



# LPG AS MARINE BUNKER FUEL CHARTER OF BENEFITS



## THE MARINE ALTERNATIVE FUEL

LPG has Numerous Advantages and a Great Untapped  
Potential in the Marine Sector

LPG as Marine Fuel is Available Today





## LPG IS EASIER & LESS EXPENSIVE TO STORE THAN LNG

THIS SOLVES THE LNG LOGISTICS PROBLEM, LPG IS ALREADY ACCESSIBLE IN PORTS ACROSS THE GLOBE AND NEW TERMINALS CAN BE BUILT FASTER AT LOWER COST



## EASY & QUICK BUNKERING

THE SPATIAL DISTRIBUTION OF LPG STORAGE FACILITIES FAVOURS LPG OVER LNG



## RELIABLE SUPPLY

GLOBAL LPG PRODUCTION GREW **5.75% EXCEEDING 300 MN T/YEAR** FIRST TIME EVER

LPG CAN RELY ON AN EXTENSIVE EXISTING GLOBAL INFRASTRUCTURE - INCLUDING MORE LPG TERMINALS BUILT IN THE US TO COVER INCREASED DEMAND FOR COMPETITIVELY PRICED LPG



THE SOLUTION TO ACHIEVE GLOBAL **0.5% SULPHUR CAP**

MEETS IMO EMISSION LIMITS

**ECAs  
SECAs**

- USES EXISTING SUPPLY CHAINS
- EASIER AND LOWER COSTS TO INSTALL THAN LNG
- LOW MAINTENANCE COST FOR GAS ENGINES
- NO SCRUBBER UNCERTAINTIES

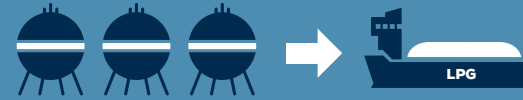
**REDUCES SO<sub>x</sub> EMISSIONS BY**



**97%**

**A LOWER EMISSIONS PROFILE**

COMPARED TO HFO & ULSFO



## SUSTAINABLE SUPPLY CHAIN

THE LARGE NETWORK OF IMPORT AND EXPORT TERMINALS AROUND THE WORLD CAN BECOME LPG BUNKERING POINTS **≈1,000 GLOBALLY AVAILABLE** EXISTING LPG FLOATING VESSELS CAN BE USED AS SUPPLY POINTS



**SAFETY MANAGEMENT & MAINTENANCE** ARE SIMPLER FOR LPG THAN FOR LNG

## THE PERFECT SOLUTIONS FOR VLGCs & OTHER VESSELS



**SHORTER PAYBACK PERIOD**



**LOWER INVESTMENT COSTS**



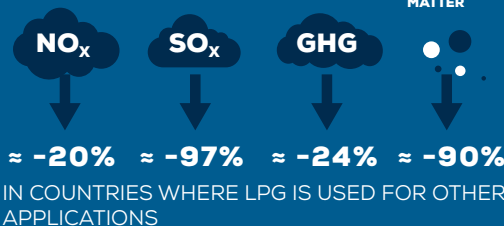
NO CRYOGENIC TECHNOLOGY REQUIRED MAKING LPG SYSTEMS LESS EXPENSIVE THAN LNG TO INSTALL



**LPG IS MORE COST EFFECTIVE & LESS SENSITIVE TO FUEL PRICE SCENARIOS**

IT IS MUCH CLEANER THAN **HFO & ULSFO** AND OTHER FUELS THAT IT REPLACES

## LPG EMITS LESS



## "AVAILABILITY" OF LPG MARINE ENGINES

TECHNOLOGY CURRENTLY AVAILABLE WITH TWO AND FOUR-STROKE ENGINES - GAS TURBINES CAN ALSO BE USED