2022 Sustainability Report

Delivering energy for the world today,
and finding solutions for tomorrow

Contents

This report provides an overview of BW Group's activities relating to environmental, social, and governance (ESG) matters. It supplements the reports published by BW Group affiliated companies.

While BW Group companies report similar metrics, each company's results must be evaluated in the context of its respective segment, as vessel size, voyage length, and duration in port all vary considerably.

Chairman's Message

BW Group is committed to continuous improvement on environmental, social and governance matters. This report highlights the progress we are making in these areas.

One of the strengths of the BW network of companies is that we have multiple affiliates who are each working to find solutions. This allows us to multiply our efforts through distributed development and shared learning.

In parallel with operational efforts to minimize our environmental footprint and improve social dimensions, we have been investing in companies that support the energy transition. Significant strides have been made across solar, wind, batteries, and we are also growing platforms in the circular economy such as biofuels and water. Technology is being applied to accelerate these developments.

Transition will not happen overnight. But like all human achievement, incremental progress will lead us to where we want to be. BW is working hard to get there, with the help of teams and partners around the world.

Andreas Sohmen-Pao
Chairman, BW Group

Business Overview

BW Group is a leading global maritime company involved in shipping, floating infrastructure, deepwater oil and gas production, and new sustainable industries.

Vision

Best on Water

Mission

Delivering energy for the world today, and finding solutions for tomorrow

Values

Collaborative

- We engage our customers to find solutions together
- We interact positively and constructively with our colleagues
- We are open and authentic in everything we do

Ambitious

- We recognise that to be our customers' first choice we must be responsive and excel in what we do
- We challenge our own performance and goals, as individuals and as teams
- We give and we value honest and respectful feedback

Reliable

- We deliver on our promises to customers and colleagues
- We recognise that accountability and reliability are essential for success
- We act with integrity and uphold high ethical standards

Enduring

- We serve our customers with a long-term perspective
- We persevere based on our commitment to make a positive impact
- We are attuned to the changes around us, and adapt to stay relevant

BW Affiliated Companies

BW LNG

A leading fleet of Liquefied Natural Gas (LNG) vessels and Floating Gas Terminals (FSRUs)

BW Solar

Developer of solar and energy storage projects

BW LPG

The world's largest fleet of Liquefied Petroleum Gas (LPG) carriers

BW Energy Storage Systems

Developer of battery energy storage systems in the UK and globally

BW Epic Kosan

Largest global fleet of smaller gas carriers for delivery of LPG and petrochemicals

BW Ideol

Experienced provider of floating foundations for offshore wind

BW Offshore

Global provider of floating production solutions to the oil and gas industry

BW Digital

Owns Hawaiki trans-Pacific subsea cable and developing new cable systems

BW Energy

Owns and develops proven oil and gas fields

BW Water

Supplier of water and wastewater systems for the industrial and municipal markets

BW Dry Cargo

A fleet of modern dry bulk carriers

Cadeler

Wind turbine installation vessels for offshore wind construction, maintenance and decommissioning

Hafnia

World's leading product tanker company

Corvus Energy

Leading supplier of energy storage solutions for the maritime industry

Navigator Gas

World's largest fleet of handysize liquefied ethylene and gas carriers

Source: Cadeler

Improving Asset Footprint

The Group has continued to increase its focus on sustainability initiatives and investments. These initiatives have been successful in decreasing average emissions and improving carbon intensity across the Group's fleet.

From 2021 to 2022, the average emissions each vessel produced reduced by 6.25% for CO_2, 10.67% for NOx, and increased by 3.88% for SOx (largely due to our LNG carriers using more LSFO instead of LNG as fuel). Our fleet has also improved on the industry's two most prominent measures of carbon intensity: Annual Efficiency Ratio (AER) and Energy Efficiency Operational Index (EEOI).

From 2021 to 2022, as an average across our businesses, AER and EEOI improved by 2.56% and 6.95%, respectively.

BW's strategy

To ensure we live up to our vision and mission, we must continue to deliver the energy the world needs today while working on solutions for the future. We continue to do this through a dual focus on reducing the environmental impact of our current business and investing in renewable technologies that support a circular and sustainable economy.

We strive to minimise our environmental footprint and have decreased average emissions per vessel across our businesses. We are on track to meet the IMO's environmental goal of a 40% reduction in carbon intensity by 2030 and a 50% reduction in total annual GHG emissions by 2050, compared to 2008 levels.

Average emissions per vessel from 2021 to 2022

↓ 6.25%

Average reduction in CO_2 emissions

↓ 10.67%*

Average reduction in NOx emissions

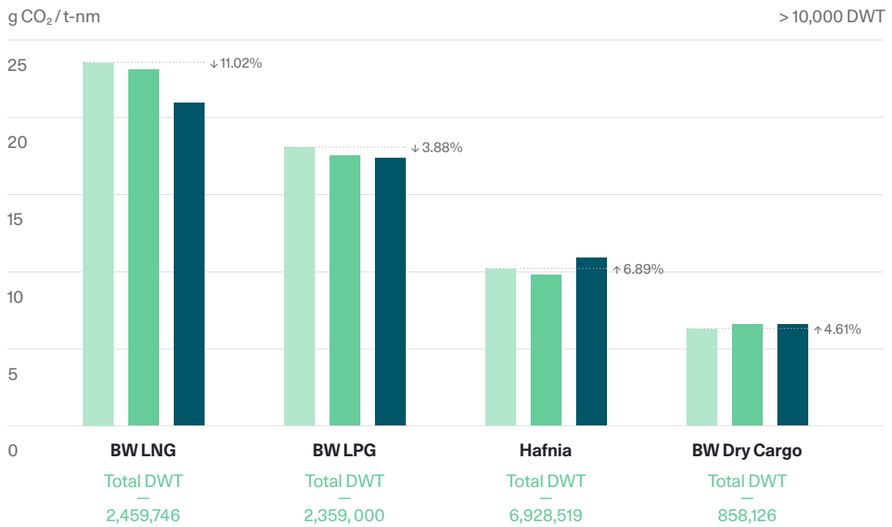
** Average across BW LNG, BW LPG, Hafnia, BW Dry Cargo and BW Epic Kosan fleets. Please refer to the Appendix for more info.*

Efficiency Metrics

2020 2021 2022

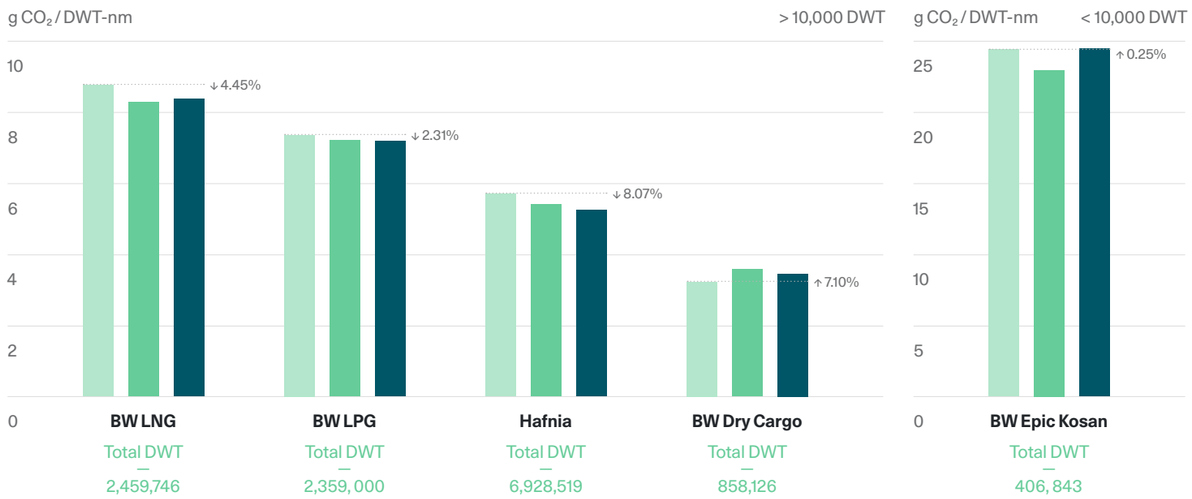
Energy Efficiency Operational Index (EEOI) for vessels

The graph below illustrates the Energy Efficiency Operational Index (EEOI) for each of our shipping businesses where we are the major shareholder.



Annual Efficiency Ratio (AER) for vessels

The graph below illustrates the Annual Efficiency Ratio (AER) for each business where we are the major shareholder.



Optimising Operations

Regular maintenance and anti-fouling paints

We continuously improve our existing fleet and its footprint. These improvements include reduced fuel consumption via anti-fouling paint, engine management, waste heat recovery, and fuel-saving devices and technologies.

Route and speed optimisation

In addition to regular maintenance of our existing fleet, BW optimises vessel efficiency by ensuring our ships travel on the most efficient routes at the most efficient speeds.

Through harnessing technology and meteorological data to conduct weather routing and regular voyage prognoses, BW ensures the scheduling of our fleet is effective and accurate. In 2020, our weather routing capabilities were enhanced by the addition of the Total Fuel Oil Consumption (TFOC) system. The system provides an algorithmic calculation and calibration of equipment onboard to optimise speed and routes. BW also endeavours to arrive in ports just in time to avoid rushing to arrive, followed by near-shore idling and resultant emissions.

In 2022, BW LNG and its charterer, oil major TotalEnergies, partnered with Nautilus Labs to improve boil-off gas optimisation and voyage optimisation services for the lowest LNG consumption per voyage. The Nautilus platform leverages integrated vessel data to build a ship-specific machine-learning performance model, to determine the optimal speed over ground based on the set ETA and corresponding shaft speed. The platform then estimates the total expected LNG consumption against the reliquefied gas to meet the temperature and pressure arrival requirements.

Waste management

BW places great emphasis on the responsible disposal of waste onboard to avoid harming the marine environment. We do this by creating vessel-specific water and waste management plans, conducting drills to prepare for unplanned events, and encouraging suggestions from our employees on methods to further reduce our footprint.

Each of our vessels have a class-approved Ballast Water Management Plan that ensures ballast water and sediment from vessels are handled in a safe and environmentally-friendly manner, in compliance with the IMO Ballast Water Management Convention.

Recycling of ships

At the end of a vessel's commercially viable life, we ensure it is recycled responsibly in a manner that minimises impact to the environment and to human health. BW takes this responsibility seriously and closely manages and monitors the entire process.

We select only ship recycling facilities that are ISO 30000 certified, approved by a class society, and in full compliance with the Hong Kong Convention. When possible, we pre-inspect the facility and ensure a BW representative on-site with stop-work authorisation throughout the demolition process.

To support the recycling facility, BW prepares an Inventory of Hazardous Materials document (IHM) and jointly formulates a plan for safe and environmentally sound decommissioning of the vessel.

↓ 5 – 10%

Potential fuel savings per voyage from voyage optimisation technologies

Retrofitting Existing Assets

2022 marks the first year the entire BW LPG fleet is serving customers with the sector's lowest emissions profile, reducing our carbon emissions by 27,000 MT or 15%, as compared to using compliant fuel. The new dual-fuel engines are the result of the collaboration with key engine manufacturers to use LPG, a cleaner-burning fuel, as part of the transition towards a low-carbon future.

BW LPG is now the world's largest fleet owner and operator of lower-emission Very Large Gas Carriers (VLGCs), following the retrofitting completion of 15 of its VLGCs with LPG dual-fuel propulsion engines and the addition of one LPG dual-fuel newbuild in 2022.

LPG dual-fuel engines have the potential to reduce emission of Sulfur Oxide (↓97%), Particulate Matter (↓90%), Carbon Dioxide (↓15%), and Nitrous Oxide (↓20%). It means that vessels powered by LPG are in full compliance with current and future Sulfur Oxide (SOx) emission requirements, including for Emission Control Areas (ECAs) and Sulfur Emission Control Areas (SECAs). LPG propulsion also offers efficiency gains on many fronts. Output efficiencies will improve by about 11% with LPG as compared to compliant fuels.

In addition to significant improvement in total voyage fuel economics, other efficiencies include easy storage and faster refueling. Bunkering for the retrofitted vessels can be done with reduced spill risk, either directly at the load terminal or via ship-to-ship transfer from a smaller LPG carrier. The dual-fuel capability also provides fuel flexibility, which translates to full redundancy. Dual-fuel allows for uninterrupted operations and buffers fuel price fluctuations.

While building new ships with LPG propulsion can be beneficial, retrofitting has a much lower carbon cost. The total emissions from retrofitting are about 2,000 tonnes of CO_2 compared to 70,000 tonnes for materials and the building process for a new vessel.

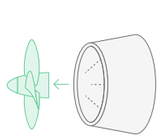
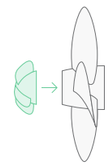
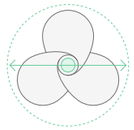
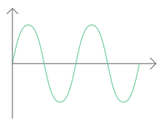
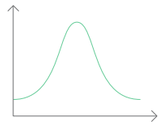
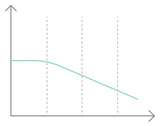
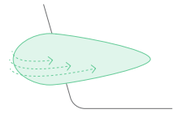
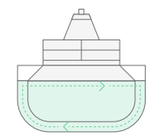
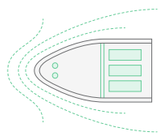
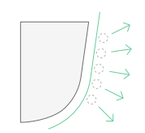
LPG dual-fuel engines have the potential to reduce the emissions of

Sulfur Oxide by	Particulate Matter by	Carbon Dioxide by	Nitrous Oxide by
↓ 97%	↓ 90%	↓ 15%	↓ 20%

Designing Fuel-Efficient Vessels

When retrofitting and optimising operations are not enough, we build the most efficient and modern vessels we can.

Specific features

Mewis ducts before propellers 	Propeller boss cap fins 	Increased propeller diameter 
Variable frequency drive for big fans, pumps and steering gear 	Fixed online PMI system for optimising main engine fuel consumption 	De-rated main engines for improved fuel efficiency 
Grey water modification 	Waste heat recovery unit for generators 	Twisted leading edge rudder bulb 
Ballast water treatment systems 	Advanced hull design, hydrodynamic, computational fluid dynamics optimization 	Advanced hull anti-fouling paint 

Fuel and emissions savings

Latest vessels with updated hull shape save

↓ 6%

Fuel savings from laden voyage

Improving hull shape and methane slip

BW's newest generation ME-GI LNG carriers are equipped with the latest technology to address environmental issues. Our latest vessels have an updated hull shape and engine. This hull is expected to reduce fuel consumption by an additional 4% on a roundtrip voyage and 6% on a laden passage. This latest-generation design gives approximately 5.5% higher efficiency. The vessels are also fitted with the latest ME-GI engines that have much lower methane slip (4-8 times less) than other LNG vessels. The engine emits 2.71 tons of CO_2 equivalent per hour, contributing considerably less to global warming than vessels with X-DF propulsion.

Alternative Propulsion

Outside of our LNG fleet, which often uses LNG as fuel, our other businesses are exploring alternative propulsion technologies.

Hafnia, a leading global product and chemical tanker company, will welcome four new dual-fuel Aframax LR2 product tankers to its fleet in 2023. The first vessel, Hafnia Languedoc, will be delivered in March 2023, and the second vessel, Hafnia Loire is expected in May 2023. The vessels will be time chartered out to long-standing customers TotalEnergies and Equinor.

The four vessels are equipped with Liquified Natural Gas (LNG) propulsion technology. Adopting Liquefied Natural Gas (LNG) as a fuel was one of the first steps in Hafnia's sustainability values and ambition for a greener future. Switching to LNG as a fuel provides significant benefits, such as improving overall air quality and reducing GHG emissions. LNG is widely regarded as a promising marine fuel helping the shipping industry move towards its goal of a 50% reduction in GHG emissions by 2050.

LNG acts as a fuel that moves shipping towards its decarbonization goals in the interim, in anticipation of hydrogen and ammonia becoming commercially viable. Compared to ships powered by traditional fuel oil, LNG as a marine fuel typically results in 97% lower Sulphur Oxide emissions, 97% lower Particulate Matter, 85% lower Nitrogen Oxide, and up to 20% lower overall GHG emissions.

The GHG emissions of vessels designed with the most efficient LNG propulsion technologies available will be in a range 5,000-6,000 tons per year lower than conventional tankers. They will also be more efficient — meaning they exceed "Phase 3" Energy Efficiency Design Index (EEDI) requirements.

Built by Guangzhou Shipyard International (GSI), these dual-fuel vessels incorporate design traits we believe are necessary for ships of the future. The high-pressure dual-fuel LNG engines incorporate a flexible design that not only ensures close to zero methane slip but also makes them adaptable to the zero-emission fuels of the future (such as ammonia or methanol). The vessels come equipped with a state-of-the art fuel gas supply system that has full redundancy on all supply systems and which can handle boil-off gas from the LNG tanks under any condition. The auxiliary engines, gensets and boilers will be able to run on multiple fuel types.

Hafnia has also continued its partnership with Arq to accredit and introduce Arq Fuel as a key blend component for marine fuels. Arq has developed a novel, patented technology that transforms environmentally damaging coal waste into a micro-fine hydrocarbon powder (Arq Fuel). After securing the required accreditations, trials scheduled for the end of 2023 aim to confirm Arq Fuel's compatibility for the approximately 1,200 vessels that Hafnia Bunkers Alliance procures fuel for.

In addition, Hafnia has successfully concluded several tests of Biofuel, and all vessels can operate on this CO2-neutral propulsion fuel, when and if available on a sufficient scale.

Use of LNG as a marine fuel typically results in

↓ 97%
Lower SOx and particulate matter

↓ 85%
Lower NOx

↓ 20%
Lower overall GHG emissions

Investments in Technological Innovations to Increase Operational Efficiency

To meet the IMO targets, BW Epic Kosan has invested in technological innovations and improved hull designs that increase power optimisation and lower CO_2 emissions at sea and in port.

Ultrasonic transducers

Two vessels will be equipped with ultrasonic transducers in Q2 2023, in a pilot programme to keep their propellors clean and reduce bunker fuel consumption. These transducers produce ultrasonic sound waves that create resonance vibrations in the propeller structure, protecting the surface from fouling larvae. Ultrasonic transducers will also be used to keep the sea chests clean. Annual bunker savings of approximately 1% are expected.

Weather routing and voyage prognoses

In addition to retrofits, weather routing, and voyage optimisation are performed for all vessels to optimise vessel efficiency. Third-party software is also used by operators and ship staff.

Carbon impellers

Six vessels have been fitted with carbon impellers for seawater pumps to reduce our overall emissions. Due to their lighter weight, these carbon impellers result in lower energy consumption from seawater pumps. Annual reduction in CO_2 emissions of approximately 25 metric tonnes per vessel is expected.

Remote auto-logging sensors

As part of efforts to reduce emissions while ensuring crew and vessel safety, remote auto-logging sensors have been installed on 40 vessels to monitor vessel performance. The live data from the auto-logging sensors enhances performance monitoring, as it improves the data quality over what can be obtained from noon reports, for better evaluation of vessel performance.

Safeguarding the Environment with Technology

The Wavex system provides accurate and reliable wave parameters, including 2D-spectrum,surface current magnitude and direction, as well as speed through water calculations.

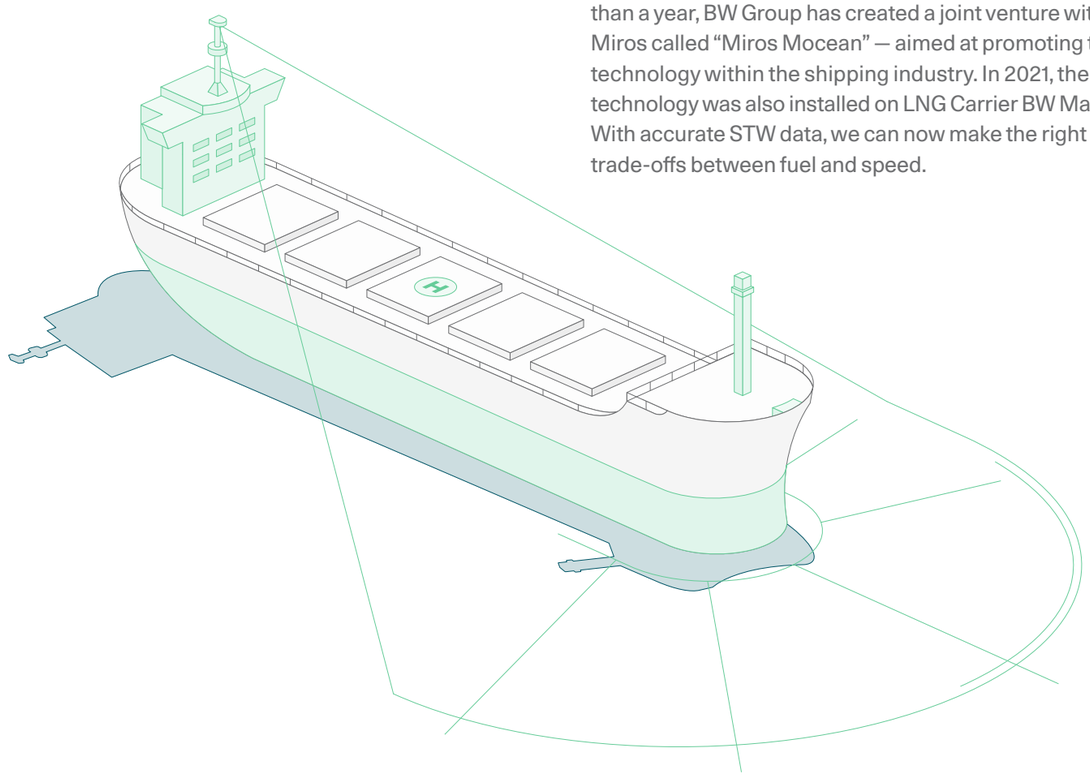
All these output parameters are key to:

- Enhanced hull and propeller performance management
- Speed optimisation to save fuel
- Reduced cost and risk due to weather claims
- Reduced weather-related vessel and cargo damage

Miros Wavex Technology

The Miros Wavex Technology provides real-time wave and current monitoring by using data from standard marine X-band radars on vessels or fixed locations. By accurately measuring waves, currents, and vessel speed through water (STW), this marks a step change in vessel performance management. STW measuring devices have until now been unreliable. They cannot accurately predict the current at specific locations and times due to the multi-factorial and high-velocity nature of currents. Instead, speed-over-ground is typically used. This is despite the inadequacy of SOG in accounting for the complex movement of water.

Today, Miros Wavex technology has overcome these challenges. After testing on bulk carrier BW Rye for more than a year, BW Group has created a joint venture with Miros called “Miros Mocean” — aimed at promoting this technology within the shipping industry. In 2021, the technology was also installed on LNG Carrier BW Magnolia. With accurate STW data, we can now make the right trade-offs between fuel and speed.



SMARTShip with Alpha Ori

We have partnered with Alpha Ori since 2017 to optimise our vessels' fuel efficiency, monitor our hull efficiency, and detect potential failures early using their SMARTShip™ system. In addition to BW Group's investment in Alpha Ori, Hafnia and BW LPG have made independent equity investments to accelerate the development. Mikael Skov, CEO of Hafnia, has joined Alpha Ori's board, alongside Andreas Sohmen-Pao, Chairman of BW Group.

Pictures from Alpha Ori Technologies

SMARTShip System's fuel-saving module

↓ 6 – 10%

Reduction in total fuel oil consumption (TFOC) per voyage

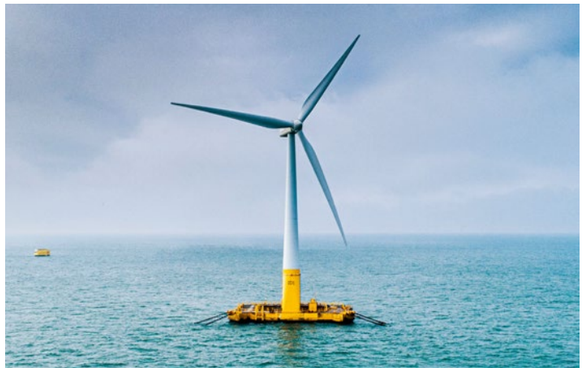
Alpha Ori's SMARTShip System contains a patented fuel-saving module that uses artificial intelligence (AI) and multiple variables (e.g., vessel speed, design data) to optimise the total fuel oil consumption (TFOC) over a voyage. By providing the commercial team and ship master with recommended speeds between waypoints in real time, the fuel-saving module can reduce TFOC per voyage by 6% to 10%. The resulting decrease in emissions is also calculated and recorded by the module, allowing the Master to navigate through ECA zones with regulatory compliance.

Another feature of the SMARTShip system is the Automated Hull Performance Monitoring (AHPM) app, which constantly assesses vessels' hull performance against benchmarks and historical data. Given a specific load and hull condition, users can check fuel consumption at various speeds and clean the hull based on the app's recommendations.

SMARTShip also encompasses other machine learning and AI applications, such as anomaly detection. Its AssetAI module detects potential failure early, prompting maintenance and preventing equipment breakdowns. Through supporting each vessel's reliable, safe and cost-efficient operations, AssetAI maximises each vessels' useful life. The recently released Emissions module helps track the carbon footprint, provides future trends and is also capable of estimating the impact on future voyage planning.

As the sum of the above modules, SMARTShip allows us to consider new operational initiatives, assess their effectiveness, and ultimately make smarter decisions that reduce our CO_2 emissions and improve our efficiency.

Investing in Sustainable Technologies



BW Energy Storage Systems

Headquartered in Singapore, BW ESS is a leading investor in battery energy storage systems, with significant projects in the United Kingdom, and an investment focus across Europe, Australia, and the United States.

BW ESS has invested in and partnered with Penso Power, one of the UK's leading greenfield battery energy storage systems (BESS) developers. Together, we will be deploying over 1 GWh of BESS within the next few years, with an additional pipeline of more than 2 GWh.

As the world continues to decarbonise through intermittent wind and solar, power production is becoming less reliable and more weather dependent. Together with the phasing out of traditional thermal power plants, this increases the stress on the grid, and reduces reliability for consumers and businesses.

After years of innovation and cost reduction, lithium-ion battery storage systems now provide a scalable, functional option for solving these issues. BESS has become an established and essential infrastructure component of the energy transition, providing services like grid frequency support, and balancing of energy supply and demand, enabling the grid to rapidly respond to fluctuating usage and increased stress at peak times.

BW ESS is a sister company to BW Group, which is strengthening its position as an energy infrastructure investor and is the world's leading provider of batteries for the maritime space through its investment in Corvus Energy.

BW Ideol

Headquartered in France, BW Ideol is an experienced provider of floating foundations for offshore wind, enabling access to deeper water and the additional space and wind power associated with that.

BW Ideol is an experienced provider of floating foundations for offshore wind, with more than 12 years of experience from design, execution and development of floating wind projects based on Ideol S.A.'s patented floating offshore wind technology and engineering capabilities. In February 2021, BW Offshore became a strategic owner of Ideol S.A., creating a renewable energy company (named BW Ideol) with market leading capabilities based on proven technology developed in-house.

In January 2022, BW Ideol secured the rights to develop a floating offshore wind farm off the Northeast Coast of Scotland as part of the Floating Energy Allyance. The Buchan Offshore Wind project will have a capacity of almost 1GW and is expected to create over 3,900 local jobs in Scotland.

The company has a dual-leg growth strategy as a floater EPCI and maintenance services provider, and as a wind-farm project developer and co-owner. BW Ideol has two full-scale offshore floating wind turbines in operation in France and Japan, a pilot project under construction, a significant project pipeline, and is supported by BW Offshore's extensive experience from developing and operating offshore energy production systems.

BW Ideol listed in Oslo in March 2021 and BW Offshore owns 53%.

BW Solar

Headquartered in Canada, BW Solar focuses on the development of solar power generation and energy storage projects.

Founded in 2020 and 100% owned by BW Group, BW Solar has originated 4,000MW to date in the United States and Canada. The company strives to collaborate closely with all stakeholders, including community leaders and residents, to minimise the environmental impact of construction and to comply with all local land-use policies. BW Solar is currently focusing on North American development, one of the fastest-growing renewable energy markets.

BW Solar's development approach focuses on providing the lowest Levelized Cost of Energy (LCOE) and minimising development risk. To achieve this, the company is involved in all levels of the project development life cycle. As a result, BW Solar is a vertically integrated developer that performs its own siting, permitting, development, engineering, and financing.

BW Water

Headquartered in Singapore, BW Water is a supplier of water and wastewater systems for the industrial and municipal marketplace.

BW Water's experienced team, working with a range of technologies, help improve the environment by protecting the world's most essential natural resource – water.

BW Water has a strong pedigree and experience in the design and implementation of water and wastewater treatment systems.

BW Water strives to create effective solutions that are low in energy consumption, chemical consumption and space requirements in order to bring a positive impact to the environment.

In October 2021, BioGill joined the BW Water Group. BioGill's headquarters are in Sydney, Australia, with sales offices in Milwaukee, Wisconsin (USA) and Shanghai, China. BioGill brings together the power of science and nature, to improve the onsite treatment of wastewater. BioGill manufactures above ground, attached growth bioreactors that deliver affordable wastewater treatment.

BW has been a significant investor in BW Water since 2021.

Cadeler

Headquartered in Denmark, Cadeler is a key supplier within the offshore wind industry for installation services and marine and engineering operations with a strong focus on safety and the environment.

Cadeler operates two highly efficient Windfarm Installation Vessels (WIVs), Wind Orca and Wind Osprey, and up to four new units will be added to the fleet within the next couple of years. In addition to offshore wind farm installation, these vessels are well suited for a wide range of maintenance, construction, and decommissioning tasks.

The new X-class and F-class vessels are designed to handle the transportation and installation of future WTGs and foundations. The two new F-class vessels will be built on specifications similar to the two X-class vessels. The main capacity will exceed 2,600t at 46m, with the hook height above deck surpassing 200m, with a variable load of over 17,600t, allowing these giant vessels to transport up to six XL-Monopile foundations per round trip.

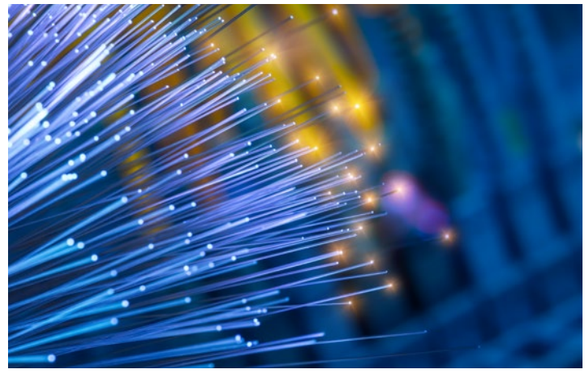
Cadeler listed in Oslo in December 2020 and BW Wind Services is a significant shareholder with a 30% stake.

Corvus Energy

Headquartered in Norway, Corvus Energy is the world's leading supplier of zero-emission solutions for the ocean space.

Founded in 2009, Corvus Energy provides purpose-engineered energy storage solutions for marine, oil and gas, and port applications. By being the first company to offer a battery with the needed capacity, low cost, and high safety level, Corvus Energy became a pioneer in maritime energy storage systems (ESS) for almost every vessel type. Corvus Energy now has the most extensive ESS base, with the largest number of projects completed in the maritime industry.

A Corvus ESS assists with regulatory compliance and Emission Control Area (ECA) limits, while providing immediate benefits with a rapid return on investment. More than 90% of large commercial hybrid vessels utilise a Corvus Energy ESS. Custom-developed mechanical and electrical design combined with state-of-the-art battery management systems provide Corvus customers with lower maintenance costs and reduced fuel consumption and emissions. The company also develops maritime hydrogen fuel cells in collaboration with the world leader in fuel cell technology, Toyota Corporation.



Ductor

Headquartered in Finland and established in 2009, Ductor began with a clear mission to address the environmental challenges in the energy and agriculture sectors.

Ductor is a global biotech company that builds, owns and operates microbiological turnkey facilities, turning waste from the agricultural sector into sustainable fertilizers and biogas. With two plants in Mexico and Germany and numerous projects in the pipeline, Ductor has made significant strides towards their goal of constructing and operating microbiological turnkey facilities. These facilities play a crucial role in converting agricultural waste such as nitrogen-rich feedstock into sustainable fertilizers and biogas.

Ductor is dedicated to unlocking the potential of bio-resources such as poultry manure or fish waste to promote sustainable food production and clean energy.

By leveraging their expertise and commitment, Ductor is actively contributing to a future where food production is more sustainable and energy sources are cleaner. Their efforts in transforming waste into valuable resources make a positive impact on both the agricultural and energy sectors.

BW has been a significant investor in Ductor since October 2020.

BW Digital

Headquartered in Singapore, BW Digital develops, funds and operates digital infrastructure in the Asia-Pacific region.

As a privately-owned and carrier-neutral operator, BW Digital focuses on data compute, storage and transport. Its objective is to create a regional digital ecosystem connecting countries across oceans sustainably.

BW Digital is the owner and operator of the Hawaiki submarine cable system, a 15,000 km telecommunication cable connecting 356 million consumers in Australia, New Zealand, American Samoa, Hawaii and continental United States. Commercial operations started in July 2018, and with a guaranteed design life of 25 years, it will be in service until at least 2043.

BW Digital is in the process of expanding its asset base with the development of Hawaiki Nui, a submarine cable connecting South-East Asia, North America, and Australasia, and Datagrid, a carbon-neutral datacentre located in the South of New Zealand.

Zero Harm

We believe in zero harm to people, the environment, cargo and property.

Safety is at the top of our agenda

BW is committed to a safe working environment. We do this through a culture of constant communication, active sharing of best practices, learning from near-miss incidents and numerous other safety tools and processes.

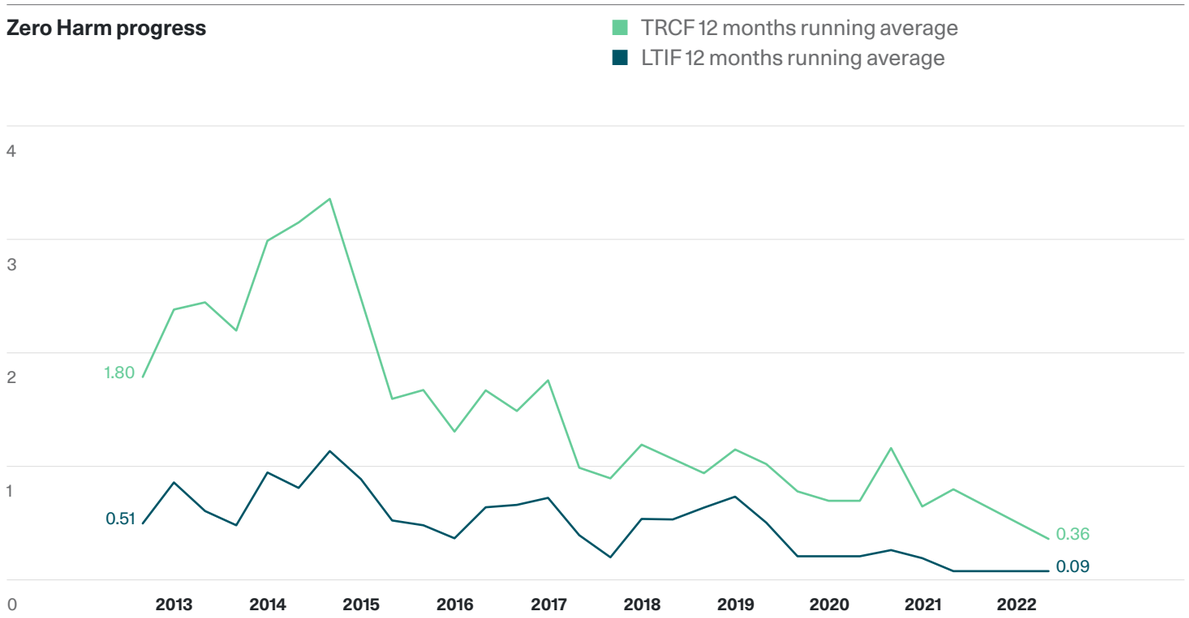
We aim to ensure that every employee, both onshore and at sea, can work in the safest work environment possible. An example is our Health, Safety and Environment Policy, a directive that embodies our work activities. Tools like this create BW's safety culture.

BW has a holistic approach to Health, Safety, Security, Environment, and Quality (HSSEQ) across our operations. Our safety vision of Zero Harm is a journey and new initiatives are put in place each year to realise our ambition. Our current safety statistics indicate these efforts have been effective and impactful. Although our incident statistics show a positive downward trend in many group companies, there is always work to be done.

Since our Zero Harm programme was introduced in 2013, our Total Recordable Case Frequency (TRCF) has decreased by 80% (2021: 55%) and the Lost Time Injury Frequency (LTIF) has decreased by 82%.

Even as we focus on prevention, we remain committed to emergency response preparedness. In collaboration with external stakeholders such as our Qualified Individuals (QI), P&I Clubs and crisis communications agency, we conduct regular drills to stress-test our processes, train crew and colleagues, and refine our response as a team. In 2022, we conducted several drills with scenarios of allision (contact with a stationary vessel), oil spills, suspicious craft (piracy), as well as Covid-19 response.

Zero Harm progress



Safety culture

Through their We LEAD Culture Programme, BW Offshore fosters a strong culture aligned with their corporate values, and the company records all incidents to apply a 'learning from failures' approach to continuous improvement at all levels. On 12 October 2022, BW Offshore held its inaugural WE LEAD Day in Singapore with synchronised activities across its 12 offices and seven operational units, reinforcing a company-wide commitment to its values and an inclusive culture of leading with integrity.

Stop Work policy

BW Offshore also gives all employees the explicit authority to stop any actions they think are unsafe and/or they are unsure about, and to initiate a process to define and clarify their concerns without any repercussions or questions. The Stop Work policy is endorsed by the CEO and conveys the expectation that everyone has the right to stop work without consequence. A safety observation card system is used at all work locations, offshore and onshore, where observations can be made anonymously. A Speak Up channel is also available for all internal and external stakeholders, for concerns to be raised anonymously.

Key safety statistics

Lost Time Incident Rate (LTIR)	BW LNG	BW LPG	Hafnia	BW Dry Cargo	BW Epic Kosan	BW Offshore	BW Energy
2020	0.17	0.14	0.51	0.50	0.16	1.86	6.66
2021	0.00	0.28	0.29	0.54	0.82	0.78	1.01
2022	0.14	0.00	0.32	1.23	0.23	0.22	0.00

Total Recordable Case Frequency (TRCF)	BW LNG	BW LPG	Hafnia	BW Dry Cargo	BW Epic Kosan	BW Offshore	BW Energy
2020	0.17	0.86	1.24	2.30	0.32	2.69	1.60
2021	0.46	1.42	0.76	18.79	1.40	1.75	0.40
2022	0.43	0.16	0.69	1.23	0.47	0.44	0.32

Workforce Diversity and Inclusion

We believe our global businesses should reflect the world we serve.

Different nationalities

> 60

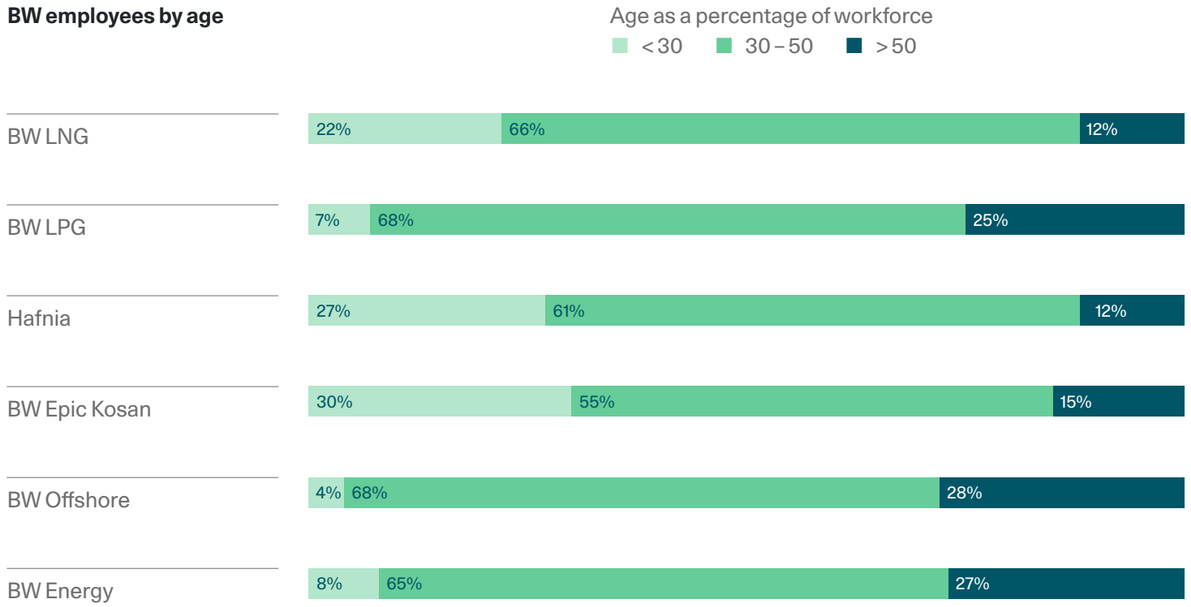
Diversity and inclusion is part of BW's culture

BW is committed to diversity and inclusion.

The collective sum of individual differences, life experiences, knowledge, capabilities, and talent constitute our culture. BW embraces differences in age, ethnicity, family and relationships, and all other characteristics that make our employees unique.

Currently over half of BW's employees from over 60 nationalities are between 30-50 years old, with 16.4% below 30 and 22.6% above 50. We support the development of our employees throughout their BW journey, and we are proud that so many of our people choose to remain at BW for a long time.

BW employees by age



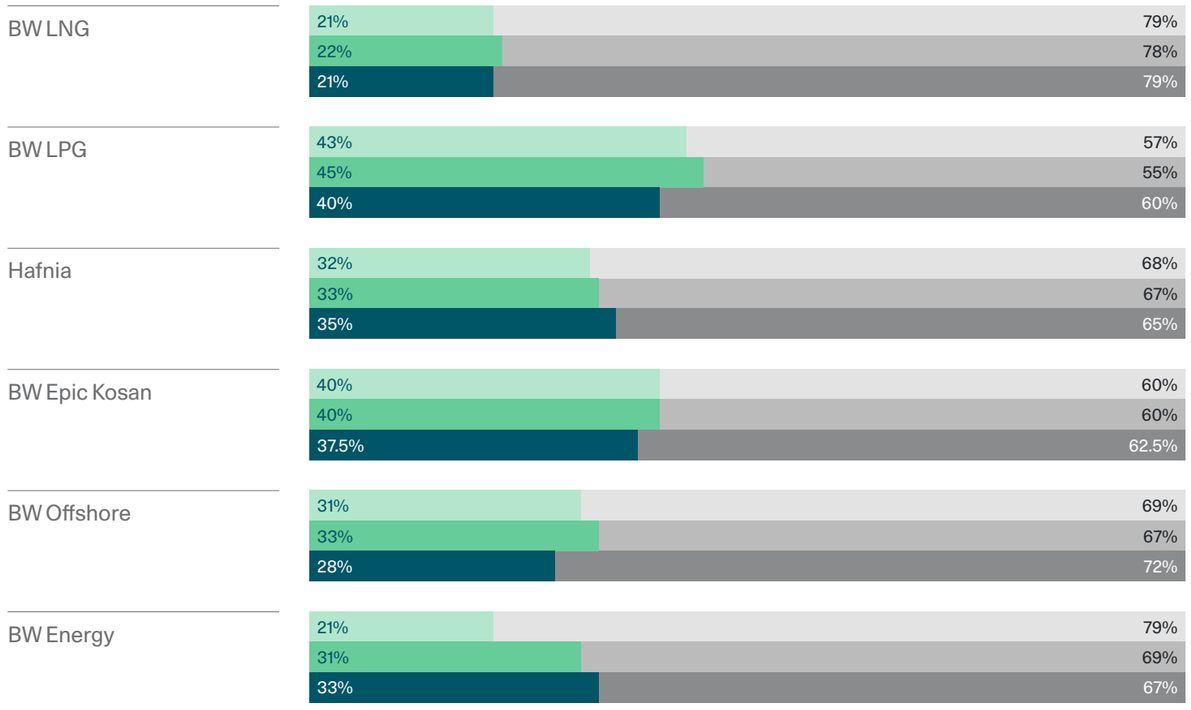
Total employees

	BW LNG	BW LPG	Hafnia	BW Epic Kosan	BW Offshore	BW Energy
2020	1,389	1,713	3,892	2,116	1,927	62
2021	1,641	2,170	3,950	2,101	1,849	106
2022	1,655	1,689	5,095	2,034	1,733	294
% Change	↑ 1%	↓ 22%	↑ 29%	↓ 3%	↓ 6%	↑ 177%

Gender Diversity

According to the IMO, women represent just 2% of the 1.6 million seafarers globally, and 94% of these women have chosen to work in the cruise industry. For onshore positions, the balance is better, and most of our offices comprise an average of over 30% female employees.

Onshore gender split (Female – Male %)



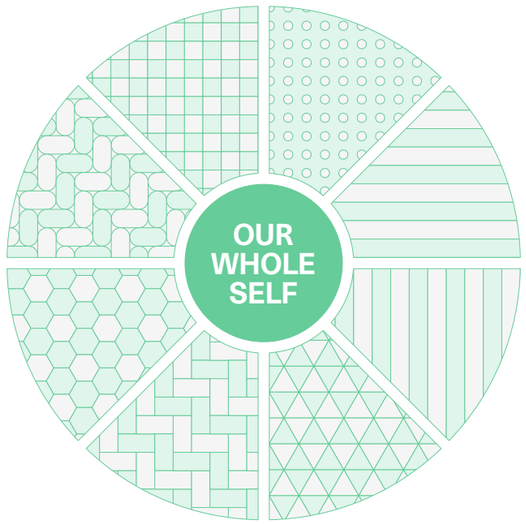
We are focused on creating a work environment where people feel inspired, valued, and fulfilled.

We are proud of our collaborative culture and the strong connections colleagues have with each other. In the Group's 2022 engagement survey, we were delighted to see that more than 95% of our employees feel proud to work for BW. Emerging from the Covid-19 pandemic, we recognise the importance of mental wellness, strengthening our culture and thriving at work.

BW's Our Whole Self Programme is designed to inspire a deeper awareness on diversity, inclusion and belonging (DI&B) and well-being. Our teams are encouraged to embrace learning events, listen to panel discussions, take part in team activities and benefit from self-reflection exercises.

We want to make sure that diversity, inclusion and belonging runs through everything that we do. We are proud of our diverse culture. The different background and experiences that our employees bring drives our innovation and creates an energising workplace.

We recognise inclusion at sea is just as important as onshore. We rolled out a pilot programme, Respect and Belonging at Sea to ensure our vessels offer a conducive work environment, particularly to underrepresented groups such as females. To show our support for diversity and inclusion in the maritime sector, we have become an Associate Member of the Diversity Study Group. We look forward to working with industry partners to strengthen the maritime sector's focus on diversity, inclusion and belonging.



Local Recruitment and Training

We are committed to developing employees, and we ensure our development programme shortlists are representative of our diverse workforce.

In 2022, we launched Voyager, a senior leadership development programme designed to equip colleagues with the awareness and capabilities they need to lead in an increasingly uncertain world. We are pleased to have delegates from multiple affiliates and anticipate delegates will enjoy broadening their internal network while on the programme.

Regardless of the country BW works in, training and integration is key to a sustainable pool of local seafarers. Having gathered significant experience over the years, we now have an extensive recruitment and training process for ratings (seafarers who support officers).

Familiarising seafarers with BW and shipping culture is also a priority. For example, in Nigeria, we set up the BW Crew Integration Program to bridge cultural and language differences and develop positive relationships across people of different ranks.

Beyond providing job opportunities for locals in the areas where we do business, BW has set up the BW Group Cadet program to develop our own in-house talent around the world. Having this talent pool ensures a steady supply of officers to all our managed vessels.

Cadets selected from ratings and maritime academies are fully sponsored by BW to pursue their maritime university studies. Over the years, BW has developed more than 1,810 cadets from the Philippines, India, China, Nigeria, Russia, Romania and other countries. 663 of them currently sail as BW Officers today.

BW Group Cadet Program

> 1,810	663
Cadets developed over the years	Cadets sail as BW Officers today

BW Wellness Programme

The BW Wellness Programme is designed to promote the mental and physical well-being of seafarers, while fostering a sense of togetherness onboard.

BW's employees are central to our mission and vision to be Best on Water. We recognise a healthy and diverse work environment, onshore and at sea, is important for fostering a culture of innovation, high performance, and safety. The BW Wellness Programme is designed to bring about a cultural shift throughout the organisation, providing ongoing support for the holistic well-being of our seafarers.

The BW Wellness Programme offers a variety of activities that can be chosen based on individual preferences and schedules. A unique aspect of the programme are the Inter-vessel Challenges, which allow seafarers from different vessels within BW to participate in friendly competitions. These challenges foster camaraderie and collaboration among seafarers.

The Programme also encourages them to create their own challenges, with monthly recognition for top-performing vessels. As a reward for active participation, monthly rewards in the form of vouchers and auctions with high-value items are provided as incentives.

The BW Wellness Program utilises internet and mobile-enabled platforms to provide a personalized experience, based on individual health data, including meal plans, exercise reminders, and mindfulness exercises. Crew members can easily access areas of interest, including fitness, nutrition, wellness, and education.

In 2022, BW conducted online Ambassador Trainings for selected seafarers who serve as Wellness Ambassadors onboard. These Wellness Ambassadors play a vital role in engaging everyone onboard. They also serve as a liaison point for feedback and support between the ship and shore-based wellness team, enhancing the overall wellness experience for crew members.

Community Support

Driven by our values to make a positive impact, BW believes in uplifting the communities we operate in.

Singapore

Combining profit with purpose, BW LPG and BW Epic Kosan collaborated with ExxonMobil Asia Pacific and grassroots leaders to sponsor the energy needs of about 2,000 households in selected districts in Singapore. This initiative comes from the belief that LPG is a clean and enabling source of energy that allows us to prepare healthier meals for ourselves and our families.

In December 2022, BW Epic Kosan held a Christmas and New Year Donation Drive – Sharing is Caring, where we donated gifts for underprivileged school children. We will continue these initiatives in good spirit and do our part in giving back to society over the coming years.

We also support talent development programmes and maritime scholarships through the Maritime Port Authority of Singapore.

India

BW LPG stayed on course in increasing rural resilience with systemic solutions. They extended their contract with ProtoVillage for another year, to help over 50 villages in Anthra Pradesh with infrastructural projects, including an upgrade to the irrigation system upgrade, electricity grid, and water purification system and distribution network. BW LPG also awarded scholarships to nine female cadet scholarships.

Disaster relief

Several affiliates in the group supported relief efforts in war-torn countries and donated towards disaster relief efforts in Pakistan.

Around the world

We provided financial assistance to the Mission to Seafarers, which supports merchant crew through advocacy and counselling services worldwide.

Corporate Governance

Strong corporate governance
BW's success is founded on high ethical standards. We have a well-developed corporate governance structure that adheres to the Corporate Governance Code of Practice.

Best in class governance
BW Group has a highly experienced and reputable Board of Directors. The Board complements the Group's management with extensive international experience in shipping, energy and capital markets.

Human Rights
BW Group is committed to meeting its responsibility to respect human rights and decent working conditions and to upholding human rights throughout all its business operations, regardless of the countries in which they are conducted. Furthermore, consistent with its governing principles, BW Group anticipates full compliance with these standards from all entities and partners within its supply chain.

BW Group supports internationally recognised human rights standards, including those set out in the International Bill of Human Rights and the International Labour Organisation Declaration on Fundamental Principles and Rights at Work. In addition, BW Group complies with applicable laws and regulations in the countries in which it operates, including the Norwegian Transparency Act (NTA). In 2022, Norway implemented the NTA, requiring companies that meet certain threshold requirements to comply with fundamental human rights, implement decent working conditions throughout their supply chain and report on such to their stakeholders. In response to this legislative movement and to ensure continued alignment with its corporate values, BW Group has reviewed the approach it takes towards human rights in its own operations and supply chain. The relevant companies within the Group shall report their findings in an NTA Report published on or before 30 June 2023.

Lastly, BW Group firmly opposes human slavery, human trafficking, forced labour, child labour and torture. BW Group also embraces a Zero-Harm safety vision, through which it strives to create the safest work environment possible for every employee, both onshore and at sea.

BW Group Board of Directors

Mr Andreas Sohmen-Pao

Chairman of BW Group, BW Offshore, BW LPG, Hafnia, BW Epic Kosan, Cadeler, and the Global Centre for Maritime Decarbonisation (GCMD). Trustee of the Lloyd's Register Foundation. Former director of HSBC (HK), MPA, London P&I amongst others.

Mr Christian Clausen

Chairman of BlackRock Europe, Sampo. Former Group CEO Nordea, President of the European Banking Federation, director of OMX Exchanges Ltd, Stockholm and Copenhagen Exchanges.

Sir John Rose

Deputy Chairman Rothschild, advisor to Greenbriar and Abu Dhabi Executive Affairs Authority. Formerly CEO Rolls Royce, Commandeur de la Légion d'honneur, and Singapore Public Service Star.

Mr Thomas Thune Andersen

Chairman of Ørsted, Lloyd's Register Group, Vice Chairman VKR Holding. Formerly CEO Maersk Oil, director of DeepOcean, Petrofac, Scottish and Southern plc.

Ms Ouma Sananikone

Director of Hafnia, Innergex, Ivanhoe Cambridge and Macquarie Infrastructure Corporation. Former CEO of Aberdeen Asset Management (Australia), CEO of the EquitiLink Group, Founding Managing Director of BNP Investment Management (Australia).

Leadership gender diversity across BW Group

Senior management Gender split (Female – Male %)	BW LNG	BW LPG	Hafnia	BW Epic Kosan	BW Offshore	BW Energy
2020	29 – 71	25 – 75	0 – 100	25 – 75	27 – 73	0 – 100
2021	33 – 67	29 – 71	17 – 83	25 – 75	27 – 73	0 – 100
2022	20 – 80	17 – 83	17 – 83	40 – 60	27 – 73	29 – 71

Board Gender split (Female – Male %)	BW LNG	BW LPG	Hafnia	BW Epic Kosan	BW Offshore	BW Energy
2020	20 – 80	60 – 40	20 – 80	0 – 100	20 – 80	20 – 80
2021	20 – 80	60 – 40	14 – 86	0 – 100	20 – 80	20 – 80
2022	20 – 80	60 – 40	17 – 83	17 – 83	20 – 80	20 – 80

Industry Participation

BW strives to be an active leader in maritime industry organisations and a participant in forums.

Lending our voice to climate advocacy

The pressure for environmental action and regulation creates the need for even greater collaboration between industry players—not only among ship owners and operators but also charterers, banks, and governments. We are active participants in multiple associations working on industry matters, including climate change initiatives.

In 2022, BW Group and its affiliates were a member of or partner with the following associations and organisations:

- Global Maritime Forum
- Maritime and Port Authority of Singapore
- Baltic & International Maritime Council
- Maritime Anti-Corruption Network
- Global Centre for Maritime Decarbonisation
- The Mission to Seafarers
- Norwegian University of Science and Technology
- Singapore Shipping Association
- Climate Change Mitigation in the Maritime Sector
- SINTEF Ocean
- All Aboard Alliance
- Diversity Study Group

Key Industry Collaborations and Initiatives

All Aboard Alliance

The All Aboard Alliance was founded in 2020 via a collaborative drive from top industry leaders, towards increasing diversity, equity, and inclusion across the maritime sector. The Diversity Study Group is one of the Founding Knowledge Partners.

In May 2022, Hafnia joined the Alliance and pledged its commitment to a more diverse maritime industry, setting ambitious targets that women should account for at least 35% of its onshore team and higher targets for female seafarers on its fleets.

Hafnia CEO Mikael Skov, Co-Chair of the All Aboard Alliance, states:

"This is an industry imperative at a pivotal time. Diversity of skills and competences is paramount if we are to innovate our way through the developments taking place in decarbonisation, digitalisation, and automation."

Maritime Anti-Corruption Network

BW is a member of the Maritime Anti-Corruption Network (MACN), a global business network working towards the vision of a maritime industry free of corruption.

MACN and its members promote good corporate practices in the maritime industry for tackling bribes, facilitation payments and other forms of corruption. BW adopts high ethical standards, following strict anti-bribery policies that inform our interactions with suppliers, customers, members of the industry and other stakeholders.

Getting to Zero Coalition

Several BW affiliates have joined the Getting to Zero Coalition, an alliance of more than 80 companies within the maritime, energy, infrastructure and finance industry, including key governments and Inter-Governmental Organisations support.

The Coalition is committed to getting commercially viable zero-emission deep-sea vessels into operation by 2030.

Global Centre for Maritime Decarbonisation

The Global Centre for Maritime Decarbonisation (GCMD) was set up on 1 August 2021 as a non-profit organisation. Strategic partners include the Maritime and Port Authority of Singapore (MPA), BHP, BW Group, Eastern Pacific Shipping, Foundation Det Norske Veritas, Ocean Network Express, Seatrium Limited*, bp and Hapag-Lloyd.

Located in Singapore, GCMD is a public-private partnership to support decarbonisation of the maritime industry to meet or exceed the International Maritime Organization's (IMO) goals for 2030 and 2050. Chaired by BW Group Chairman, Andreas Sohmen-Pao, the centre focuses on addressing some of the gaps faced by the maritime industry through pilots and trials.

The Global Centre for Maritime Decarbonisation aims to:

- Accelerate the deployment of scalable low-carbon technologies across the maritime ecosystem by validating technical and commercial feasibility
- Lower the adoption barriers for low-/zero-carbon fuels and technologies by closing the gaps in infrastructure, safety, operations and financing
- Act as a centre of gravity for catalysing and facilitating:
  - Between experts within the maritime ecosystem
  - Global connections between stakeholders across the value chain
  - Dissemination of maritime decarbonisation information and tools

GCMD recognises the need to look at multiple solutions for international shipping to achieve near and long term decarbonisation ambitions. To help address the key challenges, GCMD has launched three projects in 2022 — an ammonia bunkering safety study, an assurance framework for ensuring supply-chain integrity of current and future drop-in green fuels, and a pilot-study to demonstrate end-to-end shipboard carbon capture at scale.

Deployment of low or zero-carbon fuels including:

- Biofuels (FAME & HVO / Biomass)
- Bio-methane (Bio-LNG)
- E-ammonia

Alternative energy converters:

- Dual fuel internal combustion engines
- Fuel cells

Technical measures with at least 10% emissions reduction such as:

- Wind-power
- Air lubrication
- Carbon capture and storage (with carbon-neutral fuels)

** Following completion of the combination of Sembcorp Marine Ltd and Keppel Offshore & Marine Ltd on 28 February 2023, Sembcorp Marine Ltd has been renamed Seatrium Limited with effect from 26 April 2023.*

For more information, visit https://www.gcformd.org ↗

Environmental Metrics

Business activity	BW LNG	BW LPG[1]	Hafnia	BW Dry Cargo	BW Epic Kosan[2]	BW Offshore	BW Energy	Total
Owned fleet size (no. of vessels)								
2020	23	42	89	15	67	15	NA	251
2021	26	41	88	16	63	14	NA	248
2022	28	43	115	10	57	10	NA	263
Total Deadweight Tonnage (DWT)								
2020	2,304,132	2,292,000	5,111,109	1,373,555	457,937	NA	NA	11,538,733
2021	2,271,762	2,204,000	5,072,046	1,418,822	487,653	NA	NA	11,454,283
2022	2,459,746	2,359, 000	6,928,519	858,126	406, 843	NA	NA	10,246,391
Total distance sailed (nautical miles)								
2020	1,982,000	3,421,000	4,549,692	840,685	3,391,202	NA	NA	14,184,579
2021	2,276,232	3,173,000	4,711,326	953,464	3,554,199	NA	NA	14,668,221
2022	2,242,737	2,917,000	5,948,844	557,494	3,144,974	NA	NA	14,811,049
Total cargo carried (metric tonnes)								
2020	12,298,000	10,852,446	39,802,720	5,809,807	3,663,390	NA	NA	72,426,363
2021	12,331,497	11,886,232	39,343,595	7,203,592	5,643,760	NA	NA	76,408,676
2022	13,873,162	11,700,000	47,577,727	4,023,735	5,506,266	NA	NA	82,680,890
Transport work (million tonnes-nautical miles, mt-nm)								
2020	61,533	82,984	129,930	41,180	6,281	NA	NA	321,908
2021	70,290	73,750	130,584	47,432	7,247	NA	NA	329,303
2022	69,665	70,405	165,541	25,575	5,948	NA	NA	337,134

[1] *BW LPG: Includes both owned and operated vessels.*
[2] *BW Epic Kosan: Excludes commercially managed and time chartered-in vessels.*

Emissions	BW LNG	BW LPG[1]	Hafnia	BW Dry Cargo	BW Epic Kosan[2]	BW Offshore	BW Energy	Total
Total CO_2 emissions (metric tonnes)								
2020	1,447,999	1,502,500	1,484,724	260,584	574,762	1,254,213	56,673	6,581,455
2021	1,851,270	1,356,000	1,461,858	314,859	573,325	1,432,463	114,604	7,104,379
2022	1,769,321	1,268,700	1,869,715	169,358	554,322	1,219,041	127,824	6,978,281
Total NOx emissions (metric tonnes)								
2020	3,524	41,600	77,724	7,931	14,259	11,250	457	156,745
2021	6,264	37,000	76,528	7,928	14,969	10,383	77	153,149
2022	6,985	29,300	79,162	4,286	13,804	8,611	139	142,287
Total SOx emissions (metric tonnes)								
2020	210	3,900	5,078	972	1,434	224	12	11,830
2021	517	4,100	4,819	941	1,316	138	32.90	11,864
2022	670	5,800	4,906	507	1,192	84	42.20	13,201

Efficiency metrics	BW LNG	BW LPG[1]	Hafnia	BW Dry Cargo	BW Epic Kosan[2]	BW Offshore	BW Energy	Average
EEOI (g CO_2 / t-nm)								
2020	23.50	18.05	10.30	6.33	91.50	NA	NA	29.94
2021	23.06	17.55	9.90	6.64	82.24	NA	NA	27.88
2022	20.91	17.35	11.01	6.62	93.18	NA	NA	29.81
AER (g CO_2 / DWT-nm)								
2020	8.76	7.37	5.70	3.22	24.37	NA	NA	9.88
2021	8.27	7.23	5.40	3.57	23.00	NA	NA	9.49
2022	8.37	7.20	5.24	3.45	24.43	NA	NA	9.74

Safety Metrics

Key safety statistics	BW LNG	BW LPG[1]	Hafnia	BW Dry Cargo	BW Epic Kosan[2]	BW Offshore	BW Energy	Total
Lost Time Incident Rate (LTIR)								
2020	0.17	0.14	0.51	0.50	0.16	1.86	6.66	1.43
2021	0.00	0.28	0.29	0.54	0.82	0.78	1.01	0.53
2022	0.14	0.00	0.32	1.23	0.23	0.22	0.00	0.31
Total Recordable Case Frequency (TRCF)								
2020	0.17	0.86	1.24	2.30	0.32	2.69	1.60	1.31
2021	0.46	1.42	0.76	18.79	1.40	1.75	0.40	3.57
2022	0.43	0.16	0.69	1.23	0.47	0.44	0.32	0.53

[1] *BW LPG: Includes both owned and operated vessels.*
[2] *BW Epic Kosan: Excludes commercially managed and time chartered-in vessels.*

Diversity Metrics

Demographic diversity	BW LNG	BW LPG	Hafnia	BW Dry Cargo	BW Epic Kosan	BW Offshore	BW Energy	Total
Total employees								
2020	1,389	1,713	3,892	10	2,116	1,927	62	11,109
2021	1,641	2,170	3,950	8	2,101	1,849	106	11,825
2022	1,655	1,689	5,095	–	2,034	1,733	294	12,500
Nationalities represented								
2020	24	16	28	2	21	62	8	–
2021	30	15	31	3	31	55	19	–
2022	29	17	35	–	27	54	28	–
Age (< 30) as percentage of workforce								
2020	31%	11%	32%	–	33%	4%	6%	20%
2021	31%	8%	32%	13%	30%	4%	8%	18%
2022	22%	7%	27%	–	30%	4%	8%	16%
Age (30 – 50) as percentage of workforce								
2020	57%	71%	59%	–	52%	70%	50%	60%
2021	57%	73%	55%	75%	55%	68%	59%	63%
2022	66%	68%	62%	–	55%	68%	65%	64%
Age (> 50) as percentage of workforce								
2020	12%	19%	9%	–	15%	26%	44%	21%
2021	12%	19%	13%	13%	15%	28%	33%	19%
2022	12%	25%	12%	–	15%	28%	27%	20%

Gender diversity	BW LNG	BW LPG	Hafnia	BW Dry Cargo	BW Epic Kosan	BW Offshore	BW Energy	Average
Onshore gender split (Female – Male %)								
2020	21 – 79	43 – 57	32 – 68	20 – 80	40 – 60	31 – 69	21 – 79	29.71 – 70.29
2021	22 – 78	45 – 55	33 – 67	38 – 62	40 – 60	33 – 67	31 – 69	34.57 – 65.43
2022	21 – 79	40 – 60	35 – 65	–	37.50 – 62.50	28 – 72	33 – 67	32.42 – 67.58
Senior management gender split (Female – Male %)								
2020	29 – 71	25 – 75	0 – 100	20 – 80	25 – 75	27 – 73	0 – 100	18.00 – 82.00
2021	33 – 67	29 – 71	17 – 83	–	25 – 75	27 – 73	0 – 100	21.83 – 78.17
2022	20 – 80	17 – 83	17 – 83	–	40 – 60	27 – 73	29 – 71	25.00 – 75.00
Board gender split (Female – Male %)								
2020	20 – 80	60 – 40	20 – 80	20 – 80	0 – 100	20 – 80	20 – 80	22.86 – 77.14
2021	20 – 80	60 – 40	14 – 86	–	0 – 100	20 – 80	20 – 80	22.33 – 77.67
2022	20 – 80	60 – 40	17 – 83	–	17 – 83	20 – 80	20 – 80	25.67 – 74.33

Endnotes and Glossary

BW LNG owned fleet size
The significant increase in the number of vessels from 2020 to 2022 is due to the inclusion of the FSRUs, which were not previously incorporated due to inconsistencies in reporting methodologies.

BW Epic Kosan figures
Epic Gas announced its combination with Lauritzen Kosan in December 2020 and completed the transaction in March 2021 to form BW Epic Kosan. The 2019 data under the column "BW Epic Kosan" refers to Epic Gas figures, as the Lauritzen Kosan fleet was not part of BW Epic Kosan in 2019. However, figures from 2020 onwards refer to the combined data of all vessels and employees under BW Epic Kosan, post-transaction.

Increase in BW Epic Kosan CO_2 and NOx emissions
The increase in CO_2 and NOx emissions from 2020 onwards by BW Epic Kosan is explained by the combination of Epic Gas and Lauritzen Kosan, a transaction which added 32 vessels to the Company's fleet in 2021. 2019 figures reflect only vessels owned by then-Epic Gas.

Variation in AER based on vessel size
Vessels that are larger have greater opportunities for fuel efficiency, resulting in significantly lower AER and EEOI values. However, smaller vessels under 10,000 DWT are still important for plying near-coastal and inland waterways to transport energy, since these waterways cannot accommodate larger vessels.

Reduction in Total SOx emissions
SOx emissions between 2019 and 2020 decreased significantly relative to NOx and CO_2 emissions due to the shift from Heavy Fuel Oil (HFOs) to Very Low Sulphur Fuel Oil (VLSFO) as a fuel source in most vessels, in compliance with "IMO 2020", a new limit which was set on the sulphur content in the fuel oil used onboard ships.

"Phase 3" Energy Efficiency Design Index (EEDI)
The EEDI is a design standard determined by the IMO. "Phase 3" refers to the EEDI requirement for new ships built after 2025 to have a design efficiency at least 30% below the reference line. The reference line is the average efficiency of ships built between 1999 and 2009, measured in terms of CO_2 emitted per unit of transport work.

Annual Efficiency Ratio (AER) [g CO_2 / DWT-nm]
AER is a carbon intensity metric calculated in accordance with Poseidon Principles. Instead of calculating carbon intensity based on the actual cargo carried, AER assumes the vessel is continuously carrying cargo and utilises the vessel's designed deadweight capacity in the calculations. The AER of a fleet is calculated as the average of vessel level AER values.

Ballast Water Treatment Systems
Ballast Water Treatment Systems remove inactive biological organisms from ballast water. For a treatment system to be approved, it must discharge (a) less than 10 viable organisms per cubic meter that are greater than or equal to 50 micrometers in minimum dimension and (b) less than 10 viable organisms per milliliter that are less than 50 micrometers in minimum dimension and greater than or equal to 10 micrometers in minimum dimension.

CO_2 emissions [metric tons (T) CO_2-E]
Calculations are based on the IMO emission factors and fuel consumption for the year. The financial control approach defined by the GHG Protocol has been applied (Scope 1). This includes company owned vessels only.

Deadweight Tonnage (DWT)
Deadweight Tonnage specifies a vessel's maximum permissible dead-weight, as a sum of the weights of cargo, fuel, freshwater, ballast water, provisions, and crew.

De-rated main engines
De-rating main engines optimises vessels' actual load point with their design load point, resulting in higher efficiency and reduced specific fuel oil consumption (SFOC). Measures to achieve de-rating often involve lowering the vessel's maximum speed (or its specified maximum continuous rating, MCR), such as by deactivating cylinders, removing turbochargers, reducing stroke length, or introducing various tuning settings to the engine.

Emission Control Areas (ECAs) and Sulfur Emission Control Areas (SECAs)
ECAs and SECAs are sea areas in which stricter controls have been established to minimise airborne emissions from ships. They are defined by Annex VI of the 1997 MARPOL Protocol and include the following areas: the Baltic Sea area; the North Sea area; the North American area (covering designated coastal areas off the United States and Canada); and the United States Caribbean Sea area (around Puerto Rico and the United States Virgin Islands).

Energy Efficiency Operational Index (EEOI) [g CO_2 / t-nm]
EEOI is the amount of CO_2 emitted by the ship per tonnemile of work, the latter of which is given by the equation: amount of cargo x nautical miles sailed. The EEOI of a fleet is calculated as the average of vessel-level EEOI values.

Engineering, Procurement, Construction and Installation (EPCI)
EPCI refers to a contracting arrangement within offshore construction where contractors design the structure, procure materials, undertake construction, and install the project at the offshore site.

Fleet renewal
Fleet renewal refers to the sale of old ships and ordering of newbuilds.

Fixed online PMI System
A PMI system is a system to provide ship and power plant personnel with a portable computerised tool for cylinder pressure measurements. A fixed online PMI system is capable of optimising main engine fuel consumption.

Grey water modification
Grey water refers to general cooking and cleaning waste (as opposed to black water which refers to sewage). Grey water modification is a system of managing grey water, such as reusing it for other purposes or purifying it.

Levelised Cost of Energy (LCOE)
LCOE provides a basis for comparison of technologies of unequal life spans, capital costs, and capacities. It is calculated as the average total cost of building and operating the asset per unit of total electricity generated over an assumed lifetime.

Lost Time Incident Rate (LTIR)
A lost time incident is an incident that results in absence from work beyond the date or shift when it occurred. The rate is based on: (lost time incidents) / (1,000,000 hours worked).

Maritime Energy Storage System (ESS)
Maritime ESSs store energy when demand is low and deliver it back when demand increases, often taking the form of a battery. Corvus Energy supplies ESS systems to more than 90% of large commercial hybrid vessels.

ME-GI Engines
ME-GI Engines are M-type, Electronically controlled, Gas Injection engines that use dual-fuel two-stroke propulsion instead of steam turbines. ME-GI Engines apply the principle of non-premixed combustion (Diesel principle) and operates on Heavy Fuel Oil (HFO) or Marine Diesel Oil (MDO) together with high-pressure natural gas, allowing fuel flexibility, high efficiency and lower emission levels. The main difference between ME-GI Engines and X-DF Engines is that the former uses high-pressure gas, while the latter uses low-pressure gas.

Owned fleet size
This reflects the fleet at December 31 of the given year and includes owned vessels of significant affiliates only.

Particulate Matter (PM), NOx, SOx emissions (metric tons)
NOx, SOx and PM emissions from the combustion of fuels from owned vessels have been calculated based on the tool established by Danish Shipping and distance travelled by vessels. Scope includes owned vessels only.

P&I Clubs
P&I Clubs refer to Clubs that provide BW Group with marine liability cover. P&I stands for Protection and Indemnity insurance, which covers liabilities such as loss of life and personal injury to crew and others on board, cargo loss and damage, pollution by oil and other hazardous substances, wreck removal, collision and damage to property.

Retrofitting
In the context of shipping, retrofitting refers to the process of adding new features or technologies to our vessels, such as new engines.

Total distance traveled by vessels (in nautical miles)
The distance travelled by all owned vessels during the calendar year.

Total employees
The total employees count includes full-time staff employed in the business unit within the year stated.

Total Recordable Case Frequency (TRCF)
This is the number of Total Recordable Cases (i.e. Lost Time Injuries + Restricted Work Injuries + Medical Treatment Cases) per 1,000,000 exposure hours.

Transport Work (t-nm)
Transport Work is first calculated at a vessel level as a product of each vessel's cargo carried and distance travelled over the year. Subsequently, transport work is calculated at a business unit-level as a sum of the vessel level transport work data.

X-DF propulsion
X-DF propulsion refers to dual-fuel two-stroke propulsion engines that apply the lean-burn principle (Otto cycle) in which fuel and air are premixed and burned at a high air-to fuel ratio. The gas enters into the combustion chamber via a low-pressure feed, whereas high-pressure gas engines (like the ME-GI engine) are based on the diesel combustion process in which high-pressure gas is injected into the combustion chamber. The benefits of using low-pressure gas include lower investment costs, low electrical power consumption, low maintenance costs, more flexibility in operation and lower NOx emissions.

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