Learning Unit 4 – HOUSING

Exercise: CO_2 emissions of the household devices (average values) – weekly calculation

You have the following data (source https://ec.europa.eu/clima/sites/campaign/pdf/table_appliances_en.pdf)

Appliance	Power (watts)	CO_2 emissions per hour (gr)[1]
Light bulb 60 W	60	39
Energy-saving light bulb (equivalent to 60W normal bulb)	11	7
Halogen up lighter	300	195
TV set	80	52
	300	195
Stereo/Hi Fi	55	36
	500	325
Laptop&computer	80	52
	360	234
Vacuum cleaner	700	455
	2000	1300
Hair dryer	800	520
	2000	1300
Water kettle	300	195
	3200	2080
Micro wave	700	455
	2100	1365
Washing machine	500	325
	3000	1950
Tumble dryer	500	325
	5700	3705
Dish washer	700	455
	3000	1950
Electric radiator/heater	500	325
	3000	1950
Air conditioner	800	520
	5000	3250
Small electric hot water boiler	1500	975
	6000	3900
Fridge	200	130
	700	455
Freezer	300	194
	700	455

Think about how many of these devices you have in your household and then estimate their nominal power (W) using the minimal/maximal ranges provided above. **Now, calculate the total emissions of your electrical/electronic devices, during a week. Add rows, if you have more than one device from the same category.**

How can you reduce the overall weekly emissions by 20%???

[1]at 650 gr. of CO_2 emissions per 1 kWh

Type of consumer	Total power/ W	Average operating hours/day	Average operating hours/week	CO_2 emissions/ hour (gr)[2]	Weekly emissions (columns4X5)	Ways to reduce the emissions (suggestions)
1	**2**	**3**	**4**	**5**	**6**	**7**
Light bulb 60 W						
Energy-saving light bulb (equivalent to 60W normal bulb)						
Halogen up lighter						
TV set						
Stereo/Hi Fi						
Laptop&computer						
Vacuum cleaner						
Hair dryer						
Water kettle						
Micro wave						
Washing machine						
Tumble dryer						
Dish washer						
Electric radiator/heater						
Air conditioner						
Small electric hot water boiler						
Fridge						
Freezer						
Sum of the weekly emissions						

[2] estimate min/max levels, considering the manufacturing year and the approximate nominal power