

NAVIGATING NET ZERO



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Achieving Net Zero: Chief Executive Steve Elliott

The journey to net zero began over three decades ago for the chemicals sector, seeing a reduction in our greenhouse gas emissions by over 80% since 1990.

This long-standing and continuous effort in driving down emissions has also seen a joint Industry-Government Industrial Decarbonisation and Energy Efficiency Roadmap Action Plan – a voluntary but important framework for driving both energy efficient and wider decarbonisation improvements.

We all know however that it does not and must not stop here. In 2019 the UK Government committed to a net zero target by 2050 needing a huge collaborative effort to meet this ambitious but necessary goal. For the chemicals sector this will mean halving our remaining CO2 emissions by 2034 and to further reduce them by 90% by 2050.

This will require us building on our energy efficiency progress, enabling circularity, and, critically, securing access to sufficient hydrogen, carbon capture and storage and clean electricity.

Industry collaboration and, in particular, learning, are always central to our success. With this in mind, my thanks go to Inspired PLC for developing this toolkit, aimed at providing advice to chemical companies, all of whom are at various stages of their decarbonisation journey. I hope you and your business find this a useful resource and do please get in touch with any queries, suggestions or feedback.

Each and every stakeholder has a role in transitioning to a cleaner and greener economy. For the chemicals sector this goes beyond transforming our own businesses, providing



innovative products and technologies to underpin the UK's collective net zero transition. Whether it's through advanced batteries and hydrogen fuel cells to enable more sustainable mobility, insulation materials to improve the energy efficiency of our buildings or the technological solutions to facilitate the recycling of materials, the chemical sector will continue to do all it can in leading the world's response to the huge challenges presented by climate change.

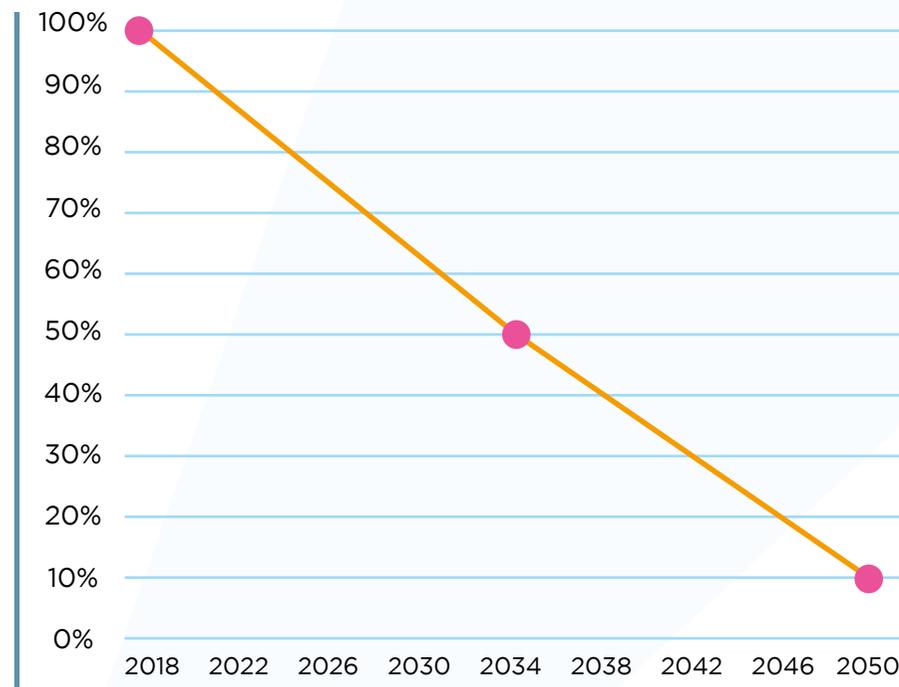
Steve Elliott, Chief Executive of the Chemical Industries Association

Where are you on your journey?

Member companies of the CIA have stated its collective ambition to halve its direct emissions by 2034 & further reduce them by 90% by 2050.

In order to help your company align with these targets, Inspired PLC have developed this toolkit, in collaboration with CIA, to provide decarbonisation advice, no matter where you are on your net zero journey.

To get started, please click the development stage most appropriate for your business:



Baselining emissions



Setting targets



Creating a net zero strategy



Developing a near-term carbon action plan



Implementing your carbon action plan/ net zero strategy



Baselining emissions

The first step on your decarbonisation journey is to calculate your company's baseline emissions, using the most accurate data available. This is important to ensure that you have a full understanding of the Scope 1, 2 & 3 emissions you are producing, including significant hotspots.

Once you have created an inventory of all your emissions, this data will be used as your baseline, which you will report against annually to monitor and measure carbon reduction.

The inventory can also be used to identify key areas that should be targeted for carbon reduction initiatives, especially within your value chain. This will ensure that efforts are focused on decarbonising the areas that have the biggest impact.

How can Inspired help?

Inspired PLC can help you measure your Scope 1, 2 & 3 emissions and produce a detailed greenhouse gas inventory to baseline your emissions.

Our team of Carbon Specialists will work with you to collate the relevant data and provide support on the reporting methodology. They will also recommend improvements to the data collection process for subsequent years to encourage continuous improvement on data accuracy.

4 Carbon Balance Sheet

Emissions Scope and Scope 3 Category	Gross Emissions (tCO ₂ e)	% of Total Emissions	Material source?
		Location based	
Scope 1	741	1.3%	Mandatory (SECR)
Gas	741	1.3%	
Transportation (excluding grey fleet)	0	-	
Scope 2	450	0.8%	Mandatory (SECR)
Purchased electricity	450	0.8%	
Scope 3	54,473	97.9%	
1: Purchased Goods and Services	52,049	93.5%	Yes
1a: Purchased Goods and Services: Consumed by company	207	0.4%	
1b: Purchased Goods and Services: Raw materials	51,843	93.1%	
2: Capital Goods	228	0.4%	No
3: Fuel-related Emissions	216	0.4%	No
4: Upstream Transportation and Distribution	641	1.2%	Yes
5: Waste Generated in Operations	1	0.0%	No
6: Business Travel	2	0.0%	No
7: Employee Commuting	30	0.1%	No
8: Upstream Leased Assets	0	0.0%	n/a
9: Downstream Transportation and Distribution	3	0.0%	No
10: Processing of Sold Products	1,036	1.9%	Yes
11: Use of Sold Products	0	0.0%	n/a
12: End-of-life Treatment of Sold Products	267	0.5%	Yes
13: Downstream Leased Assets	0	0.0%	n/a
14: Franchises	0	0.0%	n/a
15: Investments	0	0.0%	n/a
Total All Scopes	55,664		

Top Tips

- If you are completely new to reporting, focus on your Scope 1 & 2 emissions first as these are within your direct control
- There are free online tools available to help estimate emissions based on actual company data such as the GHG Emission Calculation Tool, which covers Scope 1, 2 and some Scope 3 categories.
- Scope 3 is a complex subject, comprising 15 different categories. The Scope 3 Calculation Guidance document provides concise information on the methodology for reporting emissions from each category. The GHG Protocol also offers online training [here](#).
- If you do not have the resource or expertise available to produce a GHG inventory, there are consultancies available, like Inspired, that can do these calculations for you.
- To baseline Scope 1 & 2 emissions, it will be important to involve employees who have visibility of fuel and electricity consumption. This can include finance, facilities/ estates teams and if available, energy managers.
- To baseline Scope 3 emissions, a wider variety of employees may need to be involved but as a starting point, finance will be key. It is useful to review the Scope 3 categories first to understand how they apply to your business and help establish who would be able to provide the relevant data.

Useful websites

[Greenhouse Gas Protocol Website](#)

[Greenhouse Gas Protocol Corporate Standard](#)

[Scope 3 Calculation Guidance](#)

[GHG Calculation Tools](#)





Setting Targets

Once you understand your company's baseline emissions, you can set your net zero target. As a member of the CIA, you should aim to set a target in line with the associations collective ambitions but your baseline data will help you understand whether you can be more ambitious. As a minimum, you should align with the UK governments commitment to achieving net zero emissions by 2050.

To achieve net zero, companies must set a target in line with the Paris Agreement goal: to limit global warming to ~1.5 degrees Celsius, compared to pre-industrial levels. It is recommended that businesses submit their targets to the Science Based Target Initiative (SBTi) for validation, to demonstrate and publicly verify their commitment to aligning with the Paris Agreement.

How can Inspired help?

Inspired PLC is able to provide support on target setting, including submitting SBTs.

Our Carbon Specialists are able to model different decarbonisation scenarios using your baseline data, to ensure you pick a target that is in line with your business ambitions.

Useful websites

[Paris Agreement](#)

[Carbon Trust – Net Zero for Corporates](#)

[Science Based Targets](#)

[UK Government Commitments](#)

Top Tips

- **Aim to set an absolute target, intensity metrics are useful to show insight into carbon versus business growth but should be avoided as targets.**
- **Note that offsets can not be included as part of net zero targets, these relate specifically to carbon neutrality.**
- **Ensure senior management is involved in sign off on target setting as it can significantly impact business strategies.**

Science Based Targets (SBT) Explained

The graph to the right explains the core elements of setting a SBT. Further guidance on target setting can be found in the SBTi [Net Zero Standard](#).

1

Set near-term SBTs: 5-10 year emission reduction targets in line with 1.5°C pathways.

2

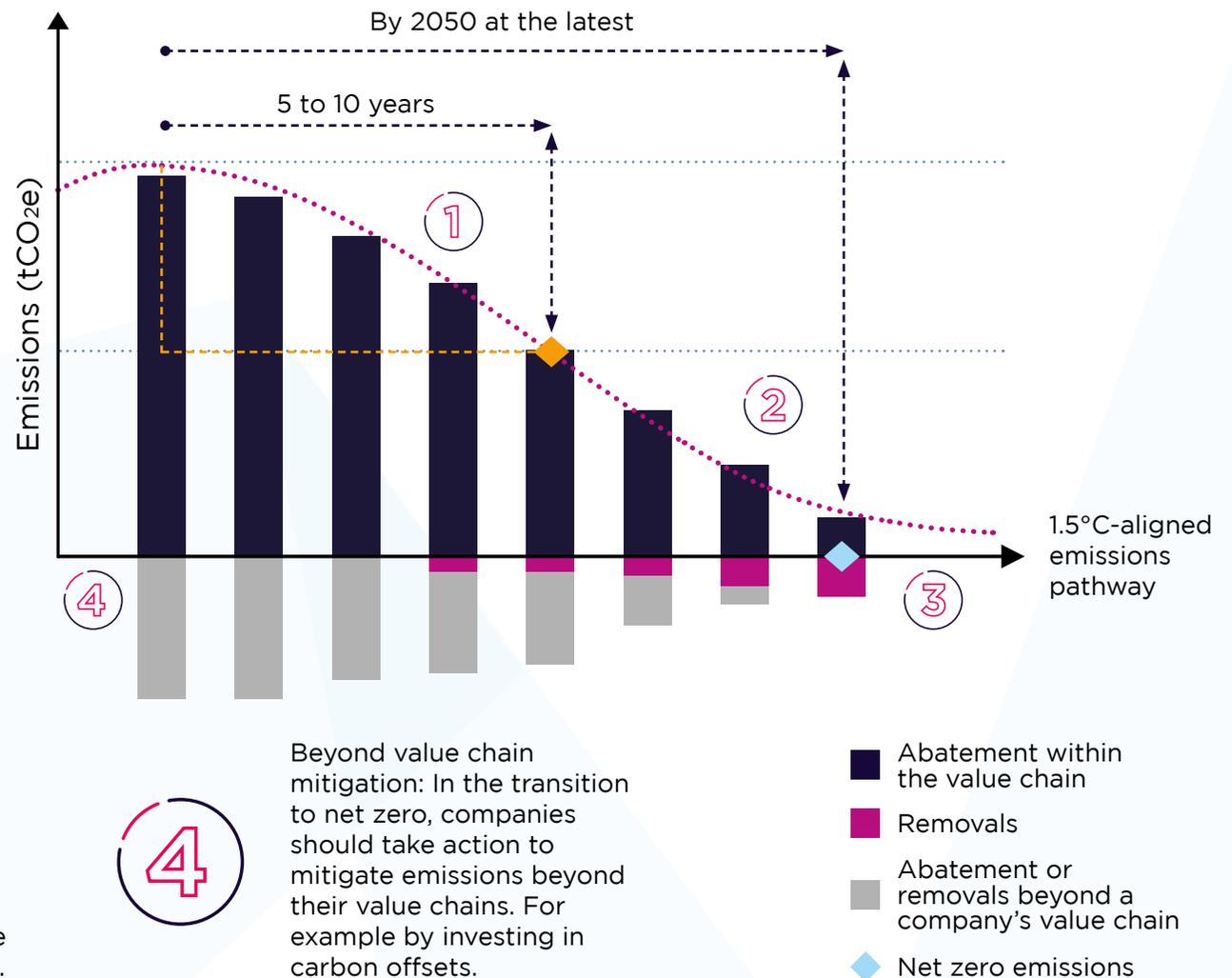
Set long-term SBTs: Target to reduce emissions to a residual level in line with 1.5°C scenarios by no later than 2050.

3

Neutralization of residual emissions: GHGs released into the atmosphere when the company has achieved their long-term SBT must be counterbalanced through the permanent removal and storage of carbon from the atmosphere.

4

Beyond value chain mitigation: In the transition to net zero, companies should take action to mitigate emissions beyond their value chains. For example by investing in carbon offsets.





CREATING A NET ZERO STRATEGY

After establishing your net zero targets, the next step is to develop a net zero strategy. This will help inform your wider business strategy and will be key to reaching net zero by your target year.

Developing a net zero strategy follows the same process as any other business strategy. To the left is a high level outline of the key steps you will need to take to produce a robust strategy.

How can Inspired help?

Inspired PLC can develop a net zero strategy for your company, to help drive decarbonisation and achieve your net zero targets. Our Carbon Specialists will use your baseline emissions to establish key areas to target and outline the relevant next steps.

The report will also include analysis on challenges and opportunities as well as feasibility of decarbonisation solutions to help provide clear direction on how put the strategy into action. In addition, decarbonisation scenarios will be modelled and a high level roadmap produced that can be used in internal and external communications.

Use available data to conduct an in-depth assessment of your operations and establish your current strengths and weaknesses.

Research competitors to understand how you are performing within your sector, identify key learns from their available information.

Identify key stakeholders and customers and establish how your current performance matches against their expectations.

Review the opportunities and threats associated with your current business model.

Establish a list of solutions to progress your business model, based on the key areas that you need to improve, including a feasibility review.

Evaluate the options and prioritise them based on cost, time and impact. Use this hierarchy to create a roadmap that will inform your next steps to implement change.

Top Tips

- Use your baseline data to identify the key areas that need to be addressed within the strategy, then break this information down to understand the next steps that should be taken in the near and medium term.
- Make sure that a a cohesive, capable and effective decision-making governance structure is put in place to to drive and embed decarbonisation in an effective manner. This will be crucial to successfully deliver the strategy and should involve key stakeholders that have the power to drive change.
- Take key learns from other businesses strategies. Apply insights from competitors, government and businesses from other industries to your own company. Often decarbonisation solutions are applicable across different disciplines.
- Make sure that your business strategy aligns with your net zero strategy to ensure there are no conflicting elements in your plans. Often this is most obvious in the cost vs carbon decision making processes.
- Decarbonisation solutions should take in account reducing, re-using and substituting energy consumption, which can be applicable to Scope 1, 2 and 3.

Useful websites

[UK CCUS Deployment PathwayAction Plan](#)

[UK Government Net Zero Strategy](#)

[Developing a Strategy](#)

[Industrial Decarbonisation Strategy](#)

[UK Hydrogen Strategy](#)





DEVELOPING A NEAR TERM CARBON ACTION PLAN

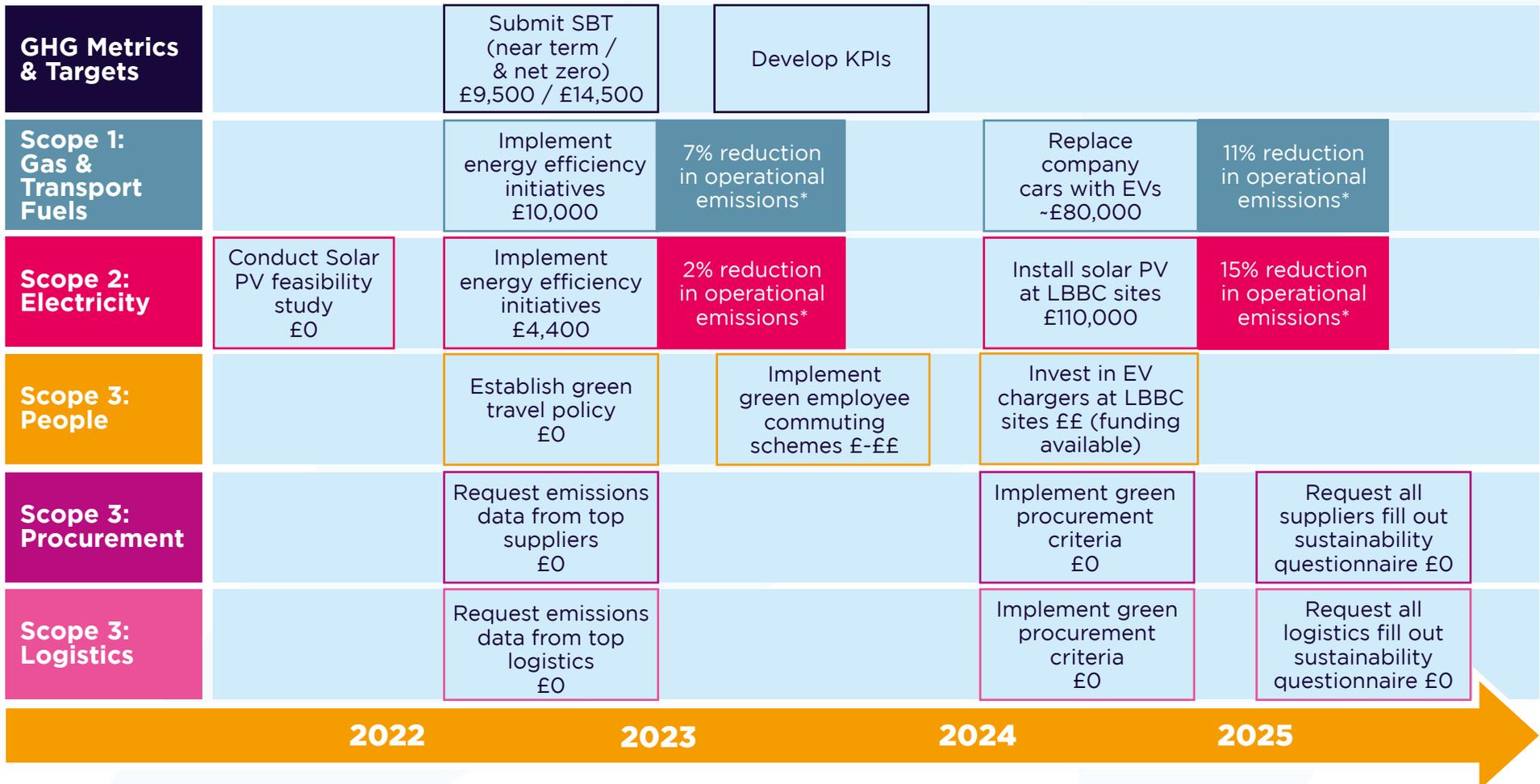
To ensure that your business aligns with your net zero strategy, it is recommended that you create a near term (1-5 years) carbon action plan which should contain:

- A list of the key areas identified in your net zero strategy that will be addressed in the plan.
- Near term targets for each key area & a timeline for delivery.
- An outline of the relevant steps to be taken to reach those targets, including:
 - Investment in decarbonisation solutions
 - Collaboration with industry/ government
 - Dissemination of business improvement measures
 - Amendments to operating procedures
- Identification of the people/teams responsible for delivering the action plan as well as key stakeholders to engage.
- A review process, with set deadlines to break the tasks up into easily digestible sections.

Top Tips

- **Involve key stakeholders in the action plan development process to help achieve buy-in and understanding of their responsibilities. This usually includes representatives from finance, procurement and operations.**
- **Highlight the importance of the agreed actions through use of metrics such as environmental Key Performance Indicators (KPIs), which can be used to measure team performance.**
- **Make sure that each year you only focus on one or two topics, to avoid programme slippage and ensure the goals are achievable. Trying to carry out too many activities at once can de-rail the action plan entirely.**
- **Start with the lower cost & readily available actions first. E.g. energy efficiency through behavioural change & automation.**
- **Constantly review short term (e.g. efficiency, alternative fuel sources) and long term (new technologies) projects, as some short term actions could become high risk over the longer term.**

Example Action Plan Timeline



How can Inspired help?

Inspired PLC can provide support to businesses developing their action plans, after their net zero strategy has been created.

Our Carbon Specialists can help identify the next steps for your business and build an action plan timeline to facilitate project delivery.

5

IMPLEMENTING YOUR CARBON ACTION PLAN/ NET ZERO STRATEGY

The next steps, after developing your net zero strategy and a near term carbon action plan, involve:

- Establishing a net zero panel to oversee delivery of the carbon action plan and net zero strategy (if you have not already done so in the strategy).
- Effectively communicating your plan/ strategy to gain buy in from your business, especially your key stakeholders.
- Putting the relevant internal control measures/ policies in place.
- Engaging with the relevant external suppliers and specialists to implement decarbonisation actions outside of your control.
- Regularly monitoring progress to ensure the plan maintains momentum.
- Conducting an annual review of the action plan to review progress and update next steps.



How can Inspired help?

Inspired PLC can provide a suite of solutions to facilitate decarbonisation including installing low carbon equipment such as LED lighting, solar PV, ASHPs and energy efficient boilers.

Our internal teams can also carry out energy efficiency surveys for buildings, employee engagement training/ workshops and procure green energy contracts. If required, they can also purchase offsets/ carbon sequestration credits for businesses that want to be carbon neutral.

Example Control Measures: Environmental KPIs

KPI	Unit of measure	Data sources	Relevance
Energy efficiency	Total energy (gas & electricity) consumption in Kwh/unit of production or Kwh/turnover	Annual electricity and gas consumption data, either from energy meters or purchased energy invoices.	A lower energy efficiency per unit of production or per turnover indicates increased value i.e. lower spend on energy per unit of output. Energy efficiency could be calculated on a site specific or company-wide basis.
Operational emissions	Absolute Scope 1 and 2 emissions in tCO ₂ e	Annual energy consumption (gas & electricity) invoices and milage/fuel consumption data for transport fuels.	A reduction in operational emissions, Scopes 1 & 2, will be key to meeting net zero targets. This KPI will help to drive emissions reduction by incentivising operatives to hit their environmental targets.
Transport fuel usage	Total consumption of fossil fuel-based (petrol, diesel, aviation fuel) transport fuels in litres or Kwh	Annual milage or fossil fuel consumption of company owned vehicles.	A reduction in the use of fossil fuel-based transport fuels indicates a reduction in absolute Scope 1 emissions. Reducing Scope 1 emissions will help progress towards net zero targets.

Top Tips

- **Focus in on reducing Scope 1 & 2 emissions as a starting point, as these are within your direct control. For Scope 3, look at improving data accuracy to develop a more robust understanding of where your biggest emissions lie.**
- **With many customers and suppliers already on the journey to net zero, partnering with your supply chain is key to accelerate technology change & Scope 3 reductions.**
- **Employee engagement will be an ongoing process. To ensure that the strategy does not lose momentum, gather a network of sustainability champions from strategic places in the business to drive the every day actions forward.**
- **A long term internal communication campaign can be useful to remind employees about their individual and collective responsibilities to achieve net zero.**

Frequently Asked Questions

Q. Why do we need to report our Scope 3 emissions?

A: Because although they are not directly within your control, you are able to influence your value chain through responsible procurement, collaborating with suppliers, product innovation, investing in a circular economy, guiding employees and much more. Net zero will be a more realistic goal if we all work together to achieve it.

Q. What is location and market-based reporting?

A: There are two ways to report Scope 2 emissions, using either a location based or market-based methodology. The location-based method calculates emissions associated with a company's electricity consumption by using the average emissions intensity of the electricity grid, in the country where the electricity is consumed. This method does not take into account contract specific emissions factors, for example, if a company chooses to purchase renewable electricity.

The market-based approach calculates company Scope 2 emissions based on an emissions factor specific to the electricity they are purchasing. For example, if you buy 100% renewable, REGO backed electricity, this will have an emissions factor of 0 kgCO₂e/ kWh resulting in zero scope 2 emissions, when reported under the market-based approach. As per SECR reporting requirements, companies must report their location-based emissions and can include market-based as an addition. The GHG Protocol guidelines encourage companies to report both location and market-based methods to demonstrate their investment in lower carbon electricity.



Q. What is the difference between net zero and carbon neutral?

A: Net zero means reducing your carbon emissions as much as possible and then sequestering the remaining emissions, so that overall no carbon emissions are emitted as a result of human activities. Carbon neutral means offsetting your current carbon emissions through investment in verified offsetting schemes, such as renewable energy projects in China. You do not have to reduce your carbon emissions to be carbon neutral. Note that for SBT, you must be net zero and not carbon neutral by your target year.

Frequently Asked Questions (continued)

Q. What support is available from government?

A: Further information on financial support and funding available from the government can be found [here](#).

Q. How can I find out what others are doing?

A: Find out what other CIA members have been doing to achieve net zero [here](#). The [Global Climate Action Portal](#) also contains information from individual state, non-state and subnational actors on how global participants are engaging in climate action.

Q. How do I get involved with local cluster decarbonisation projects?

A: There are a number of cluster decarbonisation projects available depending on your business location. To find out how to get involved with them, select the relevant link below:

- [Net Zero Teesside](#)
- [Net Zero North West](#)
- [Zero Carbon Humber](#)
- [The Acorn Project](#)
- [South Wales Industrial Cluster](#)

Q. I have a net zero product. How do I get development support for it?

A: Below are some useful links to organisations that can help provide development support for net zero products:

- [UKRI](#)
- [Innovate UK](#)
- [The Society of Chemical Industry](#)



Can't find your question here?
Please send us your queries to help@CIA.com

Call to Action

Now is the time to act, if we are to achieve the UK Government targets of net zero emissions by 2050. Wherever you are on your decarbonisation journey, Inspired can provide support and direction to help your business reduce its impact on the environment.

For all of our services, we assign a designated expert to support you and your business. They will be in regular communication with you to answer any queries and will facilitate knowledge share from our wider business, to give you the best available advice. Below are a list of services that Inspired provides. Please feel free to get in touch with our team at: hello@inspiredenergy.co.uk

Carbon Action Programme (CAP):

- Scope 1, 2 & 3 GHG Inventory and Carbon Balance Sheet (CBS)
- Product carbon footprints
- Net Zero Strategy (NZS) development
- Net Zero Workshops
- Annual CBS & NZS reviews

ESOS:

- Site Surveys for energy efficiency measures
- Production of ESOS report

SECR:

- Scope 1, 2 and relevant Scope 3 data calculations
- Production of SECR report

Offsetting:

- Costing & purchase of different offsetting options
- Purchase of RGGOs and REGOs



Installation Services:

- LED
- Solar PV
- Energy efficient boilers
- ASHPs
- Sub-meters

Behavioural Change Programme:

- Provision of tailored employee engagement programmes for behavioural change
- Running employee engagement workshops

Glossary

ASHP: Air Source Heat Pump. An air source heat pump is an alternative, lower carbon way to heat buildings. It takes heat from the air and boosts it to a higher temperature using a compressor, which it then transfers to building heating systems.

BEIS: Department for Business, Energy & Industrial Strategy. It is a government department that invests in skills and education to promote trade, boost innovation, and help people to start and grow a business. BEIS also sets regulations and legislations to help business to tackle climate change.

CCUS: Carbon Capture, Usage and Storage. CCUS is the process of capturing carbon dioxide before it enters the atmosphere, transporting it, and storing it e.g., in geological formations or using it in industrial processes.

CGS: The Clean Growth Strategy. A UK government strategy which sets out their proposals for decarbonising all sectors of the UK economy through the 2020s.

CO₂e: Carbon dioxide equivalent. Each greenhouse gas has its own global warming potential (GWP). The unit CO₂e allows the impact of all six contributing greenhouse gases (GHG) (e.g., methane, HFCs) to be conveyed in terms of the carbon dioxide emissions with an equivalent impact.

ESOS: Energy Savings Opportunity Scheme. ESOS is an energy assessment and saving scheme established by the UK Government to drive energy efficiency. Under the scheme, large organisations are required to assess & report their energy usage every 4 years, as well as identify new energy saving opportunities.

GHG: Greenhouse gas. Greenhouse gases are gases in Earth's atmosphere that trap heat. They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving it.

GHG Inventory: A greenhouse gas inventory is a list of emission sources and the associated emissions quantified using a standardised method, typically the GHG Protocol.

GHG Protocol: The greenhouse Protocol is a comprehensive global standardized framework to measure and manage GHG emissions from private and public sector operations, value chains and mitigation actions. It is the world's most widely used GHG accounting standard.

Hydrogen: Hydrogen can be used as a clean fuel that, when consumed in a fuel cell, only produces water. Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind. These qualities make it an attractive fuel option for transportation and electricity generation applications. It can be used in cars, in houses, for portable power, and in many more applications.

LED: Light-Emitting Diode. LEDs are semiconductor light sources that emit light when current flows through them. LED light bulbs use energy more efficiently than traditional halogen or fluorescent bulbs.

Glossary (continued)

Net Zero: Net zero means achieving a balance between GHG emissions produced and emissions taken out of the atmosphere, so that overall, there are no greenhouse gas emissions as a result of human activity.

Offsets: Refers to emission reductions / removals credits, a transferable instrument certified by Governments or independent certification bodies to represent an emission reduction of one metric tonne of CO₂ or CO₂e. Any carbon offset credits bought must be 'retired' in a registry for the purchaser to claim the related reductions / removals towards their own GHG accounting.

REGO: Renewable Energy Guarantee of Origin certificates are a tracking instrument which demonstrate that power supplied to an end consumer comes from a renewable source. Renewable energy includes the use of on- or off-site solar, wind, or geothermal power sources.

RGGO: Renewable Gas Guarantee of Origin. Similar to a REGO, RGGO's are issued when 1 kWh of green gas is injected into the grid. Each RGGO contains information about where, when, and how that kWh of green gas was produced. RGGOs allocated to consumers are retired and listed on Retirement Statements.

SBT: Science Based Targets. Science-based targets provide a clearly defined pathway for companies to reduce GHG emissions, helping prevent the worst impacts of climate change and future-proof business growth. Targets are considered 'science-based' if they are in line limiting global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.

Scope 1: Direct greenhouse gas emissions from the reporting company's operations including natural gas, fuel for transport, F-gases & other fuels.

Scope 2: Indirect greenhouse gas emissions from the generation of electricity used by the reporting company's operations.

Scope 3: Indirect greenhouse gas emissions from reporting company's value chain, both upstream and downstream.

SECR: Streamlined Energy & Carbon Reporting. SECR requires obligated companies to report on their energy consumption and associated greenhouse gas emissions within their financial reporting for Companies House.

Solar PV: Solar Photovoltaic is a form of technology involving systems that use solar cells to capture the sun rays and convert that energy into electricity.

