

# The Marine Advantage – Canadian Ship Operators Reduce GHG Emissions

Inland and coastal shipping has tremendous opportunity to grow and support Canada's ambitions to reduce carbon emissions and mitigate climate change.

Ships are the most fuel-efficient way to move goods and produce the least amount of carbon emissions per tonne kilometre. Domestic marine shipping offers opportunities for reducing emissions from Canada's wider transportation system, which accounts for 30% of the country's overall emissions.

CMC Canadian ship operator members have been trailblazers in tackling greenhouse gases, spending more than \$2 billion during the past 10 years on new vessels and advanced technologies that significantly reduce fuel consumption and corresponding carbon emissions. There are more than 40 new and revamped Canadian-flag ships currently sailing in the Great Lakes, St. Lawrence River and the east and Arctic coasts.

## How do our ships compare to other transport modes?

Ships are able to carry huge volumes of cargo on significantly less fuel than rail and trucks. One ship can carry as much cargo as 963 trucks.

Due to its unprecedented investment in fleet renewal, CMC's Canadian-flag fleet, on average, can carry one tonne of cargo an incredible 360 kilometres on one litre of fuel. Recent analysis by Research and Traffic Group also shows that due to that fuel efficiency, if rail and truck were to carry the same cargo over the same distance as CMC's fleet, there would be 31 per cent more GHG emissions from rail and 558 per cent more from trucking.

## Progress in reducing ship GHG emissions

In Canada, the latest federal emissions inventory published in 2020, using 2018 data, indicates that the Canadian domestic navigation sector accounts for only 0.55 per cent of Canada's national CO2 emissions. The domestic navigation sector, as defined in the inventory, includes fishing vessels, ferries, Canadian Coast Guard and military vessels as well as cargo carriers.

CMC Members' Fleet, which includes bulk carriers, tankers and articulated tug-barges, accounted for 19% of that domestic navigation sector's emissions in 2017.

Through its collective efforts, CMC ship operators have reduced their total carbon emissions by 183,000 tonnes or 19% between 2008 and 2017 (the latest year in which data is available).

## Testing new equipment and lower carbon-producing fuels

Our Canadian ship owners, which are generally unique, rapid short-sea traders operating over shorter distances, are committed to reducing their carbon footprint further and have been taking various measures including:

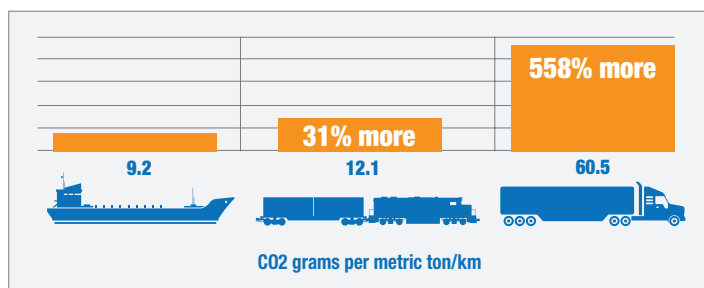
- Continuing fleet renewal
- Participating in the Green Marine environmental improvement program
- Conducting energy audits and fuel monitoring to adopt operational efficiencies
- Installing new equipment
- Adopting lower carbon-producing fuels.

As examples, one of our ship operators is trialling bio-fuels to power the main engines of vessels sailing in the Great Lakes and another has introduced five new dual-fuel LNG tankers over the past two years.

Reaching longer-term GHG reduction goals, however, will require significant global investment in research and development and deployment of new zero-carbon technologies and propulsion systems, such as green hydrogen and ammonia, fuel cells, batteries and synthetic fuels produced from renewable energy sources. With these needs in mind, the Chamber supports the global shipping industry's proposal for IMO to create an International Marine Research Fund, that the industry will pay into and that is expected to provide some \$5 billion to support research and development for these technologies.

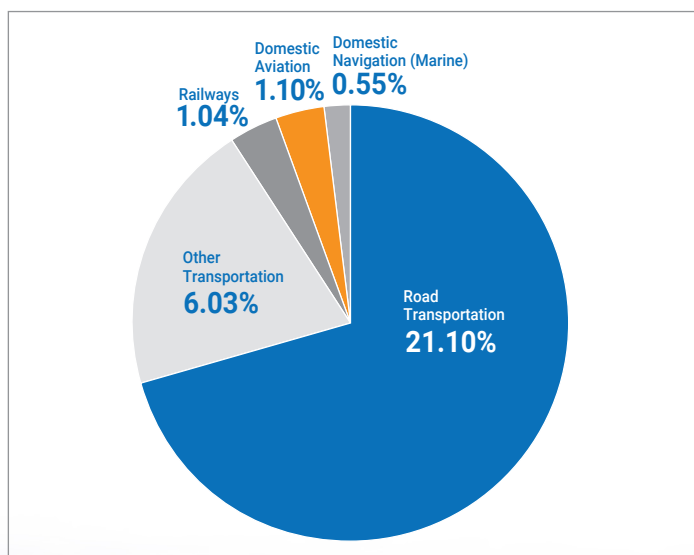
The Chamber will continue to work with the international shipping community and the Canadian government to advance solutions that will be effective for the industry to meet the wider goals Canadians expect.

## GHG Emissions Intensity Comparisons



Source: RTG analysis based on each mode carrying CMC Members' cargo with auxiliary fuel adjusted for a like-for-like comparison.

## Domestic marine vessels account for 0.55% of all Canadian transportation-related GHG emissions



Source: National Inventory Report 1990–2018: Greenhouse Gas Sources and Sinks in Canada

