Carbon-free shipping is possible, so why aren't we doing it?

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Ships produce more than two per cent of the carbon emissions warming the planet. According to some estimates, those emissions could triple by 2050 if nothing is done. And until now, next to nothing has been done. Shipping, along with aviation, has been excluded from climate agreements. But delegates at the International Maritime Organization (IMO), the UN agency that regulates international shipping, have just agreed on a target of reducing the sector's emissions by at least 50 per cent by 2050.

This sounds like great news, but island states and some European countries wanted cuts of up to 100 per cent by the same deadline. "Today the IMO has made history," said the president of the Marshall Islands, Hilda Heine. "While it may not be enough to give my country the certainty it wanted, it makes it clear that international shipping will now urgently reduce emissions."

Surprisingly, stricter cuts are actually feasible. While curbing aviation emissions remains a huge technical challenge, ships are easier. In fact, last month an Organisation for Economic Co-operation and Development report concluded that with full deployment of existing technologies alone, shipping emissions could be cut 95 per cent by 2035.

Cutting speed

How? The first thing is to change the way ships operate. For example, reducing ship speeds could deliver fuel savings of up to two-thirds. While this sounds easy, it would reduce owners' annual profits, so they won't do it voluntarily.

We could also boost fuel efficiency, by building bigger but more slender ships from lighter materials and equipping them with drag-reducing tech already in use by some vessels. Such measures could reduce fuel use by more than a third.

The last, and most important, change is to replace the heavy fuel oil used by most ships with alternative fuels. Even switching to liquefied natural gas (LNG) would provide big savings. Better yet would be to completely replace fossil fuels with hydrogen, ammonia, electricity or even nuclear power. Ships could also harness solar and wind power.

The challenge is to make all this happen, and fast. Cutting shipping emissions to near zero will require eventually replacing most of the ships now in service. But ships are expensive to build and remain in use for a long time. The average age of the commercial fleet is 25 years.

This is one of the reasons why many wanted the IMO to set a much more ambitious target now. If shipping companies don't start designing and building greener ships soon, we are going to run out of time. And the IMO is not exactly in a rush. It is not due to come up with a final plan for actually achieving the new 50 per cent target until 2023.

Enforce the rules

What's more, the IMO has no direct way to enforce this target. The countries ships sail between – the port states – have some powers to enforce what happens in their waters. The rules in international waters are meant to be enforced by the countries where ships are registered – the flag states.

Most ships are now registered to flag states such as Panama and Liberia rather than in the countries where they operate. This is done to dodge tougher regulations and higher costs elsewhere, so it's far from clear whether the major flag states will be willing and able to enforce emissions targets – especially as some have been fighting to prevent them.

Ship owners, meanwhile, are not going to want to cut emissions if it costs them money. A big part of the problem here is that the heavy fuel oil is not taxed, while some alternative energy sources, like electricity, are. So the world urgently needs to impose some form of carbon pricing on shipping – as it does on all fossil fuels.