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Re: Phasing out of HCFC’s and the Implications to your Ai

The phasing out of HCFC’s (R22 Refrigerant) will affect everyone to some degree. The following information has been put together to inform you of the implications the phase out will have and what some of the options are when considering what to do in your future planning.

Implications of Reduced Supply.

- The implication is that R22 refrigerant will become more expensive as its availability decreases. In the past 3 years we have seen an increase in excess of 300% in the price of R22 per kilo.
- The rate of increase will depend on the demand which could in turn be driven by how the market responds to the phase out. This response can either be by replacing old equipment with new equipment that has refrigerant which is a R22 replacement. If this occurs in sufficient numbers there should be decrease in demand and in turn a possible slow- down in the rate of the price increase.
- The other possibility is that there could be an increase in demand due to maintenance requirements. If this happens the price will continue increasing at a similar rate as that of the current rate.

Options/Risk Management.

- Units that are aged pose a greater risk in terms of failure and need to be looked at from an economic lifecycle perspective. The following is a guide for system types and Industry accepted Economic Life cycles based on hours of operation and starts per day.

Equipment	Economic Life.
10kw-100kw Air Conditioning Package Unit.	10 – 15 years.
10kw – 100kw Ai Conditioning Split Package unit.	10 – 15 years.
Split Cassette up to 10kw.	7 – 10 years.
Room type Air Conditioning unit.	7 – 10 years.
Central Plant	20 – 30 years.

- The amount of refrigerant required within each system varies according to its size. As a guide the small Room Type Air Conditioners could require half a kilo of refrigerant whereas a Central Plant could require a couple hundred kilos of refrigerant. Based on this information some of the options are but not necessarily limited to:
 - ❖ Take the risk and do nothing if the R22 component of the system is negligible in comparison to the unit replacement.
 - ❖ Take the risk if the systems failure will not have an adverse effect upon your operations/business and you are prepared to assess the situation based on its possible future costs and the availability of R22.
 - ❖ Implement a planned phase out/replacement of units that are close to or at the end of their Economic Lifecycle.

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- ❖ In terms of risk management, those systems that are of Central Plant design with refrigerant condenser/receivers which contain substantial quantities of refrigerant and have open style compressors which are prone to leaking shaft seals can have refrigerant detectors fitted in the plant rooms. These detectors can be installed and wired into the control system so that when they detect the presence of refrigerant in the atmosphere, they will send a signal to the control system to shut down thus alerting the relevant person or person to a potential problem. The base cost of such a device is ±\$1,375.00 + GST. Installation will need to be costed on a site by site basis.
- ❖ There is another alternative/option which involves the reclaiming of the R22 refrigerant and replacing it with a refrigerant that has similar properties but does not have the same damaging effect on the atmosphere. The negative side to this option is that although there are refrigerants with similar properties there is currently none on the market that can be exchanged with R22 without some modifications to the system. These modifications will also vary depending on the replacement refrigerant chosen and may also require consultation with the unit/system manufacturer. In addition to this there is also a possible reduction in unit capacity.

Benefits of Replacing Systems/ Units.

- New air conditioning systems do not have HCFCs thus making a positive contribution to climate change.
- New air conditioning systems are more energy efficient and cost effective compared to their predecessors thus making the ROI better and reducing your carbon footprint.
- Many of the new air conditioning units have electronic controls which are able to be interrogated when there is a problem thus minimising downtime and reducing repair costs.

Information behind the Phase Out.

An amendment to the Montreal Protocol in 1992 was established to schedule the phase out of hydro chlorofluorocarbons(HCFCs). These artificial refrigerants have long been identified for their ozone depletion potential and global warming potential. R22 refrigerant which is widely used in commercial air conditioning systems falls into this category .

The current phase out program for HCFC's is as follows:

- Freeze on production from the beginning of 1996.
- 35% reduction by 2004.
- 75% reduction by 2010.
- 90% reduction by 2015.
- Total phase out by 2020.

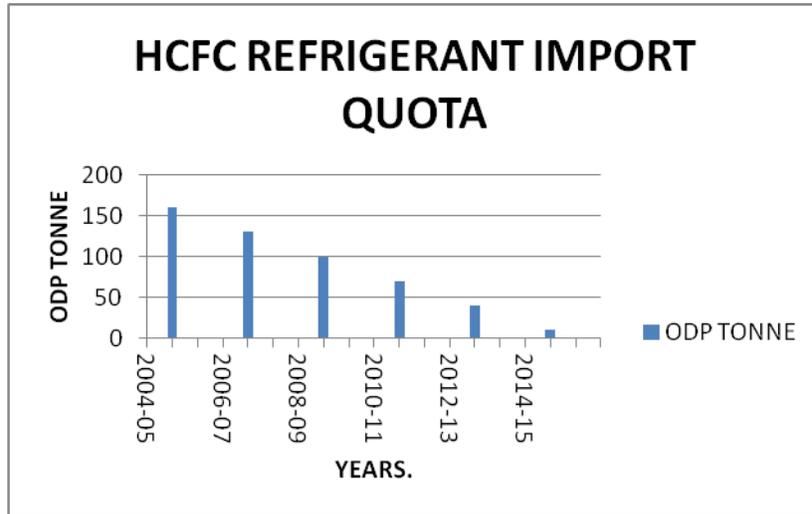
It has been forecast that Australia will phase out consumption by 2016, four years ahead of the schedule required by the Protocol. The figures above represent worldwide phase out.

In conjunction with the phase out, Australia's import quota of tonnes of available refrigerant will decrease in line with the reduction year on year.

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Should you require an assessment done that will be specific to your system, please feel free to contact the office.

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