

Technology and environment: revolution on the way

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Author: Tim Power
Managing Director – Head of Drewry Maritime Advisors

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Maritime Advisors



IMO 2020 is just the beginning

SOx reduction 1st January 2020

- Global: 0.5%
- China coast: 0.1%
- LSFO, scrubbers, LNG, biofuels
- Fuel availability

BWT 8th September, 2019

- Vessels required to retrofit in next dry dock after Sept 9, 2019.
- All vessel to be equipped by Sept 2024
- 16 BWTS now approved by USCG

50% GHG emission reduction 2050

- New engine technology
- LNG, LPG, methanol, biofuel and hydrogen
- Battery systems, fuel cell systems and wind-assisted propulsion

Initial IMO Strategy on reduction of GHG emissions from ships confirms IMO's commitment to reducing GHG emissions from international shipping and, as a matter of urgency, to **phasing them out as soon as possible in this century.**

Seven technologies to watch out for

Technology

Trade effect

Renewable energy

Non-coking coal  Bauxite, Cu 

Falling cost of batteries

Lithium, Mn  Nickel 

Re-emergence of electric vehicles

Diesel (Gasoil)  Petrol 

Hydrogen fuel cell trains

Diesel (Gasoil) 

3D printing

Container trade 

Nuke detonators on Shale deposits

Crude Oil  LNG 

Robotics

Container trade 