R22 Refrigerant

The use of all substances with the potential to damage the ozone layer is being phased out in the UK. One of these substances is the refrigerant R22 which was the primary refrigerant used in air conditioning systems for many years.

The phase out of R22 has the following time line:

- **From January 1st 2001 R22 was banned from being used in the manufacture of new air conditioning systems**
- **From January 1st 2010 only recycled R22 can be used to service incumbent R22 air conditioning systems**
- **As it currently stands, from January 1st 2015 R22 in all forms will be entirely phased out**

What this means for R22 system owners?

In order to avoid undue costs, it is important that system owners have a plan in place to remove R22 from their buildings and be aware of the options when a system requires servicing and repair

Dependence on recycled R22 means that prices are likely to increase significantly, driving up servicing and maintenance costs for older systems that, because of their age, are more likely to require attention. Furthermore, as active R22 systems decrease in number, so suppliers will reduce stock holding of parts. This will make them more difficult to obtain raising costs and making it more difficult to service systems.

Reasons to replace.

A key part of the air conditioning inspection is to pay special attention to older systems and systems that still utilise R22 refrigerant. It was found that you have several systems left still operating with R22.

Although it is not a legal requirement at this time to replace R22 systems, there are several compelling commercial reasons that make the consideration of installing new inverter systems in place of the older systems a viable option. The R22 Audit Report on the next pages shows the comparisons between your existing R22 systems and new replacement inverter systems. I have used the assumptions of .10p / kwh electrical costs and 8 hours per

day operation however, this is a comparison and the percentage savings remain the same if the parameters change. Please note that the "replacement cost" is an average and may change subject to the Manufacturer of equipment used and also your specific pipe runs and routes taken. The cost is to give you a guide only.

The report shows that your existing air conditioning systems are costing £17.72 per day to operate and is producing 73.2 kg / co2 per day. The replacement systems would cost only £8.20p per day and would produce 33.58 kg /co2 per day. This would be an average 55 **%** reduction. The following benefits should also be considered :

1. A system that is 10 years old or older will lose a minimum of 15% of the original cooling duty due to wear and tear and deterioration of the heat exchangers .

2. In addition to the 15% loss of duty, the running costs and carbon emissions will increase by the same amount.

3. Replacing the system would result in reduced running costs and Carbon emissions of around 55%

4. The new system will give you peace of mind with a renewed 3 year / 5 year warranty.

5. You may be able to claim ECA (enhanced capital allowance) against the cost of replacing the system. For further information please look at www.eca.gov.uk

MITSUBISHI ELECTRIC Indepth Audit Results

Customer **Contractor** Date
Site **Site**

System **5kw Split**
Age **11 years**

CO2 Audit

	OLD	NEW
Outdoor Unit Type	PAC	
Cooling System kW	5	5
O/D Power Input	0	1.3
Run Hours Per Day	8	
Run Days Per Year	245	
Application Type	DOL	
Electricity Cost Per kWh	£0.10	
Number of Indoor Units	1	
Number of Branch Controllers	0	
Cost Per Day	£1.83	£0.95
Kg/CO2	7.54	3.92
Kg/CO2 % saving		48%

AVERAGE REPAIR PRICE	TOTAL REPLACE PRICE
£2,508	£2,463

REPLACEMENT EQUIPMENT

Item	Quantity	Price
SUZ-KA50VA	1	£606
SLZ-KA50VA	1	£557

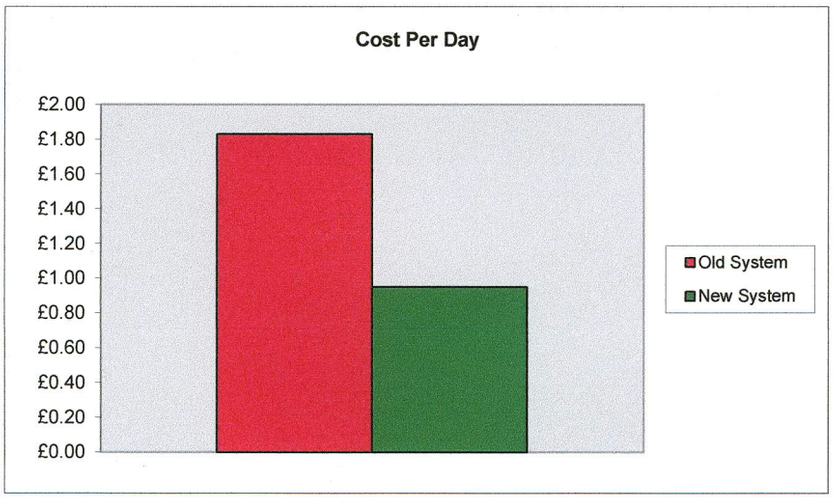
Total Replace Price **£2,463**

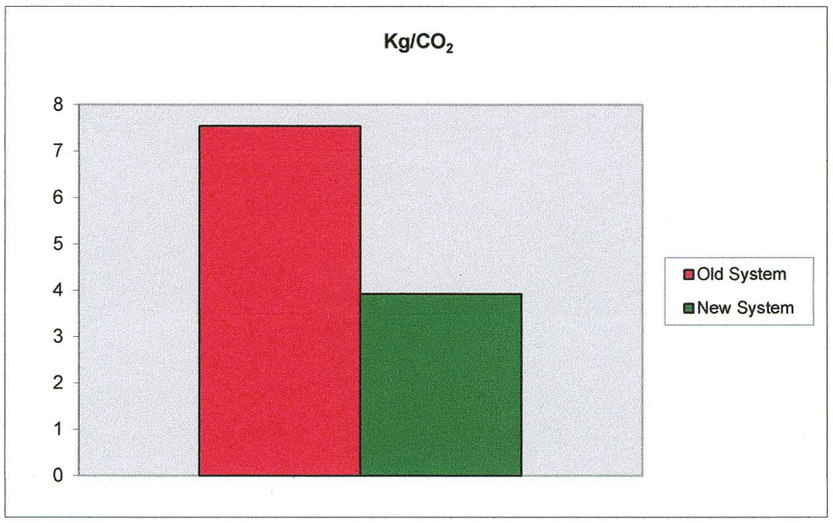
RETURN ON EXTRA INVESTMENT

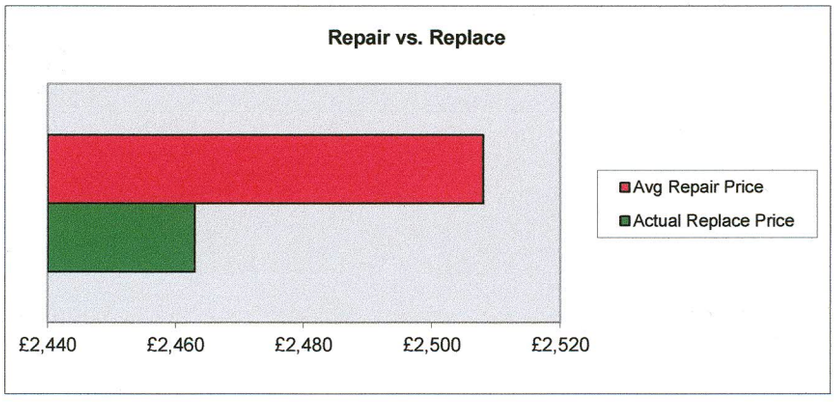
Annual run costs savings if replaced	**£215**
Additional cost of replacement equipment	**-£45**
R.O.E.I. Payback (years)	**0**

MITSUBISHI ELECTRIC

Indepth Comparison







MITSUBISHI ELECTRIC Indepth Audit Results

Customer	**Contractor**	Date	
Site	**Site**		
		System	**3.5kw split**
		Age	**11 years**

CO2 Audit

	OLD	NEW
Outdoor Unit Type	RAC	
Cooling System kW	3.5	3.5
O/D Power Input	0	0.692
Run Hours Per Day	8	
Run Days Per Year	245	
Application Type	DOL	
Electricity Cost Per kWh	£0.10	
Number of Indoor Units	1	
Number of Branch Controllers	0	
Cost Per Day	£1.30	£0.55
Kg/CO2	5.38	2.25
Kg/CO2 % saving		58%

AVERAGE REPAIR PRICE	TOTAL REPLACE PRICE
£1,627	£1,806

REPLACEMENT EQUIPMENT

Item	Quantity	Price
MUZ-GC35VA	1	£379
MSZ-GC35VA	1	£227

Total Replace Price **£1,806**

RETURN ON EXTRA INVESTMENT

Annual run costs savings if replaced	**£183**
Additional cost of replacement equipment	**£179**
R.O.E.I. Payback (years)	**0**

MITSUBISHI ELECTRIC

Indepth Comparison