

# Lighting the way to a greener future

Marine, Offshore & Wind



# Creating light for a better life



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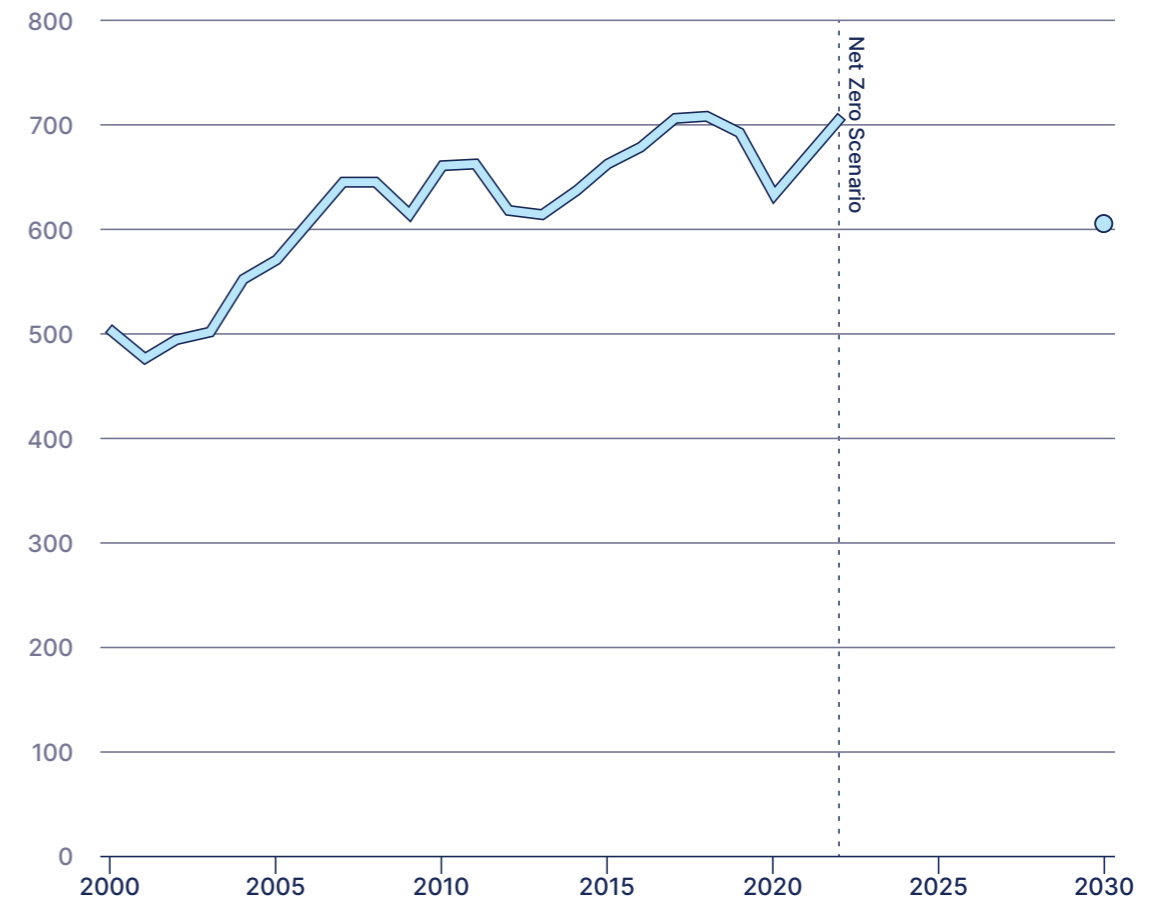
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In today's rapidly evolving world, the marine and offshore industries **face numerous challenges** when it comes to achieving sustainability goals.

In 2022 international shipping accounted for about 2% of global energy-related CO<sub>2</sub> emissions. According to the International Energy Agency (IEA), CO<sub>2</sub> emissions from international shipping continued to rebound in 2022 following a dip in 2020.



Source: [iea.org](https://www.iea.org)

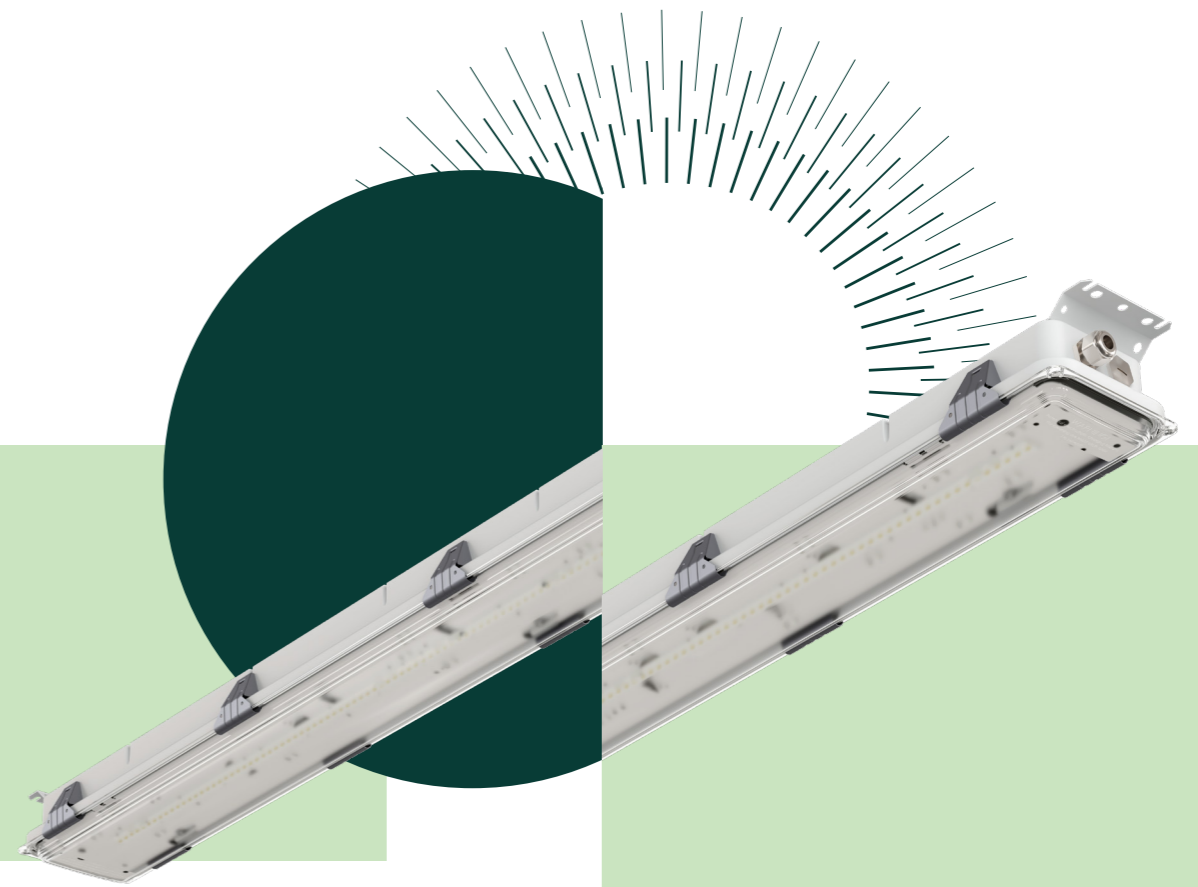
While regulations become stricter and the demand for environmentally friendly practices grows, it is crucial to find reliable partners who can provide effective solutions. At GlamoX, we are dedicated to supporting the sustainability efforts of our clients and helping them navigate this transition towards a greener future. We do this by providing the world's leading LED lighting solutions and Light Management Systems that help you significantly improve your energy efficiencies and reduce your

carbon emissions. Our capabilities go much further than being a solutions provider. We have a deep understanding of our customers' specific lighting challenges, enabling us to offer services that add significant value to their operations over the complete lifecycle of the lighting solution.

Read on to discover why investing in our LED lighting solutions can support your path to achieving Net Zero.



Photo: © Maritime Filming UK



## Addressing sustainability challenges

The marine and offshore industries are under increasing pressure to reduce their environmental impact. From carbon emissions to pollution, the need for sustainable practices is more significant than ever. Glamox with its state-of-the-art LED technology offers a straightforward and cost-efficient way to contribute to sustainability efforts.



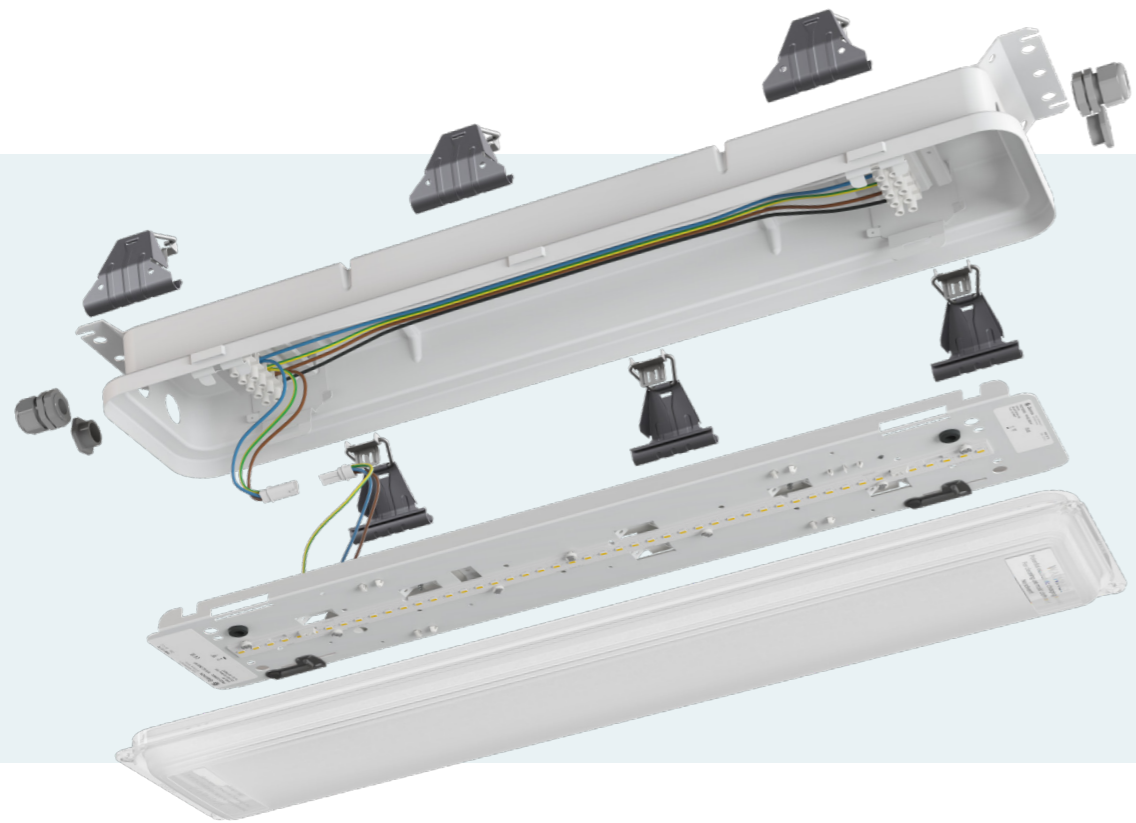
## Your trusted partner in sustainability

As a leading lighting supplier, Glamox is the perfect partner to help you achieve your sustainability goals. We understand the unique challenges faced by the marine and offshore industries and have extensive experience in providing the best lighting solutions tailored to these environments.

Lighting solutions from Glamox are designed to last, because the most sustainable solution is to use a lighting system for as long as possible. We deliver mechanical and optical quality that will last for generations. Together with state-of-the-art LED modules and drivers with an operation time of around 100.000 hours, this ensures long lifetime for the lighting installation. At its end of service life, one can easily take our products apart and sort them in clean fractions to be recycled.

In order to develop sustainable lighting solutions and systems, Glamox follows circular design principles:

- / The most energy efficient lighting solutions
- / Long product lifetime through high quality
- / Environmentally conscious material choices
- / Reparability & recyclability
- / Modularity



## LED lighting to maximise energy savings

In terms of improving energy efficiency and reducing emissions investing in LED lighting is a crucial step towards sustainability as we know that the biggest footprint from a lighting solution is the energy use during its lifetime. Our industry leading LED technology offers world-class energy efficiency, ensuring substantial energy savings and a significant reduction in carbon emissions. By upgrading from conventional lighting to efficient and smart LED luminaires and systems, you can reduce energy consumption by up to 90%. Lower energy consumption is not only economical, it also translates to less waste and less pollution. Furthermore, with LED upgrades you will be on the right track in complying with IMO regulations (CII - Carbon Intensity Indicator and rating) and other relevant guidelines, ensuring your operations align with global sustainability standards.

With our Energy Savings Calculation tool, you can gain valuable insights into potential energy savings. The tool is used as a method of quantifying and demonstrating potential energy savings that can be achieved by implementing Glamox lighting products and solutions, helping you reach your gradings defined by the IMO.

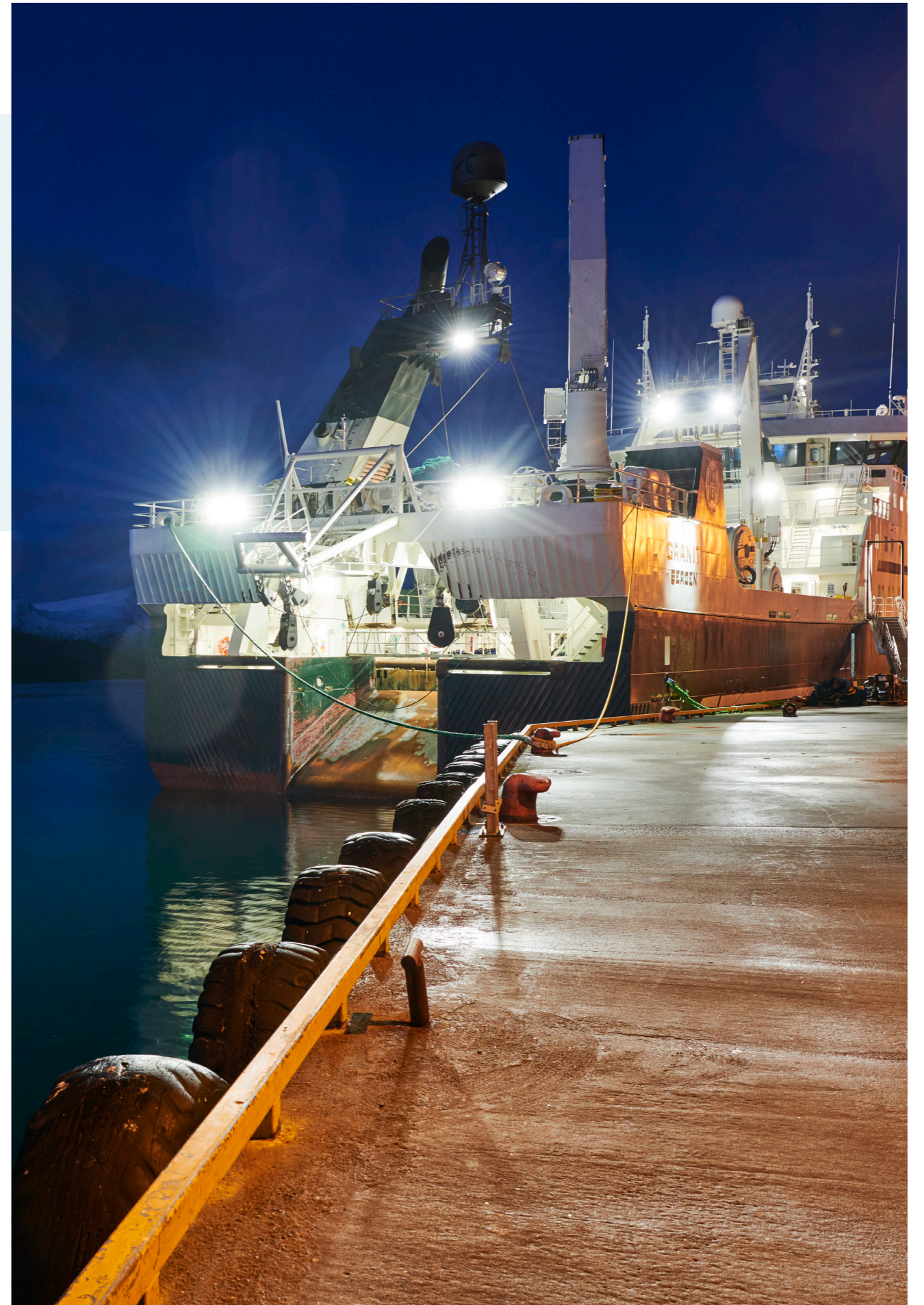
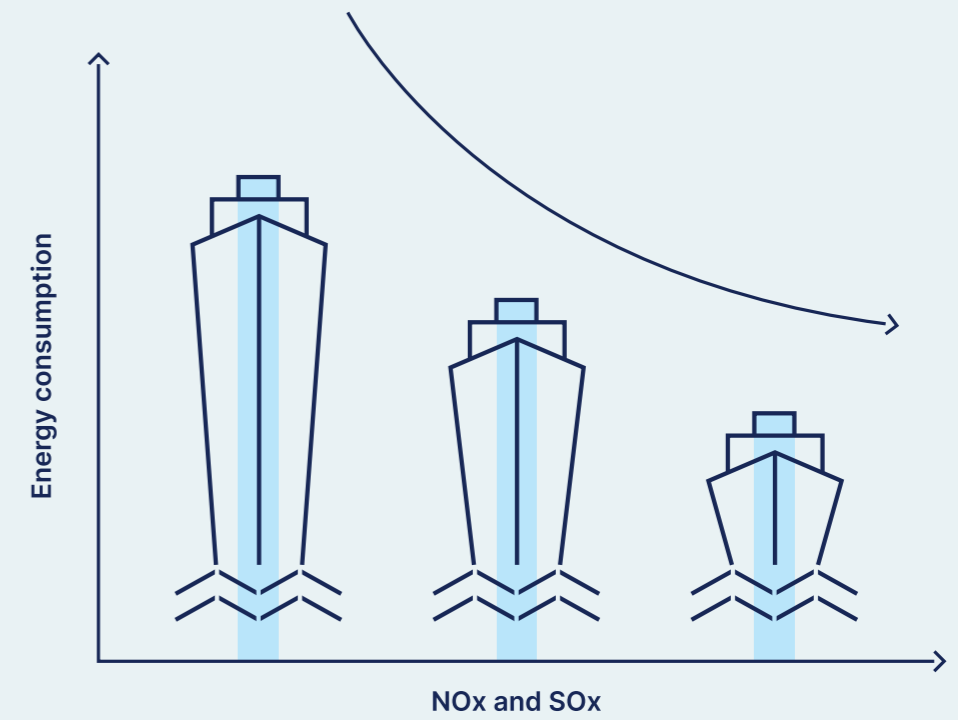


Photo: Morten Wanvik © Luminell



## Decarbonisation and cutting NOx and SOx

LED lighting plays a vital role in decarbonisation efforts. By reducing energy consumption, our LED luminaires contribute to lower emissions of NOx and SOx. This reduction helps create a cleaner and healthier environment, aligning your operations with the latest environmental regulations and enhancing the overall sustainability goals for the marine and offshore industries.



## Further enhancing energy efficiency with Light Management Systems

While replacing conventional lighting with LED can bring significant savings in energy consumption, Glamox offers advanced Light Management Systems (LMS) that optimise energy efficiency even further, often more than doubling the savings made from using LED lighting alone. With smart sensors and monitoring features, our LMS allow

you to precisely control and optimise light usage based on specific needs and occupancy patterns, avoiding over-lighting (light pollution) that benefit surrounding vessels, installations, ecosystem and human health. By utilising a Glamox LMS, you can achieve even greater energy savings and extend the lifetime of your lighting installations.



## Seamless retrofit solutions

Our retrofit solutions are designed to replace existing conventional luminaires with LED kits and LED luminaires effortlessly. With the same mounting footprint, there's no need for rebuilding or creating new cut-outs or screw holes. This seamless retrofit process saves you valuable time and money, while ensuring compliance with the latest LED technology for years to come.



## Inspection and maintenance, repair and overhaul service

At Glamox, we have developed an extensive inspection and maintenance, repair and overhaul service for professional upgrade services, resulting in a lifetime of decreased carbon emissions, increased energy savings and a longer operating life for your lighting installations.

Our inspection reports are detailed and comprehensive, allowing customers to make informed decisions about their lighting systems and can help identify potential safety hazards, allowing for timely corrective action to be taken. By choosing Glamox, you gain a partner committed to your success and dedicated to delivering high-quality, sustainable lighting solutions.



## RoHS directive: The perfect time to switch to LED

The RoHS directive phases out the sale of the most common forms of fluorescent tube lighting, emphasising the need for eco-friendly alternatives. Glamox LED lighting solutions perfectly align with the RoHS Directive, allowing you to transition to sustainable lighting while protecting the environment and public health. By investing in Glamox solutions, you can ensure compliance with regulations and contribute to a healthier planet and a more sustainable future.

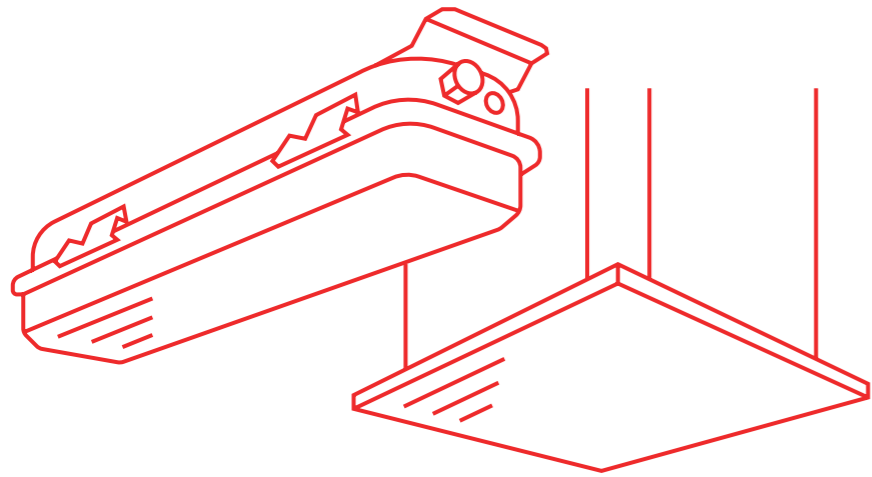


## | Safety and well-being

LED lighting offers more than just improved energy efficiency. Premium LED luminaires deliver superior light quality, enhancing visibility and reducing the risk of accidents. By providing better visual conditions, our lighting solutions create a safer working environment, ultimately improving the performance and well-being of individuals.

### **Join us on the path to sustainability**

At Glamox, we are passionate about creating a sustainable future for the marine and offshore industries. By investing in our LED lighting solutions, you gain a trusted partner committed to supporting your sustainability goals. Together, let's reduce energy consumption, cut emissions, comply with regulations, and create a brighter, greener world.



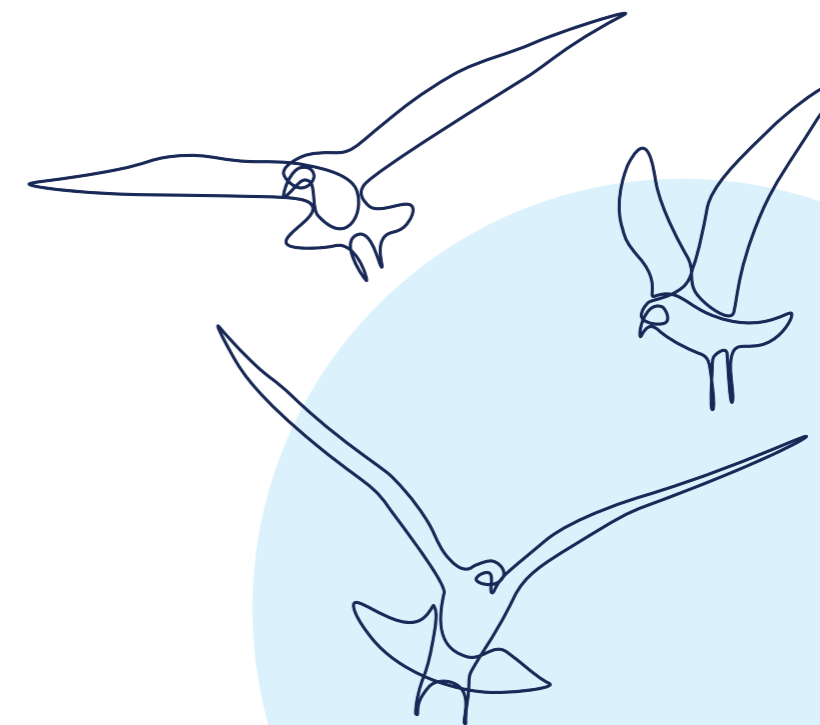
## Documentation

Documentation is an important concept related to sustainability in the context of products and their environmental impact. The purpose of documentation is to provide transparent and reliable information about the environmental performance of a product and this is precisely what Glamox can provide for its products. We help you to assess the sustainability credentials of our products, which supports informed decision-making by enabling comparisons between different products or alternatives.





**Glamox can help to ensure that your lighting installations align with responsible practices, reducing the negative impact on marine wildlife.**



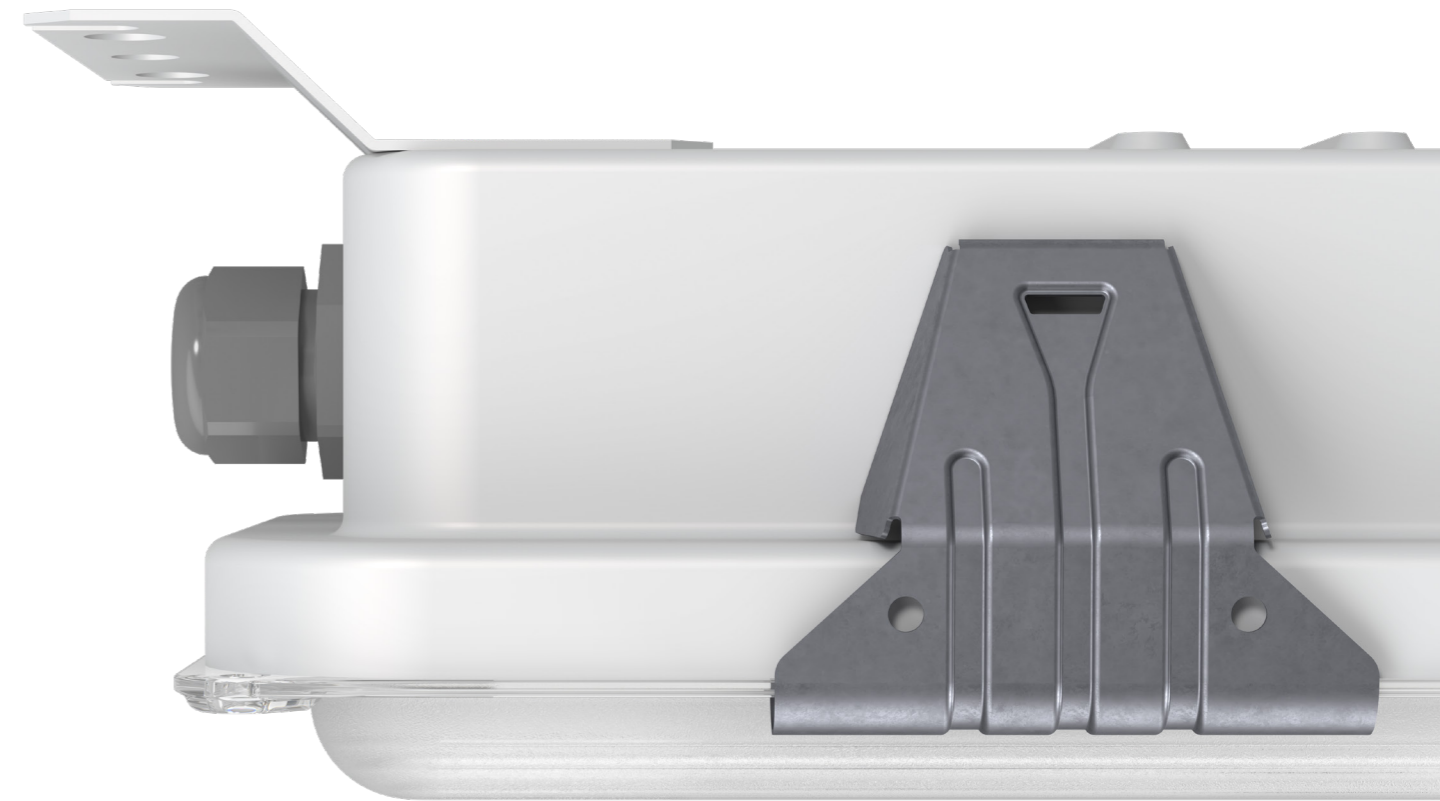
## Minimising artificial light's impact on wildlife

As our understanding of the ecological consequences of artificial light continues to grow, our need to address these consequences grows with it. Ships, onshore and offshore installations, with their widespread presence in coastal and marine environments, have an opportunity to make a positive difference. By implementing the appropriate light technologies, employing directional lighting practices, integrating intelligent control systems, and promoting awareness among crew members, Glamox can help mitigate the negative effects of artificial light on wildlife, contributing to the preservation of our natural ecosystems.

One example of how this is possible is by using our bird-friendly lighting solutions, which are designed specifically to mitigate the disruption of bird habitats, bird migratory habits and routes, and reduce damage to avian populations caused by high luminance light installations. Glamox can help to ensure that your lighting installations align with responsible practices, reducing the negative impact on marine wildlife.

## Dedicated to quality

As a result of the high demands placed on the quality and durability of our products, Glamox operates modern assessment and testing laboratories in Norway and Poland for the simulation of a wide variety of environmental conditions. These institutes have earned an excellent reputation in the lighting industry and possess licenses from institutions such as the European Norms Electrical Certification (ENEC) and the Det Norske Veritas (DNV). These Glamox laboratories have been certified in accordance with the requirements of ISO 9001, ATEX and IECEx.



We also follow an environmental policy for the purpose of monitoring its impact on the natural environment. This includes aspects such as energy and water consumption, the carbon footprint, waste management and recycling, as well as restrictions regarding the use and disposal of hazardous materials and substances. Several of our production units hold the ISO 14001 environmental approval.



## Glamox's ambition – A sustainability leader in the industry

We have set ambitious goals and track our ongoing progress on key topics such as environmental and climate sustainability, labour rights and business ethics. Going forward we will work towards:

- / Enabling our customers to reduce their CO<sub>2</sub> emissions from Scope 1 and Scope 2 activities related to lighting through our products and solutions
- / Becoming net-zero in our own operations (Scope 1 and 2) by 2030
- / Encouraging, improving and driving forward respect for fundamental human rights and decent working conditions by taking a systematic approach throughout our entire value chain
- / Continuing to reduce and eventually eliminate the use of landfill for all types of waste in our operations
- / Increasing the share of products in our portfolio that contribute to a circular economy
- / Improving our occupational health and safety data to better ensure a safe and inspiring working environment for our employees
- / Improving data quality and reporting standards across all relevant ESG-metrics, for instance by calculating Scope 3 emissions data

Do you want to know more about our corporate sustainability strategy and ambitions?

Scan this QR-code for more information:





## Sustainability success stories

We use our experience and expertise to help find the most energy-efficient and sustainable solution for every project. Get inspired from these success stories and see how we can help your business reach your sustainability goals and reduce energy costs.



Stena Britannica Photo: stenaline.com

### SUSTAINABILITY SUCCESS STORY

## / Stena Line

Glamox LED lighting to cut energy costs and carbon footprint of Stena Line's fleet of ferries

Glamox are undertaking a major project to retrofit Stena Line's fleet of passenger ferries with quality, energy-efficient LED lighting. Replacing mainly fluorescent luminaires with LED luminaires will enable Stena Line to reduce electricity used for lighting by 60 percent. This shift to LED technologies corresponds with Stena Line's sustainability strategy which includes reducing CO<sub>2</sub> emissions from existing vessels by 30 percent. Glamox, a world leader in providing lighting to the marine, offshore energy, and offshore wind sectors, provides a range of linear luminaires, downlights, and floodlights that can operate in the harshest environments. To date, an initial 15 RoRo (Roll-on Roll-off) and RoPax

(Roll-on Roll-off Passenger) ferries are being refitted with around 3,500 energy-efficient LED luminaires. The vessels operate on Stena Line's UK, Sweden, Denmark, and Baltic routes. Refitting all the vessels with LED luminaires will be completed during the next few years.

"Shipping worldwide contributes to around 3 percent of global CO<sub>2</sub> emissions, equal to around 1 billion tonnes of CO<sub>2</sub> a year. LED penetration in shipping is woefully low at around 30 percent compared to around 50 percent for commercial buildings. Switching to LED lighting is a no-brainer for vessel operators that want to reduce costs as well as emissions," said Håkon Helmersen, Senior Vice President of Glamox's Marine, Offshore & Wind division.

"We worked in partnership with Stena Line, conducting joint inspections of its vessels, and used our Glamox digital energy calculator to illustrate the energy, carbon, and cost savings we could enable it to realise. Making the switch to LED lighting makes good sense for the pocket as well as the environment," added Helmersen.





#### SUSTAINABILITY SUCCESS STORY

## / Dogger Bank

Glamox lights first giant substation for the world's largest offshore wind farm at Dogger Bank

This giant unmanned structure is one of three offshore high-voltage direct current (HVDC) substations being built for Dogger Bank, the world's largest offshore wind farm, located 130 km off the North East coast of England. This first substation is pictured in the dock at Haugesund, Norway, where it was fitted with more than 640 specialist marine LED luminaires, ahead of its transportation to Dogger Bank A in the North Sea, where it is now in location and being prepared for the start of operations. Glamox, a world leader in lighting, won the order from Aibel to light Dogger Bank A, B, and C substations.

The substation is where the AC electricity produced by the wind turbines is brought together and converted by transformers to a high-voltage direct current transmission before being relayed by cable to land. The Dogger Bank A substation will be linked to 95 GE Haliade-X 13 MW wind turbines. Each turbine has a 220-metre diameter and 107-metre-long blades.

Glamox is providing marine-certified external and internal LED luminaires for the substations. These include tough, anticorrosive, waterproof linear luminaires and floodlights for lighting gantries, walkways, cranes, doors, stairwells, corridors, and machine rooms. For Dogger Bank, Glamox also lights some of the turbine transition pieces, which is the tubular steel structure that serves as the transition between the monopile foundation and the wind turbine. Glamox is also lighting commissioning service operation vessels and Thialf, the semi-submersible crane vessel used to assemble the turbines, substation jacket, and topside.

Dogger Bank will provide clean renewable electricity to power 6 million UK homes. Developed in three 1.2GW phases, it is a joint venture partnership between SSE Renewables (40%), Equinor (40%), and Vårgrønn (20%). Dogger Bank A is expected to start operating in the summer of 2023.



We provide the world's leading LED lighting solutions and Light Management Systems that help you significantly improve your energy efficiencies and reduce your carbon emissions.

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Creating light for a better life

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## The Glamox Group

Glamox is a Norwegian industrial group that develops, manufactures and distributes professional lighting solutions for the global market.

### Quality brands and solutions

The Group owns a range of quality lighting brands including Glamox, Aqua Signal, Luxo, Norselight, LINKSrechts and Küttel. Glamox is committed to meeting customer needs and expectations by providing quality products and solutions, service and support.

### Technology and expertise

Our products and solutions are developed and tested by our engineers at our own research and testing facilities, and manufactured and certified in accordance with all relevant quality and environmental standards. They are based on the latest technology and expertise – and generations of experience.

For more info, see [www.glamox.com](http://www.glamox.com)

