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ESG and refrigerant gases, what every company should know

Decades ago, many companies had a Corporate Social Responsibility (CSR) strategy and for many it was a fool-proof way of armour-plating their brand's reputation through acts of kindness and social awareness. This strategy has since evolved and in a world where transparency, authenticity and social consciousness take centre stage, Environmental, Social and Governance [ESG] has become the new norm. ESG has now become an integral part of many companies' modus operandi, irrespective of size, industry or location; but many companies are unaware of the negative impact on their ESG standing and reputation should they be seen to not be maintaining their HVAC/R systems.

The origins of ESG

The term ESG, coined in 2005, is the integration of environmental, social and governance factors into the investment process. ESG covers a spectrum of issues that, traditionally, had not been part of the financial analysis and investors are pro-organisations that are actively involved in fighting climate change and social injustice. ESG is now considered one of the most important parts of an organisations stratagem;

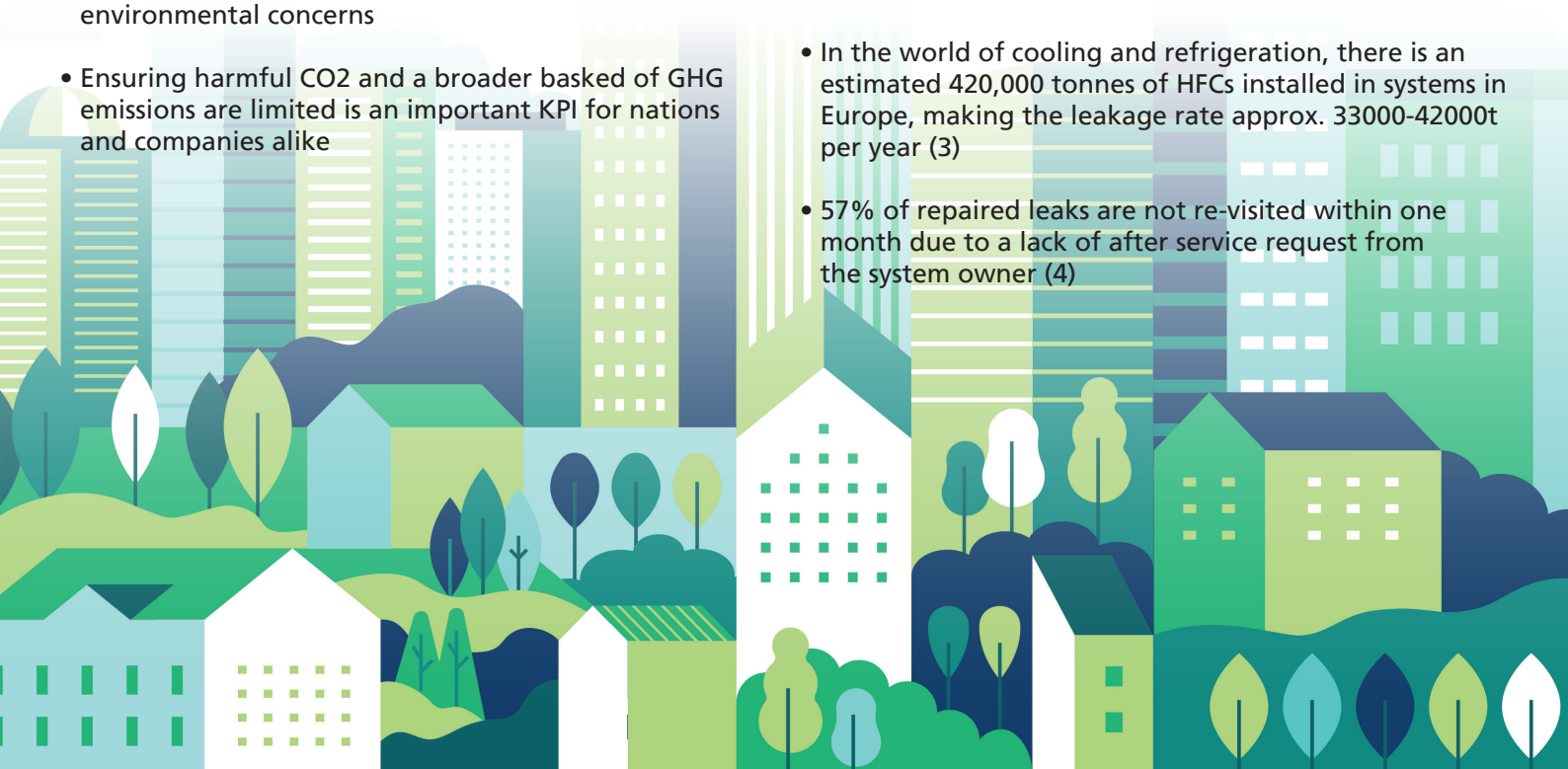
- An increasing number of companies in the UK and around Europe now have Environmental, Social and Governance policies with KPIs reported at board level
- Nearly 2/3 of private investors (65%) said they consider ESG when deciding on investments (1)
- $649million poured into ESG focused investment funds in 2021 vs $542million in 2020 and $285million in 2019 (2)
- Government policy makers are increasingly looking at the taxonomy infrastructure to address environmental concerns
- Ensuring harmful CO2 and a broader basked of GHG emissions are limited is an important KPI for nations and companies alike

How does ESG relate to the HVAC/R industry?

ESG directly affects owners of buildings in which an air conditioning, refrigeration or heat pump systems are installed, as the owner of these systems is responsible for their safe and efficient operation. As these systems use refrigerant gas, it's possible that at some point there will be a leak. Natural gas and refrigerants are a finite resource, so conservation and careful use are a priority. Also, while refrigerant gases are greener these days, there are still those that can have a significant impact on the environment if they leak; a leak from a system using ammonia can kill.

ESG HVAC/R The facts

- The phasing out of F Gases with high Global Warming Potential [GWP] is driven by progressive regulation, driven by various trade bodies and the EPA.
- Many countries also have specific rules in place to limit sales of high GWP gases and ensure any losses of gases from existing charged cooling and refrigeration systems is reduced to a minimum
- In the world of cooling and refrigeration, there is an estimated 420,000 tonnes of HFCs installed in systems in Europe, making the leakage rate approx. 33000-42000t per year (3)
- 57% of repaired leaks are not re-visited within one month due to a lack of after service request from the system owner (4)



Compliance with regulations on refrigerant use and leak detection testing in commercial premises, is the only way to prevent the avoidable and mitigate risk.

An ACR engineer's role is to make sure the systems comply but, if there's no service or planned preventative maintenance contract in place, how will you know your system's safe?

Leak detection testing, for example, should be carried out at specified periods, which is dependent on the amount of gas in the system and, under the F-Gas Regulation, records kept for any system with more than 3kg of HFCs.

	GWP	5kg system	20kg system	50kg system	100kg system	150kg system	300kg system
404A	3922			196.1		588.3	1176.6
449A	1397			69.85		209.55	419.1
410A	2088	10.44	41.76		209		
Application		Large split	VRF/VRV	Small commercial	Large chiller	Large commercial	Supermarket

Did you know?

- While F Gases only make up 3% of the UK's Greenhouse Gas Emissions, the high GWP of some gases (e.g. R404A with a GWP of 3922) rates them more harmful than the same quantity of CO2 emissions only
- Estimated leakage rates can span a range from 8-10% losses (3)
- Internationally recognized best practice, and common regulatory frameworks, require at least an annual service and maintenance check on systems, including a leak and pressure check
- Equally, if a leak is found, it MUST be fixed and the system re-tested within a month to check the repair worked

Failure to repair leaks can have significant impacts on the environment. Engineers/ installers will be able to guide companies through the dos and don'ts of HVAC/R system maintenance and advise what best practice looks like for different system types.

For more information visit www.aspenpumps.com/en-gb/ldc-environment

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(1) Association of Investment Companies: November 2021, (2) Reuters: December 2021, (3) Source A-gas, (4) UK Installer Research: October 2021