## Port of Barcelona, heading for sustainability

The Port of Barcelona has been a pioneer in the port industry, promoting actions to reduce the environmental impact of its activity. It's currently committed to sustainability as one of the strategic lines that form the basis of its development over the coming years.

The plan to improve air quality at the Port of Barcelona aims to minimise the emissions of NOx and other contaminating gases resulting from port activity. The main actions planned are the promotion of natural gas as an alternative fuel for vessels, trucks and terminal machinery, as well as offering environmental discounts for vessels with good environmental performance.



Latitude: 41° 21' N Longitude: 2° 10' E

www.portdebarcelona.cat

# HEADING FOR SUSTAINABILITY

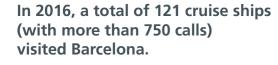
The environmental impact of cruise ships on Barcelona





90% of the cruise ships visiting the Port of Barcelona are **diesel-electric**, making them more efficient than most vessels using direct-drive diesel engines. Most of these cruise ships are also new, built after 2010, guaranteeing they produce between 15% and 20% fewer emissions than ships built before the year 2000, the average age of the global cruise fleet.

The largest cruise ships in the world, with capacity for over 8,000 people including the crew, have also called in at Barcelona.



SMALL SHIPS

Up to 1,000 people, not including the crew

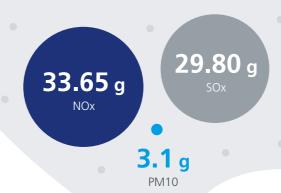


MEGA CRUISE SHIPS



### Impact of cruise ships on Barcelona's air quality

When moored at the Port of Barcelona, the average emissions from cruise ships per passenger and hour are 33.65 g of NOx, 29.80 g of SOx and 3.1 g of PM10.





## Barcelona, a city of cruise ships

The 1992 Olympic Games also served to turn the city of Barcelona into a cruise port: this was when the port received its first cruise passengers. Since then cruise tourism has steadily increased, and particularly since 2001, transforming the Catalan capital into Europe's main cruise port and the Mediterranean base for leading shipping lines.

Some figures for the Port of Barcelona (2016):



**750 CRUISE** CALLS



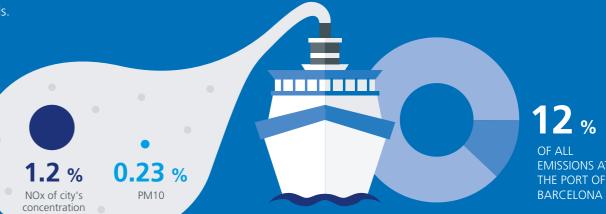
2.6 MILLION CRUISE



KM OF DOCKING LINE FOR CRUISE SHIPS

These ships have little impact on the city's air pollution levels: cruise ship emissions are responsible for 1.2% of Barcelona's air pollution by NOx and 0.23% of its PM10

On an annual basis, cruise ships emit around 700 t of NOx and 60 t of PM10 and therefore account for 12% of the emissions from all Barcelona's port activity.



12% OF ALL **EMISSIONS AT** THE PORT OF