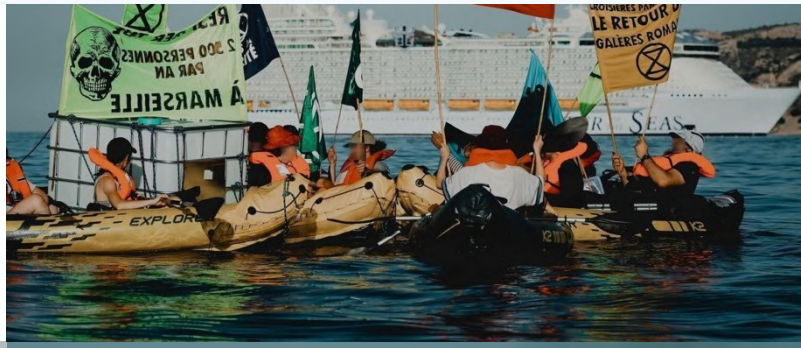

STOP CRUISES

LEAFLET

Produced by Stop Croisières Marseille - December 2023

Acknowledgements

Many thanks to the members of Stop Croisières Marseille who helped write, proofread and lay out this brochure.

We would also like to extend our warmest thanks to cartoonist Giulia David for illustrating the images signed "GD".

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1. Introduction

In France, the cruise industry is continuing its meteoric growth. The number of cruise passengers has doubled in ten years, rising from 2.1 million in 2009 to 4.5 million in 2019, an average increase of 7.9% each year [1]. Marseille remains the leading French port in this field, with 1.8 million cruise passengers in 2019.

2. The anachronism of cruises

At a time when the effects of climate change are already destructive and scientists are unanimously warning of the urgent need to act [2], some dinosaurs are doing just fine: shipowners are still breaking records for excessiveness.

When the collective was born in 2022 in Marseille, we saw the *Wonder Of the Seas* disembark every Tuesday for 6 months. At the time, it was the biggest cruise liner in the world (Figure 1), measuring 362 metres long (more than half the length of the Vieux Port) and weighing 230,000 tonnes. The extravagance of its equipment is enough to understand the aberration of this building, which carries and fuels surf simulators, an ice rink, theatres, a casino, climbing walls, shops, swimming pools (15!), whirlpools (10), giant waterslides, promenades, miniature golf, sports fields, laser-game, zip line, 20 restaurants, 35 bars (including the bionic Bar, famous for its dancing robot bartenders) and the icing on the cake: a Central Park and its "lush vegetation setting".

Figure 1: left - blocking of the Wonder of the seas by Stop Croisières and Extinction Rebellion on 14 June 2022 [3] - right - visual action on 12 July 2022 [4].

Totally out of touch with ecological issues, *Royal Caribbean* broke its own record for excessiveness in 2023 with the launch of the *Icon of the Seas*... Unfortunately, this American company is no exception: at the end of 2022, the Italian-Swiss company MSC took advantage of the World Cup in Qatar to inaugurate its similarly gigantic *World Europa. Norwegian Cruise Line*'s fleet, following the same competitive logic, offers karting tracks on two or three levels on several of its liners.

Against a backdrop of devastating ecological crises, the absurdity of this type of building and the cynicism of those who still defend the industry should be beyond dispute. Yet this sector is booming, and there is no serious public policy in Marseille or elsewhere to curb it.

That's why we've set up a group of committed residents and activists in Marseille to fight this industry locally and globally and to inform people about the damage it causes.

The purpose of this document is to shed light on the demands we are making by presenting the deleterious effects of cruises, then the false solutions put forward by the industry and lobbies, and finally the current state of policies and regulations around the Mediterranean and in Marseilles.

3. Air pollution

Heavy fuel oil: this is the residue left at the bottom of the tank after crude oil refining. Very thick and concentrated in harmful substances, it is difficult to find an outlet for it. Ships that ply the seas are allowed to use this fuel, which is very harmful to the air [5] and the sea, in particular because it emits sulphur oxides (SOx), nitrogen oxides (NOx) and fine particles.

Respiratory, heart and lung diseases [6], cancers [7] and even worsening asthma and allergies are all caused by these pollutants in the air, which can no longer be underestimated. We now also know that fine particles migrate into the placenta of pregnant women, with obvious harmful consequences for the physical and neuronal development of unborn babies [8].

In the PACA region, all residents are exposed to concentrations exceeding the threshold values recommended by the World Health Organisation (WHO) for fine particles [9].

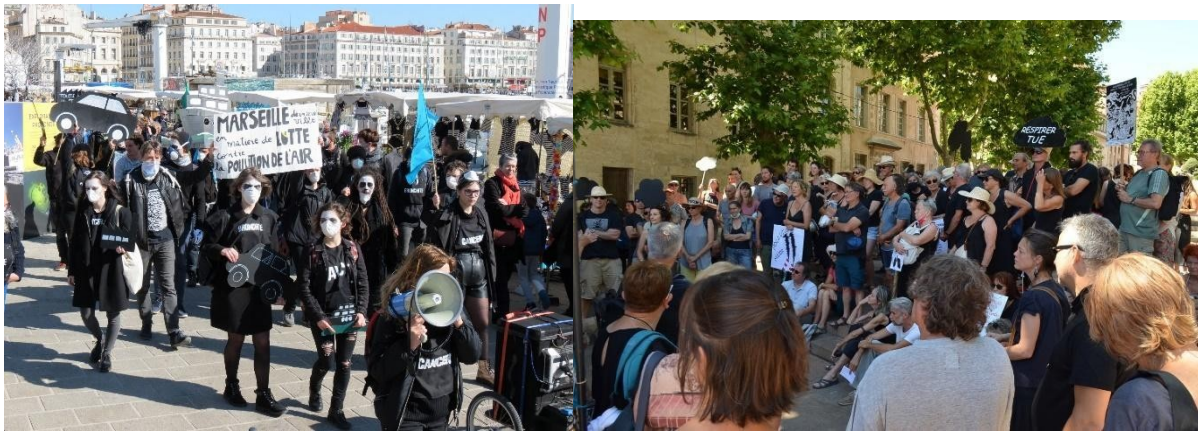


Figure 2: Demonstrations against air pollution on 7 June 2020 (left) and 11 June 2022 (right) in Marseille

Regulations on emissions from the maritime sector are limited. At global level, only sulphur oxide emissions are limited under the MARPOL Convention (MARine POLlution): the maximum SOx content at the stack exit has been reduced to 3.5% in 2012 and to 0.5% in 2020 (which is still 500 times higher than what is authorised for diesel cars).

In addition, there are currently 4 geographical areas where emissions of SOx, NOx and fine particles are limited:

- NECA zones (0.1% SOx limit and engines meeting Tier3 standards for NOx): Baltic Sea, North Sea and English Channel;
- SECA zones (0.1% SOx limit) : North America, Caribbean.

The Mediterranean will become a SECA zone from 2025. In the meantime, a European law introduced in 2016 requires all ships docked for more than two hours to use diesel with a sulphur content of 0.1%. In terms of this pollutant, a cruise ship docked in Marseille - which does not use its engines for propulsion but only to run the equipment on board - still emits the equivalent of 30,000 vehicles travelling at 30 km/h [10] continuously during the 8 to 10 hours it is docked.

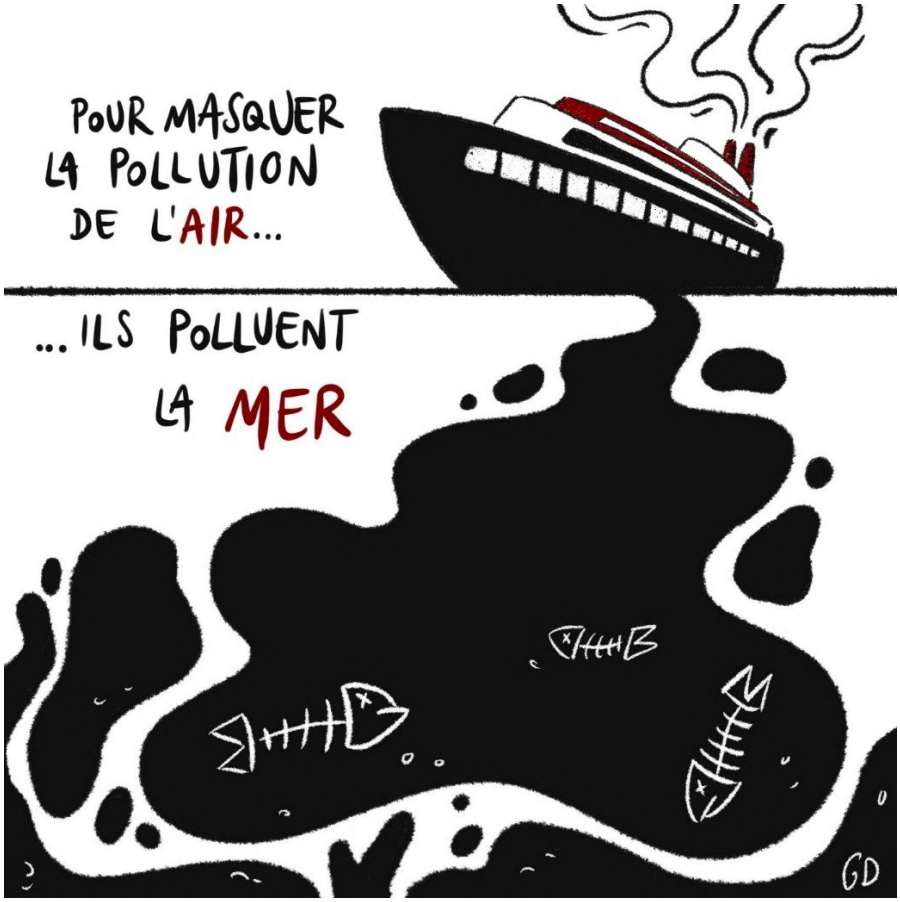
Boat fumes are unique in **that they emit a high proportion of fine and ultrafine particles**, which penetrate deep into our respiratory system, cross blood barriers and spread throughout our body and organs.

According to Atmosud (an association approved by the Ministry of the Environment to monitor air quality), in **Marseille, maritime traffic accounts for up to 50% of Nox emissions, making it the leading emitter of this compound ahead of road traffic (30%), and 1/3 of the port's emissions are linked to cruise activity [11].** On the front line against this pollution: the

residents of the districts bordering the Grand Port Maritime de Marseille (GPMM) in the north of Marseille (La Calade, Saint-Henri, Saint-André, l'Estaque, etc.) who filed a collective criminal complaint on 1er March 2023 for endangering the lives of others.

Figure 3: Press conference for the filing of the collective criminal complaint on 1er March 2023

4. Pollution of the sea



Discharges from ships affect the water in the seas and oceans and the organisms that live there in a number of ways [12].

Grey water and wastewater discharges

Discharge of grey water (washing up, showers, etc.), "treated" waste water and pulped food is authorised more than 12 nautical miles from land.

Ships carrying 4,000 passengers produce more than 1.5 million litres of grey water every day [13]. Wastewater must by law be crushed and disinfected before it is discharged, but studies show that very few treatment plants are compliant and that the majority discharge
The term "practically untreated raw sewage" is used [14].

These discharges cause pollution linked to the presence of nutrients, viruses and bacteria, and microplastics (washing of textiles, etc.).

Discharge of hydrocarbons (bilge water)

Satellite data suggest that illegal discharges are commonplace [15], with 90% of oil spills from ships attributed to the illegal and deliberate release of oil residues from routine operations (rather than major oil spill disasters). Prosecutions are rare and penalties negligible [14].

These discharges lead to pollution from oil and other hydrocarbons, bacteria and invasive species.

Solid waste

Solid waste is a growing problem. Waste management practices on cruise ships often deviate from the basic technical requirements for the disposal of municipal and hazardous waste, resulting in emissions of hazardous substances such as dioxins (through incineration), floating macro-waste and micro- and nano-plastics, affecting marine wildlife [16]. Each passenger on a cruise ship produces an average of 4 kilos of solid waste every day: this would mean that a cruise ship carrying 2,000 people would produce 8 tonnes of solid waste per day [16].

Direct disturbance of wildlife

Vessels also cause direct disturbance to wildlife through **collisions, noise and light pollution**.

Fin whales and sperm whales in the north-western Mediterranean ~~are~~ classified as threatened on the IUCN Red List, with the fin whale population recently estimated at around 1,800 adults alone, half of what was previously estimated. The main cause of mortality due to human activity is ship strikes [17].

Along shipping lanes, the noise landscape has increased 32-fold. The continuous low-frequency noise emitted by ships overlaps frequency ranges used by various marine species, interfering with their communication and behaviour. IMO guidelines on noise reduction are not mandatory.

Antifouling coatings

Antifouling coatings used on hulls contain high concentrations of biocides, which can have serious consequences for marine organisms [18] [19] [20].

Flue gas fallout and flue gas scrubber discharge

Flue gas fallout and, since 2020, direct discharges of very large quantities of polluted water through the use of flue gas scrubbers, which cause heavy metal and PAH pollution and contribute to ocean acidification (see section 7 on scrubbers).

Unambitious standards that are often circumvented

According to *Oceana [21]*: "Much of the international legislation on the dumping of waste at sea by ships was drawn up during the decades when cruise ships made up a fairly insignificant proportion of maritime traffic. The growth of the cruise industry has not been matched by appropriate legislation, especially in international waters where standards and controls are less strict.

The experience of Alaska, the only jurisdiction in the world where discharges from cruise ships are monitored by independent on-board personnel (the *Ocean Ranger* programme), has highlighted the trivial nature of breaches of the rules (which are already not very restrictive) and the failure to comply with discharge standards [22].

In Marseille, the Cap au Nord and Alternatiba associations have joined with the residents of the neighbourhoods affected to lodge a complaint for environmental damage and the crime of ecocide as a result of these harms, and in particular the scrubber discharges mentioned in part 7.

5. Climate change

Cruise ships consume large quantities of fossil fuels, not only in their operation but also in their manufacture, maintenance and dismantling.

Cruises therefore contribute to global warming. For example, an 8-day trip on a cruise ship, in a standard suite for two people with 4 days in port, represents a carbon footprint of 2.2 tonnes of $C0_2$ equivalent per person [23]. To comply with the Paris Agreements, this carbon footprint should not exceed 2 tonnes of $C0_2$ equivalent per person per year [23]. **A single cruise is therefore equivalent to everyone's annual carbon footprint.**

If we compare journeys of the same distance, a cruise has a carbon footprint per passenger similar to that of a flight [24]. Not to mention the fact that many cruise passengers fly to and from the port.

Given the challenge posed by climate change, efforts to adapt will always be insufficient. The new luxury cruise routes designed to visit the poles are cynical in this respect [25]: areas already devastated by global warming are now being opened up to tourism that will exacerbate this destruction.

Figure 4: Advertising for Ponant luxury cruises

As the scientist J. Rockstrom [26], the consultancy B&L Evolution [27] and the IPCC [28] have shown, global warming is an existential problem for the world as we know it.

The findings of climate scientists are clear. Urgent measures must be taken, and the cruise model is not compatible with this requirement. According to Wolfgang Cramer, ecologist, geographer and director of research at the CNRS, who has been contributing to the IPCC since 1995 [2]: "*We need to find ways of reducing to zero, as quickly as possible, all activities that generate CO2, methane or other greenhouse gases. Our calculations show that this reduction must be at least 6% every year from now on - otherwise we will not respect the Paris Agreement. As far as cruise ships are concerned, the solutions currently proposed by shipowners, such as replacing fuel oil with liquefied natural gas, do nothing to address the need to drastically reduce emissions. [...].*

The region is facing a triple threat [heat waves, droughts, rising sea levels]. From an economic point of view, these risks will cause serious problems for all commercial activities in the region, including tourism, including the cruise ship business model."

6. Consumption of resources

In addition to its impact on the climate, the cruise industry gobbles up vast quantities of resources.

Fuel consumption

Taking into account the 53 largest ships in operation in the world, and considering that they cruise for 8 days with 48 hours in port, their theoretical consumption would be **64,600 t of fuel over 8 days [29], i.e. 40% of all the fuel consumed by all motorists in France during those 8 days [30] [31].**

Smoothed over the year, in 2019, the 112 largest cruise ships in the world consumed 2 million tonnes of fuel, or 1/4 of what the entire French car fleet consumed that year [32].

Electricity consumption

Based on the experience of the port of Copenhagen, which receives ships of a similar size to Marseille, the berthing of a cruise ship requires an installed capacity of 7 to 11 MW [33].
. According to the same document, this represents the average consumption of 27,000 homes over the duration of the stay. Another example: when the Carnival Triumph cruise ship starts its engines, it consumes as much energy as the needs of 70,000 homes [34].

The issue of fuel and electricity raises the following question: **in a context of energy shortages and rising prices [35], can our society accept that so many resources are consumed for this activity?**

Consumption of materials

Cruise ships are equipped with a multitude of electronic devices drawing on the (finite) resources of elements present on Earth. In this way, the construction of cruise ships is a further - and dispensable - step in the deadly production of electronic equipment that will pollute the air, the soil and humans [36].

Steel consumption is also gigantic. **The 10 largest cruise ships together weigh almost 2 million tonnes, the equivalent of 194 Eiffel Towers [37].** With a fleet of around 323 ships in 2021 [38], this is an enormous amount of material that has had to be extracted, transformed, shaped, maintained and dismantled.

Poor dismantling conditions

The dismantling of these ships is often carried out in conditions that are more than alarming for the environment and workers. In order to circumvent European regulations, many European shipowners have resorted to stripping their vessels and re-registering them in a country with no environmental standards. The *Robin Hood* association condemns this practice as "the norm, not the exception" [39]. Although industries are emerging in France, they are struggling to develop in this context [40].

The NGO *Shipbreaking Platform* monitors the fate of end-of-life cruise ships [41]. In 2023, many of them are still being **washed up on beaches in South-East Asia** to be dismantled by hand, without taking any precautions for the environment or the safety of the workers - often exploited migrants, some of whom are children. Every year, dozens of people die on these sites, not to mention the illnesses caused by exposure to toxic substances without any protection [42].

Figure 5: left, view of a beach with boats cut out of the sea [42] - right, the Star Pisces *cruise ship in one of these shipyards in 2022 [39].*

7. What are the socio-economic impacts?

The cruise business model

At first glance, an analysis of the cruise industry's business model makes it possible to describe the link between this industry and the areas where the ships dock. **The majority of cruises are based on all-inclusive offers (so there is no point in consuming in the ports of call), constituting a destination in itself. The profitability of the ship is increased by additional paid services (bars, discos, ice rinks, cinemas, etc.) and by optimising expenditure in the ports [43].**

Thus, a cruise company has every interest in 1) encouraging passenger spending on board its ship, to the detriment of ports of call 2) encouraging competition between host ports to reduce costs. This puts the ports at a disadvantage, to the point of being considered the "poor cousins" of the business [44].

What's more, the few studies on the economic impact of cruise ships are carried out by players dependent on this sector, using methods that are opaque, to say the least. In Marseille, for example, the only studies available are carried out by the "Club de la Croisière" and the Chamber of Commerce and Industry. They put the figure for 2016 at 310 million euros for the Marseille area, and 2000 direct and indirect jobs, without specifying the method used to obtain these figures [45].

Bauke Visser, Professor of Economics at the University of Rotterdam, has drawn up an economic balance sheet for cruises in the Netherlands and claims that **the economic benefits are less than the costs incurred by greenhouse gas emissions and air pollution [46]**.

In addition to health costs, local authorities spend money on building infrastructure to accommodate these ships. For example, the Southern Region is investing €40 million in the electrification of quays between 2017 and 2025 in Marseille, Nice and Toulon [45] (see section 10). **The "polluter pays" principle is not being respected.**

The design of the ships and the direct jobs created by the cruise industry are not sufficient arguments for this economic model to be accepted. The ecological crisis is in itself an opportunity to create a multitude of jobs: ADEME estimates that 340,000 jobs will be created between now and 2035 and 900,000 in 2050 [47], despite the declines observed in other sectors. The 19,973 French jobs put forward by the "Club de la Croisière" can therefore be redirected as part of the imperative ecological transition of our societies [48]. This is a political choice of direction for our region's economic activity, which must necessarily be accompanied by a major training programme to support the professional transition of the employees affected.

As a result, the relationship between cruise companies and port cities is more one of territorial submission, in a context of competition between local authorities and private interests, rather than a discussion between equals [49].

A tourism model that is changing host towns [50].

The touristification of an area is often presented by its promoters as an opportunity to make money and create jobs. Yet over-tourism has obvious social implications that are never discussed.

The tourist industry is **changing the most emblematic areas of a city, tending to homogenise areas** and take away the soul of certain neighbourhoods, which become Disneyland, in addition to causing various nuisances for local residents (occupation of streets, traffic jams, noise and visual pollution, etc.). For Barcelona or Marseille, this applies to a few districts (the old port or the shopping basket), where shops, restaurants and infrastructures are increasingly adapted to tourists and no longer meet the needs of locals, but it can be applied to the whole of smaller towns visited by cruises, such as Venice or Dubrovnik.

Tourism drives up prices. Infrastructure designed to accommodate visitors is built and maintained at the expense of the local population, and tourism generates trade in new products that are superfluous or previously had no market value.

In Barcelona and Corsica, for example, seawater desalination plants are being **built at the expense of local residents to absorb the peaks in consumption in summer caused by the combination of very hot weather and very high tourist pressure**. In addition, the development of the cruise industry has been accompanied by an increase in air traffic due to the large number of cruise passengers taking their boats by plane.

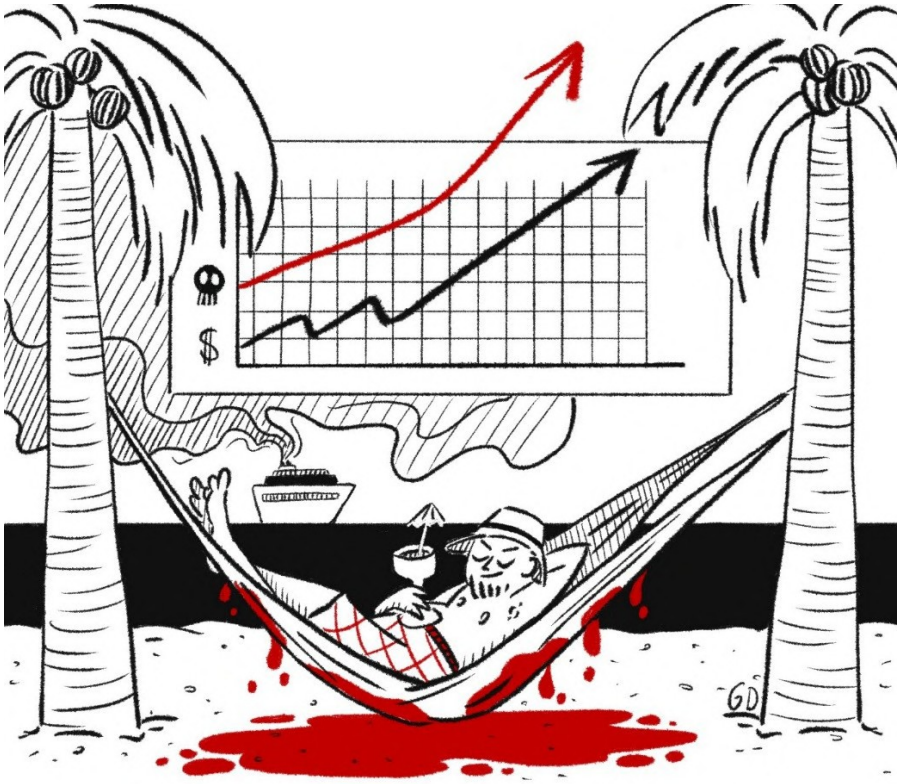
In gateway cities such as Marseille and Barcelona, cruises can increase demand for Air Bnb, the deleterious aspects of which are now well known and documented: the development of flats or even buildings exclusively dedicated to short-term accommodation, in addition to causing nuisance to neighbours, **leads to an increase in rent prices and makes it much more difficult for residents themselves to access accommodation**.

So it's a double whammy for the residents of the towns affected, who suffer the nuisance of these infrastructures and bear the costs.

Tourism turns every object and objective - material or otherwise - into a commodity. Money changes human and social relations**.** It transforms hospitality into a service, and every skill and know-how into a potential market value to be exploited.

The tourism sector is also vulnerable, and with it all the people who depend on it. The Covid-19 pandemic reminded us of this. There is talk of 62 million jobs being lost worldwide by 2020, with seasonal workers the first to be affected.

8. Companies that evade the rules: tax evasion, the law, etc. work, safety...



An administrative complexity that puts you above the law...

The corporate structures of cruise companies are spread across several countries and tax havens in order to avoid labour legislation, taxes, environmental controls, etc.

A survey by the newspaper *Univisién Noticias,* reported by *Courrier International*, shows that the 266 cruise ships studied are registered in 23 different countries. However, four flags (Bahamas, Panama, Bermuda and Malta) alone account for 70% of the ships surveyed. One of the first advantages of this administrative fragmentation is to play with the registration of ships and the resulting constraints.

... including passenger safety ...

The article shows that a ship registered in Malta, with an owner registered in Curaçao, operated by a British company but working for the American cruise company *Carnival,* was able to continue sailing despite flagrant and dangerous problems (lifeboats in poor condition, radar problems, burst pipes, etc.).

In the event of a crime committed on board, this administrative and jurisdictional complexity dissuades or prevents the tracing of those responsible. **Investigations carried out in the United States show that thefts, sexual assaults and rapes that have taken place on board go unpunished because of these obstacles.**

A recent *Arte* report *[46]* interviewed former ship captains who said that passenger safety is not guaranteed in the event of an accident either. The size of the ships means that there is often no way of evacuating the people on board. 32 people died when the *Costa Concordia* sank in 2012. In 2019, an engine failure *on* the *Viking Sky* could have led to the deaths of several hundred people, but the tragedy was narrowly averted [46].

... including the Labour Code...

The labour law that applies on board is not that of the areas visited or the country of the cruise company, but once again that of the ship's flag of convenience.

For example, the American company *Carnival*, the largest company on an international scale (registered in Panama and sailing under various foreign flags of convenience...) escapes American regulations in terms of labour law and employs Indian and Filipino staff who are **not protected by a law limiting working hours or setting a minimum wage [52].**

A waiter on the *Harmony of the Seas* (*Royal Caribean*) works every day without a break, 77 hours a week, for 9 months for a monthly salary of €1,300, even though waiter jobs are still much more highly valued than kitchen or cleaning jobs [53].

More generally, the jurisdiction of these workplaces makes it difficult to provide adequate visibility and protection. Between 1998 and 2015, 318 breaches of crew rules were reported (mainly in Europe) on 80 ships [44]. Companies frequently terminate employment contracts in the event of illness. Appeals are complex. For example, for ships registered in the Bahamas, disputes are settled by an arbitration court presided over by a judge paid by *Royal Caribbean [46]*.

Bob Dikinson, the former chairman of Carnival, explains this way of doing things without being moved [53]: "We want a lively, competitive and very helpful crew, we have people from Eastern Europe, Asia, Africa, who raise their hand to come and work, we just have to bend down to choose them, and if they are not good, we take others. We can be selective, because we recruit from all over the world.

The management of the COVID pandemic also showed the best face of this industry in the area of human resources. Many seafarers were forcibly confined to ships in deplorable conditions, with the ships themselves stuck in ports or at anchor. The industry's ability to manage this kind of exceptional crisis is matched only by the absence of statistics on the number of suicides of shipboard personnel during this period [54].

... and tax payments.

Finally, being registered in tax havens (*Carnival* in Panama; *Norwegian* in Bermuda; *Royal Caribbean* in the Bahamas, etc.) enables cruise companies to **avoid paying tax on their commercial profits**, as well as social security contributions. Between 2011 and 2015, *Carnival* paid $44 million in tax, or 1% of its profits per year. *MSC* has centralised its European activities in a subsidiary based in Geneva, enabling it to pay only €5.7 million to the French tax authorities in 2019, or 1.4% of its profits.

9. False solutions

Context

Following protests from residents and media investigations into air pollution, the desire to reduce pollutant emissions is beginning to be enshrined in regulations.

In this context, shipowners and industrialists in the sector, forced to make changes, do not hesitate to describe as "green" technologies that make it possible to comply with new regulations on air pollution, while concealing the fact that they contribute to global warming and/or the destruction of the marine environment.

The two main "false solutions" being widely deployed are scrubbers and LNG.

The International Maritime Organisation has set itself a target of carbon neutrality for the maritime sector by 2050, which seems both too far away in view of the climate emergency, and unattainable without a reduction in maritime traffic [55]. Some newly envisaged technologies, such as BioNGL and hydrogen, are still in their infancy and will not be able to meet the sector's colossal energy needs.

Here are some explanations of these false solutions.

Using "open loop" scrubbers

An amendment has been made to the MARPOL Convention (see "Air pollution" chapter) by oil companies and shipping lines to comply with regulations limiting stack emissions to 0.5% SOx, while continuing to use heavy fuel oil at 3.5
% fuel oil widely available and at low cost. Thanks to this amendment, shipping companies are therefore authorised to continue using 3.5% fuel oil if they fit their ships with "smoke scrubbers".
scrubbers, to the detriment of the seas and oceans.

This involves spraying seawater into the exhaust flue to reduce SO2 (sulphur dioxide) emissions. In the vast majority of cases, the scrubber is an "open loop" or "hydride" system (see Figure 1). This means that **the hot, acidic water, loaded with soot, SOx and combustion residues (including heavy metals and polycyclic aromatic hydrocarbons [PAHs]), is discharged into the sea.**

PAHs and heavy metals have been linked to **cancer** and **reproductive disorders in marine mammals [56].** Rising ocean temperatures and acidification are already causing the bleaching and death of coral reefs, serious disturbances to fish and phytoplankton, and accelerating global warming. Scrubbers are now discharging wash water that is warmer and more acidic than ambient seawater [57].

Scrubbers can only **move pollutants from the air into the sea [58]**. This could be contrary to Article 195 of the United Nations Convention on the Law of the Sea, which stipulates that harm or risks must not be displaced and that one type of pollution must not be replaced by another.

As a precautionary measure, discharges from open-loop scrubbers were banned in January 2022 within 3 miles of the nearest land in French territorial waters [59], but remain authorised in the rest of the Mediterranean. What's more, the lack of monitoring makes compliance with this rule rather vague.

In 2015, fewer than 250 ships were fitted with scrubbers; by 2020 this number had risen to more than 4,300, according to industry figures [60], and orders are continuing unabated (see below).

Although few in number, large cruise liners make a major contribution to sea pollution through their enormous seawater discharges: several hundred m^3 per hour.

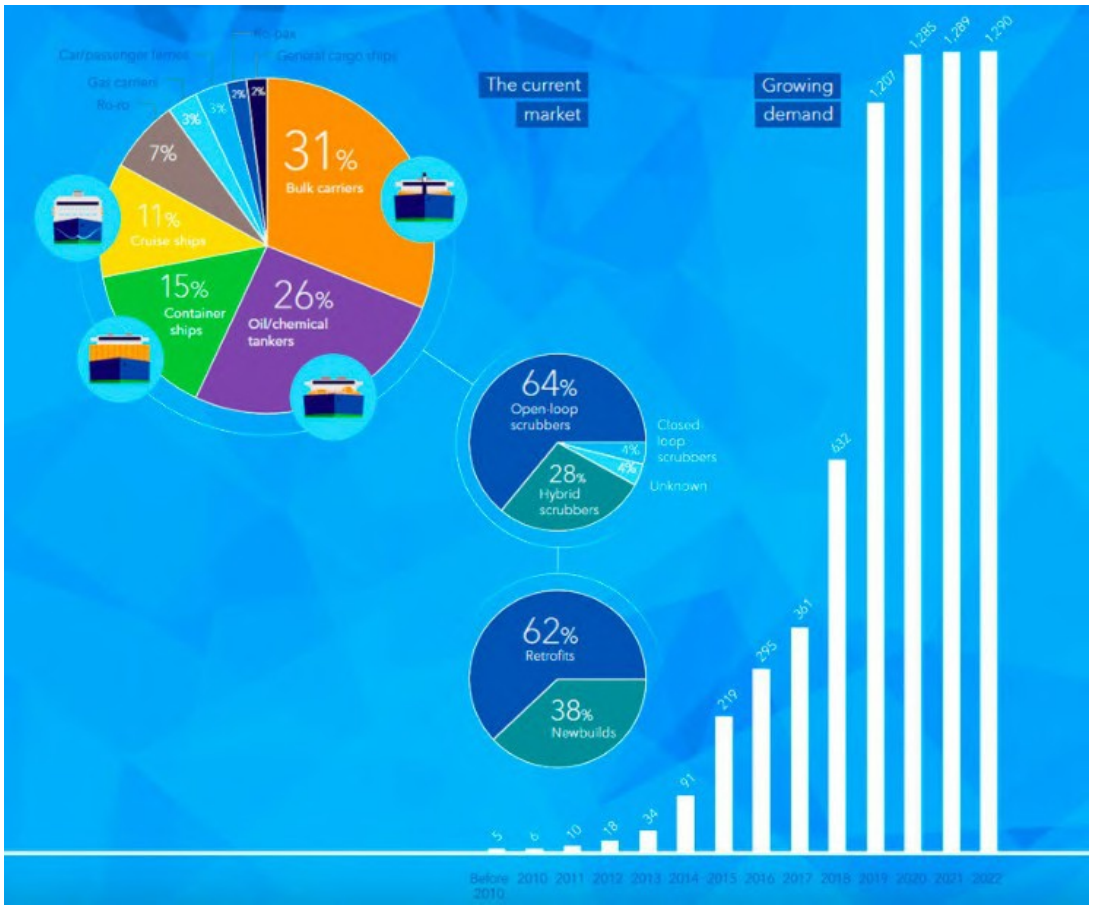


Figure 6: Discharges of flue gas cleaning water by ship category. Source: International Council on Clean Transportation [61] [62]

According to Kerstin Magnusson, a marine ecotoxicologist at the IVL, "if we allow Scrubbers to be discharged into the sea, we are exposing marine ecosystems to a new source of pollution, on top of all those to which they are already subject. **This goes against the UN's global environmental objectives, which require us to prevent or at least significantly reduce all forms of pollution in the sea by 2025**".

In addition, the use of scrubbers increases fuel consumption, and therefore greenhouse gas emissions, by around 2% [58].

What's more, their effectiveness in combating air pollution is relative: according to Dr. Ralf Zimmermann, Director of Research at the University of Rostock, the aim of a scrubber is to eliminate SO2, but it does not limit the particles and other pollutants found in the breathable part of the air [46]: with or without a scrubber, the concentrations of inhalable particles are virtually identical.

These devices therefore pose a threat to marine ecosystems, increase fuel consumption and are not in themselves effective in eliminating health impacts. The main purpose of these devices is to circumvent international regulations at lower cost.

Use of "closed loop" scrubbers

With closed-loop operation, the water is continuously recirculated and a reagent is used to neutralise the sulphur content of the exhaust gases. Some of the sludge generated is stored on the ship and only a small quantity of water is discharged into the sea after treatment [63]. This system, at first sight more effective in preventing pollution, nevertheless reveals two worrying problems.

The residual sludge will have to be transferred ashore and treated without any guarantee that a suitable treatment process will be available, or that the costs incurred will be covered, or even that there will be any risk of pollution on land.

The second problem is the lack of control over discharges at sea. For one reason or another, particularly on long voyages, the storage tanks holding the sludge may **be incorrectly sized or damaged**. They can also be **evacuated at sea** to save time at the next port of call, for example. Especially if the ship in question is equipped with a
This is a "hybrid system" (which can operate in a closed or open loop), enabling it to empty its tanks if necessary.

Furthermore, the operation of a closed-loop system requires the addition of a solid base and in a life-cycle and cost assessment [64], it was estimated that a ship equipped with a closed-loop scrubber system would consume more than 2500 L of sodium hydroxide (NaOH) per day. NaOH is highly reactive and corrosive, and for a ship to carry large volumes on board involves an additional risk for the crew.

In the Baltic Sea, since the introduction of a SECA zone in 2020 (which authorises closed-loop scrubbers), researchers are beginning to measure the impact of this pollution.

Using Liquefied Natural Gas (LNG)

Natural gas is the third most widely used fossil fuel after oil and coal. Deposits are found in a number of countries, from which it is transported either by high-pressure pipelines or by LNG tanker after being liquefied: this is the famous Liquefied Natural Gas (LNG). This is a booming sector: the global quantity of LNG transported has doubled since 2009 [65].

Using LNG does not emit SOx, and much less NOx or fine particles [66]. But the name "clean fuel" conceals major problems concerning greenhouse gas emissions and environmental damage.

LNG reduces CO2 emissions by 30% compared with heavy fuel oil [67], but as the NGO *T&E has* shown, this reduction is offset by methane leaks [68]. The extraction, transport and use of natural gas inevitably produce methane leaks [69], whose greenhouse effect is much greater than that of CO_2 [70].

Figure 1: Demonstration in front of the MSC World Europa, the first LNG-fuelled ship in the MSC fleet, Marseille, June 2023

Yet our ministers are still talking about this fossil fuel as a solution for decarbonisation... :

Figure 7: Tweet from Clément Beaune, Minister Delegate for Transport, who confuses reducing air pollution with decarbonisation

The other major problem is that the extraction of natural gas has a serious impact on the environment. For example:

- The United States, which is currently developing its LNG exports, produces it from shale gas,
- French company *Total Energies*, which hopes to become the world leader in LNG:
    - is exploiting gas deposits in the Arctic, developing, for example, a gas extraction programme on the Yamal Peninsula (on the Arctic Ocean bordering the European part of Russia) which is causing enormous destruction to the natural environment, the vital environment of the reindeer herding population [71],
    - is currently carrying out a highly controversial project off the coast of South Africa in an area with a particularly rich marine life [72].

At a time when "the living world is collapsing, the climate is collapsing, it really is the last of the good ideas to go and develop fossil hydrocarbon projects in one of the richest and most marvellous areas on the planet" [72].

LNG projects have also been excluded from funding under the recovery and resilience plan presented to Europe with a view to "greening ports".

Some shipowners concede that this is not an ideal solution and speak of a "transitional solution". However, the long-term solution has not been found, and LNG terminals are very expensive to build: if a miracle solution ever appears, these heavy investments will have been made in vain. What's more, LNG-powered ships built today have an average lifespan of 40 years, making the "transitional" nature of this solution unlikely.

BioNGL and hydrogen, miracle solutions?

Biomethane can be produced from a variety of organic sources such as agricultural produce, animal fats, plants, biomass waste or sewage sludge via an anaerobic digestion or gasification process.

These sources are limited, especially as there are other uses (heating, cooking and electricity generation) that also require fossil fuels.

What's more, ships can only use biomethane if it is liquefied. This represents an additional manufacturing step, and therefore a waste of energy. Indeed, liquefaction (cooling biomethane to -162°C) generally results in an energy loss of 8%, whereas this resource could instead be supplied directly to households or power stations in gaseous form [73].

Biomethane is also an expensive fuel. Although small quantities can be produced from landfill biogas at affordable prices, they are still very limited. Other feedstocks, such as wastewater, forestry and agricultural residues, and dairy and non-dairy manure, would cost up to 30 times more than the current price of fossil LNG [73].

The issues are similar with hydrogen or hydrogen-based synthetic fuels (ammonia, methanol), which are now also being promoted by the cruise industry.

First of all, it should be remembered that hydrogen is a way of storing energy, not producing it: it is a "battery" that has to be charged with energy produced elsewhere, with an efficiency of around 25%: it takes 4 times more energy to charge the battery than it can then deliver [74].

A survey carried out by *Reporterre* on hydrogen [75] reveals that today, **more than 95% of the hydrogen produced in the world is derived from methane, oil or coal, using processes that are highly polluting, particularly in terms of greenhouse gas emissions.** The whole point of the hydrogen plans is to "decarbonise" this production by 2030 or 2050, moving towards "green" hydrogen (produced from renewable energy sources, in particular solar energy).

But to meet just one of the objectives of the European strategy for 2030, that of replacing the fossil hydrogen currently consumed by European industry (petrochemicals and fertilisers) with 'green' hydrogen, **we would need 86 nuclear reactors or 5,470 km^2 of photovoltaic panels, an area the size of the Ardèche department.**

Hydrogen is not, therefore, a magic solution and will not be able to meet the needs of all the sectors of the economy in which it is promoted. In this context, the cruise ship sector should clearly not be a priority.

Finally, the promotion of these solutions, presented as "green", makes it possible to reassure health-conscious consumers and unscrupulously pursue the growth of the customer base, which perfectly illustrates the rebound effect [76] [77] whereby a technical innovation that is supposed to reduce the harmful effects of certain consumer goods will at the same time lead to an increase in consumer access to these goods, and ultimately to an increase in harmful effects. Long live "clean cruises"!

10. Well-established lobbies

Cruises love greenwashing

The cruise industry is structurally incompatible with today's ecological challenges. However, in

the face of mounting protests, it is using arguments to present itself as green:

- As we have seen, by labelling as "sustainable" technologies that limit air pollution but do not really reduce the carbon impact, such as the use of LNG or the electrification of docks, it is possible to reduce the carbon footprint.
- Technologies that they do not use if they entail additional costs:
    - For example, ships are generally fitted with "dual fuel" engines, which allow them to use LNG... or to switch back to heavy fuel oil if LNG becomes too expensive [78],
    - A survey of British ports revealed that shipowners, while promoting the electrification of quays to the hilt, do not plug in in British ports equipped with electricity because it is more expensive [79].

The harder the pill is to swallow, the more resources the industry deploys to push it through its well-developed lobbying network (see following sections). They do not hesitate to offer cruises to dozens of journalists and pampered influencers on board and at ports of call on islands bought by cruise companies so that they can then sell the cruise dream [80].

Worldwide: CLIA

On a global scale, the Cruise Lines International Association (CLIA) sets up intense lobbying networks to ensure that nothing stands in the way of its interests. For example, the plan to introduce regulations in the United States against the noise generated by ships, which deafens marine fauna, has never seen the light of day, scuppered by the lobbies [51].

Figure 2: Message broadcast in Marseille - May 2023

In Marseille, the "Club de la Croisière" takes us on a cruise

The Club de la Croisière, now the "Cruise Club Marseille Provence", despite its name, is not a club for happy tourists.

In October 2019, this lobbying organisation is organising the first *Blue Maritime Summit [81]*, bringing together representatives of public authorities, several cruise and energy companies (including Total and Elengy, a subsidiary of Engie which manages two LNG terminals), to sign a Memorandum of Understanding (MoU) with the European Union.
The "Blue Charter" includes promises that are questionable in substance, with no regulatory constraints and no mention of global warming. Commenting on the Blue Charter's commitments when it was signed, the Chairman of the Cruise Club said: "We are under no obligation to implement these measures. There is no regulatory obligation to do so. It's a voluntary approach" [82].

This club does not hesitate to use misinformation to give a green image to shipowners who are not changing their practices. For example, the brochure "Understanding the eco-energy transition for cruise ships" [83] published by the Cruise Club in 2020 with the Region's logo misleads the reader by highlighting the use of scrubbers and LNG.

The second part of this "Blue Maritime Summit", which took place in October 2022, was an opportunity for the main shipowners to sign, with great fanfare, a "Charter for Sustainable Mediterranean Cruises", which applies only to French waters and contains 13 totally hollow commitments. What's more, signing this charter is in no way binding. *Stop croisières* has produced a video to decipher this communication operation (see link below).

Figure 8: Sustainable cruise charter for the Mediterranean: a communication campaign available here: https://www.youtube.com/watch?v=8OKTxFwBo9k&t=35s

The cruise industry therefore has considerable lobbying resources at its disposal to organise misinformation, influence politicians and prevent the law from evolving against its interests.

Widely relayed to Metropolitan France

The Metropole's Territorial Climate Air Energy Plan has been submitted to a public enquiry from 13 September to 22 October 2021. With regard to maritime activities, this plan proposes two things [84] :

- Anticipating the future low-emission zone in the Mediterranean by supporting the development of a liquefied natural gas supply from the Fos LNG terminals (Supported by: GPMM - South PACA Region - Cost: €40,000,000),
- Create a new relationship between Cruise Club Marseille Provence and the Metropole in order to create a joint dynamic for the energy and ecological transition of this sector (Supported by: Club de la Croisière - Cost: €80,000).

To understand this lack of initiative, this following of the most climate disrespectful business leaders, we can read the following statement, which sounds like a leap of faith:

"Faced with the challenges posed by global warming and in an increasingly competitive environment, the Metropole is convinced that the economic performance of businesses is the priority and that supporting their transition to a more sustainable way of operating is one way of achieving this" [82].

The city of Marseille has withdrawn its membership and subsidies (of 90,000 euros) from the Marseille Provence Cruise Club in 2021 on the grounds that "it is a lobbying tool that does not respect the balance between public authorities and private interests". However, the département (headed by the same Martine Vassal as at the Metropole) was quick to increase its subsidies to compensate for this loss [85].

And also supported by the region

The cruise business is also supported by the Region, which has made cruises one of the priorities of its "Escales Zéro Fumées" scheme (discussed in part 10) and is helping to develop the LNG sector.

Here again, misinformation is at work, as for example in the publication below in which the President of the Southern Region cites an "Insee" survey that would reveal "massive support" for cruises, whereas this "information" actually comes from a survey carried out by the company Mars-Marketing on behalf of the GPMM itself, on a panel of 500 people, less than half of whom are Marseillais [51] ....

These positions may seem insignificant, but they reveal the state of the current debate on the future of this activity.

There is also support within the government

The Secretary General of the Elysée Palace, Emmanuel Macron's main aide, was placed under investigation for "taking illegal interests" on 3 October 2022. At issue: his hidden family links with the main shareholders of the MSC transport group, one of the main clients of the Saint-Nazaire shipyards. On several occasions, he found himself in a position to make State resources available to the cruise company, before going to work for it.

Figure 3: "We are very en Kohler" banner against MSC Croisières - demonstration on the water - 17 June 2023

Édouard Philippe, Mayor of Le Havre and former Prime Minister, defends the project to develop a new cruise port in Le Havre.

11. Progress on Mediterranean and worldwide

On a global scale: aiming to decarbonise the maritime sector by 2050

Regulation of the cruise sector is entrusted to the International Maritime Organisation (IMO), a UN body criticised for the weight of the private sector within it [86]. But the rise of environmental concerns is slowly beginning to change this.

In July 2023, the IMO set a course for the maritime sector to become carbon neutral by 2050. This objective would make it possible to meet the 2°C temperature increase limit set by the Paris Agreement (but not the 1.5°C limit).

This objective seems very difficult to achieve. The IMO is relying above all on the development of "zero-emission" fuel sources (hydrogen, etc.), which, as discussed in the previous section, are still in their infancy and will not be able to meet current energy demand. Without a reduction in maritime traffic, this objective cannot be achieved. **However, at the same time as aiming for carbon neutrality, the IMO is forecasting an increase in traffic.**

The development of **wind propulsion (**using the force of the wind) is promising for a part (to be drastically reduced) of maritime traffic. It will never be a solution for cruises, which need energy not only for propulsion but also to run the extravagant equipment on board.

On a Mediterranean scale: the ECA MED (Emission Control Area Mediterranean) project

In France, the national plan to reduce emissions of atmospheric pollutants (PREPA), adopted in 2017, envisages the introduction of new low-emission zones in the Mediterranean. The impact study carried out by INERIS shows that the introduction of an ECA zone, synonymous with a reduction in sulphur oxide emissions (SECA zone: switch to 0.1% sulphur content in fuels) and nitrogen oxide emissions (NECA zone: use of cleaner engines), would result in health benefits at least three times higher than the costs [87].

The SECA zone has been approved and will come into force in 2025. It has not been decided to implement a NECA zone for the time being, but preparatory work should begin in 2024 to speed up its introduction. Unfortunately for marine life, **the use of scrubbers in this zone has not yet been banned.**

At European level: European FuelEU Maritime regulation

The European FuelEU Maritime Regulation will introduce an obligation for passenger ships and container ships to use shore-side power "or other zero-emission technologies" for all electricity needs when berthed alongside in major EU ports from 2030, with a view to reducing air pollution in ports [88].

The Particularly Vulnerable Sea Area project

In the Mediterranean, the main cause of death for sperm whales, fin whales and whales (endangered in the Mediterranean) is the collision of cetaceans with ships, where traffic is increasing. To curb this disastrous phenomenon, the IMO has designated the north-western Mediterranean Sea as a Particularly Vulnerable Sea Area (PSSA), at the suggestion of Spain, France, Italy and Monaco. The voluntary measures that will be put in place (safety distance and speed, alerts, etc.) will be examined in 2023 with a view to their adoption in the near future.

At the level of certain ports and in France: a ban on scrubber discharges close to the coast.

23 States and 71 ports have decided to ban open-loop scrubber discharges in their territorial waters or port waters. Turkey, the Suez Canal Authority, Oman and Saudi Arabia have recently joined this list [59].

Since January 2022, a French law has prohibited scrubber discharges within 3 miles of the coast (but there are no regulations beyond that). However, exemptions have already been granted to certain *Corsica Linea* boats *[89]*.

Limiting cruise traffic in certain cities

As a result of the many negative impacts of the cruise industry on local communities and the mobilisation of local residents, some towns have taken specific measures to limit the number of ships docking simultaneously.

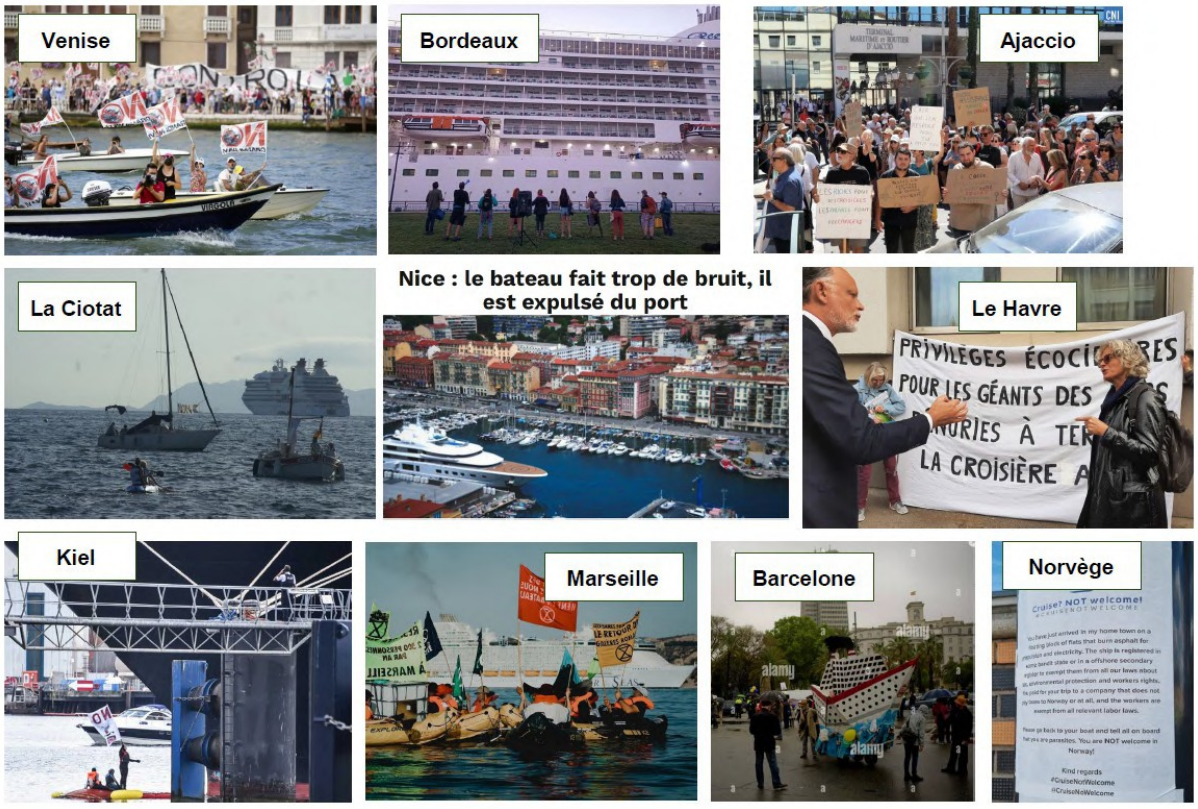


Figure 10: In each city where cruise ships are welcomed, local residents are organising protests

In an article entitled "Damning pollution studies, citizen protests, Covid-19, etc. Les croisiéristes dans la tempête", *Le Monde* cites the many cities where cruise ship traffic has been restricted over the last three years [86] :

- In 2019, in Croatia, **the city of Dubrovnik wanted to limit the number of cruise ships passing through to two per day, with a ceiling of 5,000 passengers**. In the same year, despite warnings from shipowners, the ports of **Santorini, Bruges and Dublin** limited the number of ships that could dock simultaneously,
- **In Venice**, large cruise ships, accused of endangering the lagoon's ecosystem and weakening the city's foundations, have been banned from the city centre in August 2021, but have been moved to the industrial port, where they will continue to damage the lagoon,
- **Since 2022, traffic in Palma de Mallorca has been limited to three cruise ships a day,** with only one carrying more than 5,000 passengers. This breakthrough was achieved thanks to the mobilisation of some thirty associations of Palma residents and environmentalists. They have described it as a "half-victory": they had asked for a limit of 1 ship per day, but now realise that a limit of 3 ships per day will not reduce the number of ships per year, because the ports of call are now spread out differently over time,
- Further away from the Mediterranean, in the Caribbean, where a third of the world's passengers pass through their waters, **the Cayman Islands have decided not to build a terminal for large ships.**

  ,

- **In Amsterdam,** the city council voted to move the terminal out of the centre of Amsterdam as part of a plan to limit the number of tourists to 20 million a year and reduce pollution.

The fact that ports of call are moved to a neighbouring port greatly limits progress in terms of ecology and health, and only slightly hampers the growth of the cruise industry. New cruise terminals continue to spring up, such as in the French port of Le Havre and in Valencia and Barcelona in Spain. Global measures on a Mediterranean scale could be more effective.

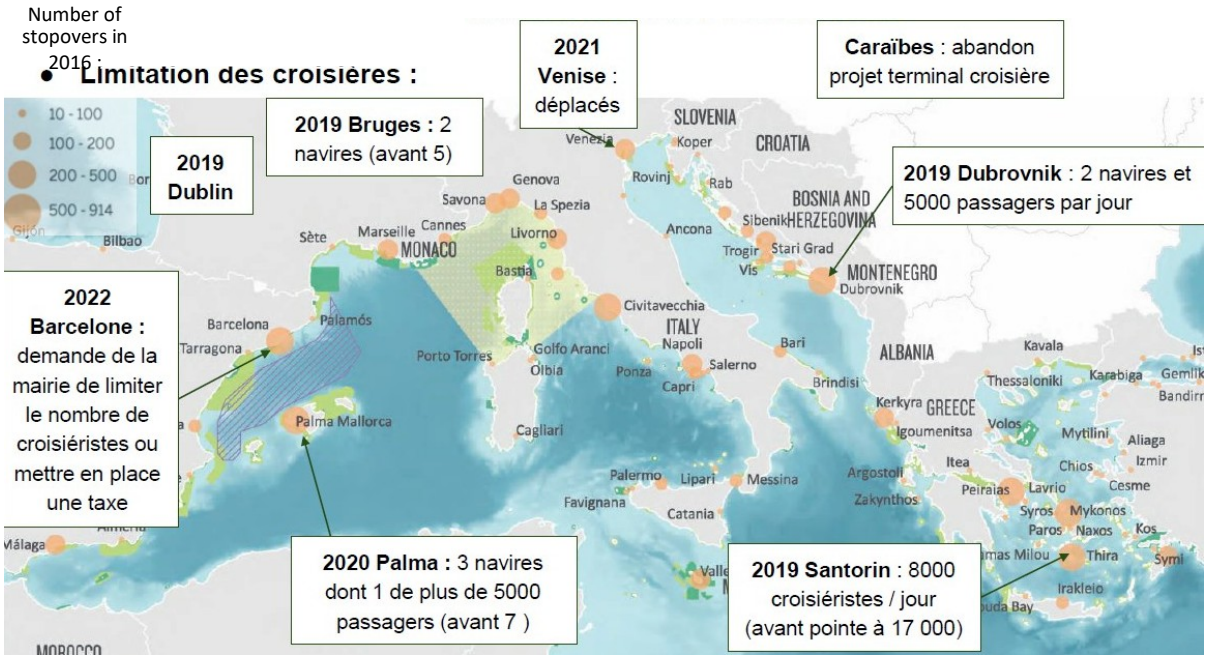


Figure 11: Examples of cities where the number of cruise ships has been limited

And in Marseille?

In Marseille, there is no limit to the number of ships docked, with up to 6 ships docked simultaneously.

In a "Grand Port Martime" such as Marseille's "GPMM", governance is based on a public/private mix as follows:

- Management of the port is entrusted to an Executive Board, currently made up of 4 members, under the control of the Supervisory Board, which has 18 members (5 representatives of the State, 5 representatives of local authorities (2 regions, 1 department, 1 metropolis and 1 town), 3 staff representatives, 5 "qualified personalities" (including 1 representative of the CCI and 1 from the business world),
- The Development Council has a consultative role and makes proposals (but does not make decisions). It has 40 members representing the professional, social and associative sectors, as well as the local authorities and their groupings concerned by the GPMM.

The city of Marseille has fairly limited direct power over the decisions taken by the GPMM (1 vote out of 18 on the supervisory board). It launched a petition calling for the most polluting ships to be banned from entering the port on peak pollution days, but it cannot enforce this itself (unlike Nice, for example).

Public initiatives can, however, influence decisions, also in the form of publicly-funded plans, the most current example being the "Plan Escale Zero Fumées".
With regard to this plan, it is indeed urgent to act by electrifying the platforms for Form 10, ferries and freight. But for cruise ships, our collective is opposed. Indeed:

- Investing in the electrification of cruise docks means using public money to keep the most polluting ships on the water,
- Cruise ships are the biggest energy guzzlers, requiring an obscene amount of power for an activity that can be substituted,
- At a time when sobriety and energy sovereignty must be the priorities to preserve our future and peace, it is unacceptable to use energy, whatever its source, for cruise activities to power an ice rink in the middle of summer, giant screens, jacuzzis, laser-games, bars and air conditioning,
- To improve air quality and protect our lungs, let's prioritise electrification of the quays for the ship repair yard, ferries and container ships, but let's say no t o cruise ships in Marseille!

12. Conclusion and demands

There is no justification for maintaining these floating leisure parks, which have not taken the measure of the climatic and social urgency that requires more than surface greening. Their persistence is due solely to the inertia of political decisions, further hampered by the intense activity of lobbies.

In response, local residents have long been denouncing air pollution and now also the many impacts on the marine environment, such as acidification of the water. More generally, cruises contribute to global warming and the depletion of resources.

There are also serious social consequences, as these companies practise tax optimisation/evasion, exploit their staff and circumvent safety obligations.

The economic justification put forward does not offset the future cost of serious environmental impacts. In the case of cruises, the benefits for the port of call are so small that the argument is unacceptable. Lastly, the technical innovations put forward (LNG Hydrogen, electrification of quays, etc.) are not only not solutions, but they make us believe that the problems will be solved, preventing us from looking for real solutions.

However, the end of cruises, far from signifying the end of travel, invites us to rethink our relationship with tourism, with time, with natural environments, with holidays that offer a quality of experience rather than a dizzying quantity.

That's why we've come together as a group of residents and activists to define and make common demands about cruises and maritime traffic in general.

In our demands, we distinguish between cruises, which are purely recreational, and other vessels (ferries, freights, etc.), whose usefulness is not in question.

Demand no. 1: No more cruise ships in Marseille or anywhere else

Accompany the transition by setting up a fund to support the reorientation of jobs and training.

From the arguments put forward, it is clear that maritime traffic also has an impact on the environment that needs to be regulated. Read our letter to the Grand Port Maritime de Marseille on this subject here.

Claim no. 2: Limit the impact of other ships

2.1. Speeding up the complete electrification of the docks, starting with Forme 10 (ship repair yard) - see our article.

2.2. Create a Mediterranean ECA (limited pollutant emission) zone

2.3. Total ban on scrubbers in the Mediterranean.

To make these demands credible, we are asking for a timetable for implementation, as well as the definition of monitoring procedures and penalties in the event of infringement.

Claim no. 3: Honest communication on the issue of cruises and maritime traffic in Marseille, and a genuine democratic debate.

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