



Energy Savings report of O General AC Unit at Mr. Viewk Kapur Residence Dubai, and UAE

I) Pre and Post Data of MAXR 100 installation :

SR.NO	Days		Total RH	Temperature's in Deg C		kwh Meter Reading		Total KWH	Average KWH/Hour
	From	To		Amb	Inside	Start	End		
1	07-04-2016	12-04-2016	23	33.16	25	344.587	421.746	77.159	3.35473913
2	12-04-2016	12-06-2016	540	38.59	25	421.746	2044.66	1622.914	3.005396296

II) Improvement Calculations :

Parameters	With Out MAXR 100	With MaxR 100	Difference
Total Running Hours	23	540	
Total Energy Consumption in Kwh	77.159	1622.914	
Average Energy Consumption/ Hour in kWh	3.35	3.01	0.34
Average Ambient Temperatures in Deg C (Outside)	33.16	38.59	5.43

Energy Savings in %

10.15 %

III) Actual Energy Savings due to the change in the outside ambient temperatures:

For calculating the actual savings we need to consider the change in ambient temperatures of pre data period with the post data period, which is 5.43 Deg C. Any increase in the ambient temperature will affect the energy consumption of the AC unit. Hence for calculating the actual savings we need to consider COP- Coefficient of Performance principle which is most commonly used method.

COP- is the ratio of heat removed from a system to the energy required to remove the heat. The theoretical maximum is equal to the coldest temperatures of the refrigerant divided by the difference between its coldest and hottest temperatures are expressed in Kelvins. Even the perfect system decreases efficiency with increased outside temperatures, dropping about 2% per Deg C.

Considering 5.43 Deg C increase in the ambient Temperatures for the post MAXR 100 installation period the energy consumption has increased by 10.86% during the period.

Considering the above we have calculated the actual energy consumption during the post MAXR100 installation period.

➤ Total Energy consumption in KWH	:	1622.914 Kwh
➤ Increase in Energy consumption due to rise in ambient temperature in %	:	10.86%
➤ Actual Energy Consumption in KWH	:	$(1622.914 \times 10.86)/100 = 176.248$ KWH
		$1622.914 - 176.248 = 1446.666$ kWh
➤ Actual average Energy Consumption / Hour on kWh	:	$1446.666/540 = 2.679$ kWh/Hour
➤ Actual % of Energy Savings with MAXR100 in %	:	$(3.35 - 2.679) = 0.671$ Kwh/ Hour
		$(0.671/3.35) \times 100 = 20.029\%$