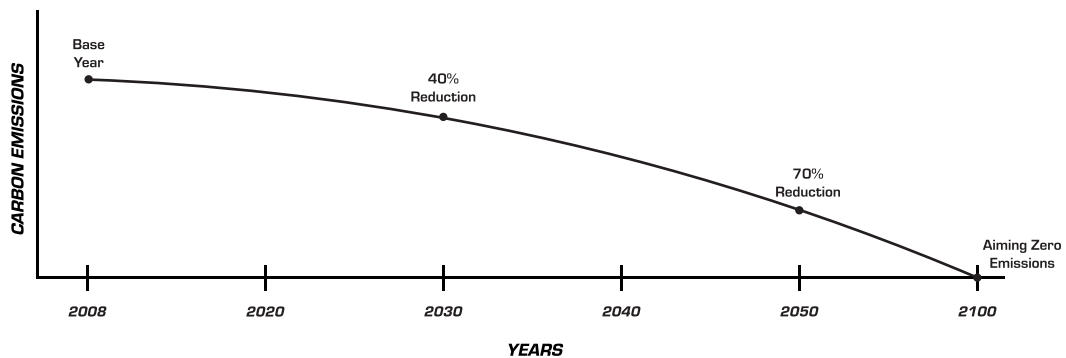


WHILE YOU ARE CHARTING A COURSE FOR DECARBONISING SHIPPING, WE ARE AN ADDITIONAL HAND ON THE DECK TO SUPPORT THE TRANSITION, ACROSS ALL VESSEL TYPES

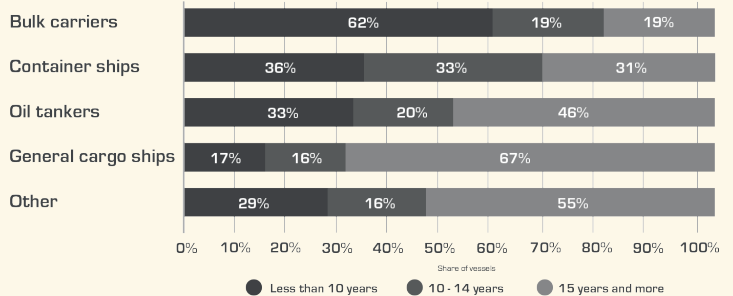


IMO EMISSIONS CONTROL TIMELINE FOR SHIPPING



While the global maritime industry works fast and furious to meet the IMO emission control requirements, there is an undeniable commercial consideration to operating leaner and cleaner vessels fit for the future.

FuelSpec is a cost competitive investment in significantly reducing fuel consumption and improving the emissions profile.



The above data is for 55,000 vessels
Source: Statista - Martin Placek, Oct 2021

FUELSPEC WILL IMPROVE BOTH EMISSIONS CONTROL AND FUEL EFFICIENCY TO THE EXISTING FLEET OF VESSELS THAT ARE USING FOSSIL FUELS, WITHOUT EXPENSIVE EQUIPMENT MODIFICATION.

WHAT IS FUELSPEC?

FuelSpec is a revolutionary product that improves fuel efficiency and reduces emissions by significantly improving the heat conductivity through a catalytic process.

- FuelSpec has excellent miscibility in fuel
- The viscosity of FuelSpec is very low due to its small molecular size
- FuelSpec treats all types of fuels including VLSFO and heavy fuels
- FuelSpec has a high flash point and is safe to use
- FuelSpec comes with strong lubricity enhancer
- FuelSpec is a patented technology by Efficient Fuel Solutions (EFS), USA and is EPA approved

SAFE TECHNOLOGY

No damage to equipment

- Active content is well within the range by EPA, which is upto 1/10th of the maximum limit

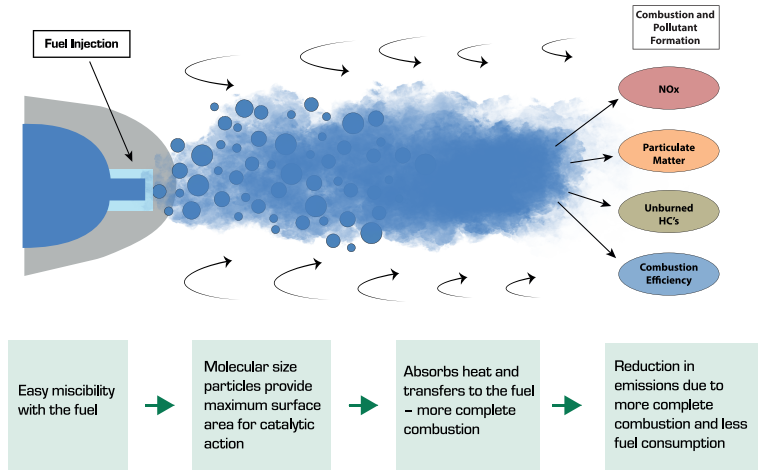
No melting/sticking inside the engine

- Magnesium acts as cleaning and lubricating agent
- Melting point of metal additives are very high, more than 1200 degrees

No clogging/fouling the fuel purification and filtration equipment

- FuelSpec is a catalyst - does not interact with the fuel
- Does not interact/interfere with other additives being used

FUELSPEC® COMBUSTION PROCESS



FAQs

Can FuelSpec be used on all types of bunker fuel?	Yes, the fuel efficiency is higher with the heavier fuels.
Can FuelSpec be used with any engine make?	Yes, FuelSpec works in a pure catalytic action and does not impact engines in any way.
Can FuelSpec be used with scrubbers?	Yes, no change in utilisation method needed on vessels with scrubbers
Can FuelSpec be used along with other additives?	Yes, FuelSpec does not interfere with the working of any additives. It simply improves combustion of the bunker fuels.
Is heating required to mix FuelSpec into the bunker fuel?	No, FuelSpec is highly miscible and the normal vessel vibration / sea movement while anchored is sufficient.
Is Dosing Equipment required onboard the vessel?	No, Dosing Equipment is not a must for trials. The vessel crew can dose the tanks onboard for the purpose of trials.

TRIALS CONDUCTED ON CONTAINER VESSELS, TANKERS AND BULK CARRIERS HAVE SHOWN:

Fuel Savings: **8% - 10%**
 Emission Reduction in NOx: **10% - 30%**
 Emission Reduction in Carbon: **10% - 60%**
 Significant reduction in soot

Fuel Consumption per vessel

MT per month
500
1,000
1,500
2,000
2,500
3,000
4,000
5,000

Fuel Consumption per vessel with FuelSpec

Sensitivity Analysis for Reduction in Fuel Consumption (%)						
-5%	-6%	-7%	-8%	-9%	-10%	
25	30	35	40	45	50	
50	60	70	80	90	100	
75	90	105	120	135	150	
100	120	140	160	180	200	
125	150	175	200	225	250	
150	180	210	240	270	300	
200	240	280	320	360	400	
250	300	350	400	450	500	

Fuel Cost Savings per month per vessel: VLSFO @ \$ 700 per MT

Sensitivity Analysis for Reduction in Fuel Cost (US \$)					
-5%	-6%	-7%	-8%	-9%	-10%
17,500	21,000	24,500	28,000	31,500	35,000
35,000	42,000	49,000	56,000	63,000	70,000
52,500	63,000	73,500	84,000	94,500	1,05,000
70,000	84,000	98,000	1,12,000	1,26,000	1,40,000
87,500	1,05,000	1,22,500	1,40,000	1,57,500	1,75,000
1,05,000	1,26,000	1,47,000	1,68,000	1,89,000	2,10,000
1,40,000	1,68,000	1,96,000	2,24,000	2,52,000	2,80,000
1,75,000	2,10,000	2,45,000	2,80,000	3,15,000	3,50,000

WE'RE CHANGING HOW THE WORLD BURNS FOSSIL FUELS

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