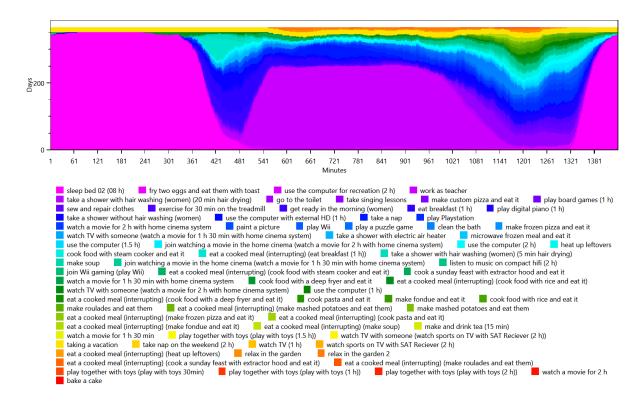
HH0 - CHR15 Myra (68 Female)



HH0 - CHR15 Nick (40 Male)



HH0 - CHR15 Rebekah (32 Female)

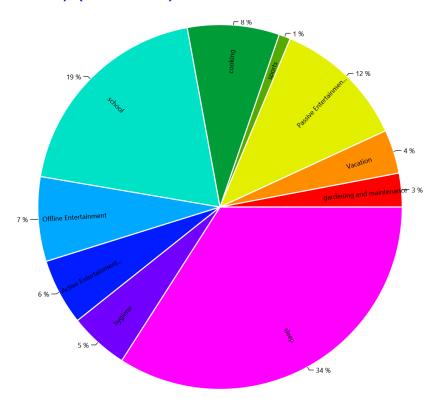


Activity Distribution per Person

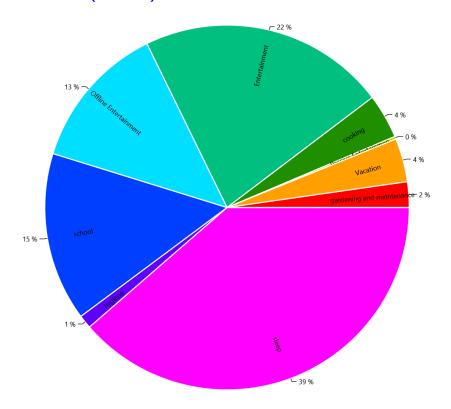
This is made from the files starting with: ActivityPercentage

This shows the distribution of the activities, grouped by the affordance Affordance ToCategories.

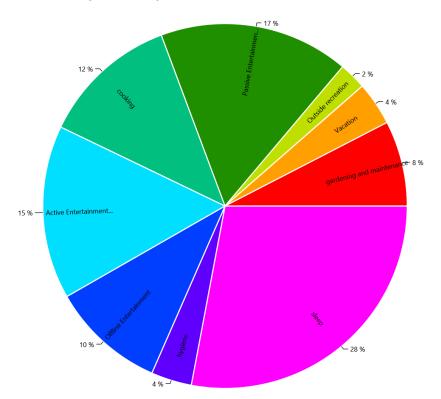
HH0 - CHR15 Abby (15 Female)



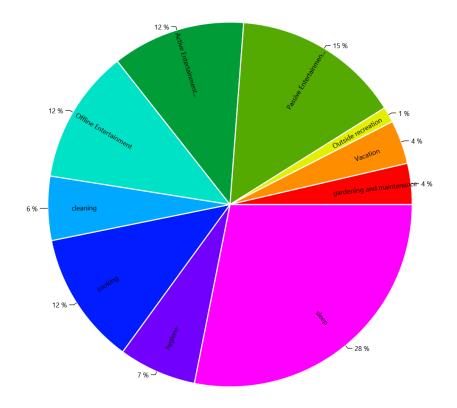
HH0 - CHR15 Adam (4 Male)



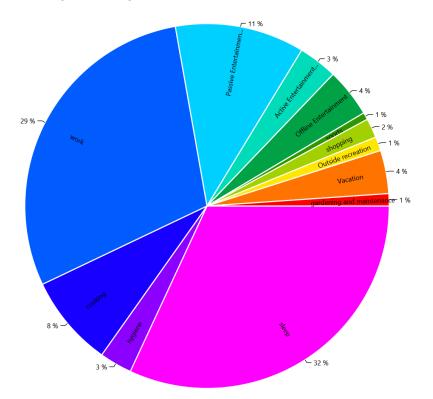
HH0 - CHR15 Eddie (70 Male)



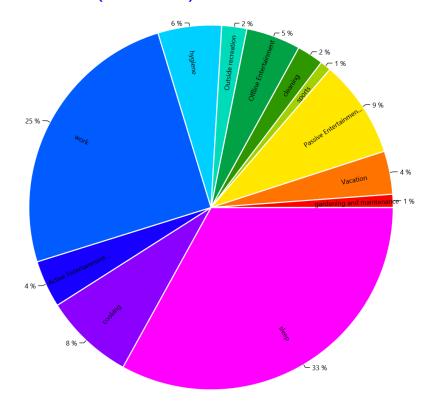
HH0 - CHR15 Myra (68 Female)



HH0 - CHR15 Nick (40 Male)



HH0 - CHR15 Rebekah (32 Female)

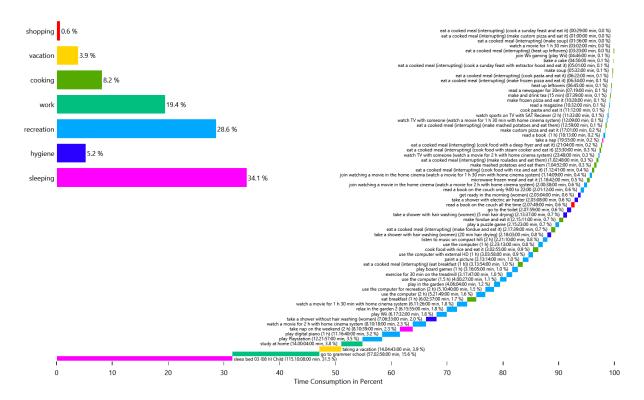


Time Use per Person per Affordance Per Person

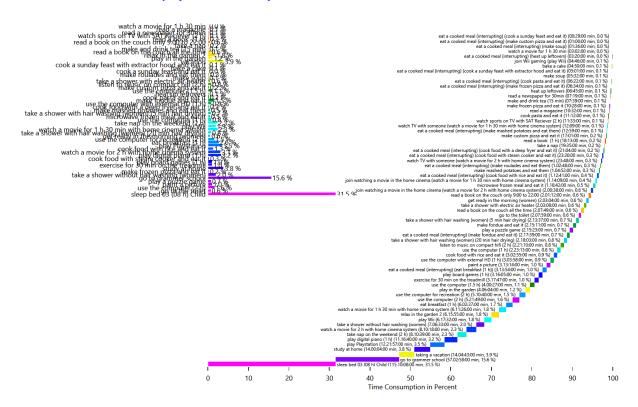
This is made from the files starting with: AffordanceTimeUse

These charts show how the people in the household use their time. This shows the individual affordances to help find problems in the household definition.

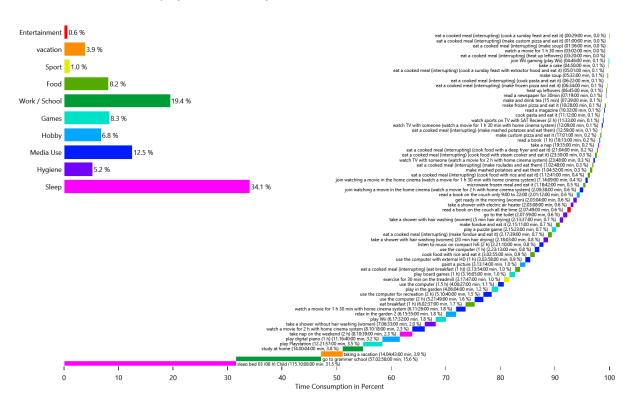
HH0 - CHR15 Abby (15 Female)



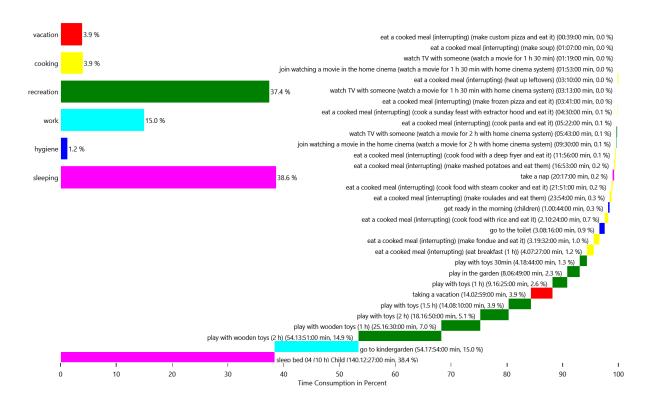
HH0 - CHR15 Abby (15 Female)



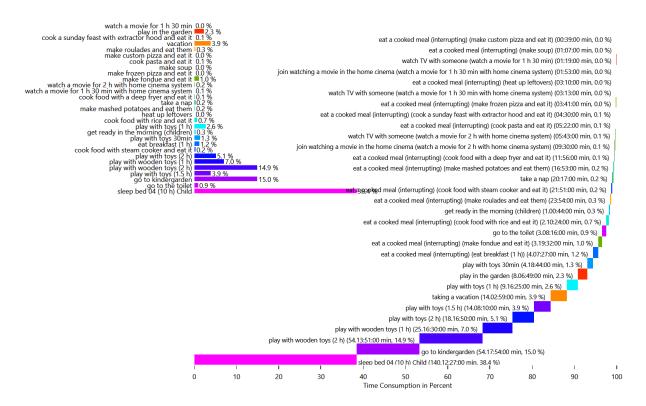
HH0 - CHR15 Abby (15 Female)



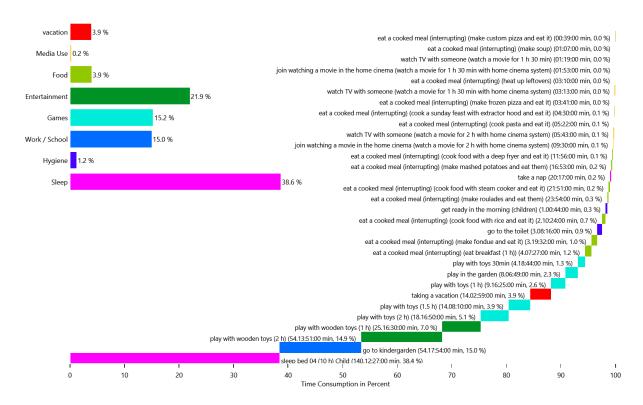
HH0 - CHR15 Adam (4 Male)



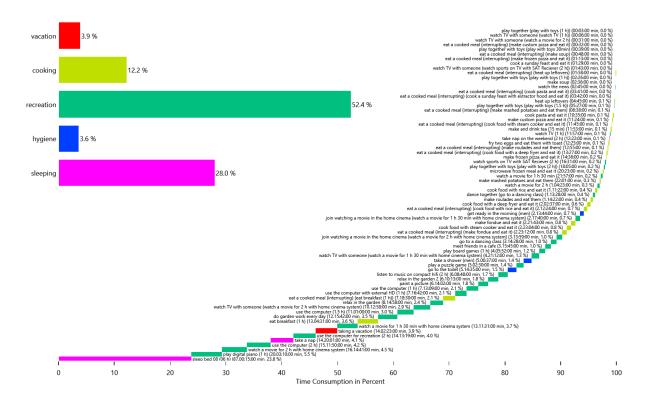
HH0 - CHR15 Adam (4 Male)



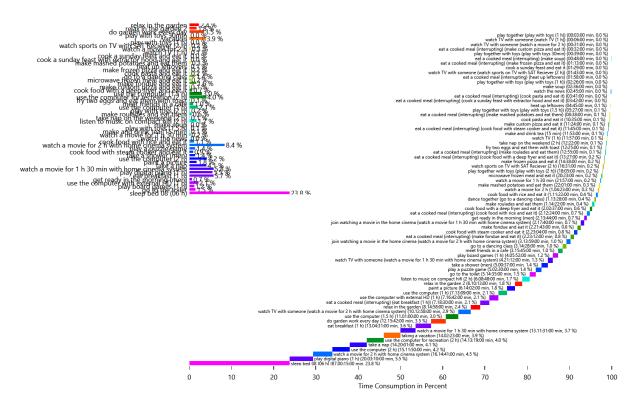
HH0 - CHR15 Adam (4 Male)



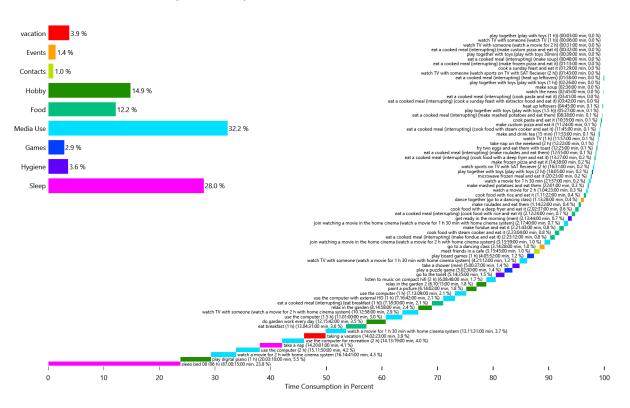
HH0 - CHR15 Eddie (70 Male)



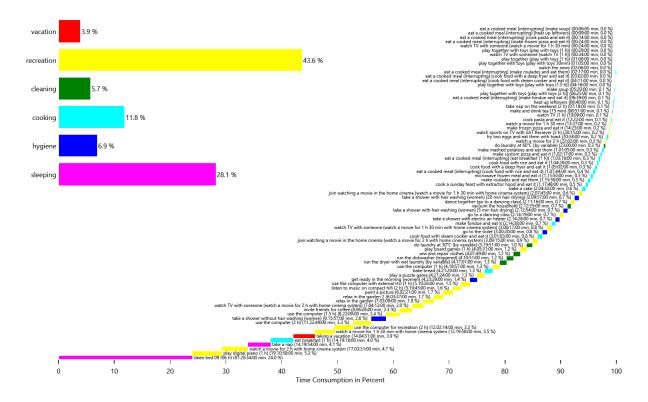
HH0 - CHR15 Eddie (70 Male)



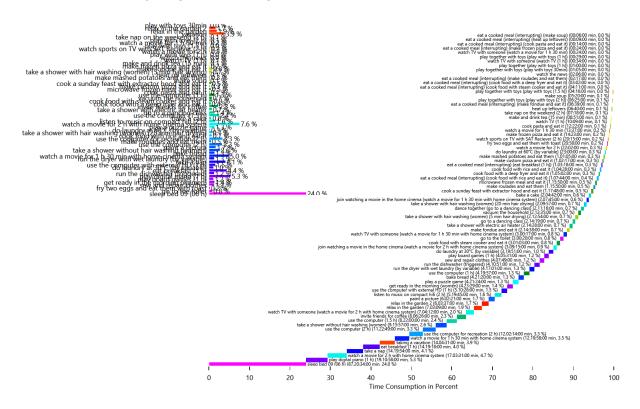
HH0 - CHR15 Eddie (70 Male)



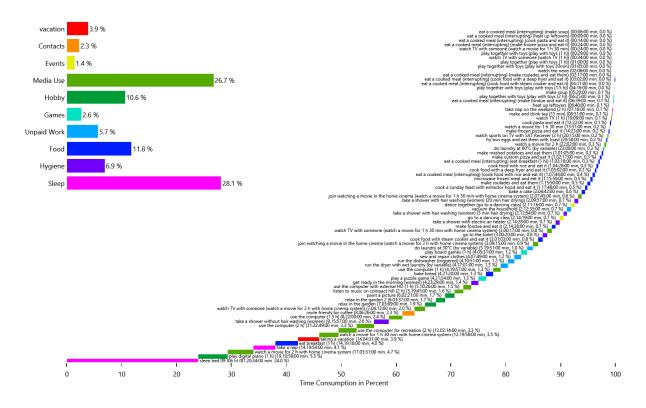
HH0 - CHR15 Myra (68 Female)



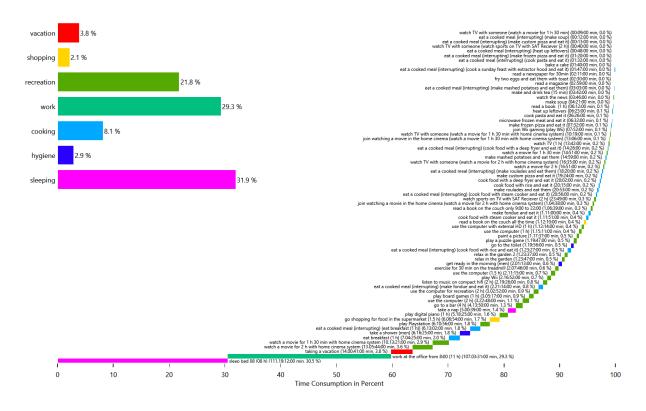
HH0 - CHR15 Myra (68 Female)



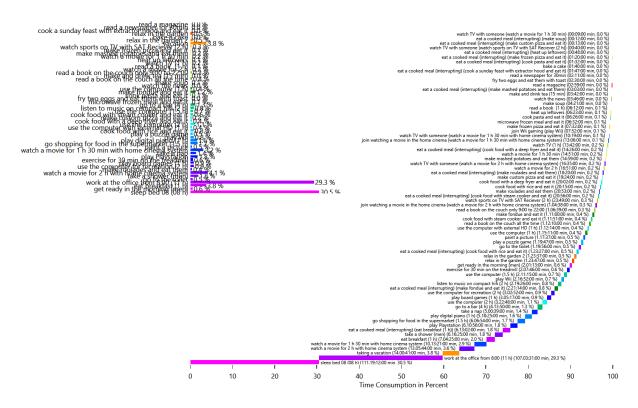
HH0 - CHR15 Myra (68 Female)



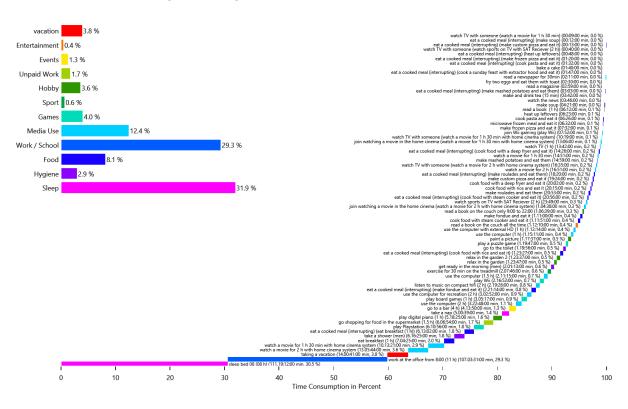
HH0 - CHR15 Nick (40 Male)



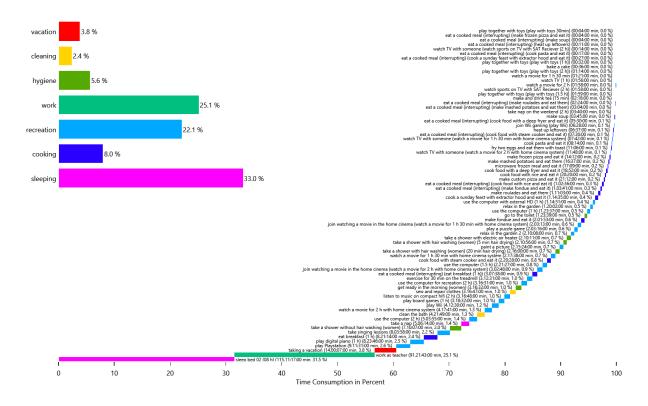
HH0 - CHR15 Nick (40 Male)



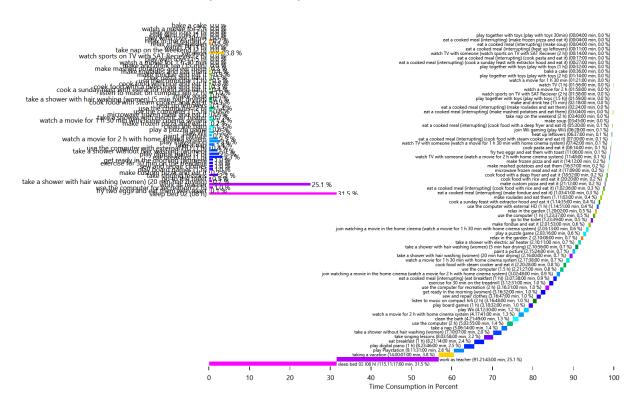
HH0 - CHR15 Nick (40 Male)



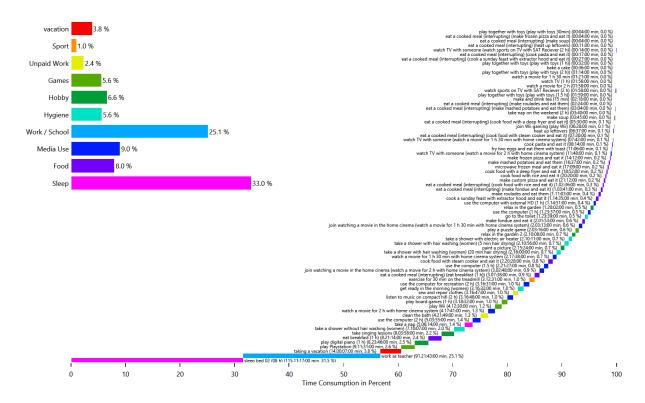
HH0 - CHR15 Rebekah (32 Female)



HH0 - CHR15 Rebekah (32 Female)



HH0 - CHR15 Rebekah (32 Female)

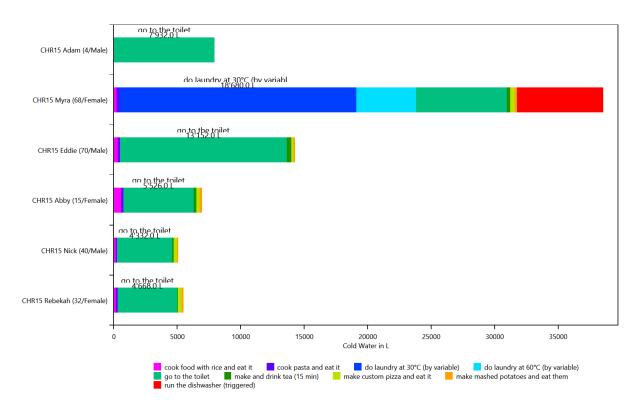


Energy use per person per affordance

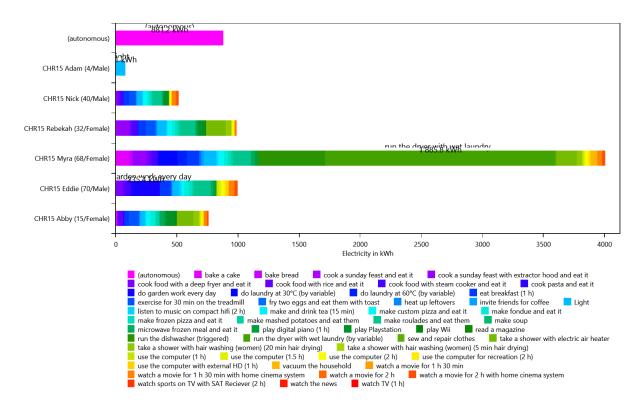
$This is \ made \ from \ the \ files \ starting \ with: Affordance Energy Use Per Person$

This shows the distribution of the energy/ressource use to each affordance by load type and by person. This helps with figuring out if a person is using too much electricity.

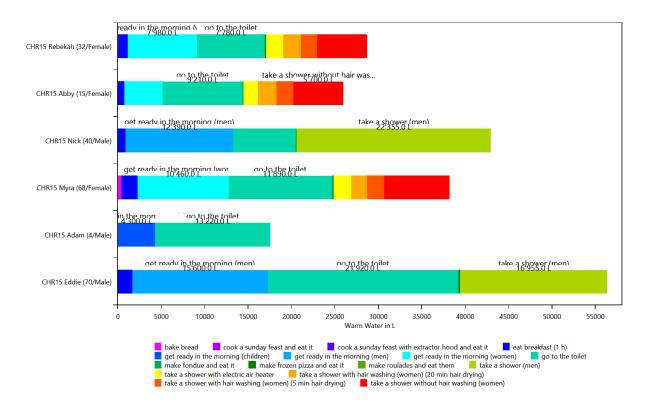
HH0 - Cold Water



HH0 - Electricity



HH0 - Warm Water

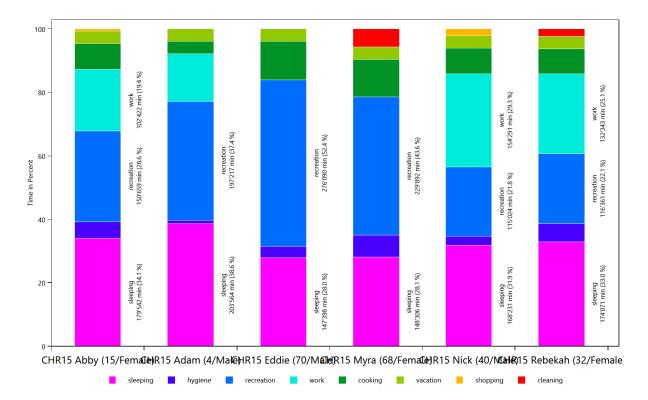


Time Use per Person Per Affordance according to different category definitions

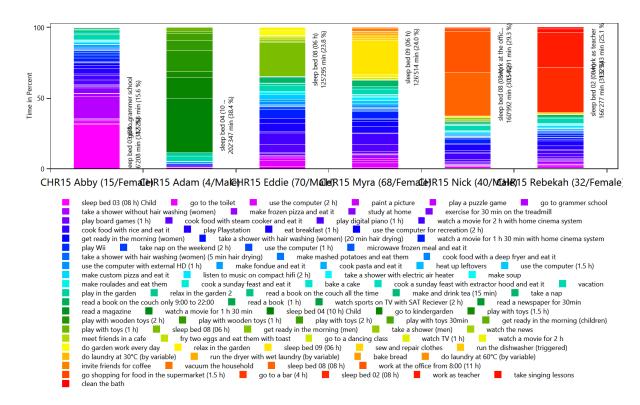
This is made from the files starting with: AffordanceTaggingSet

These charts show how the people in the household use their time. To help with analysis, the activities can be grouped by various criteria. This is done with the affordance tagging sets in the LPG.

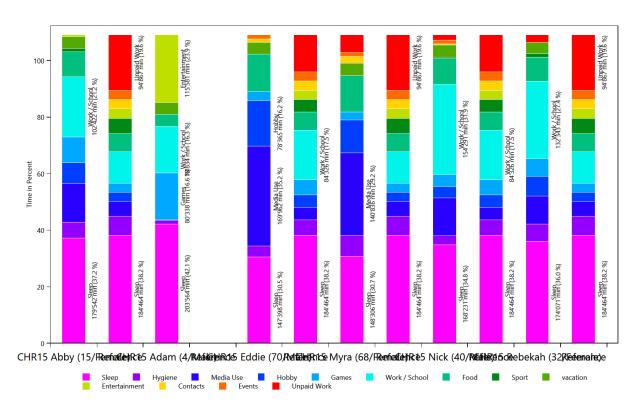
Basic Tagging - HH0



Tagging Set For Planning - HH0



Wo bleibt die Zeit - HH0

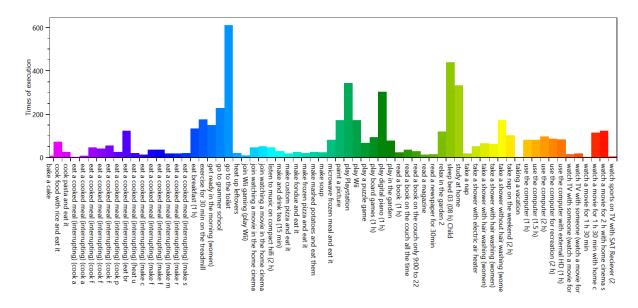


Overview of the actions of each member of the household

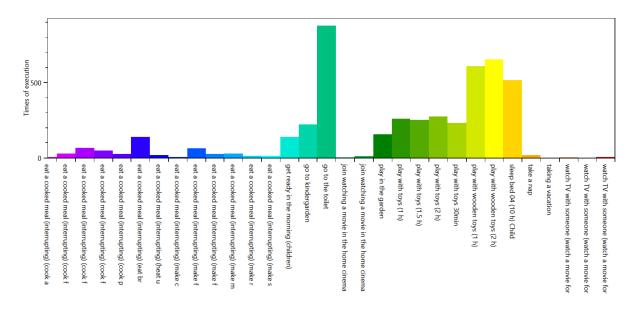
This is made from the files starting with: ExecutedActionsOverviewCount

These charts show how often each affordance was executed.

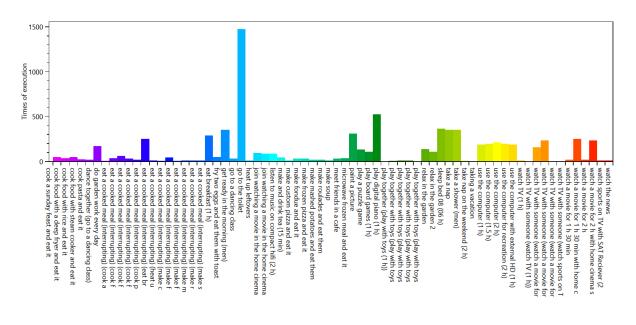
HH0 - CHR15 Abby (15 Female)



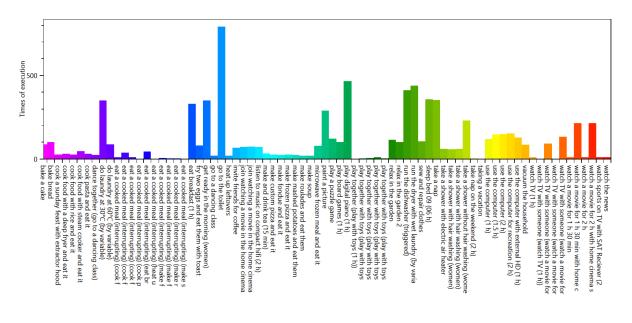
HH0 - CHR15 Adam (4 Male)



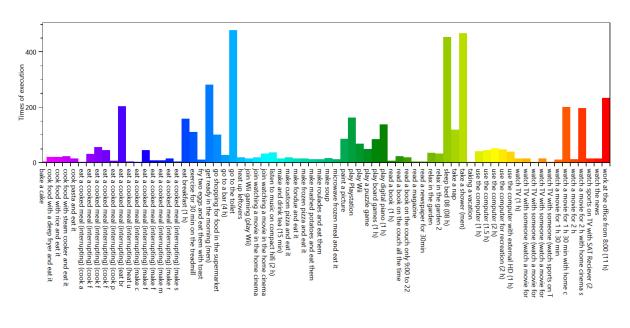
HH0 - CHR15 Eddie (70 Male)



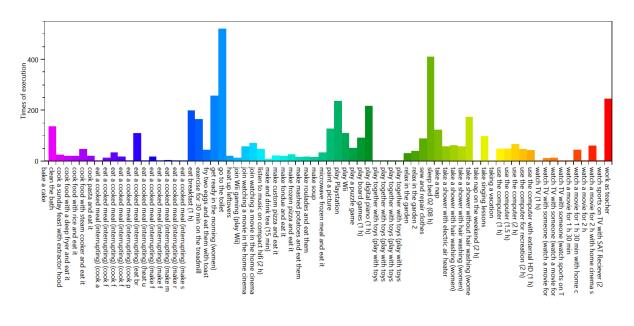
HH0 - CHR15 Myra (68 Female)



HH0 - CHR15 Nick (40 Male)



HH0 - CHR15 Rebekah (32 Female)

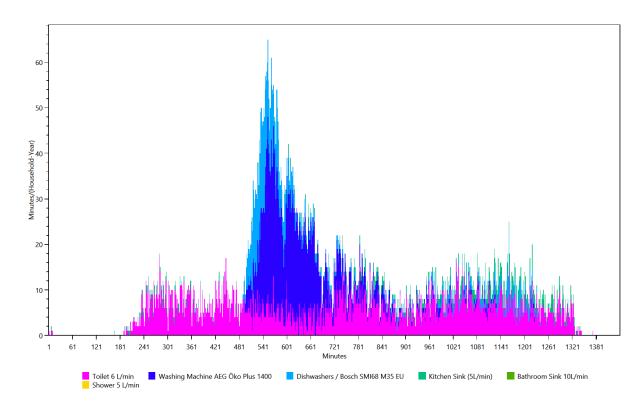


Overview of the time of the use per load type per device

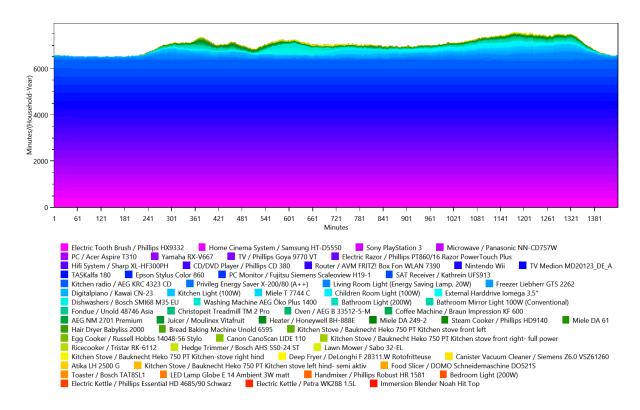
This is made from the files starting with: TimeOfUseEnergyProfiles

The time of use energy profiles shows when each device was used.

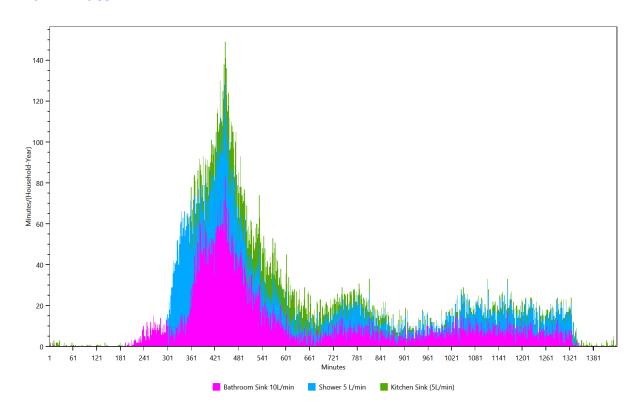
Cold Water



Electricity



Warm Water

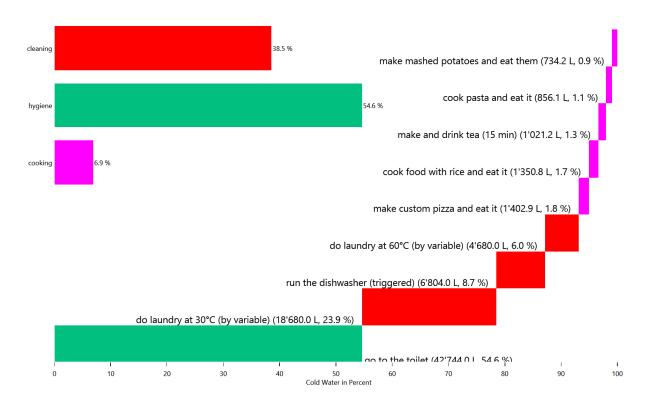


Energy/Resource use distribution per load type per affordance

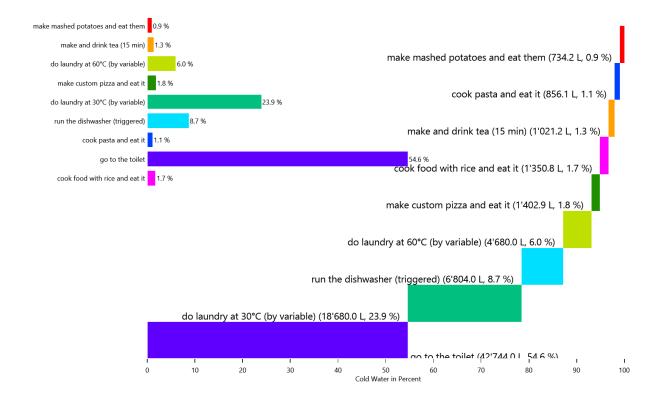
This is made from the files starting with: AffordanceEnergyUse

This shows the distribution of the energy/ressource use to each affordance by load type.

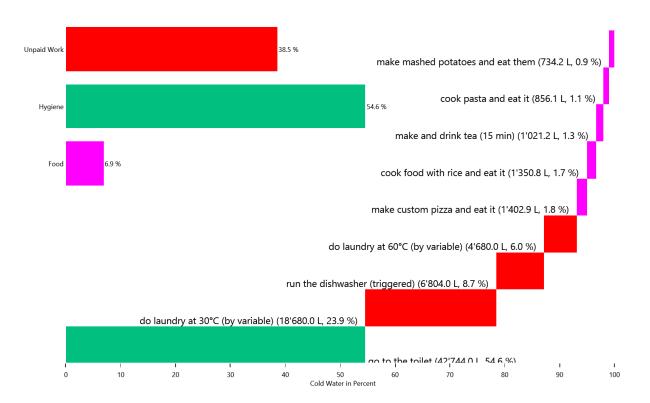
HH0 - Cold Water



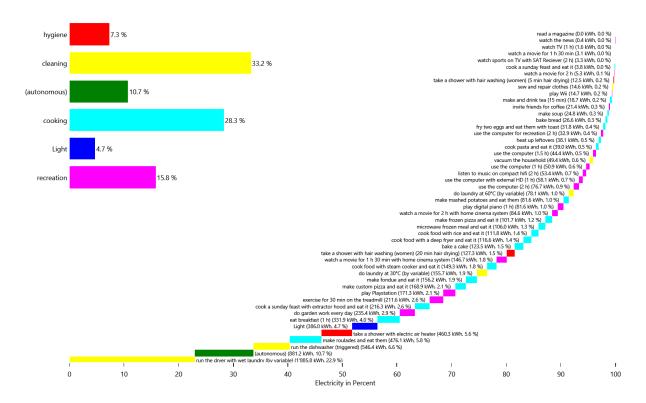
HH0 - Cold Water



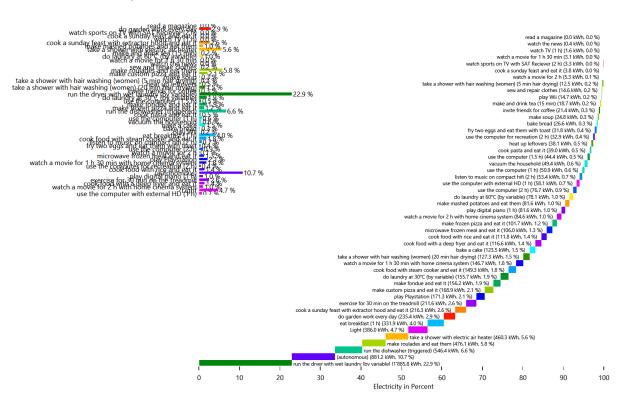
HH0 - Cold Water



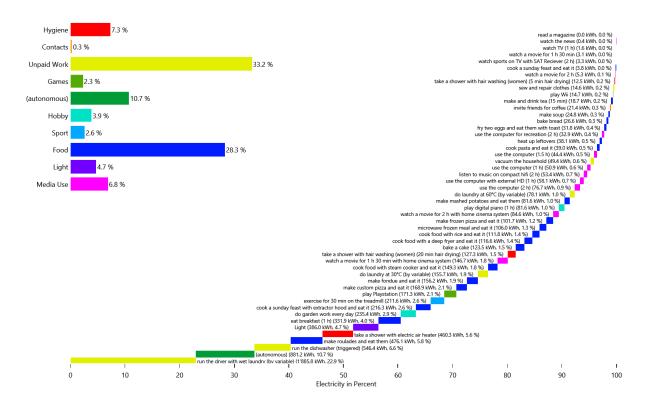
HH0 - Electricity



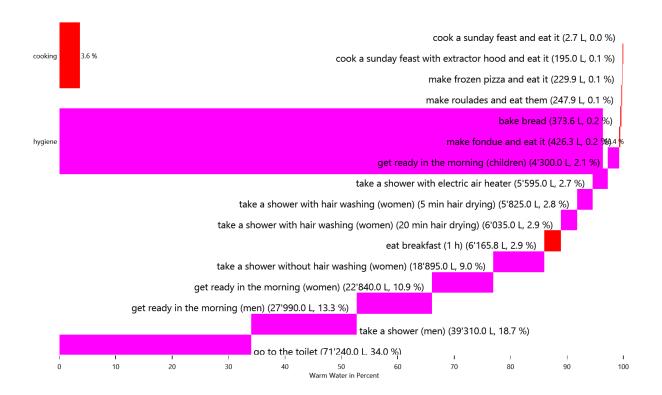
HH0 - Electricity



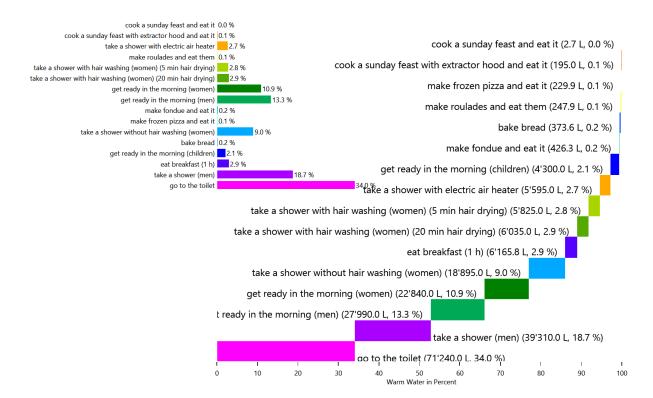
HH0 - Electricity



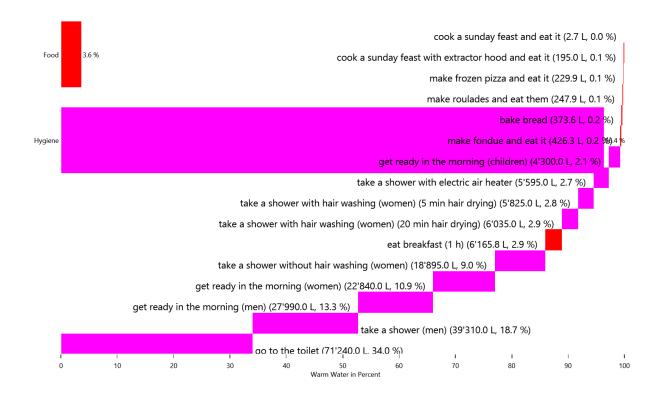
HH0 - Warm Water



HH0 - Warm Water



HH0 - Warm Water

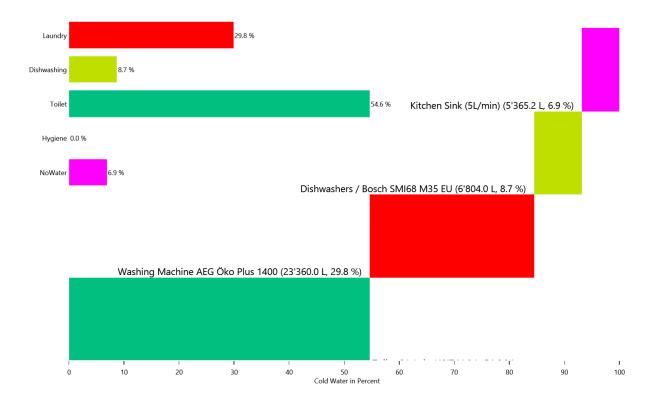


Energy use for each load type for each device

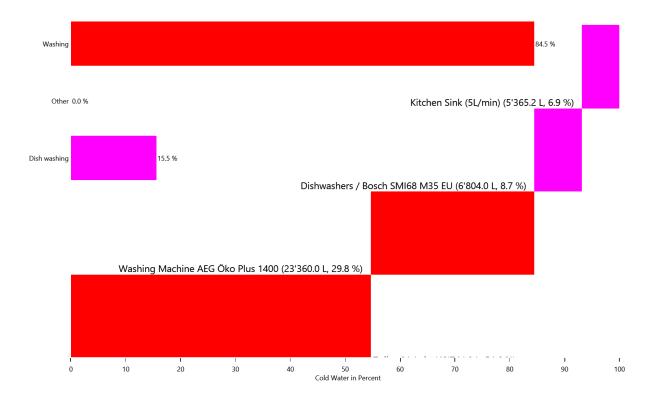
This is made from the files starting with: DeviceSums

These pie charts show the energy use for each invidividual device in each load type.

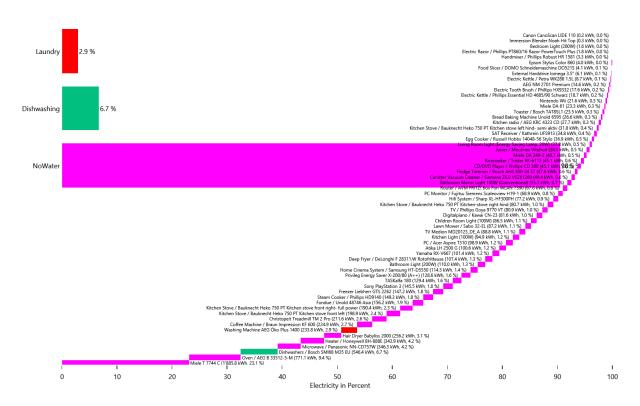
Cold Water



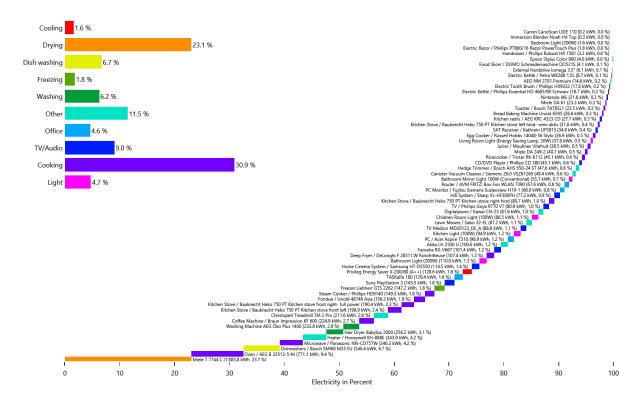
Cold Water



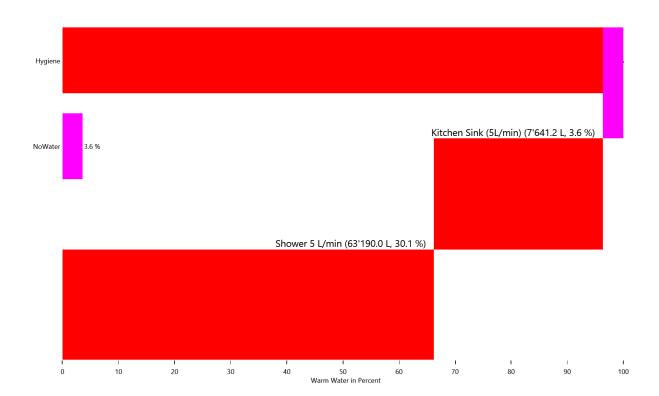
Electricity



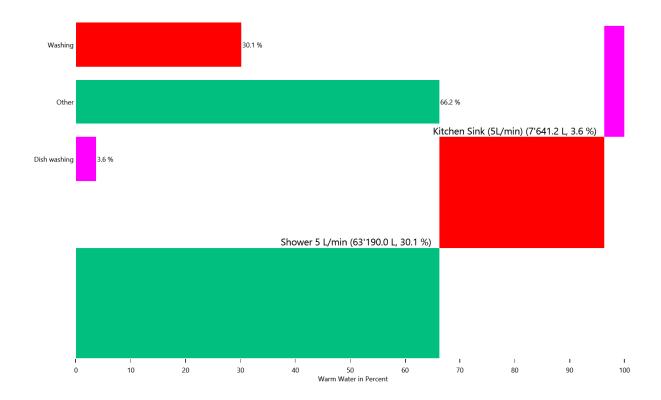
Electricity



Warm Water



Warm Water

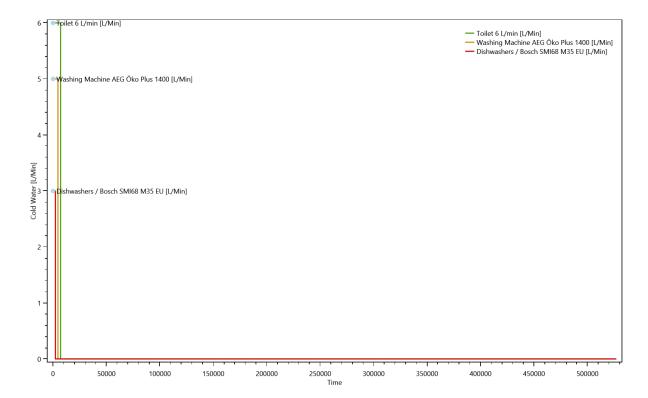


Duration curve for each device for each load type

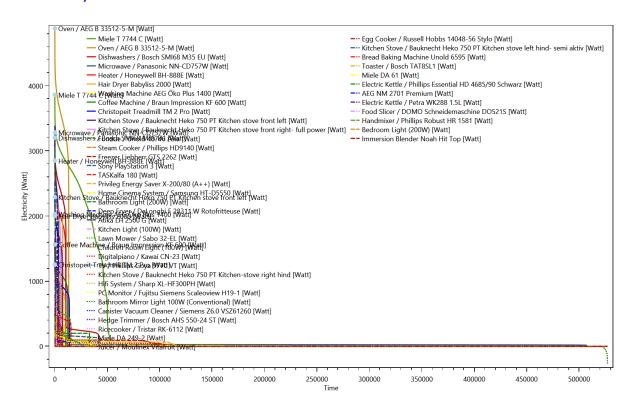
This is made from the files starting with: DeviceDurationCurves

The device duration curve show the duration curve of each device to give an overview of the power consumption.

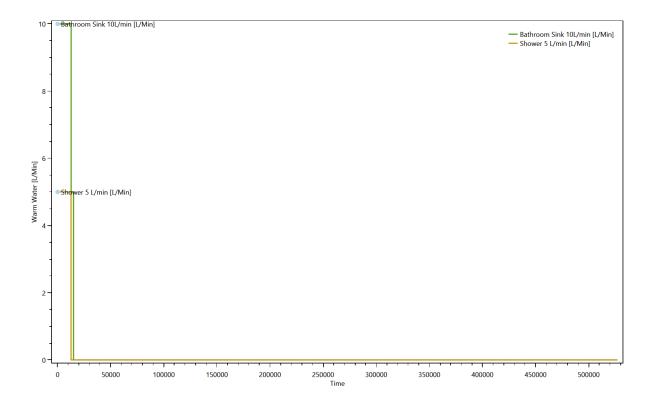
Cold Water



Electricity



Warm Water

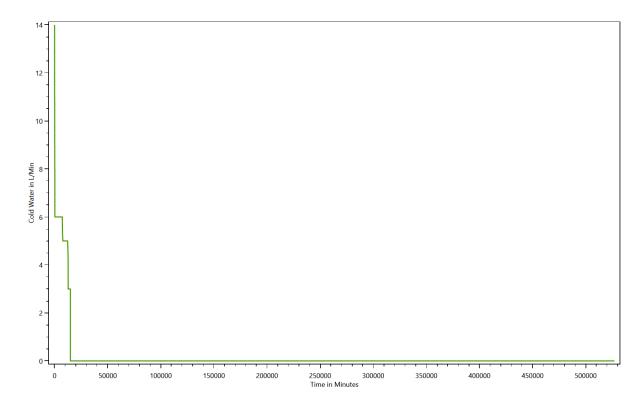


Duration curve for each load type

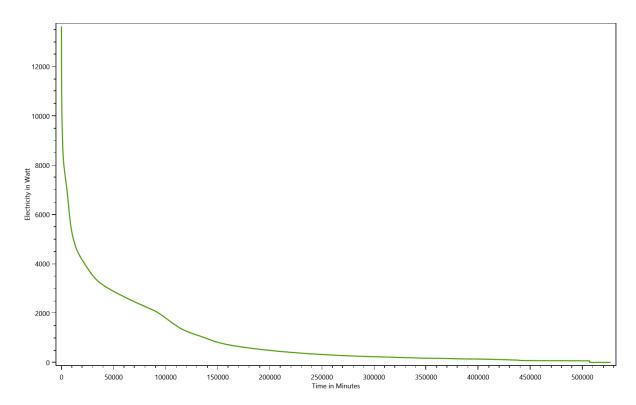
This is made from the files starting with: DurationCurve

The duration curve show the duration curve for the entire household to give an overview of the power consumption.

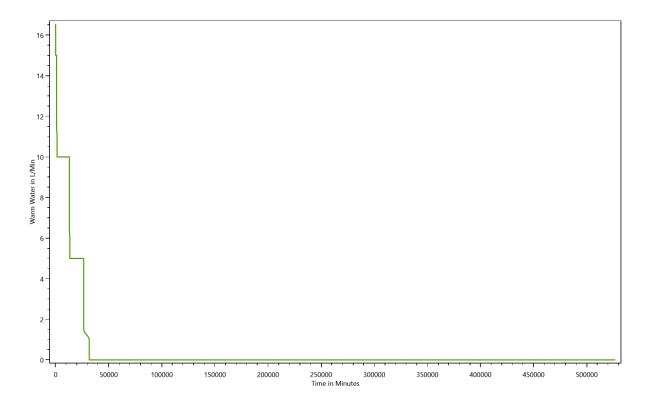
Cold Water



Electricity



Warm Water

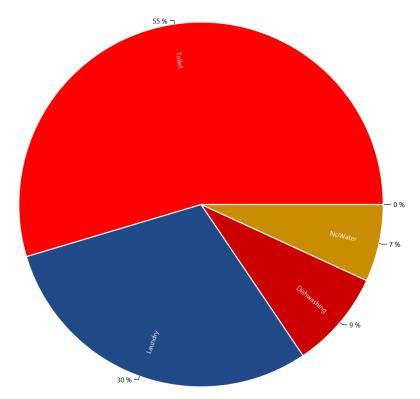


Grouped energy use for each load type for each device

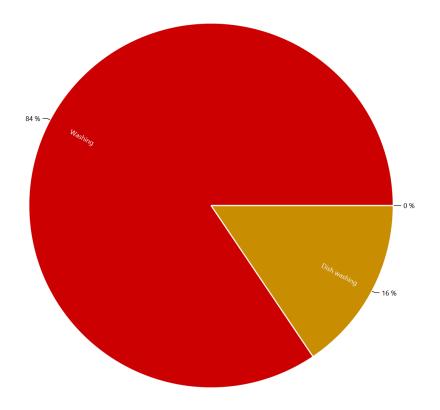
This is made from the files starting with: DeviceTaggingSet

The devices in the LPG can be grouped with various criteria by the device tagging sets. These charts show the results.

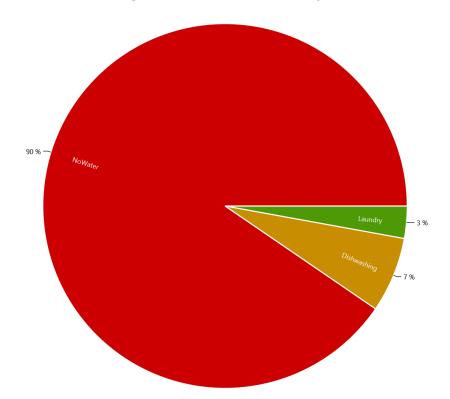
HH0 - Destatis Water Usage Statistics - Cold Water



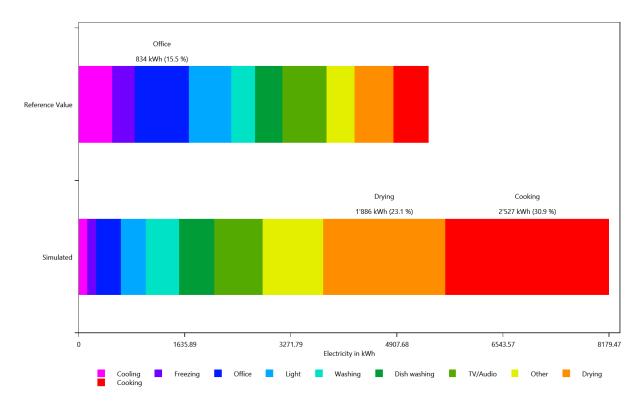
HH0 - Energieagentur - Cold Water



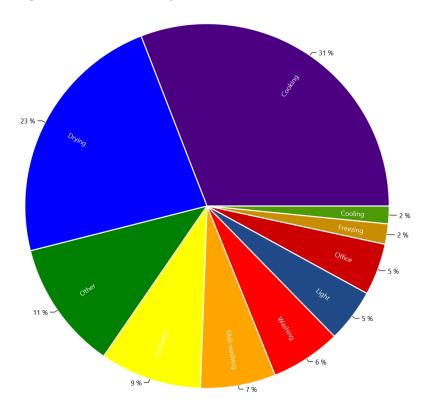
HH0 - Destatis Water Usage Statistics - Electricity



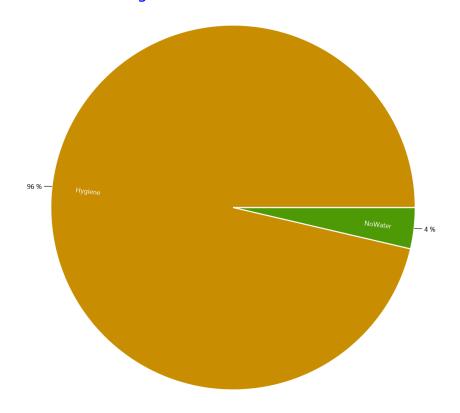
HH0 - Energieagentur - Electricity



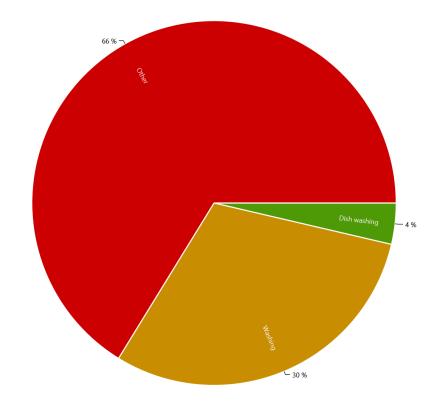
HH0 - Energieagentur - Electricity



HH0 - Destatis Water Usage Statistics - Warm Water



HH0 - Energieagentur - Warm Water

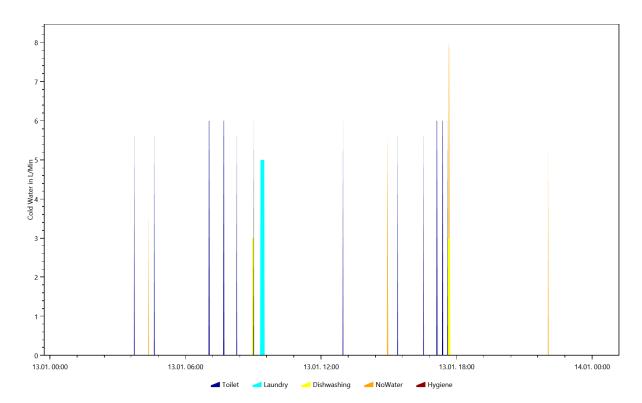


Example of the device profiles for each load type

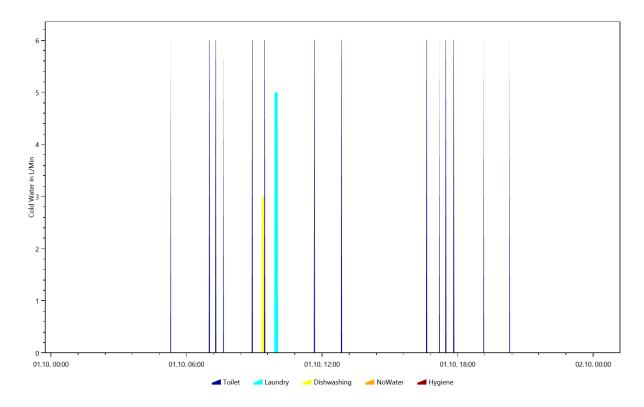
This is made from the files starting with: DeviceProfiles

The device profile files are the reason for the LPG. They show the power consumption of each device.

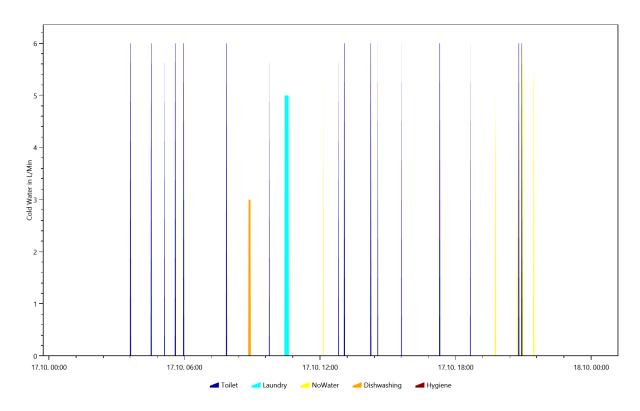
Cold Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.1.13



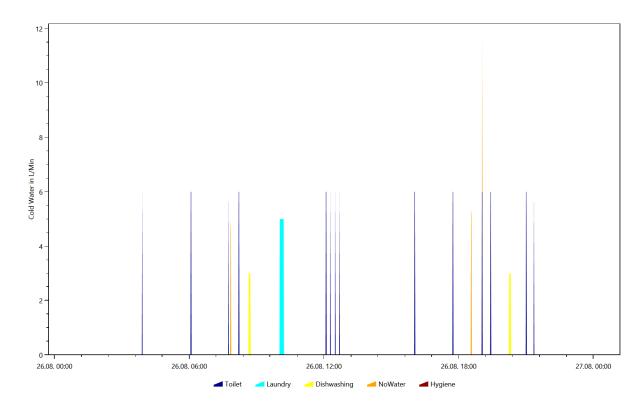
Cold Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.10.1



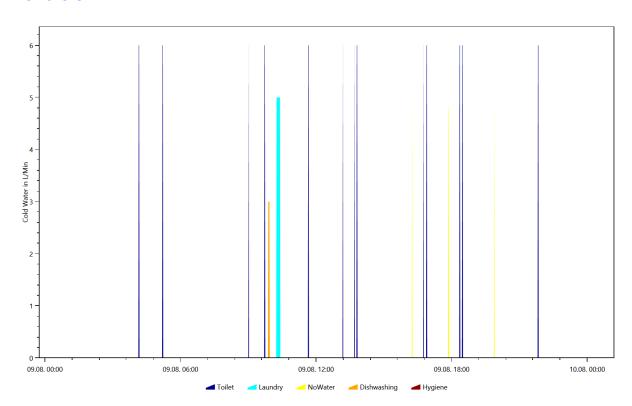
Cold Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.10.17



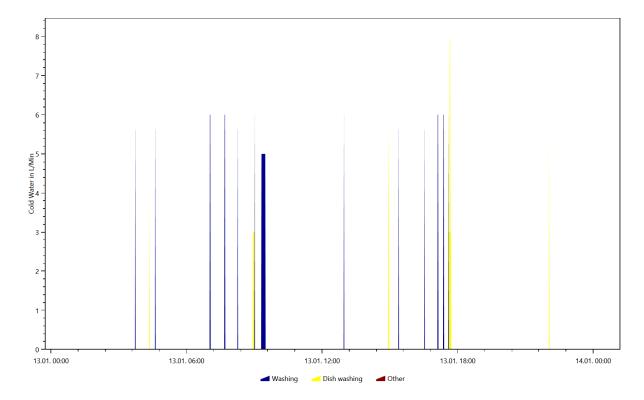
Cold Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.8.26



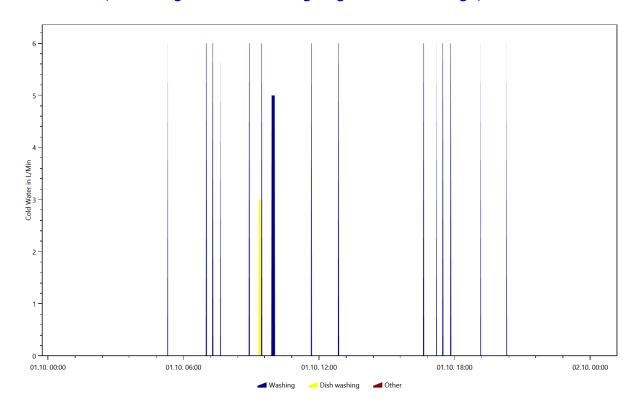
Cold Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.8.9



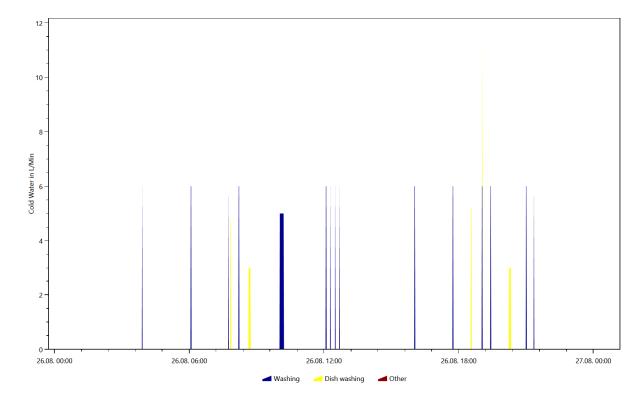
Cold Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.1.13



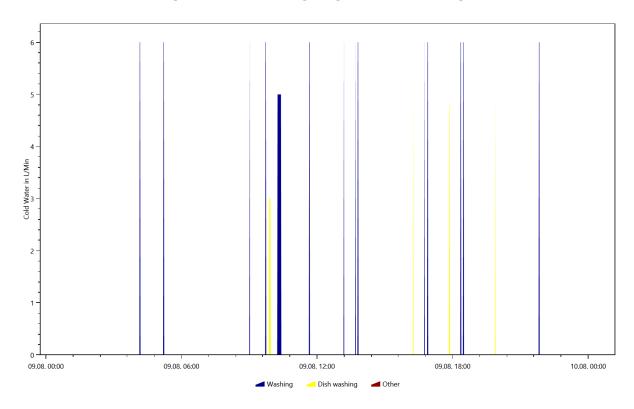
Cold Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.10.1



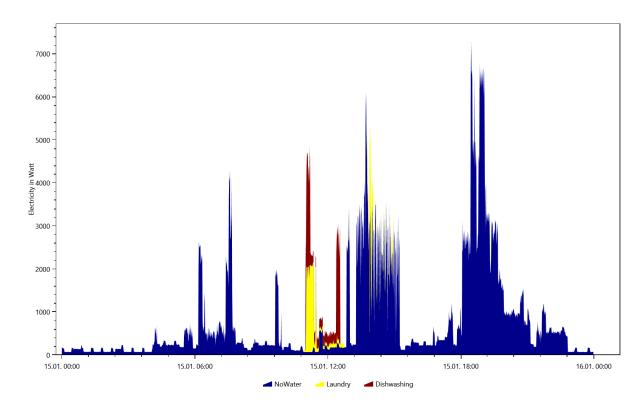
Cold Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.8.26



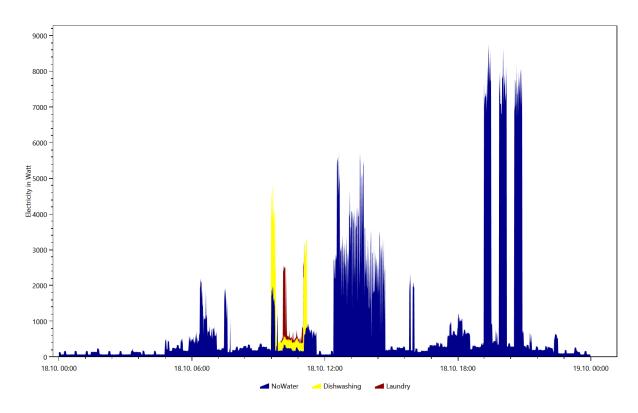
Cold Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.8.9



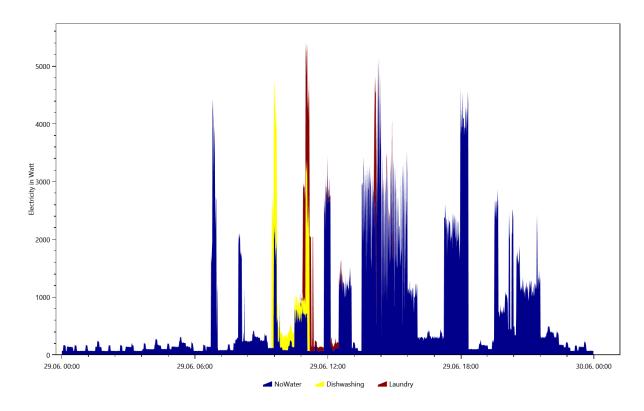
Electricity, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.1.15



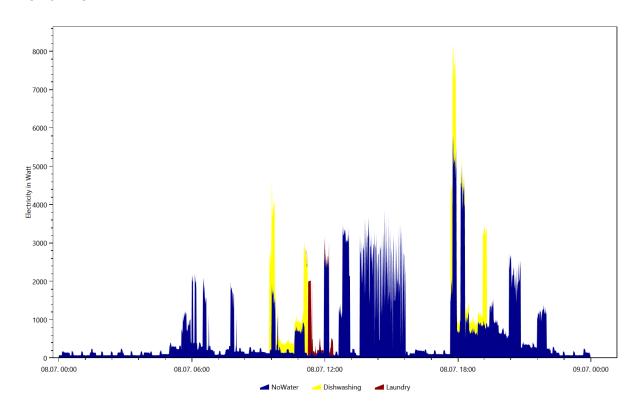
Electricity, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.10.18



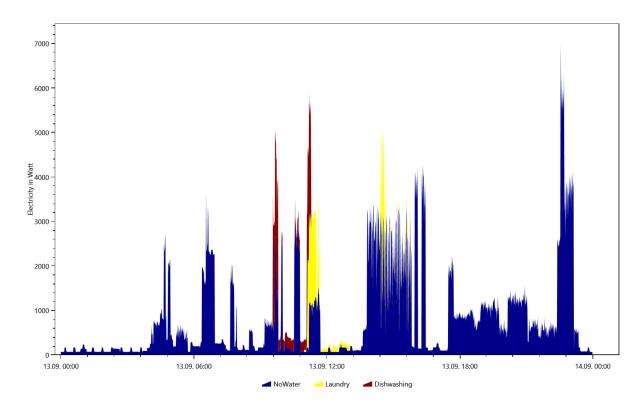
Electricity, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.6.29



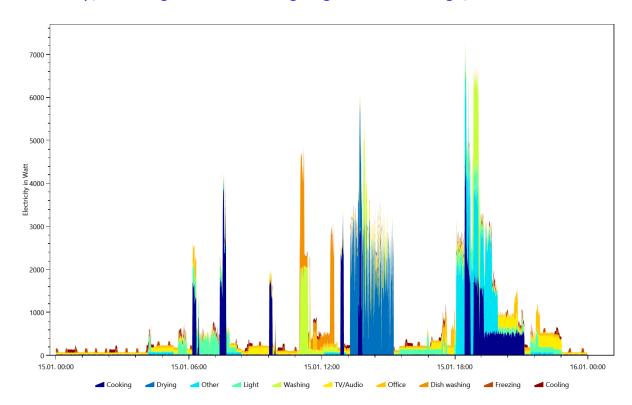
Electricity, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.7.8



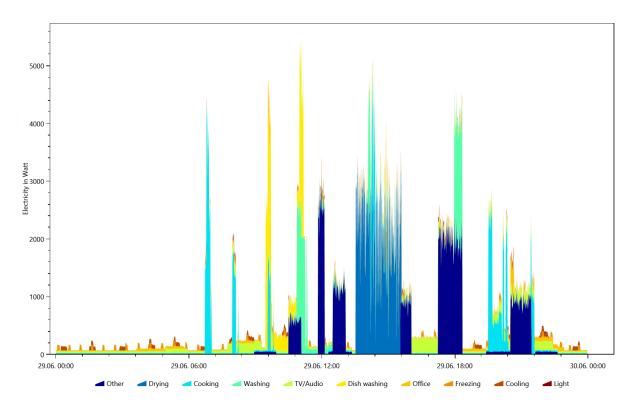
Electricity, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.9.13



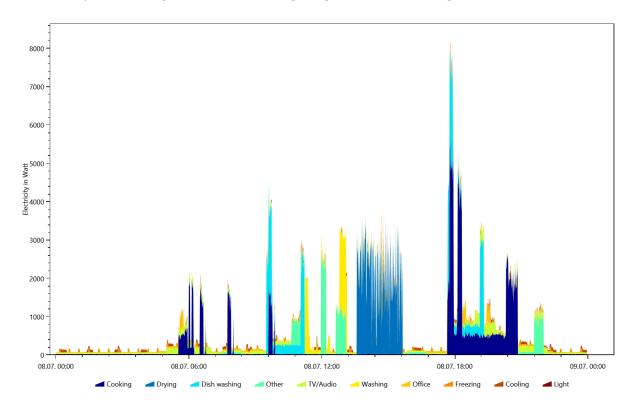
Electricity, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.1.15



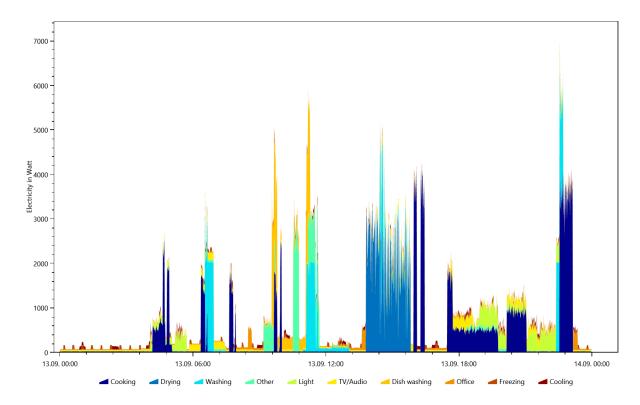
Electricity, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.6.29



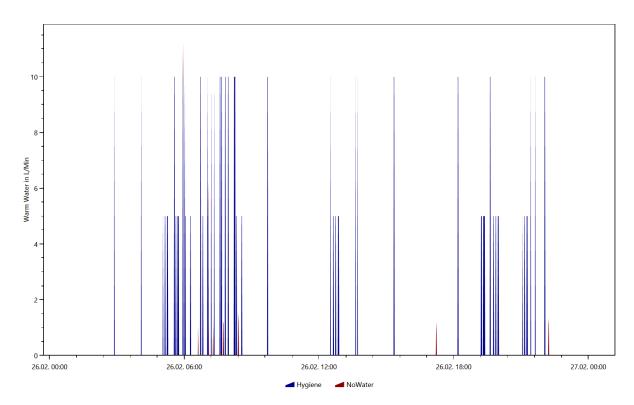
Electricity, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.7.8



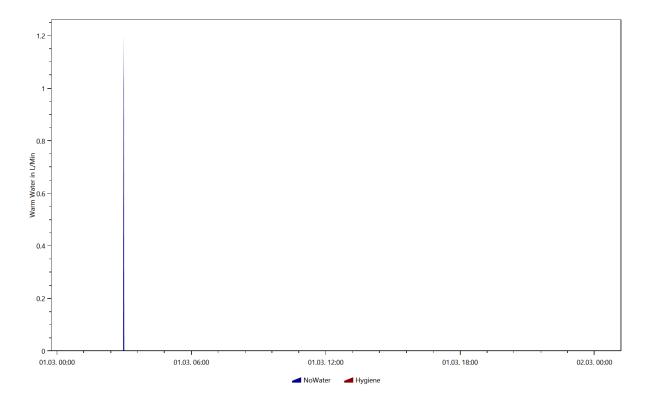
Electricity, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.9.13



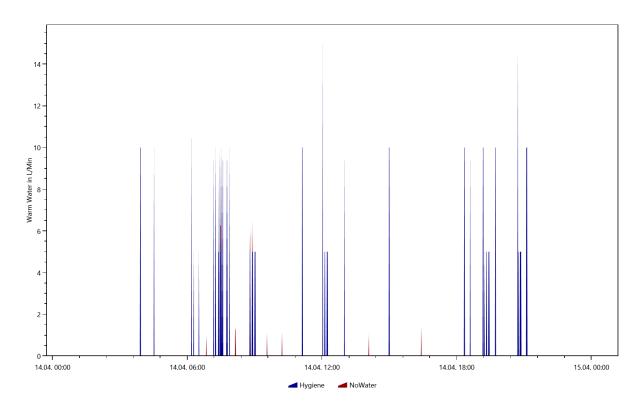
Warm Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.2.26



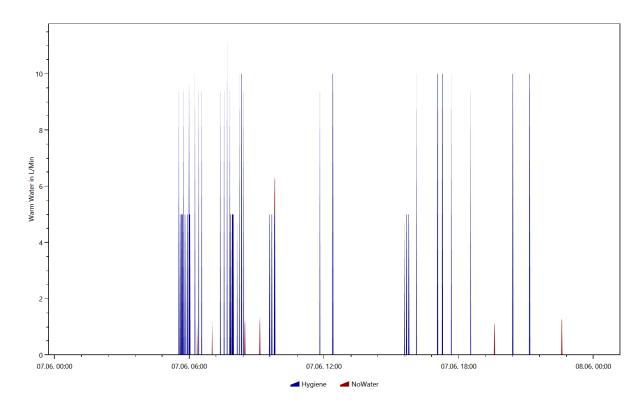
Warm Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.3.1



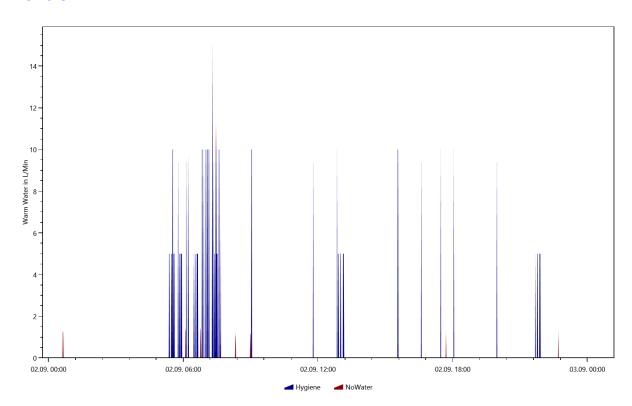
Warm Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.4.14



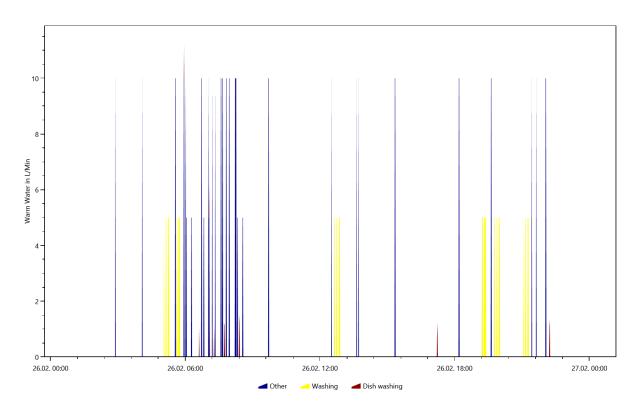
Warm Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.6.7



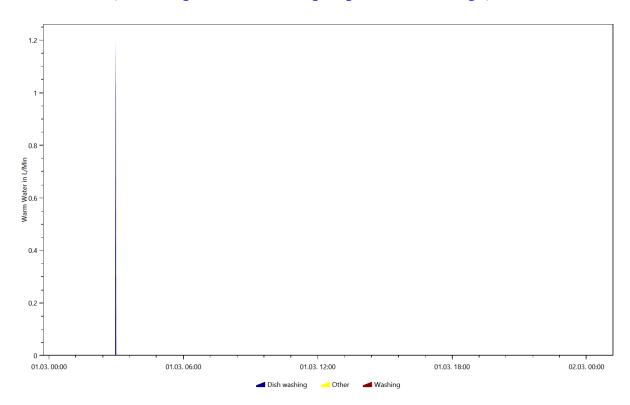
Warm Water, Coloring Scheme: Destatis Water Usage Statistics, Date 2016.9.2



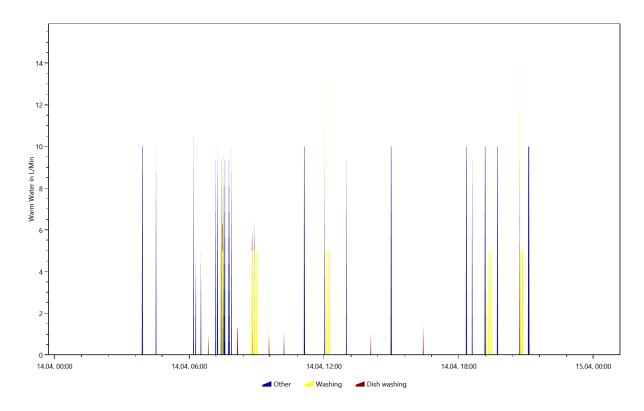
Warm Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.2.26



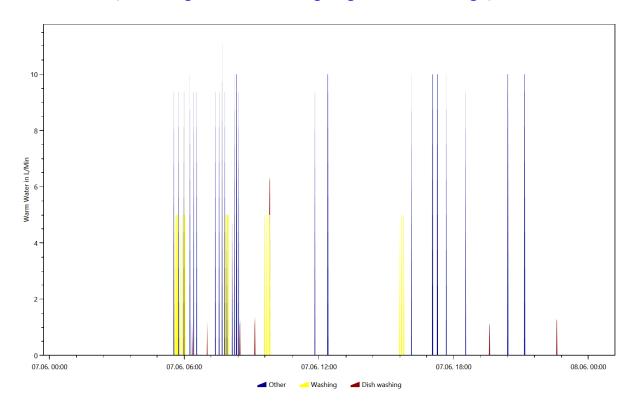
Warm Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.3.1



Warm Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.4.14



Warm Water, Coloring Scheme: Energieagentur.NRW Tags, Date 2016.6.7

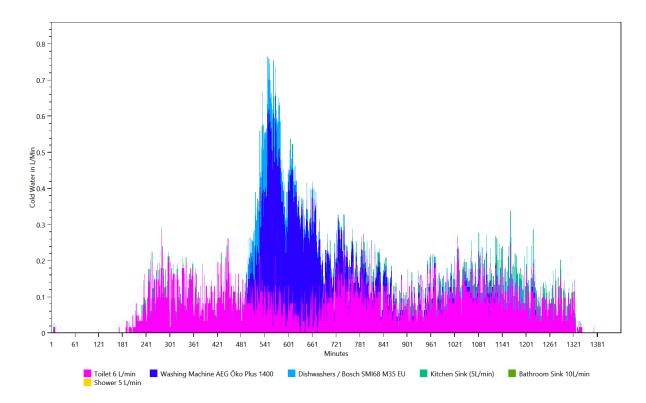


Overview of the time and power of the use per load type per device

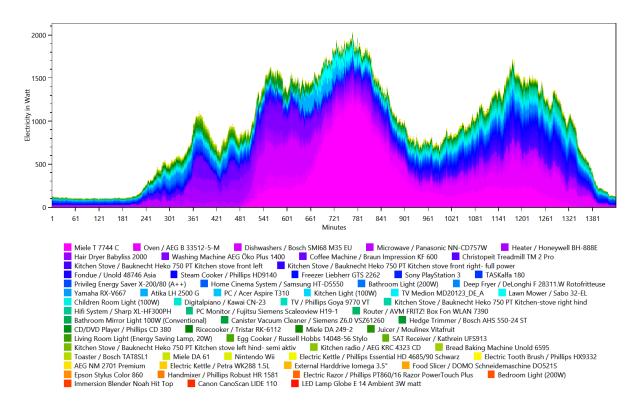
This is made from the files starting with: TimeOfUseEnergyProfiles

The time of use energy profiles show when each device was used and how much power it used.

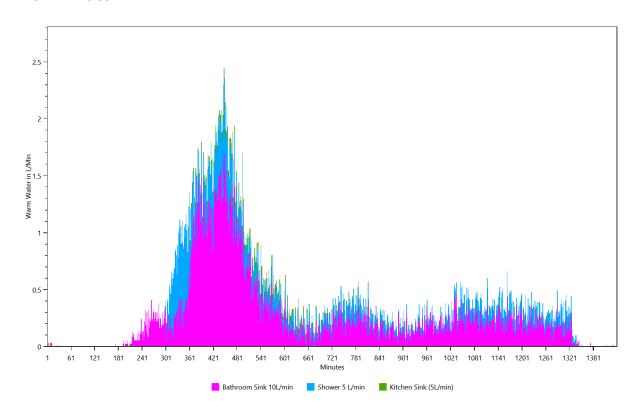
Cold Water



Electricity



Warm Water

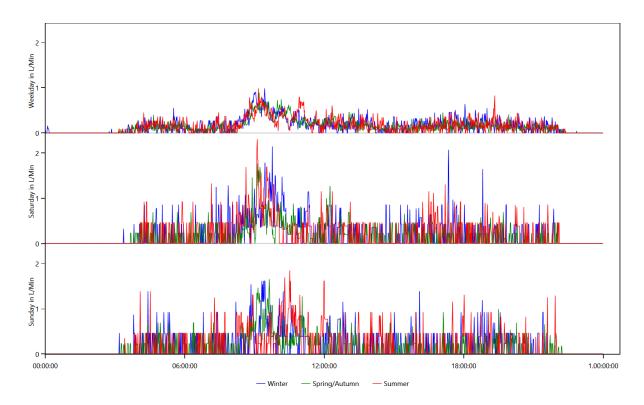


Energy use per load type during different seasons, split by weekday/saturday/sunday

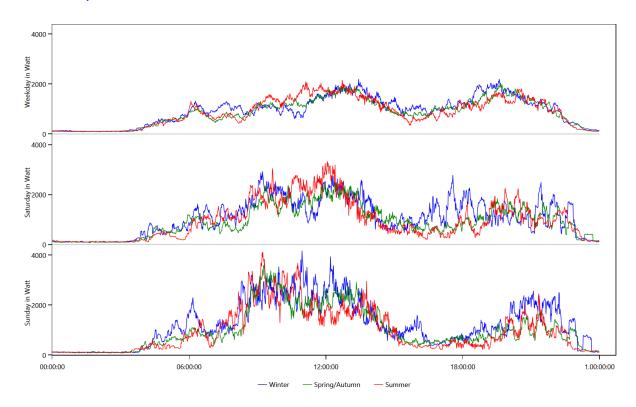
This is made from the files starting with: WeekdayProfiles

This graph shows for each load type the average power consumption per day grouped byseason and weekday/saturday/sunday.

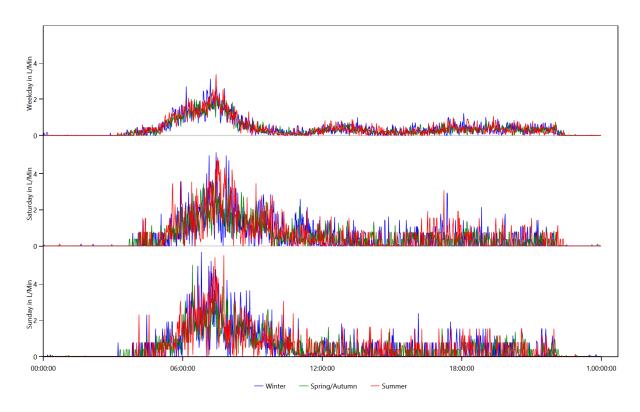
Cold Water



Electricity



Warm Water

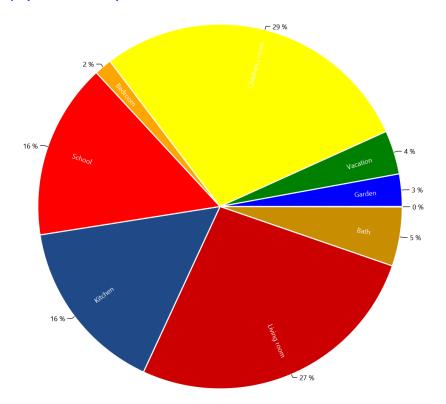


Location Distribution per Person

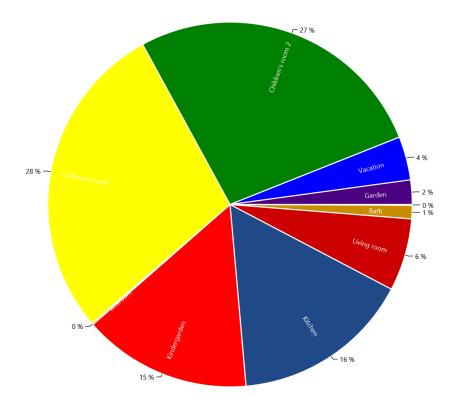
This is made from the files starting with: LocationStatistics

These charts show where the persons spend their time.

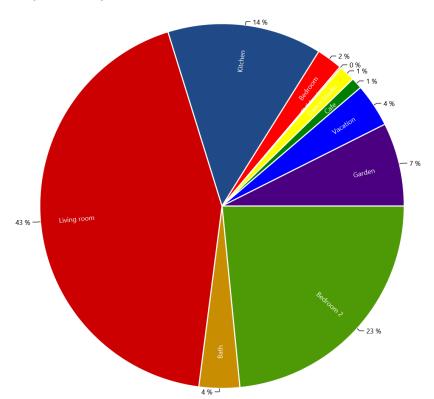
CHR15 Abby (15 Female)



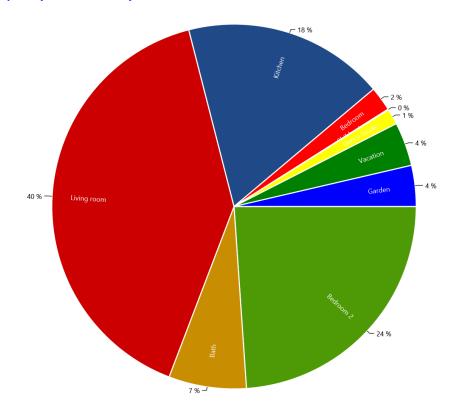
CHR15 Adam (4 Male)



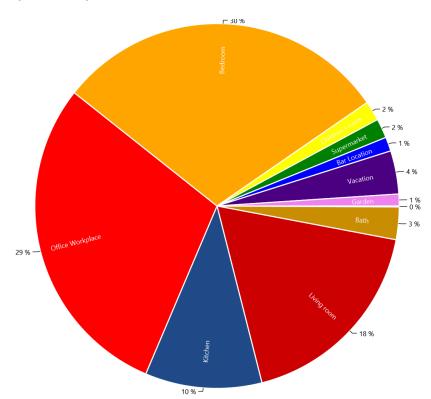
CHR15 Eddie (70 Male)



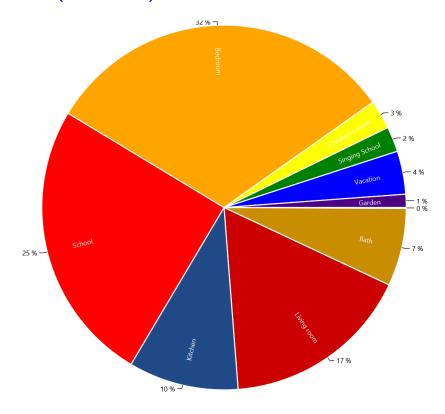
CHR15 Myra (68 Female)



CHR15 Nick (40 Male)



CHR15 Rebekah (32 Female)



Actions.csv

This is made from the files starting with: Actions

These files show the actions of each person in the household. The content looks like this:

Actions.HH0.csv

Time step;Calendertime;Person;Selected affordance;Affordance Category;Is Sick

0;01.01.2016 00:00;CHR15 Abby (15/Female);sleep bed 03 (08 h) Child;sleep;False;

0;01.01.2016 00:00;CHR15 Adam (4/Male);sleep bed 04 (10 h) Child;sleep;False;

0;01.01.2016 00:00;CHR15 Eddie (70/Male);sleep bed 08 (06 h);sleep;False;

0;01.01.2016 00:00;CHR15 Myra (68/Female);sleep bed 09 (06 h);sleep;False;

0;01.01.2016 00:00;CHR15 Nick (40/Male);sleep bed 08 (08 h);sleep;False;

 $0;\!01.01.2016\ 00:\!00;\!CHR15\ Rebekah\ (32/Female);\\ sleep\ bed\ 02\ (08\ h);\\ sleep;\\ False;$

214;01.01.2016 03:34;CHR15 Abby (15/Female);go to the toilet;hygiene;False;

219;01.01.2016 03:39;CHR15 Abby (15/Female);use the computer (2 h);Active Entertainment (Computer, Internet etc);False;

271;01.01.2016 04:31;CHR15 Myra (68/Female);go to the toilet;hygiene;False;

277;01.01.2016 04:37;CHR15 Myra (68/Female);fry two eggs and eat them with toast;cooking;False;

290;01.01.2016 04:50;CHR15 Myra (68/Female);sew and repair clothes;cleaning;False;

291;01.01.2016 04:51;CHR15 Eddie (70/Male);go to the toilet;hygiene;False;

296;01.01.2016 04:56;CHR15 Eddie (70/Male);play board games (1 h);Offline Entertainment;False;

329;01.01.2016 05:29;CHR15 Abby (15/Female);paint a picture ;Offline Entertainment;False;

356;01.01.2016 05:56;CHR15 Abby (15/Female);play a puzzle game;Offline Entertainment;False;

357;01.01.2016 05:57;CHR15 Myra (68/Female);get ready in the morning (women);hygiene;False;

362;01.01.2016 06:02;CHR15 Eddie (70/Male);use the computer with external HD (1 h);Active Entertainment (Computer, Internet etc);False;

367;01.01.2016 06:07;CHR15 Adam (4/Male);go to the toilet;hygiene;False;

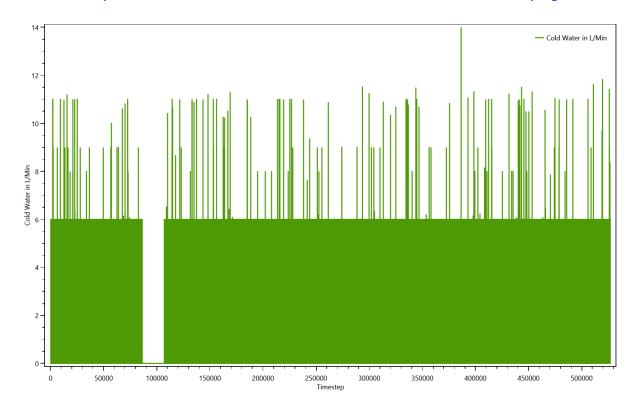
373;01.01.2016 06:13;CHR15 Adam (4/Male);go to kindergarden;school;False;

Sum Profiles

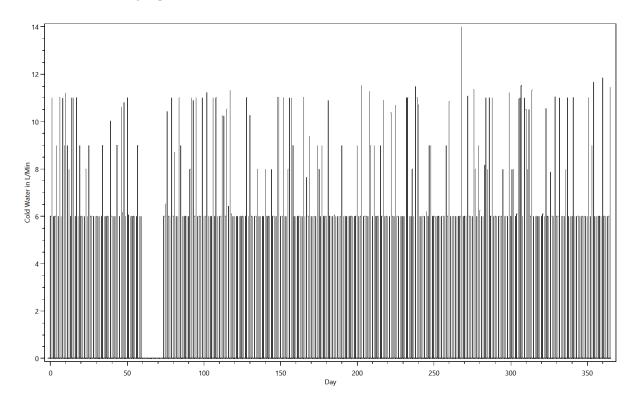
This is made from the files starting with: SumProfiles

This shows the energy use during the simulation.

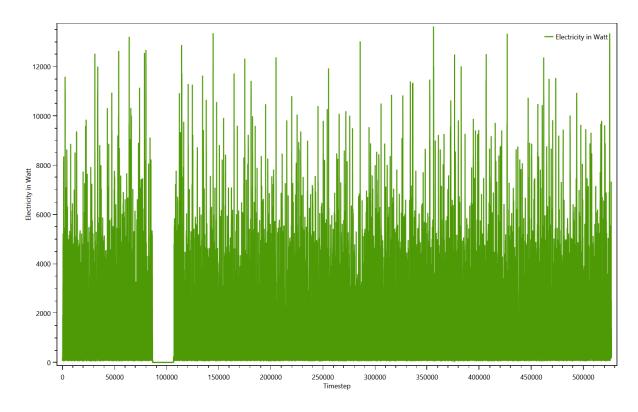
Summed up curve for Cold Water from SumProfiles.Cold Water.png



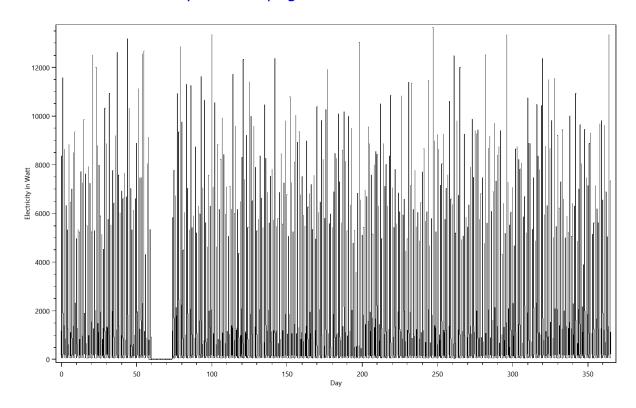
Summed up curve for Cold WaterMinMax from SumProfiles.Cold WaterMinMax..png



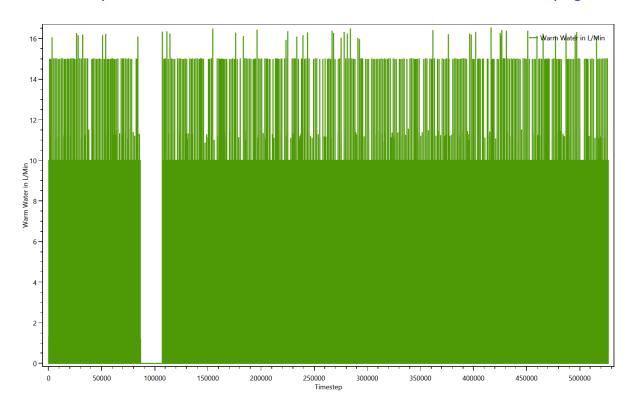
Summed up curve for Electricity from SumProfiles. Electricity.png



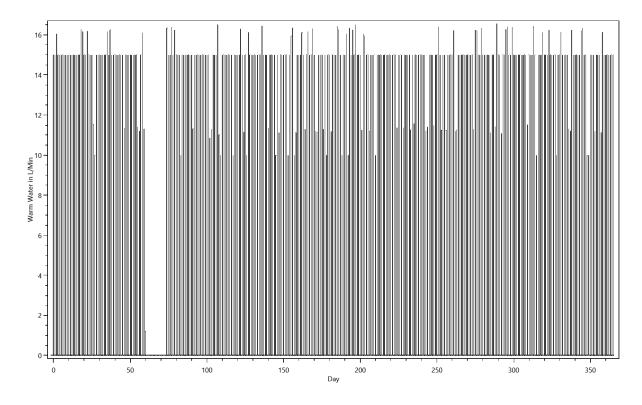
Summed up curve for ElectricityMinMax from SumProfiles.ElectricityMinMax..png



Summed up curve for Warm Water from SumProfiles.Warm Water.png



Summed up curve for Warm WaterMinMax from SumProfiles.Warm WaterMinMax..png



Time Profiles

This is made from the files starting with: Time Profiles

These files show which time profiles were used for each device and how often. The content looks like this:

TimeProfiles.HH0.CHR15 Multigenerational Home working couple, 2 children, 2 seniors 0.txt

Device; Load Type; Profile; Number of Activations

AEG NM 2701 Premium; Electricity; 01 h 0 min 100% [Synthetic]; 192

Atika LH 2500 G; Electricity; 0 h 15 min 100% [Synthetic]; 155

Bar; None; 04 h 0 min 100% [Synthetic]; 27

Bathroom Light (200W); Electricity; Bath - light [Synthetic for Light Device]; 2270

Bathroom Mirror Light 100W (Conventional); Electricity; Bath - light [Synthetic for Light Device]; 2270

Bathroom Sink 10L/min; Warm Water; 0 h 01 min 100% [Synthetic]; 8568

Bathroom Sink 10L/min; Warm Water; 0 h 01 min 50% [Synthetic]; 1522

Bed 2; None; 08 h 0 min 100% [Synthetic]; 355

Bed 3 (Children); None; 08 h 0 min 100% [Synthetic]; 355

Bed 4:None;10 h 0 min 100% [Synthetic];355

Bed 8; None; 06 h 0 min 100% [Synthetic]; 354

Bed 8; None; 08 h 0 min 100% [Synthetic]; 352

Bed 9; None; 06 h 0 min 100% [Synthetic]; 355

Bedroom Light (200W); Electricity; Bedroom - light [Synthetic for Light Device]; 5

Board Games; None; 01 h 0 min 100% [Synthetic]; 465

Book; None; 01 h 0 min 100% [Synthetic]; 25

Bread Baking Machine Unold 6595; Electricity; Profile for Bread Baking Machine Unold 6595 Electricity

[Measured 1 min Resolution (TUC)];101

CD/DVD Player / Phillips CD 380; Electricity; 01 h 30 min 100% [Synthetic]; 817

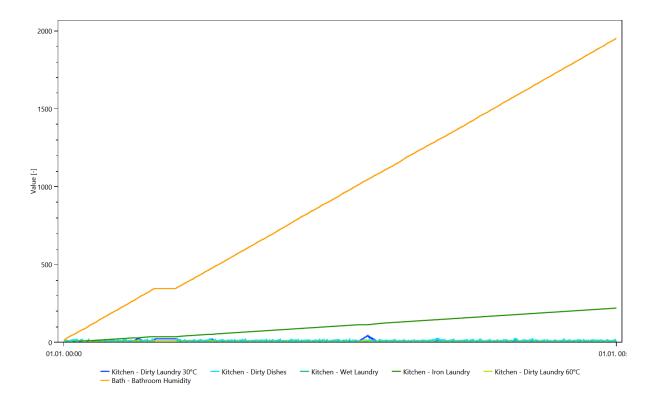
CD/DVD Player / Phillips CD 380; Electricity; 02 h 0 min 100% [Synthetic]; 37

Variables

This is made from the files starting with: Variablelogfile

The variables are used to keep track of things like dirty laundry, dirty dishes and the amount of laundry to iron. They are used to ensure that for example the dishwasher is only turned on if there are sufficient dirty dishes. One chart shows the first 25000 timesteps of the contents of all variables, the other shows the entire time span.

Variables



Variables

