SMART-UP

CONSUMER EMPOWERMENT IN A SMART METER WORLD

www.smartup-project.eu

Co-funded by the European Union

INSTRUCTION SHEET - Your SMART-UP Energy Diary

CALCULATING ENERGY SAVINGS WITH THE HELP OF YOUR SMART METER

The SMART-UP consortium has developed a set of tools that will help you to analyse your home energy consumption in an easy way and helps you to compare it to similar households in your region.

1. The energy consumption diary

The energy consumption diary allows you to keep track of your overall energy consumption at home. Simply enter the energy readings from your smart meter at the end of every month and see how it changes over time and whether your energy saving efforts make a difference.

2. The night energy consumption tool

Are you wasting a lot of money because your appliances are on standby all the time or because your geyser is an energy guzzler? Find out by using our night energy consumption tool. It will tell you how much electricity you consume while you sleep.

3. Appliances running cost tool

Learning how much our energy use costs is key to understanding how to use less and to saving money. To illustrate this, we have developed an appliance running costs tool which can show you how much it would cost to run a number of different appliances for set amounts of time.

Please make sure you refer to the following SMART-UP sheets should you decide to share your data with us.

1. SMART-UP participant information and Instructions sheet,
2. the SMART-UP Informed consent form
3. IHD and generic energy-saving tips sheet

Should you require further assistance please do not hesitate to get in touch with your SMART-UP contact point.

The National contact for Malta is:

Brian Restall and he can be reached via email on brian.restall@pim.com.mt or on 2142 0852.

1.1 - ELECTRICITY CONSUMPTION RECORDING SHEET

Simply take a reading for the total consumption from your smart electricity meter at the end of each month and insert in colum A. See smart meter illustration below.

To calculate the consumption deduct the latest reading from a previous reading of your electricity smart meter

Press this button on your electricity smartmeter until you see TOTAL on the display

Jse the Total consumption when taking readings for this exercise

Electricity readings					
Reading No.	**Date of meter reading** ***Day/Month/Year***	**Meter readings**	**Reading No.**	**Date of meter reading** ***Day/Month/Year***	**Meter readings**
	01/03/2015 (example)	6,781	16		
	01/04/2015 (example)	7,156	17		
1			18		
2			19		
3			20		
4			21		
5			22		
6			23		
7			24		
8			25		
9			26		
10			27		
11			28		
12			29		
13			30		
14			31		
15				**Total**	

1.2 - ELECTRICITY CONSUMPTION AND COST DIARY

What do you need for this exercise? You will need this recording sheet, a pencil, and a calculator.

Simply take a reading for the total consumption from your smart electricity meter at the end of each month. Insert the date in column A and the electricity reading in column B. See smart meter illustration below.

To calculate the costs simply multiply column C (consumption) with column D (cost per unit). Enter the result in column E (Total Cost)

Insert your results for consumption (Column C) and Total Cost (Column E) for each month in the two charts on the next page. Mark results for each month with an X. After you have completed all months the table gives you information about your overall electricity consumption and the costs. It also tells you if you managed to reduce your consumption over the year or if you use more electricity in summer or winter.

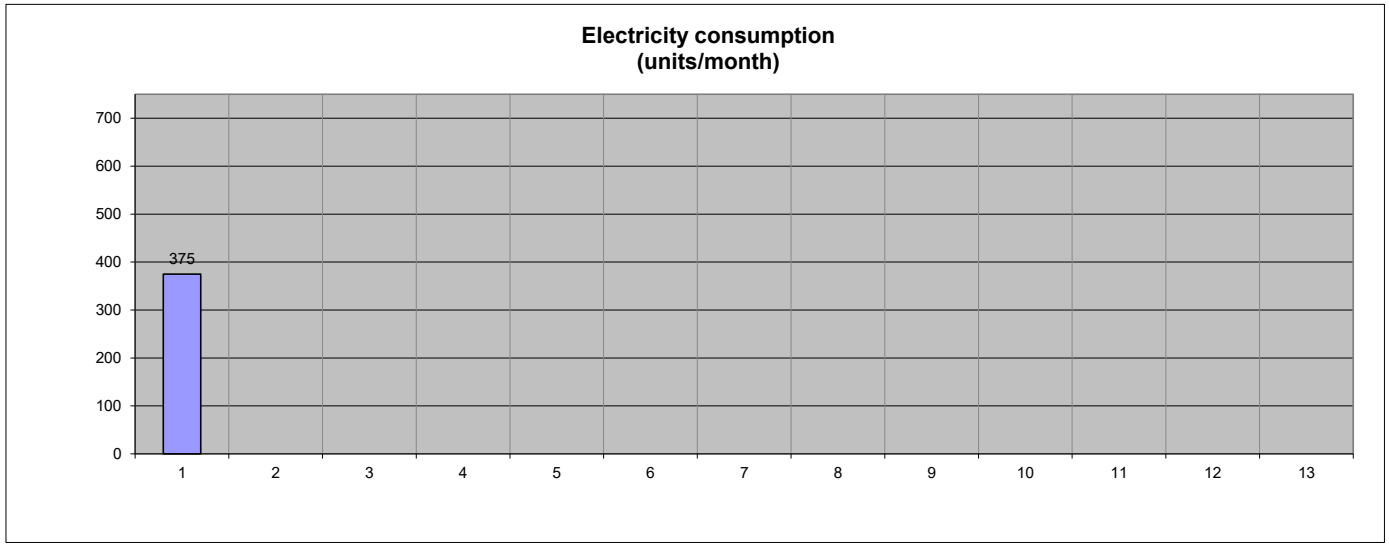
Press this button on your electricity smartmeter until you see TOTAL on the display

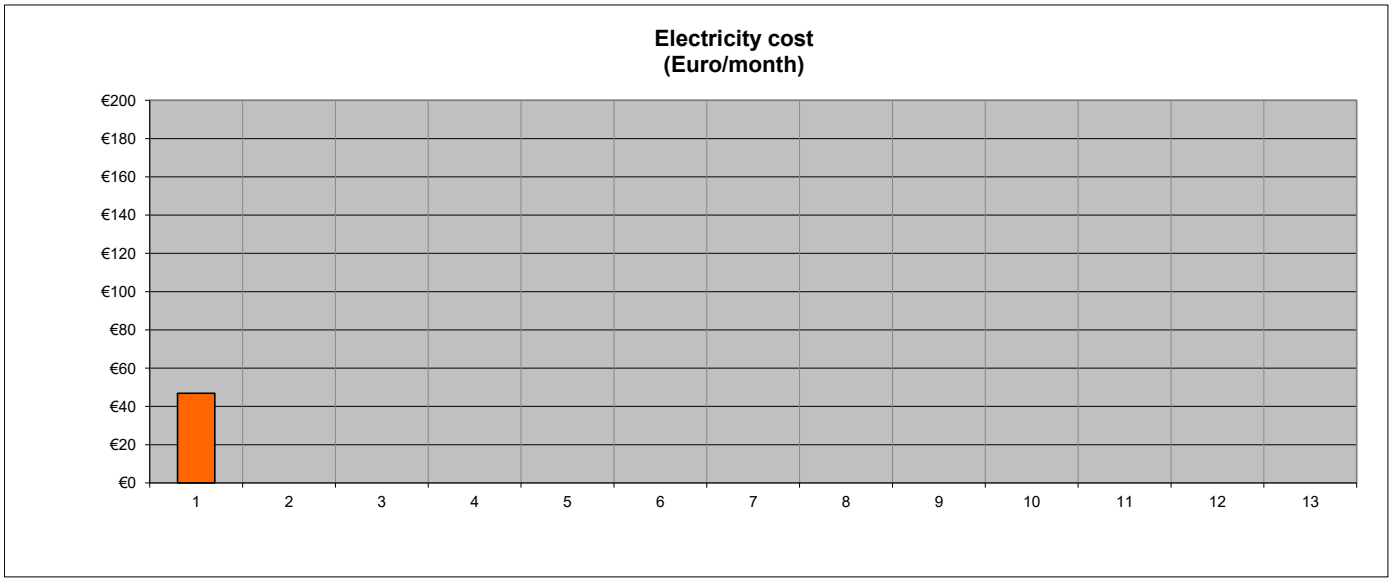
Use the Total consumption when taking readings for this exercise

	Electricity readings			*Enter data in the grey cells only*			
	A Date of meter reading *Day/Month/Year*	**B** Meter readings	**C** Consumption for period *(Units) Deduct last meter reading from previous reading ex B2-B1*	**D** Cost per unit (€)			**E** Total Cost Calculate C x D
1	**01/03/2015 (example)**	6,781					
2	**01/04/2015 (example)**	7,156	375	x	€0.125	=	€47
3				x	€0.125	=	€
4				x	€0.125	=	€
5				x	€0.125	=	€
6				x	€0.125	=	€
7				x	€0.125	=	€
8				x	€0.125	=	€
9				x	€0.125	=	€
10				x	€0.125	=	€
11				x	€0.125	=	€
12				x	€0.125	=	€
13				x	€0.125	=	€
14				x	€0.125	=	€
						Total	**€**

1.3 - ELECTRICITY CONSUMPTION DIARY AND CONSUMPTION CHARTS

Year:	





Overview of average daily and monthly energy consumption in a typical Maltese household (in units). Compare your consumption with the average household below

Source: NSO, 2010	Refrigeration	Water Heating	TV, HiFi and Computers	Lighting and Other	Minor Appliances	Total per day	Total per month
Apartments	1.94	2.72	1.47	3.21	0.53	**9.9**	**295.8**
Maisonettes	2.47	2.52	1.6	3.15	1.03	**10.8**	**322.8**
Terraced Houses	2.51	2.87	1.45	3.69	0.51	**11.0**	**330.6**

2.1 - THE NIGHT ENERGY CONSUMPTION TOOL

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MONITOR YOUR NIGHT ELECTRICITY CONSUMPTION TO FIND ENERGY GUZZLERS

What do you need for this exercise? You will need this recording sheet, a pencil, a calculator

Press this button on your smartmeter until you see TOTAL on the display

Use the Total consumption when taking readings for this exercise

Instructions

1. Take the first reading before going to bed at night and insert the reading from your electricity meter in column (B) of the table below.

2. Take the second reading from your electricity meter right after you wake up. Insert the reading in column (B) below the previous one.

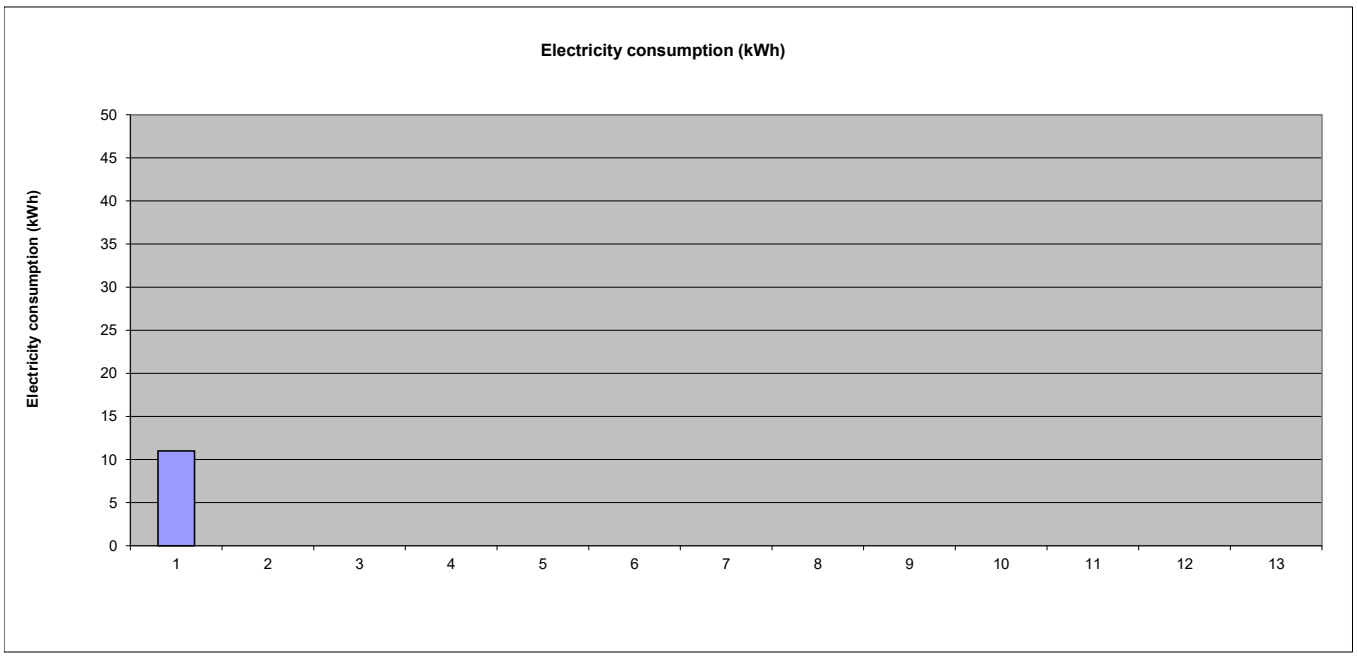
3. Use the calculator and deduct the morning reading from the night reading in column (B). Insert the result in column C. Then multiply the result in column C with column D to find out how much electricity you use at night and how much it is costing you. Enter the results from column C and E in the table on the next page.

Enter data in the grey cells only

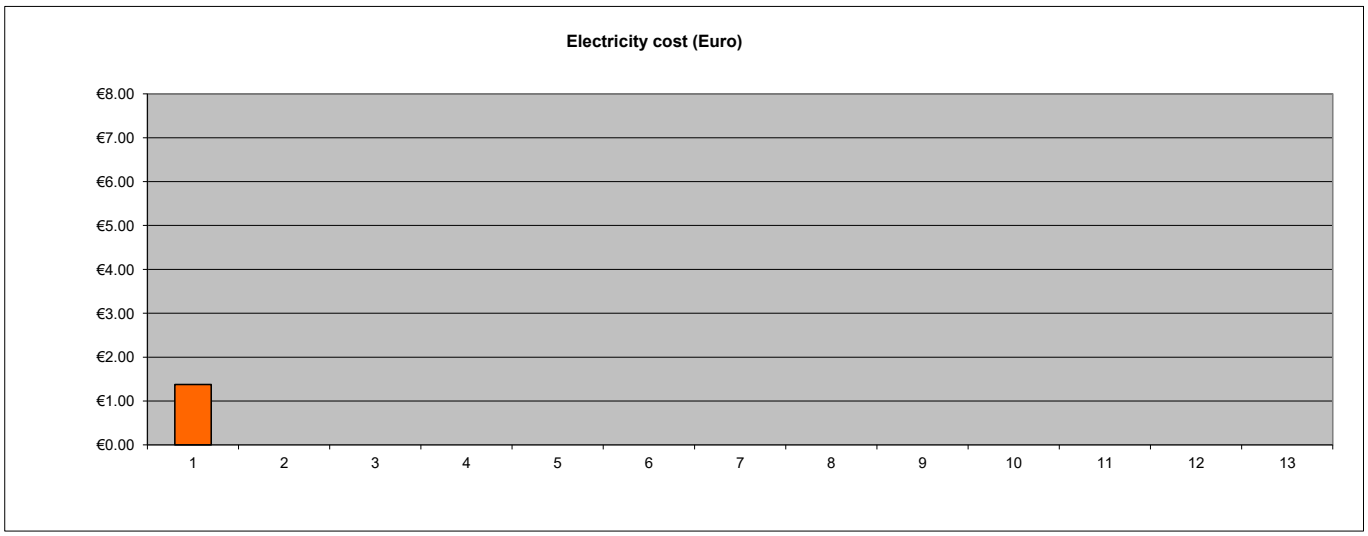
	A Date of meter reading *Day/Month/Year*	B Meter readings (for morning and evening)	C Consumption for period *(Units)* *Deduct last meter reading from previous reading ex B2-B1*	D Cost per unit (€)			E Total Cost *Calculate C x D*
1	**02/10/2015 (example)**	5,230					
2	**03/10/2015 (example)**	5,241	11	x	€0.125	=	€1.38
3				x	€0.125	=	€
4				x	€0.125	=	€
5				x	€0.125	=	€
6				x	€0.125	=	€
7				x	€0.125	=	€
8				x	€0.125	=	€
9				x	€0.125	=	€
10				x	€0.125	=	€
11				x	€0.125	=	€
12				x	€0.125	=	€
13				x	€0.125	=	€
14				x	€0.125	=	€
						Total	€

2.2 - MONITOR YOUR NIGHT ELECTRICITY CONSUMPTION TO FIND ENERGY GUZZLERS

Insert your results for consumption from column (C) for each day in the chart below. Mark results for each day with an X. After you have completed all days the table gives you information about your night electricity consumption, tells you if you have hidden energy guzzlers, or if you managed to reduce it.



Insert your results for costs from column (E) for each day in the chart below. Mark results for each day with an X. After you have completed all days the table gives you information about how much electricity costs you throughout the night.



Try to reduce your contribution to this energy waste

Tips:
1. **Chargers still consume some power even if they are not actually charging a device such as a mobile phone. Switch them off or unplug them if they**
2. **Switch your TV off at the mains when you are not watching it.**
3. **Make sure that the children are switching off their game consoles when they are not playing with them.**

Did you know? Mobile phone chargers that are left on and plugged in but not in use are one of the biggest causes of domestic fires not to mention the wasted

Want to do more? Consider buying a PC or TV powerdown. These devices will ensure that the peripherals to these will be switched off when not required.

3 - CALCULATING THE ELECTRIC RUNNING COST OF APPLIANCES

What do you need for this exercise? You will need this recording sheet, a pencil, a calculator

ENTER DATA IN THE GREY CELLS ONLY

	Location	Description	A Equipment nameplate Power Rating [kW]	B Operating hours [h]	C Electricity Consumption [kWh]	D Cost per kWh (unit) in Malta	E Electiricty Cost [€]
Example	Kitchen	Iron (1.3kW)	1.30	1.0	1.30	€ 0.125	€0.16
Example	Kitchen	Kettle (3kW)	3.00	0.1	0.30	€ 0.125	€0.04
Example	Kitchen	Microwave oven (0.75kW)	0.75	0.4	0.28	€ 0.125	€0.04
Example	Kitchen	Electric grill (3.4kW)	3.40	1.5	5.10	€ 0.125	€0.64
Example	Kitchen	Radiant electric cooker ring (2kW)	2.00	2.0	4.00	€ 0.125	€0.50
Example	Kitchen	Fridge medium size (A class) (800w)	0.80	24.0	19.20	€ 0.125	€2.40
Example	Kitchen	Freezer medium size (A class) (1350w)	1.35	24.0	32.40	€ 0.125	€4.05
Example	Kitchen	Vacuum cleaner (1500w)	1.50	1.5	2.25	€ 0.125	€0.28
Example	Living room	Games console (380w)	0.38	0.4	0.14	€ 0.125	€0.02
Example	Living room	Wide screen TV (110w)	0.11	1.0	0.11	€ 0.125	€0.01
Example	Washroom	Tumble dryer (vented)	3.50	3.0	10.50	€ 0.125	€1.31
Example	Washroom	Washing machine 40°	1.05	1.0	1.05	€ 0.125	€0.13
Example	Living room	Energy saving light bulb (3w)	0.00	50.0	0.15	€ 0.125	€0.02
Example	Living room	Conventional light bulb (60w)	0.06	50.0	3.00	€ 0.125	€0.38
Example	Bedroom	Heated under blanket (single) (220w)	0.22	8.0	1.76	€ 0.125	€0.22
Your appliance						€ 0.125	
Your appliance						€ 0.125	
Your appliance						€ 0.125	
Your appliance						€ 0.125	
Your appliance						€ 0.125	
Your appliance						€ 0.125	
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Your appliance						€ 0.125	

Instructions

In Malta, we can assume an average unit cost of 12.5 cents € at the moment. You will also need to know what the power rating of your appliance is - usually displayed on a label on the appliance itself (on the back or underside), as well as a calculator.
If the label on your appliance says 2kW then it would use 2kWh's (units) if it was left on for one hour. If the appliance is displayed in watts it is easy to convert to kW's as there are 1000 watts in a kW – the formula is below.

Watts ÷ 1000 (A) x Operating hours (B) = consumption (C).

Then multiply this by the unit cost (D). In Malta electricity per unit costs on average 0.125 Euros. Have a look at the left hand side for a number of examples of how much different electrical appliances cost you to run.