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The New Forward Brent Benchmark

OIES ENERGY COMMENT

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On January 31st, 2023, S&P Global Commodity Insights (Platts) confirmed the inclusion of West Texas Intermediate (WTI) Midland in the forward Brent (BFOET) contract from June 2023 and provided further guidance. This followed the introduction of WTI Midland into Dated Brent in June 2022.[1] While the change in Dated Brent is relatively straightforward,[2] changes in the forward (or cash)[3] contract are more complex.

The latest version validates the industry's movement towards the STASCO 2022 Cash BFOETM general terms and conditions (GT&Cs),[4] with the seller of a forward Brent being able to deliver a cargo of WTI Midland on a 'cost, insurance, and freight' (CIF) Rotterdam[5] basis into the contract. However, the forward Brent will remain a 'free on board' (FOB) contract by using a freight adjustment mechanism, assessing the delivered WTI Midland 'as if it was loaded in the North Sea'.

In spite of a number of forward Brent trades already done on the basis of the WTI Midland inclusion, there are some details that may need to be ironed out before the first 'new forward Brent' nominations are made in May 2023. Even earlier, the Intercontinental Exchange (ICE) May Brent futures contract which expires in March, on the basis of the ICE Brent Index, takes into account June forward and EFP trades for its methodology.

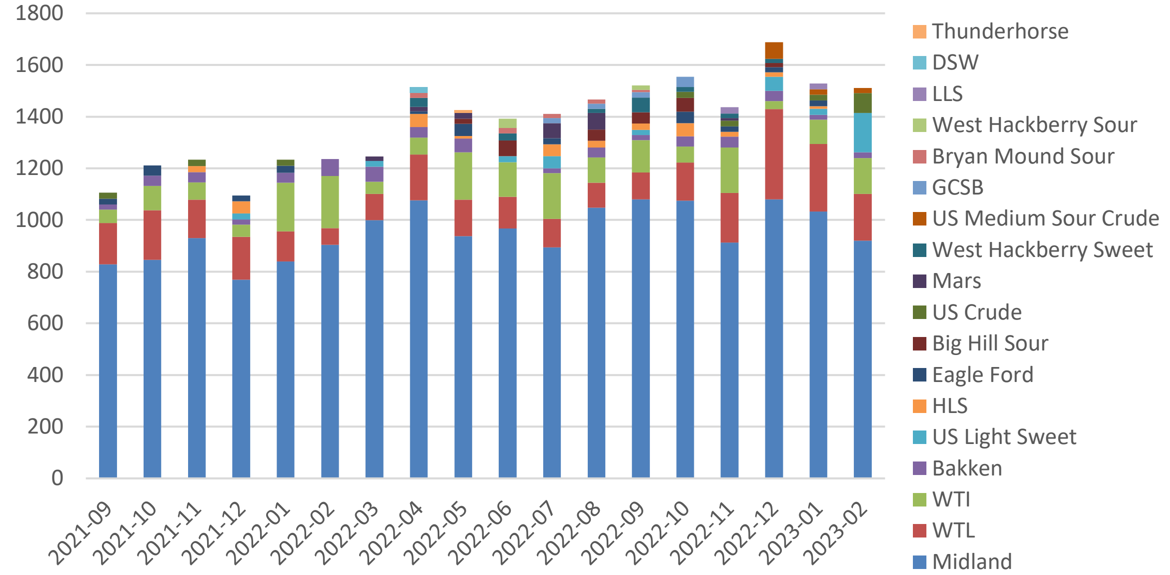
This Energy Comment highlights the changing oil flows resulting from the Russian invasion of Ukraine, which support the inclusion of WTI Midland into the Brent benchmark. It explains the importance of the forward Brent for the 'Brent complex', for the calculation of both Dated and futures Brent contracts. The paper discusses the deals in the forward 'new Brent' already concluded, and points to the variability of June EFP premiums and possible reasons for that. Then it explores some of the remaining, yet critical issues to be resolved in the new contract. Finally, the paper discusses the possible impact of the WTI Midland inclusion into Brent for the US markets and the recent and exciting developments in the WTI derivatives markets.

Changing flows, WTI Midland and the Brent Benchmark

US crude oil exports averaged a record 3.6 million barrels per day (b/d) in 2022, up by about 21 percent year-on-year. Alongside this surge in volumes was a noteworthy change in trading flows. Last year, the UK and the Netherlands purchased more US crude than China and India. Yet this should not come as a surprise. The US has become the crude supplier of choice for European buyers since Russia invaded Ukraine. US crude exports to Europe jumped by 426,000 b/d to 1.4 million b/d in 2022 compared to the previous year.[6] As a result, the share of US crude exports destined to Europe rose from 35 to 41 percent. US crude flows to Asia showed a more modest year-on-year rise of 158,000 b/d to 1.51 million b/d.[7]

[1] 'Platts to reflect WTI Midland in Dated Brent, Cash BFOE from June 2023', S&P Global Commodity Insights, June 8, 2022: https://www.spglobal.com/commodityinsights/en/our-methodology/subscriber-notes/060822-platts-to-reflect-wti-midland-in-dated-brent-cash-bfoe-from-june-2023
This inclusion is discussed in: A. Imsirovic and K. Chapman, 'The Brent Benchmark – Where Do We Stand?', OIES Energy Comment, July 2022 https://www.oxfordenergy.org/publications/the-brent-benchmark-where-do-we-stand/
[2] Also, see: A. Imsirovic and K. Chapman, 'The Brent Benchmark – Where Do We Stand?', OIES Energy Comment, July 2022.
[3] We shall be using the term forward, rather than cash as we believe that it better describes the nature of the contract. In the US, term 'cash' is synonymous with physical oil, which in Europe can be interpreted as 'Dated'. However, in the Brent market. Both forward and cash have the same meaning.
[4] https://www.shell.com/business-customers/trading-and-supply/trading/general-trading-terms-and-conditions/_jcr_content/root/main/section/simple/call_to_action/links/item1.stream/1677248184495/0a921882c6b596fdb3641757dab1b1c83f59b17a/stasco-bfoetm-2022-version-1.1.pdf
[5] The title is to pass just outside the US Economic Exclusion Zone (EEZ).
[6] PVM Fundamental Report, 08 March 2023.
[7] Ibid.

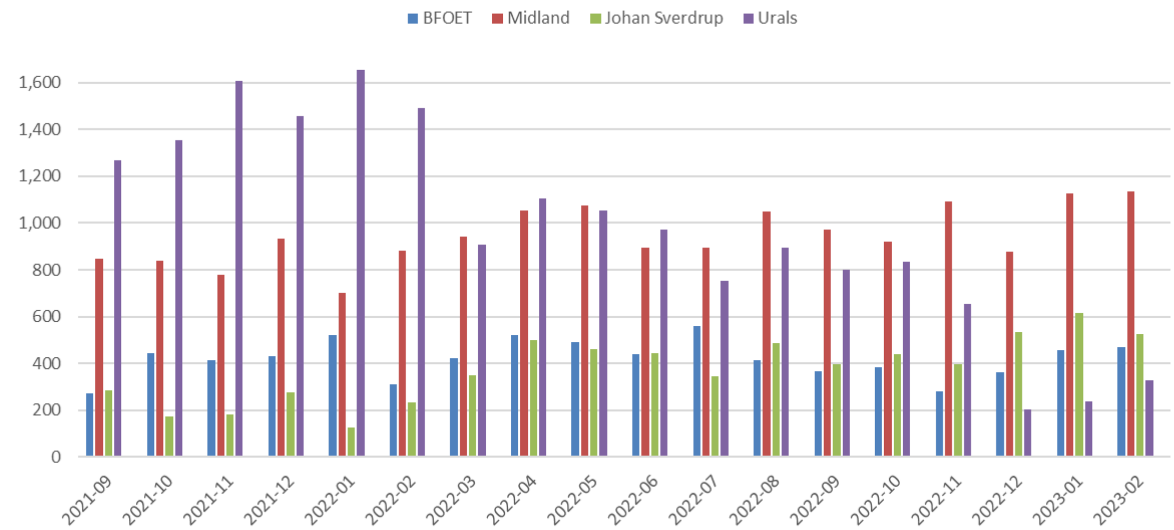
Figure 1: US crude exports to Europe, (in kb/d)



Source: Kpler, OIES

WTI Midland makes up most of the US oil exports into Europe and is currently leaving the US Gulf Coast at over 1.5 million b/d (**Figure 1**). The Russian invasion of Ukraine greatly increased the volumes of WTI Midland arriving to Europe. As shown in **Figure 2**, the gap left by Urals cargoes leaving Europe for India and China has been filled by alternative imports, the bulk of which were WTI Midland barrels. Further, Johan Sverdrup and Forties crudes remained in Europe with the last cargoes of Forties going to Korea in August 2022 and to China in November 2022.[8]

Figure 2: European crude imports by main grade (BFOET, JS, Urals and WTI Midland, kb/d, monthly)



Source: Kpler, OIES

[8] From Kpler tracking data.

Trading flows of oil are never permanent. But it is unlikely that Russia will be seen as a reliable oil supplier to Europe for the foreseeable future. This only strengthens the importance of WTI Midland crude in the European refinery diets and therefore in the Brent benchmark. Another interesting aspect is the impact of the WTI Midland inclusion into Brent on the Asian markets. Given that the Dubai benchmark is firmly linked to Brent, as it trades as a differential to Brent, increased liquidity of Brent is only good news for the stability of the Dubai benchmark.

Forward Brent: The beating heart of the Brent Benchmark

The Forward Brent market sits at the heart of the Brent complex being the first Brent instrument actively traded. Holding a forward contract to maturity becomes Dated Brent, the reference point not only for Brent cargos but also for most of the physical crude oil barrels traded in the Atlantic Basin and even Asia. Brent futures evolved from Brent partials, the subset of the forward Brent, and has always relied on the forward market to financially settle using the Brent Index.[9] The Exchange of Physical for Futures (EFP) which links forward and futures, is the lynchpin of the Brent Index, given the lack of outright forward trades.

For this reason, at the expiry of a prompt contract,[10] EFP trades in the next contractual month are the key to setting the value of forward Brent relative to the futures contract. Then, adding the prevailing spread between the prompt, expiring month and the next contractual month, the outright price of the expiring month can be established. For example, May Brent futures will expire on the last day of March. Given the lack of outright trades (fixed price, in dollars per barrel) in forward Brent for May and June, EFP trades in June Brent determine the value of June forward Brent. Then, the prevailing May/June[11] spread is applied to establish the May forward Brent value. Without any June EFP indications or trades, it would be impossible to properly derive the index.

Thus, EFPs are a fundamental link between forward and futures Brent market, and the price discovery of their value is essential to the functioning of the Brent market.

As illustrated in **Table 1**, there has been limited trading activity in June Brent EFPs, and values have fallen, potentially indicating a lack of desire to own the new forward Brent contract. Theoretically, the June EFP should go to zero (there should be no premium for forward Brent over the futures Brent contract) on the expiry day, at the end of April. But prior to that, it will be the May ICE Brent futures expiry at the end of March that may prove more significant. So far, about a two dozen EFPs Brent trades have been done based on the newly specified forward Brent contract which includes WTI Midland. The original deals concluded on September 9, 2022, were probably done on BP or Vitol GT&Cs which specified a FOB delivery of WTI Midland. The deals between Shell and Total concluded the next working day are believed to have been done on Shell terms (STASCO 2022 Cash BFOETM GT&Cs).

Since then, it appears that all the consequent EFP trades were concluded on Shell terms. If important market players such as Shell cannot accept FOB delivery of WTI Midland for US Taxes and Permanent establishment risk reasons,[12] there is little choice for the others but to adopt what is acceptable to Shell as a common denominator.

[9] https://www.theice.com/publicdocs/futures/ICE_Futures_Europe_Brent_Index.pdf

[10] Note a problem here. The 'new' June forward Brent is 700,000 barrels, compared with 600,000 barrels in May. To solve the imbalance, PVM, a broker, in consultations with the industry has proposed that: '… to transact an offsetting 100 kb of Jun Brent ICE future (posted as EFP), concurrently with all BFOET/M spreads on the day. This will be traded at the level of the relevant June brent minute marker level for each window. This package of trades will be standard and final during all concluded May v Jun BFOET/M spread deals during expiry day on 31st March [2023], as well as any spreads that transact on 30th March.

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[12] This is a legal point on which we are not experts. But it appears that the US judiciary may see FOB trades as falling under their jurisdiction. Brent is normally traded under English law.

SUKO 1990 GTCs have underpinned the Brent Forward contract for over 30 years making them the industry standard, and Shell was determined to retain that status by publicly trading EFPs at levels that incentivised traders to transact. That may be an explain the high variability in June EFP values.

Table 1: EFP Forward Brent trades based on new specification, including delivered WTI Midland (Seller/Buyer, EFP month and premium in cents/bbl)

09-Sep22	12-Sep22	Since Sept 2022:	28-Feb23
BP/Vitol Jun +15	Shell/Total Sep +15	ENI/Total Sep +27	Petroineos/Gunvor Jun +6 (twice)
Vitol/BP Jul +15	Total/Shell Oct +15		Exxon/Vitol Jun+6
Vitol/BP Aug +15	Total/Shell Oct +15	Alta/Total Sep +27	
BP/Vitol Sep +15	Shell/Total Nov +15	Total/Alta Oct +27	
		Alta/Total Sep +27	
		Repsol/Total Aug +25	
		Total/Repsol Sep +25	
		Traf/Shell Jun +30	
		Traf/Shell Jul +30	
		Traf/Shell Aug +30	
		Traf/Shell Sep +30	
		Traf/Shell Oct +30	
		Merc/Shell Aug +25*	
		Merc/Shell Sep +25*	
		Merc/Shell Oct +25*	
		Exxon/Shell Jul+15	
		Shell/ Exxon Aug +16	
		Alta/Total Oct +27	

Notes: *Estimated price. Source: Various broker reports.

We have witnessed EFP trades in six different maturities (June through November). Six major oil companies (Shell, Total, ENI, Repsol, Exxon, Petroineos) have been involved as have five oil traders (Alta, Trafigura, Mercuria, Gunvor, Vitol).[13] And while BP has apparently avoided the Shell terms,[14] Vitol has not. The first EFPs traded at 15 cents over the ICE Brent futures and then rallied to 30 cents before settling back to only 6 cents with the trades on 28 February 2023.

What is noticeable in **Table 1** is the absence of some important players: Equinor, the largest producer of the Brent 'basket' of crudes, and Oxy and Chevron, the largest producers of WTI Midland crude. However, these are early days for the new contract, and the producers of Midland WTI may wait to see a premium that should eventually be associated with having WTI Midland deliverable in the most important international oil contract.

Of greater concern is the lack of 100,000-barrel June Brent partial trades. Only one has occurred in the Platts Market on Close (MOC) assessment process, and the same deal was reported by Argus in their 'Market on Close (MOC).[15] Liquidity should increase when June becomes the prompt month in

[13] Alta shut operations last year and likely booked out their exposure with Total, perhaps through an intermediary.
[14] It is likely that the original EFP trades between BP and Vitol have subsequently converted to Shell GT&Cs.
[15] It was a June Brent deal between Mercuria to Shell at $81.60 a barrel, reported on 2 February 2023.

April. If it does not materialise, it may be a sign that the new Brent contract is not attracting sufficient liquidity.

Reasons for caution in trading June forward Brent may be several. One are slight differences between the freight assessments in forward and Dated Brents. In the assessment of Dated Brent, Platts is using five (BFOET) ports, and applies weighted average of their rates to Rotterdam. Also, only 80% of that freight adjustment factor (FAF) is applied, to compensate the buyer for the lost optionality of accepting delivered, rather than FOB oil. On the other hand, the 2023 amendments to STASCO 2022 Cash BFOETM use four ports (FOET, excluding Brent - which is negligible in volume but is a lot more expensive), and applies no penalty (100% FAF is applied).

Nominations and uncertainties

It is more likely that uncertainty is also arising from the nomination procedure. For most types of crude oil, the buyer nominates desired loading dates (or 'laycan'). In the Brent forward contract, it is the seller that nominates the cargo. Nominations can be made verbally, over the phone, provided the following elements are explicitly stated: The name of the seller, grade of oil, price at which oil was traded, loading dates and the cargo number.[16]

Clearly, the nomination of WTI Midland into the Brent contract has to fit within this procedure. As BFOET grades are nominated 30 days before the first day of loading of the nominated cargo, and the US grade is nominated on CIF delivery basis, the declaration date will be one month and one day before the implied first day of its arrival window in Rotterdam[17] (one day being as if the WTI Midland cargo was loaded in the North Sea).

The problem, however, is the loading dates and the corresponding cargo number. Generally, US Gulf terminals do not have a right to publish loading dates, as terminals do not own the cargoes – they only lease the facility to the oil owners. They can only publish the loading dates if instructed by the cargo owners. While this should not be difficult to arrange, at this stage the terminals only need to be on the approved list of the loading facilities.[18]

The cargo number in the BFOET nomination is a guarantee that identifies every cargo loaded in the North Sea. As US terminals do not follow similar procedures, there must be an agreement among the Brent players as to what exactly a Brent nomination should look like, and what documents should be provided to identify each individual WTI Midland cargo. The new STASCO 2022 Cash BFOETM terms have addressed this issue,[19] but to our knowledge, these provisions are yet to be fully agreed by all the participants.

Another uncertainty is the possibility of a cargo not meeting the quality specifications stated in the SUKO GT&C, 2023 amendments. The said amendments state that:

> '*In the event that the inspection finds the cargo to be off-specification, the buyer and the seller should enter a negotiation to reflect commercial practice by proceeding from verifiable evidence of a quantifiable cost or loss that has accrued to either party as a result. Buyer holds the right to claim quantifiable cost or loss from the seller,* ***but buyer may not reject the cargo****.'*[20]

The fact that the cargo may not be rejected, in spite of not meeting the Brent specifications is understandable. If it were to be rejected, a number of trades in the 'chain' could be void, leading to a breakdown in the system and potential litigation. While the buyer is entitled to appropriate compensation, such cargo would become Dated without being admissible in the Platts MOC

[16] In Stasco GT&Cs, nomination or declaration is addressed in section 3, page 9.
[17] It takes about 17 days for WTI Midlands to be shipped to Rotterdam.
[18] The number of the approved facilities is expected to grow over time.
[19] Section 4. Of the GT&Cs.
[20] SUKO GT&C 2023 Amendments, page 2.

assessment process, rendering any swap hedges against the forward Brent trade irrelevant. Gaining confidence in the quality of WTI Midland in the Brent basket is essential but may take time.

WTI Midland quality specifications are defined by Platts Crude Oil Methodology (November 2022) and were incorporated into the SUKO GT&Cs. Shell had initially suggested[21] the inclusion of additional quality perimeters in their 2023 amendments to include:

- Hydrogen Sulphide (H_2S) less than 10ppm,
- Organic Chloride less than 1 ppm, and
- High Temperature Simulated Distillation (HTSD) stipulating Light Ends not more than 19% and Vacuum Residuum not more than 16% by mass.

These additional specifications may not be adopted, but there is a case for their inclusion. WTI of Midland origin has tended to be a more reliable crude oil quality and preferred by European refiners. If lesser quality crude oils such as light-ended Eagle Ford taint the blend, it will undermine Midlands inclusion in the 'Brent basket.' Some terminals are more likely to supply 'pure' WTI Midland quality than others and the ongoing certification of terminals is critical for safeguarding the quality of oil included into the Brent basket.

The terminal acceptance procedure, enacted to ensure the United States Gulf Coast (USGC) loading facilities can handle appropriately sized vessels to lift the larger contract of 700,000 barrels and provide WTI Midland pipeline and tank segregation, has been well received. Most of the facilities in Corpus Christi and Houston have applied and been approved by Platts (eleven) and Argus Media (twelve). Terminals further east in the Port Arthur area and LOOP are yet to qualify, likely due to segregation issues.

Buyers of forward Brent may also have concerns over the reduced optionality of having a delivered the cargo, rather than one loaded on the FOB basis. We do not think that this should be a major concern. If a forward cargo is traded on the newly agreed criteria, and a WTI Midland cargo is to be nominated, there is no reason that the bilateral contract cannot be booked-out and re-negotiated on an FOB or any other basis. Of course, if there is a long chain of trades, and many parties are involved, this may be more complicated, but certainly not impossible.[22] Therefore, even with a delivered crude in the forward Brent contract, not all the forward cargoes need end up in the Dated Brent pool.

However, there may be a case to apply 80% FAF in forward Brent (the same as already applied in Dated Brent) to compensate the buyer for this lost optionality and to make buying forward cargoes more attractive. That would also align the Dated and forward contracts ensuring the all-important convergence of the two Brents.

This is particularly important as more and more WTI Midland is shipped on larger (Suezmax and Very Large Crude Carrier or VLCC vessels).[23] Since only Aframax deliveries qualify for assessment in both Dated and forward Brent, this could limit the volume of Midland ending up in either Dated or forward Brent pool.

Finally, there is one legal uncertainty. The inclusion of WTI Midland into what was originally a North Sea benchmark could in theory risk triggering of the "Material Change" clauses in International Swaps and Derivative Association ("ISDA") contracts[24] that govern the Brent swap agreements.[25] However, this may not be a serious issue for two reasons. Firstly, the inclusion of WTI Midland crude in the Brent contract has not made any observable impact on the forward curves for the Brent contracts. In other words, the recent change has not broken the 'golden rule' of price reporting that the assessments procedure reflects the market and does not significantly alter it. Secondly, inclusion of additional and similar grades of oil into a contract is nothing new. The New York Mercantile Exchange (now part of

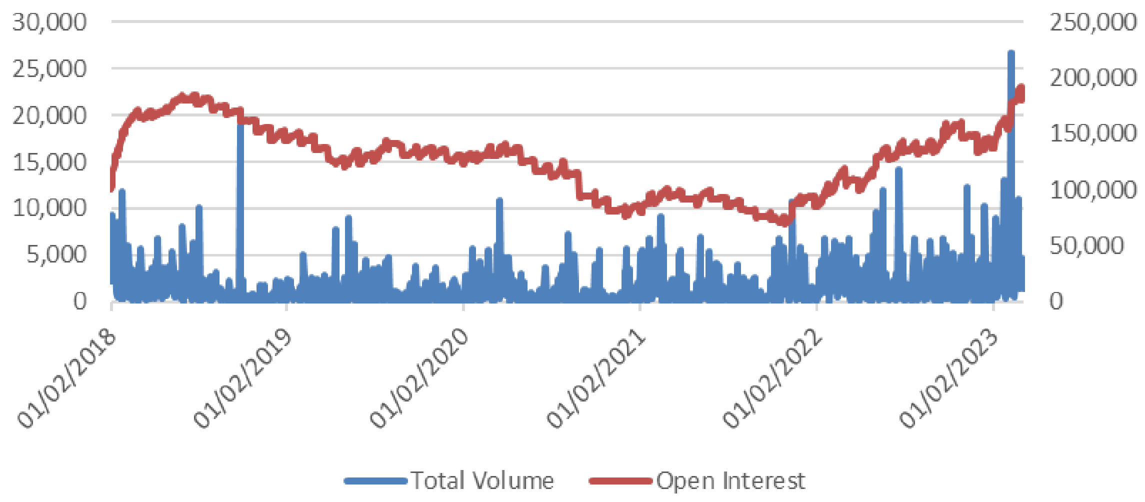
[21] Ibid.
[22] All that really matters is the agreement between the original seller and the final lifter of crude. All the parties in the middle can the simply pass on the changed terms.
[23] Suezmax vessels carry about 1 million barrels and VLCCs about twice as much.
[24] https://www.isda.org/
[25] The authors would like to thank Ms. Liz Bossley for pointing this out.

CME) pioneered it in the 1980s when they included a number of foreign, sweet crude oil grades including Brent and Oseberg, into the WTI physically deliverable, futures contract in Cushing, Oklahoma. The Brent contract had similar transformation in the early 2000's when Forties, Oseberg, Ekofisk and then Troll (FOET) were introduced.

The new Brent Benchmark and impact on the US Gulf market

It has been noted that the pricing of WTI crude would gradually shift towards the waterborne market in the US Gulf.[26] The inclusion of WTI Midland is already having an effect on the US oil market. The volumes of WTI Midland and WTI Houston swaps and futures contracts have been growing steadily (**Figure 3**).

Figure 3: Volumes of WTI Midland Houston (WTT) contracts cleared on CME exchange, in lots (WTI Midland Houston vs WTI average month)



Source: CME, OIES

Patts assess the values of WTI Midland in the US Gulf and publishes the assessment as the 'American GulfCoast Select' (AGS), both as an absolute price (AGSAA00), and as a differential to Dated Brent (AGSAB00).[27]

The Intercontinental Exchange (ICE) lists a Midland WTI American Gulf Coast Futures contract, a physically settled contract for Midland WTI crude deliverable into the Enterprise ECHO and the Magellan MEH Terminals.[28] According to ICE, average daily volume is over 4,000 contracts. Open interest is currently over 12,500 lots (12.5 million barrels), up 87% from the start of 2023.[29]

Argus assess WTI Midland Houston and WTI Midland weighted average monthly prices outright and as a differential to WTI futures. The two also trade as swaps and are cleared on the CME (as HTT and WTT contracts in the CME Globex platform). Both are monthly swaps and normally trade as a differential to the WTI Cushing futures oil contract. These WTI Houston swaps have been trading over 30 million barrels a day in February 2023. By the end of January, open interest on this contract was close to 180 million barrels (**Figure 3**).[30] These instruments enable sellers and buyers[31] to 'lock in' the value of oil before transportation from Midland and sales based on Houston prices.

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[26] See Fattouh and Imsirovic: 'Oil Benchmarks Under Stress', Oxford Energy Comment, April 2020, page 4.
[27] https://www.spglobal.com/commodityinsights/en/our-methodology/price-assessments/oil/platts-american-gulfcoast-select
[28] https://www.theice.com/products/69088330/Midland-WTI-AGC-Future
[29] See 'WTI Houston Contract Gains Market Steam', Energy Intelligence, March 9, 2023.
[30] See: 'WTI volume at record ahead of Brent inclusion', Argus, 9 Feb 2023.
In a conversation with the midstream company Medallion, the authors learned that most of the company customers hedge their Midland WTI crude, shipped from the well to the USG using WTT and HTT.
[31] According to ICE and Argus, there are over 60 different companies participating in these instruments.

Since the Contracts for Difference (CFD) curve for Dated Brent is very liquid, pointing to the value of physical Brent at virtually any future point in time, the inclusion of WTI Midland should eventually transpose this transparency onto the values of WTI Midland crude loading in the US Gulf. Some of these WTI Midland swaps may trade on 10-day, intramonth basis (1-11, 12-20, and 21- 30 of each month or decade of the month of loading), it is likely that there will be increasing visibility of the WTI Midland Houston price, similar to that of Dated Brent. In November 2022, Argus started publishing these 10-day swap values as a differential to both WTI Cushing and ICE Brent futures. They are beginning to resemble the Brent CFD curve with intramonth variability.

These and other new, potentially emerging derivative instruments would enable seamless arbitrage all the way from Midland, via FOB Houston, to forward, futures and Dated Brent. Given visible freight market (spot as well as forward derivatives prices), the basis risk for all the participants would become minimal.

Conclusion

The inclusion of WTI Midland into the 'Brent complex' is already on the way. The process has taken a couple of years, but due to antitrust worries, there has been relatively little direct discussion amongst the key players on the subject, slowing the process.

The introduction of WTI Midland into Dated Brent should be relatively easy. The inclusion of the grade into the forward Brent contract, however, is much harder, given the forward nature of its delivery. Ensuring a smooth operation of the forward Brent contract is absolutely critical for the functioning of the overall 'Brent complex'. Without it, neither Brent futures nor Dated Brent contracts can converge properly to their expected, fundamental values.

The outstanding issues concern the quality of delivered WTI Midland into the contract and the nomination procedure, especially the loading cargo confirmations from the approved terminals. The June EFPs trades have been volatile, possibly reflecting these uncertainties.

So far, the liquidity of the June EFP and cash partial trades for this month have been poor. However, this is not unexpected. An important test for the contract will be at the end of March 2023, at the expiration of the May Brent futures contract. June EFP values are critical for the establishment of the May Brent Index, the price at which the May futures contract is settled. So, if all goes well, we should be seeing more June EFP and cash partial trades in the near future.

The success of the 'new Brent' will depend on several large price-makers in Brent, and the oil trading industry as a whole. It is unlikely that all the issues regarding the new contract are going to be ironed out in the next few weeks. In particular, the acceptance of only WTI Midland delivered to Rotterdam on Aframax vessels in the Brent assessment process is likely to limit the overall volume and impact of the US grade on the Brent benchmark. However, it is prudent to start with a limited number of cargoes, with clear loading dates and terminals before considering expanding the assessment process to WTI Midland delivered on larger vessels, lightered, and offered in Aframax parcels in Europe.[32]

If history of Brent is anything to go by[33], it may take several years and an occasional bumpy ride to see the eventual, smooth incorporation of the WTI Midland into the Brent contract.

In the long run, a successful inclusion of the US oil into the contract will likely lead to development and growth of liquid and transparent instruments for managing the risk of trading WTI Midland in the USGC. This may lead to an eventual shift in the US oil pricing from Cushing to the Gulf Coast,[34] and a better integration of the two key global benchmarks, Brent and WTI.

[32] Note that Ship-to-Ship (STS) BFOET barrels are already accepted in the Brent assessment process.

[33] See; Imsirovic A. ed. 'Brent Crude Oil: Genesis and Development of the World's Most Important Oil Benchmark', Palgrave, May 2023.

[34] This process may take a while, as long as the price discovery of most of the WTI volume remains in Cushing.