



ISO 14001 & The Climate Change Levy

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Legislation, Policies, Compliance....

What does this mean to the end-user? Probably more paperwork, additional costs of production, more compliance, and yet more auditing? But it is a benefit. Consider this, ISO introduced the Quality standards. Companies used it to improve their practices, and today, quality is vastly improved.

And so, too, the Climate Change Levy and the ISO 14001 policies. Companies implementing change to meet these requirements will benefit. Not just financially, but from the satisfaction of their role in the preservation of the environment. In Public Relations terms, companies cannot afford not to comply.

ISO 14001, like ISO 9001 is a management framework. Companies focus on the recycling of their packaging etc. But the Climate Change Levy and ISO 14001 fall short. They are not yet the complete solution.

In the author's experience, lubricants and fuels are usually overlooked. Are you managing your lubricants, and utilising their energy saving potential? Lubricants come from the same limited reserves as fuels. Lubricants are consumed at an uncontrolled rate. Lubricants leak from systems. Used lubricants require disposal. And improved base stocks and formulations reduce friction, hence power demand, even further.

In fact, will anyone consider 'Best Practices Lubricant Management' as a means to reducing power demand, and reducing the impact of their 'ecological footprint'?

So what are the options...?

Firstly, do you know exactly what your total system sump capacity is? Are you aware what your annual lubricant consumption is? If you have access to these figures, work out the annual consumption ratio by dividing the annual consumption by the capacity. Most likely, this is higher than you thought? What proportion of that is leakage? These figures should be documented and regularly updated. And a plan of action set in place to reduce the ratio by targeting leakage problems and extending the useful life of the lubricant.

Secondly, are you purchasing your lubricants based on an OEM specification? Or are you purchasing based on your lubricant supplier's recommendations? Do you even get involved in the purchasing of your lubricants? Setting lubricant specifications requires expert input. The OEM derives theirs as a baseline for an average user. Your site is unique, set the standards according to your needs. It is you, not the OEM, that pays the price of failure.

Thirdly, do you run an oil analysis programme? If you do, what action does maintenance take on a suspect sample? Immediately replace the oil? Take responsibility on site for oil management. Understand the root cause of the problem through effective oil analysis. This is Proactive Maintenance. Replacing with fresh oil is not the answer.

Take time to understand the Financial Benefits...

Companies that have reached world-class levels frequently see:

- Reductions of > 80% in lubricant consumption,
- Reductions of > 50% in unplanned downtime and equipment failure,
- Life extension of > 3 fold on capital plant.

What are the benefits? Their Overall Equipment Effectiveness (OEE) has risen from a sub-standard 40% to as much as 95%. Increased demand in production was met without building new plants. Their pricing was more competitive, yet profits went up. Maintenance budgets were typically reduced by at least 40%, yet, with improved reliability. The overall cost of the lubricant per sump litre dropped dramatically.

Consider the total cost of lubricant; factor in the purchase cost, the disposal/reclamation cost, handling, administration, inventory etc, and oil is conservatively as much as £5.00 per litre. Using synthetics? Then look at possibly £20.00 per litre.

Reducing Power Consumption...

A key benefit to a lubricant management strategy is reduced power demand. Some studies suggest as much as a 5% reduction in power consumption. Worn equipment increases power demand. Extending equipment life through wear reduction, and minimising large scale maintenance tasks, will reduce this impact.

Reducing Lubricant Disposal...

Apart from the obvious financial gain, using lubricants more effectively will reduce current demand on resources. Fuels and lubricants are derived from the same source. Reducing the consumption of both is mandatory to achieving meaningful benefits. But it is not just the protection of the reserves. Lubricants, when exhausted, remain in a liquid, possibly toxic, form that must be disposed correctly. Alternatives to straight disposal exist, re-refining or reclamation for other purposes such as fuels. However, severely exhausted lubricants maybe impractical for reclamation and may contain severely toxic acids. Better management of the lubricants in service will ensure that they remain fit for a longer term.

Management of leakage is another key area, especially outdoor or mobile plant. Consider a small drop of oil the size of a small coin leaking at the rate of one drop per minute, that is 2L of oil lost per day. Multiply that by the number of guilty systems across the world, and the end result is devastating, and expensive.

Filter change frequency is also reduced in better-maintained systems, and the impact of disposing of oil-soaked elements is reduced.

Who is Responsible?...

Everyone has a responsibility to manage their lubricants more effectively. Ultimately, it is up to the governing bodies to recognise the impact of lubrication and the role it has with regard to the environment.

About the Author:

Martin Williamson is a graduate Mechanical Engineer and has managed an oil analysis programme in a mining environment, more latterly supported oil analysis products in a wide variety of industries, and is currently managing director of KEW engineering Ltd, based in Chester. KEW engineering Ltd provides a training and consultancy service in maintenance and reliability.