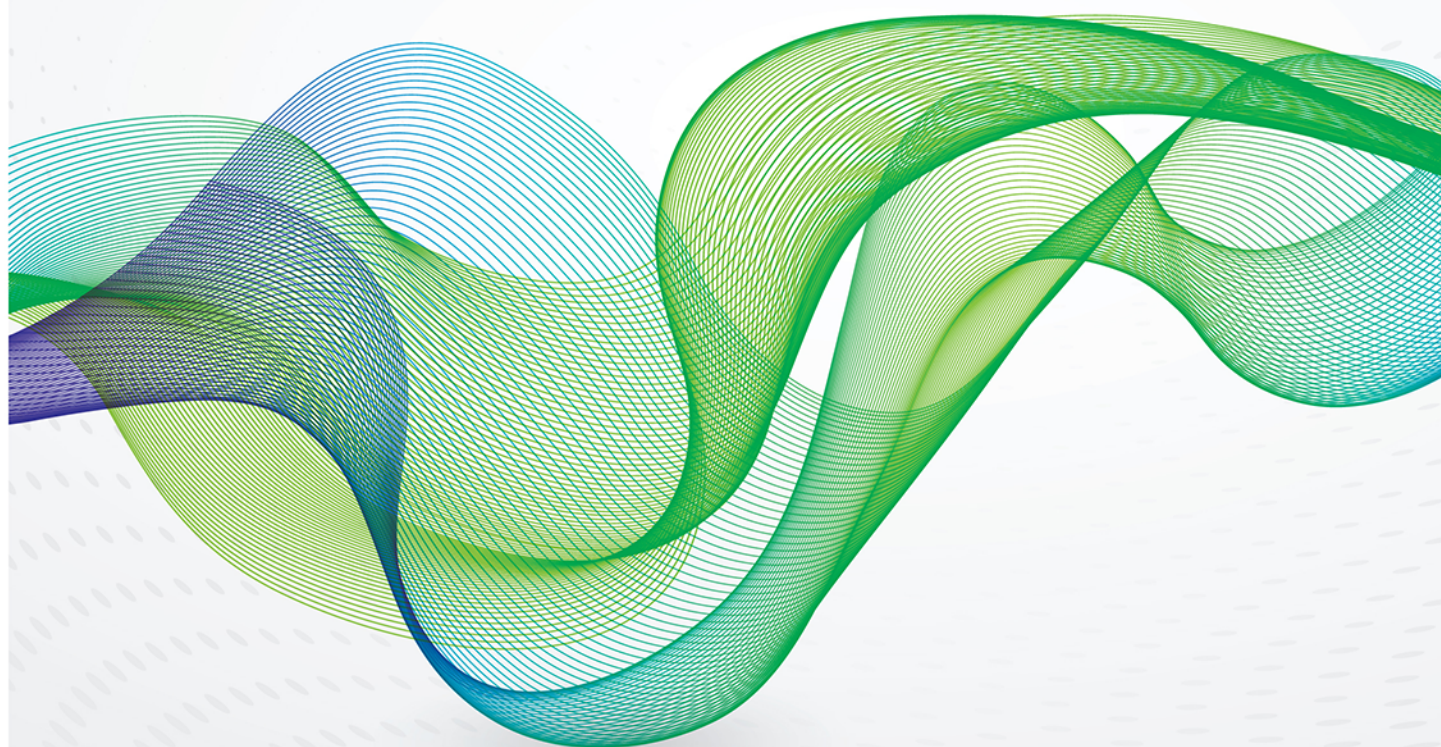


April 2021

The second split: Basrah Medium and the challenge of Iraqi crude quality



Introduction

In November 2020, ahead of annual term contract negotiations,¹ Iraq's State Oil Marketing Organisation (SOMO) announced it would further split its crude streams from two into three by launching a new export grade: Basrah Medium. The launch of Basrah Medium – 27.9° API (3% sulphur) – in January 2021 marks the second time Iraq has split its Basra crude stream, the first being in 2015, with the launch of Basra Heavy² (see **Table 1**).

Table 1: Current Specification vs New Grades

	Old (Pre-January 2021)		New (Post January 2021)		
Assay Spec [Nov 2020]	Basrah Light	Basrah Heavy	Basrah Light	Basrah Medium	Basrah Heavy
API (degree)	29.9	24	31.4	27.9	24
Sulphur (%)	2.93	4.05	2.74	3	4.05
Contracted Spec	Basrah Light	Basrah Heavy	Basrah Light	Basrah Medium	Basrah Heavy
API (degree)	34	26	33	29	24

Source: OIES

With Iraq being the only major Middle East producer to have API de-escalators to reflect the volatility of delivered cargoes, Iraq's new crude grade is designed to align the quality in specs between what clients expect to receive (contracted spec) versus what they actually receive (delivered cargoes). From 2015 to 2020, the mismatch in quality between marketed Basra Light and Heavy and delivered cargoes has proven costly to Iraq.

It has now been over three months since the launch of Basrah Medium. This Comment explores several issues:

- What were the key drivers behind the launch?
- How has the new grade been priced and has the market welcomed the move?
- In the short-term as OPEC+ cuts ease, which grades are likely to re-enter the market?
- In the longer-term, what other strategic factors are likely to bear on Iraqi crude quality?

The problem of Iraqi crude quality

Iraq has always had challenges with crude quality. As far back as 2012, when former Oil Minister Thami Ghadhban commissioned a major Integrated National Energy Strategy (INES) to review Iraq's oil and gas sector, a key recommendation was that "production increases will require Iraq to formulate a new crude segregation strategy."³

The problem of rising production from heavier oil reservoirs has been a pressing issue for Iraq since the late 2000s, when the average density of Iraqi crude started to increase. This was mainly due to declining production from Zubair reservoir (34-36° API, 1%S) and since the late 2000s, greater volumes being drawn from the poorer quality Mishrif reservoir crude (24-28° API, 4%S).⁴ Indeed, Iraq's (now old, pre-2020) Basrah Light contractual spec (34°) was historically based on crude production from the Zubair reservoir (34-36° API, 1%S).

¹ SOMO was also in the throes of launching its first 5-year prepayment tender, later abandoned in February 2021. Two points are worth noting on the tender: 1) Unwillingness by Iraq's Finance Ministry to provide a sovereign guarantee for future deliveries (e.g., in case of force majeure) was a primary deal-killer (unacceptable to Zhenhua), not rising flat prices; 2) key commodity trade banks were unaware of the tender before its launch (given with a 2-week deadline). The chaotic tender process did not bode well for SOMO's credibility among physical participants.

² Unlike Basra Medium, the launch of Basra Heavy was designed to reflect growing production from heavier fields (primarily Halfaya and West-Qurna 2).

³ Integrated National Energy Strategy (2012)

⁴ See Ahmed Mehdi, *Iraqi Oil: industry evolution and short-medium term prospects*, OIES Working Paper, 2018

As crude quality deteriorated from 2009 onward (particularly from Rumaila), Iraq's Oil Ministry agreed to introduce after much negotiation a new compensation formula with IOCs to account for the mismatch between contracted API volumes and actual API loadings. The introduction in 2010 of a \$0.40 per API degree compensation mechanism replaced what was a \$0.10 per API mechanism introduced in 2004.

From 2012 onward, as Iraqi oil production ramped up, additional production from heavier crude streams (particularly West Qurna 2 and Halfaya) was not accompanied by the building of segregated crude storage facilities or settling tanks to allow for improved blending and crude stability. This led to volatility in the API of Basrah Light. In April 2014, for example, the API fluctuated between 28.1° and 32.4°. ⁵ This situation was exacerbated by the increased blending of fuel oil into the crude stream.

The first split: Basra Heavy

This eventually prompted the creation of a new grade—Basrah Heavy—in 2015, which was produced mainly from West Qurna 2 (WQ-2), Halfaya, Gharraf and Tuba (see Table 2).

Table 2: Basrah Heavy Crude Composition

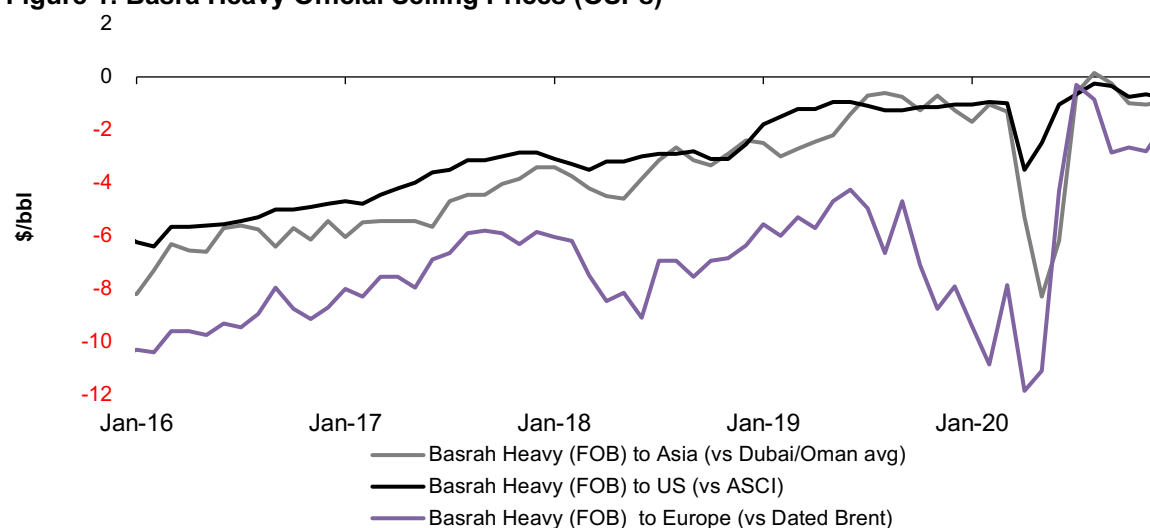
Constituent Grade	°API
West Qurna-2	22.8
Halfaya	23
Gharraf	25.9
Tuba	27.2

Source: OIES

The launch of Basra Heavy initially faced resistance from term-lifters due to the higher-than-expected (Official Selling Prices) OSPs. However, after industry consultation, SOMO adjusted the OSP and pushed the grade onto the market with the support of several IOCs, particularly BP.

Growth in Iraq's production and exports from 2015 onward was supported by a basic strategy, namely to discount Asia-bound OSPs relative to other grades of similar quality in order to win market share (see: Figure 1 and Figure 2). This was a bonanza for IOC equity lifters who repriced the discounted grade on the market. Indeed, 2015–16 saw regular trades for Basra Heavy at healthy premiums to the OSP at times at +\$3/b to the OSP.

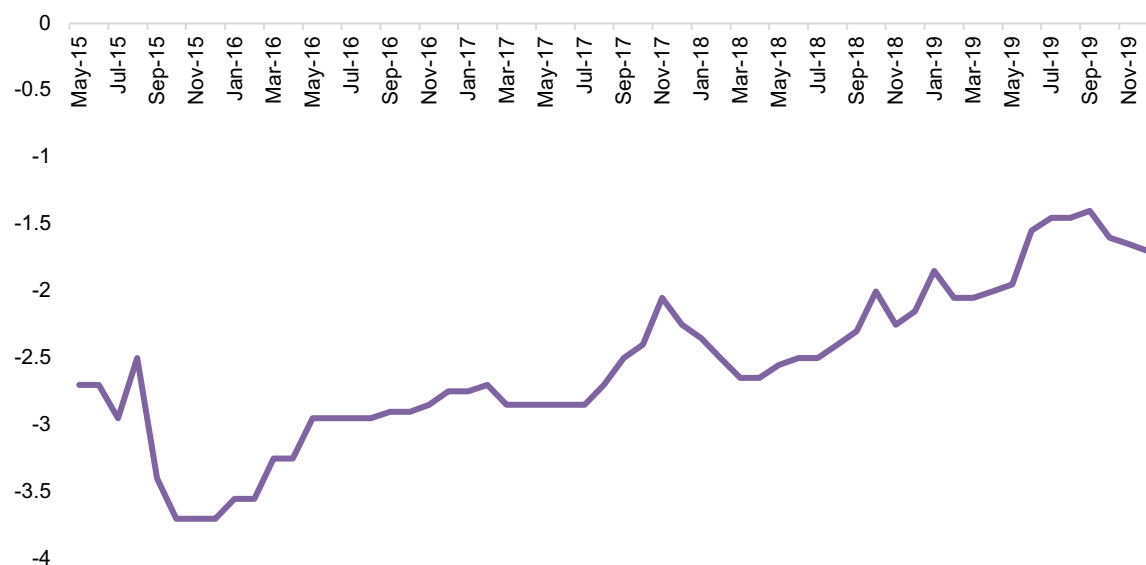
Figure 1: Basra Heavy Official Selling Prices (OSP)



Source: OIES

⁵ Ahmed Mehdi, Iraqi Oil: industry evolution and short-medium term prospects, OIES Working Paper, 2018

Figure 2: Basra Heavy (Iraq) v Arab Heavy (Saudi) - Asia, \$/b



Source: OIES

The second split: Basrah Medium

While the introduction of Basra Heavy in 2015 reflected new crude production (Iraq was one of the largest contributors to global oil supply in 2015–6), the introduction in January 2021 of Basra Medium was not launched to reflect any new crude supply, but rather to address the following:

- **Grade stability:** between 2015 and 2020, Basra Light was marketed as 34°API and Basra Heavy as 26°API but deliveries always fell short of these specs. Delivered loading data for 2020, for example, shows the mismatch between contracted specifications and delivered cargoes (see Table 3).

Table 3: 2020 Basra Light and Basra Heavy range of delivered cargoes vs. contracted Specs

Range of Delivered	BL	BH
Cargos API	Basra Light (vs 34)	Basra Heavy (vs 26)
Jan-20	28.3 - 30.5	23.0 - 23.7
Feb-20	28.8 - 30.2	23.0 - 23.5
Mar-20	28.2 - 31.0	23.1 - 24.7
Apr-20	28.2 - 30.6	23.1 - 23.6
May-20	27.5 - 32.0	22.7 - 23.5
Jun-20	27.5 - 31.4	22.7 - 23.3
Jul-20	27.7 - 31.4	23.0 - 24.0
Aug-20	27.4 - 32.7	23.2 - 24.2
Sep-20	27.3 - 32.2	23.0 - 23.7
Oct-20	27.7 - 32.5	23.0 - 24.2
Nov-20	27.8 - 32.3	23.2 - 24.3
Dec-20	28 - 32.4	22.9 - 24

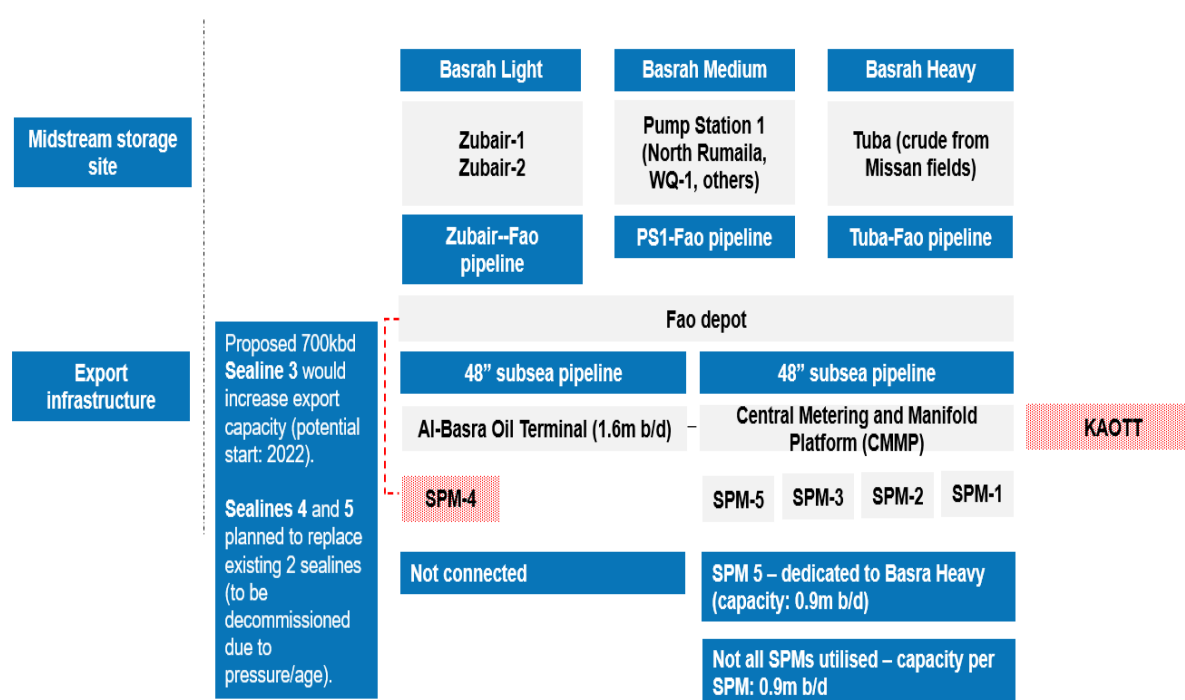
Source: OIES

- **API compensation:** The above mismatch between contracted and delivered cargoes had serious cost implications for Iraq. Basrah Light buyers have generally been compensated \$0.40

for each whole API degree below contracted specs (and \$0.60/bbl for every °API below Basrah Heavy's contracted 26°API). With an average API of 29 degrees for Basrah Light deliveries in 2020, SOMO, in practice, had to compensate buyers by roughly \$2/bbl. With average sales of 2.2 mb/d of Basrah Light in 2020, this translated to a total annual cost of \$1.6 billion – a major cost component in Iraq's oil sales balance sheet, particularly during the 2020 oil market turmoil when Iraq's economy was under significant economic pressure.⁶ The \$0.40/b per API degree was not only overly generous (leading to high payouts) but also made Basrah an attractive set of grades to trade in the spot market. As a result, a healthy and liquid secondary market for Basra Light took root, with attempts by SOMO to restrict resales proving futile.⁷

- **Infrastructural upgrades:** From 2015 to 2020, a number of key infrastructural upgrades have taken place in Iraq's midstream and export infrastructure, helping pave the way for an additional grade launch. The completion of the Tuba-Fao pipeline built by Lukoil allows heavy crude stored at Tuba to be transported directly to Fao. Likewise, the completion of the PS1-Fao pipeline (in 2016) helps ease midstream bottlenecks and allows a dedicated crude grade to be stored at the storage site (currently with 10 tanks each with 82,000 m³ capacity). The planned completion of the Sealine-3 subsea pipeline will also add an additional 700,000 b/d export capacity (connecting the pipeline to SPM-4). This is expected to be completed by end-2021/early 2022.⁸

Figure 3: Overview of Iraq midstream and export infrastructure



Source: OIES

- **Better reflect upstream realities:** throughout 2019–20, it was becoming increasingly clear that Iraq's upstream production was already reflecting 3 distinct groups of APIs (see **Figures 4 and 5**) but marketing just two (Basra Heavy and Light).

⁶ See: Ahmed Mehdi and Ali Saffar, *Compounding Crises: Iraq's Oil and Energy Economy*, OIES, July 2020

⁷ Iraq presses customers for data in clamp down on Basra oil sales, Reuters, October 2018

⁸ Final stages will be completed by lead contractor, Leighton Offshore. Thanks to Mahmoud Abbas, DG SCOP.

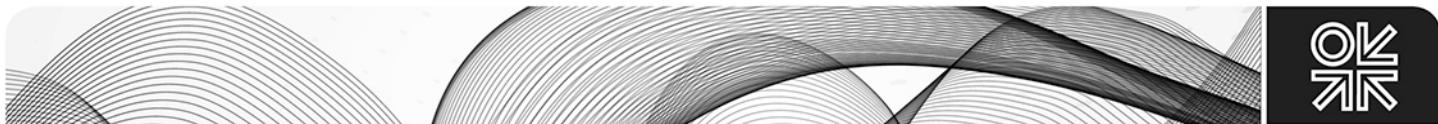
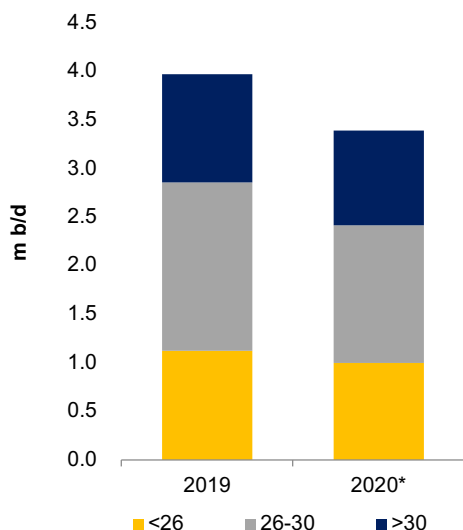
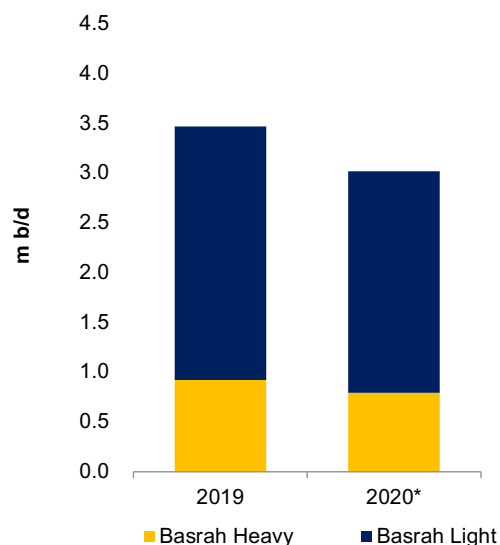


Figure 4: Southern Iraq – production by API



*Jan-Oct 2020
Source: OIES, FGE

Figure 5: Southern Iraq – Exports by grade



- Critically, SOMO's use of \$0.40/b per API (gravity escalator) is out-of-sync when compared to both spot market valuations and light-heavy differentials. **Figures 6 and 7**, for example, takes Saudi grades as a reference, showing that the value of an API degree should be far lower (more in range of \$0.05-0.15 rather than \$0.40 per API degree).

Figure 6: Arab Light and Arab Medium OSPs and Differential per API degree

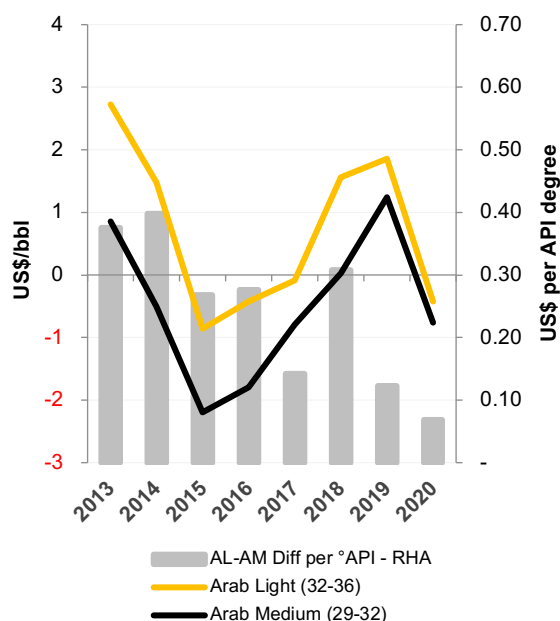
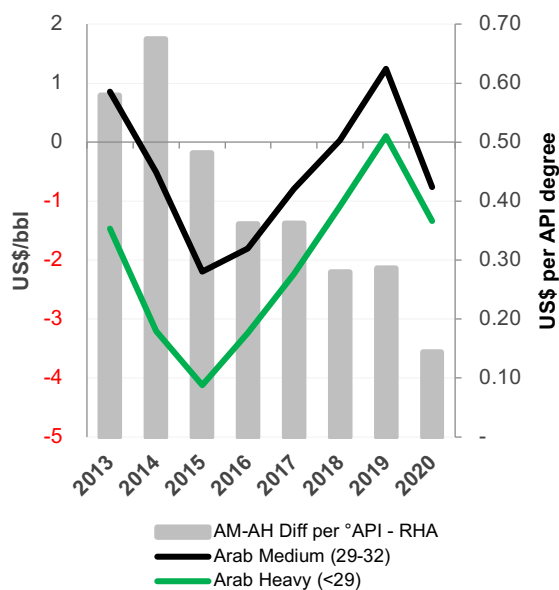


Figure 7: Arab Medium and Arab Heavy OSPs and Differential per API degree

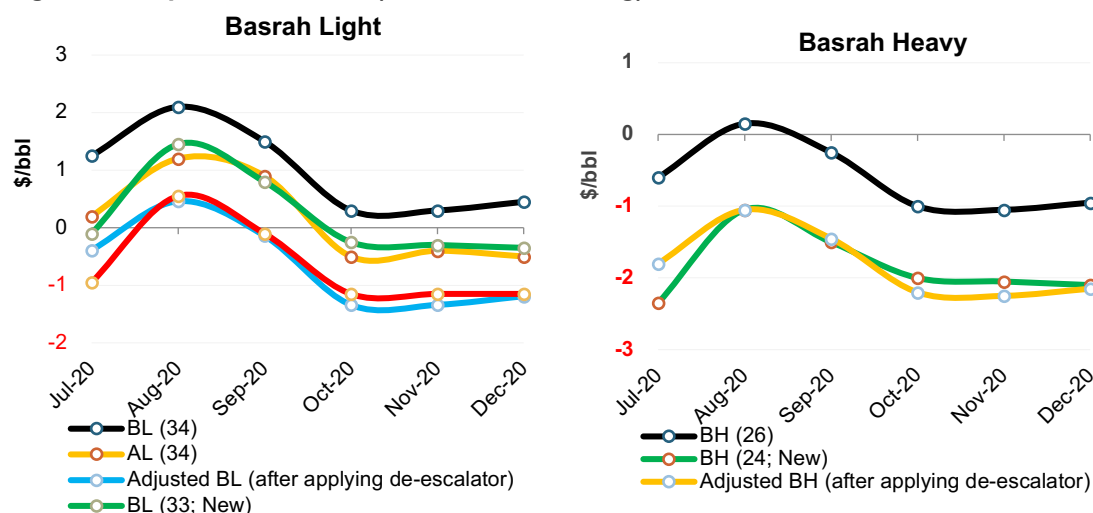


Source: OIES

Basra Medium pricing

Prior to the launch of the new grade, SOMO released a list of alternative OSPs (for H2 2020) to help clients understand how OSPs would be set, taking into account de-escalator and spec alignment. Figure 8 shows the impact of the pricing shift by comparing actual OSPs for 2020 with adjusted OSPs after applying de-escalators.

Figure 8: Iraqi Grades' OSPs (vs Dubai/Oman Avg)



Source: OIES

From a pricing perspective then, it is clear that SOMO sought to achieve the following objectives with the spec shift:

- Price Basra Heavy OSP in line with the adjusted Basrah Heavy price after applying \$0.60/API compensation for a 2°API deviation from the spec;
- Price Basra Medium in line with adjusted Basrah Light prices after applying \$0.40/API compensation for 5°API deviation; and
- Price New Basrah Light price in line with Arab Light, assuming deliveries of the new Basrah Light would have an API close to its contracted 33°. The new pricing for Basrah Light would also capture the losses made in compensation payments.

The launch of Basrah Medium has also meant a reshuffle in the grades Iraq will compete with in the market (see **Table 4**).

Table 4: Iraqi Crude Grades' Competing Grades

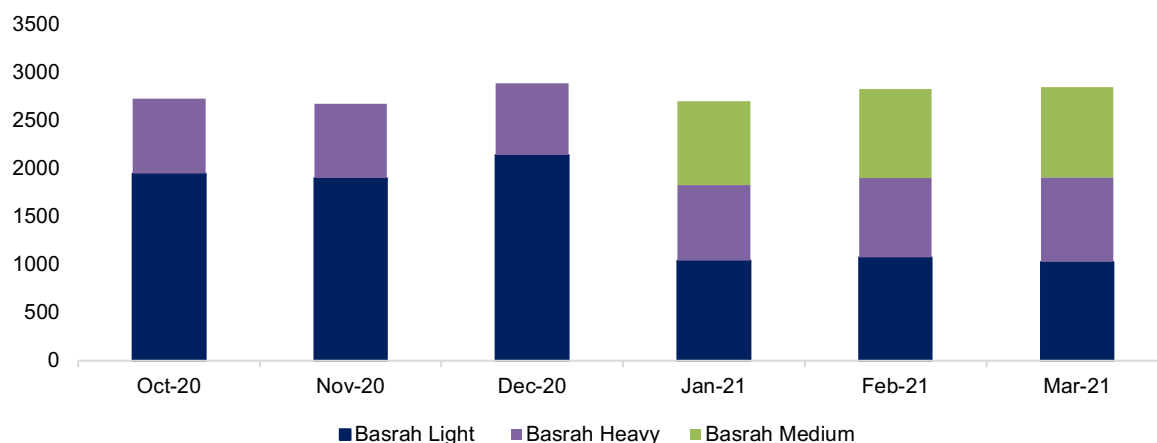
Crude Grade	API	Sulfur (%)
Upper Zakum	33.9	1.8
Oman	33.5	1.4
Basrah Light	33.0	2.7
Arab Light	32.9	2.0
Arab Medium	30.7	2.5
Kuwait Export	30.5	2.5
Al Shaheen	29.0	2.3
Basrah Medium	29.0	3.0
Arab Heavy	26.9	3.1
Basrah Heavy	24.0	4.1

Source: OIES

Market reception

So far, Basra Medium exports have averaged ~900,000 b/d (see **Figure 9**) but the market should expect to see greater availability of both Basrah Medium and Heavy later this year, as OPEC+ cuts ease for Iraq. Critically, Iraq's OPEC+ cuts have come from both state-operated fields and IOC-operated fields.

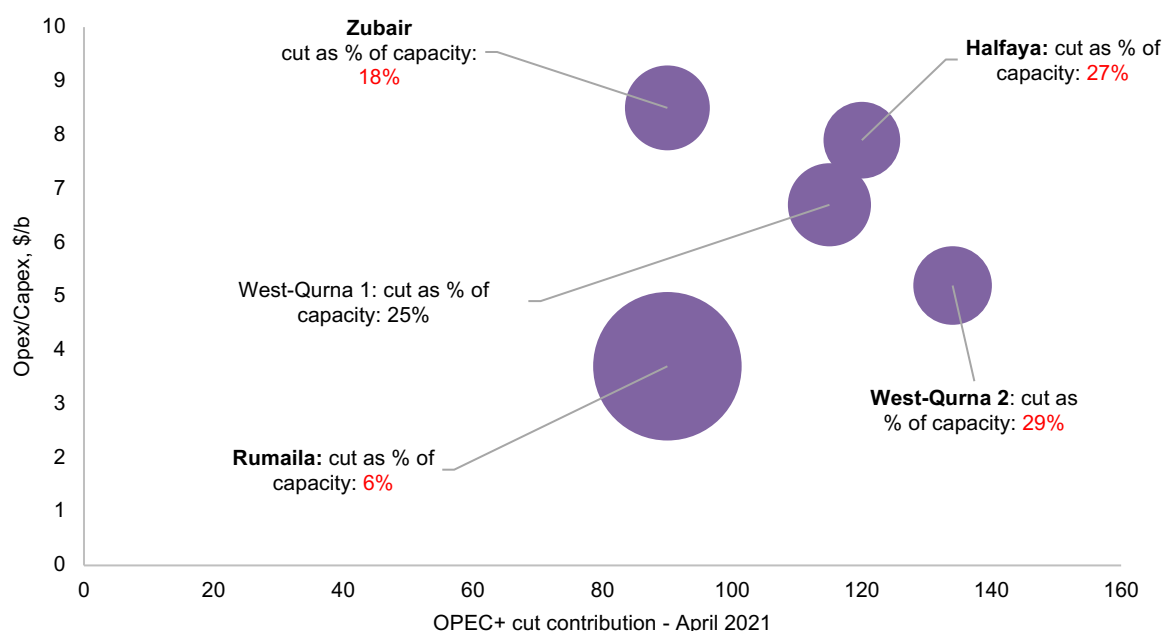
Figure 9: Iraq crude exports by grade (kbd)



Source: OIES, KPLER

Decision-making on which fields to cut from IOC-operated fields is based on both cost and quality (see **Figure 10**). As OPEC+ cuts ease, it is expected that the first fields to be released from cuts will be those with lowest-cost and highest-quality predominant contributors to Basrah Medium volume⁹.

Figure 10: Iraq OPEC+ cuts by IOC field (opex/capex)



*bubble denotes production capacity of field

Source: OIES

⁹ Rumaila and WQ-1 are LR1 fields where associated gas is captured by Basrah Gas Company (BGC) – an important qualification as Iraq approaches peak summer demand.

With greater availability expected later this year, it is worth asking: has the grade been popular so far? Several points are worth noting:

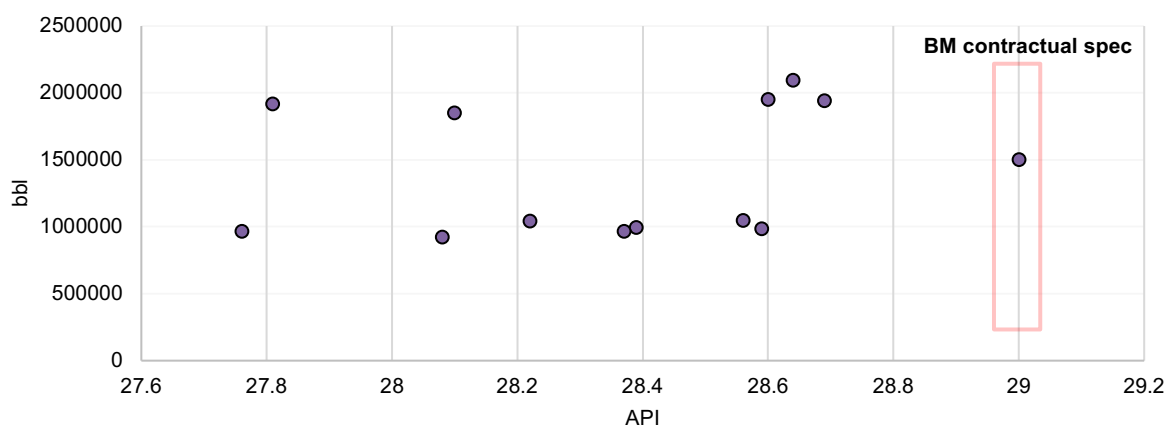
- **Tighter API range:** data obtained from port agents show the average API of delivered cargoes for each grade fairly close to contracted API – helping reduce compensation payments owed by Iraq to lifters (see **Table 5** and **Figure 11**).

Table 5: 2020 Basra Light and Basra Heavy range of delivered cargoes vs. contracted Specifications

Range of delivered Cargoes (API)	Basra Light (vs. 33)	Basra Medium (vs 29)	Basra Heavy (vs 24)
Jan 21	30.9 - 32.7	27.8 – 28.7	23.1 – 24.1
Feb 21	31.1 – 32.2	27.8 – 28.6	23.3 - 24

Source: OIES

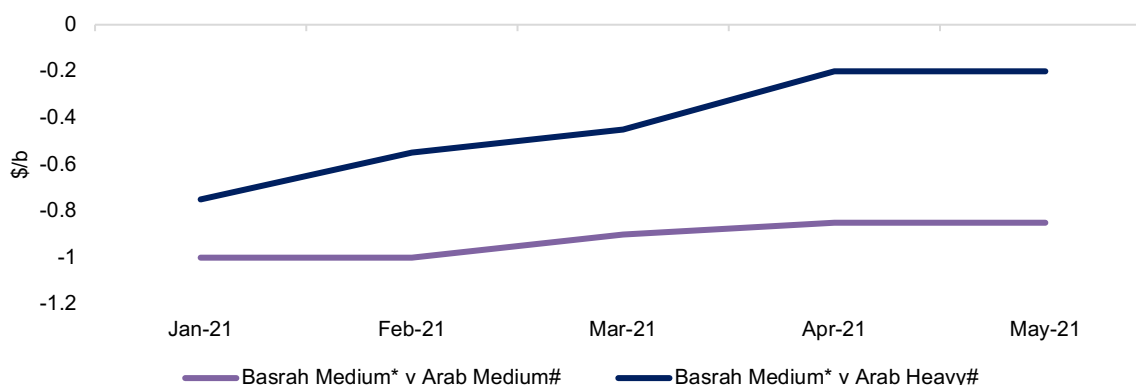
Figure 11: Basra Medium January-loading API



Source: OIES, OilX

- **Pricing:** Since the grade's launch, Basrah Medium has been priced at a significant discount to other medium-heavy grades in the Middle East. Crude loading for February, for example, saw Iraq price Basrah Medium at a \$1/b discount to Saudi Aramco's Arab Medium. Basrah Medium has also been consistently priced at a discount to Saudi's Arab Heavy since its launch (see **Figure 12**).

Figure 12: Basrah Medium OSP v rival Saudi grades (Asia)



*vs average of Platts Oman/Dubai #vs average of DME Oman/Platts Dubai

Source: OIES

- SOMO's competitive pricing for Basrah Medium has supported spot valuations for the grade in the physical market. The February trading cycle, for example, saw premiums of \$0.50-0.70/b above OSPs for the grade. More recently, April saw SOMO sell a cargo of Basrah Medium via tender to Lukoil \$0.40/b above OSP. Beyond competitive pricing, another reason for the grade's popularity in recent trading cycles include the impact of Saudi's 1m b/d voluntary cut.

Other potential explanations for Basrah Medium's discount can be explained by higher-than-acceptable salt quality of the grade (see **Table 6**), which suggest that while API ranges have improved, quality issues remain a concern.

Table 6: Quality parameters of Iraqi crude grades

	Old (Pre-January 2021)		New (Post January 2021)		
Assay Spec [Nov 2020]	Basrah Light	Basrah Heavy	Basrah Light	Basrah Medium	Basrah Heavy
Sulphur (%)	2.93	4.05	2.74	3	4.05
Water content (ppm)			0.07	0.86	0.15
Salt content (1b/1000 bbl)			36.7	291.1	34.6

Source: OIES

In terms of export destinations, China has accounted for approximately 50% of Basrah Medium purchases since the launch (see **Figure 11**), with the biggest Chinese buyers being Sinopec and Sinochem (see **Figure 12**).

Figure 11: Basrah Medium exports by destination (kbd)

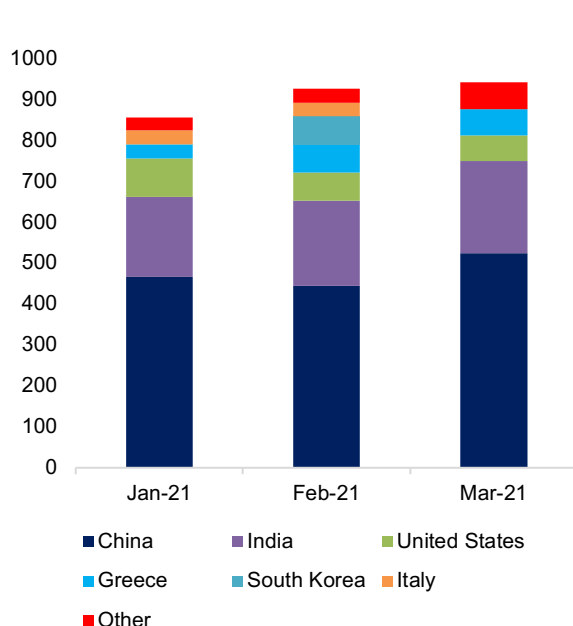
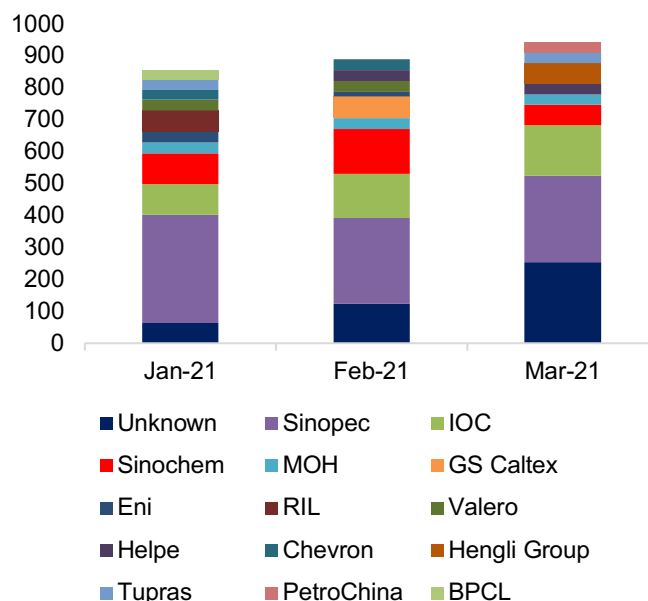


Figure 12: Basrah Medium exports by buyer (kbd)



Source: OIES, KPLER

While Basrah Medium has been discounted heavily, the opposite appears to be the case for the new Basrah Light. Since January 2021, Iraq's new Basrah Light grade has been trading in steeply negative territory, with a number of trades clearing at negative \$0.70-\$1/b. This suggests that SOMO is (over)pricing Basrah Light based on its paper value. While this means Iraq will make more money from Basrah Light sales, feedback from equity lifters surveyed by the author has been negative on pricing since January.

Table 7: Basrah Light spot deals

Date Reported	First	Activity	Second	Pricing Basis	Price	Destination
2021-01-19	Indian Refiner	Buys	SOMO	OSP	-\$0.05	India
2021-01-19	Petronas	Sells	Aramco	OSP	-	India
2021-02-17	Oil major	Offers	NA	OSP	-\$0.05	Unknown
2021-02-23	CNOOC	Buys	Unknown	OSP	-\$0.70	China
2021-02-24	Chinese Refiner	Buys	Unknown	OSP	-\$1.00	China
2021-03-05	KNOC	Sells	Unipet	OSP	-	China

Source: OIES, General Index

Conclusions

We can make the following observations on the launch of Basrah Medium and other strategic implications for Iraq going forward:

- On a positive note, Iraq will now pay less compensation to lifters as there is now greater alignment between contracted and delivered specs.
- Despite this, Iraq's ongoing use of an overpriced de-escalator is not justified by market realities.
- With Iraq having now captured more of the tradeable value of its crude via lower compensation payouts, SOMO will have a more delicate balancing act going forward, specifically ensuring equity lifters remain satisfied with their grade allocations and margins. For years, equity lifters were satisfied with Iraqi pricing due to the overly generous compensation. With that having diminished, Iraq will need to ensure OSP flat price remains attractive as this bares consequences for liftings, and, ultimately investment rates in Iraq's upstream which already suffer from an onerous fiscal regime. IOC margins in Iraq are already tight (with ExxonMobil's planned divestment from West-Qurna 1 being the latest development) and equity cargoes have been a central pillar of Iraq's attractiveness.
- Iraq will also need to increase infrastructural flexibility. Iraq's production profile is transitioning to a more complex mix of heavier Mishrif crude (increasing Basra Heavy supply) and lighter Yamama (helping Iraq increase its share of light crude exports). Quality concerns will continue to dominate refiner thinking until: a) operators address issues such as increased water handling (water-cut) and other factors impacting quality (e.g. metals and salt content). Rumaila Operating Organisation (ROO), for example, has already started addressing these issues by installing Dehydrators and Desalters and new tanks to help address quality concerns.¹⁰ While this is a positive step, state investment in storage upgrades, pipeline expansions and the use of technologies (e.g. SCADA systems) to monitor crude quality will be the necessary next step.

In this light, Iraq's latest crude export launch may represent more levelling the playing field in capturing value, rather than a quick fix to Iraq's ongoing crude quality challenge.

¹⁰ Thanks to Zaid El-Yasseri, BP Iraq