



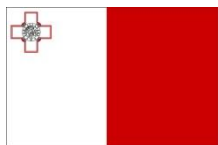
saving energy for your well-being



# Electricity Consumption in Households

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Investing in Competitiveness for a Better Quality of Life  
Project part-financed by the European Union  
European Regional Development Fund (ERDF)  
Co-financing rate: 85% EU Funds; 15% National Funds  
Investing in your future



# Presentation Outline

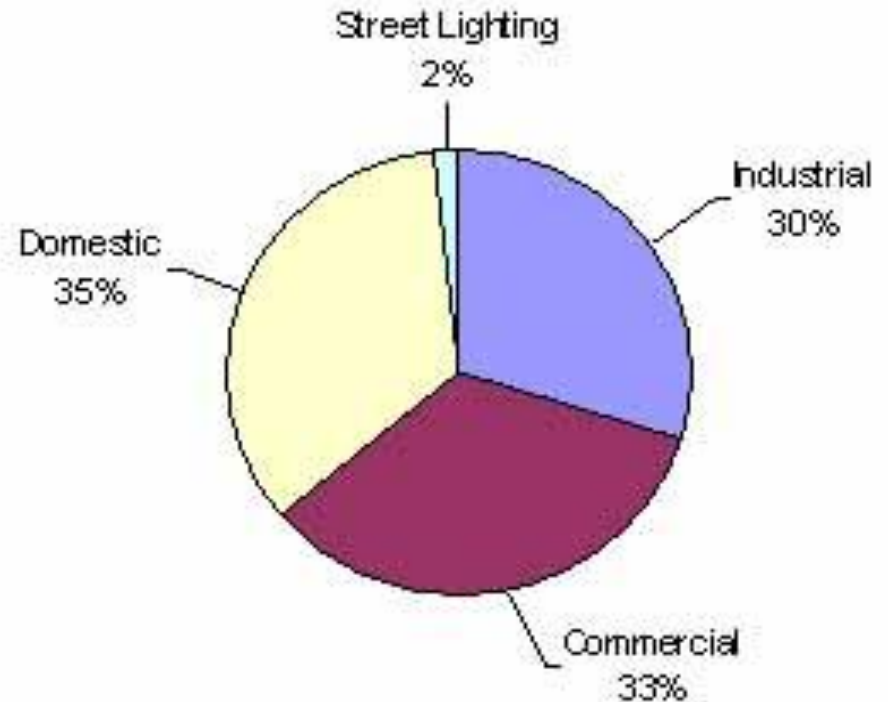
1. Share of electricity consumption in Malta
2. Survey on quantity and type of appliances in households
3. Technical survey on electricity consumption in households



# Share of Electrical Energy Consumption in Malta

Malta is almost totally dependent on electrical energy.

The households' sector is one of the largest users of energy in Malta with domestic consumption accounting for around 35 per cent of total electricity consumption.



# Survey on Electricity Consumption in Households

The Survey on Energy Consumption in Households which was commissioned by the NSO in 2010 adopted a two-tiered approach:

1.) A survey among 1,500 households using CATI technology. The information collected was about the dwelling characteristics and the type and number of electrical appliances currently in use. Additional questions referred to behavioural patterns, energy efficiency, renewable energy generation and the use of motor vehicles.

2. A technical survey among 60 households which were chosen according to dwelling type (apartments, maisonettes, terraced houses, estate villas). After going through a tendering procedure AIS Ltd. was selected to conduct the survey which entailed the installation of electrical energy consumption meters to various appliances within the selected households.

The survey was financed through a grant agreement with Eurostat.

# The CATI Survey (1)

The Environment and Resources Unit of the NSO prepared the survey questionnaire whilst the Survey and Methodology Unit was responsible for conducting the telephone interviews.

Respondents were asked to provide information about:

1.) The number of appliances present in their main dwelling. The appliances covered included:

- Cookers (Gas/Electric)
- Hobs (Gas/Electric)
- Microwave Ovens
- Air-conditioning Units
- Central Heating Units
- Heaters (Gas/Electric)
- Electrical Water Heaters
- Television Sets
- Fridges
- Freezers
- Dishwashers
- Computers/Laptops
- Washing Machines
- Tumble Dryers

The information requested for electrical water heaters also included their size and usage pattern.

# The CATI Survey (2)

2.) Which of the following appliances are energy efficient:

- Cooker
- Cooker Hob
- Fridge
- Freezer
- Lighting
- Washing Machine
- Air Conditioner
- Dishwasher
- Microwave

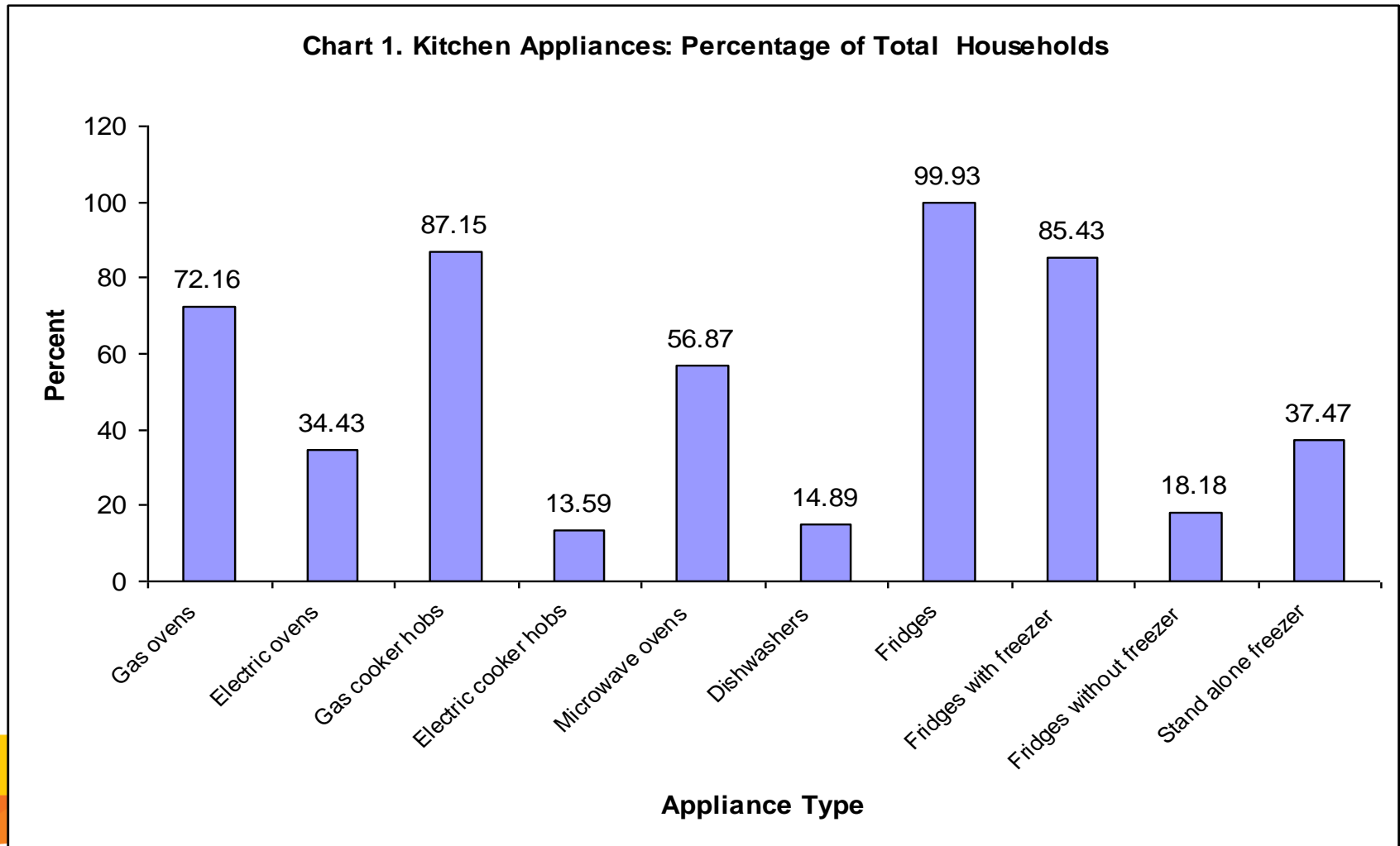
3.) Which of the following renewable energy technologies are present in their main dwelling:

- Solar Water Heaters
- Photovoltaic Panels
- Micro Turbines

4.) The use of motor vehicles and the associated fuel bill per week.

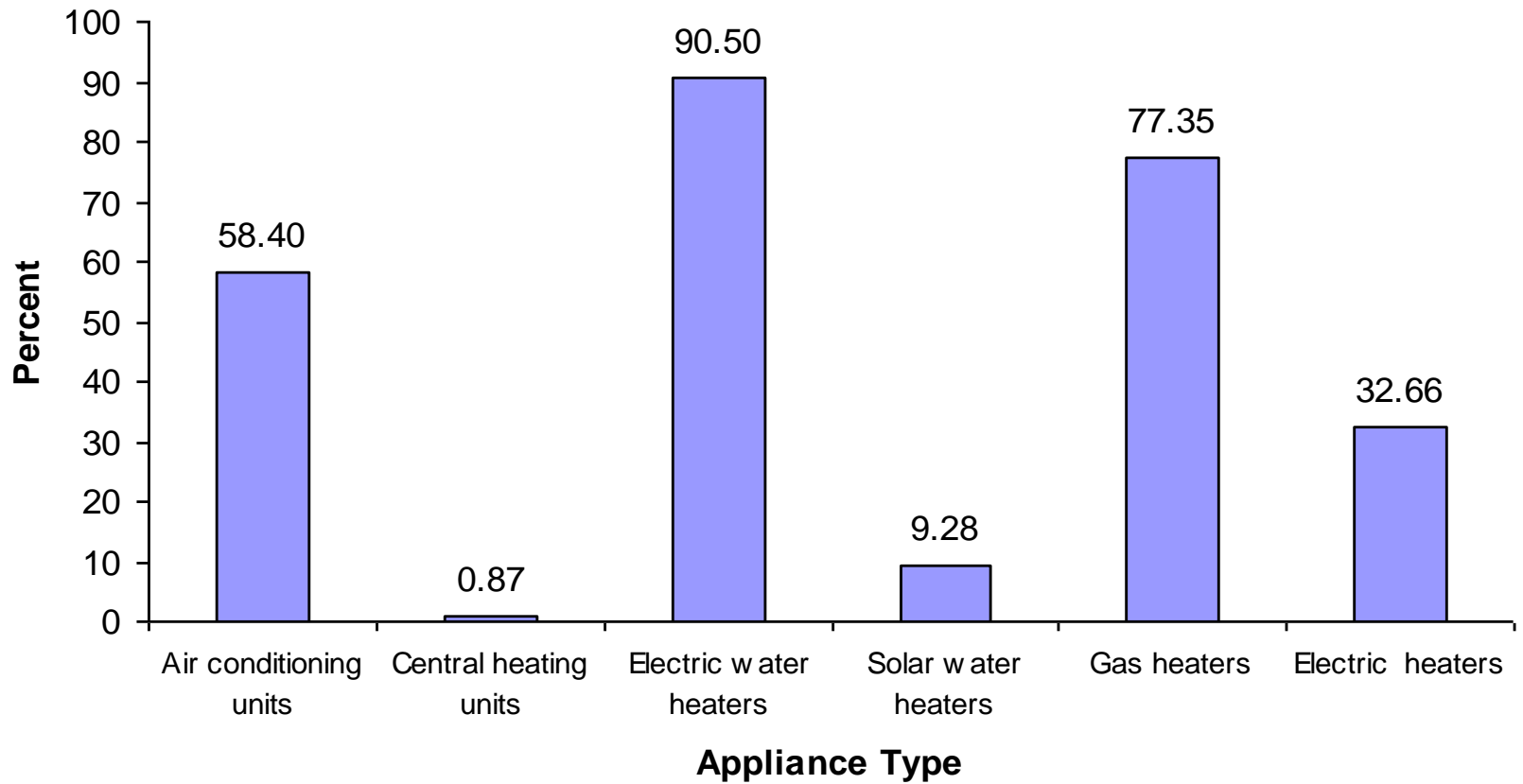


# CATI Survey Results: Kitchen Appliances



# Heating/Cooling Appliances

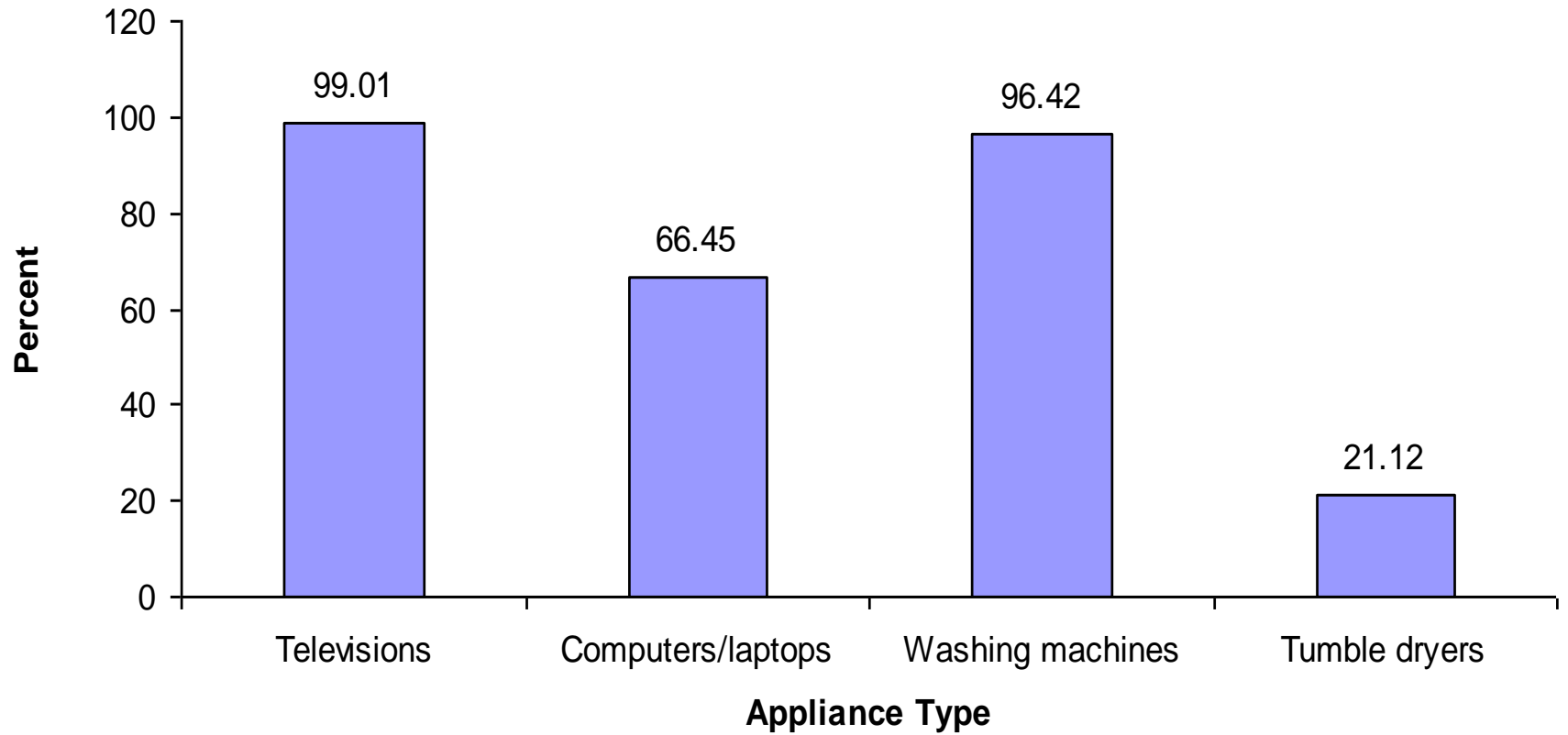
Chart 2. Heating/Cooling Appliances : Percentage of Total Households





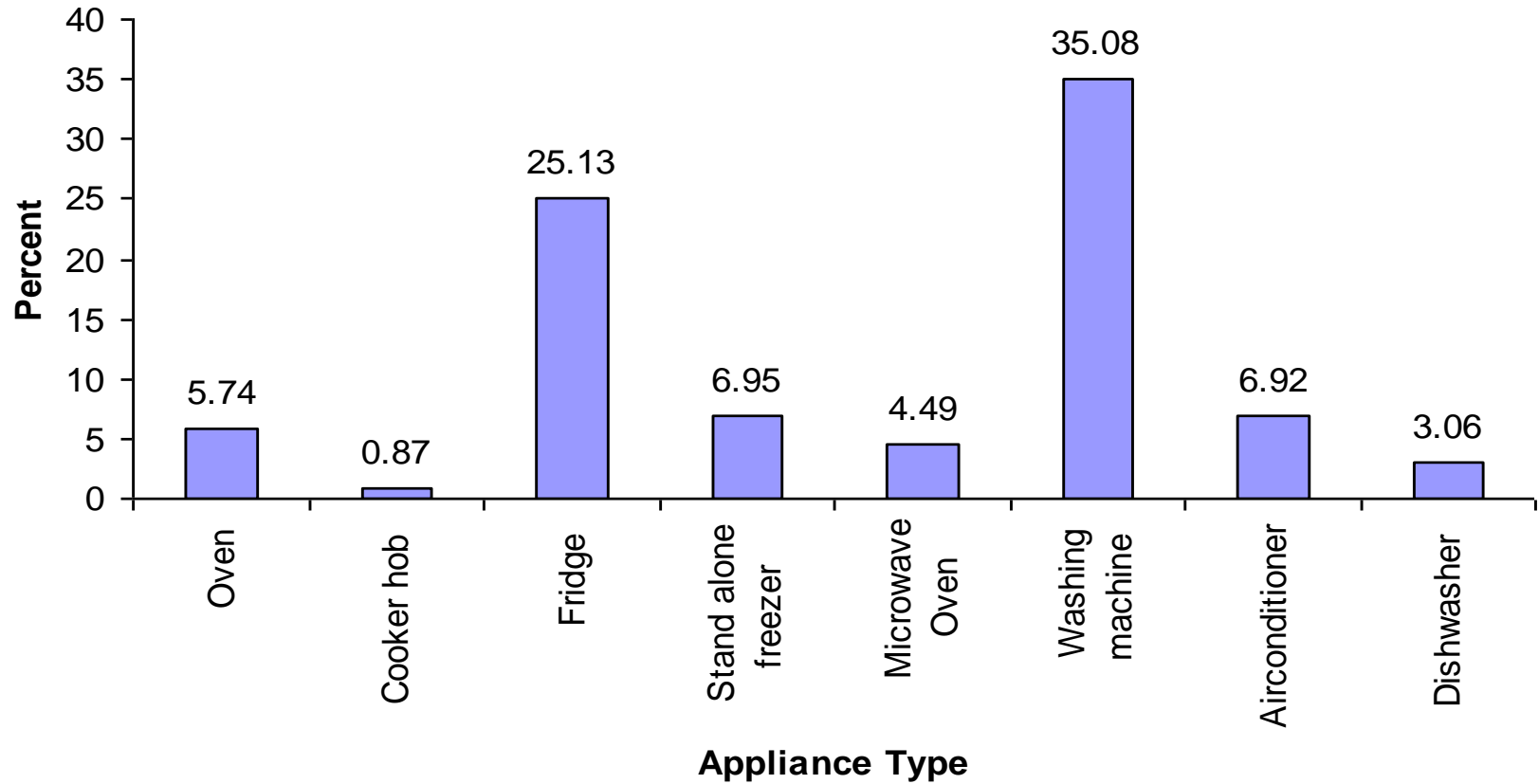
# Other Appliances

Chart 3. Other Appliances: Percentage of total households



# Energy Efficient Appliances

Chart 4. Energy Efficient Appliances: Percentage of Total Households



# Renewable Energy Generation in Households

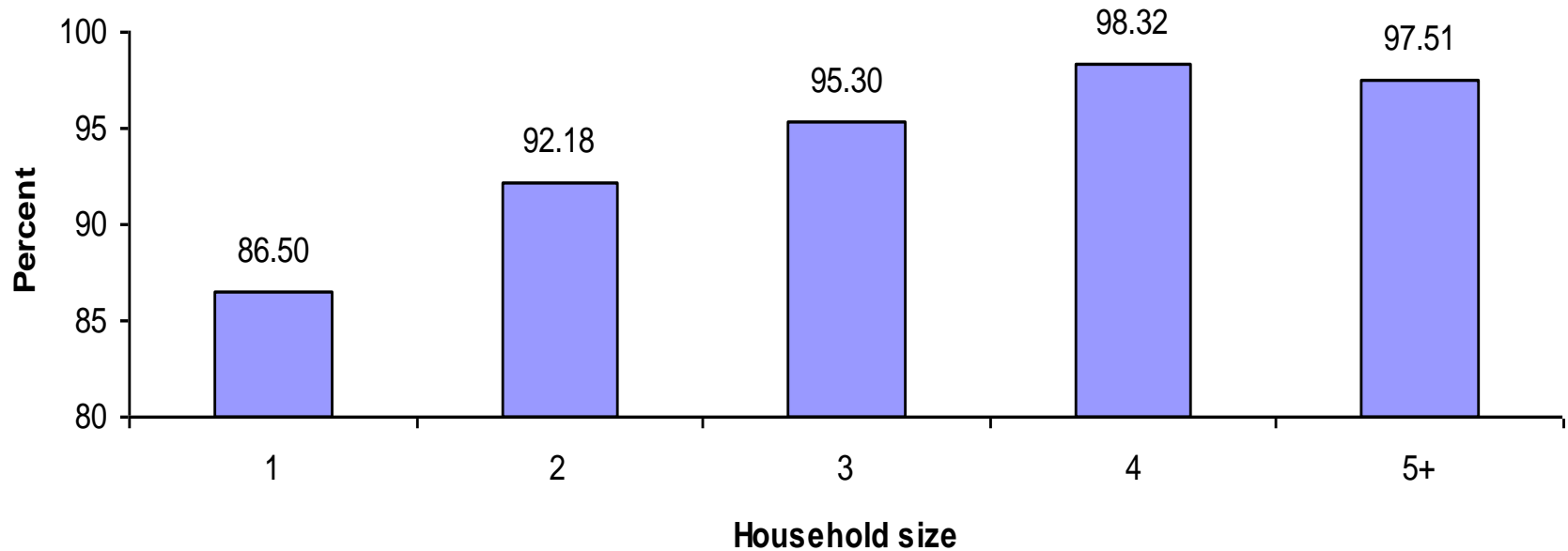


## Availability of renewable energy in households (%)

Micro turbines	0.1
Solar panels	1.3
Solar water heaters	9.3

# Use of Energy Saving Lamps in Households

Chart 5. Use of energy saving lamps by household size (%)



# The Technical Survey (1)

The technical survey was carried out among 60 households, in the Island of Malta, whose dwellings were categorised as apartments, maisonettes, terraced houses and estate villas.

Staff from AIS Ltd. visited the selected households and installed energy consumption meters to as many appliances as possible. The monitored appliances included:

- Fridges and freezers
- Washing machines
- Dishwashers
- Electrical water heaters
- Electrical ovens/hobs
- Heaters
- Air conditioning units
- Microwave ovens
- Television sets
- Hi-fi equipment
- Computers
- Washing machines
- Tumble dryers
- Solar heaters
- Others

An energy consumption meter was also connected to the main incomer in order to calculate the energy consumption from lighting (Total energy consumption – energy consumption by appliances).

## The Technical Survey (2)

The survey duration for each household was 30 days, at the end of which a representative from AIS Ltd. visited the household and took note of the final readings displayed on each meter.

Data for the energy consumption from the main incomer and permanently-connected appliances was recorded on an hourly basis.

The survey was carried out from October 2010 to April 2011. Due to the seasonal factor the energy consumption of air conditioning units is under represented.



# Measuring Equipment and Installation Devices



Measuring equipment



Examples of the equipment installation for the measurement of the electricity flow

# Technical Survey Results: Average Daily Energy Consumption

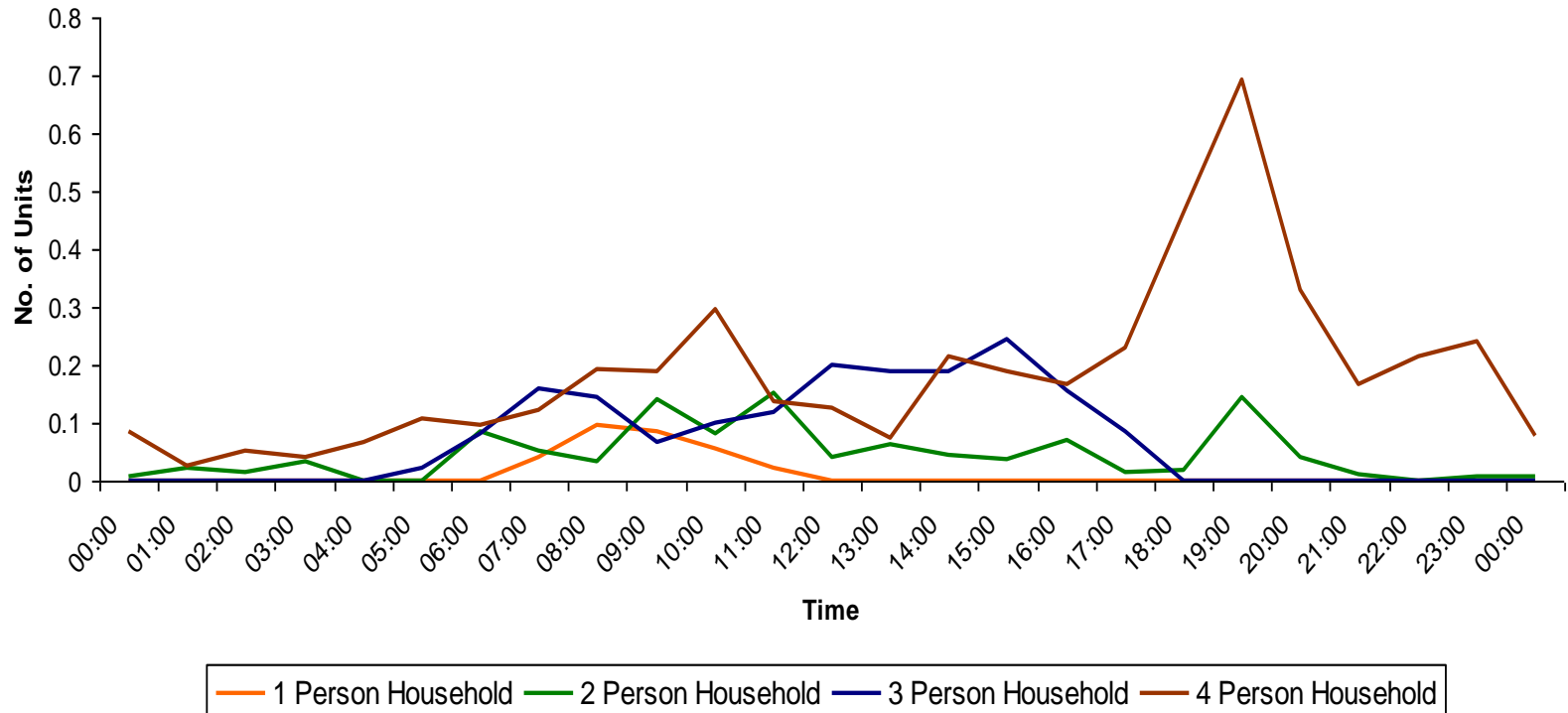
Table 1. Average Daily consumption in Units

	Apartments	Maisonettes	Terraced Houses	Villas
<b>Main Incomer</b>	<b>9.86</b>	<b>10.76</b>	<b>11.02</b>	<b>12.72</b>
Refrigeration	1.94	2.47	2.51	2.46
Water Heating	2.72	2.52	2.87	2.53
TV, HiFi and Computers	1.47	1.60	1.45	1.10
Lighting and Other	3.21	3.15	3.69	4.27
Minor Appliances	0.53	1.03	0.51	2.36

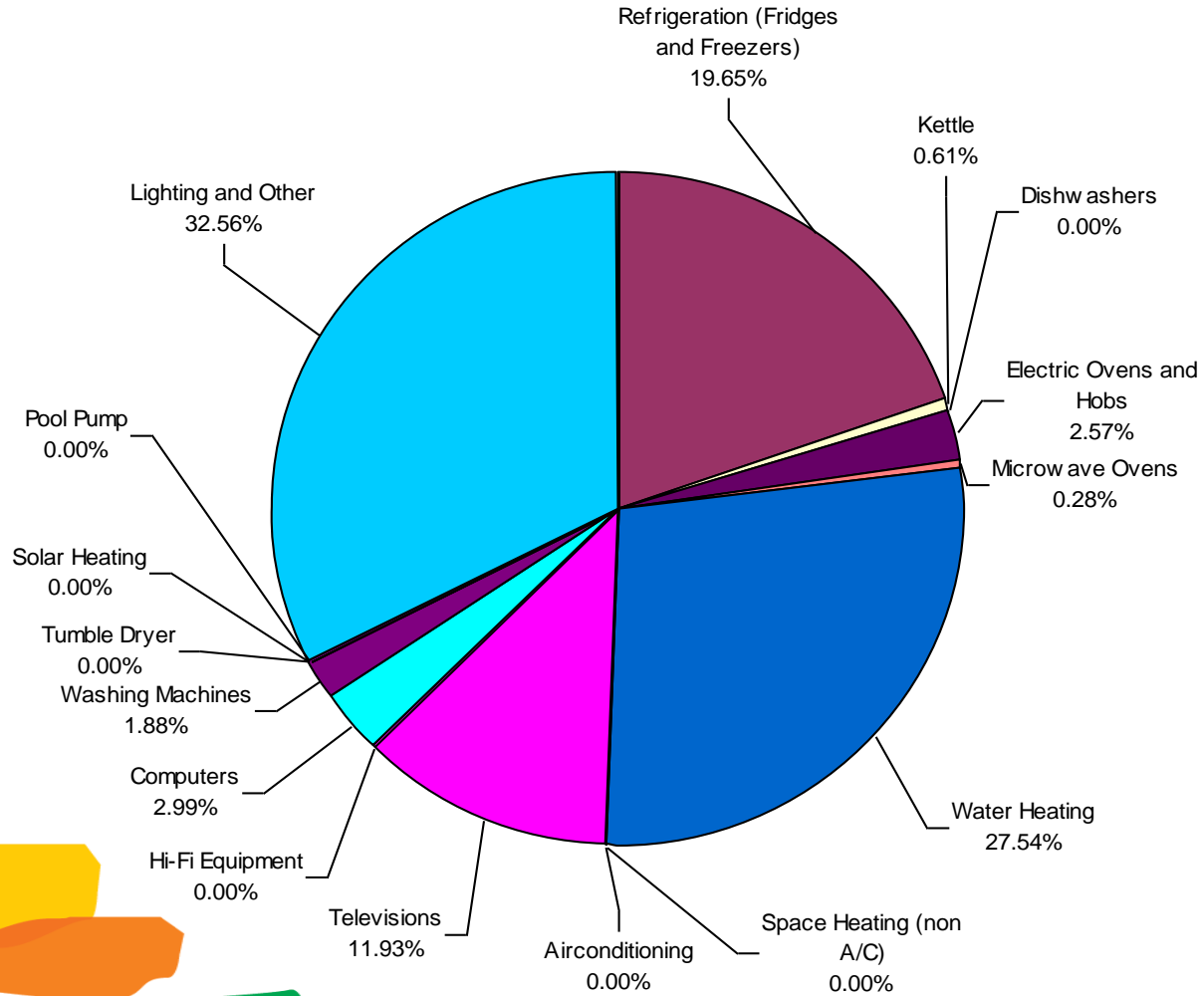


# Usage of Electrical Water Heaters

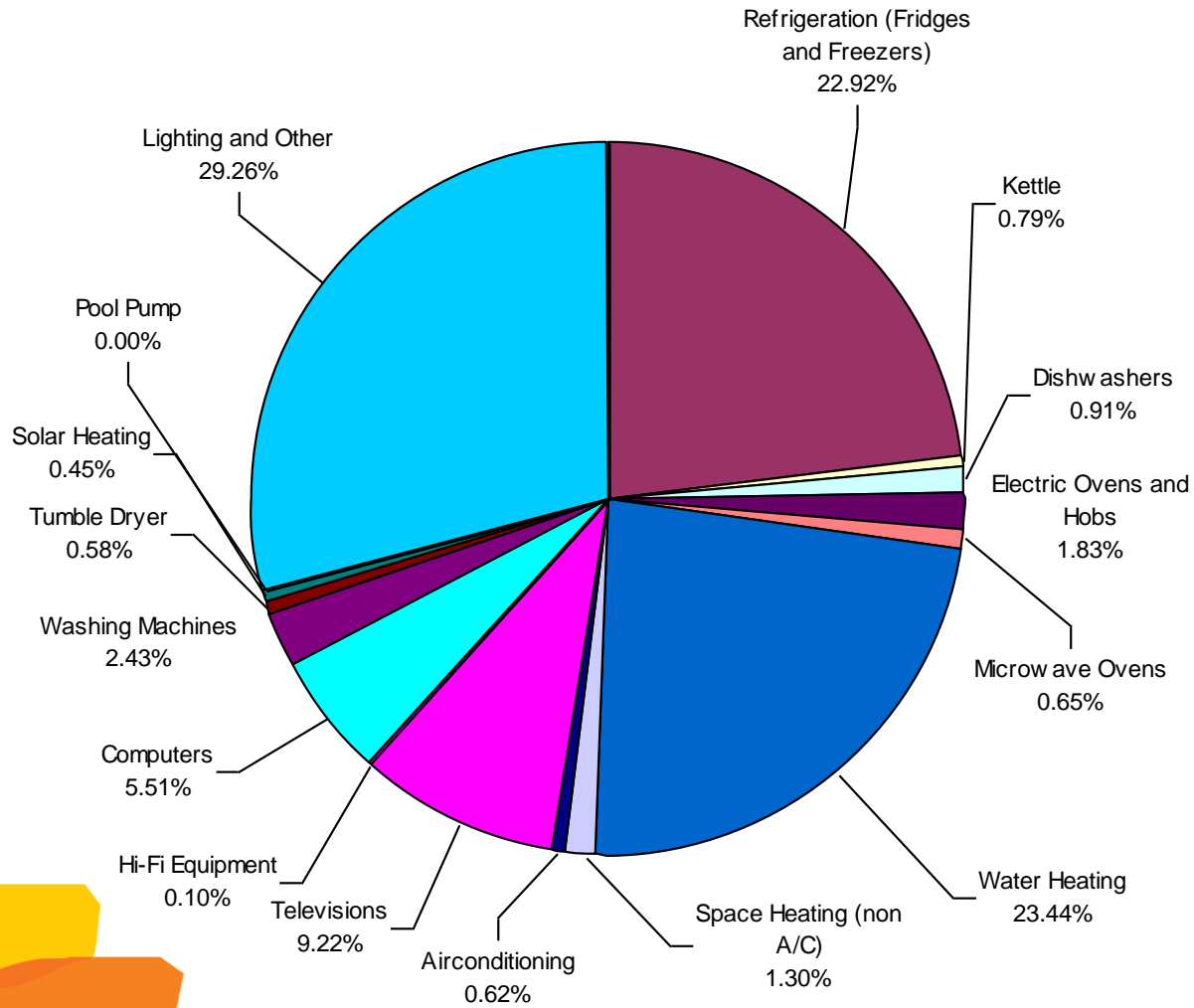
Chart 6. Water Heater Electrical Consumption Trend by Household Size



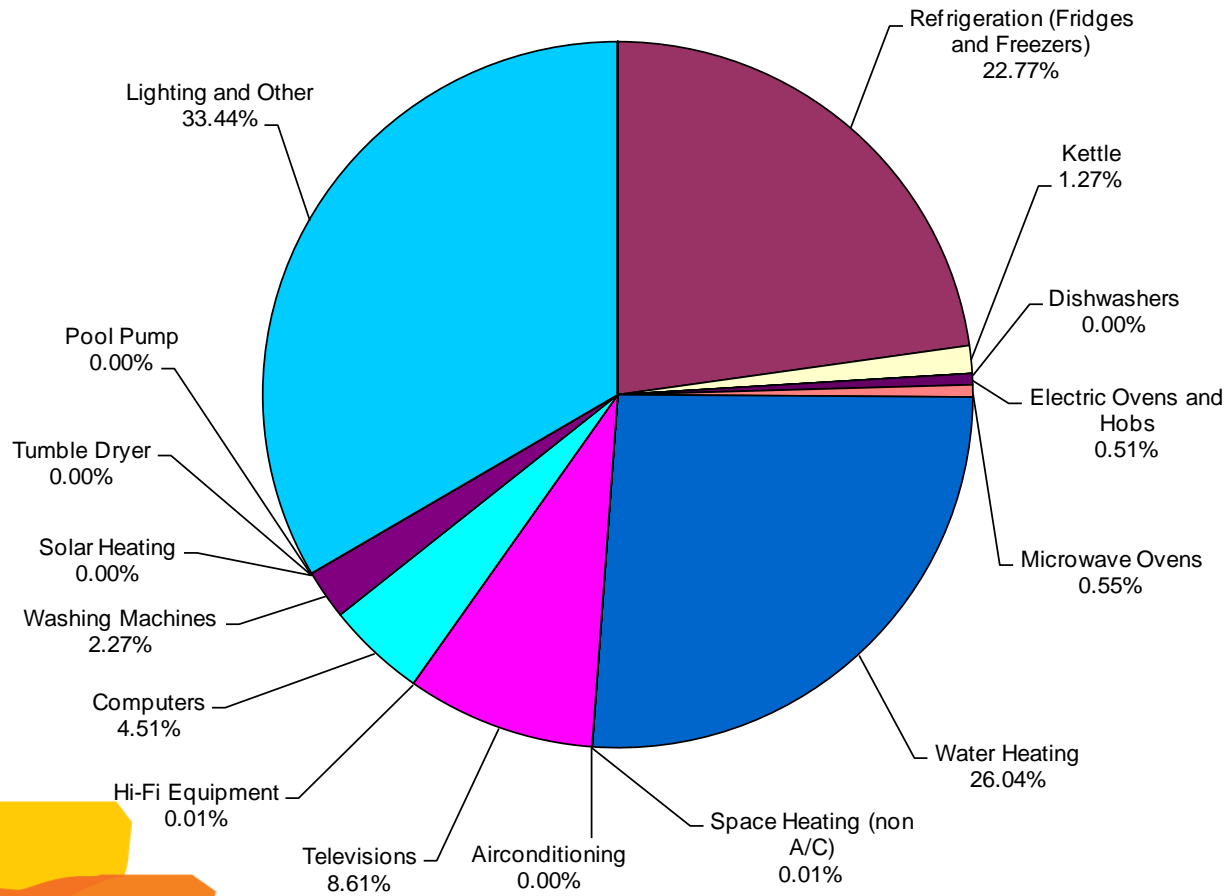
# Apartments



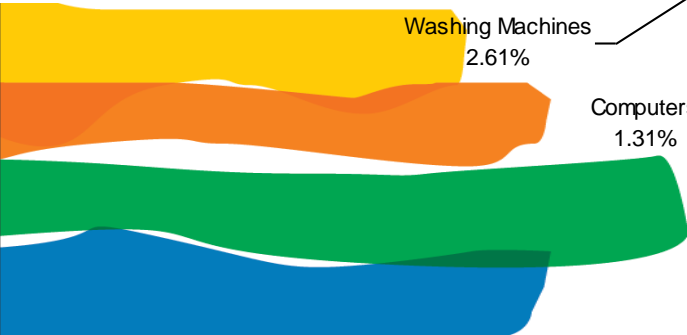
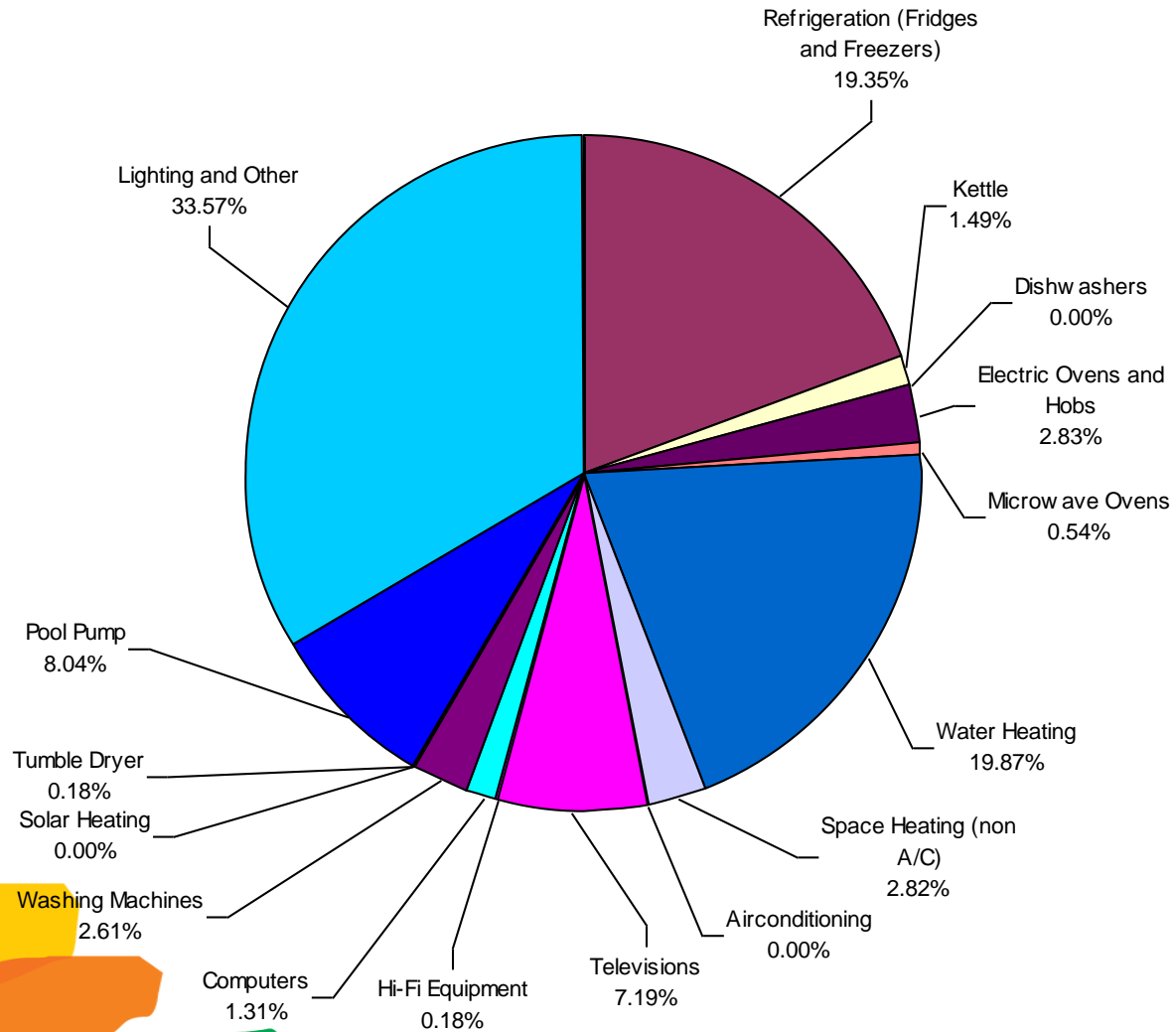
# Maisonettes



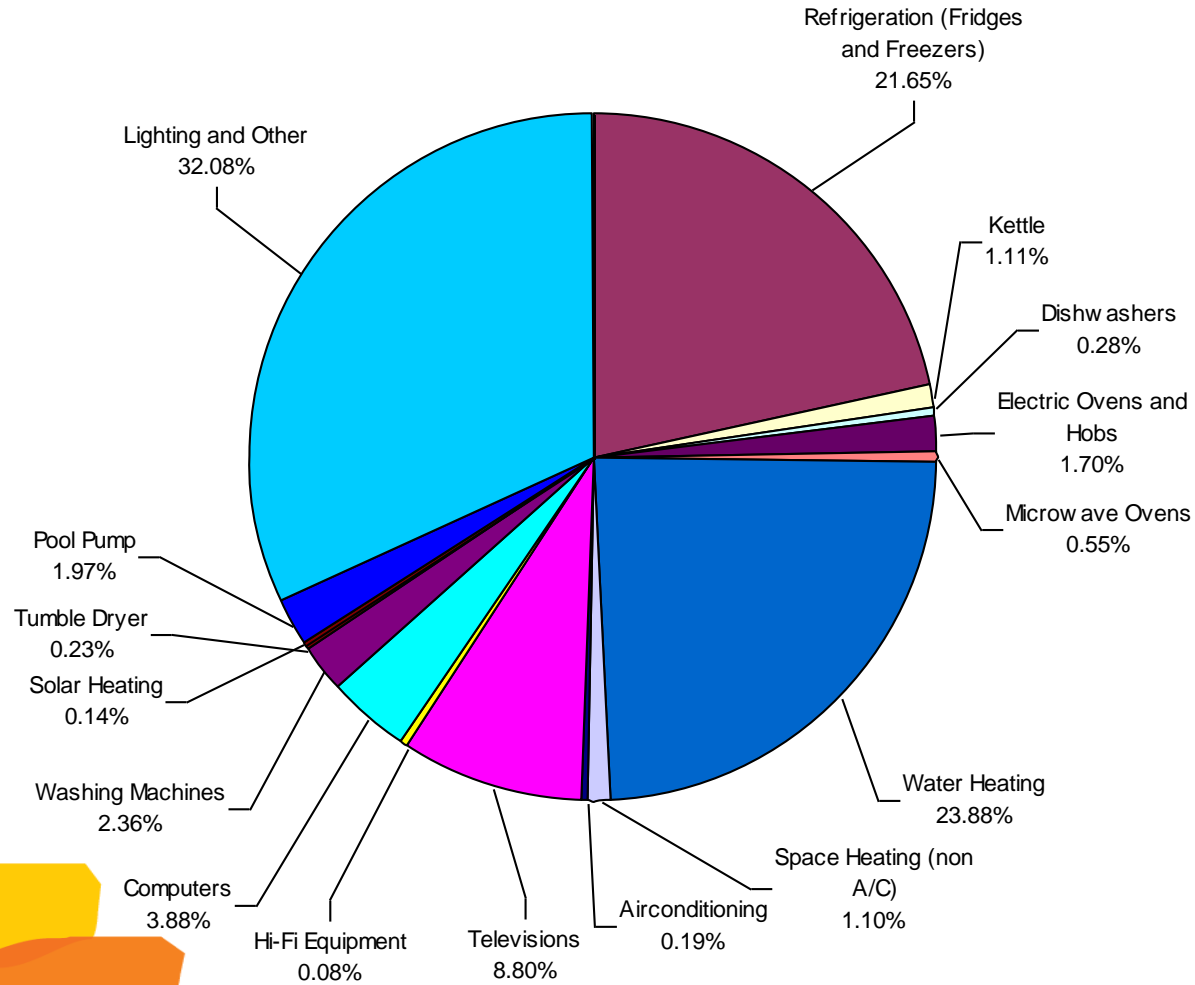
# Terraced Houses



# Estate Villas



# Overall Maltese Households



Thank you





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