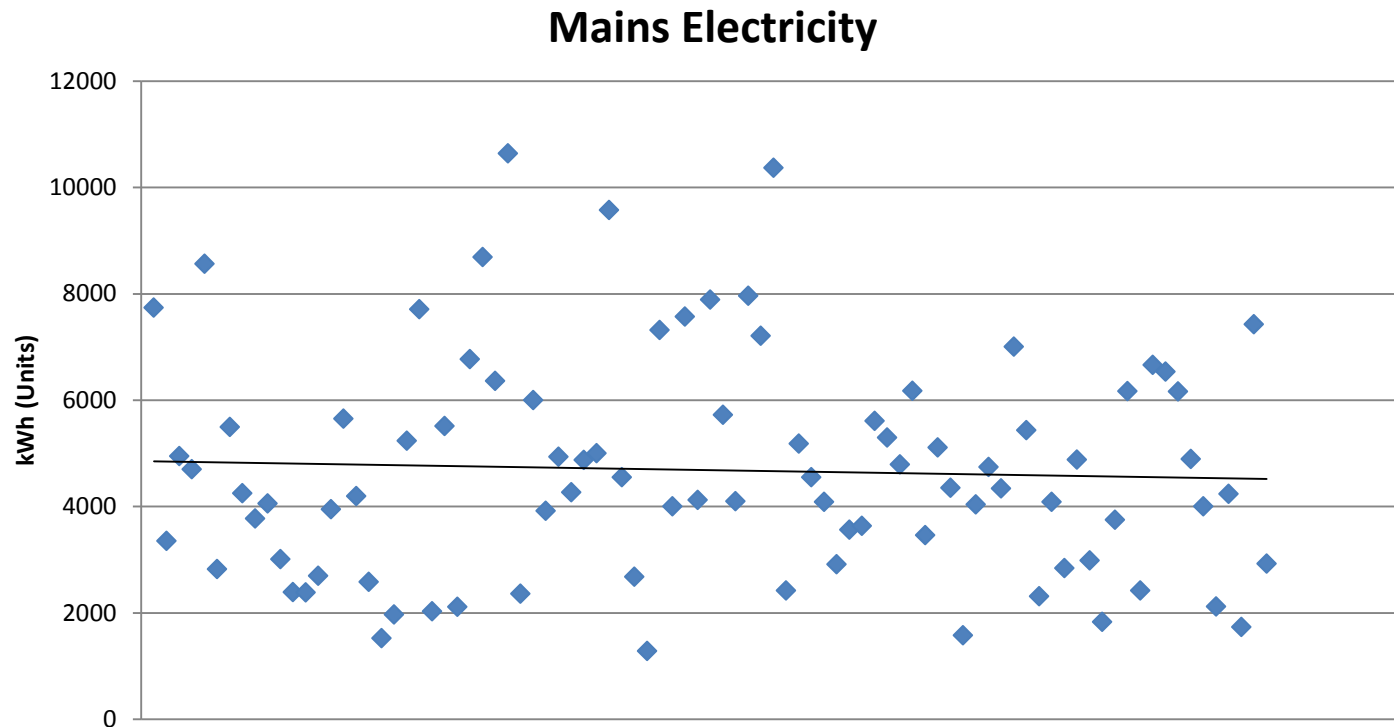


SERVE Project - First Results

PJ McLoughlin

04th October 2012

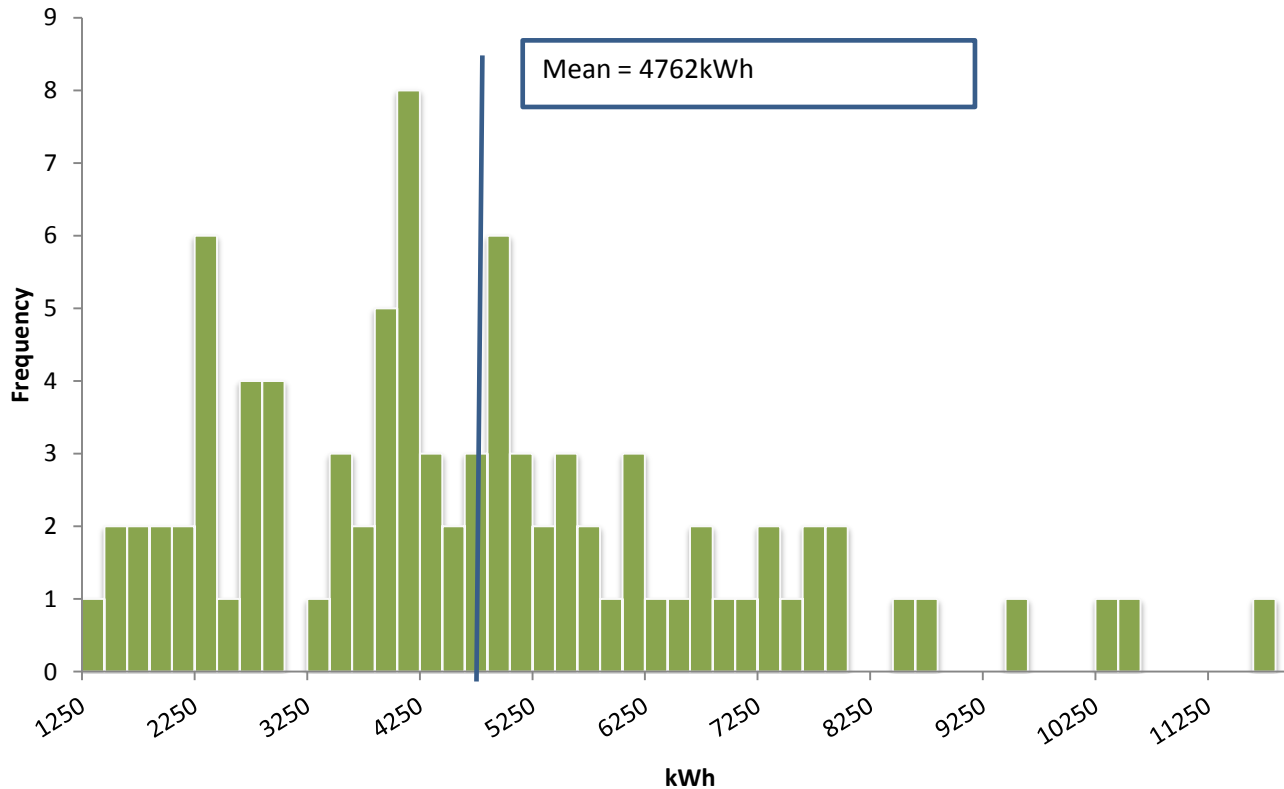
Overall Electricity Consumption Spread



Avg - 4762kwh/yr
Max – 11844kWh/yr
Min – 1276kWh/yr
Sample Size 90

Electricity Consumption Distribution

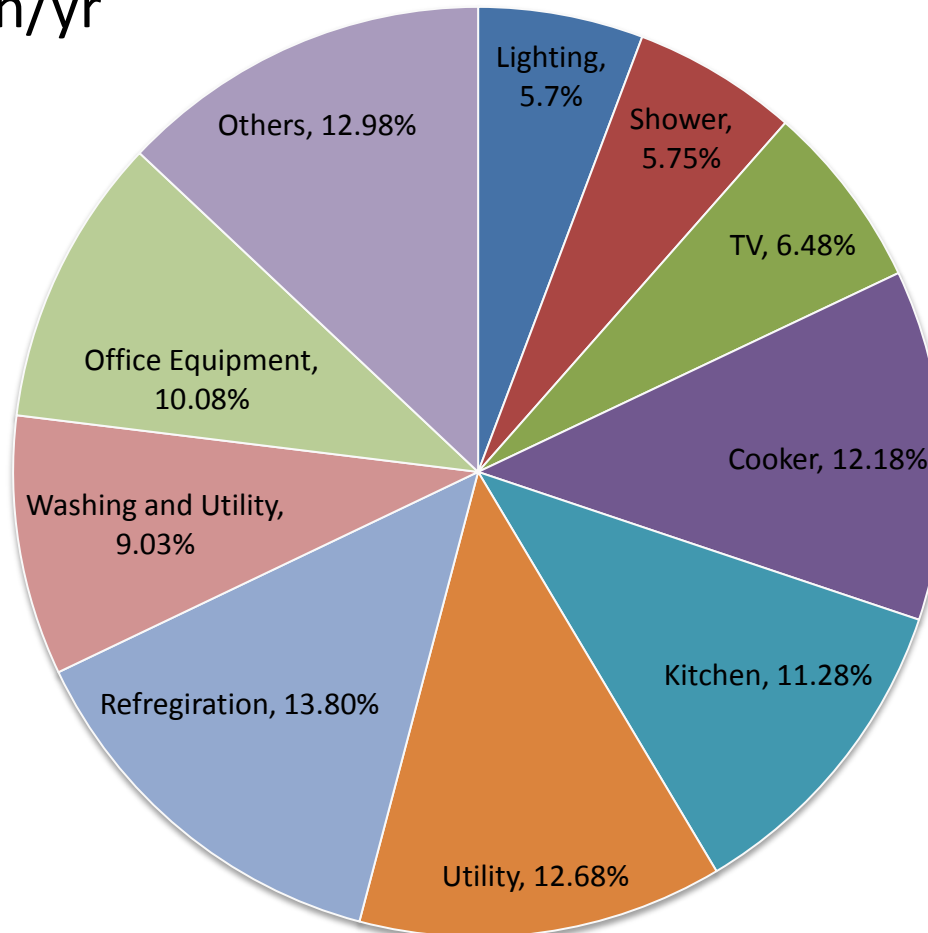
Electricity Frequency Distribution



Electrical Breakdown in SERVE

Average House in SERVE

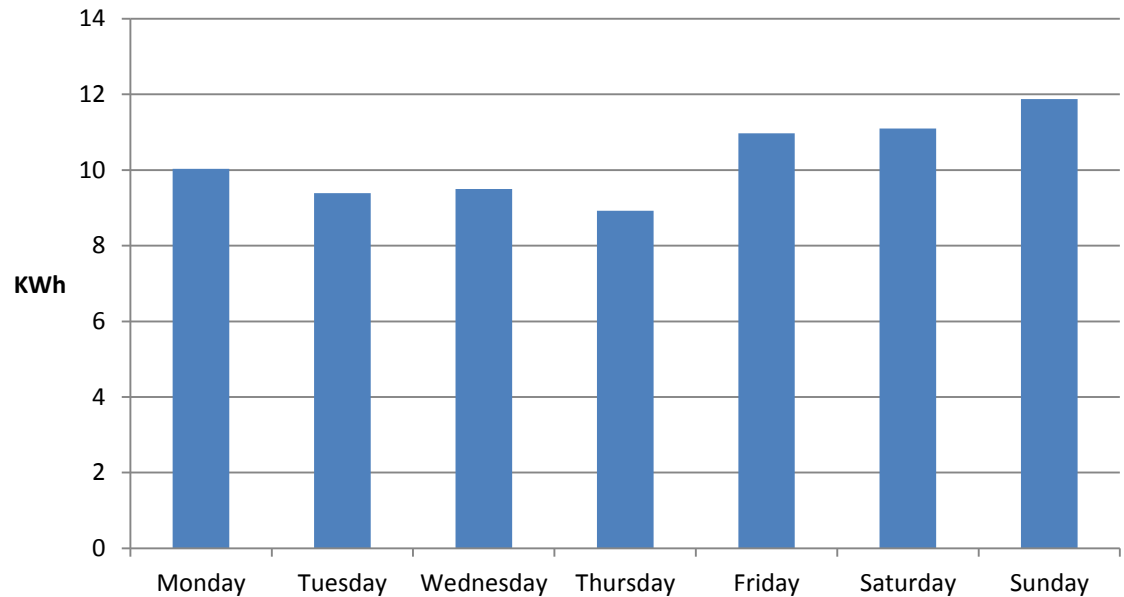
- 29.22kWh/m²/yr
- 1799kWh/person/yr



Example House Weekly Electrical Usage

- Young working family (2kids)
- Type 2 Occupancy (Evening & Week ends)
- 3747.6kWh/yr
- 936.9kWh/person/yr

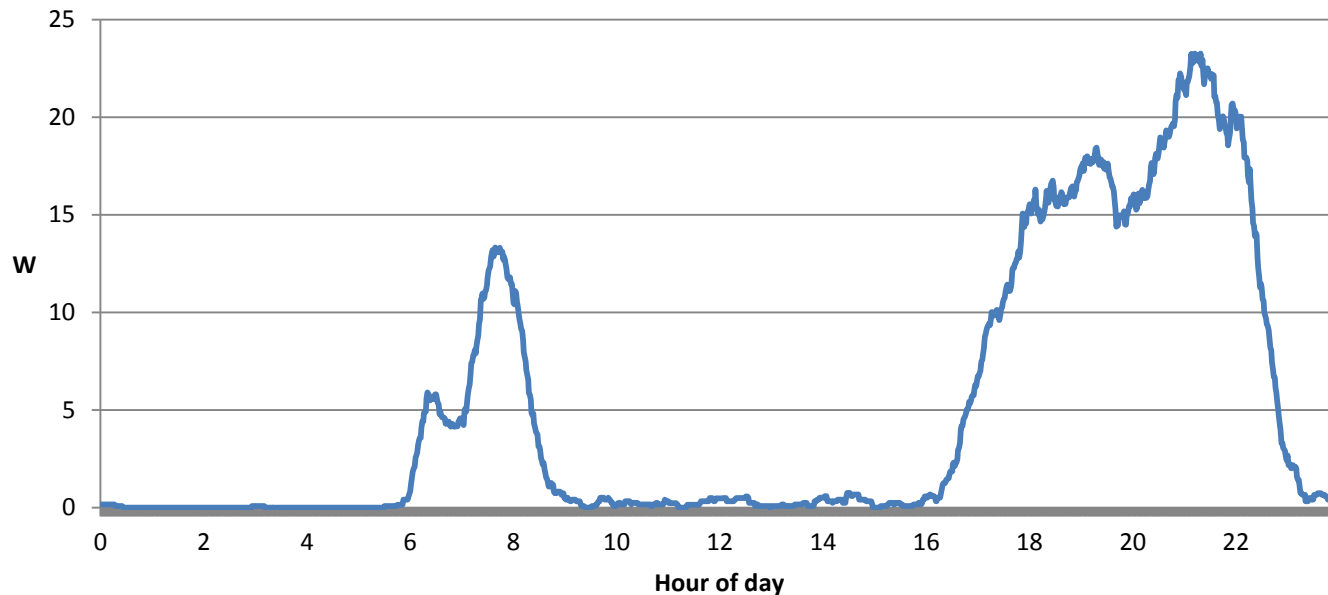
Week profile of main electricity consumption



Lighting (15 Houses)

- Average 5.7%
- 220kWh/year
- 1.5kWh/m²/year
- 1512 hours/year or 4hours/day

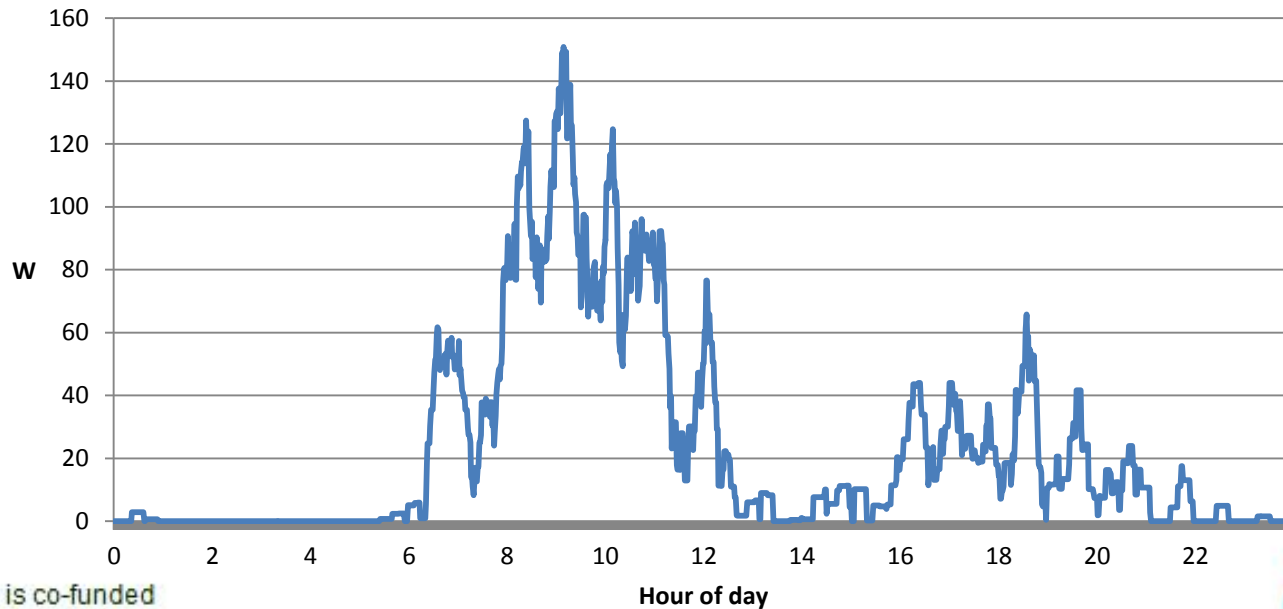
Average Daily Profile of Lighting power



Showering (7 Houses)

- Average 5.75%
- 191.55kWh/year
- Shower Length 3 minutes
- €0.08 per shower

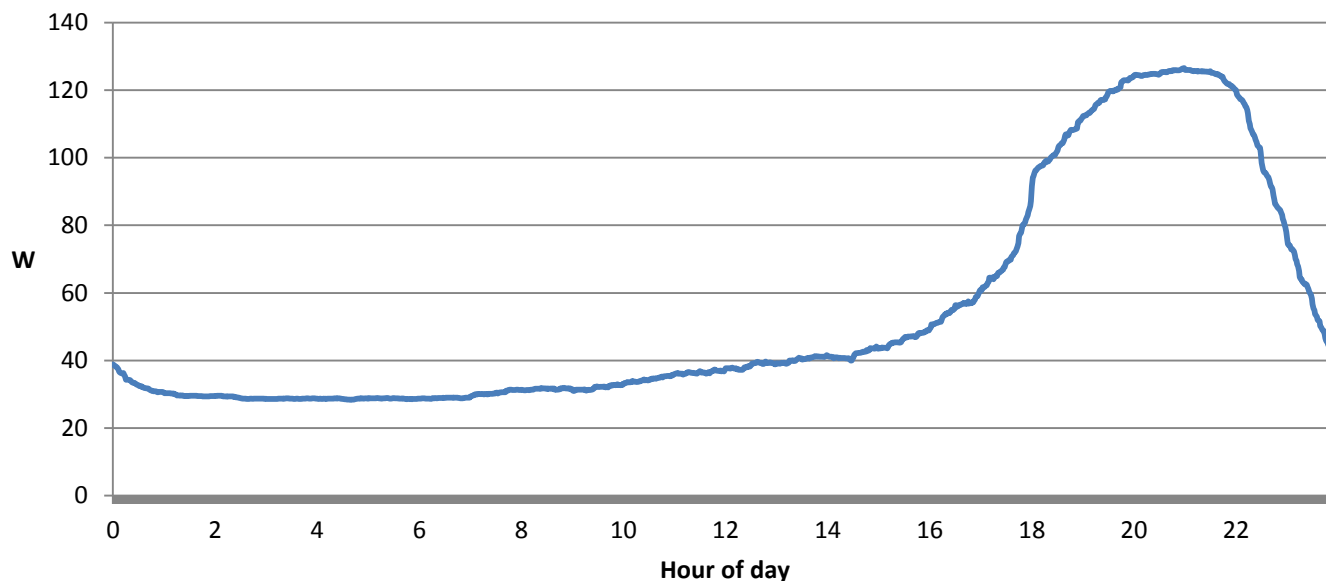
Daily Profile of Shower



TV and Entertainment Centre (9 Houses)

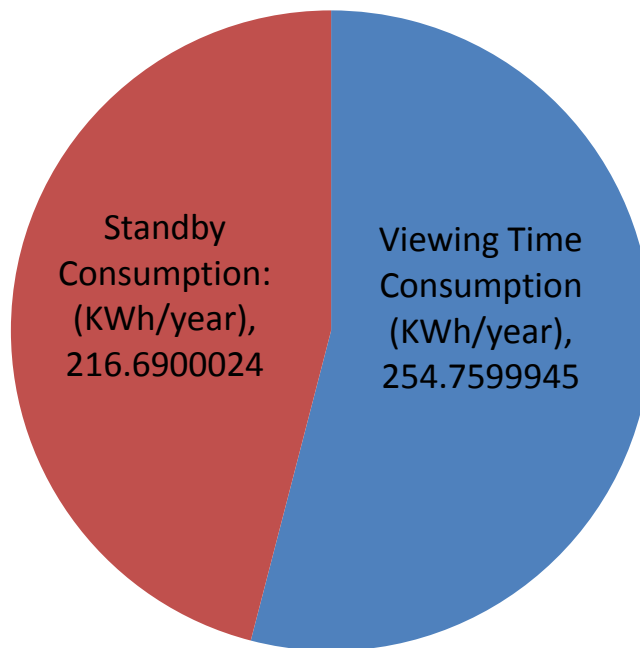
- Average 6.48%
- 244.27kWh/year
- 4.36 Hours of view time per day

Daily profile of TV power



TV and Entertainment Centre (9 Houses)

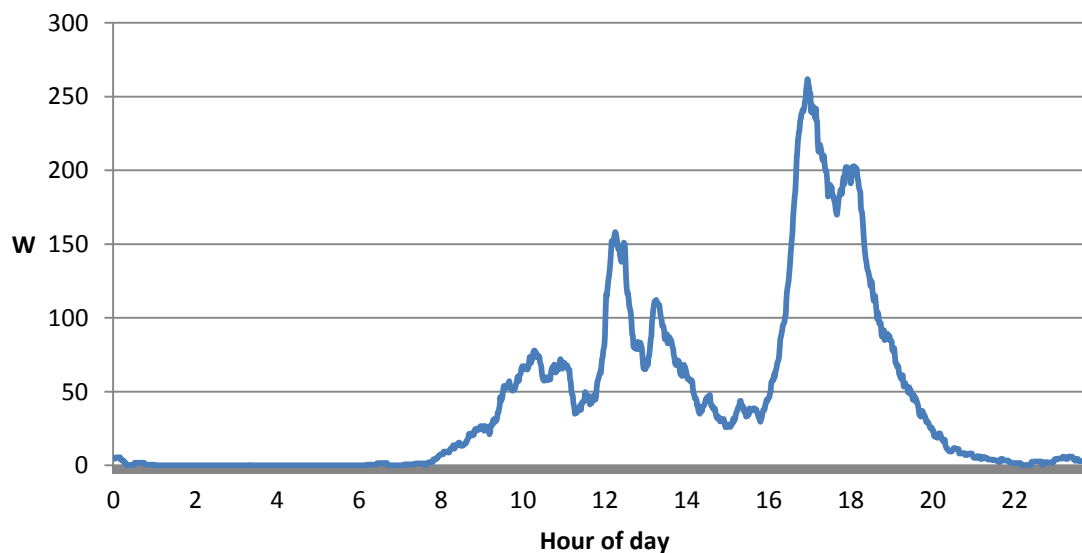
TV					
Viewing Consumption	Standby Consumption	Viewing Cost	Standby Cost	Hours of use per year	Hours of use per day
KWh/yr	KWh/yr	€/yr	€/yr	H/yr	H/day
254.76	216.69	45.85	39	1978.45	5.42



Cooking (23 Houses)

- Average 12.18%
- 548.48kWh/year

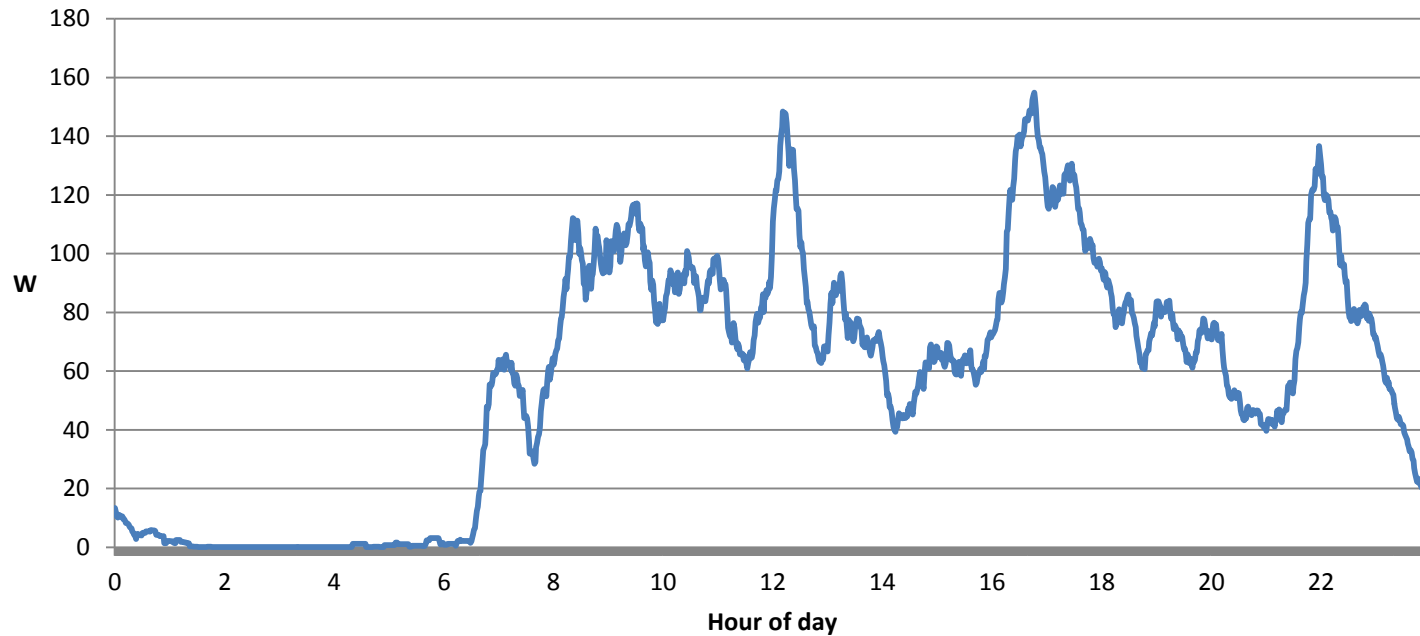
Daily profile of Cooker power



Kitchen Sockets (25 Houses)

- Average 11.48%
- 536.27kWh/year

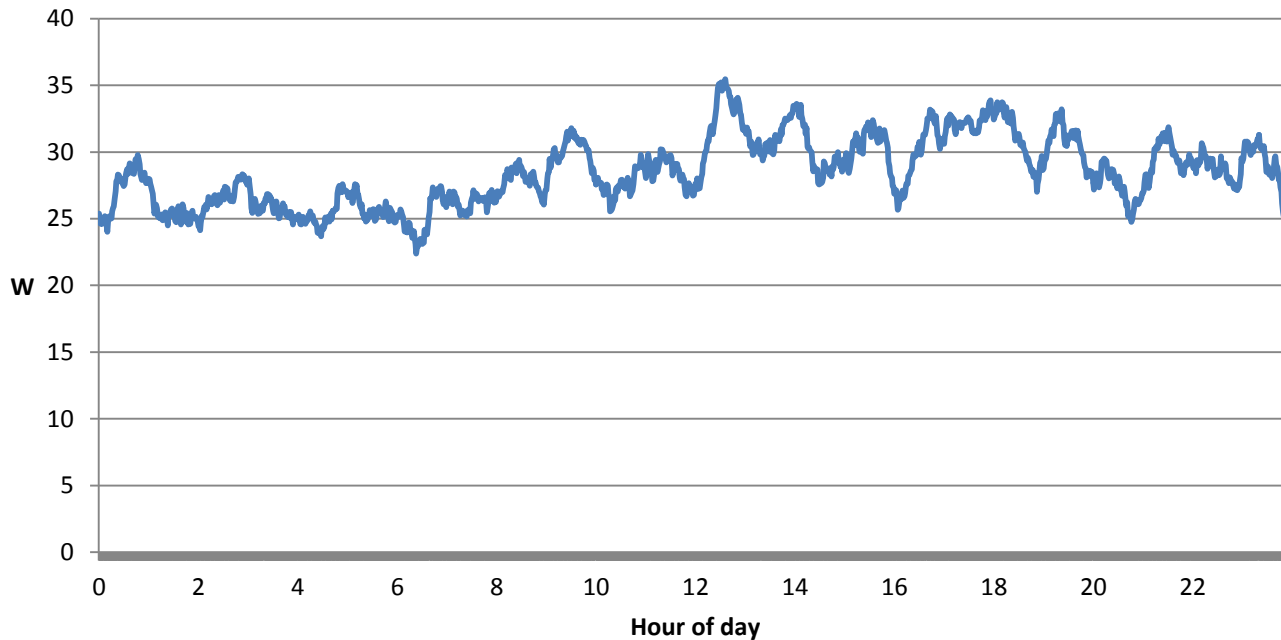
Daily profile of Kitchen power



Refrigeration (18 Houses)

- Average 13.8%
- 633.10kWh/year

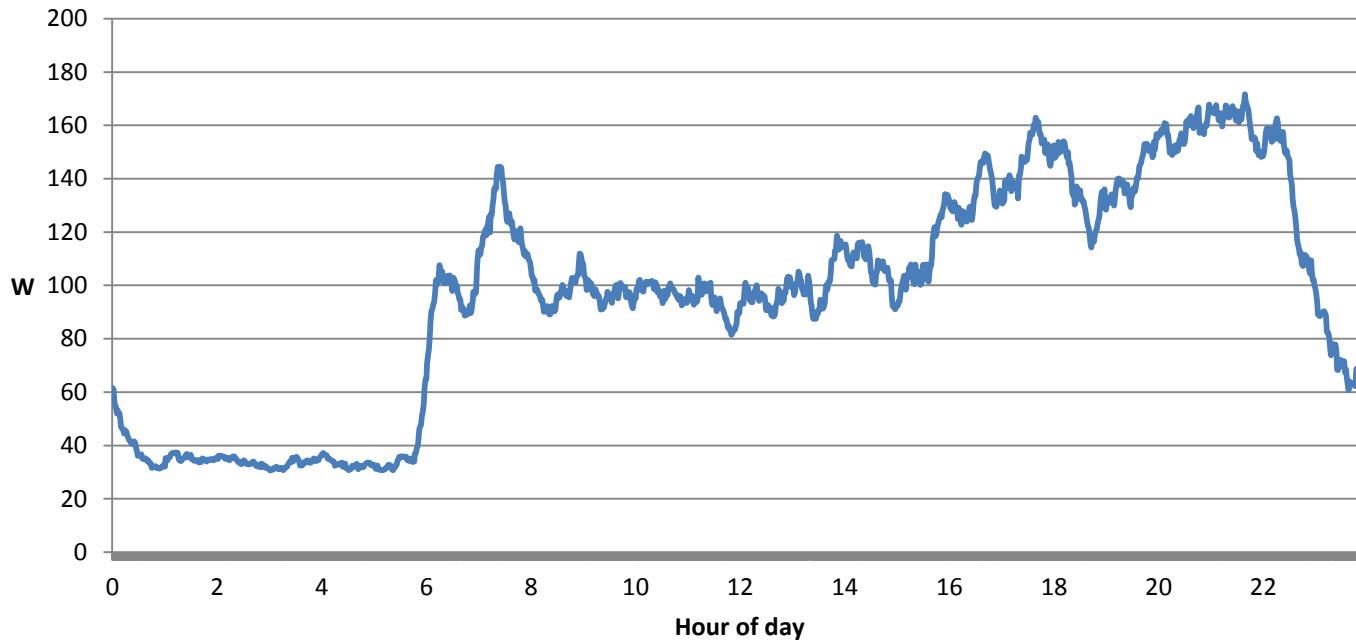
Daily profile of Fridge Freezer power



Washing & Utility (23 Houses)

- Average 9.03%
- 408.14kWh/year

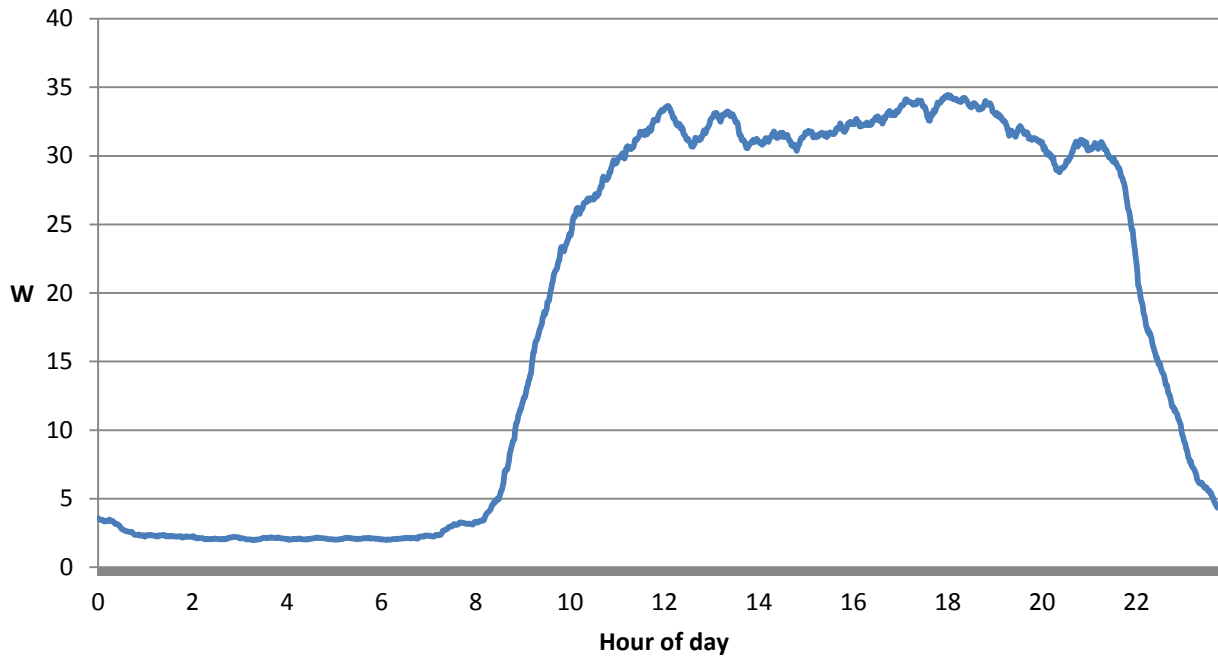
Daily profile of Utility power



PC & Office Equipment (5 Houses)

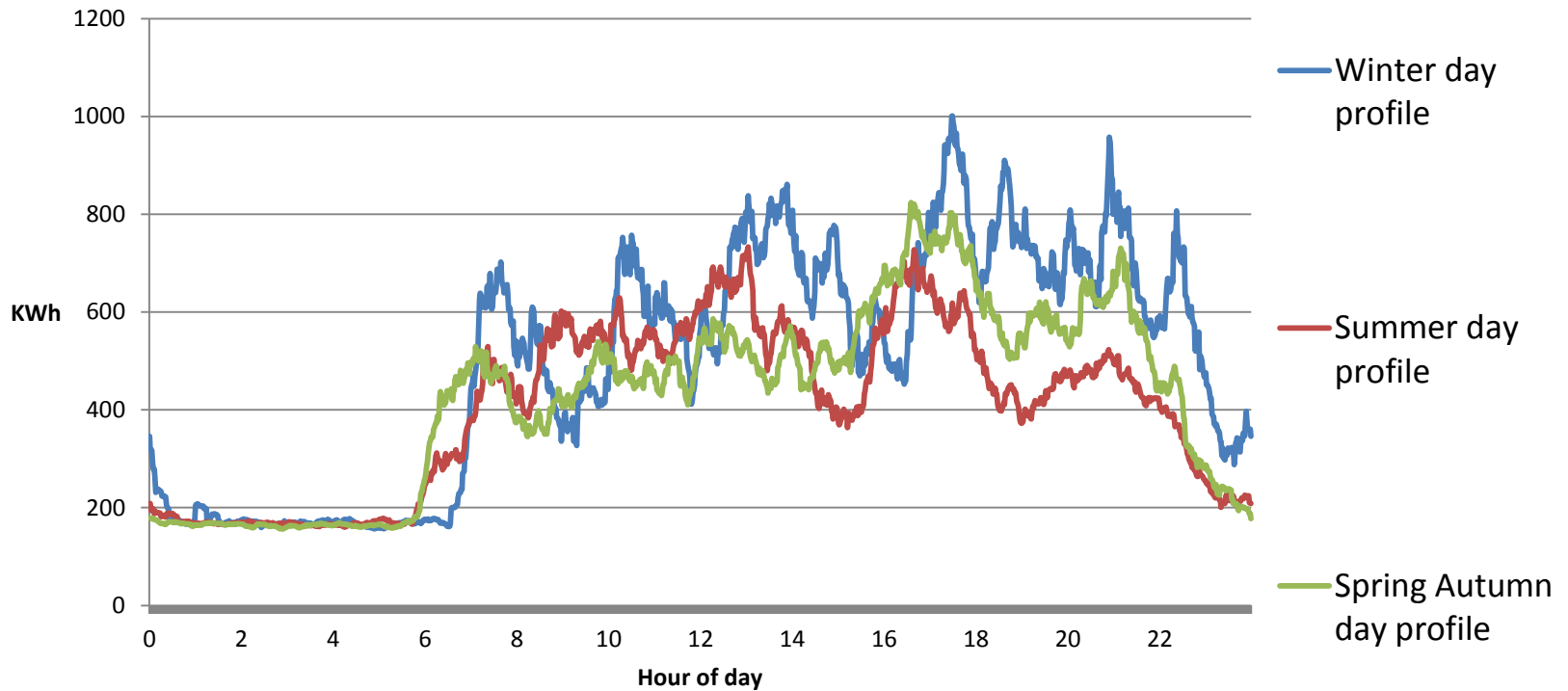
- Average 7.69%
- 479.94kWh/year

Daily profile of PC power



Electricity Domestic Baseload

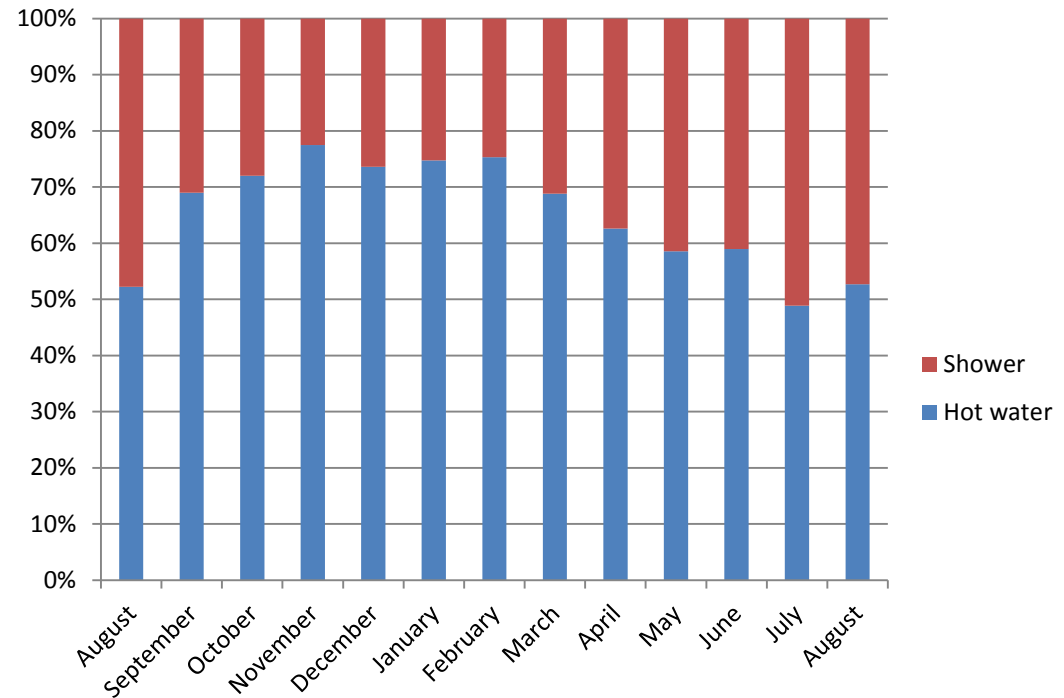
Average Daily Electricity Consumption Per Season



Domestic Hot Water (6 Houses)

Average in SERVE

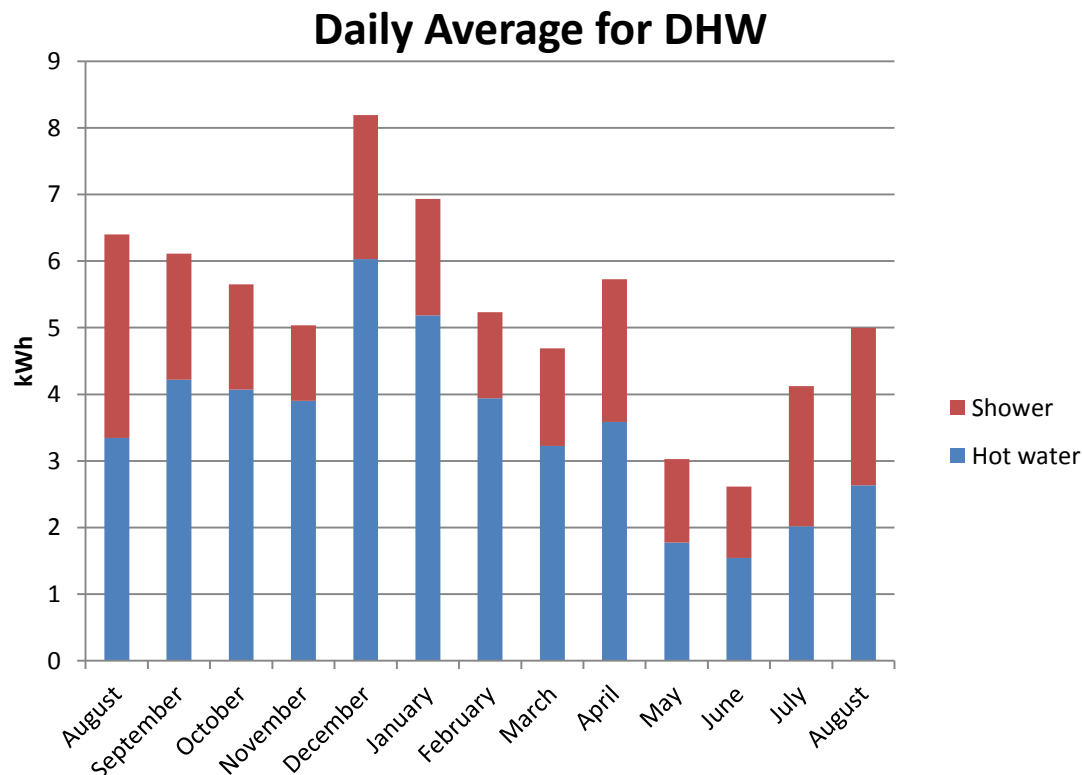
- 1595kWh/yr
- 401kWh/person/yr
- 1.24kWh/person/day



Domestic Hot Water

House A Example

- 1475kWh/yr
- 244kWh/person/yr
- 1.06kWh/person/day

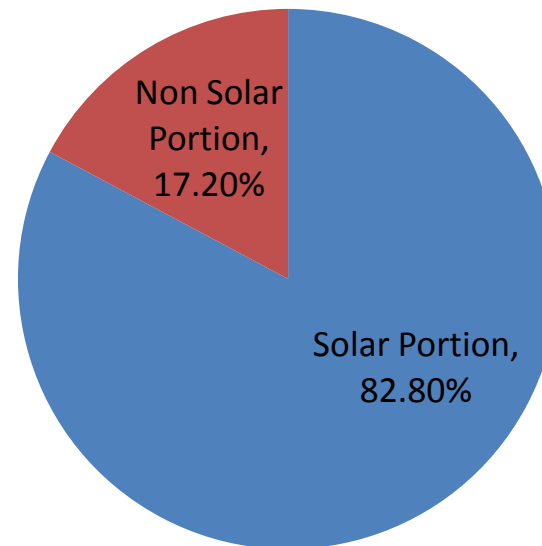


Solar Energy

House B Example

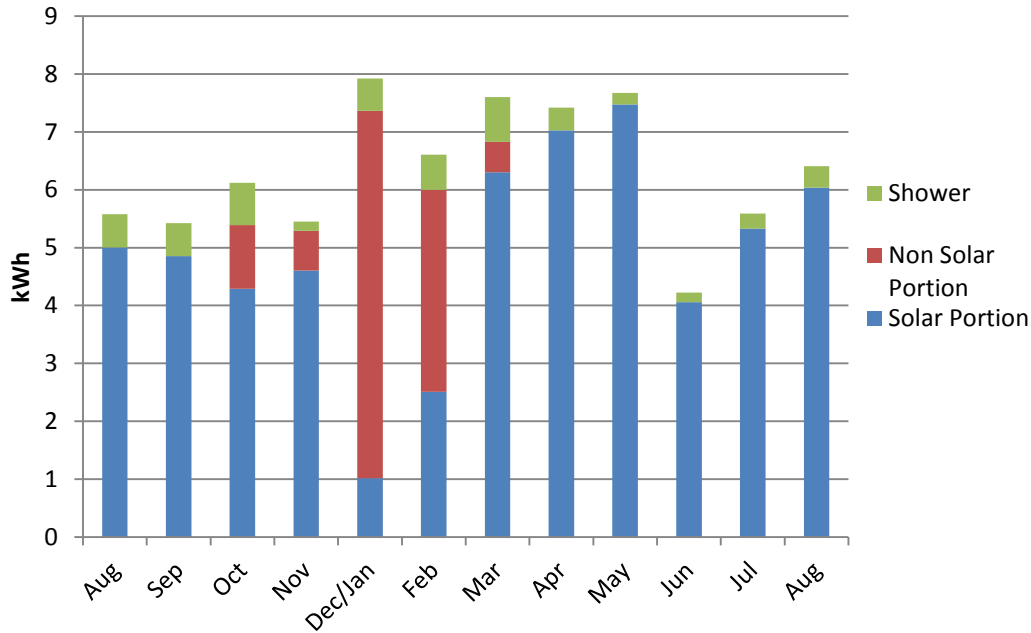
- DHW - 2,219 kWh/yr
- 443kWh/person/yr
- 1.27kWh/person/day

Domestic Hot water

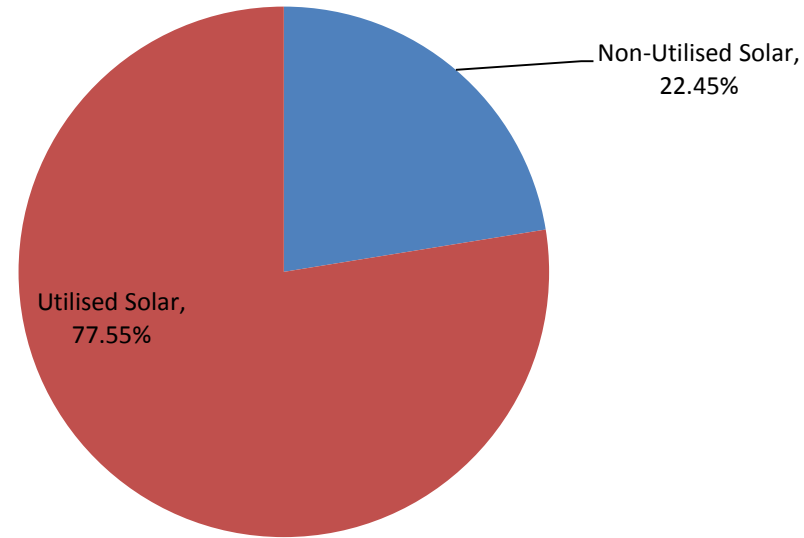


Solar Energy

Daily Average DHW Usage



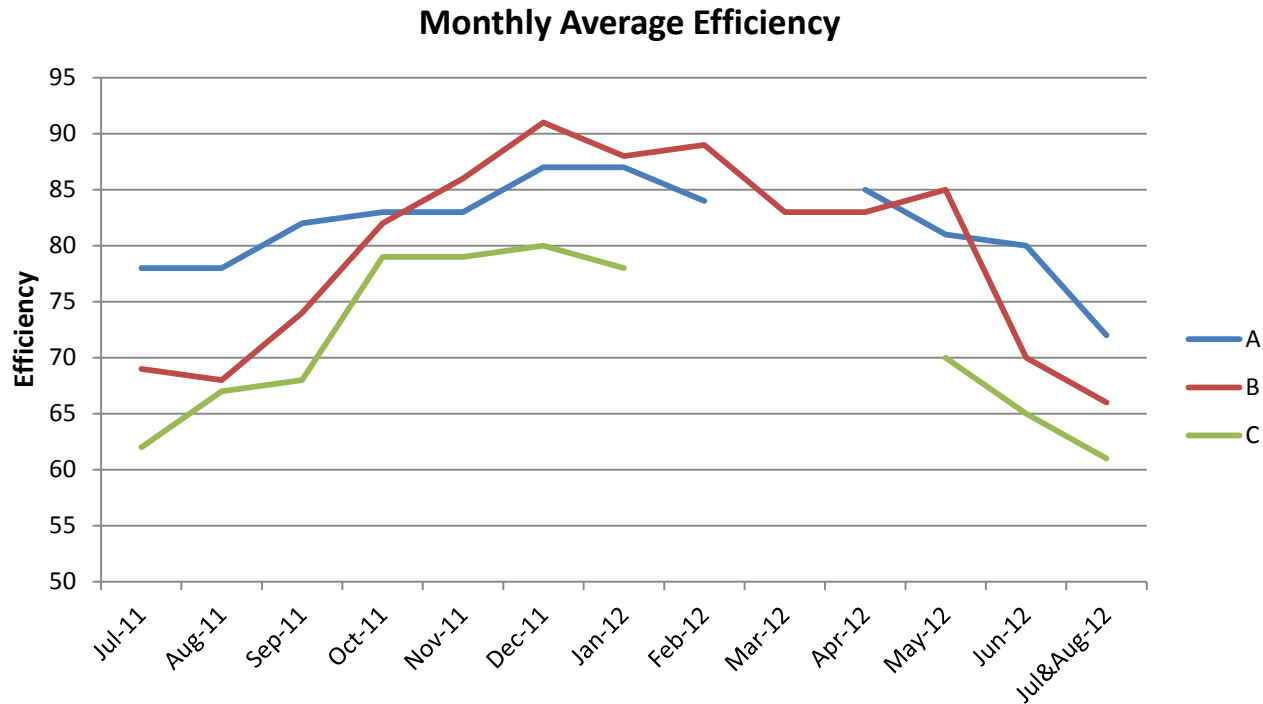
Used Solar Energy



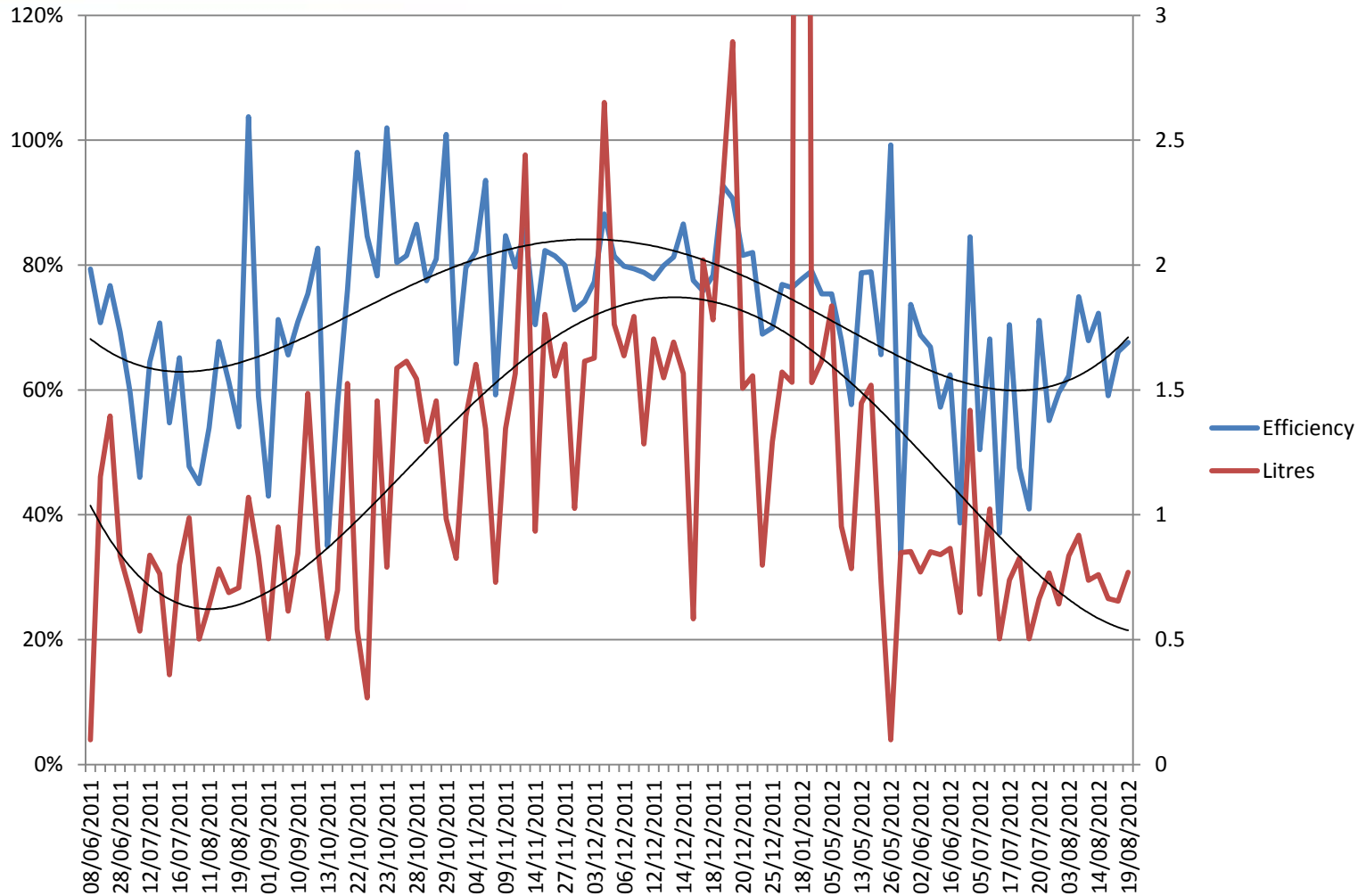
■ 384kWh/yr/m² Installed Solar (Flat Plat)

Boiler Efficiency

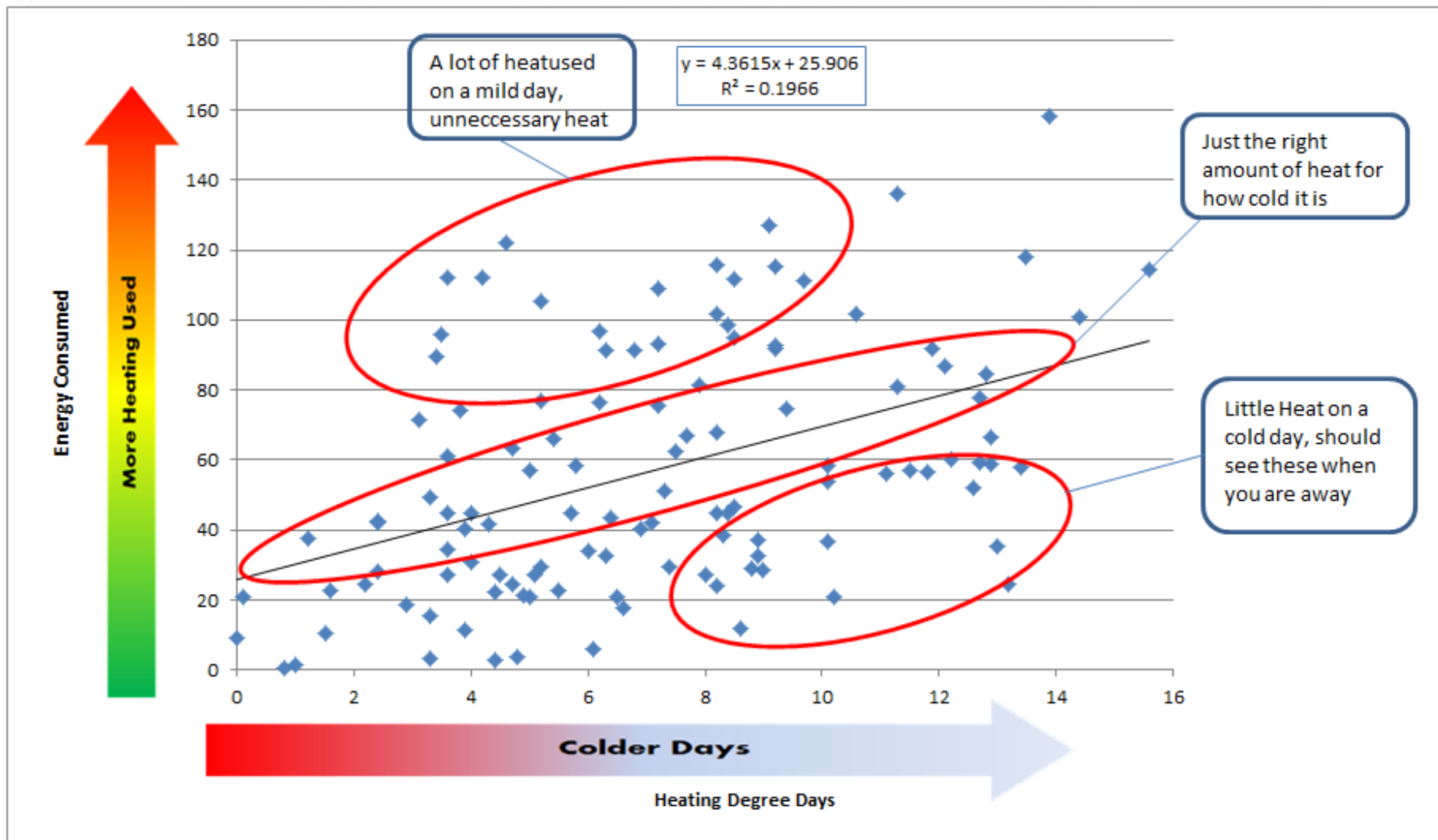
- Efficiencies of boilers are linked to the quantity of oil used, similar to most mechanical machines running on partial load.



Boiler Efficiency



Heating Controllability



How to Communicate to homeowner

- Communication is about getting the message and in a language that can be understood, not only understand but are interest in.

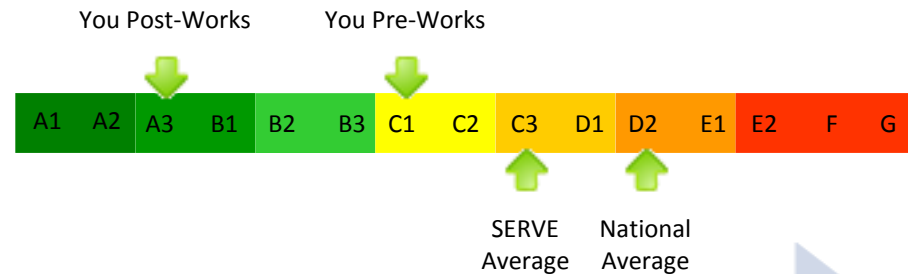
Shown in Figure XXX, we see that the

- Main heating, oil, amounts to 10,792 kWh
 - Equivalent of 1060.2 litres of oil or the equivalent of 1 fill of your tank,
 - or €985
- The open fire, totals 2112 kWh Equivalent of 31 fuel buckets in your setting room or 6.7bags of coal or 32 fires being lit.
 - or €XX of Coal
- The quantity of electricity used is 5003 kWh/ year
 - At a cost of €918.97

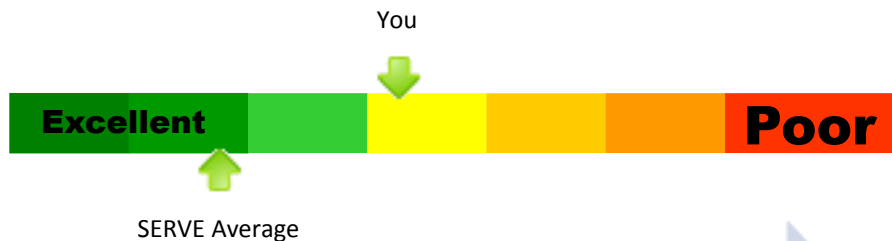
How to communicate to homeowner

- Using common sliding scale can also help to get the message across

BER Your Position



Oil Usage Rating



- Tipperary Energy Agency
- Craft Granary
- Church St, Cahir
- Co. Tipperary, Ireland
- PJ McLoughlin
- Energy Analyst
- T: 052 7443090
- F: 052 7443012
- E: pjmcloughlin@tea.ie
- W: www.tea.ie

Thanks for your time. Questions??

Questions to Answer for Today

Review potential projects and discuss future development opportunities

- Analysis of key barriers and identification of potential solutions.
- Produce a concise key policy requirements