

OIL & GAS

# ACHIEVING NET ZERO

ADVANCING DECARBONIZATION SOLUTIONS  
FOR GLOBAL ENERGY PROVIDERS



BUREAU  
VERITAS



## DEFINING NET ZERO

**W**hile achieving net zero emissions is essential to advancing the energy transition, there are different approaches to defining and measuring this target. Before beginning their journey to net zero, energy providers should ensure they have a clear, common definition of what it means for their industry.

## THE GROWING CALL FOR NET ZERO

**C**limate change is one of the main challenges of our era, with regulators, businesses, activist groups and society as a whole increasingly calling for a swift energy transition. To achieve this, carbon-intense industries are adopting ambitious net zero targets that will steer them toward reduced emissions and greener operations.

Major oil and gas companies worldwide have come to understand the key role they have to play in the energy transition, with many pledging to achieve net zero by 2050. Oil companies at both the national and international level are looking to limit their greenhouse gas (GHG) emissions, recognizing that reaching net zero will require serious, sustained, long-term effort.

While there are many routes to reducing direct and indirect emissions from the oil and gas industry, each energy provider will need a company-specific approach. Bureau Veritas helps organizations assess their carbon footprint, identify emissions hotspots, and develop a net zero roadmap that defines clear actions for reducing emissions. We then help clients implement and evaluate improvement programs, and verify their information, enabling companies to communicate transparently about their progress toward net zero. We further help businesses undergo audits, independent certification and verification of their efforts to mitigate climate impact.

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### KEY FIGURES



**15% GLOBAL EMISSIONS** from oil and gas activities worldwide<sup>1</sup>



**33% GLOBAL EMISSIONS** from oil and gas use worldwide<sup>2</sup>



**1% TOTAL CAPEX INVESTMENT** in low-carbon solutions by energy providers<sup>3</sup>

#### – What is net zero?

To reach net zero, a company's value chain must result in no net accumulation of CO<sub>2</sub> in the atmosphere, and no net impact from other GHG emissions<sup>4</sup>. For oil and gas companies specifically, net zero is a commitment to both reducing emissions from internal operations and limiting impact from transportation and use.

#### – Who sets net zero targets?

The United Nations is pushing for net zero by mid-century through a variety of accords. These include the 2016 Paris Agreement, the Sustainable Development Goals (SDG), and the Race for Zero campaign. Companies, regulatory bodies, and governments can also set net zero targets. The European Union has announced its aim to be carbon neutral by 2050, and countries worldwide are setting their own national and local targets.

#### – What does net zero mean for the energy industry?

Net zero poses a significant challenge for the energy industry, as well as for the engineering, procurement and construction (EPC) companies and complete supply chain that support it. For these businesses, achieving net zero means measuring and reducing emissions from operations and use, capturing and sequestering emissions, and conducting carbon offsetting. Importantly, to achieve net zero, energy providers must do this across all three emissions scopes defined by the Greenhouse Gas Protocol, or by following **ISO 14064-1**<sup>5</sup>.

1. <https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions>  
 2. <https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-future-is-now-how-oil-and-gas-companies-can-decarbonize>  
 3. <https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions>  
 4. <https://sciencebasedtargets.org/resources/legacy/2020/09/foundations-for-net-zero-full-paper.pdf>  
 5. ISO 14064-1 addresses both direct and indirect emissions

# THREE EMISSIONS SCOPES FOR ACHIEVING NET ZERO

The GHG Protocol categorizes emissions into three scopes. Scopes 1 and 2 are direct and indirect emissions generated by an organization. Scope 3 encompasses emissions produced outside of an organization, but within its value chain. For energy providers, managing Scopes 1 and 2 is an obvious first step, while Scope 3 is a subsequent challenge that requires in-depth collaboration with suppliers and across the supply chain.

## SCOPE 1 Minimizing GHG emissions

Scope 1 emissions are direct emissions from company-owned or controlled sources. For the oil and gas industry, main sources of Scope 1 emissions include stationary combustion, mobile combustion, fugitive emissions, process emissions and land use.

Reducing Scope 1 emissions is the first priority for most energy companies, enabling them to quantify emissions, improve data reliability and adopt industry best practices for reducing and minimizing emissions. Bureau Veritas' *Achieving Net Zero* solution helps energy providers manage this category of emissions by identifying emission hotspots at the asset level and properly implementing solutions to reduce GHG and carbon output.



*Reducing Scope 1 emissions is the first priority for most energy companies, enabling them to quantify emissions, improve data reliability and adopt industry best practices for reducing and minimizing emissions.*

## SCOPE 2 Improving asset operations

For most businesses, indirect Scope 2 emissions are linked to the generation of electricity that has been purchased and used. For oil and gas companies, this puts a focus on asset operations and particularly the use of electricity, steam, heat and cooling. This is the primary focus of Bureau Veritas' integrated *Achieving Net Zero* solution, which helps oil and gas companies create and implement a net zero roadmap.



## SCOPE 3 Upstream and downstream indirect emissions

Scope 3 includes all other indirect emissions that occur outside of a company and its assets, but within its value chain, accounting for organizations' entire business ecosystem<sup>6</sup>. These emissions are the hardest to track and control, but often represent the greatest share of a company's environmental footprint. GHG emissions from oil and gas use are more than twice that of production, representing a significant portion of the energy industry's climate impact.

For oil and gas companies, Scope 3 emissions frequently occur in the transportation and distribution of goods, both upstream and downstream. For example, companies are considered accountable for the emissions of the tankers that ship their oil worldwide, despite not owning or operating the ships themselves.

Within Scope 3, energy providers must push to limit these emissions, ensuring tankers are designed to limit environmental impact, and use alternative fuels or propulsion methods. Companies can also finance and contribute to the development, production and scaling up of greener fuels, such as biofuels, green hydrogen and green ammonia.

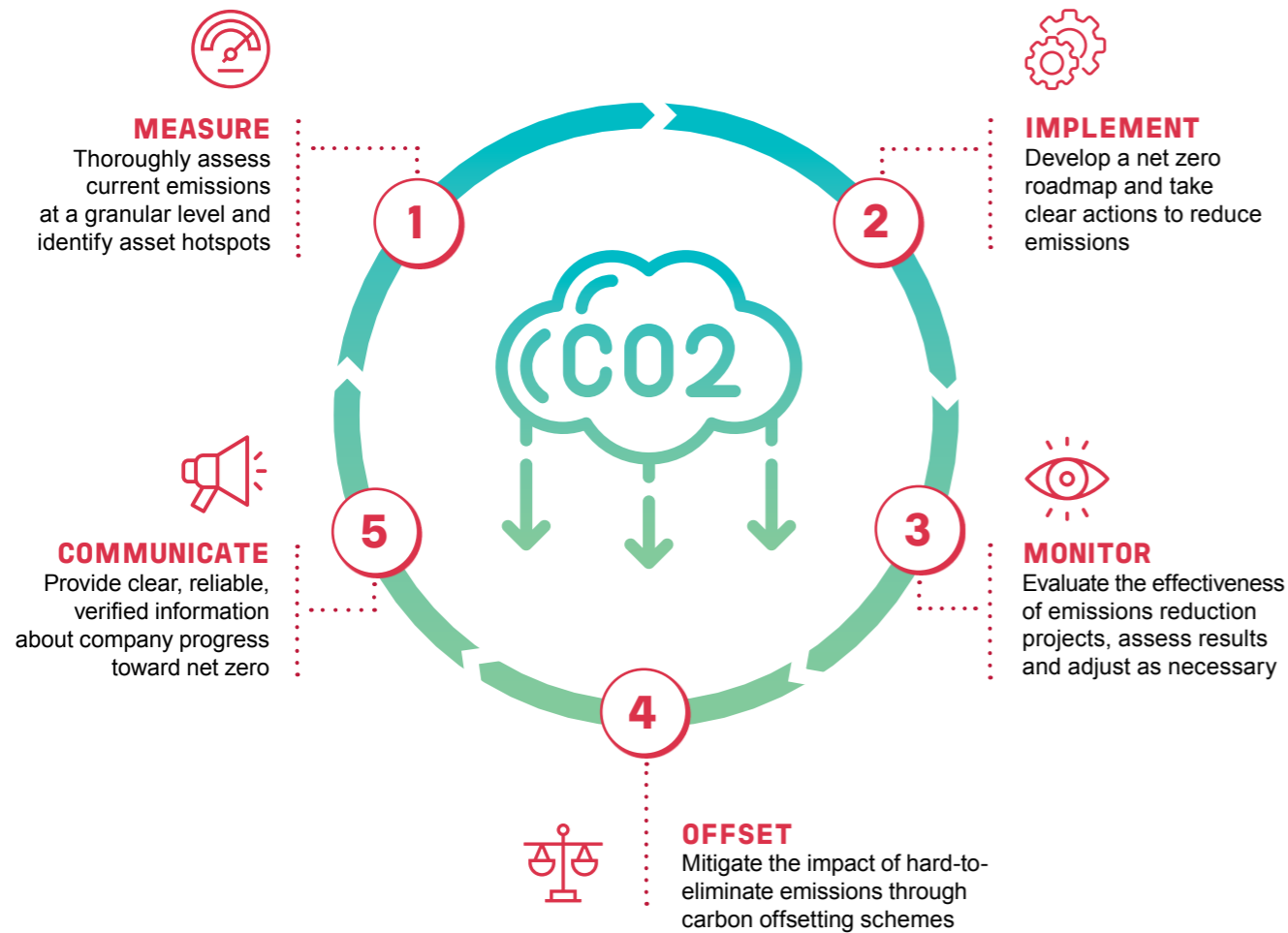
## EPCs: a role to play in reducing emissions across all scopes

The priority for EPCs is to support customers in accelerating the transition of their business to net zero emissions. To this end, they are developing their ability to deliver projects to cleaner standards internally, reducing their own Scope 1 and 2 GHG emissions. EPCs can also support oil and gas companies by adopting new technology to help them reduce Scope 1 emissions, thereby achieving Scope 3 reductions as part of energy providers' value chain.

Bureau Veritas supports EPCs by providing independent verification. This ensures the reliability of customers' asset data, helps EPCs identify the right solutions and technology, and enables Bureau Veritas to measure emissions reduction at project end.

<sup>6</sup> The GHG Protocol divides Scope 3 emissions into 15 categories: [https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf](https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporting-Standard_041613_2.pdf)

# A 5-STEP SOLUTION TO REDUCING EMISSIONS



**B**ureau Veritas' integrated, five-step *Achieving Net Zero* solution enables us to partner with oil and gas companies to reduce their emissions across all three scopes. We help clients accelerate their transition to net zero, providing an initial, targeted approach to minimizing Scope 1 and Scope 2 emissions, while preparing for Scope 3 improvements.

Oil and gas companies and the value chain that supports them can use Bureau Veritas' five-step solution to take practical steps toward achieving net zero by developing and implementing a clearly defined roadmap. Our solution offers support for monitoring assets and value chain activities, improving emission data reliability, and effectively quantifying emissions based on industry best practices. It adds value by identifying a company's emission hotspots, in order to help clients implement clear actions that will steadily and sustainably reduce its environmental impact. Our solution also accounts for long-term asset and system monitoring to verify progress, and helps clients understand and assess emissions offsetting and removal options, such as geological sequestration.

## 1/5 MEASURE EMISSIONS TO IDENTIFY HOTSPOTS

**B**efore they can take action, oil and gas companies should conduct a thorough assessment of their carbon footprint. This enables them to measure the reliability of their emissions data from the broadest to the most granular level<sup>7</sup>. This vital evaluation determines a starting point for improvement, identifying asset hotspots, and, once actions have been implemented, measuring progress.

A comprehensive carbon footprint evaluation is an essential first step to achieving net zero, with organizations reviewing data from numerous sources and areas. Data should be consolidated at asset, value chain, country and corporate levels to ensure the evaluation is an accurate reflection of a business' current emissions.

The reliability of an organization's carbon footprint can be significantly improved when carbon footprint data is verified by a trusted, independent third party. Bureau Veritas' *Achieving Net Zero* solution includes a review of all calculations at the asset and value chain level<sup>8</sup>, and field measurements as needed. Our experts verify that the measurements and methodologies used are correct and uniform, checking them against best practices and our internal data scoring system to ensure their reliability. In addition to an initial evaluation, Bureau Veritas engineers and data experts can review and update this data as often as required by the client.

A thorough carbon footprint assessment also provides an opportunity to identify emissions hotspots organized by emissions type across the value chain. It can pinpoint exactly which of a company's assets or value chain components is generating the most emissions and offer explanations for their output in terms of reliability. Giving priority to damaged or leaking assets, for example, can minimize emissions. The same is true for prioritizing assets that have been evaluated for integrity and proper maintenance.

By identifying hotspots and ensuring companies have reliable and comprehensive emissions data, Bureau Veritas can help decision makers choose and implement emissions reduction strategies.



*The reliability of an organization's carbon footprint can be significantly improved when carbon footprint data is verified by a trusted, independent third party.*

<sup>7</sup> This includes evaluations at the country, supply chain, company, asset and equipment levels.  
<sup>8</sup> Including original measurements taken by energy providers

2/5

## IMPLEMENT CLEAR DECARBONIZATION ACTIONS

Once emissions hotspots have been identified and analyzed, and the data has been verified, energy providers can develop a strong, achievable, company-specific decarbonization roadmap. Bureau Veritas provides end-to-end support to onshore oil and gas companies, offshore providers and marine stakeholders, helping them take action to reduce GHG emissions.



### INTERESTING TO KNOW



**300+ AUDITORS**  
for conducting carbon  
emissions verification



**200+ AUDITORS**  
for Energy Management  
Systems (ISO 50001)



**3,000+ AUDITORS**  
for Environmental  
Management Systems  
(ISO 14001)



**500+ ENGINEERS**  
working at Bureau Veritas'  
Technical Centers

#### – Developing decarbonization for onshore oil and gas

For oil and gas companies, CO<sub>2</sub> and methane are the most significant components of GHG emissions. Limiting these emissions is an immediate concern and can be achieved by improving management of energy and combustion, flaring, venting and fugitive emissions.

Bureau Veritas offers a number of different and individualized solutions to these industry-specific concerns. For example, our experts can conduct audits for certified energy management systems based on **ISO 50001**, a step increasingly considered best practice for oil and gas companies. For clients seeking a different option, Bureau Veritas can perform energy audits for worksites and assets, assessing areas where heat is wasted and determining which utilities consume the most energy.

Operators can also improve energy efficiency and reduce production losses with Bureau Veritas' Fugitive Emissions integrated solution. This approach enables operators to identify and monitor fugitive emissions sources, quantify emissions and repair leaks. In addition, Bureau Veritas' Bolted Joints Management integrated solution provides a safe and energy-efficient start-up for assets coming online after a shutdown, reducing flare gas concerns.

#### – Decarbonizing the offshore oil and gas industry

Power generation is the primary source of Scope 1 and 2 emissions for offshore installations. To achieve net zero, operators are focusing on the electrification of assets, reduction of flaring and venting, and limiting fugitive emissions. By powering assets with clean energy from offshore wind farms or alternative fuels (e.g., biofuel, green hydrogen, green ammonia), operators can limit GHG output. And like their onshore counterparts, offshore assets can reduce venting, flaring and fugitive emissions by improving maintenance, minimizing asset downtime, and increasing asset monitoring.

Drawing on the expertise of our global network, Bureau Veritas offers a full suite of decarbonization services for offshore installations. We help implement relevant standards and management systems for removing direct emissions, and provide technology qualification for green electricity solutions.



**2025  
PROJECTED DATE**  
for first commercial offshore  
hydrogen projects

### KEY FIGURES



**2023  
EEXI AND CII  
REGULATIONS**  
come into force  
worldwide



**3  
NEW FUEL NOTATIONS**  
(Methanolfuel,  
Ammoniafuel,  
Ammonia-Prepared)



**2  
WIND PROPULSION  
NOTATIONS**  
(WPS-1, WPS-2)

#### – Moving the marine industry toward net zero

Bureau Veritas' Green Line of services and solutions empowers marine-sector organizations to implement strategies to achieve their sustainability objectives. Our experts support ship owners and shipyards in preparing vessels to use low-carbon or zero-carbon fuels. We do this by collaborating with industry stakeholders to develop the technical insight, rules and guidelines for future fuels like methanol, ammonia and hydrogen.

Our Rules and notations for onboard wind propulsion help clients reduce GHG emissions and minimize fuel burning and consumption. We also help clients understand carbon indexes like the **Energy Efficiency Design Index (EEDI)**, **Energy Efficiency Existing Ship Index (EEXI)**, and **Carbon Intensity Indicator (CII)**. This enables ship owners to implement technical and operational improvements onboard to reduce carbon emissions and improve energy efficiency.

3/5

# MONITOR EMISSIONS FROM OPERATIONS

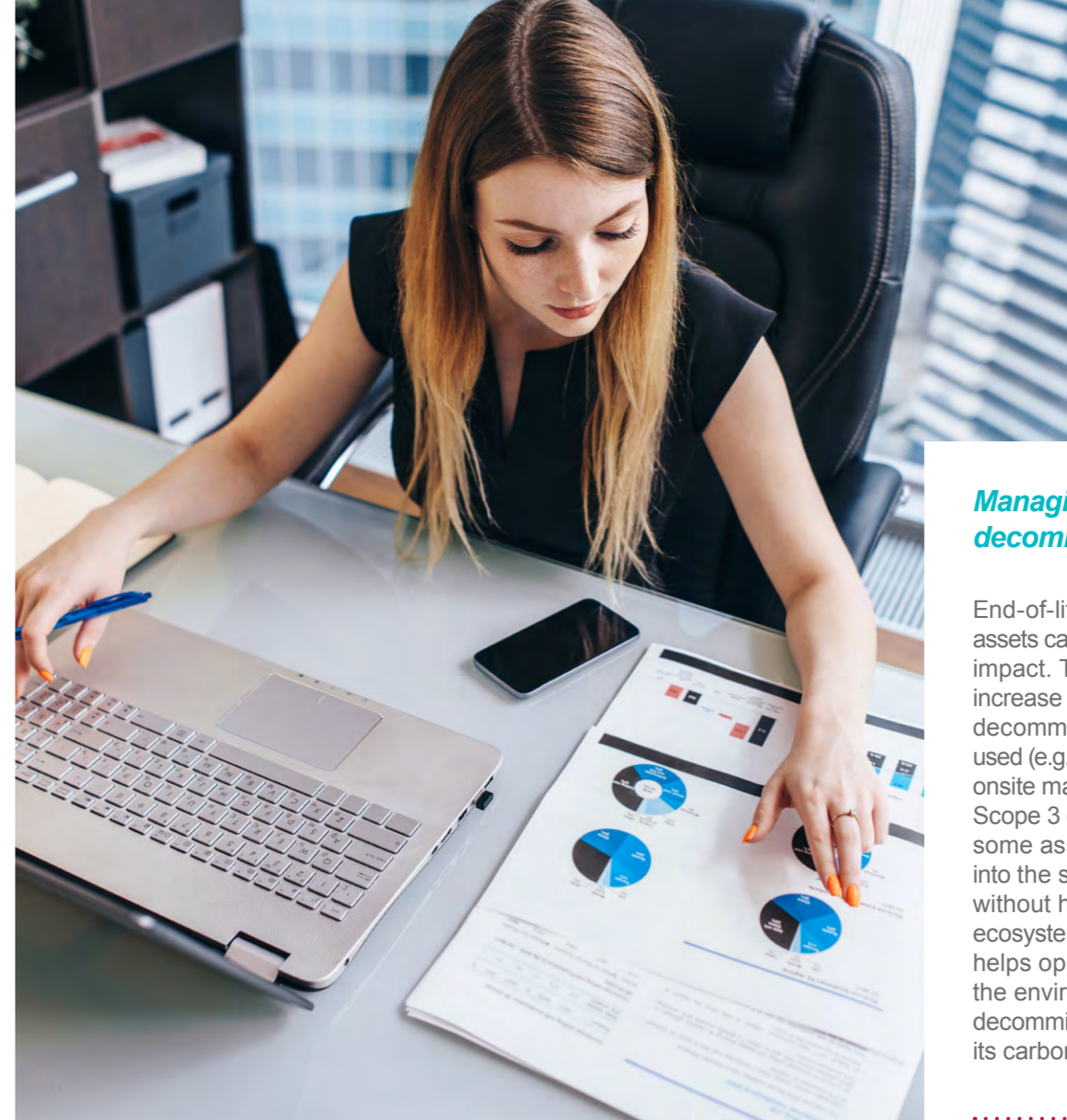
Once energy companies have implemented actions to reliably quantify emissions and focus on hotspots to reduce GHG emissions, it is important to monitor both specific assets and overall operations. Regular and accurate monitoring enables businesses to measure their progress, helping them meet sustainability targets and allowing them to adjust their plans where necessary.

Regular assessments and ongoing monitoring of assets enable oil and gas companies to check that the right emissions hotspots were identified during their initial evaluation. Verifying the reliability of original measurements and calculations also helps measure the progress of KPIs once emissions reduction strategies have been put in place.

Bureau Veritas experts can work with clients to evaluate the impact of actions taken and adjust calculations through a yearly review of client data. A review can also take place at the end of any project. Our experts have experience in all testing, inspection and certification (TIC) services, enabling them to:

- Review compliance with environmental policy and regulations
- Assess methods of calculation and classify them in accordance with specific requirements and common or best practices
- Analyze information provided through reports and technical documentation
- Evaluate the need to integrate data through field audits to collect engineering, process, inspection and maintenance data
- Perform field testing and take additional measurements where required
- Modify the existing system or integrate new processes to improve reliability

*Our goal is to create a virtuous cycle, in which data is regularly measured and verified, enabling companies to review their net zero roadmap and implement new actions.*



## Managing decommissioning

End-of-life activities for offshore assets can have a big environmental impact. There is a significant increase in offshore activity during decommissioning, and the assets used (e.g., offshore support vessels, onsite machinery) heavily increase Scope 3 emissions. Meanwhile, some assets are too integrated into the seabed to be removed without harming the marine ecosystem. Bureau Veritas helps operators determine the environmental impact of decommissioning and calculate its carbon impact.

## - Guiding OPEX and CAPEX decisions

Our five-step *Achieving Net Zero* solution further includes support for setting up **OPEX** and **CAPEX** projects to reduce emissions from hotspots.

- **OPEX** projects aim to modify existing systems to improve reliability. These might include repairing leaks to reduce fugitive emissions, reducing inspection and maintenance time in order to limit flaring during routine maintenance, or improving asset integrity management to extend asset life and reduce energy consumption.
- **CAPEX** projects focus on the installation of new technology and equipment, such as gas injection systems and turbines, or systems that provide continuous monitoring. For assets, CAPEX can be managed through the use of alternative energies like liquefied natural gas (LNG).

Bureau Veritas plays a technical advisory role, helping clients choose projects to launch, and guiding decision-making using their data and our roadmap. We offer support for project management, helping clients track progress and ensuring on time and compliant project delivery. We act as a TIC contractor, providing CAPEX services such as design review, QA/QC, regulatory, verification and monitoring services for OPEX projects. We further cover voluntary services, such as bolted joints management, asset integrity management and risk-based inspection.

For finished projects, Bureau Veritas can perform emission data verification and field measurement of emissions. We update emissions data within the *Achieving Net Zero* platform and confirm progress on defined KPIs, verifying the information that enables clients to communicate transparently about their progress.

# 4/5 OFFSET DIRECT CARBON EMISSIONS

Not all GHG emissions produced by businesses can currently be eliminated, but this does not mean compromising on sustainability. Bureau Veritas plays a key role in supporting clients' carbon offsetting requirements. We do this by validating and verifying projects that generate carbon credits through internationally recognized schemes, or directly within the value chain<sup>9</sup>.

Carbon offset schemes enable businesses to buy offset credits that contribute directly to projects outside of their organizations that reduce or remove GHG emissions. These include investing in clean energy technologies, purchasing and "retiring" carbon credits from emissions trading schemes, and supporting work to directly remove CO<sub>2</sub> from the air. This enables companies to compensate for their residual emissions.

While carbon offsetting is an increasingly common practice, it is intended to support net zero progress in a specific way. The goal is for businesses to invest in carbon offsetting schemes while steadily decreasing their own GHG emissions and eventually achieving zero emissions.

Companies that choose to use carbon offset schemes must therefore ensure that their offsets are credible and legitimate. Bureau Veritas supports this by assessing carbon offset from operations and verifying that it matches a company's net zero roadmap. We leverage the UNFCCC<sup>10</sup> Clean Development Mechanism to offer project design validation and verification services. This helps clients meet the requirements of approved schemes like the Verified Carbon Standard and Gold Standard.

Thanks to these verified emission reductions, energy providers can demonstrate the integrity of their offsetting projects and support credible progress toward net zero.



**Developing carbon capture and storage**

Another solution for offsetting emissions is carbon capture and storage (CCS) technology. Energy companies already account for more than a third of investment in CCS projects, and about 75% of CO<sub>2</sub> captured comes from oil and gas operations<sup>11</sup>. Offshore assets offer their own possibilities for storing carbon, by injecting CO<sub>2</sub> into decommissioned jackets or topside facilities. Bureau Veritas provides both feasibility studies for onshore projects and integrity inspections for offshore jackets, using OPEX and CAPEX data to support decision-making.

<sup>9</sup>. This process is known as insetting, and can help reduce Scope 3 emissions  
<sup>10</sup>. The United Nations Framework Convention on Climate Change  
<sup>11</sup>. <https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions>

# 5/5 COMMUNICATE AROUND BUSINESS CLAIMS

Once companies have measured and monitored their emissions reduction and improved data reliability, they need to communicate their progress to both stakeholders and society at large. By verifying all collected emissions reduction data with an independent third party, companies can provide proof of their efforts and progress toward achieving net zero.

Companies working toward net zero should expect to undergo regular carbon footprint assessment, reporting and verification. This may be required by regulations, but is also expected by other stakeholders, including investors, clients and consumers.

Bureau Veritas helps clients ensure their communications around emissions reduction are thorough and precise. We can assist with reporting index selection, including the **Carbon Disclosure Project (CDP)**, the **Task Force on Climate-Related Financial Disclosures (TCFD)** framework, and the **Global Reporting Initiative (GRI)**.

As an independent third party, Bureau Veritas can also provide verification of sustainability reporting, ensuring a comprehensive and accurate picture of a company's environmental footprint. We help clients prove that the organization, processes and practices behind their business ventures are socially responsible and sustainable.

Bureau Veritas provides clients with clear, reliable and verified information thanks to our industry-specific expertise, field experience, project management skills, local presence, and verification and certification services. We put a trusted stamp of approval on companies' sustainability results, enabling clients to communicate transparently about their progress toward net zero. By facilitating responsible communication, we support companies as they seek to shape lasting trust with stakeholders, partners and consumers.



## Carbon Progress® certification



Bureau Veritas has developed a certification scheme that enables organizations

to demonstrate their progress towards decarbonization. Improvements reduction clients have achieved and their trajectory toward meeting the science-based targets established for their industry.

## Bring Trust to your ESG commitments



Bureau Veritas has developed Clarity, a comprehensive solution to manage the progress of companies'

sustainability commitments and support their roadmap implementation on various ESG topics. Bureau Veritas' Net-Zero is an industry-specific module of Clarity specifically designed to help them manage their emissions.

# YOUR PARTNER IN VALUE CREATION

**Achieving Net Zero solution is a flexible, dynamic, integrated digital solution that enables clients to set and reach the GHG emissions reduction targets most suited to their business and situation. This includes achieving net zero at the pace and by the date of their choice. Our modular solution comprises three levels of compliance.**

## A MODULAR SOLUTION TO MEET THE NEEDS OF EVERY COMPANY

1

### Compliance and **VERIFICATION**

Allows companies to verify that their data is compliant with standardized principles and approaches for reducing GHG emissions, including all relevant policies and regulations

2

### Compliance and **IMPROVEMENT**

Enables organizations to compare their activities to common, industry-specific GHG emission practices and improve data reliability to more accurately identify hotspots

3

### Compliance and **DEVELOPMENT**

Empowers clients to discover and implement verified GHG emission best practices to increase data reliability and accelerate progress toward net zero, reducing emissions, limiting production costs and mitigating carbon tax exposure

# GOING BEYOND SUSTAINABILITY

**With years of experience and a worldwide network of experts, Bureau Veritas is the partner of choice for companies looking to make the transition to net zero. Our integrated solution and far-reaching industry know-how enable energy providers to reap all the benefits of achieving net zero. We help companies go beyond compliance and improving sustainability, enabling them to take advantage of a host of additional benefits, including greater efficiency, reduced costs, lower taxes and improved operations.**



Our BV Green Line of services and solutions enables clients to meet sustainability challenges, protecting the environment and improving the quality of products and services across the value chain. We are a key player in the energy transition, present at all stages of the renewable and alternative energy production chain. The **BV Green Line** helps organizations implement, measure and achieve sustainability objectives, and enables us to support our clients in sustainably designing, building and operating their assets.



**Increase**  
energy  
efficiency



**Improve**  
asset  
management



**Create**  
value for  
stakeholders



**Reduce**  
costs from operations  
and maintenance



**Prepare**  
for carbon tax  
legislation



**Build**  
a clean  
energy sector



**Apply**  
industry expertise  
to a global challenge





# SHAPING A WORLD OF TRUST

**Bureau Veritas** is a Business to Business to Society company, contributing to transforming the world we live in. A world leader in testing, inspection and certification, we help clients across all industries address challenges in quality, health & safety, environmental protection and social responsibility.

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