



DORIAN LPG®
22nd Asia LPG Seminar
with IHS Markit
June 2018

Forward-Looking Statements

This presentation contains certain forward-looking statements including analyses and other information based on forecasts of future results and estimates of amounts not yet determinable and statements relating to our future prospects, developments and business strategies. Forward-looking statements are identified by their use of terms and phrases such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “will” and similar terms and phrases, including references to assumptions. The forward-looking statements in this presentation are based upon various assumptions, many of which are based, in turn, upon further assumptions, including without limitation, management’s examination of historical operating trends, data contained in our records and other data available from third parties. Although we believe that these assumptions were reasonable when made, because these assumptions are inherently subject to significant uncertainties and contingencies that are difficult or impossible to predict and are beyond our control, we cannot assure you that we will achieve or accomplish these expectations, beliefs or projections.

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Dorian LPG at a Glance

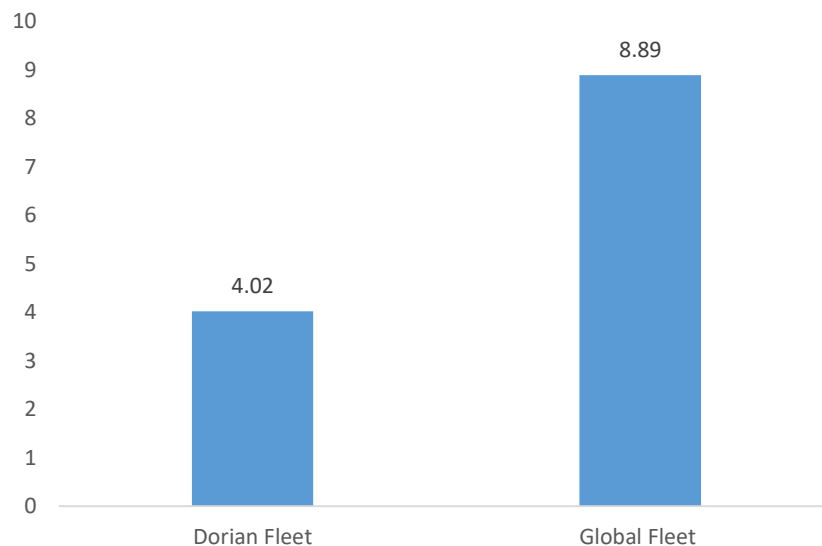
Company Overview

- Dorian LPG is a liquefied petroleum gas shipping company and a leading owner and operator of modern very large gas carriers (“VLGCs”).
- The Company was established in 2013 in connection with placing a large order of newbuildings at Hyundai HI. Predecessors have invested in and managed LPG vessels since 2002.
- The fleet is comprised of 19 ECO-VLGCs and 3 modern VLGCs, with an average age of 4 years.
- 19 of the vessels are currently employed in the Helios LPG Pool, founded by the Company together with Phoenix Tankers in Apr-2015.
- The remaining vessels are on time charter contracts to major companies.
- The Company provides in-house commercial and technical management services for all of the vessels in the fleet, including vessels owned by Dorian LPG deployed in the Helios LPG Pool.
- Dorian LPG was listed on the NYSE in 2014 under the ticker “LPG”.

Global Presence



Average Vessel Age vs. Global Fleet¹



(1) As of 18-June-2018

The Helios LPG Pool



- The Helios LPG Pool (the “Pool”) was established in April 2015 as a 50-50 partnership between Dorian LPG and Phoenix Tankers, a subsidiary of MOL of Japan
- The Pool is comprised of 19 Dorian LPG VLGCs and 4 Phoenix VLGCs, and uses these high-quality assets to offer a complete global LPG maritime transportation solution offering spot freight, TCs, and COAs¹
- Earnings are allocated to each vessel participating in the Pool based on “Pool Points”, which are awarded to each vessel on the basis of characteristics such as carrying capacity and speed/consumption

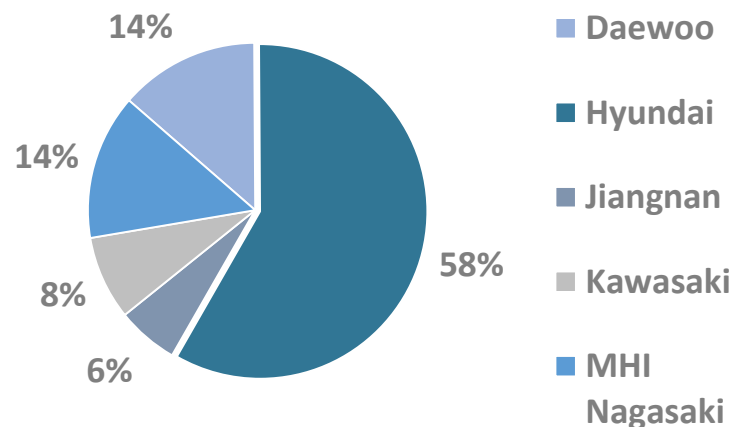
(1) Pool vessel composition is accurate as of 6/15/2018.

ECO-Vessels Built at World Class Korean Shipyards

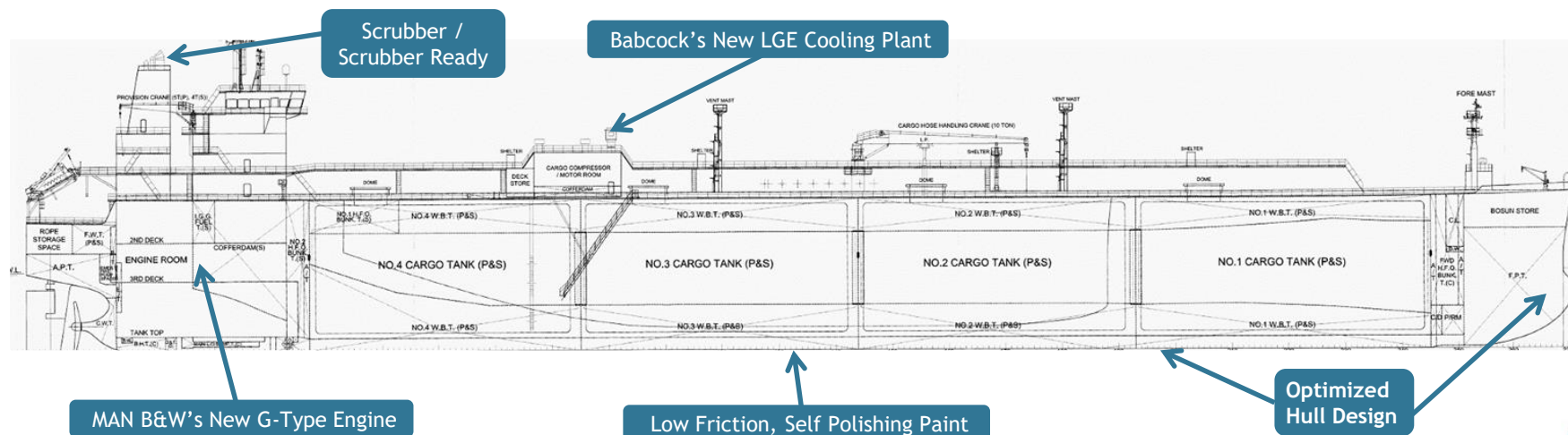
VLGC fleet constructed at top tier yards

- LPG vessels are highly engineered, and exacting technical specifications determine commercial acceptance
- HHI and DSME also design and build some of the world's most complex offshore vessels and rigs
- Dorian has built 17 vessels at HHI since 2004 and maintains a strong relationship with both HHI and DSME

Deliveries by shipyard (2006-2017)



Daily fuel savings between \$2,000-3,500¹



Source: Hyundai Heavy Industries (HHI), MAN B&W, FT Maritime Services, Company, Managers

¹ Fuel saving assuming loaded condition at 16 knots and a HFO price ranging from USD 260-450/MT

Premium Fleet

Fleet Overview						Comments
Type	Name	CBM	Delivered	Yard	Features ²	
ECO VLGC	CARAVELLE	84,000	2016	Hyundai HI	BWTS	The Company owns and operates 19 ECO-VLGCs and 3 modern VLGCs
ECO VLGC	CHALLENGER	84,000	2015	Hyundai HI	BWTS	
ECO VLGC	COPERNICUS	84,000	2015	Daewoo SME	BWTS + SR	
ECO VLGC	CHAPARRAL	84,000	2015	Hyundai HI	BWTS	Average fleet age of 4.02 years
ECO VLGC	COMMANDER	84,000	2015	Hyundai HI	BWTS + SR	
ECO VLGC	CRATIS	84,000	2015	Daewoo SME	BWTS + SR	
ECO VLGC	CHEYENNE	84,000	2015	Hyundai HI	BWTS	16 of the 22 vessels already equipped with Ballast Water Treatment Systems
ECO VLGC	CLERMONT	84,000	2015	Hyundai HI	BWTS	
ECO VLGC	CONSTELLATION	84,000	2015	Hyundai HI	BWTS + SR	
ECO VLGC	CRESQUES	84,000	2015	Daewoo SME	BWTS + SR	2 of the 22 vessels already equipped with scrubbers, and an additional 7 are “scrubber ready”
ECO VLGC	COMMODORE	84,000	2015	Hyundai HI	BWTS	
ECO VLGC	CONSTITUTION	84,000	2015	Hyundai HI	BWTS	
ECO VLGC	CONTINENTAL	84,000	2015	Hyundai HI	BWTS	Captain Markos NL and Captain John NP have recently completed 10 year special Surveys, and Nicholas currently underway
ECO VLGC	COBRA	84,000	2015	Hyundai HI	BWTS	
ECO VLGC	CONCORDE ¹	84,000	2015	Hyundai HI	BWTS + Scrubber	
ECO VLGC	COUGAR	84,000	2015	Hyundai HI	BWTS	In-house technical and commercial management of fleet
ECO VLGC	CORVETTE ¹	84,000	2015	Hyundai HI	Scrubber	
ECO VLGC	CORSAIR ¹	84,000	2014	Hyundai HI	SR	
ECO VLGC	COMET	84,000	2014	Hyundai HI	SR	19 vessels operate under spot, COA or Time Charter contracts of less than 24 months in the Helios Pool, remaining 3 on TC.
Modern VLGC	CAPTAIN NICHOLAS ML	82,000	2008	Hyundai HI		
Modern VLGC	CAPTAIN JOHN NP	82,000	2007	Hyundai HI		
Modern VLGC	CAPTAIN MARKOS NL	82,000	2006	Hyundai HI		

(1) Operated pursuant to Bareboat Lease from Japanese Owners

(2) 'BWTS' = *Ballast Water Treatment System*

'SR' = *Scrubber Ready*

U.S. LPG Supply and Export Dynamics



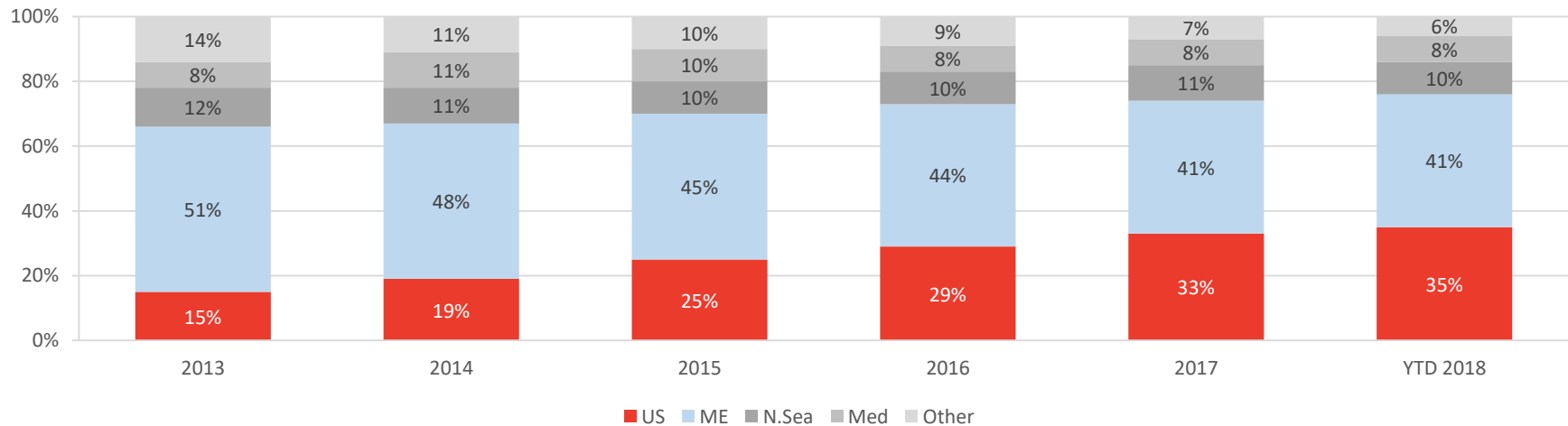
U.S. LPG has significantly increased its share of global supply

A New Era of Supply

- Emergence of U.S. as largest exporting nation has forced price competition amongst all suppliers
- Middle East supply has surprised on the upside with more export growth than expected
- The Asian market has become increasingly reliant on US LPG

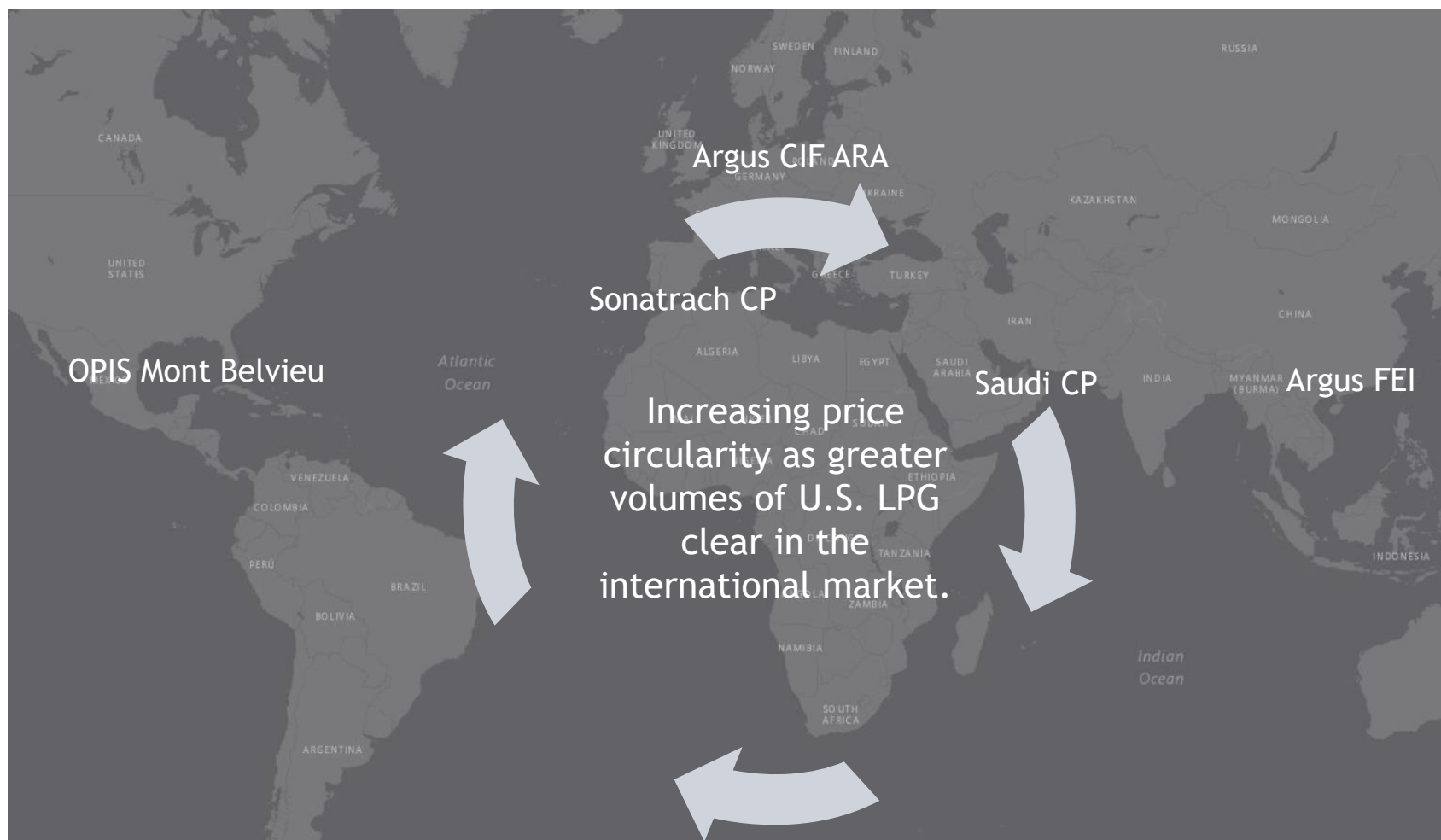


Seaborne LPG by Source



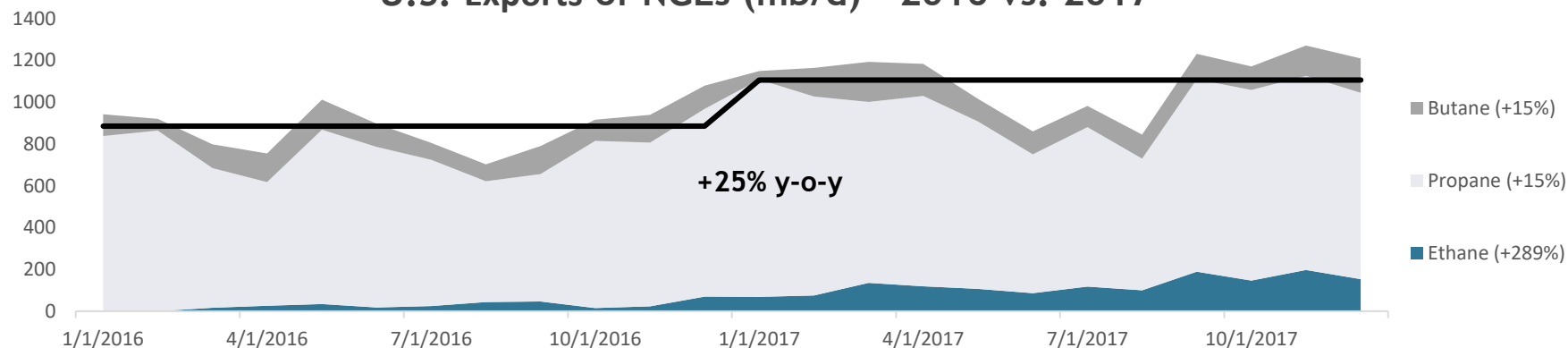
U.S. as Global NGL / LPG Price Setter...

We believe the U.S. will become the global LPG market price setter given increasing supply at both Mont Belvieu and the Northeast (Marcus Hook) coupled with a liquid trading market and active hedging opportunities along the forward curves.

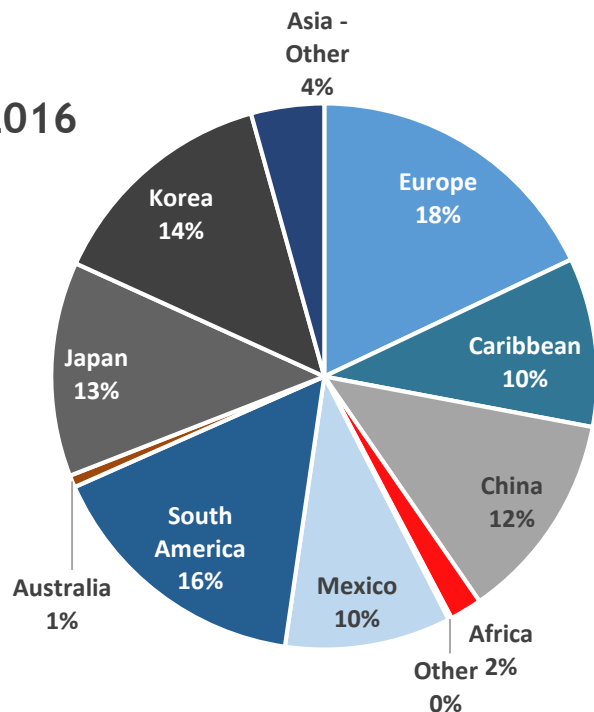


Evolving U.S. NGL / LPG Trade Flows

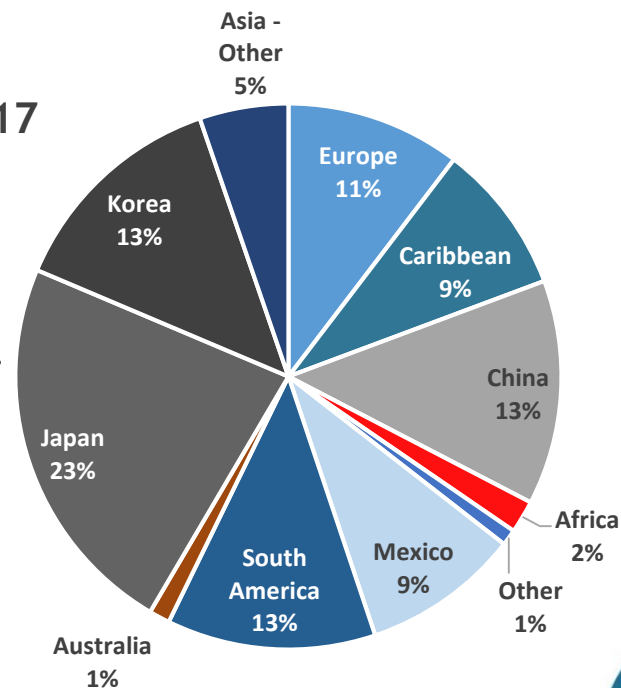
U.S. Exports of NGLs (mb/d) - 2016 vs. 2017



2016



2017



U.S. LPG volumes to Asia increased 45% year-over-year (vs. 15% growth in overall U.S. LPG exports).

North American Export Capacity

VLGC “Commander” Loading the first Unipac Cargo from Philips 66’s Terminal (Freeport, TX)



North American Export Capacity

Near Term Export Terminal Expansions

Philips 66's Terminal (Freeport, TX)

- Capacity for 8 VLGCs/month
- Started up in November 2016
- Potential to add increased competition to terminal fees

Sunoco's Terminal (Marcus Hook, PA)

- Now exporting 2-4 VLGC cargoes per month
- Consistent supply contracts with offtake agreements
- Further expansion in 1Q 2018 will add capacity

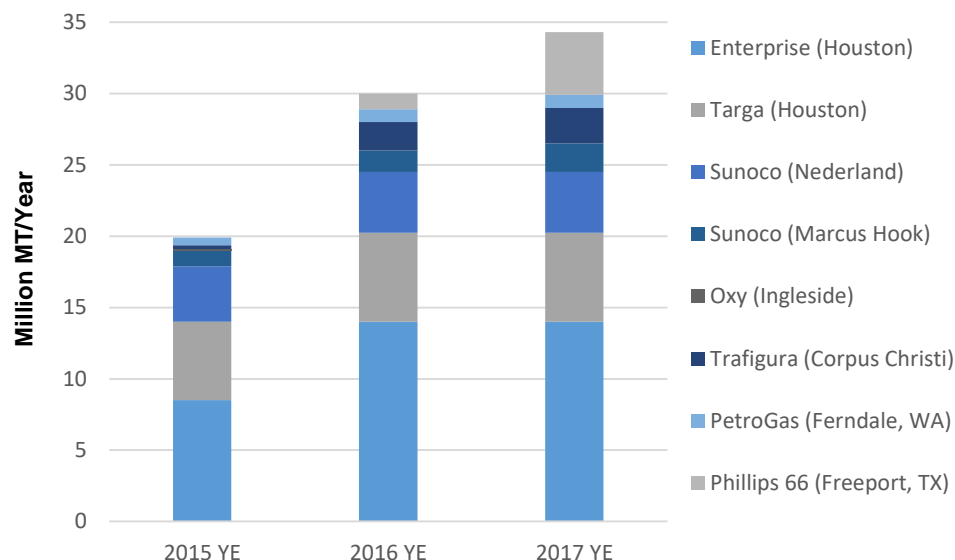
Petrogas' Terminal (Ferndale, WA)

- Outperforming seasonality, expect increase in butane cargoes
- Operated by AltaGas

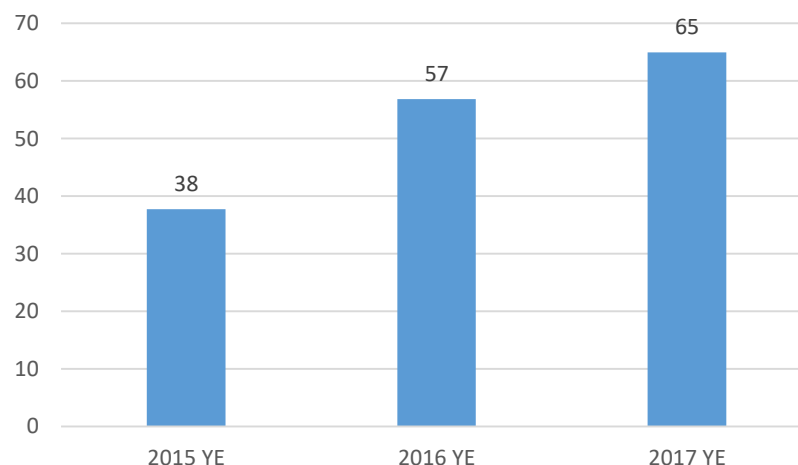
AltaGas' Terminal (Ridley Island, BC)

- Final investment decision on October 20, 2016
- Entered into Memorandum of Understanding with Astomos Energy Corporation for purchase of 50% of the propane exported.

Firm North American VLGC Export Capacity

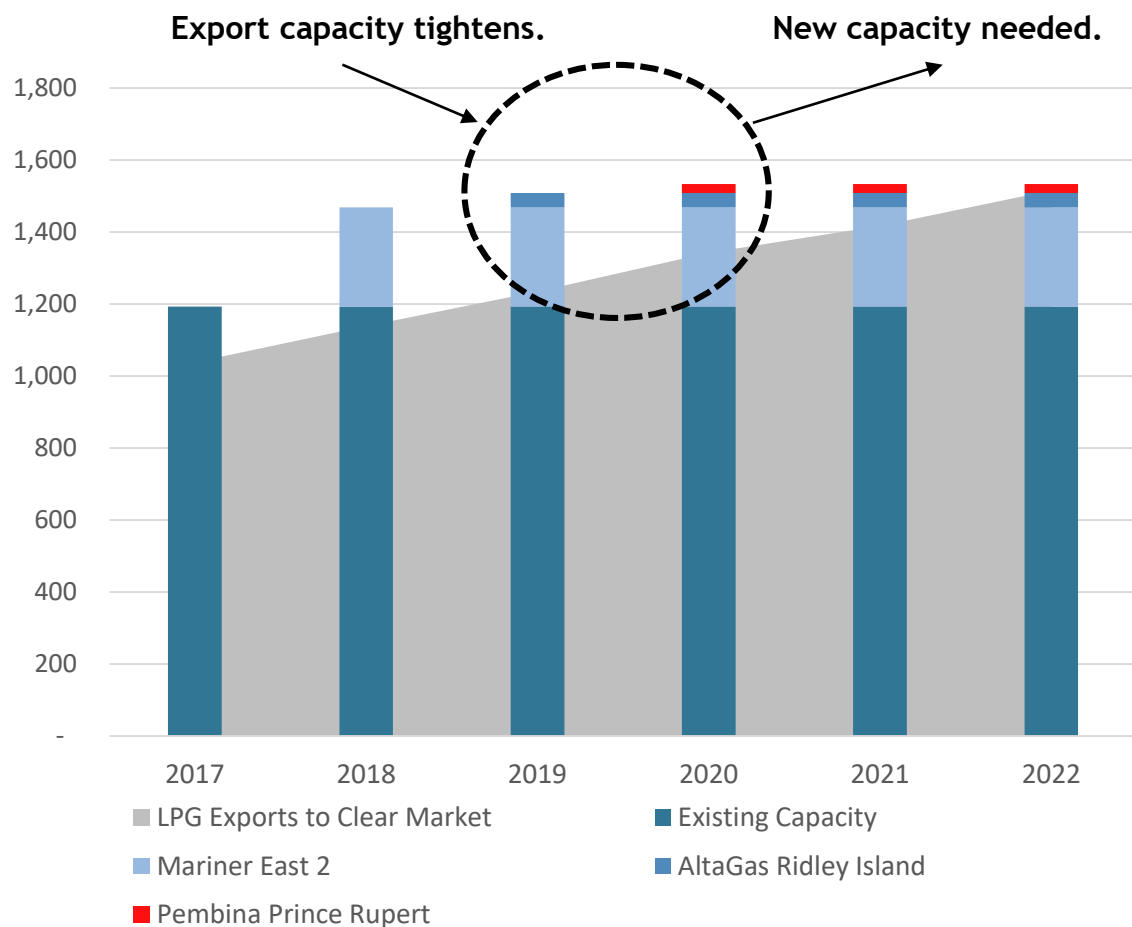


Potential U.S. VLGC liftings per month



LPG Expansion Capacity

Base Case LPG Exports (mb/d)



Comments

- We estimate current LPG export capacity is running at ~91% utilization (LPG nameplate capacity est. at ~1,200 mb/d).
- Based on the 'Base Case' model, increasing volumes of LPG (propane and butane) will need to be exported in order to clear the market. The total volume is expected to grow from ~1,000 mb/d in 2017 to ~1,300 mb/d in 2020 and ~1,500 mb/d in 2022. The need to clear via exports stems from the lack of incremental domestic demand in the face of increasing levels of production.
- The Mariner East II start-up (est. 2018) will provide an outlet for (initially) up to ~275 mb/d. We expect this will provide some near term relief to the Gulf Coast terminals, although we expect that Mariner East II will take some time to fill up. Mariner East II is expected to primarily export NGLs produced in the Appalachian region.

Global VLGC Fleet



Global VLGC Fleet Overview

Review



- Top 10 Owners Control 148 of the 303 VLGCs in the Fleet and on order through 2020, representing 48% of the total Fleet and over 50% of the expected active fleet by 2020



- 16 Owners with between 4-7 vessels

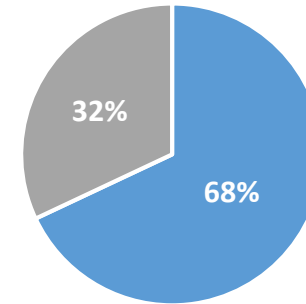


- 45 Owners with 3 or less VLGCs

Trader Orders

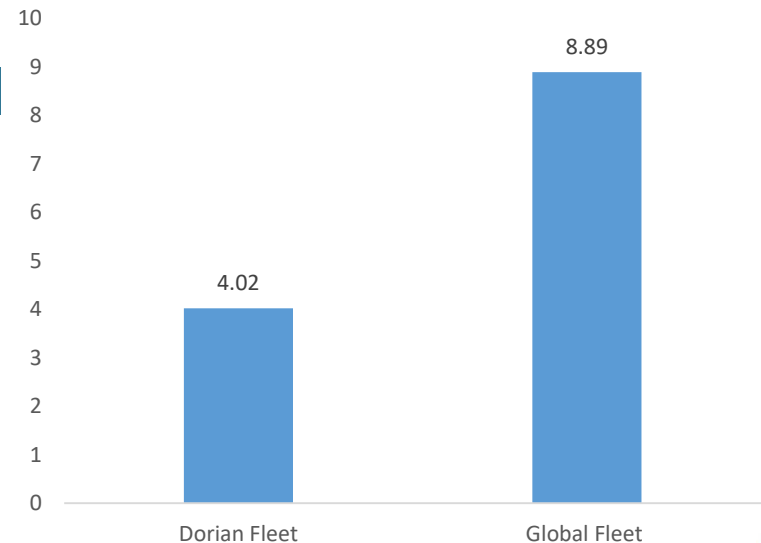
- In the past 9 months we saw Petredec, Vitol and Trafigura place orders for VLGC NBs
- Trader Relets - Threat to stability of the market
- Quality > Size
- Respect for customer is paramount

Ownership (Cumulative CBMs)



■ Top 20 Owners (cbms) ■ Other 49 Owners (cbms)

Dorian Average vessel age vs. global fleet¹

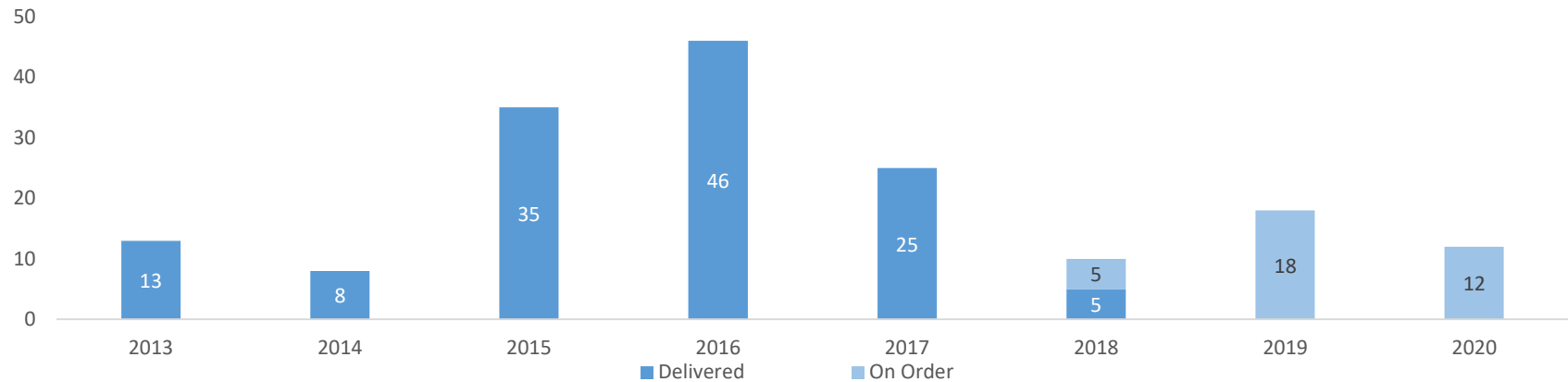


(1) Clarkson's Fleet Data, As of 18-June-2018

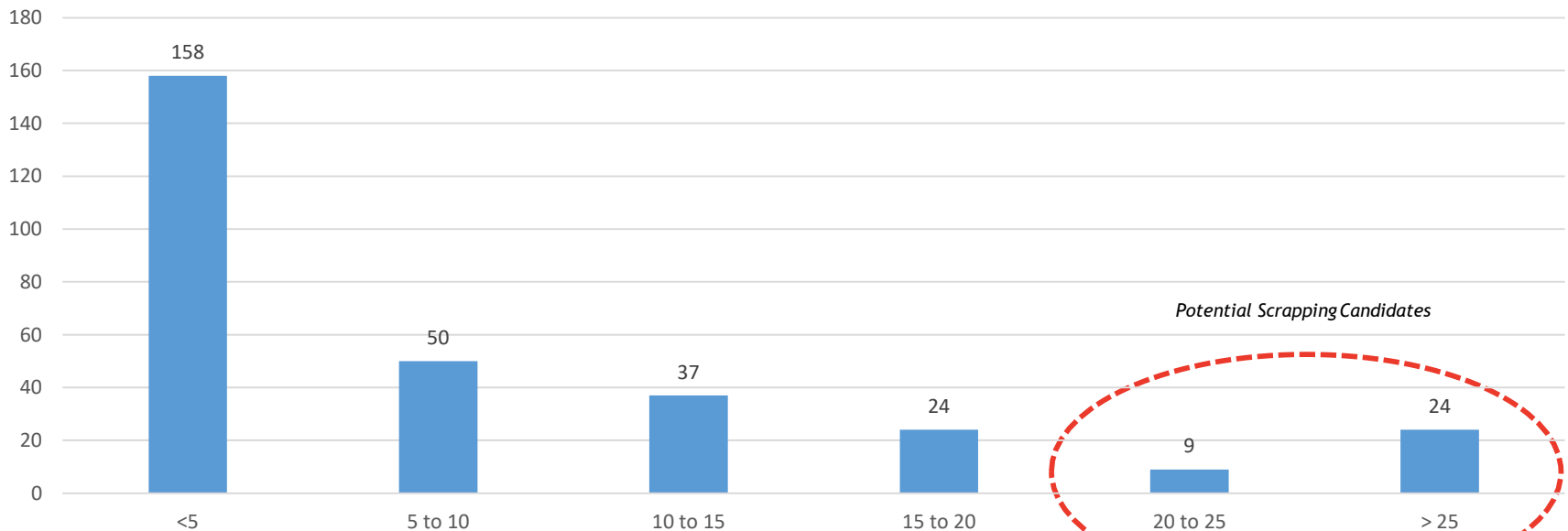
VLGC Fleet & Orderbook Review

VLGC orderbook (2013-Onwards) (# vessels)

VLGC Deliveries by Year



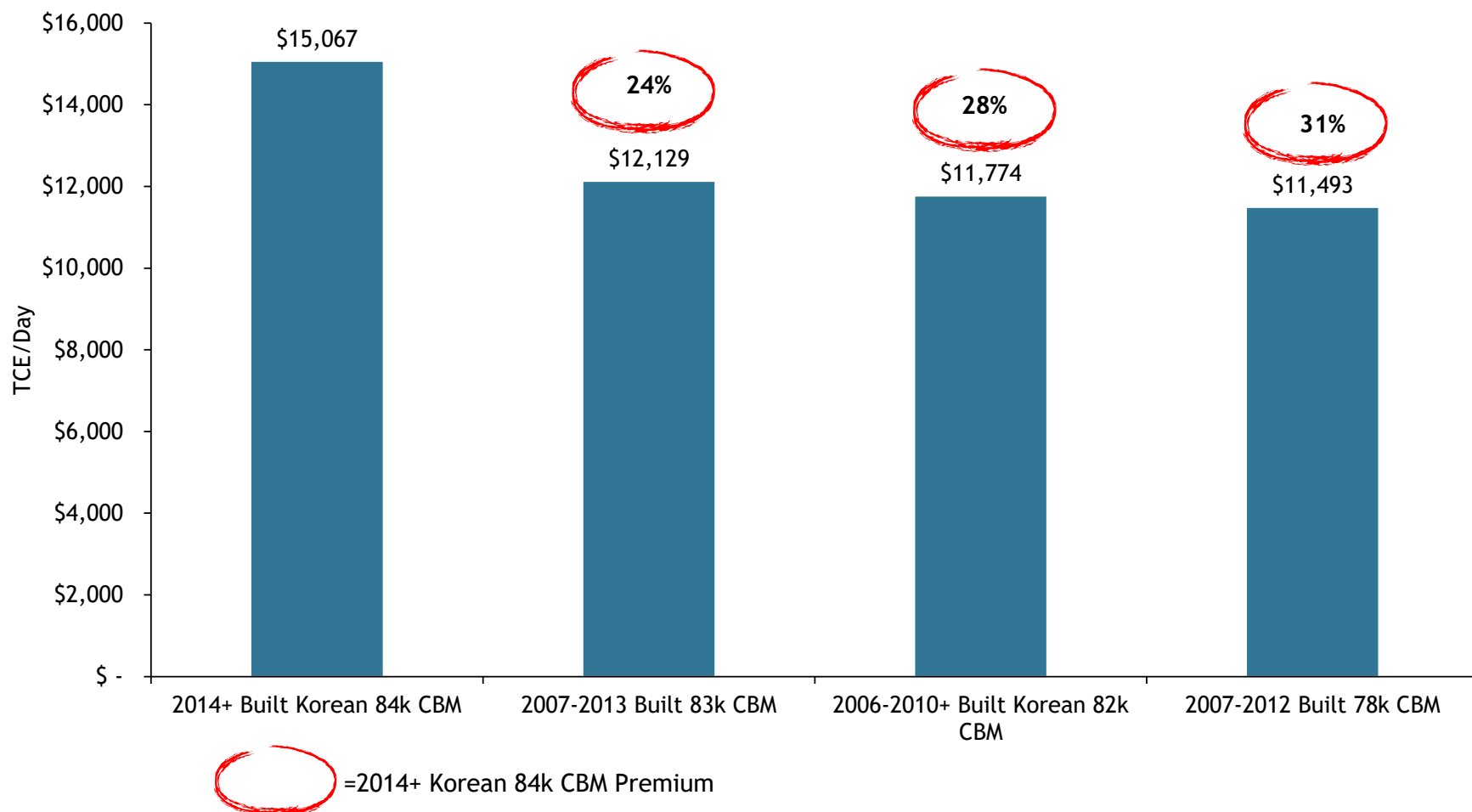
Fleet profile¹ (# vessels)



Source: Clarksons Research, Dorian LPG analysis

(1) As of June 18, 2018

Same Freight Rates and Bunker Costs Yield Very Different TCEs by VLGC Type



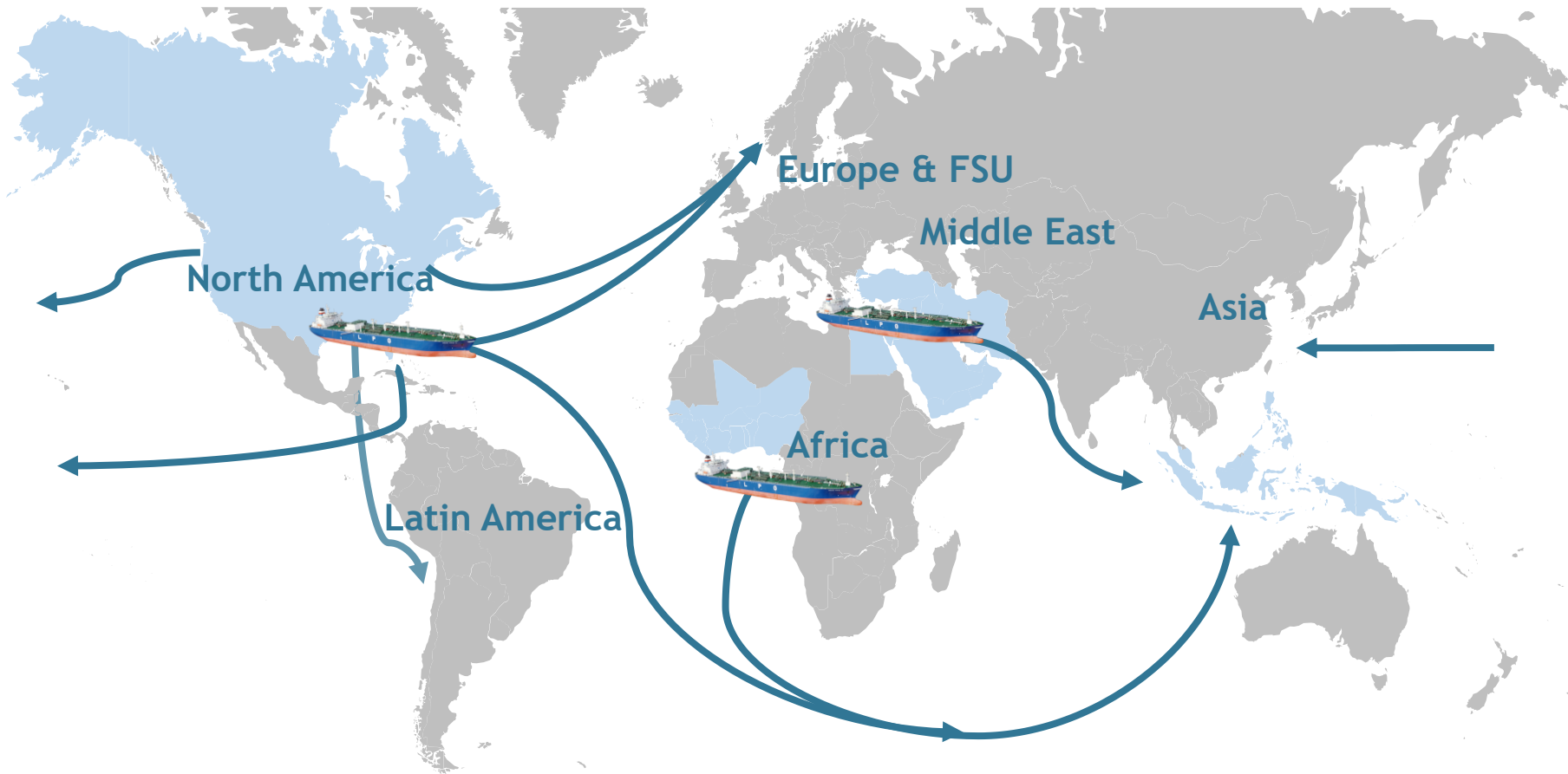
Note: TCEs based on Ras Tanura-Chiba route. All vessels assume fuel oil cost of \$410, diesel oil cost of \$665 and Baltic AG-Chiba rate of \$29.75/MT

VLGC Shipping Market Dynamics



Primary VLGC Trade Routes

From U.S. Export Terminals

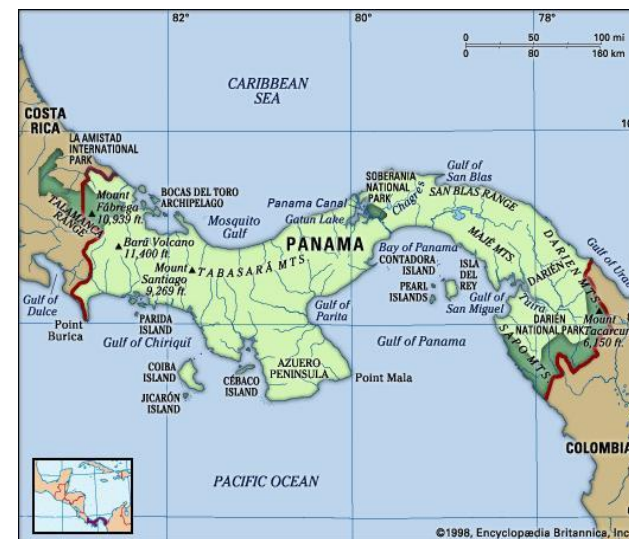


Impact of the Panama Expansion

Excitement about prospect of quicker Transits for VLGCs

	Panama Lock Restrictions			VLGC Size (CBM)
	Max Beam	Draft	Length	
Old Locks	32.3	12	294	79,329
New Locks	49	15.2	366	84,000

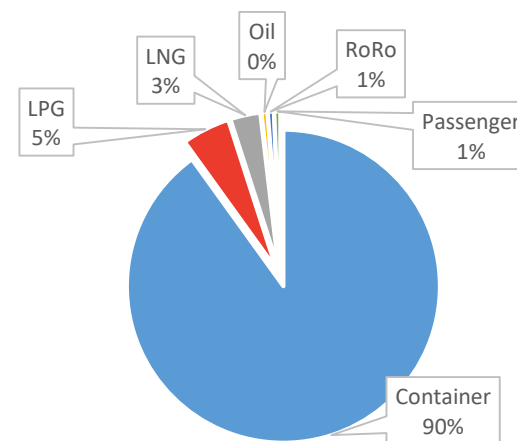
- About 6,700 NM saved on Houston-Chiba route (about 16 days savings)



Some caveats that existed at the time

- Water levels were low due to El Nino weather phenomenon
- VLGCs are the smallest Neopanamax users and thereby the least profitable for the Canal Authority
- A new world, and thereby uncertainty about how it would work
 - Booking system
 - Pacific Ocean seasonal weather

Forecasted Canal Transits by Vessel Type



Panama Canal Revised tolls and other factors

Panama revised Tolls

84,000 CBM VLGC	OLD TOLL		NEW TOLL		Difference
BALLAST	\$215,700		\$262,407		\$46,707
LADEN	\$221,100		\$278,528		\$57,428

- The fees for a VLGC transiting the Neopanama Canal have increased by over 25%
- \$35k pre booking fee included in Ballast cost to owner
- VLGC Transits have fallen from 35% 12 months ago to 29%, as other sectors have increased their usage of the canal transits
- Waiting time is beginning to increase with VLGCs waiting an average of 2-3 days

Factors beyond the control of most LPG stakeholders

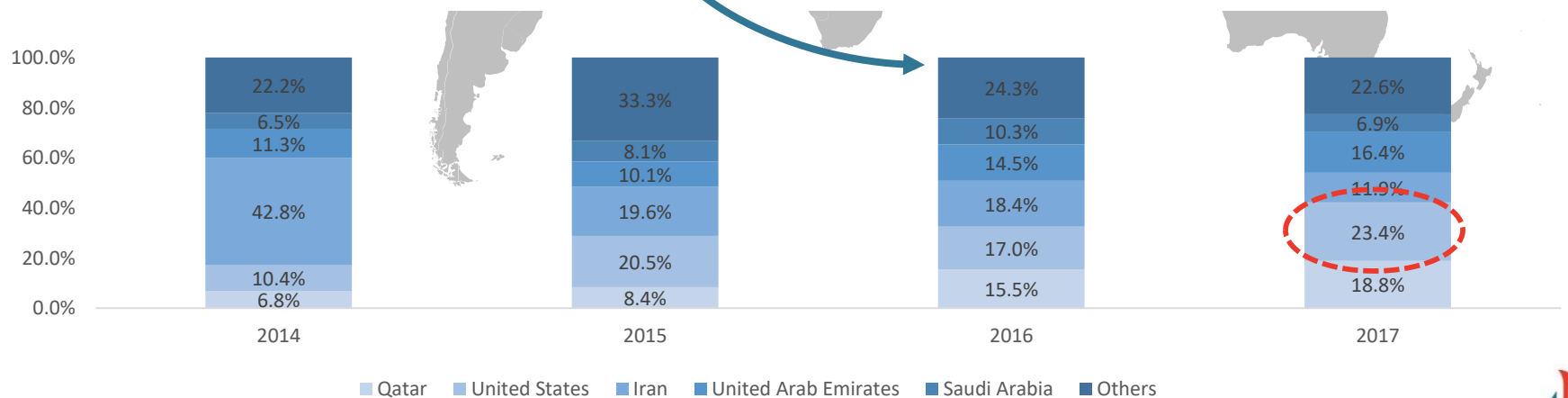
- Forward pricing – is the LPG market backwardated or in contango?
 - Backwardated market → Canal demand should be high
 - Contango market → Canal demand should be low
- Congestion caused by weather and by other segments
 - Container market was slow as they waited for operations to commence, and thereafter would begin to retrofit vessels
 - As container vessels are “preferred” in the booking system, their usage will impact congestion
 - Especially booking southbound transits in advance heavily impacted by weather delays

U.S. Exports to China

Annual China LPG Imports (Tons)

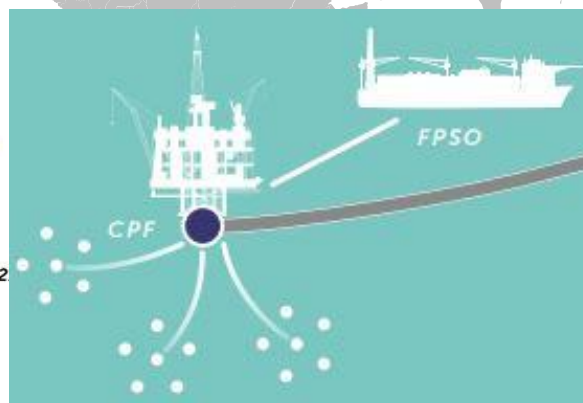
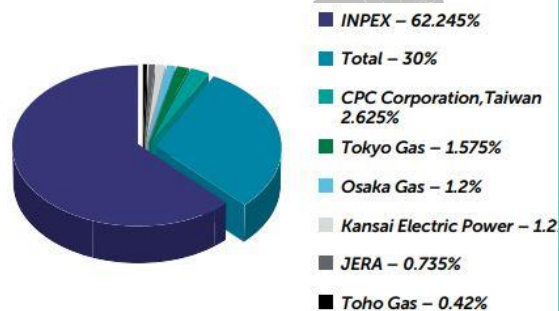


China LPG Imports by Source



Potential Tariff Impact

Annual China LPG Imports (Tons)



- Ichthys Field in Western Australia is expected to produce 1.6mm tons of LPG per annum¹

(1) Sourced from <http://www.inpex.com.au>

IMO 2020 & Other Regulatory Requirements



2020 IMO Global Sulfur Cap of .5%

Background

- On Oct 27th, 2017, the IMO confirmed it would proceed with a global sulfur cap of .5% on all marine fuels starting from January 1, 2020. This declaration ended years of uncertainty and surprised many who anticipated a delay. The IMO decision was based on a study that assessed the availability of said fuel by 2020 and ruled it would be readily available, the uncertainty lies with the price.
- In response, we have been simultaneously investigating the economic feasibility and competitiveness of:
 1. Using the new .5% LSHFO
 2. Installing scrubbers
 3. Converting our NB engines to burn LPG.

Global Fleet

- Only 5/259 VLGCs on the water have Scrubbers and only 9 in the orderbook of 29
- In 2016 marine bunker demand was 3.8mb/d which equals 4% of total crude demand

Other Regulatory Additions

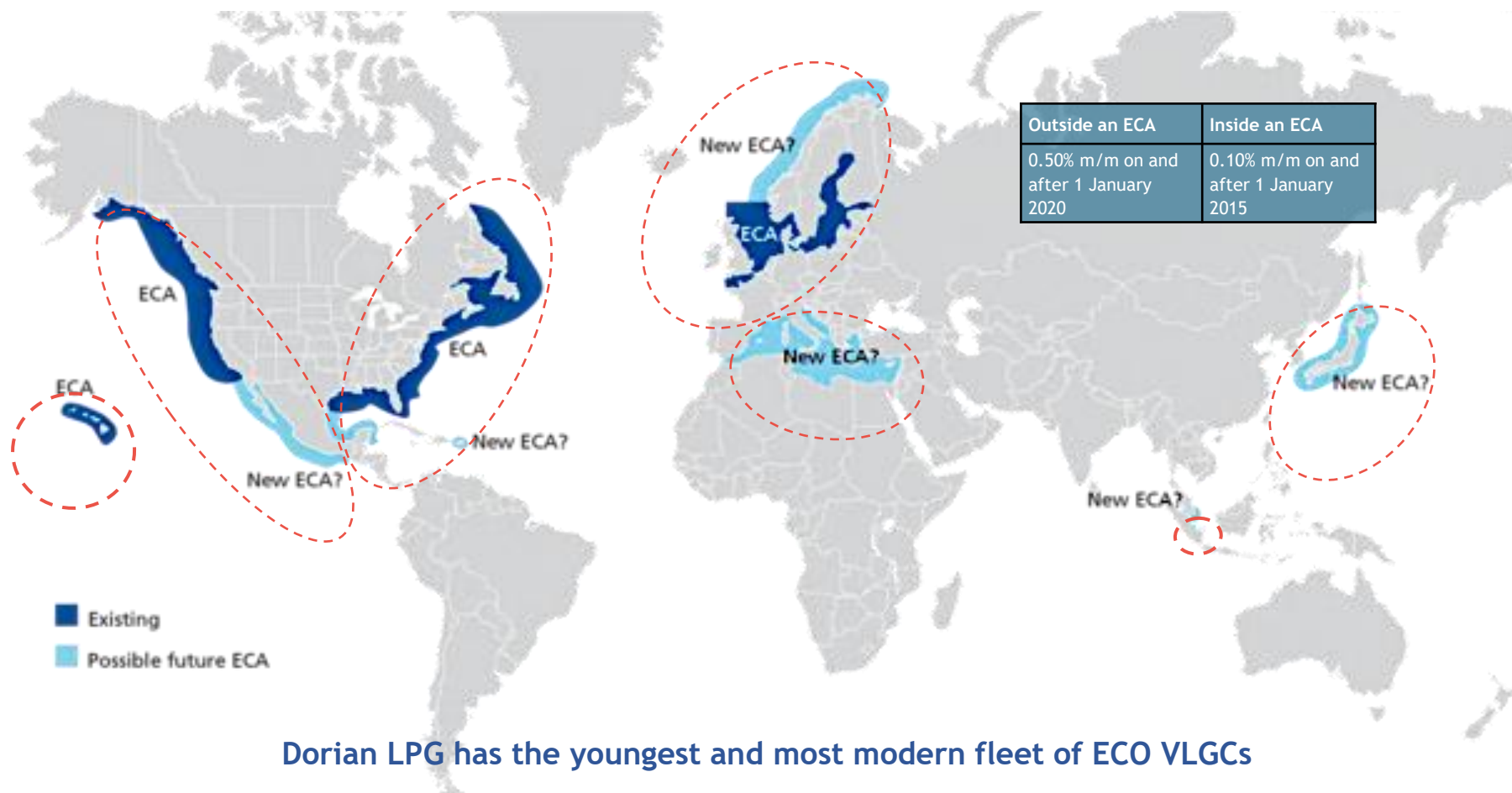
BWTS Requirement and Installation

- Approximately 65-71 VLGCs are required to DD and subsequently install BWTS between 9/8/2017-1/1/2019
- More than 60 countries, representing more than 70% of the world merchant shipping tonnage have signed the BWM treaty.
 - D-1 standard - The D-1 standard requires ships to conduct an exchange of ballast water such that at least 95% of water by volume is exchanged far away from the coast.
 - D-2 standard - The D-2 standard specifies that ships can only discharge ballast water that meets the following criteria:
- We estimate BWTS installations for an older VLGC to range from \$800k-\$1.1mm
- We estimate scrubber retrofits to for a non-scrubber ready ship to be around \$3.7 mm

Ballast Water Management Process



Fleet Designed to Meet Tomorrow's Regulations



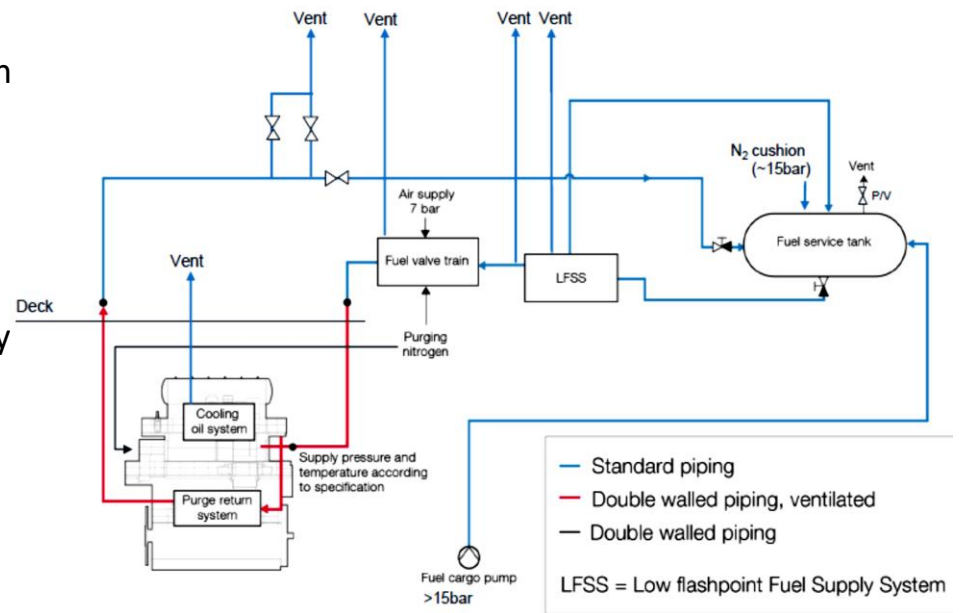
Dorian LPG has the youngest and most modern fleet of ECO VLGCs



LPG as Fuel Concept Description

The LPG Fuel Supply System Consists of:

- One deck storage tank, connected to the cargo system for loading
- A skid located in a deck shelter on the upper deck hosting the LP and HP booster pumps and one electric heater
- A master gas valve located in the cargo area
- Stand-alone control system capable for receiving control signals from the ME engine control system
- Double wall pipe within the engine room suitable ventilation capacities and gas detection
- Fuel Valve Train (FVT) outside engine room with block and bleed valves for proper LPG supply stop, purging, draining and inerting
- Hazardous areas classification and certified equipment selection
- Emergency Shut-Down (ESD) system philosophy assessed
- Nitrogen supply provided



LPG as Marine Fuel



LPG as Fuel Feasibility Study with ABS

Dorian and ABS recently conducted a feasibility study for retrofitting our existing VLGCs to burn LPG and be SOx compliant in 2020

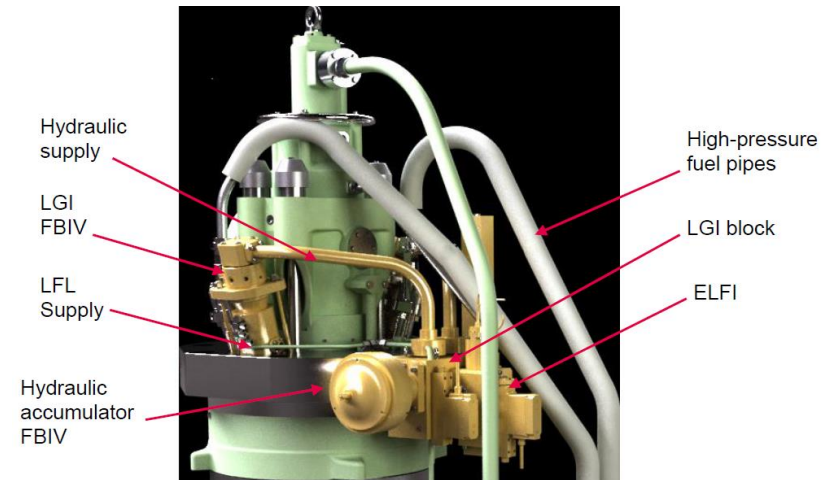
- Life Cycle Cost Analysis (LCCA)
 - Based on;
 - data on vessel trade route, operation profile
 - assumptions of fuel price (sensitivity analysis)
 - Compares the cost effectiveness of;
 - operating with compliant fuel, or
 - converting and operating with LPG as Fuel
 - Generate LCCA KPIs
 - providing a quantitative assessment of an investment
- LPG as fuel Technical Evaluation Study
 - Concept assessed for technical feasibility, design limitations and requirements, operating considerations and restrictions
 - a regulatory framework and approval procedure roadmap

Main Engine LPG as Fuel Concept

Dorian chose MAN's ME-GI Engines w/ Dual Fuel Retrofit in Mind

Fuel Injectors are Key to Retrofit

- MAN ME-LGI engine;
 - Operates on 2-stroke diesel cycle mode
 - Conventional fuel oil injector plus low flashpoint liquid injector
 - Pilot diesel fuel oil of 5 to 10% at 100% load for ignition
 - LPG fuel supply to injector (liquid state at 40 bar pressure)
 - Hydraulic actuation
 - Separate cooling and sealing function
- Emissions compared to diesel;
 - SOx: 90-95% lower due to no sulphur content in LPG
 - NOx: 15-20% lower due to relatively lower combustion temperature when burning LPG
 - CO₂: 20% lower due to chemistry



High Pressure fuel injection





LPG
LISTED
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Our Mission is to arrange safe, reliable and trouble free transportation