

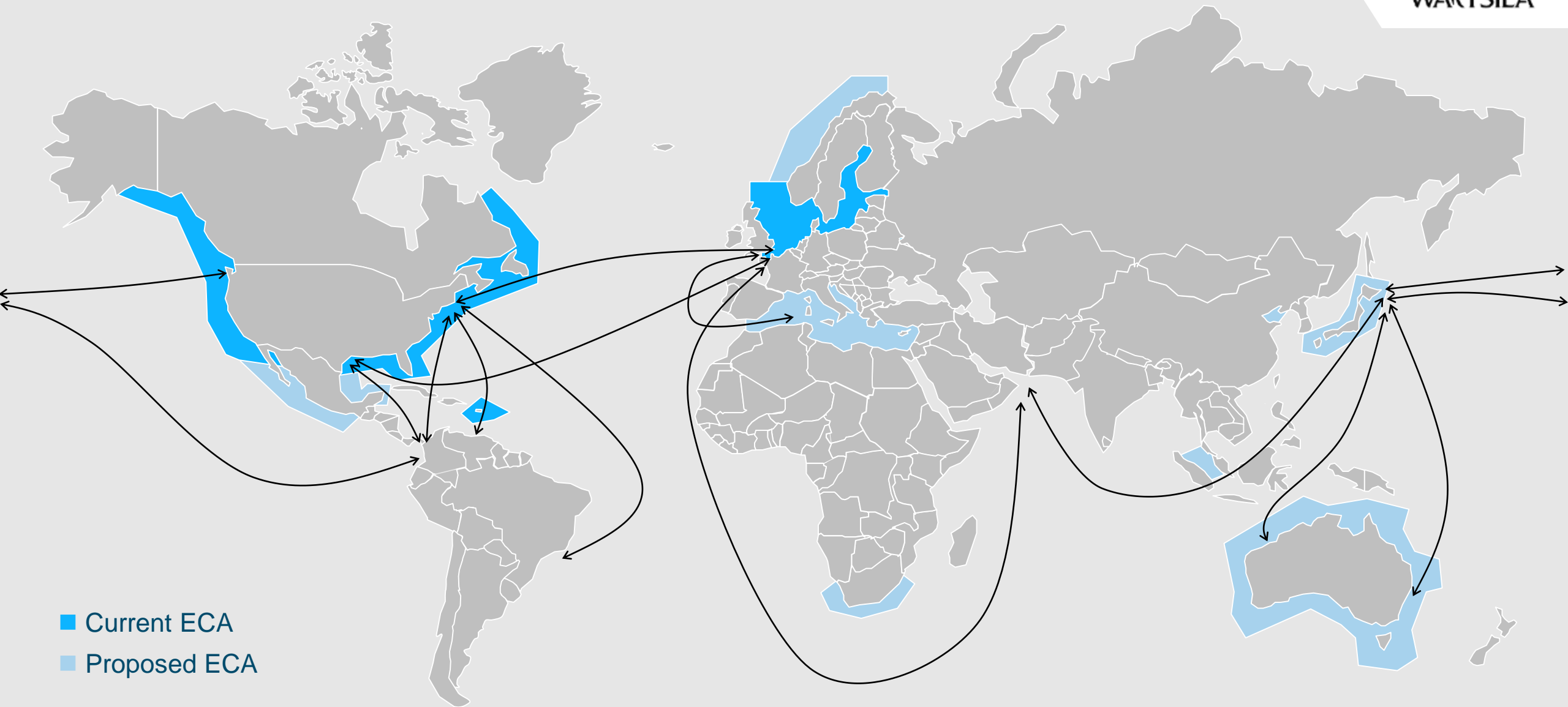
FUEL FORWARD



Matteo Natali

Manager, Technical Sales
Wärtsilä Engines

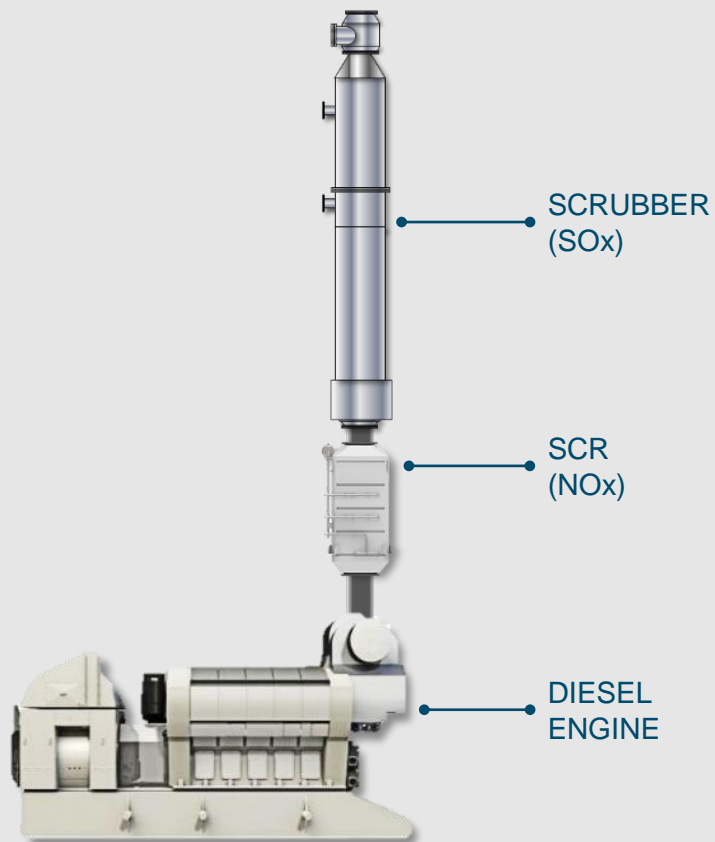
Shortsea 2016 European Conference
Port of Barcelona, 29-30 September



■ Current ECA
■ Proposed ECA

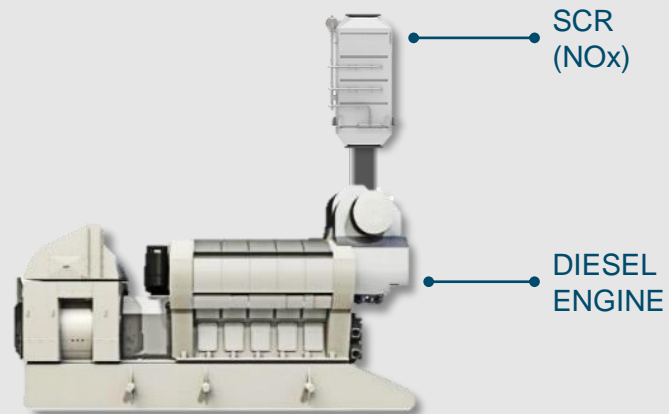
High sulfur fuel

(S > 0,1%)

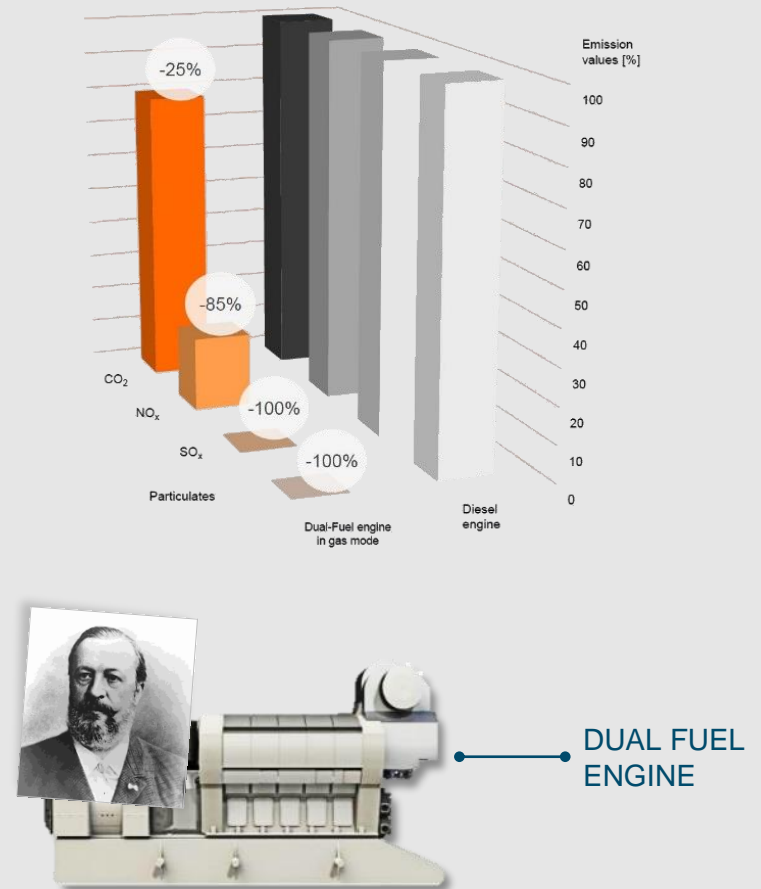


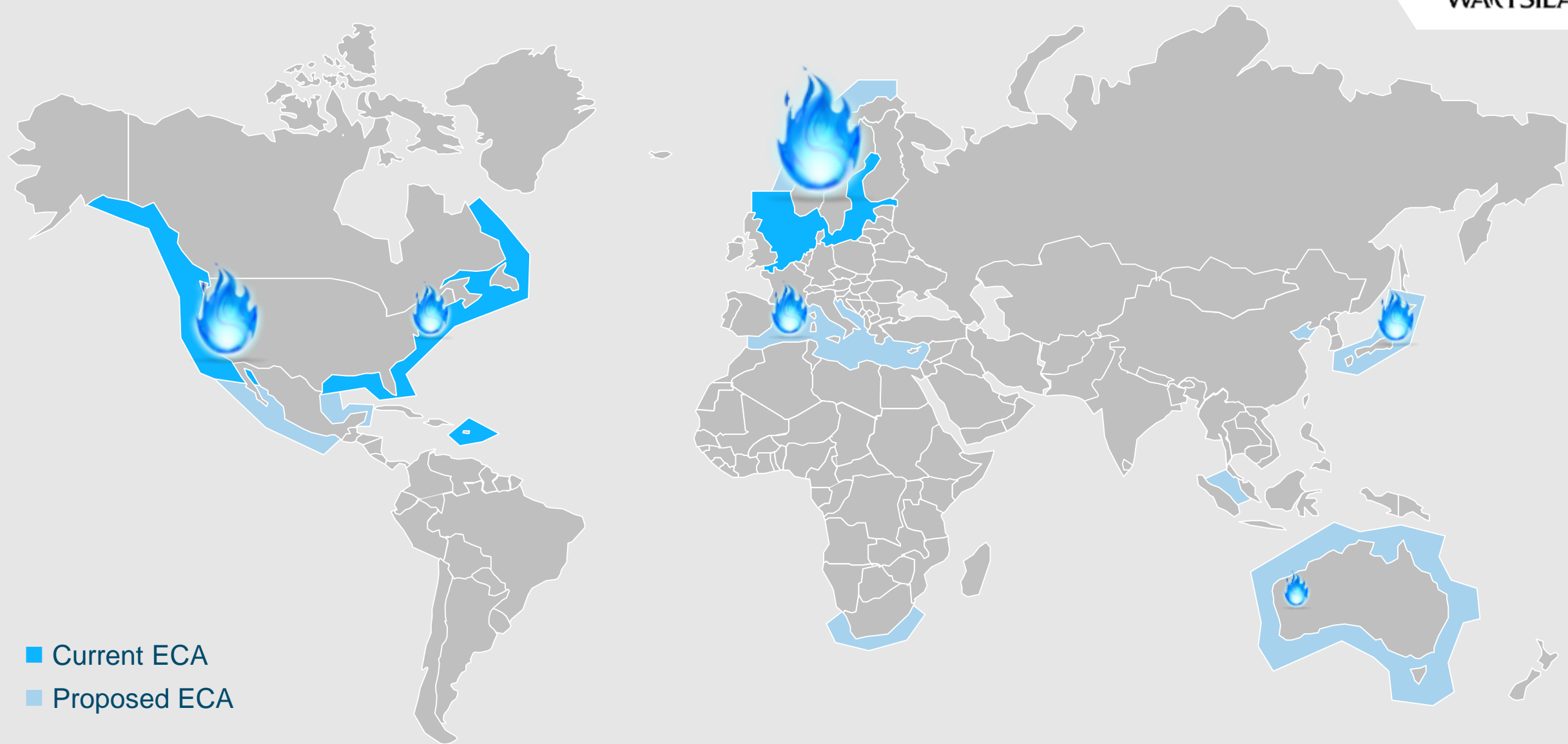
Low sulfur fuel

(S < 0,1%)



Gas



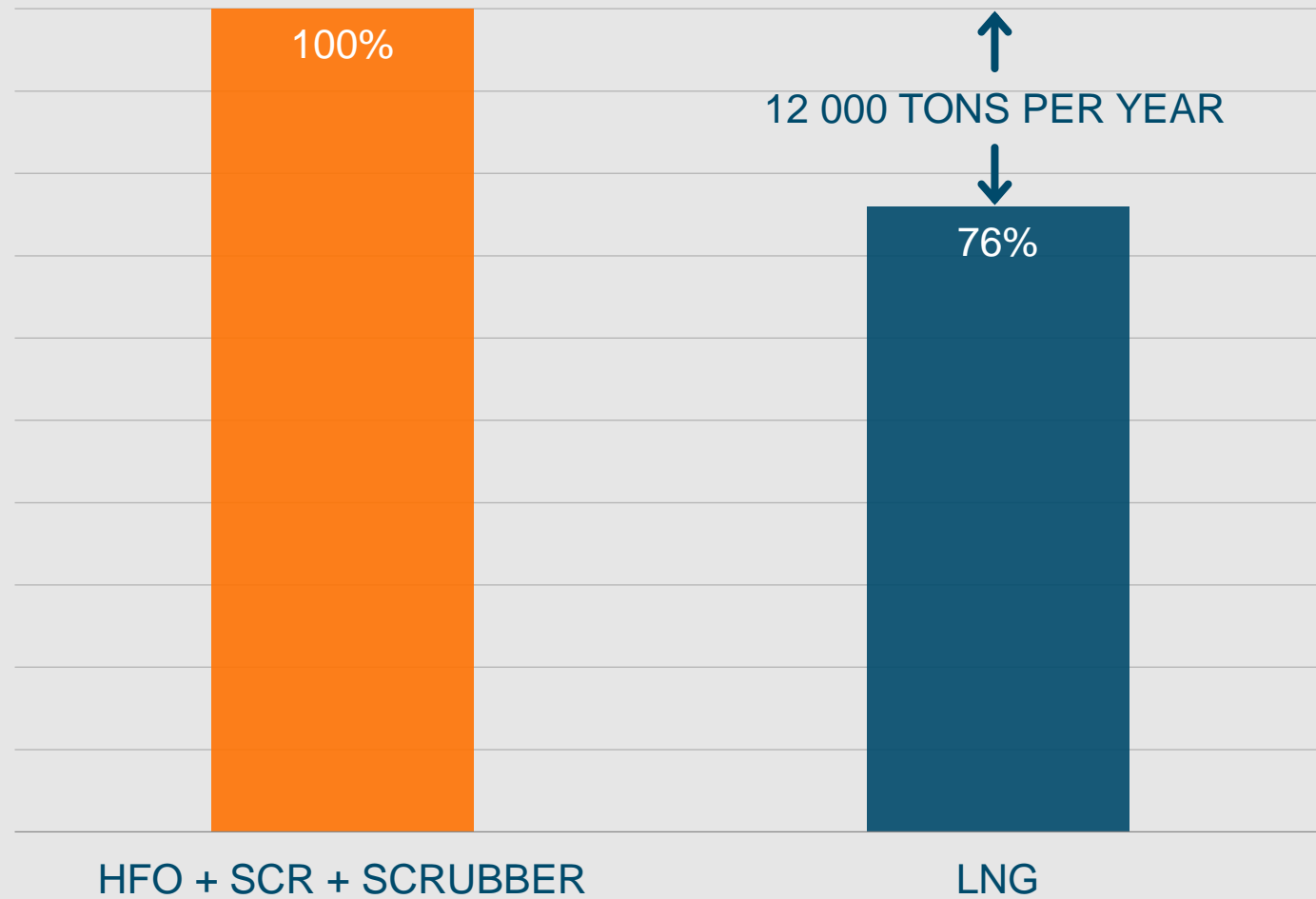


■ Current ECA
■ Proposed ECA



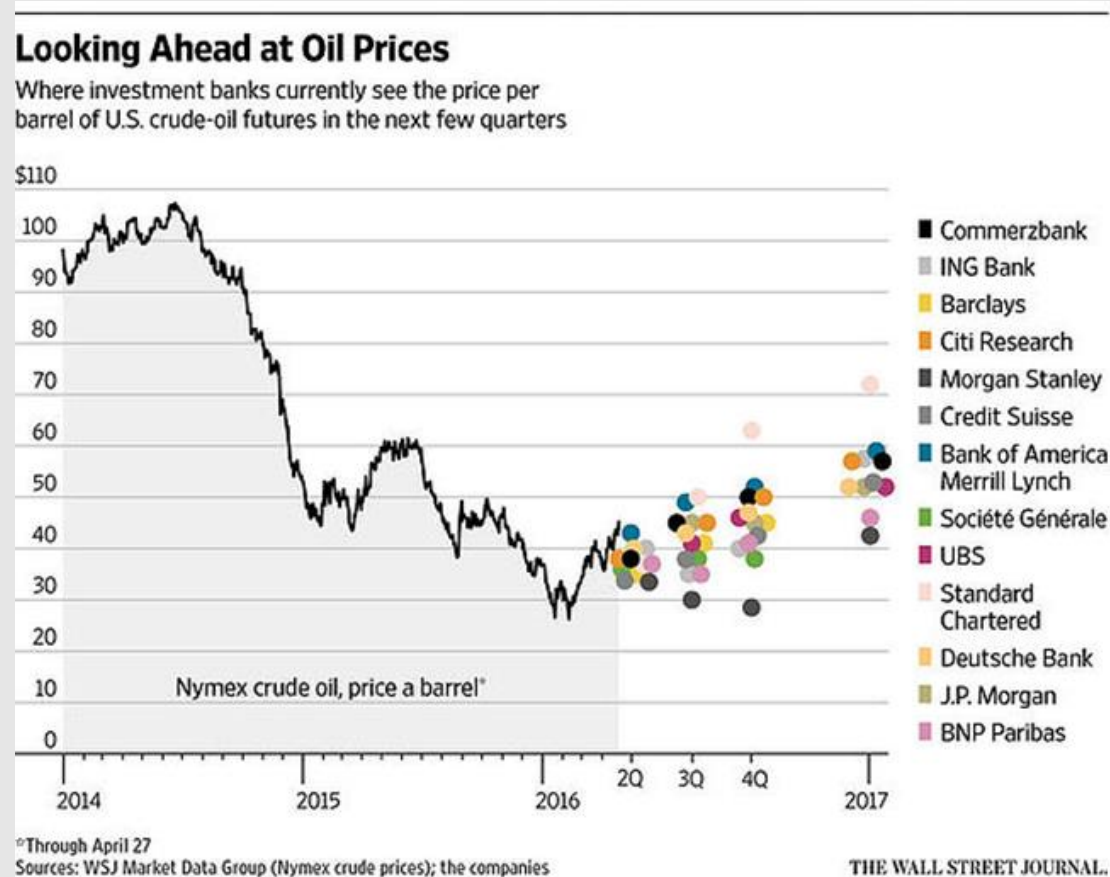
- Vessel
Large cruise
- Power Installed
77 MW
- Propulsion Type
Diesel-electric
- Operation Time
7200 hrs / year

ANNUAL FUEL CONSUMPTION



NYMEX Crude Prices

WSJ Market Data Group – Investment Banks Forecasts



Expected
recovery in the
medium term

>1 500 engines → >16 000 000 running hours

MERCHANT

LNG Carrier	204 vessels
LPG Carrier	11 vessels
Tankers	14 vessels
Containers	4 vessels
Bulk Carrier	3 vessels
Car Carrier	2 vessels



881 engines

CRUISE & FERRY

CruiseFerry	1 vessel
ROPAX	3 vessels
Ferries	12 vessels



66 engines

OFFSHORE

Platform	2 vessels
FSO	2 vessels
FPSO	6 vessels
Jack-up Rig	1 vessel
OSV	24 vessels



132 engines

DF CONVERSION

FPSO	4 vessels
Chemical tanker	1 vessel
RORO	2 vessels
Ferries	3 vessels
IWW	1 vessel



36 engines

SPECIALS

Hopper Dredger	1 vessel
Tugs	6 vessels
Navy	1 vessel
Icebreaker	1 vessel
IWW	16 vessels
Guide ship	1 vessel
Cable Layer	1 vessel



46 engines

DF POWER PLANT

Plants	82
Output	5031 MW
Online since	1997



376 engines

Fuel flexibility

LNG



OWNER - Viking line AB

DF engines

ETHANE



OWNER - Evergas

DF engines

METHANOL



OWNER - Stena line

Conversion

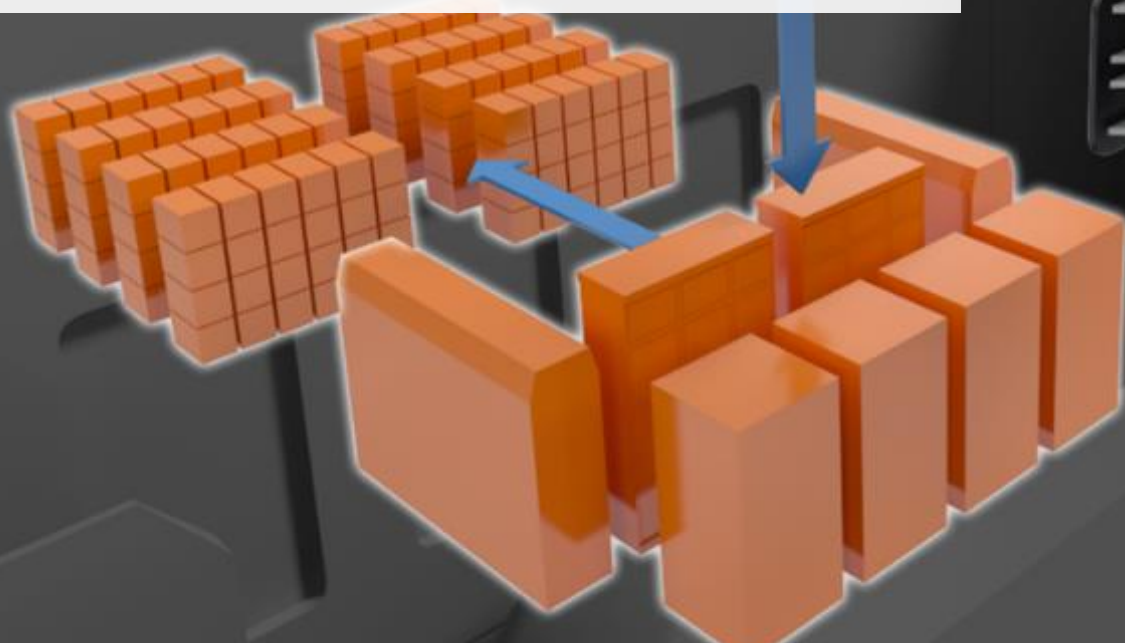
MUCH MORE...



Gas Reformer

The **battery market** starts
being particularly active

Potential to cut emissions
and boost efficiency



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