Portuguese RCHEPs

All but two RCHEP are multi storey building, with 1, 2, 3 or 6 floors. The type of construction is heavy and only one RCHEP does not have any garden or trees surrounded. The average net area per building, is 2 405 m2, ranging from 570 m2 to 5 170 m2. The buildings were built between 1970 and 2008. Only two buildings are not insulated, but do have double wall with air cavity. Only two buildings have not been renovated recently, the renovations were related to increasing the installations, installing solar thermal and changing the windows. The vast majority of windows are aluminium with thermal cut and PVC windows. The windows are horizontal sliding, with the exception of two houses where they are casement and hopper type. Three houses have single glazed windows, and all RCHEPs have all their windows with outdoor blinders. The doors are of wood and aluminium, and are all in good condition. Considering the elevators, all, but one, have one or two elevators of hydraulic or geared type.

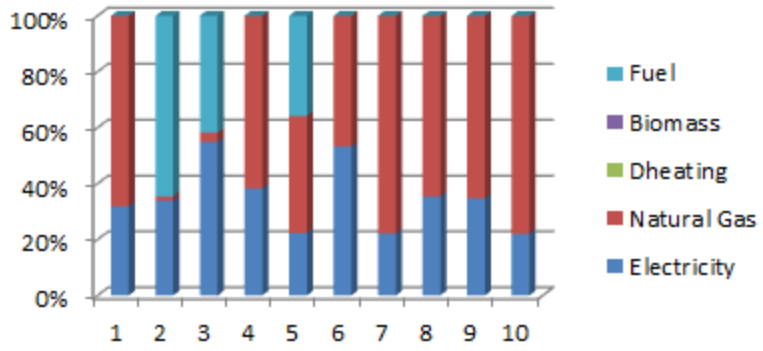

Figure 1 – Energy source´s distribution in each Portuguese RCHEP

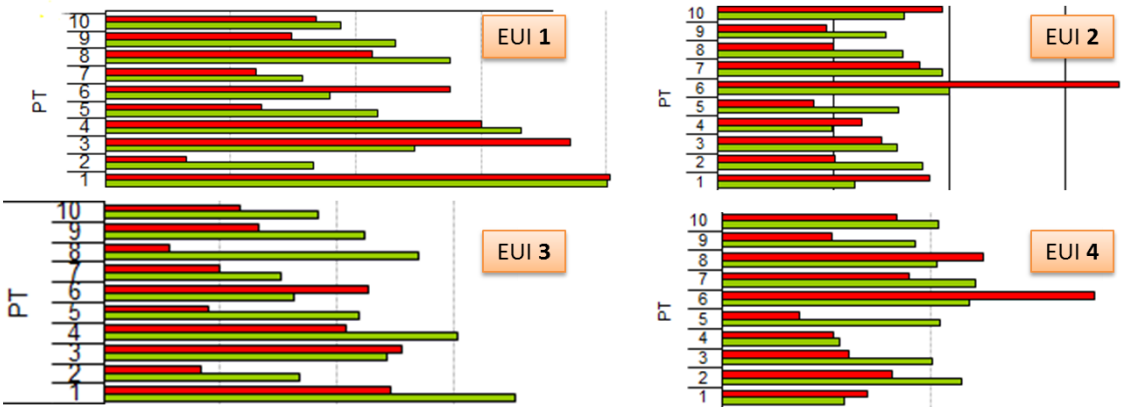

Figure 2 – Benchmark indicators results for the 10 Portuguese RCHEPs

- EUI1 (kWh/m^2/year) – informs on total consumption per square meter of the building;
- EUI2 (kWh/residents/year) – informs on total consumption per resident;
- EUI3 ($kWh_{heating}$/m^2/year) – informs on heating consumption per square meter;
- EUI4 ($kWh_{heating}$/residents/year) – informs on heating consumption per resident.

Throughout all ten audits some problems have been revealed by RCHEP´s managers regarding energy efficiency. These are summarized in the table below:

	Residential Care Home for Elderly People									
Problems Identified	001	002	003	004	005	006	007	008	009	010
Energy consumption just yearly recorded, or not recorded at all.	x	x	x				x	x		
No evaluation of the (small) data collected.	x	x			x		x	x		x
No advice, what so ever, from an energy consultant.							x	x		x
No exchanged experiences of energy issues with other companies / institutions		x			x		x	x		

Besides these problems they have identified specific week points, within their RCHEP, where actions should be taken right away in order to improve efficiency. These week points are their priority needs and go from building renovation, appliances and end use technologies, equipment and furniture, to energy management.

	Residential Care Home for Elderly People									
Needs	001	002	003	004	005	006	007	008	009	010
Walls insulation	x									
Roof					x					
Bathrooms										x
Windows	x				x					
Piping	x		x							
Heating System	x									x
Cooling system	x									
Ventilation system	x									
Hot water system	x	x			x		x	x	x	x
Lighting	x		x		x				x	x
kitchen										
Washing	x									
Beds	x									x
Garden									x	
Energy management system		x			x					
Management practices		x								