Recent oil market volatility

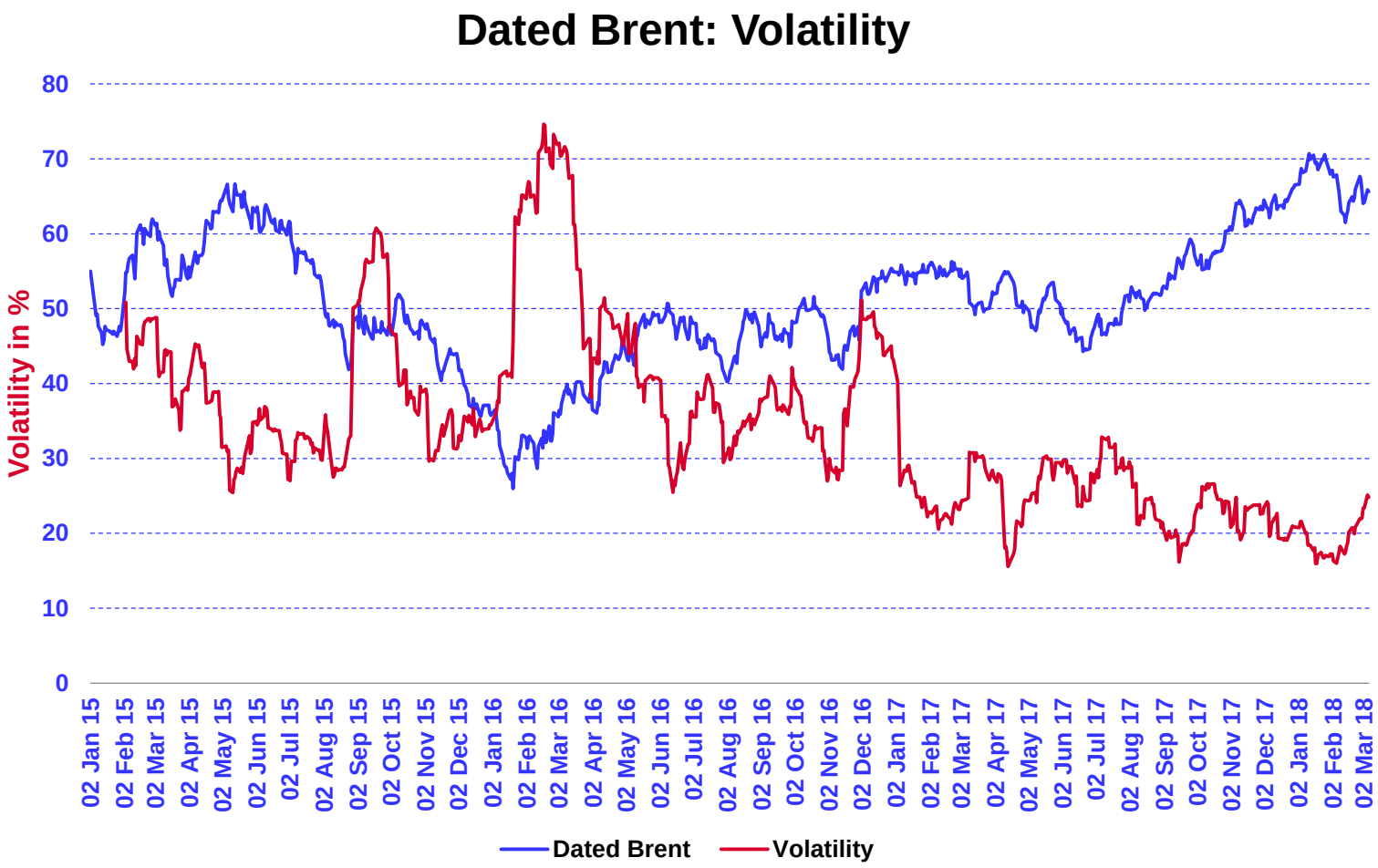
Dave Ernsberger
Global Head of Energy Pricing
S&P Global Platts

March 15, 2018

Recent trends and structural volatility in physical benchmarks

S&P Global
Platts

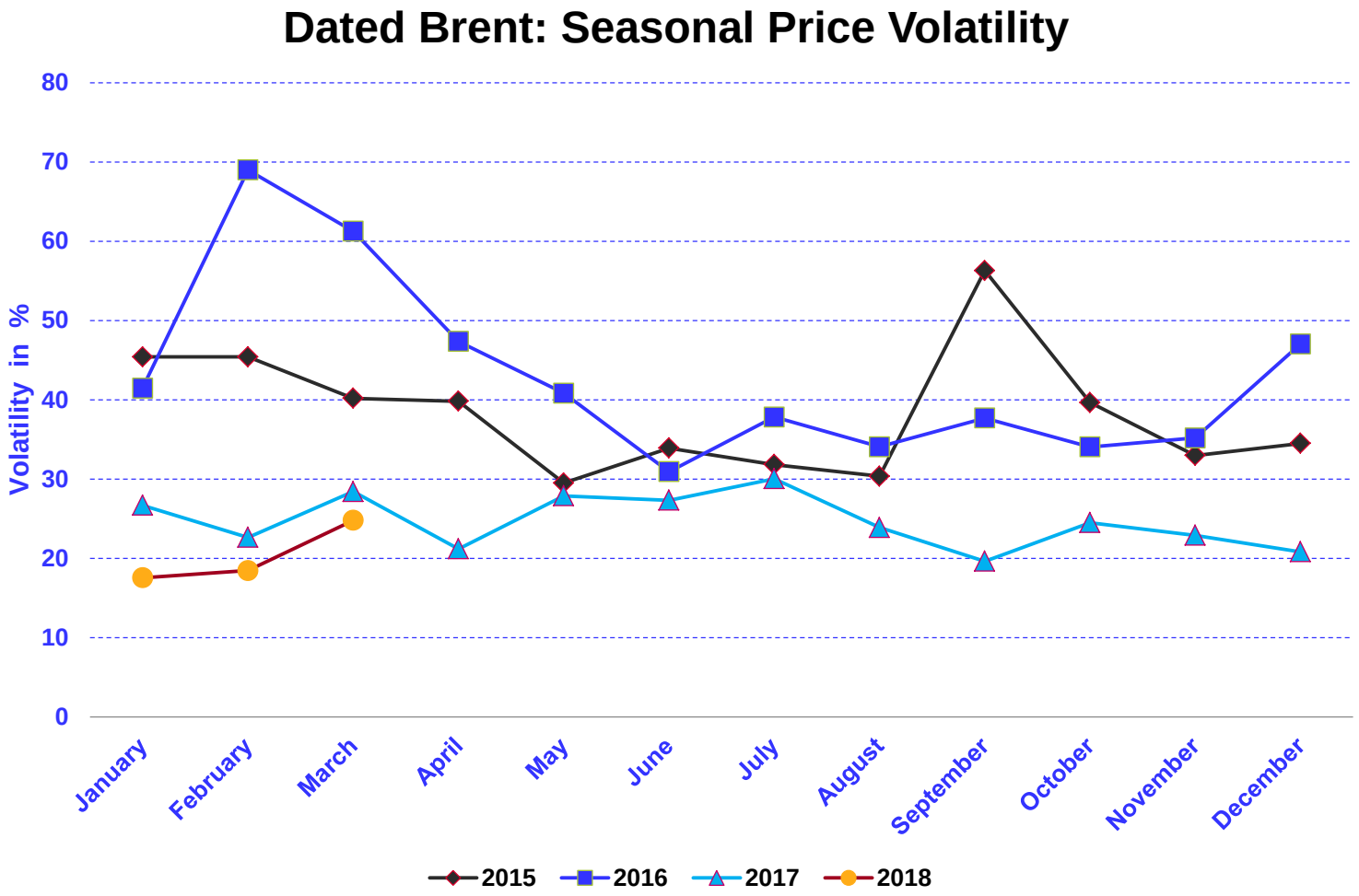
Interpretations of recent volatility trends: physical crude oil



- Volatility does not trend, it mean reverts -- tends to get back to an equilibrium level
- Volatility inversely correlated to prices
- When crude prices go down they tend to crash a lot more quickly than when they uptrend
- Implies that when volatility starts to slow, crude likely to recover

S&P Global
Platts

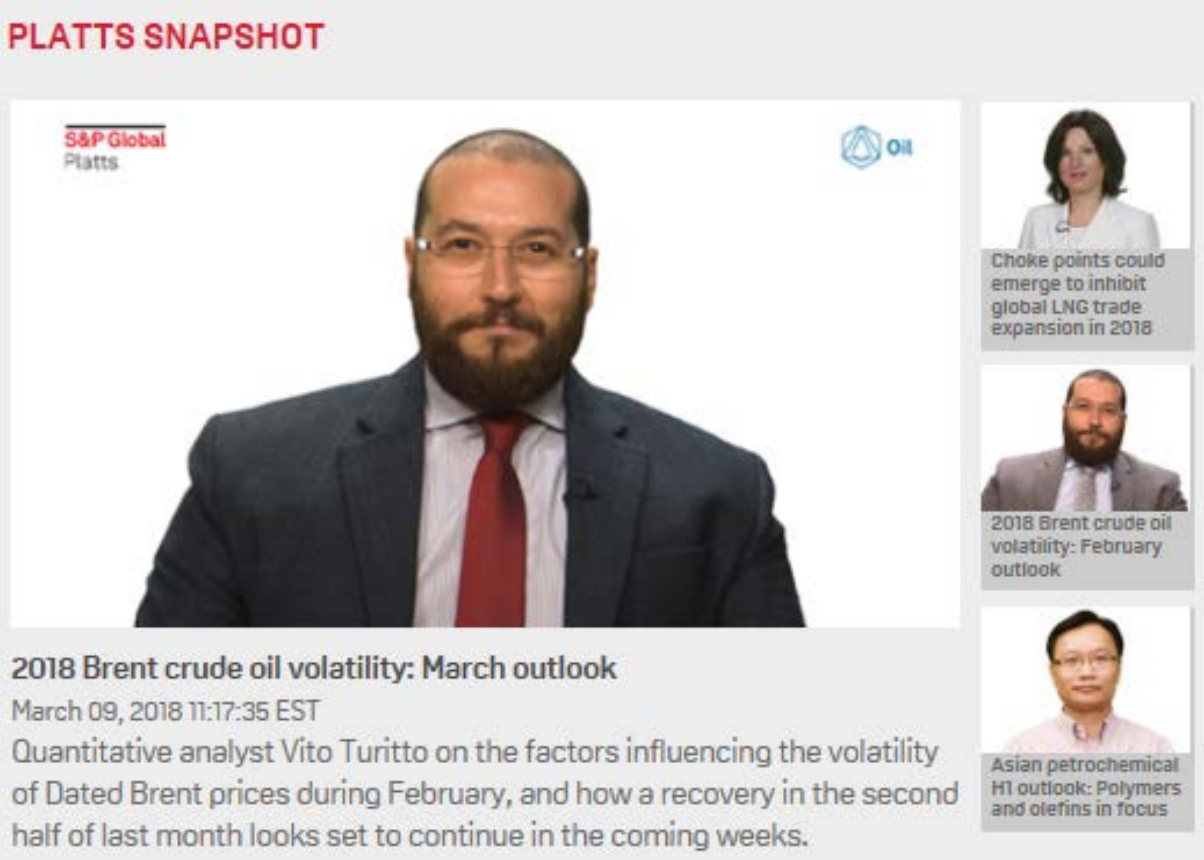
Seasonal trends in physical crude volatility



- Dated Brent in 2018 experiencing the lowest volatility for several years
- 2016 a high watermark in volatility
- 2017 showed a very low degree of price fluctuation, higher market stability

S&P Global
Platts

More thoughts and analysis around market volatility



https://www.platts.com/videos/platts-snapshot

- CFDs have flipped between contango and backwardation
- Tepid regional demand, more sluggish buying from South Korea & China
- Volatility likely to tick higher in coming weeks
- Regular updates for free on our website

S&P Global
Platts

Structural considerations around physical price benchmarks

A robust

METHODOLOGY

must define

1. What is being assessed
2. How data is **collected**
3. How data is analyzed to produce a final value

S&P Global
Platts

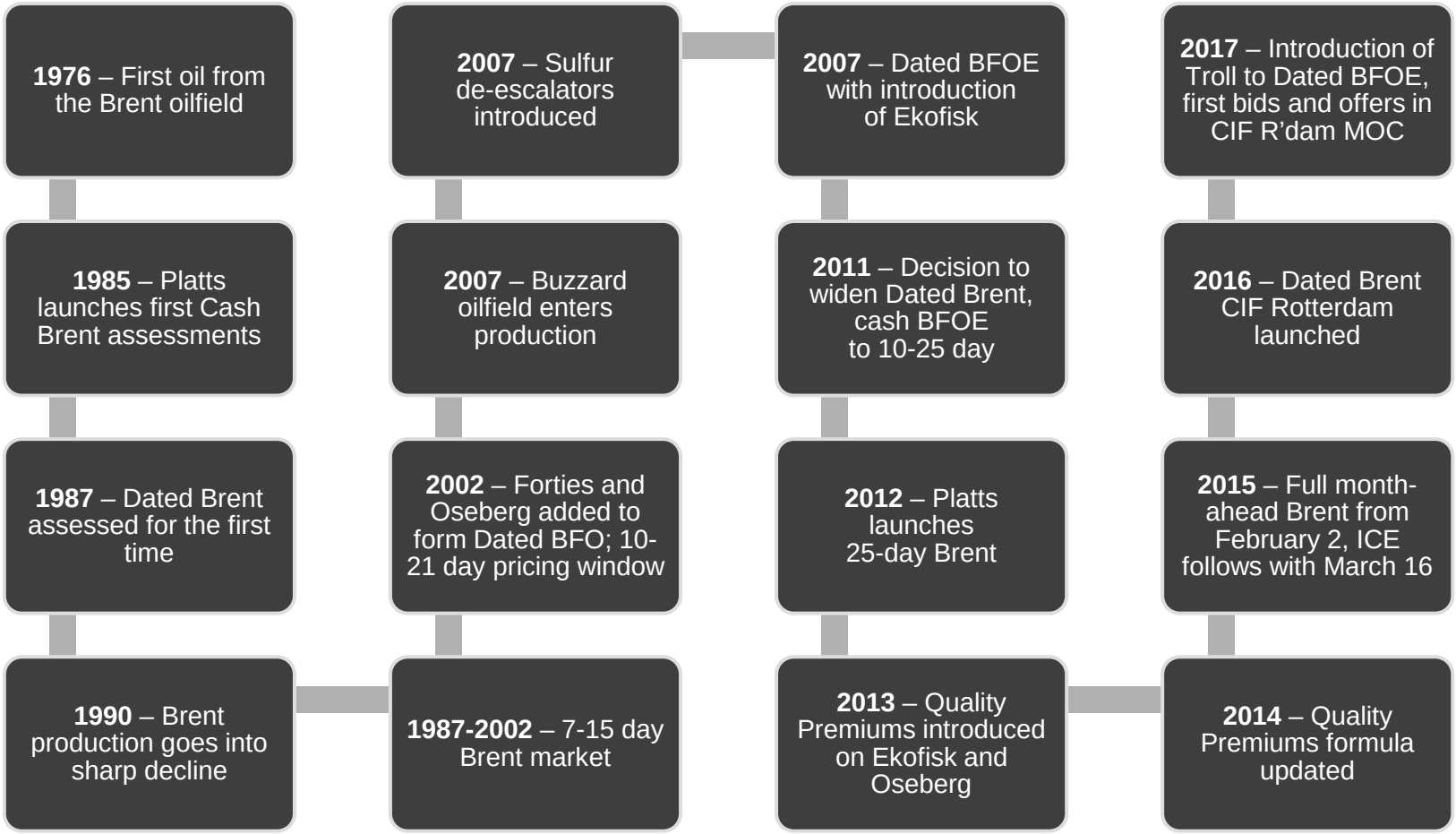
Potential drivers of benchmark volatility

- Benchmark specifications
  - **Volume deliverable** against the benchmark
  - **Logistical capacity** to handle liquidity surges
  - **Fungibility** of the grade against the broader marketplace

- Availability and collection of data
  - **Voluntary reporting** of bids, offers, transactions, other spot market indications
  - **Process** used to collect data available

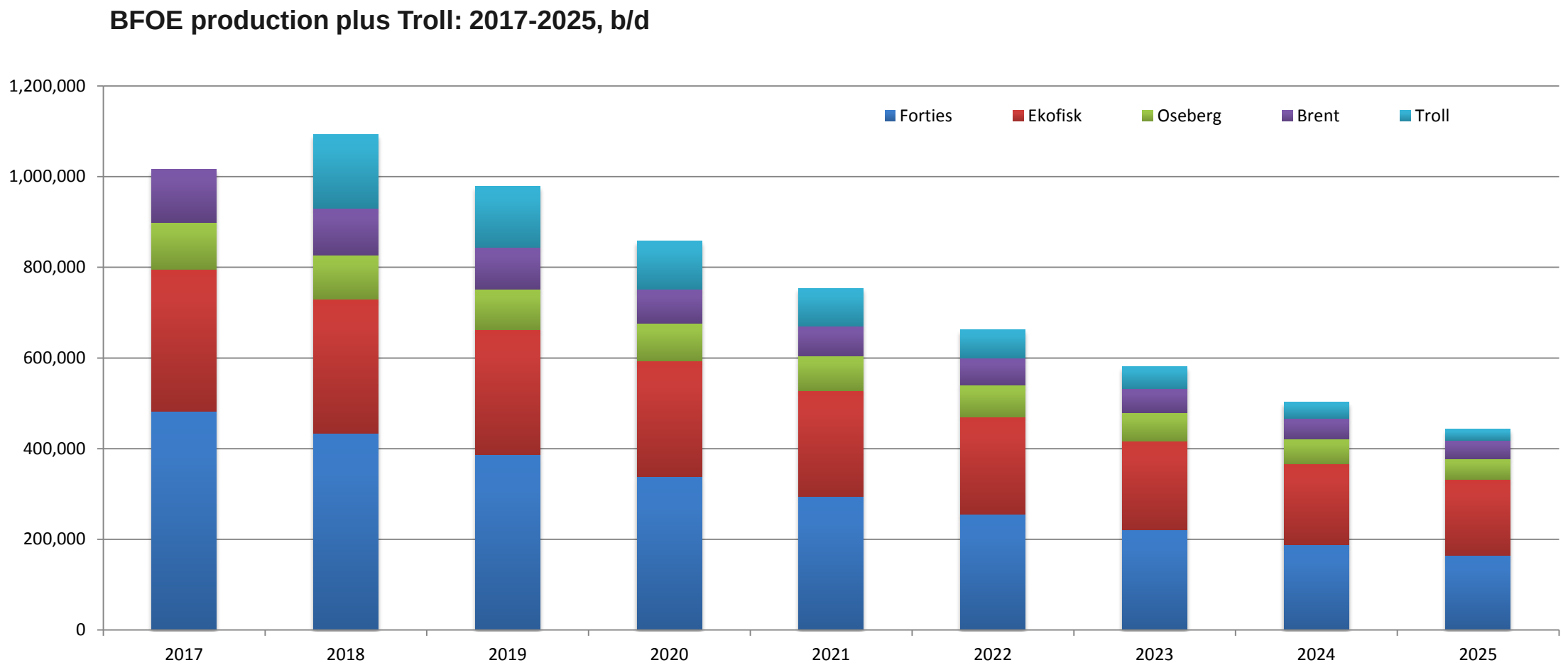
- Analytical process applied to the data
  - **Time sensitive** assessment of value
  - **Volume weighted** average of transactional data

Example of specification evolution: Dated Brent



S&P Global
Platts

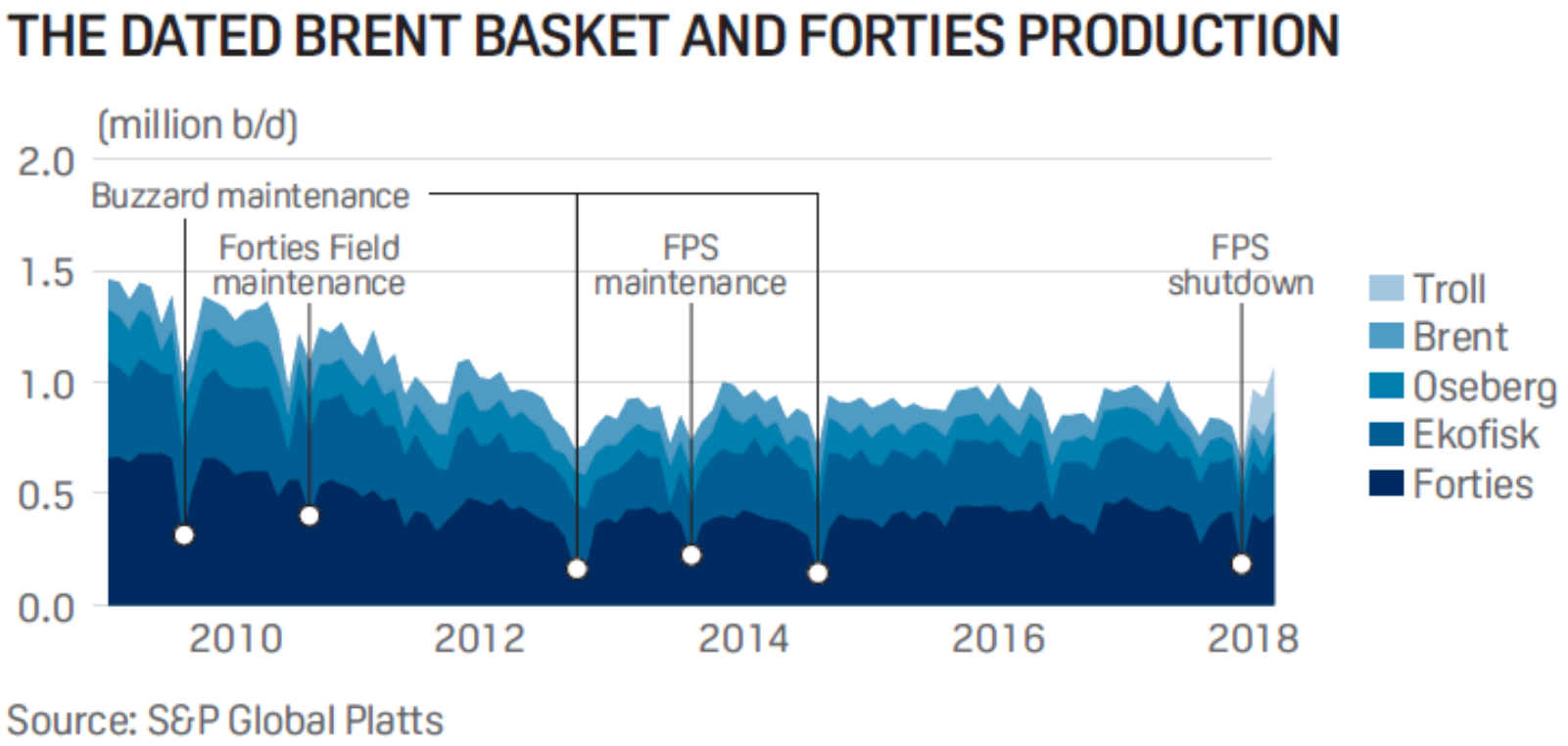
Outlook for the new North Sea basket



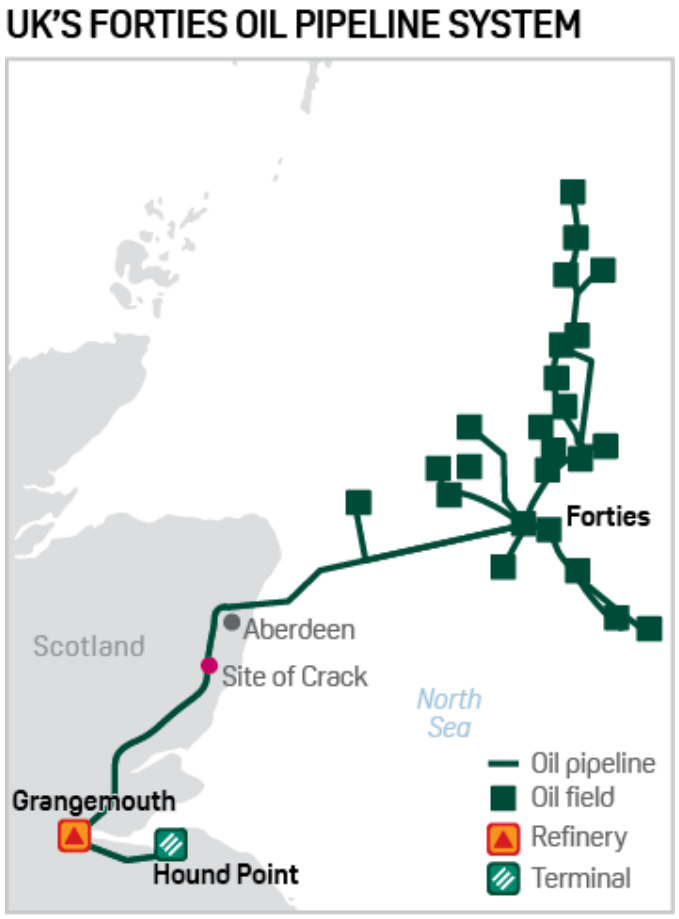
Source: S&P Global Platts Analytics

S&P Global
Platts

An Eventful Winter: Forties Pipeline System



Source: S&P Global Platts



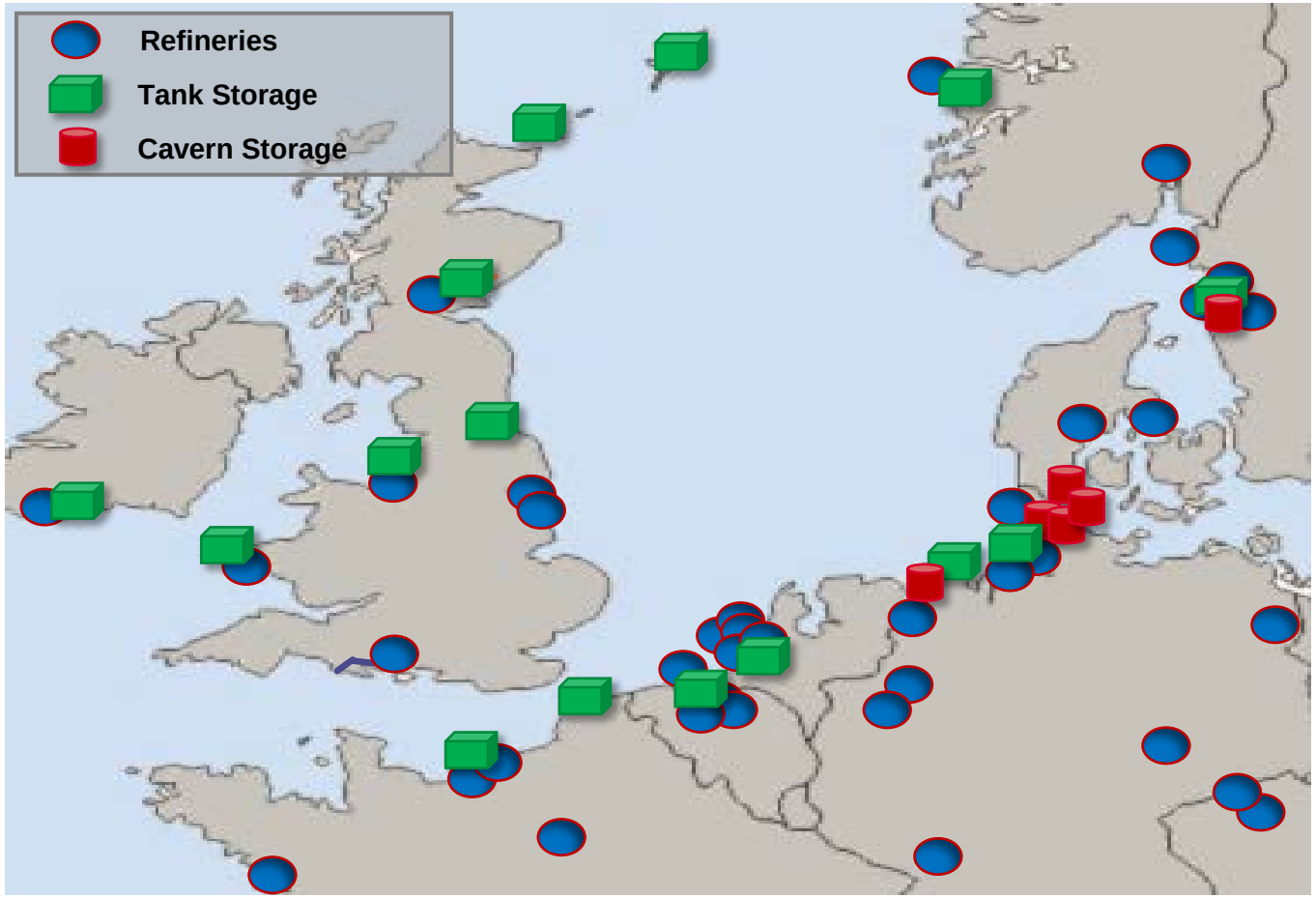
Source: S&P Global Platts, Ineos

Looking Ahead: Sverdrup due in 2019

- Johan Sverdrup, due to begin production in late-2019, is expected to be the single largest field in North Sea by 2022
- Production is forecast to peak above 650,000 b/d
- Differences in quality raise important considerations

Looking Ahead: A role for storage?

- Stored crude oil was a major source of local refinery supply in 2017
- Majority of European crude oil storage – both tank and cavern – is easily accessible for seaborne export
- Crude from storage, especially cavern storage, generally trades at a discount to FOB amid concerns about quality



Source: S&P Global Platts Analytics

Example of logistical evolution: FOB Singapore (FOB Straits)

S&P Global
Platts

Terminals reflected in FOB Straits

STRAITS TERMINALS

Terminal	Location	No. of Berths	Maximum draft (m)	Maximum LOA (m)/vessel type	No. of tanks	Storage capacity (cu m)	Ownership	Platts Gasoline	Platts Jet	Platts Gasoil	Platts HSFO
Helios	Jurong Island	6+1 (VLCC)	18.5/24.5 (VLCC)	280/353 (VLCC)	18	503408	55% Oiltanking GmbH/ 45% Macquarie	No	No	No	Yes
Universal	Jurong Island	6	23	333/VLCC	78	2360000	65% Hin Leong: 35% PetroChina	Yes	Yes	Yes	Yes
Horizon	Jurong Island	7	16.5	333/VLCC	59	1243990	JV between Horizon Terminals Ltd (52%) and four partners SK Corp, Independent Petroleum Group, Boreh International, Martank	Yes	Yes	Yes	Yes
Tankstore	Pulau Busing, Bukom Island	11	17.1	360	107	2000000	100% PB TANKER (Kuo International (Pte) Ltd)	Yes	Yes	Yes	Yes
SRC	Jurong Island	7	15	290/up to 105,000dwt		1904762	50% Chevron; 50% PetroChina (through SPC)	Yes	Yes	Yes	Yes
Oiltanking	Jurong Island	11	15.7	335	80	1305444	55% Oiltanking GmbH/ 45% Oystercatcher	Yes	Yes	Yes	Yes
Shell Bukom	Pulau Bukom	9				3900000	100% Shell	Yes	Yes	Yes	Yes
XOM Jurong	Jurong	5				2310000	100% ExxonMobil	Yes	Yes	Yes	Yes
XOM PAC	Jurong Island	6				1700000	100% ExxonMobil	Yes	Yes	Yes	Yes
Tuas	Jurong	1	10.2 (without tide)	280	1	60000	100% Huaneng Power International	No	No	No	Yes
Vopak Sebarok	Pulau Sebarok	9	17.6	280/Half Laden VLCC	79	1263079	100% Vopak Terminals Singapore (69.5% Vopak; 30.5% PSA Corp)	Yes	Yes	Yes	Yes
Vopak Banyan	Jurong Island	7	15.5	260/Aframax	60	1025339	100% Vopak Terminals Singapore (69.5% Vopak; 30.5% PSA Corp)	Yes	Yes	Yes	Yes
Chevron Penjuru	Jurong	7	14.8	300	40	485600	100% Chevron	Yes	Yes	Yes	Yes
Power Seraya	Jurong Island	4	12.6	275/Suezmax	20	835000	100% YTL PowerSeraya	No	No	Yes	Yes
Senoko Power	Woodlands	1	12	277	7	260000	Senoko	No	No	Yes	No
SPC	Pulau Sebarok	3	17	297/120000 Dwt	13	220000	100% PetroChina	No	Yes	Yes	Yes
Jurong Aromatics Corporation								Under Review	Under Review	Under Review	Under Review
Tanjung Langsat (TLP, TgL1, TgL2)	Tanjung Langsat, Pasir Gudang, Johor	7	13.5	430/partially laden VLCC	52 (TLP: 10; LGT-1: 32; LGT-2: 10)	747000 (TLP Oil Terminal: 100,000; LGT-1: 476,000; LGT-2: 171,000)	TLP Oil Terminal: 100% Johor Corp; LgT-1 and LgT-2: 80% Centralized Terminals Sdn Bhd (55% Dialog, 45% MISC Bhd) and 20% Puma Energy (subsidiary of Trafigura)	Yes	Yes	Yes	Yes
Tanjung Bin	Tanjung Bin, Johor	6	17.5	fully-laden Suezmax or partially laden VLCC	41	890,000 and another 250,000 by mid-2015	100% VTTI	Yes	Yes	Yes	Yes
Tanjung Pengerang	Pengerang, Johor	6	24	350 (VLCC)	57	1284000	90% Pengerang Terminals Sdn Bhd (51% Dialog Group Bhd, 49% Royal Vopak) + 10% SSI* (Johor) * SSI=State Secretary Inc.	Yes	Yes	Yes	No
Pasir Gudang (Far East Oil Terminal One)	Pasir Gudang, Johor	4	13.5	290 (Aframax)	16	231000	Cosco-Feoso (S) Pte Ltd (JV between Cosco Holdings (S) Pte Ltd and Feoso Investment (S) Pte Ltd)	No	No	No	Yes

Terminal information provided for reference only and reflects most recent available data.

Example of fungibility evolution: Gasoline specifications

SUBSCRIBER NOTES / METHODOLOGY UPDATES

SUBSCRIBER NOTE: Platts to amend Singapore 92 RON, 95 RON, 97 RON gasoline specifications

Singapore (Platts)--7Feb2018/1013 pm EST/313 GMT
S&P Global Platts proposes to amend the specifications for gasoline reflected in its FOB Singapore 92 RON unleaded, 95 RON unleaded and 97 RON unleaded assessments from July 1, 2019, after market consultation on a proposal note on October 31, 2017.

The earlier proposal can be viewed at http://www.Platts.com/subscriber-notes-details/27883410.

Since then, Platts has discussed the proposal in a variety of bilateral meetings involving a full range of stakeholders.

In that announcement, Platts stated it would not change the specifications for the FOB Singapore 92 RON gasoline grade and that only the FOB Singapore 95 RON and 97 RON specifications would be amended.

Under the new proposal, all three gasoline grades assessed by Platts -- 92 RON, 95 RON and 97 RON -- will reflect similar specification standards.

Under these changes, Platts proposes to lower the Reid Vapor Pressure specification to a maximum of 9 PSI, from 9.5 PSI currently. Platts will also reduce the final boiling point from a maximum of 225 degrees Celsius to 215 degrees Celsius.

Platts will also move down the sulfur level from a maximum of 350 ppm (0.035%) currently, to 50 ppm (0.005%). The lowering of the sulfur in gasoline to 50 ppm will see additional limits on aromatics by percent volume and olefin by percent volume. The maximum aromatics content will be set at 40%, while maximum olefin content will be set at 25%.

https://www.platts.com/subscriber-notes-details/27913267

S&P Global
Platts

Q & A

email: dave.ernsberger@spglobal.com