

# Countdown to F-Gas

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Dan Radford, Managing Director of Parasense, outlines what's involved with the new F-Gas regulation, who's responsible and how, with the right attitude, this regulation could be a blessing in disguise. What is the impact for facilities managers in different sectors?

How can facilities managers benefit from the new regulation?

Facilities managers are no strangers to bureaucracy. Whether it's surrounding health and safety, smoking or signage, the legislation they have to deal with is endless. On 4 July 2007, a new piece of EU environmental regulation with huge implications for facilities managers in a range of sectors will come into force. Anybody with responsibility for refrigeration, chilling or air conditioning systems needs to ensure their facility is compliant, but awareness of the legislation is frighteningly low.

About the legislation

Many things have come under scrutiny as a result of the Kyoto Protocol, and this summer EC Regulation No. 842/2006 will come into force with the aim of reducing the release of certain fluorinated greenhouse gases into the atmosphere. To translate this into plain English, it means that facilities managers of organisations using air conditioning, refrigeration or chilling systems need to be aware of how much fluorinated greenhouse gas (or F-Gas) the equipment contains to understand their obligations in light of the ruling.

The legislation states that any facility with a refrigerant charge of more than 3kg must undertake reasonable measures to monitor its use of F-Gas, improve containment and keep track of all activity with an auditable trail. There is a sliding scale of responsibility, with facilities containing in excess of a 300kg charge required to fit a fixed leak detection system, conduct regular checks and repair any leaks within a set timeframe.

What will this mean for facilities managers in different sectors?

Some industrial sectors - such as food processing - obviously use extensive refrigeration facilities as part of their core activity. The very nature and layout of any food processing plant means that there is likely to be a high refrigerant charge, particularly if meat, fish or dairy produce is involved. Sites with considerable lengths of pipeline where the refrigeration plant is some distance from the evaporator are especially prone to leakage. But there are many other businesses that need to control temperature during production and storage processes. For instance, environmental management in pharmaceutical manufacturing and storage involves chillers and refrigeration to ensure precise temperature control. It's a similar story in petrochemical and gas storage and transportation, as well as in microchip manufacture. But it's not just manufacturing industries - large air conditioned office complexes can also have a high refrigerant charge.

In most businesses, refrigeration, chilling and air conditioning systems fall under the facilities manager's remit. If you don't know the refrigerant charge at your facility, you need to find out (the refrigerant calculator available via [www.parasense.co.uk/fgas](http://www.parasense.co.uk/fgas) is a good place to start).

Clearly the F-Gas legislation could create serious shockwaves for facilities managers throughout the EU. At the time of writing, penalties for non-compliance have yet to be announced. They will vary between countries, but it is likely that they will involve large fines and the potential of negative publicity, particularly as green issues are so high on the international news agenda at present. What we do know for sure is that ultimately it is the owners and operators of refrigeration facilities who are responsible for compliance, regardless of the country or sector.

However, it doesn't need to be a picture of doom and gloom. Yes, there will be upfront costs and increased maintenance but many businesses stand to make a rapid return on their investment, or even become more profitable, as a result of minimising the leakage of F-Gas.

What can be done?

Leaks often go undetected for long periods of time, gradually becoming bigger until the system loses a significant portion of its charge. Monitoring for leaks to catch them in the early stages is of paramount importance, both for cost-effective management and reducing emissions into the atmosphere. A large food processing facility, for instance, can lose tens of thousands of pounds every year as a result of refrigerant leakage.

Look at it this way - a system losing just 15 per cent of its refrigerant charge through leakage could easily experience a 50 per cent drop in cooling capacity and a corresponding 100 per cent increase in energy consumption. Add to this the potential loss of perishable goods - be that food stuff or pharmaceutical components - due to temperature fluctuation and you have a costly situation on your hands.

So what can facilities managers do to help ensure that minimising F-Gas leakage makes sense from a business as well

as an environmental point of view?

Whether your refrigerant charge is 3kg or 300kg, the single most important action you can take is to develop a refrigerant management strategy that is tailored to the specific needs and circumstances of your facility. The first step towards achieving this is conducting an audit of your current system and identifying:

- What your refrigerant charge is;
- How much is currently lost to leakage;
- What you will be required to implement by law;
- What you might want to carry out to further improve efficiencies. If you do need to install equipment, take a long-term view when considering what will be most cost-effective. Hand-held units might involve a lower initial outlay, but a more robust fixed system might bring greater associated savings.

Whatever equipment you decide to use, the key factors have to be accuracy and reliability. There are numerous systems available and a good supplier will be able to discuss them all. But a sound refrigerant management strategy doesn't end with equipment installation. An individual or team within the organisation needs to hold responsibility for regularly analysing the data and acting swiftly when required to stop leakage. In most industries, this is likely to fall into the facility manager's lap.

The fact is that the legislation is coming and steps must be taken to ensure compliance. Burying your head in the sand is not an option, but the good news is that in time there should be a positive impact on the bottom line.

Tips for benefiting from EC Regulation No. 842/2006

#### 1. Determine your refrigerant charge now

Before you do anything else, you need to work out how much refrigerant is in your facility. The three benchmarks for different tiers of compliance are 3kg, 30kg and 300kg - the more contained, the stricter the legislation.

#### 2. Devise a long-term strategy

Take some time to work out the most cost-effective approach to F-Gas for your facility. It is likely that you will have to invest in leak detection equipment of some sort, but think carefully about what's best for your site - a little more money spent now could mean much bigger savings over time. You also need to consider who is responsible for ensuring leaks are dealt with once they're detected.

#### 3. Consider all your options

Talk to suppliers with a range of products so you have a good understanding of what's available. For example, a fixed multi-point leak detection system enables you to maintain a constant monitoring presence on-site, alerting you to leaks before they get out of control. This type of system detects refrigerant loss and alerts relevant parties as required. Compared to the cost of lost refrigerant, the payback period can be short, resulting in significant savings.

To ensure the most accurate readings and to minimise servicing costs the best option is an infrared system that can be programmed to detect trace levels of a variety of gases.

#### 4. Gather and analyse leakage data

The legislation dictates that any facility with a refrigerant charge of more than 3kg must monitor leakage. Well-formatted data can provide targeted management information, leading to substantial savings as well as compliance with EC 842/2006. There are a number of tools on the market that will analyse the information for you, meaning you don't need a degree in computer programming to decipher the mountains of data created.

#### 5. Ensure the right people receive relevant information

Once reports have been generated, ensure there is a system in place to distribute them to the correct people. For example, if you have a refrigeration manager responsible for the F-Gas strategy across multiple sites, they should be given a high-level portfolio analysis. Alongside this, the facilities maintenance contractor should receive email alerts with details of the location, time and scale of leaks.

Further information

For more about the legislation visit [www.parasense.co.uk/fgas](http://www.parasense.co.uk/fgas)