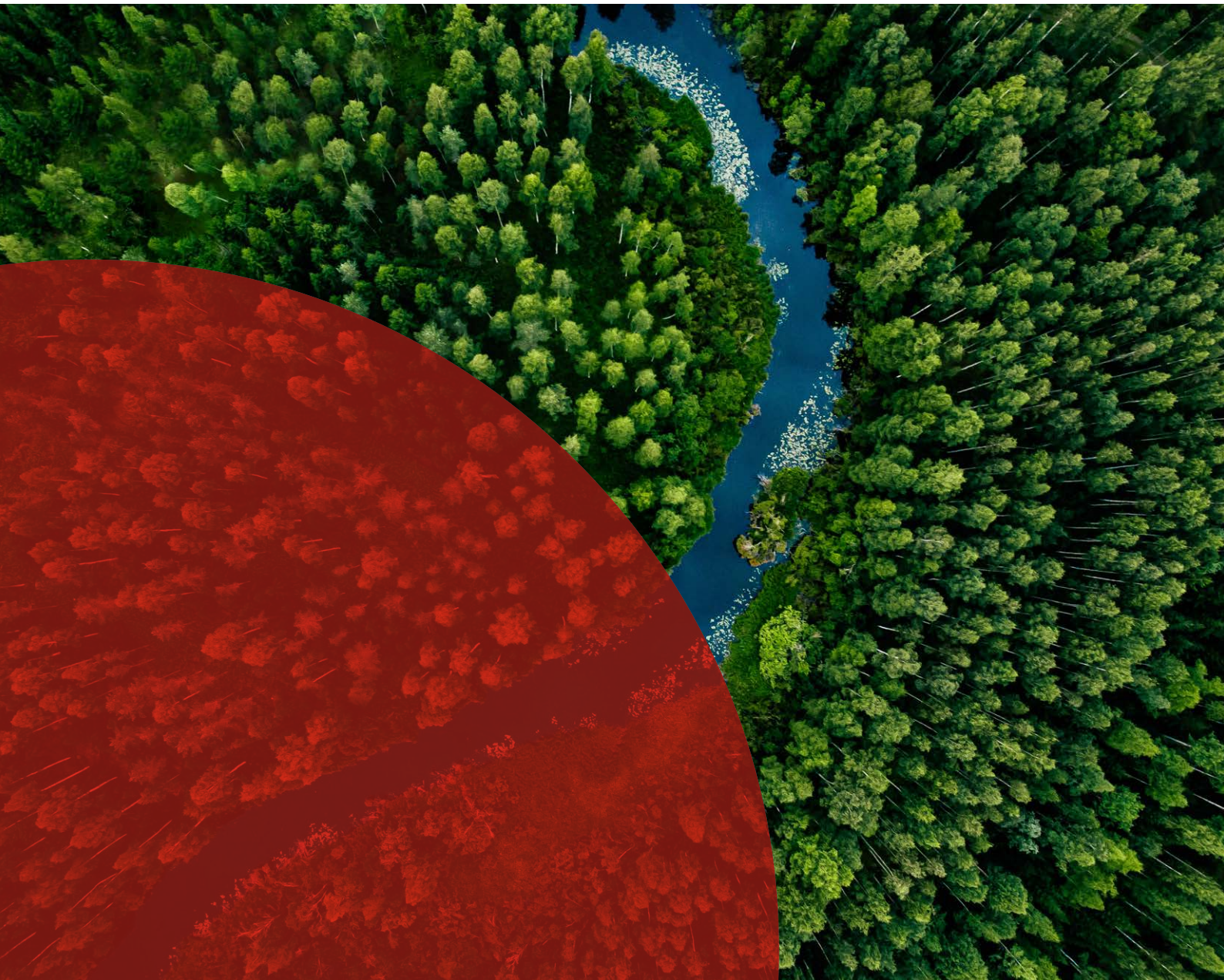
Inspiring trust for a more resilient world.

The journey to carbon neutrality

A guide to progress with standards



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The journey to carbon neutrality

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Introduction

The countdown

In recent years, many business leaders have been considering how they can lower their emissions within their operations. In some instances, leaders have already begun to take action. Now, as climate change is recognized as a threat to the planet, the emphasis is shifting towards a need to set out on a journey to net zero.

Carbon neutrality, which is a state of balance between the CO_2 released into the atmosphere and the CO_2 removed from the atmosphere, is an important milestone on that journey.

> The question is: what are the implications of carbon neutrality for your organization and how will you manage the necessary transition?

The Paris Agreement set goals to limit temperature rises via the reduction of greenhouse gas (GHG) emissions, which in turn have fed into regional policies, laws and regulations. Alongside these regulations, real-world evidence, such as increased rainfall, tropical storms, flooding and rising temperatures, tangibly demonstrates the urgent need for the world to become low carbon.

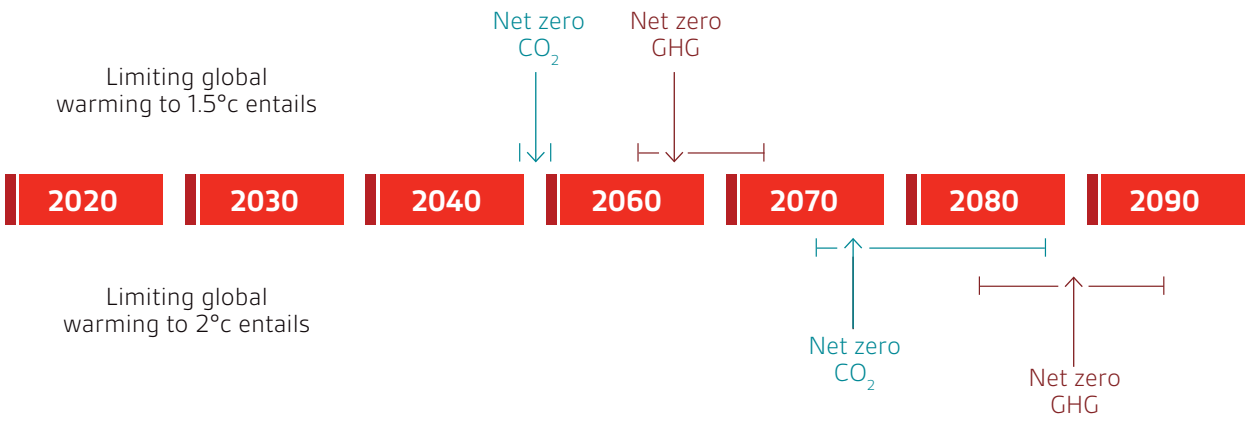
Many experts and climate scientists now speak clearly on the negative impact that human activity has on our planet; they advise that we are running out of time to resolve the issues. A report from the UN Intergovernmental Panel on Climate Change (IPCC) which states that the 1.5°C target will be exceeded by 2040 unless emissions are slashed in the next few years, has been described as a 'code red for humanity'[1]. Fixing the climate change problem and securing a stable, prosperous future for the planet is a key driving force behind climate action.

But additionally, climate action can be good for business. Stakeholders from consumers and investors, to staff and suppliers want to see progress and will support your organization as you take steps to actualize carbon neutrality throughout the supply chain.

Time is of the essence, and the task ahead may seem complex, but standards can play an important role in helping organizations overcome the obstacles to achieving carbon neutrality. With this support and an intrepid attitude, organizations can adapt to become a part of the solution.

[1]IPCC Report described as 'code red for humanity' by UN Secretary-General https://www.un.org/press/en/2021/sgsm20847.doc.htm

Global timeline to reach net-zero emissions



Source: IPCC Special Report on Global Warming of 1.5°C

The role of standards

Standards are an agreed way of doing something and provide precise criteria which allow them to be used as rules, guidelines and definitions. Developed by industry experts, researchers, consumers and government departments all working in unison, they provide a best-practice consensus for organizations to apply.

In the context of carbon neutrality, an area that is both highly important and multifaceted, standards play a vital role.

From broad-ranging standards encompassing carbon neutrality at the strategic, organizational and product level, through to highly specific standards such as those denoting competency requirements for reporting, BSI can support you at every step on your journey to carbon neutrality.

'[Carbon neutrality is the] condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject [that which is being analysed for GHGs and carbon neutrality] during the same period.'

Defining carbon neutrality

Inconsistency in definitions breeds confusion around climate action, which in turn hampers progress. BSI research[2] shows that only 10 per cent of respondents say that they 'fully understand' the relevant terminology related to carbon neutrality.

Part of the issue is that the concepts of carbon neutrality and net zero carbon are often conflated. Net zero carbon refers to eliminating CO_2 emissions to the minimum possible level and then offsetting the residual quantity. Carbon neutrality refers to CO_2 emissions being balanced, which to varying degrees can be dependent on carbon offsetting throughout the process.

For the purpose of this document, the BSI PAS 2060 definition of carbon neutrality has been applied.

[2]BSI Net Zero Barometer Report
https://www.bsigroup.com/en-GB/topics/sustainable-resilience/net-zero/NetZeroBarometer/

Get the standard

PAS 2060

(Specification for the achievement and demonstration of carbon neutrality) can help your organization to measure and manage your emissions throughout your operations and your supply chain. Covering direct and indirect emissions across the entire product or service life cycle, this specification has been used by thousands of organizations globally.

Understanding the scope of carbon neutrality

In a connected world with complex supply and value chains, understanding the true extent of the carbon emissions associated with your organization can be a challenge.

Imagine that you are a cardboard box manufacturer. It would be relatively simple to calculate your carbon emissions in the design and production of your goods. You could work out your factory's energy consumption, and also the emissions associated with distributing your boxes to the marketplace.

But that is only a small part of the picture, as there are upstream and downstream emissions to consider. What was the carbon cost of extracting and processing the raw materials needed to make your boxes?

How far around the globe did those materials travel to get to your factory? What emissions result from retail, or from delivery to the end user? And what happens to your boxes when they reach the end of their life cycle?

The Greenhouse Gas Protocol (GHG Protocol) divides emissions into three scopes, while BS EN ISO 14064-1 categorizes emissions as either direct or indirect. PAS 2060, the specification for the demonstration of carbon neutrality, can help your organization to measure and manage both direct and indirect emissions.

Emissions/ Covers	Examples	Key emission assessment approaches and standards								
		GHG Protocol Corporate Accounting and Reporting Standard	GHG Protocol for Project Accounting	GHG Protocol Product Life Cycle Accounting and Reporting Standard	GHG Protocol Corporate Value Chain (Scope 3 standard) Accounting and Reporting Standard	BS EN ISO 14064-1 (organizational footprinting)	BS EN ISO 14064-2 (project footprinting)	BS EN ISO 14067 (product footprinting)	PAS 2050 (product footprinting + sector derivatives)	PAS 2060 (demonstration of carbon neutrality)
Scope 1 Direct emissions	Company vehicles, company buildings	✓	✓			✓	✓			✓
Scope 2 Indirect emissions	Purchased electricity, heat and steam		✓ (some)	✓			✓	✓	✓	✓
Scope 3 Other indirect, all other emissions	Purchased goods and services, transportation and distribution, investments, leased assets, business travel, employee commuting			✓	✓			✓	✓	✓

Strategy design

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Strategy Design

Getting decisive

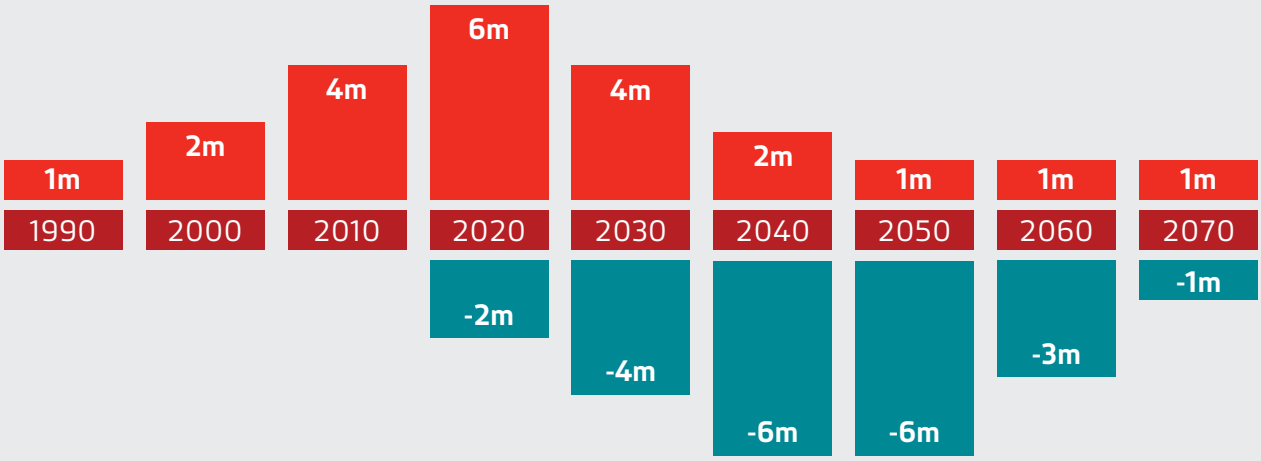
The route to carbon neutrality can seem daunting but that should not discourage you. Any organization can get started on its carbon neutral journey. One of the initial details you will need to establish is how carbon neutrality is relevant to your organization's purpose and aspirations.

Organizations and sectors come in all shapes and sizes and there can be no one-size-fits-all strategy – you must work out what is the best course of action for your set of circumstances.

Strategic steps towards carbon neutrality:

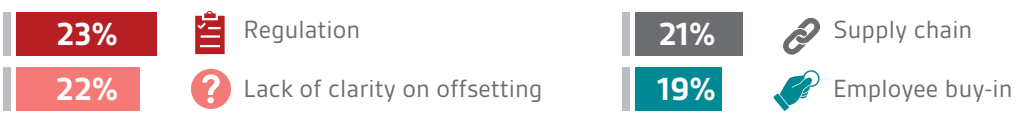
1. Decide which areas of your organization you will focus attention on.
2. Prioritize hot-spots or low hanging fruit that you wish to address. Are there 'quick wins' that can be made, for example, by changing something in your supply chain, using renewable energy, or electrifying a fleet of vehicles?
3. Evaluate the scopes (direct and indirect emissions) for your organization and consider mapping out timeframes for your goals and investment in carbon neutrality. For example, direct emissions could be your year one goal and all indirect emissions could be your ten-year goal.
4. Determine where and how you will you support and collaborate with suppliers or customers up or downstream in the value chain.
5. Consider whether you will attempt to neutralize your historic emissions. Alternatively, decide whether you will establish a rigid 'year zero' starting point from now or from a set time in the future.

Backdating carbon emissions



This graph shows how a company which can calculate its historic emissions, can backdate and neutralize them through, for example, carbon removal and offsetting.

Organizational barriers to carbon neutrality[3]



[3]All figures taken from the BSI Net Zero Barometer Report https://www.bsigroup.com/en-GB/topics/sustainable-resilience/net-zero/NetZeroBarometer/

Trust, transparency and the pitfall of perceived insincerity

Inevitably, with many corporations now pledging to become carbon neutral, net zero or even 'carbon negative', some sections of society will question the credibility of company strategies which claim to be sustainability led.

Climate action is a critical issue affecting ecosystems, economies and all forms of life. Naturally, your stakeholders, associates and the general public care deeply about the issue and will not react favourably to efforts which overpromise and underdeliver. The way organizations utilise their carbon neutrality strategies within their marketing is particularly sensitive.

That's not to say you shouldn't celebrate the positive steps that you take towards carbon neutrality. Doing so can bring considerable benefits, with research showing that more than half of consumers would be willing to pay more for a sustainable product that can be reused or recycled[4]. However, what is vital is that communications are open, honest and transparent.

Making a solid commitment to impartial, internationally recognized standards will not only help your organization manage its transition to carbon neutrality, but it will also reassure your customers and stakeholders that you are serious in your endeavours.

[4]Accenture [More than Half of Consumers Would Pay More for Sustainable Products Designed to Be Reused or Recycled, Accenture Survey Finds | Accenture https://newsroom.accenture.com/news/more-than-half-of-consumers-would-pay-more-for-sustainable-products-designed-to-be-reused-or-recycled-accenture-survey-finds.htm

At a glance...

Benefits of working towards carbon neutrality at the organizational level

- Reduce operational costs such as energy consumption by influencing stakeholder behaviour and implementing more efficient systems and processes
- Differentiate your company in the market and increase revenues
- Motivate and retain staff and attract investors by demonstrating your dedication to climate action
- Reduce the financial risk of possible future taxation on carbon emissions
- Support national and global efforts to meet international climate goals

Get the standard

PAS 2060

(Specification for the achievement and demonstration of carbon neutrality) is the internationally applicable specification for the demonstration of carbon neutrality. Verification to this standard will substantiate carbon neutrality claims that your organization makes.

BS EN ISO 14020 and BS EN ISO 14021

are the International Standards for Environmental labels and declarations. Providing descriptions of commonly used terms in environmental claims, qualifications for the use of those terms, as well as validated methodology for verifying any claims that your organization makes, these standards can help you to assert your credibility on carbon neutrality.

Working backwards, moving forwards

In contrast to other business endeavours, carbon neutrality has pre-existing parameters that can make the formation of your strategy relatively simple. You know with some certainty what it is you need to achieve - a balance between the carbon you emit and that which you remove from the atmosphere. Second, with the 2050 target[5], you also have a clear deadline for achieving it. With this knowledge, you are already in a great position to start working backwards to create a structure for your plans.

Every business is unique and therefore, each company must follow its own path to carbon neutrality.

[5] https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law and https://ec.europa.eu/clima/eu-action/climate-strategies-targets/2050-long-term-strategy_en

Stakeholder management

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Stakeholder management

Securing stakeholder buy-in is a crucial element of your carbon neutrality strategy because it improves collaboration and diminishes conflict and apathy. With the support of everyone from leaders and employees to third-party members of your supply chain, you can build momentum behind your carbon management programme.

BSI research[6] found that 19 per cent of companies cited employee buy-in as a barrier to climate action, with 24 per cent saying the same about senior management.

Irrespective of seniority, your organization must make a compelling case for a more environmentally sustainable way of operating. Thankfully, the appetite for such an approach may already exist; one study found that more than 50 per cent of employees would be willing to accept a lower salary to work for a socially responsible company[7].

What this tells us is that individuals are genuinely incentivized to be a part of a sustainable business. It is reasonable to suggest that a company with a serious commitment to mitigating climate change will be a more appealing proposition to prospective employees and therefore is likely to attract candidates of a higher calibre.

The people within an organization are its advocates and enablers for sustainable change. To make carbon neutrality a reality for your company you must:

- Engage
- Incentivize
- Consult
- Reskill
- Reorganize

[6]BSI Net Zero Barometer Report
https://www.bsigroup.com/en-GB/topics/sustainable-resilience/net-zero/NetZeroBarometer/
[7]Cone Communications Employee Engagement Study
https://www.conecomm.com/2016-cone-communications-employee-engagment-pdf
and CSR Study
https://www.conecomm.com/2017-cone-communications-csr-study-pdf

Considerations:

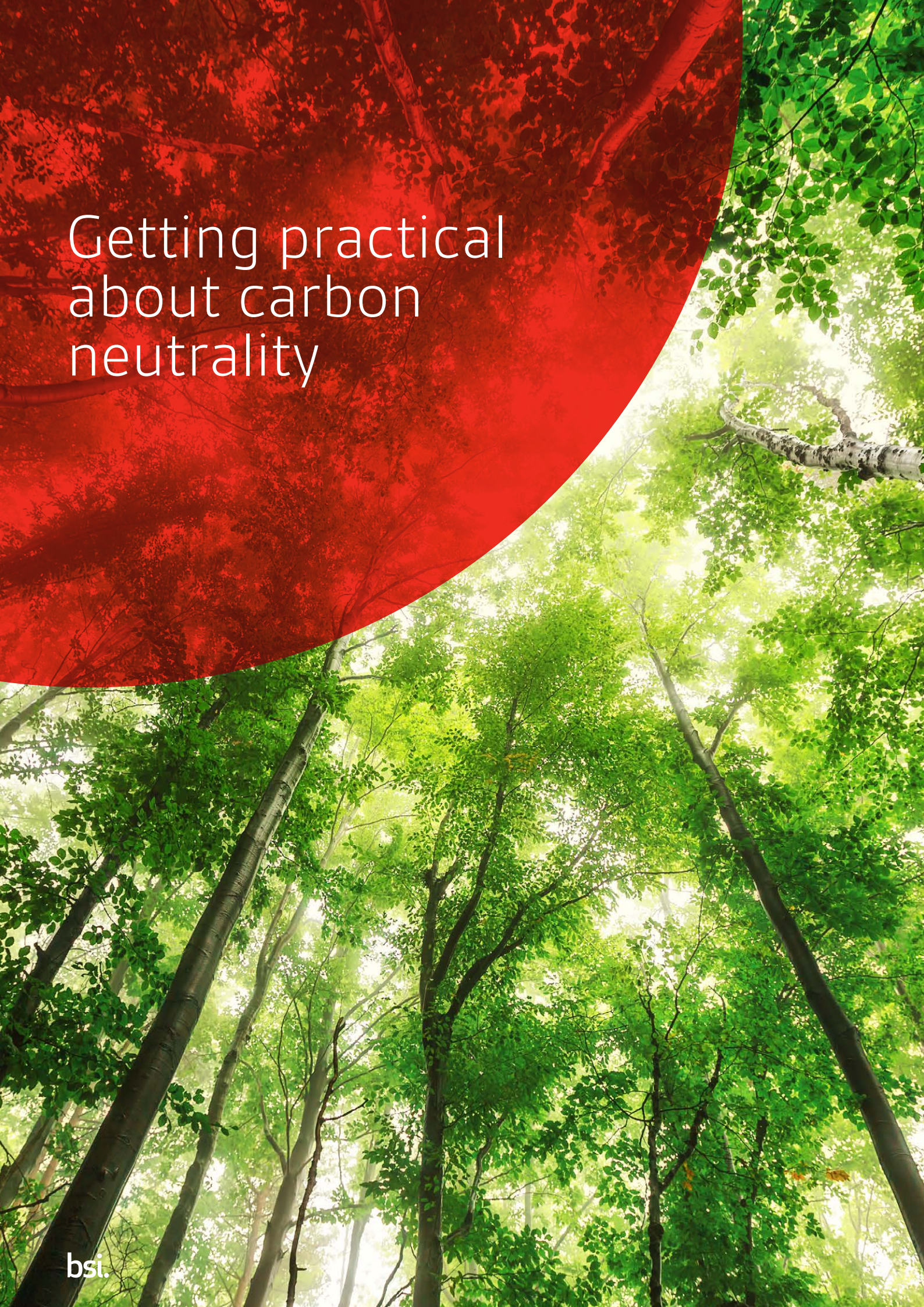
- **Create a purpose led culture** – Companies with highly engaged employees are likely to outperform their competition in gross profit by about 5%[8]. In other words, if your team cares about something, they do that 'something' better. Nurture a consistent and compelling narrative for carbon neutrality in your business. Be sure to give your employees a voice and be quick to share success stories with enthusiasm.

- **Factor sustainability achievements into executive remuneration** – Consider encouraging your senior stakeholders to set the tone for carbon neutrality reflecting sustainability achievements in compensation packages.

- **Work alongside external stakeholders that share your vision** – A comprehensive approach to carbon neutrality must consider the attitudes and actions of external stakeholders as well as internal ones. The first step towards ascertaining whether your external stakeholders' objectives and practices align with your own, is to review their compliance with regulations as well as their adherence to the relevant standards.

[8]Willis Towers Watson, The Power of Three: Taking Engagement to New Heights article
https://twogreysuits.com/public_documents/Towers-Watson-Employee-Survey_power-of-three.pdf

Getting practical about carbon neutrality



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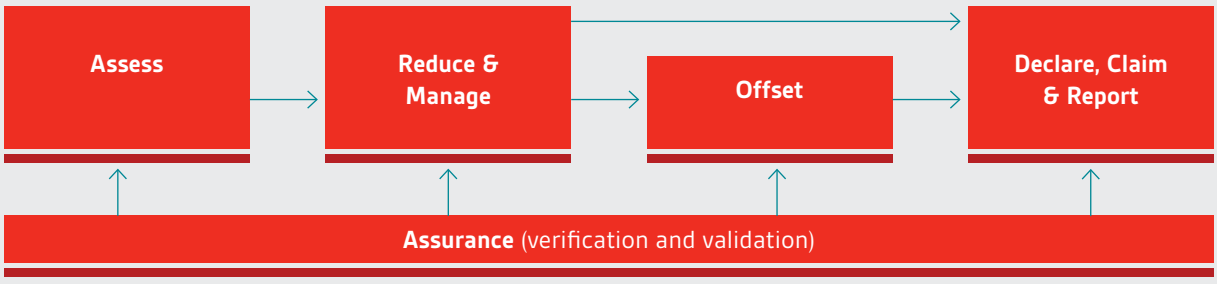
Getting practical about carbon neutrality

Greenhouse Gas Management

To help make GHG management more workable, the process can be broken into 5 distinct stages. These include: Assess; Reduce & Manage; Offset; Declare, Claim & Report; and Assurance. For each stage, there are a number of standards that will help to provide your organization with the necessary best practice framework for success.

> The aforementioned stages can be presented as a flowchart, which illustrates how each stage fits into the broader carbon neutrality picture.



(See BSI's interactive infographic for more information and sector-specific examples)

Discover the standards which can help your organization manage GHG emissions:

Assess:

BS EN ISO 14064-1
Organizational-level guidance for quantification and reporting of GHG emissions and removals.

This document includes requirements for the design, development, management, reporting and verification of an organization's GHG inventory.

BS EN ISO 14064-2
Project-level guidance for quantification and reporting of GHG emissions and removal enhancements.

This standard includes requirements for planning a GHG project, identifying and selecting GHG sources, sinks and reservoirs relevant to the project and baseline scenario, monitoring, quantifying, documenting and reporting GHG project performance and managing data quality.

PAS 2050
Specification for the assessment of life cycle GHG emissions of goods and services.

This publicly available standard builds on existing life cycle assessment methods established through BS EN ISO 14040 and BS EN ISO 14044 by giving requirements specifically for the assessment of GHG emissions within the life cycle of goods and services. These requirements further clarify the implementation of these standards in relation to the assessment of GHG emissions of goods and services, and establish particular principles and techniques.

Reduce & Manage:

BS EN ISO 14001
Guidance for environmental management systems.

The world's foremost standard for environmental management, this document maps out a framework that an organization can follow to set up an effective environmental management system including policies and objectives. It can help your organization reduce its environmental impact while simultaneously achieving growth.

Offset:

PAS 2060
Specification for the achievement and demonstration of carbon neutrality.

This standard specifies the requirements for carbon neutrality through the quantification, reduction and offsetting of GHG emissions.

Declare, Claim & Report:

PAS 2060 Specification for the achievement and demonstration of carbon neutrality.

PAS helps organizations demonstrate the carbon neutrality of a specific product, entity or activity, underpinning reliable, credible claims to that effect.

Assurance:

BS EN ISO 14064-3 Guidance for the verification and validation of GHG statements.

Applicable to organization, project and products, this document specifies principles and requirements and provides guidance for verifying and validating GHG statements.

BS EN ISO 14065 Guidance for GHG verification and validation bodies for use in accreditation.

This standard outlines principles, requirements and verification processes necessary for accreditation of carbon neutrality.

BS ISO 14066 Competence requirements for GHG verification and validation teams.

Helping to provide international consistency on GHG reporting, this standard specifies competence requirements for validation and verification teams and is complementary to BS ISO 14065.

BS EN ISO 50001
Guidance for energy management systems.

This standard helps organizations integrate better energy management into their business strategies and use energy more efficiently. It does this by outlining how to implement and maintain energy management systems that continually improve energy performance, thus saving money.

PAS 2060
Specification for the achievement and demonstration of carbon neutrality.

Use of this PAS will help organizations reduce GHG emissions, identify areas of inefficiency, improve overall performance and make cost savings by reducing energy consumption.

Focus on...

Making the 2021 G7 Leaders' Summit carbon neutral

In June 2021, the UK hosted the G7 Leaders' Summit, welcoming figureheads from some of the world's largest economies including Australia, Canada, the EU, France, Germany, India, Japan, South Korea, the UK and the US. A key focus of the summit was to form agreements on the international response to climate change and the COVID-19 pandemic.

With climate change so high on the agenda, it was important that the G7 Summit was managed to ensure it achieved carbon neutrality. Using the best available guidance, primarily PAS 2060, as well as internationally recognised standards on the measurement and reporting of GHG impacts, the UK Government was able to achieve this, submitting a PAS 2060 claim to demonstrate the credibility of the event's carbon neutral label.

Bentley Motors' 5-year commitment

Luxury car manufacturer, Bentley Motors Limited, has made a commitment to maintaining carbon neutrality across its manufacturing, testing and development sites in accordance with PAS 2060. The standard will help the company measure, reduce, offset and validate its emissions to demonstrate carbon neutrality between 2020 and 2025.

Decarbonization

Organizations do not operate independently. They sit within the context of national and international developments in decarbonization innovations. In the UK and elsewhere, this includes decarbonization of fuel and innovations around electric vehicles.

At present, decarbonization is largely focused on clean, renewable energy, which makes sense because once the energy sector has tackled its own emissions, huge gains will be made in other industries too, especially the most energy intensive.

Feasible. Necessary. Cost-effective.
The UK Climate Change Committee's verdict on decarbonization.

It is important to remember that while offsetting may initially be the means of achieving carbon neutrality, it is not an example of decarbonization. Decarbonization (the process of removing or reducing CO_2 output) should always be the primary focus of any carbon neutrality agenda.

Focus on...

Electric vehicles – decarbonizing the transport sector

One of the most conspicuous contemporary examples of decarbonization is the introduction of electric vehicles (EVs). By replacing petrol and diesel engines with battery cells, the automotive industry can mitigate tailpipe emissions, which will undoubtedly have a huge impact on the environment. However, even if we replaced every combustion engine on the road for an EV tomorrow, the industry's decarbonization challenge would still be far from complete.

That's because the embodied carbon in an EV (and in particular, within the actual battery itself) is presently far higher at the point of sale than that of a vehicle which runs on fossil fuel. It takes about 2 years for an EV to 'break-even', after which time the carbon benefits of EVs start to take effect.

One of the next big focus areas for the automotive industry therefore is in the development of batteries which are not only safe, effective and high performance, but also recyclable. Incoming regulations on batteries are helping to move the industry forwards, while new technology, research and resources are becoming available all the time to help solve the challenge.

BSI has been working on the UK Government funded project, The Faraday Battery Challenge[9], to create the standards that support the technical development of sustainable batteries. As overseers of this programme, we are conducting scoping, which includes workshops and research into the current standards landscape; creating three Publicly Available Specifications; and producing a strategic roadmap for future standards and standards uptake.

Furthermore, to help ensure that sustainable batteries in EVs can be charged via a sustainable, responsive and resilient energy grid, BSI has also been leading the ESA[10] (Energy Smart Appliances) and EV Charging programmes. This work will deliver a range of standards based on key principles which include interoperability and grid stability.

[9]The Faraday Battery Challenge https://www.bsigroup.com/en-GB/industries-and-sectors/energy-and-utilities/faraday-battery-challenge/

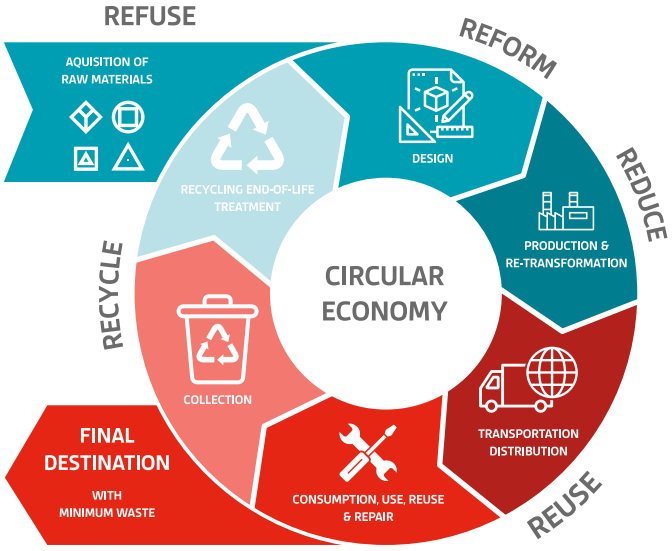
[10]The Energy Smart Appliances programme https://www.bsigroup.com/en-GB/about-bsi/uk-national-standards-body/about-standards/Innovation/energy-smart-appliances-programme/

Circularity

In the existing, linear economic model, materials are grown or extracted, made into goods, used and then disposed of. The circular economy differs as the materials used to make goods are kept in circulation for as long as possible at their highest possible quality and then recovered and regenerated at the end of their service life.

While the principals of circularity are not new, the concept has become increasingly popular in recent years, gaining traction as businesses seek to minimize waste and alleviate pressures on dwindling natural resources.

The circular economy decouples economic growth from resource use. It offers potential for a global economic system resulting in long-term prosperity as well as a healthier environment. Because circularity helps to limit emissions throughout the value chain, it can serve an important and effective function in your carbon neutrality strategy.



Get the standard

BS 8001

(Framework for implementing the principles of the circular economy in organizations) is the first practical framework and guidance of its kind to support the implementation of circular economy principals. The standard provides practical ways to secure smaller 'quick-wins', right through to helping organizations re-think holistically how their resources are managed to enhance financial, environmental and social benefits.

Europe's 'circular economy opportunity' has been projected to be worth €1.8 trillion by 2030[11]

[11]McKinsey & Company 'Europe's Circular-economy opportunity' 2015
https://www.mckinsey.com/business-functions/sustainability/our-insights/europes-circular-economy-opportunity

At a glance... Benefits of the circular economy for your organization

- Decoupling your organizational growth from natural resource dependence can help you to build resilience, protecting you from supply and stock shortages
- Resources - and by extension, your organization's assets - last longer, thus saving you money
- The circular economy has potential to be lucrative for forward-thinking organizations and has been estimated to present a €1.8 trillion opportunity in Europe alone
- A responsible attitude towards resources and the environment is valued by stakeholders and customers and can help you to build market share
- Moving towards a circular economy will help you to manage your waste and resources, therefore reducing your emissions and helping you on your journey towards carbon neutrality

Offsetting

Although elimination might be the ultimate goal, the truth is that no organization or entity is able to eradicate all of their emissions. That's where offsetting can play a supporting role. After avoiding and reducing GHG emissions as much as possible, an 'offset' is a way to compensate residual emissions by funding an equivalent CO_2 saving elsewhere.

Offsetting programmes can be national or international and may include investments in anything from renewable energy and forest planting to insulation projects within the built environment.

Good practice for offsetting

1. Offsetting should be viewed as a last resort when all options for carbon reduction or removal have been exhausted.
2. For a credible net zero plan, there must be a programme to reduce offsets over time.
3. Offsets should provide 'additionality' (i.e., a reduction that wouldn't otherwise happen).
4. Purchase offsets from a valid, credible provider.
5. Offsetting results must be permanent or effective over an extended period of time.
6. Offsetting measures must be measurable for validation.

Get the standard

PAS 2060

(Specification for the achievement and demonstration of carbon neutrality) contains internationally recognized best-practice guidelines for effective offsetting activity, specifying the requirements for carbon neutrality through the quantification, reduction and offsetting of GHG emissions.

Regulations

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Regulations

Thinking local / thinking global

Regulations are a vital component in the pursuit of carbon neutrality in the UK and internationally. From top level demands - such as limiting and taxing emissions - down to nuanced, sector-specific mandates, regulations are one of the key drivers of change.

Your company should be aware of the regulations that apply within your particular sphere of operation. To achieve carbon neutrality, however, you also need to think in broader, more global terms. For example, you will in all likelihood have links to other organizations, either up or downstream, that operate from a different country, or continent. Often these links will be indirect, but nonetheless, if they fall somewhere within your supply or value chain, you should consider the impact of their involvement and the implications of their local regulatory controls.

Effective climate action cannot be tackled with an individualist agenda; success depends on connectivity, transparency and collaboration.

Keeping pace with regulatory change… And why regulations might need to start keeping pace with you

As climate science and technology develop and the race to net zero intensifies, regulations will inevitably evolve. For this reason, your organization will benefit from agility, flexibility and proactivity in its approach to carbon neutrality.

However, regulations are rigid by necessity and regulatory changes inevitably take time. For this reason, progress within industry can outpace progress at a regulatory level.

Once your product or your service has been developed and undergone the necessary assessments to receive approval, it can become very hard to deviate from the processes you have established without compromising regulatory compliance - even if you find a more efficient, sustainable way to operate.

In order to circumvent this regulatory bind, a whole new regulatory paradigm would need to be developed; one that allows for real-time reporting and assessment, thus supporting efficacy and safety as well as sustainable innovation.

In practical terms, any such shift in the regulatory model is a long way from becoming a reality. Regardless of whether you consider regulations a catalyst or a constraint for sustainable innovation within your own organization, you will have to operate within the existing regulatory framework. Voluntary adherence to standards is the best way to achieve that.

Nullifying the non-compliance risk through standards

Failure to comply with regulations can have a devastating impact on an organization. Reputational damage, financial sanctions and in some cases, the withdrawal of trade licenses, are just some of the penalties that threaten to grind a non-compliant company to a halt.

Adherence to internationally recognized standards presents an excellent way to manage the risk of failing to comply with regulation. Standards draw on legislation, expert insight and the knowledge of industry stakeholders to form a definitive best-practice consensus that any company can choose to adopt.

Digital transformation

Digital transformation

If structured and interpreted into insight, data can inform any organizational decision. From a carbon neutrality perspective, data is essential for understanding where emissions occur and on what kind of scale. Accurate, reliable measurements are important so that (a) emitting activity can be targeted and addressed and (b) efficacy can be assessed and proven.

Organizations within some sectors, for example, manufacturing, do not typically revolve around data. Instead, they might rely on more process-driven methods whereby the costs of inputs are compared against the value of outputs. And while such an approach may have been sufficient for business success in the past, it will not be adequate in a future world where carbon neutrality is mandatory.

Embracing digital technology can help to place data at the heart of your operation and have a transformative impact on the way you understand and manage your emissions.

Get the standards

BS EN ISO 14064-1

is the International Standard for Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals. It sets out requirements for the design, development, management, reporting and verification of an organization's GHG inventory.

BS EN ISO 14064-2

is the International Standard for Specification with guidance at the project level for quantification and reporting of GHG emissions and removals. It sets out requirements for planning monitoring, quantifying, documenting and reporting GHG project performance.

Data circularity

Digital transformation unlocks the power of data and opens the door to data circularity. Circularity is usually associated with recycling or reusing physical resources, but in the digital realm, the concept refers to the feedback of data from the use-phase into design. With this valuable insight, products, systems and software can subsequently be optimized for decarbonization. As connectivity and the internet of things become more prevalent, opportunities to apply data circularity in all kinds of markets can improve.

In focus...

The digital transformation of the built environment

Construction is a sector that is taking huge strides in reducing emissions with the help of digital information. With a new technological focus, some players in the industry are proving that data brings a host of sustainable benefits throughout the entire value chain.

Effective data management is facilitating collaboration, minimising errors and rework, and providing leaders with the information they need to make better decisions. The upshot is that projects run more smoothly, less resources are wasted and building quality is higher – all of which help to minimize emissions.

A construction project that runs without mistakes is inevitably completed faster, thus limiting emissions from machinery during construction. In addition, fewer wasted materials mean less embodied carbon, while higher quality buildings are more energy efficient, last longer and require less carbon-heavy maintenance work throughout the building lifecycle.

BIM (Building Information Modelling) is a tangible example of construction's digital revolution and its potential to deliver a more sustainable built environment. By providing a data-rich 'digital twin' for a physical asset, BIM helps architects, contractors and asset owners derive learnings from the way an asset comes together and operates. These learnings can then be applied to optimize processes on subsequent projects, or to optimize the way a completed asset is managed.

Enhancing the benefits provided by BIM, augmented reality is now being used to allow contractors to overlay digital building plans in holographic form upon the physical construction site with millimetre accuracy[12]. This means errors can be spotted proactively and in theory this has the potential to eradicate the reactive remediation phase of the construction process altogether.

[12]IPA TIP 2030 Roadmap 14.4 Engineering Grade Augmented Reality https://www.gov.uk/government/publications/transforming-infrastructure-performance-roadmap-to-2030/transforming-infrastructure-performance-roadmap-to-2030

A carbon neutral future

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A carbon neutral future

As you progress on your journey towards carbon neutrality, the landscape will inevitably shift. New technology, regulations, guidance, knowledge and practices will emerge over the horizon all the time. Your organization must be alert to these changes if it is to successfully reach the finish line.

Carbon neutrality will require investment, dedication, upskilling, persuasion, innovation, transparency and (perhaps most importantly) collaboration. There are few easy answers and there is no one-size-fits-all solution. But you mustn't be deterred. With deference to the science and a host of standards-based tools at your disposal, you will be able to draw upon best-practice consensus to drive down your emissions. The reward is a more resilient world in which your organization can thrive.

Standards are developed by those who have the deepest understanding of the challenges you face and what it will take to help you succeed on your journey to carbon neutrality.

Contact BSI today to find out more about how we can help you achieve carbon neutrality.

About BSI

About BSI

BSI (British Standards Institution) is the business standards company that equips businesses with the necessary solutions to turn standards of best practice into habits of excellence. BSI helps its clients drive performance, manage risk and grow sustainably.

BSI is responsible for originating many of the world's most commonly used management systems standards. These standards address the most pressing issues of today from clear billing to energy management and disability access to nano-technology; spanning sectors including Aerospace, Automotive, Built Environment, Food, Healthcare and IT.

BSI's standards are underpinned by a collaborative and rigorous approach honed over decades; working with industry experts, government bodies, trade associations, businesses of all sizes and consumers to develop the standards for excellence.

BSI works with 86,000 clients in over 150 countries worldwide to help them adopt and cultivate the habits of best practice. Clients are trained and provided with practical guidance for implementation alongside a suite of compliance tools. BSI is independently assessed and accredited globally by ANAB (ANSI-ASQ National Accreditation Board) and by over 26 other accreditation bodies throughout the world including UKAS (United Kingdom Accreditation Service). BSI is also renowned for its marks of excellence including the consumer recognized BSI Kitemark™, which today ranks amongst the UK's most trusted brands.

British Standards Online - Supporting your carbon neutrality journey

Explore the British Standards Online (BSOL) Library for instant access to more than 3,000 standards relating to sustainable business practices and move a step forward on your carbon neutrality journey.

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