

ENVIRONMENTALLY FRIENDLY CRUISES? ARE THEY EVEN POSSIBLE?

Cruises are experiencing a real boom lately. Some travelers have a guilty conscience, because the ships consume a lot of energy and emit pollutants. However, some shipping companies are highlighting their climate protection efforts.

The major shipping companies are struggling to strike a balance between environmental and climate friendliness and what is economically feasible. Proudly announced new ocean liners promise to protect the sea, the air and the climate. Is there a dream destination: cruising without a guilty environmental conscience?

New generations of ships at least reduce their harmful emissions, for example through an efficient energy mix of fossil fuels with battery storage or fuel cells. Many details in ship design and on-board operation improve the climate balance.

Some shipping companies are also optimizing their existing fleet, but that still doesn't make cruise vacations environmentally friendly. Dirty heavy oil still dominates the world's oceans.

Environmentally Harmful Cruises

Engines powered by heavy fuel oil damage the environment with emissions of sulfur oxide, nitrogen oxide, particulate matter and soot, and contribute to the climate crisis with carbon dioxide (CO₂) emissions. Reduced-emission fuels such as marine gasoil and marine diesel are more expensive and emit only slightly less CO₂.

Even the lower-polluting liquefied natural gas LNG, which is considered a transitional solution to climate-friendly cruising, only manages a CO₂ reduction of around 20 percent. And it also has disadvantages, climate-damaging methane escapes during production, transport and operation, which reduces the CO₂ advantage and in some cases makes the climate balance even worse than that of ships with marine diesel.

Moreover, the floating small cities damage sensitive natural areas, for example in the Arctic, even if they sail with low emissions. It should not be forgotten that in pre-Corona times, the throngs of guests from giant ships sometimes overran destinations such as Palma, Dubrovnik or Venice. Venice's historic foundations were damaged by the water displacement of the giants in the canals. Last summer, Italy's government decided to ban large cruise ships from passing through part of the lagoon.

What Are the Cruise Companies Doing?

Some shipowners comply with the regulations of the UN organization responsible for shipping, the IMO, by using exhaust gas cleaners (scrubbers), which, however, in turn increase energy consumption and whose contaminated wash water is usually disposed of at sea. In protection zones and when entering ports, heavy oil-powered ships switch to less environmentally harmful but more expensive marine gasoil or marine diesel.

After all, thanks to scrubbers, nitrogen oxide catalytic converters and soot particle filters, six ships in the TUI Cruises fleet say they blow up to 99 percent less sulfur, 75 percent less nitrogen oxide and 60 percent fewer harmful particles out of their funnels and dispose of the residues properly on

land.

The goals of some companies are ambitious. By 2030, the first ships in the TUI fleet should be sailing in a completely climate-neutral manner, TUI Cruises CEO Wybcke Meier recently said. However, there is one big unknown, Meier said: the sufficient availability of biofuels. In any case, the "Mein Schiff 7," which is scheduled to enter service in 2024, is being designed so that it could also run on methanol.

Aida Cruises relies primarily on fossil LNG, which could one day be replaced by synthetic or biogenic fuel. Others, such as Hapag Lloyd or Plantours, are sailing with marine diesel. Shore power from renewable sources is currently seen as a ray of hope. Connecting the ships in port makes the operation emission-free during the time and reduces noise and vibrations.

"Ecologically produced shore power will be very important in the environmentally friendly energy mix of cruising," says Harald Zeiss, professor of sustainability and tourism at Harz University of Applied Sciences. But while nearly half of ships will soon be shore power-capable or can be quickly converted to it, there are so far only 14 ports worldwide with such connections, according to the Cruise Lines Industry Association (CLIA).

What Else Do Cruise Ships Do?

Route changes and economical sailing by means of sophisticated software and drag-reducing hull coatings reduce fuel consumption. New harmless techniques prevent marine fouling on the cooling system. Many adjustments are also being made to hotel operations, which consume up to 50 percent of the ship's energy.

The environmental reports of the shipping companies mention heat recovery, insulation or isolation, water treatment and sophisticated waste management with plastic reduction and disposal in recycling plants in the ports. Some ocean giants have better waste disposal and wastewater treatment than small municipalities. Details such as biodegradable cleaning and care products, optimizing air-conditioning systems or energy recovery from the braking energy of elevators, and green, fair shore excursions are the steps toward greater environmental protection and sustainability.

Norway is currently considered a pioneer on the road to climate-friendly cruises. Hurtigruten ships run on marine diesel, with up to 20 percent biodiesel blended from food waste. The shipping company aims to be able to offer zero-emission cruises by 2030. Its new competitor on the mail route, Havila Kyststruten, relies on computerized LNG plus battery energy management. The ships can run electrically for up to four hours.

On Which Routes Is More Attention Paid to the Environment?

In international waters, ships are allowed to use heavy fuel oil. Stricter rules apply to coastal areas and special areas at risk (Emission Control Areas, ECAs) designated by the IMO with regard to emissions of sulfur and nitrogen oxides. These include the Baltic and North Seas, the coasts of the USA and Canada including the waters around Hawaii and the US Caribbean, some areas in China and generally all EU ports.

In the Antarctic and in future in the Arctic, ships are not allowed to carry heavy fuel oil on board as a precautionary measure. But it is also clear that anyone who has flown halfway around the world before embarking on a voyage has a miserable carbon footprint when boarding the comparatively environmentally friendly small expedition ships.

What Can Environmentally Conscious Cruisers Look out for?

There is no longer a current NABU ranking of which ship is least harmful to the environment. Instead of ranking ships as in the past, **the Nature and Biodiversity Conservation Union now rate shipping companies according to their environmental and climate friendliness.**

As a rule of thumb: The newer a ship is, the more efficiently it uses energy. Hybrid forms such as marine gas oil or LNG with battery or fuel cell are promising candidates. Blended biofuel should come from waste, not crops. Ships connected to green shore power in port thus protect the environment and climate. Cruise experts point out that short cruises in the vicinity and arrival by train, are environmentally conscious ship trips for vacationers.

In fact, long flight distances ruin the CO2 footprint of the vacation enormously. Then, even sailing cruises, where diesel propulsion is only used when there is a lull, come off badly. Cruisers can also reduce emissions by choosing their shore excursions. And they can voluntarily offset CO2 with an additional sum of money, thus compensating for the greenhouse gases emitted during the trip.

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