initiative 8

Initiative 8: Maintenance

Promote understanding of why maintenance is extremely important to sustainability.
Set standards for a new maintenance programme.

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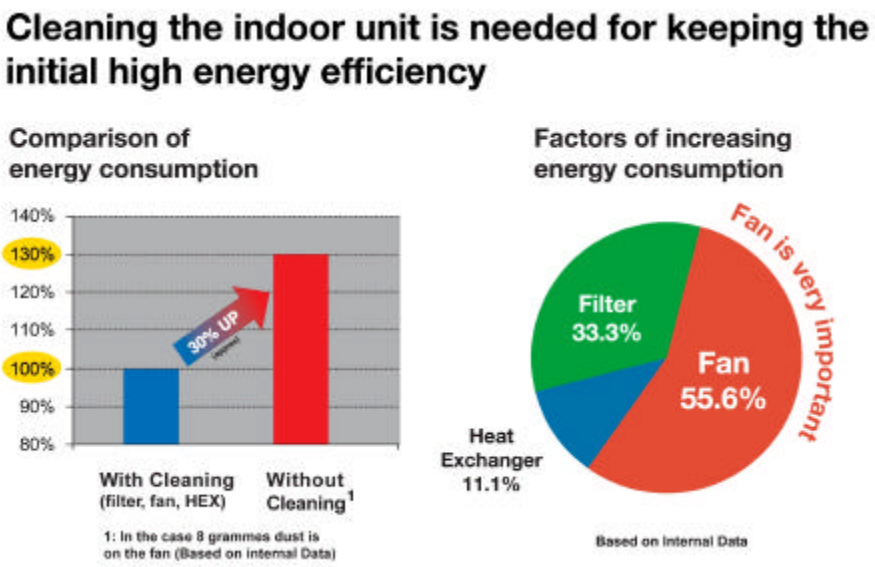
Regular maintenance is an essential part of operating an air conditioning system. Poor maintenance results in filters or heat exchangers which are clogged or dirty, which causes the system to over-work and consume ever-higher amounts of energy.
For example, an air conditioning system which is operated for four years without even basic servicing, such as filter cleaning, could be using as much as 50% more energy than a system which has been looked after properly. The diagram below shows how much energy can be saved by cleaning the indoor unit.



Another reason for good maintenance is to avoid unexpected failures which lead to call-outs for repair – leaving premises without cooling or heating facilities, with a detrimental impact on customer and staff comfort.

Set standards for a new maintenance and inspection programme.

Maintenance and inspection are soon to become legal requirements. The Energy Performance of Buildings Directive (EPBD) requires regular inspection of air conditioning systems by an independent and qualified individual. As part of this process the facilities manager will have to supply information for this inspection, so will need to have the information readily to hand.

These inspections will carry a financial cost (though the precise amount is currently not clear). However, it has been proposed that where an organisation can demonstrate a good programme of maintenance, this may save some of the work of a full EPBD inspection.

Mitsubishi Electric LES is therefore devising a recommended maintenance programme which can help facilities managers keep track of work carried out on the air conditioning system, and have documentation ready for the inspection process.

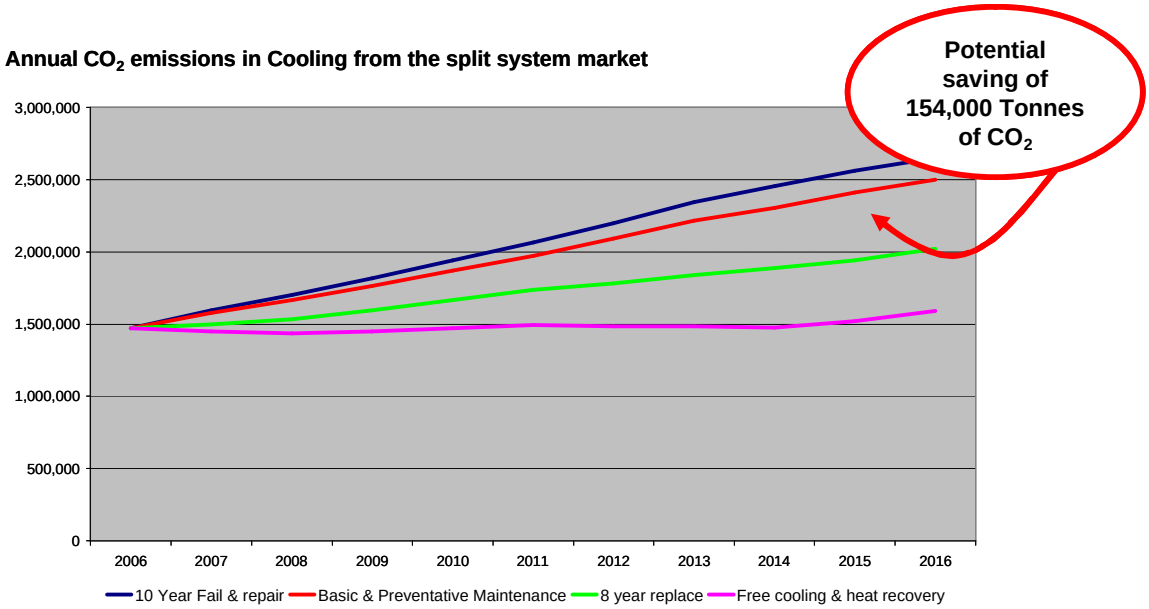
The Mitsubishi Electric LES maintenance programme should include:

1. Records and documentation stored for easy access
2. Keep a clear record of maintenance
3. Show regular cleaning programme e.g. clearing obstructed heat exchangers
4. Demonstrate use of controls technology (see Initiative 9)
5. Show where low energy technology such as free cooling, or variable speed fan drives have been used.

Comprehensive guidelines will be available from Mitsubishi Electric LES giving recommended inspection schedules for an air cooled air conditioning system. It has been shown however, that even

something as simple as regularly cleaning internal filters with a vacuum cleaner can save a great deal of energy use.

Expected outcomes from this initiative:



Market assumptions: 1.66 million split systems operating in the market in 2006, growing to 3.697 million units in 2016. This graph shows the potential cumulative effect if the principles of the Green Gateway Initiative were adopted across the whole market.