

The European crude market

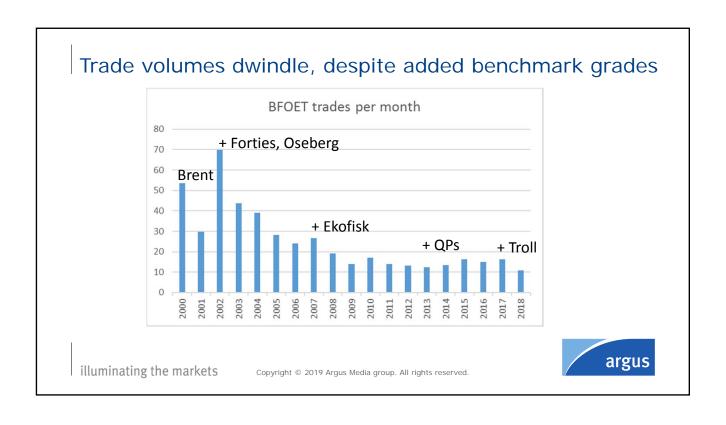
- North Sea production and trade volumes are in decline.
- Eastern arbitrage has significant effect on fob prices.
- Market calls for a more robust methodology have increased.
- There is a large flow of light sweet crude into the region.
- This can be used for additional price discovery.

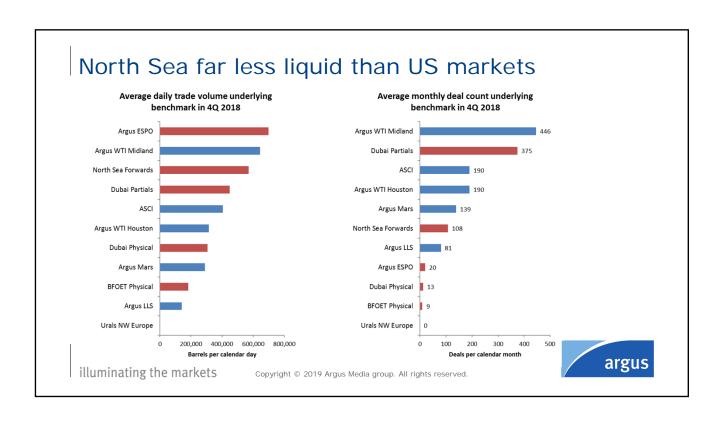
illuminating the markets

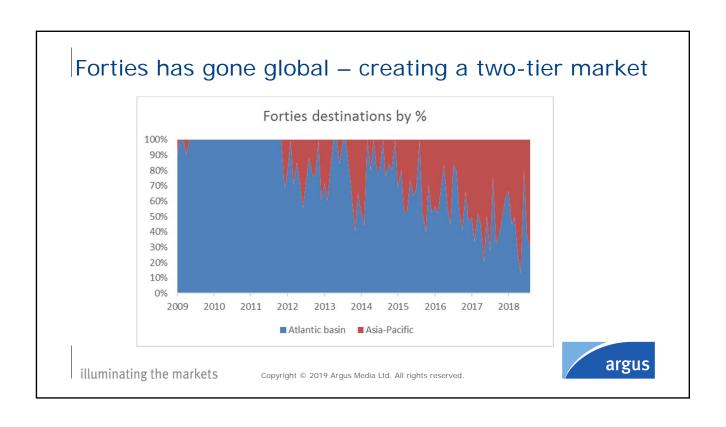
Copyright © 2019 Argus Media group. All rights reserved.

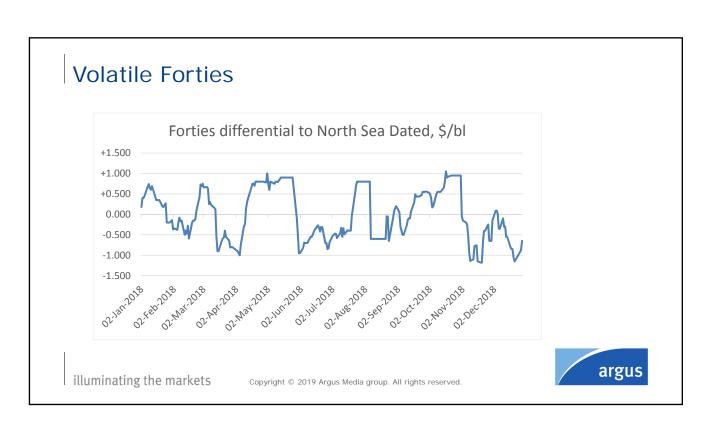


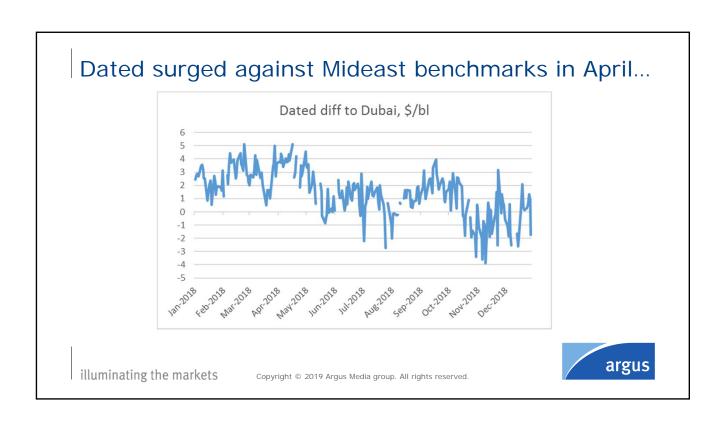
Output decline slows after steep drop Norway and UK crude production, b/d 7,000,000 6,000,000 5,000,000 4,000,000 3,000,000 2,000,000 1,000,000 1976 1981 1986 2006 2011 2016 ■ Norway ■ UK argus illuminating the markets Copyright © 2019 Argus Media group. All rights reserved.

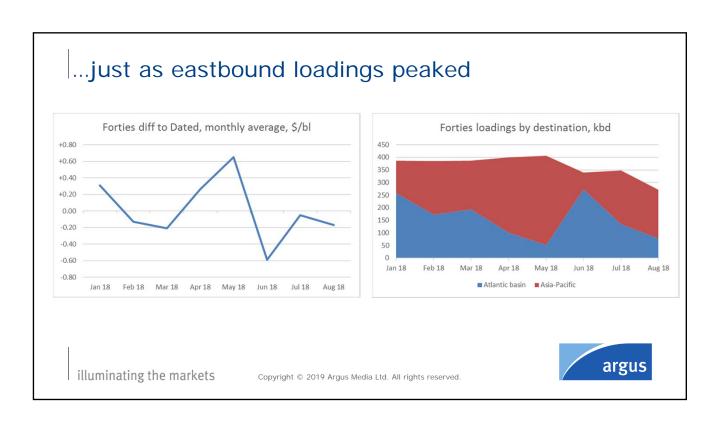




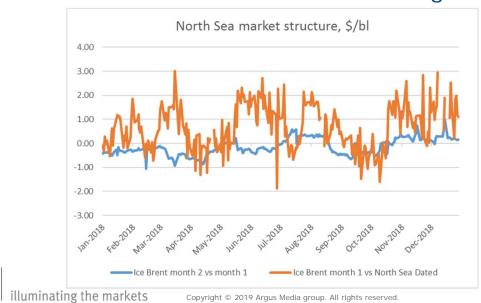














mannating the markets

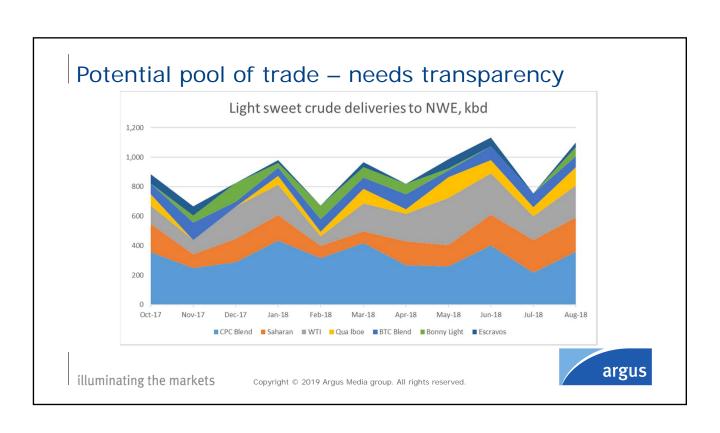
The North Sea benchmark elements

- Outright price (volume weighted average of forward trade)
- Contracts for Difference curve (aligns timing with physical date-range 10 days to month ahead)
- Physical grade differentials for Brent, Forties, Oseberg, Ekofisk and Troll
- Quality adjustments to bring more expensive grade components (Oseberg, Ekofisk, Troll) closer to others

illuminating the markets







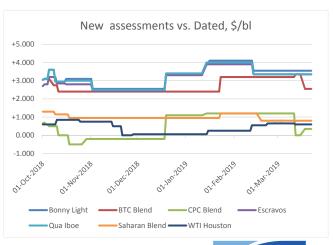
Argus launched cif Rotterdam assessments in Oct 2018

Delivered northwest Europe	assessn	nents			
	Basis	Diff	Bid	Ask	±
CPC Blend cif Rotterdam	Dated	+1.10	60.45	60.51	-1.11
BTC Blend cif Rotterdam	Dated	+2.40	61.75	61.81	-1.11
Saharan Blend cif Rotterdam	Dated	+0.95	60.30	60.36	-1.11
Bonny Light cif Rotterdam	Dated	+3.40	62.75	62.81	-1.11
Qua Iboe cif Rotterdam	Dated	+3.40	62.75	62.81	-1.11
Escravos cif Rotterdam	Dated	+3.30	62.65	62.71	-1.11
WTI cif Rotterdam	Dated	+0.06	59.41	59.47	-1.11

- Observations and feedback CPC Blend, while liquid, is discounted to other light crudes and there are quality concerns. We have therefore excluded it from the benchmarking process.
- Several grades, not all, require quality premium adjustments in order to be relevant to the benchmark setting process. Exceptions: Saharan Blend and WTI.

illuminating the markets

Copyright © 2019 Argus Media group. All rights reserved.





New North Sea Dated

- Bonny Light, BTC Blend, Escravos, Qua Iboe, Saharan Blend and WTI cargoes traded on, or normalised to, a CIF Rotterdam basis, confirmed, reported and assessed.
- Assessed for delivery 12 days to one month ahead plus two days.
- Freight deduction Hound Point to Rotterdam, based on past five working days' assessments.
- This aligns the delivered market with the trading and pricing of FOB North Sea grades, Brent, Forties, Oseberg, Ekofisk and Troll.

WTI

Quality adjustments at 60pc of difference between grade and lowest in basket (on FOB basis) two months previous to month of publication, for all grades in basket except Brent, Forties, Saharan Blend and WTI.

> Bonny Light, Escravos, Qua Iboe

> > argus

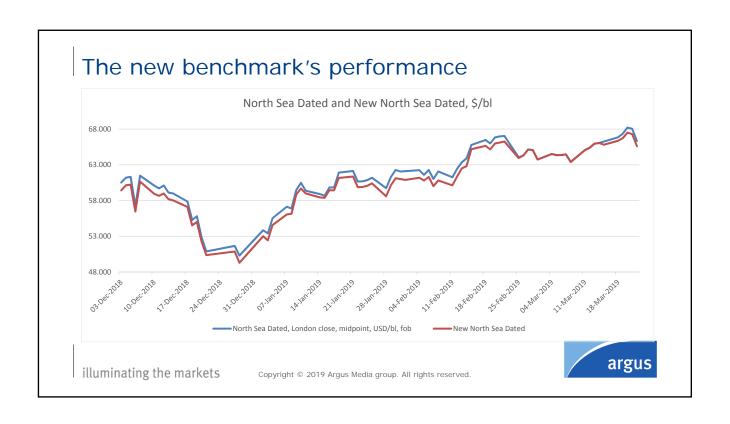
BTC Blend,

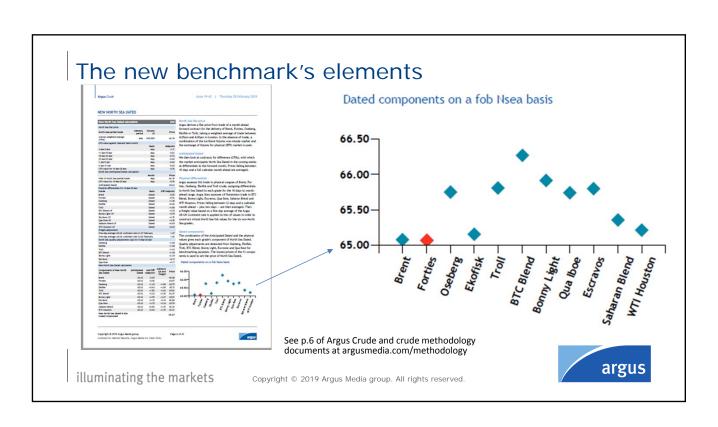
Saharan Blend

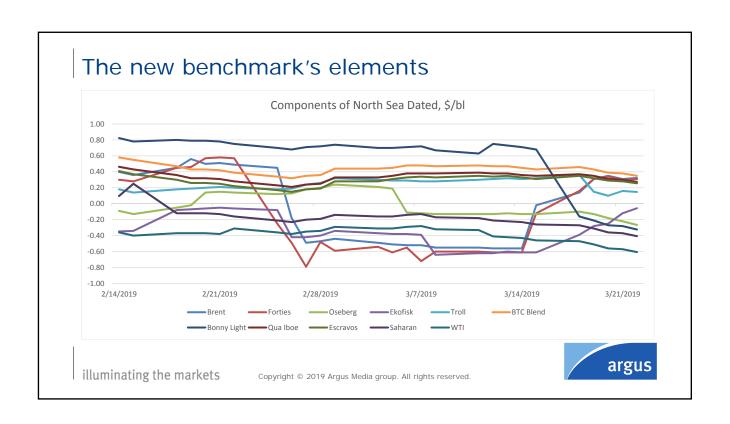
4

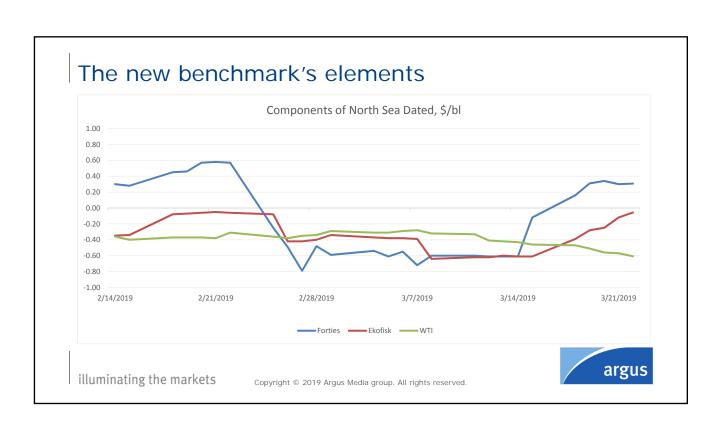
4

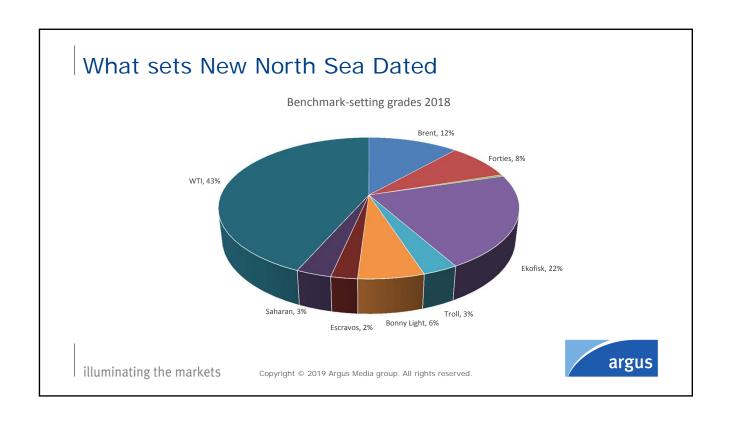
illuminating the markets

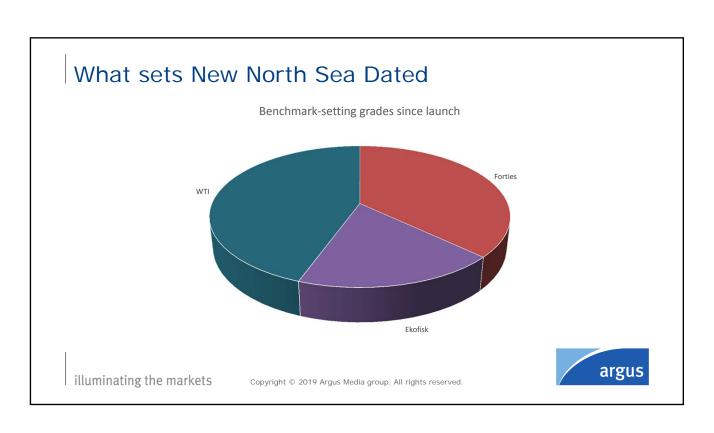


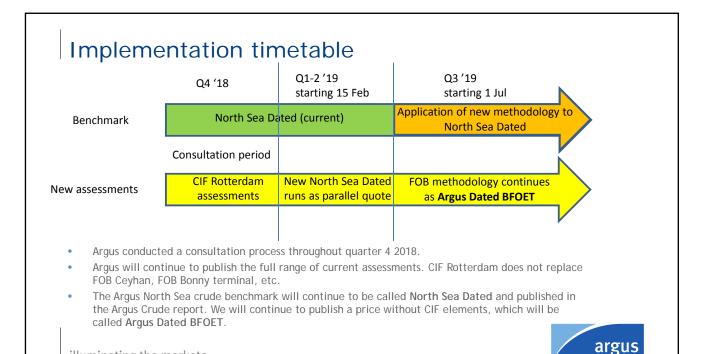












Copyright © 2019 Argus Media group. All rights reserved.

A representative benchmark helps all

- Liquidity and transparency aids the price discovery process.
- Refiners benefit from a market in which regional and imported grades are competitive with one another.
- Producers can set differentials with confidence.
- Traders can judge the arbitrage between regions.

illuminating the markets

illuminating the markets



In summary

- The North Sea Dated benchmark has become volatile and is regularly driven by factors outside the region.
- Asian demand, particularly for Forties and Ekofisk, can reduce the number of cargoes available for price identification.
- There is a steady flow of competing light sweet crude being delivered into the European market.
- If this trade is reported and assessed, it can be integrated into a more representative incarnation of the benchmark.

illuminating the markets



