ENERGY SAVING REPORT –CARRIER SPLIT AC UNIT AT SCHLUMBERGER, NIZWA

(Prepared on 07th November 2020)

PROJECT & CLIENT DETAILS

❖ **Client Details** : **SCHLUMBERGER, NIZWA BASE, OMAN**

❖ Project Reference : **SCHLUMBERGER, NIZWA BASE, OMAN**

❖ Equipment Details : 3.0 TR, Carrier Make Split AC Unit

Table -1

Sr. No	TR	Model	Serial No	Location
1	3.0	Carrier Split AC Unit 38FN0362120B	NA	Conference/ Meeting Room

PROJECT LOCATION

SCHLUMBERGER, NIZWA BASE

Executive Summary

MAXR100 PERFORMANCE TEST

A test of the impact of MAXR100 treatment on Split AC unit had been conducted by M/s. Ganatra International LLC, Muscat at Schlumberger Nizwa base, Oman.

❖ Number of unit's data logged – 01 (*Ref: Table-1*)

❖ Set conditions in the facility:
   ▪ Set point for the Split AC unit has been maintained at 21°C
   ▪ The set point is maintained constant throughout the pre-data logging and the

last post data logging. (*Ref for dates – Table-2*)

- Temperature Hygrometer has been placed close to the outdoor unit to correlate the effect of ambient temperature on Energy consumption.

❖ The Measurement & Verification for the savings project is as per the test protocol agreed between Ganatra International LLC & Schlumberger.

- The data logging has been carried out for more than 100 hours during the pre-installation benchmarking and the post-installation reporting.
- The power parameters of the split unit have been recorded for every 15 mins.
- The data attained during pre-measurement is solely based on instantaneous values and Energy (KWh).
- The data obtained during the post-measurement are RMS values which differ with the pre-measurement due to change in data logger (advanced).
- The benchmark detailed in this report has been revised to standardize the pre-measurement and post-measurement data.

❖ This document contains the Savings report of the Split AC Unit of Capacity 3.0TR

❖ **Pre & Post Data Logging period:**

Sr. No	TR	Model	Pre-Data period	Post Data Period
1	3.0	Carrier Split AC Unit 38FN0362120B	22/10/2019 to 18/11/2019	11/10/2020 to 18/10/2020

<center>Table – 2</center>

Summary Conclusion:

Unit Capacity	Unit Type	Savings in %
3.0 TR	**Split AC Unit**	**22%**

A). Energy Saving Report of Carrier Make 3.0 TR Split AC unit Model 38FN0362120B, Serial. No. NA, at Schlumberger for Trial with MAXR100

(Total 03 Pages)

I		**Client Details**	SCHLUMBERGER – NIZWA BASE, OMAN
	a	Project Name & Address	SCHLUMBERGER – NIZWA BASE, OMAN
II		**Equipment Details**	
	a	Capacity& Location	3.0 TR, Conference/Meeting Room
	b	Make &Model	Carrier – 38FN0362120B
	c	Serial Number	NA
	d	Refrigerant	R- 22
III		**MaxR100 - Test Period**	
	a	PRE-Measurement Period	22nd October 2019 to 18th November 2019
	b	POST-Measurement Period	11th November 2020 to 18st November 2020

B). Summary of PRE & POST Data – Carrier Make 3.0 TR Split AC unit Model 38FN0362120B, Serial. No. NA, at Schlumberger for Trial with MAXR100

COMPARATIVE STUDY	PRE-DATA	POST DATA
Total Operated Hours	141.75	135.75
Total Energy Consumed in Kwh	387.3	289.0
Average energy consumption/Hour in Kwh	**2.73**	**2.13**
Average Load Demand in KW	**2.82**	**2.14**
Average Line to Neutral Voltage in VLN	234.1	240.2
Average Current in Amps	12.3	9.3
Average Power Factor in PF	0.906	0.961
Average Ambient Temperature	**32.6**	**32.9**
Average Relative Humidity in %	17.8	17.1

Note: Kindly refer to the excel sheets provided for the data and summary

Microsoft Excel
97-2003 Worksheet

C). Conclusion - Energy Savings with MaxR100:

- ➢ Average Energy Consumption/ Hour - PRE   :   2.73 KWH
- ➢ Average Energy Consumption/ Hour – POST   :   2.13 KWH
- ➢ Difference   :   2.73 – 2.13 = 0.6 KWH/ Hour

- ➢ **Improvement with MAXR100 in %**   :   **(0.6/2.73) x 100 = 22%**

Observations:

- The operating time of the unit during the post data logging has drastically reduced due to frequent cut-offs. Such kind of operation from a split unit can be observed when the unit reaches the set point quicker.
- Due to frequent cut-offs from the split unit, the data is considered for six whole days and therefore the pre-data has been revised for six whole days to make an apple to apple comparison on performance.
- The pre-data logging and the post-data logging have been conducted in the same month (October) in two different years (2019, 2020) with same settings (21°C) and similar ambient temperatures (32.6°C & 32.9°C), the result in observed in total energy consumed in six days broken down to KWh/hr.