

COST MITIGATION & ROUTE TO NET ZERO REPORT



INTRODUCTION

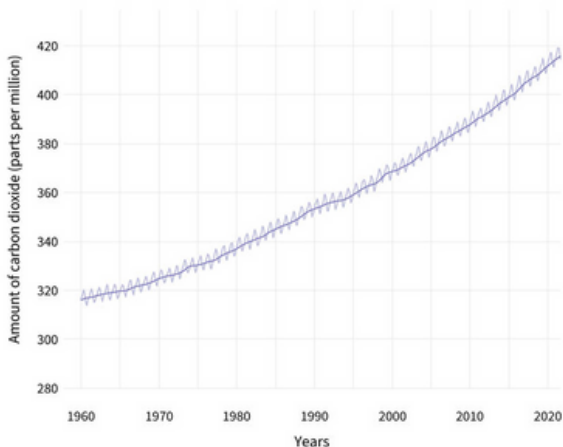
Over the past 18 months, the wholesale energy market has experienced unprecedented volatility. This volatility has been reflected in seasonal wholesale pricing with winter gas prices reaching record highs of 28p/kWh (827p/therm) and winter electricity prices reaching 85p/kWh (price constraints observed from 26th to 29th of August).

When factoring in non-energy costs (i.e. environmental taxes, wholesale distribution and transmission costs) gas prices to customers exceeded 40p/kWh and electricity at 100p/kWh. Mercifully for consumers, the wholesale market has decreased and prices become a more palatable ~9p/kWh to 20p/kWh for gas and 30p/kWh to 50p/kWh for electricity.



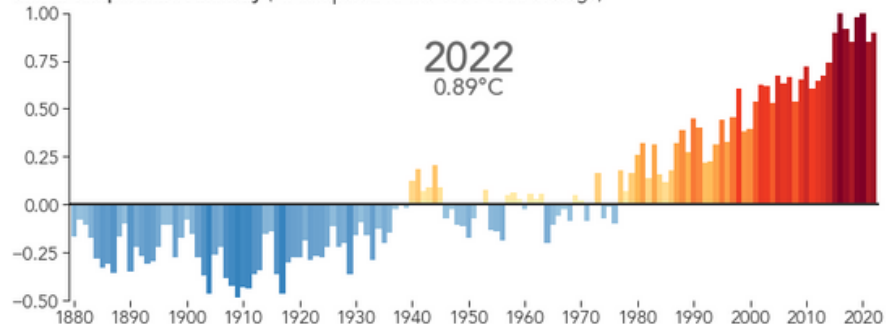
Furthermore, based on the UK Government Department for Business, Energy & Industrial Strategy (BEIS), centralised grid-sourced electricity and gas is still highly pollutive. Whereby, electricity production contributes ~0.19 kg of CO₂/kWh and gas is 0.18 to 0.20 kg of CO₂/kWh. As a result, green-house-gas emissions continue to increase at an unforgiving rate which has now started having a noticeable and damaging effect on the global climate.

ATMOSPHERIC CARBON DIOXIDE (1960-2021)



Last 9 Years Warmest on Record

Global Temperature Anomaly (°C compared to the 1951-1980 average)



ENERGY SAVING OPPORTUNITIES SCHEME (ESOS)

Advantage Utilities have proposed this report to negate these important environmental and economic factors now strongly influencing businesses. As 2023 is also a compulsory ESOS (Energy Saving Opportunity Scheme) legislative year, our insights and capabilities provide important assistance to integrate the findings of these report.

Compulsory ESOS Phase three organisations comprise one of the following:

- a) Employs 250 or more people.
- b) Has an annual turnover in excess of £44million and an annual balance sheet total in excess of 37million.
- c) An overseas company with a UK registered establishment employing 250 or more UK employees (paying income tax in the UK).



Even for businesses not fulfilling this criteria, the modest cost of an on-site efficiency audit (~£1,500 to ~£2,500 per site) will provide granular insights to integrate economically and environmentally incentivising solutions.

COST MITIGATION & SUSTAINABILITY ENHANCEMENT

In order to manage the high energy costs and enhances a companies sustainability credentials, there are 2 basic principles to apply:

The greenest form of energy generation is the most affordable method of consumption.

Whereby, renewable energy generators have undergone such dramatic technological advancement over the past decades. This means technologies can now produce energy at a cheaper rate than otherwise consumed from the grid.

This is achieved through technologies related to onsite generation.

The cheapest and greenest form of energy is that which is not consumed at all.

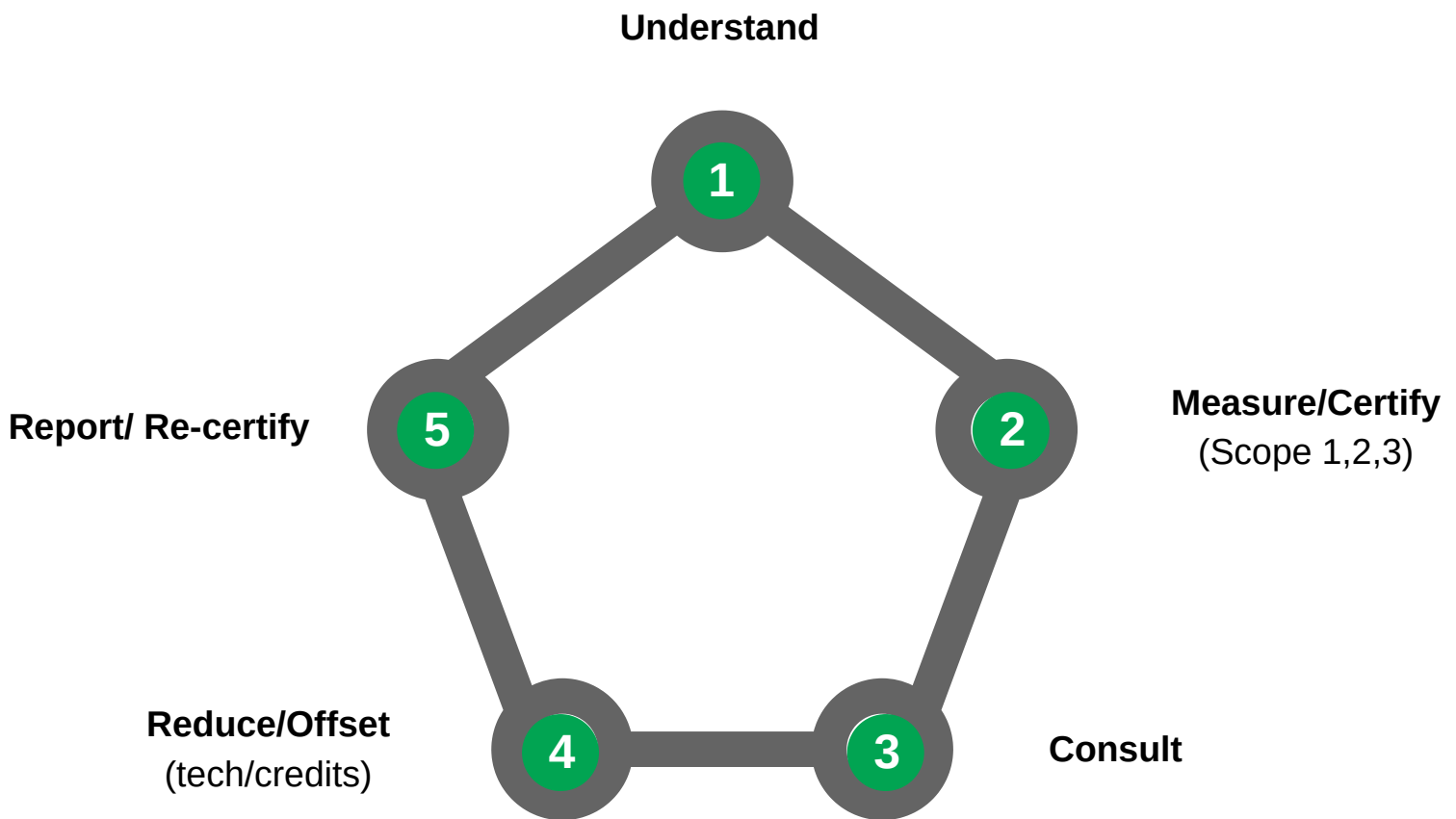
This refers to technologies that undertake the same function as already existing infrastructure. However, these newer, more efficient technologies consume less gas and/or electricity but have the same performance output.

This is achieved through technologies related to onsite efficiency.

To achieve either of the above principals we must begin with understanding and measuring of your environment. This is a key foundational step in our process and forms the basis of our “Carbonethics” Programme.

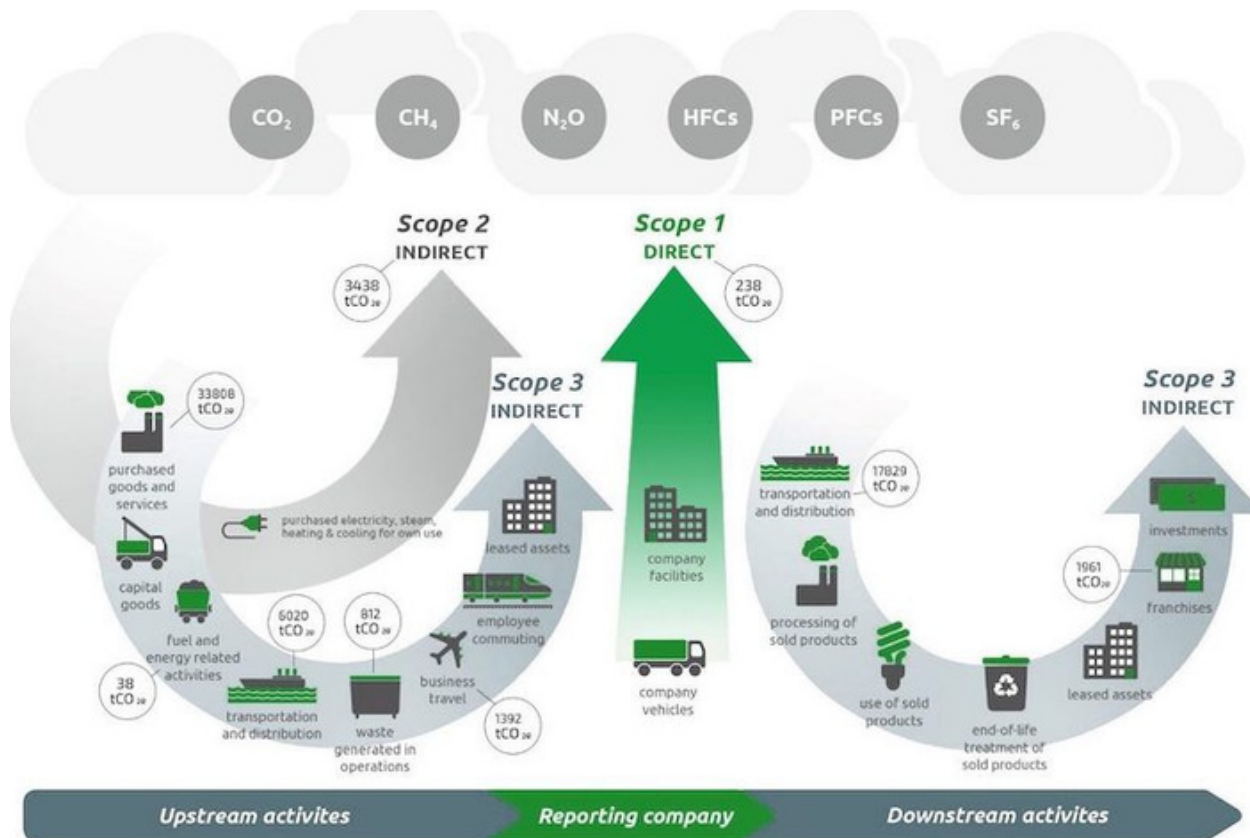
ADVANTAGE CARBONETHICS PROGRAMME.

In an ever-developing climate-conscious world; having a clear, transparent, ethical, and a reportable path to Net Zero is a key strategy for all successful businesses.



We begin with understanding your business and aligning ourselves with your company goals, budgets and timescales.

Our methodology above has been developed over years of experience to simplify complex environments and data.



Scope 1 & 2 and 3 emissions are shown above and in conjunction with our partners Future Net Zero Standard™ (FNZ) and we can provide full stakeholder reporting, benchmarking, tracking and international reporting across these scopes.

Our Carbon Accounting platforms are fully aligned to the GHG Protocol / UK Government SECR and all other relevant standards. Due to the nature and complexity of the journey and calculations, we take a phased approach to make this as simple as possible, often beginning with Scope 1 Direct and Scope 2 indirect with elements of Scope 3

Once calculated you will be in a position to understand the key areas of focus onto, thus providing these key benefits:

- Understanding its carbon impact
- Enhanced working relationships with key retailer customers and suppliers
- PR and engagement opportunities
- Potential cost efficiencies
- Take a leadership role on tackling its carbon impact
- Work with its supply chain partners to understand the carbon impact within the supply chain
- Improved stakeholder engagement

ONSITE GENERATION

Renewable energy generators installed on a site can produce electricity at the fraction of the price of grid consumption. Commonly termed the Levelized Cost of Electricity (LCoE), these generators commonly produce figures at 1p/kWh to 5p/kWh over the warranted lifetime of a system. Furthermore, a benefit of these systems is the decentralized nature of them. Their energy production is an independent source and completely separate from the grid. As a result, this protects customers from volatile changes in wholesale gas + power markets in addition to unpredictable non-energy cost fluctuation.

Finally, renewable energy generators have little carbon/greenhouse gas emissions associated with them. Once the minute embodied carbon from their manufacture and minor emissions associated with their operations & maintenance are factored in, they have excellent ESG credentials. Therefore, these technologies will dramatically enhance the sustainability of a sites operation. As a result, these technology form the basis of the greenest and most affordable method of energy consumption.

The most suitable technologies to offset grid consumption relate to:

Solar Photovoltaic (PV)

Solar thermal

Wind

Combined Heat + Power fuelled from renewable sources

Hydroelectric Power

Rainwater Harvesting

ONSITE EFFICIENCY

Facilities will have an abundance of energy-intensive inventory which are imperative to their successful operations. This can be related to electrical consumption to power machinery and plant or gas consumption for heating and industrial purposes. Ultimately, this inventory will have a set consumption based on their efficiency.

The purpose of onsite efficiency is to introduce technologies to complement or replace this inventory, so it operated more efficiently. By having a more efficient operation, it will decrease the electricity/gas kW consumption and therefore introduce energy savings.

The most suitable technologies to offset grid consumption relate to:

LED Lighting

Voltage Optimisation

Gas Fuel Optimisation

HVAC Upgrades/Optimisation

Battery Energy Storage Systems

Air-/Ground-Sourced Heat Pumps

GOVERNMENT INCENTIVES AND EXPENSE ALLOWANCE

Fortunately, the onsite efficiency and generation technologies fall under the UK Government 'Full Capital Expensing' and 'First Year Allowance' policies. This policy (depending on the nature of the equipment) enables the taxpayer to deduct between 50% to 100% of the capital equipment cost from their year-end taxation. This is a government policy that runs from April 2023 to March 2026. This policy works on top of the £1million threshold for Annual Investment Allowance (AIA).

Worked Example for Solar Panels:

- Based on the January 2023 HMRC capital allowances manual, solar panels fall under HMRC code CAA01/S104A. This manual outlines they have a designated special rate taxation banding. Therefore, an eligible business may be permitted to claim the 50% deduction for First Year Allowance (FYA).
- Project Value = £100,000
- Special rate allocation = £50,000
- 19% tax bracket value deduction = £9,500
- 25% tax bracket value deduction = £12,500

CONCLUSION

It is apparent that energy costs across the UK have recently hit record highs. Whilst the market has come down considerably, we are still in an energy crisis based on the wholesale market.

Furthermore, whilst more renewable generators are coming online, the grid still remains a highly pollutive method of energy consumption.

Therefore, the obvious route for a business to moderate their energy cost and enhance their sustainability credentials is to explore additional onsite generation and efficiency technologies. By implementing these, it will enhance their abilities to produce their own sustainable energy and decrease their consumption from the grid.



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