

24 March 2020

Energy | Regional Oil & Gas

## Regional Oil & Gas

## Overweight (Maintained)

### Someone's Blinking

Stocks Covered 21  
 Ratings (Buy/Neutral/Sell): 13 / 7 / 1  
 Last 12m Earnings Revision Trend: Negative

- **Maintain OVERWEIGHT; Top Picks include PTT, Keppel and Yinson.** At current crude oil prices, all producers are suffering. US shale oil producers are scrambling for the US Government to intervene; the Texas regulator is looking at curtailing production, and has started a dialogue with OPEC. Ultimately, Saudi Arabia and Russia will have to see whether natural rebalancing or a truce is best for their respective countries. Our crude oil price is now USD40.00/bbl for 2020F and USD55/bbl for 2021F-2022F.

Top Picks	Target Price
PTT (PTT TB) – BUY	THB32.80
Keppel Corp (KEP SP) – BUY	SGD7.60
Dialog (DLG MK) – BUY	MYR3.66

- **Breakeven price for producers.** We take a look at crude oil price breakeven for OPEC, Russia, oil majors and shale oil producers. Almost all the players are suffering at USD30.00/bbl, some more than others. For the two countries that are in this price war, Russia's fiscal breakeven is USD42.00/bbl, while Saudi Arabia's fiscal breakeven is USD84.00/bbl. For US shale oil producers, being the possible target of this price war, the average breakeven is USD46.00/bbl.

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- **So, who's blinking?** US oil companies are reeling in this crude oil bear market. They have requested for help from the US Government. The most common request has been to ramp up diplomatic intervention between Saudi Arabia and Russia and purchase its reserves as well as implement anti-dumping and/or countervailing-duty investigations of Saudi Arabia, Russia and potentially, the other countries for selling so much crude oil at prices below market value. We believe the Texas regulator is talking about steps to mandate production cuts in the state (that produces 5.1mbpd of shale oil), as requested by shale oil producers. The idea is a big step forward that could be part of a broader compromise between the US, Saudi Arabia and Russia. The Texas commissioner has already began a dialogue with OPEC. The tide is turning rapidly against US shale oil producers.

#### Self-induced super bear market



Source: marketwatch.com

- **Ultimately, we believe both Russia and Saudi Arabia will have to consider** what is best for their respective countries and the oil market over the longer term. If coordinating with the US provides a long-term solution to the crude oil supply balancing and more stable prices, then both countries will most likely take that route. However, if they view in favour of natural rebalancing (with the exit of shale oil producers), then we may need to wait for the rebalancing to happen. We are looking an improved market situation by 2H20.

- **Our 2020F crude oil price forecast is revised to USD40.00/bbl** from USD47.00/bbl, after taking into account Saudi Arabia's production plans as well as the uncontrollable and uncontainable COVID-19 outbreak. For 2021-2022, our forecasts are pared down to USD55.00/bbl from USD60.00/bbl as we expect a slower recovery from 2020F. Our worst case and best case put crude oil prices at USD28.30/bbl and USD46.30/bbl for 2020F. The major swing will be in 2Q20F when a flood of crude oil enters the market whilst demand is expected to contract significantly. 4Q20F should see another swing, where US shale oil production should start to decline. Should there be a compromise between Russia, Saudi Arabia and the US by June, crude oil price could rebound to the USD50-60.00/bbl range. We are not expecting that to happen at the moment.

- **All stocks under our coverage should be under pressure**, due to the uncertainty of both the impact of COVID-19 and the oil market being in disarray. We are NEUTRAL on the Thai oil & gas sector, while our ratings on the Singapore and Malaysia sectors are still OVERWEIGHT. Top Picks are PTT, Keppel, Dialog, and Yinson.

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Company	Rating	TP	% Upside (Downside)	P/E (x) Dec-20F	P/BV (x) Dec-20F	Yield (%) Dec-20F
PTTEP	BUY	THB91.00	63.96	6.46	0.58	6.18
PTTGC	BUY	THB33.00	33.06	10.21	0.39	4.35
PTT	BUY	THB32.80	20.37	9.87	0.89	4.04
Dialog	BUY	MYR3.66	27.97	31.43	4.21	1.43
Yinson	BUY	MYR7.60	65.94	12.90	1.44	0.87
Keppel Corp	BUY	SGD7.60	51.70	10.22	0.78	4.99

Source: Bloomberg, RHB

## Let The Chips Fall Where They May

The collapse of the OPEC+ meeting on 6 Mar 2020 sent the oil markets in disarray, with crude oil prices freefalling. However, the change in strategy should be taken into context of the environment that we are currently in.

When the OPEC+ production cut agreement was first conceived in 2016, global economic growth was 3.4%, and global oil demand was 96.7mbpd, with additional demand at 1.1mbpd. The environment has changed dramatically this year with the COVID-19 outbreak. The outbreak comes at a time when the global economy remaining fragile and crude oil demand weakening. Global oil demand was already weak in 2019 at 99.7mbpd, with additional demand at 0.8mbpd (weakest growth since 2012).

The fear of travel, social distancing, and countries imposing lockdown on its population as a result of the COVID-19 outbreak will have an unprecedented crude oil demand destruction. Demand contraction for this year remains highly uncertain, with estimates still varying wildly from 200kbpd to 8mbpd.

As such, the reason to walk out on a deal is understandable. Cutting crude oil production by an extra 1.5mbpd, as suggested by the OPEC at the last meeting, may not have supported crude oil prices in any significant way this year – as long as COVID-19 continues to spread globally.

So, better to let the chips fall where they may.

**Figure 1: Who will blink first?**

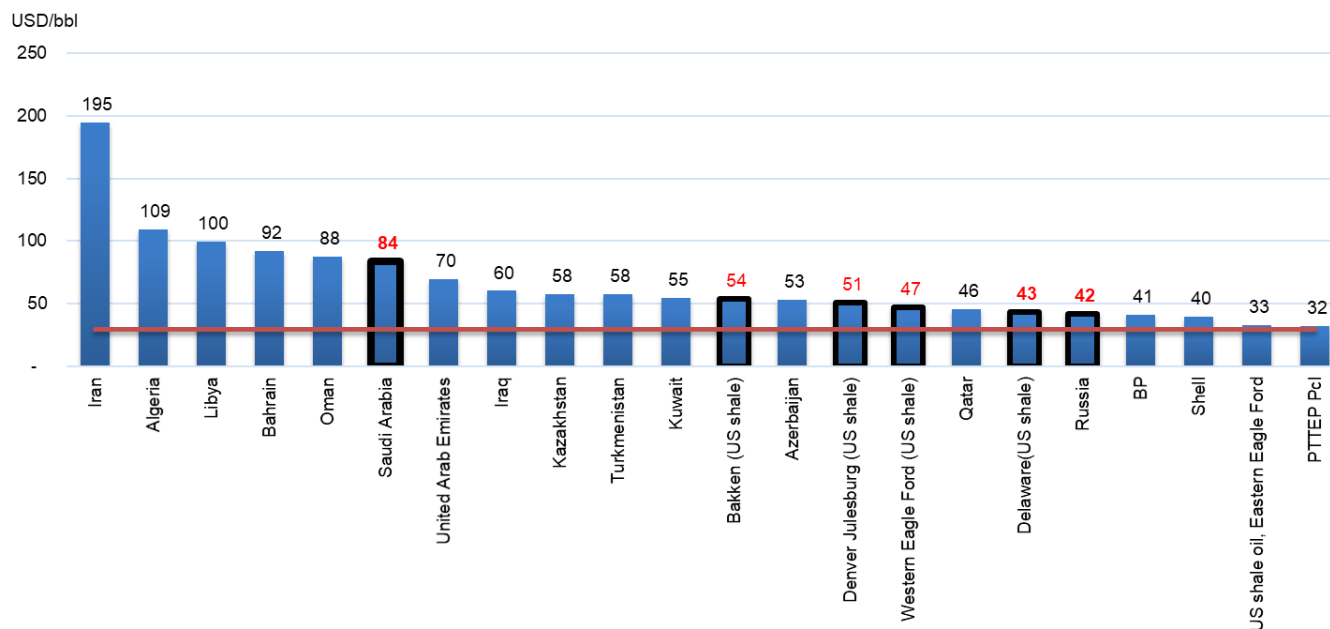


*Saudi Crown Prince Mohammed bin Salman (left), and Russian President Vladimir Putin at the G-20 summit in Osaka, Japan June 28, 2019*  
Source: [Foreignpolicy.com](https://www.foreignpolicy.com)

## Breakeven Price Point

We take a look at crude oil price breakeven for Middle East, North Africa, Russia, US shale formations and BP, Shell, as well as PTTEP's breakeven price point. For individual countries, this is IMF's fiscal crude oil price breakeven/media reporting; for US shale formations and individual companies, this is the breakeven costs as provided by Bloomberg/individual companies.

**Figure 2: Country/formation/company crude oil price breakeven**



Source: Bloomberg, IMF, Company data, RHB

**From the above numbers, almost all the players are suffering at USD30.00 per bbl.**

Under worst case scenario that if the crude oil price stays at USD30.00 per bbl or below for a prolonged period (>12 or 24 months), it is possible that there will be only one or two producers left standing ie Saudi Arabia and Russia to fight this war. Both of these countries can produce c.24mbpd at the moment, the other 76mbpd needed for global consumption that comes from higher cost producers will most likely shutdown their fields.

**For the two countries that are in this price war,** Russia's fiscal breakeven is USD42.00 per bbl, while Saudi Arabia's fiscal breakeven is USD84.00 per bbl. US shale oil producers, being the possible target of the price war, the average breakeven is USD46.00 per bbl.

Within the US shale formations, the breakeven costs vary quite significantly:

- Bakken formation's breakeven cost is USD54.00 per bbl, total production is c.1.4mbpd
- Denver Julesburg (Niobrara) is USD51.00 per bbl, total production is 814kbpd
- Western Eagle Ford is USD47.00 per bbl
- Delaware/Midland (Permian basin) is USD43.00 per bbl – total production is 5.1mbpd
- Eastern Eagle Ford is USD33.00 per bbl

Note that total Eagle Ford formation is 1.4mbpd.

We have highlighted the vulnerabilities of US shale oil producers in our 2020 Thematic/Strategy report, [The Fossil Fuel Addiction](#) published on 27 Nov last year. Their vulnerabilities are that equity and debt funding have dried up, with capital discipline being the focus for now. The other problems are the high well declining rates and high debt position of many of these companies. Finally, the most prolific areas have already been drilled. We believe that they were vulnerable even before crude oil prices collapsed. We believe this crude oil price war will make them fold much faster.

### Saudi Arabia vs Russia

**Saudi Arabia has foreign currency reserves of USD502bn**, with fiscal breakeven price of crude oil of USD84.00 per bbl. It may need to borrow to fill the gap between its expenses and revenue. With its low debt to GDP of 25%, it should have sufficient room to borrow. However, prolonged low prices will strain its budget and constrain government spending on projects that are meant to diversify the country's economy away from oil. It needs oil above USD60.00 per bbl to sustain its ambitious reform program. Saudi Arabia's increased production of 12mbpd to offset lower prices is not expected to be sustainable beyond June, according to Saudi officials.

**Russia has total foreign reserves of USD570bn**, with fiscal price break even of USD42.00 per bbl. It has USD150bn national wealth fund (part of the foreign reserves), which is derived from surplus oil and gas revenue since 2017. It can therefore spend USD1.7bn per month for the next decade if crude oil prices stay at the USD25-30.00/bbl level. Russia's energy minister Alexander Novak said that the country's oil sector had the resources and financial reserves to remain competitive at any predicted price range and keep its market share.

**Russia will be under pressure to return to the negotiating table** if low oil prices persist, according to the *Financial Times*, President Vladimir Putin will be unwilling to scale back budget spending, reluctant to run a bid budget deficit or reduce financial reserves to a low level. If crude oil prices are still trading at the USD20-30.00 per barrel range in the summer, then Russia may be under pressure to return to the negotiating table. Russia can increase production by 100kbpd to a maximum of 300kbpd in the immediate future. This seems immaterial compared to the losses caused by the lower oil prices.

**Russia remains accommodating, in our view.** Mr Novak commented that he is not ruling out further cooperation with OPEC, adding that the next scheduled meeting is in May or June. "The doors are not closed," he was quoted.

Some excerpts from Russia's industry players that are interesting (source: S&P Global Platts):

#### Kremlin's spokesman, Dmitry Peskov:

"There is no price war between Russia and Saudi Arabia. There is a very unfavourable price environment for many countries, but we have good relations with Saudi Arabia, we are partners and we do not think anyone should intervene in this relationship," Peskov said.

Russia would like to see higher oil prices, and is always ready to talk said Peskov. Saudi Arabia have begun a "war of attrition" and that even Russian producers that supported leaving the deal did not imagine crude oil prices would fall below USD25.00 per bbl.

#### Rosneft CEO, Igor Sechin:

Although OPEC+ has lost its influence, it is important for participants to continue the dialogue, Mr. Sechin said. "These are the largest oil producers, of course, we need to cooperate, exchange information. Well, strive to obtain mutual benefits by carrying out this work. By the end of the year (2020), I assume that it will grow and return to a level of USD60/bbl. If these processes continue, shale oil will exit the market".

He pointed to the coronavirus factor, of course, has had an impact. The reduction of transport, flight cancellations, general isolation of entire regions of the world, this reduces consumption. And there is an oversupply of production. "From my point of view, coronavirus is really a serious problem that must be taken into account when balancing the market. But there is no need to dramatise these things. China, as we see, has already practically coped with the development of the epidemic," he said.

Rosneft, an integrated oil & gas company, has been affected by sanctions introduced against it and the Russia oil sector since 2014. Rosneft has most recently been affected by sanctions against Venezuela, with two trading subsidiaries Rosneft Trading and TNK Trading sanctioned for handling Venezuela crude. Igor Sechin is considered a close ally of President Putin and has long been against the production cuts that OPEC+ has been implementing.



## So, Who's Blinking?

**US oil companies are reeling under this bear market** and they have requested the help of the US Government. The most common request has been to ramp up diplomatic intervention between Saudi Arabia and Russia, along with the purchase for reserves. Other requests include implementing anti-dumping and/or countervailing-duty investigations of Saudi Arabia, Russia and potentially other countries for selling so much crude oil at prices below market value, according to the WSJ. An interesting idea at the moment is the curtailment of production in Texas.

**Mandating production cuts.** The Texas Railroad Commission, which regulates the oil & gas industry in Texas, is talking about steps of mandating production cuts in the state for the first time since 1973. It has yet to receive the support of the majority of the three-person commission. The commission has the ability to require operators to prorate the production of their wells below their production capacity. Such measures have not been taken since the 1970s as the US has been short on crude oil until recently.

**A broader compromise between the US, Russia and Saudi Arabia.** The idea is that such a big step would only move forward if it is part of a broader compromise between the US, Saudi Arabia, and Russia to all agree to scale back their volumes if the US joins in the effort, according to S&P Global Platts. Texas Railroad Commissioner Ryan Sitton said on Friday, he spoke with OPEC secretary general Mohammed Sanusi Barkindo, who he had said that he is in favour of a broader international deal. Its chairman Wayne Christian on Friday said he is open to all ideas, but has strong reservations about the potential plan, opting to stand with free enterprise.

Mr Sitton has been pushing the idea of coordinating a production cut with Saudi Arabia and discussed it with Mr Mohammed Sanusi. In theory, Texas could cut production by 10% and if Saudi Arabia and Russia do the same, then it would return the market to pre-crisis levels.

**Shale oil producers are behind this curtailment of production:**

**Parsley Energy CEO Matt Gallagher** said: "In order to stabilise the oil markets, we need a coordinated approach. The Texas Railroad Commission limiting state crude output is one part of the solution. Companies reducing production on their own is another."

**Mr. Sheffield, chairman and CEO of Pioneer Natural Resources**, said he was seeking cuts of c. 500kbpd of oil through year-end, with each operator cutting c.10% of their output, with the exemption of small producers.

**Bob McNally, president of Rapidan Energy Group:** Whether or not the commission seriously considers any production cut will depend on how long prices remain low. "It becomes more likely the lower oil prices go."

**It remains unclear whether the regulator will ultimately act**, but it is examining what would be required in such an event. The Texas Railroad Commission oversees the production in the Permian Basin, which straddles Texas and New Mexico. It is the most productive basin in the US, with production of 5.1mbpd.

**Figure 3: "We are hoping the Trump administration could use tools in negotiations with the Saudis and also the Russians. What I am trying to do is to prevent the oil & gas sector from disappearing over the next 18 months".**



*Scott Sheffield, chairman and CEO of Pioneer Natural Resources*  
Source: WSJ

**Port of Corpus Christi, the third largest port in the US in total tonnage, CEO Sean Strawbridge:**

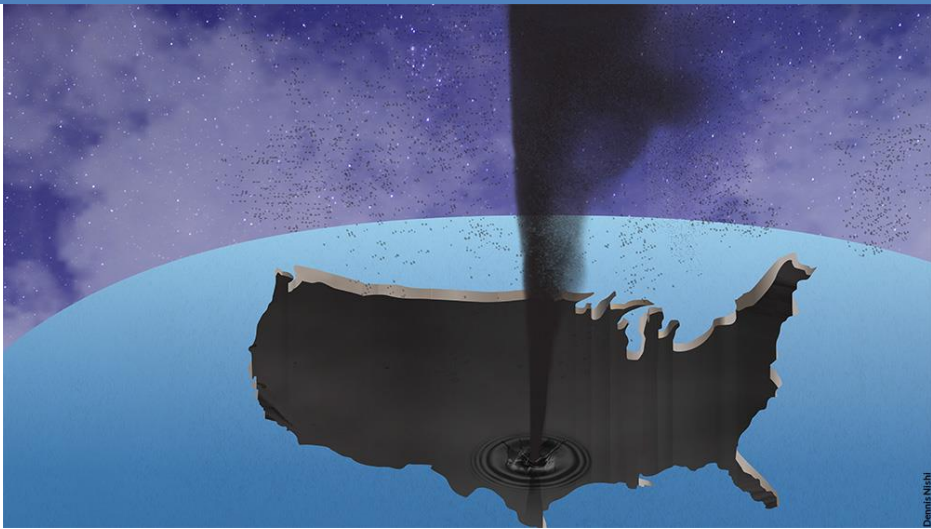
"The further the pendulum swings one way and the faster it swings, the faster the pendulum swings back towards equilibrium. It wouldn't surprise me if we eventually saw a pretty significant bounce. The question is when would we see that bounce? And who can weather the storm until we see that bounce?" Estimates vary at the moment, but it is possible the Permian Basin production could fall below 4mbpd, well below the government's latest estimate of 4.8mbpd. There will be consolidation, and bankruptcies. Russia and Saudi Arabia does not want a prolonged fight. 2020 will be painful, but 2021 could be quite bullish.

**Shale drillers continue to dramatically scale back their spending.** Big capital budget cuts from shale producers in March have averaged close to 30% but the companies that have announced reductions to their 2020 production guidance are only seeing their volumes fall by 5-10%. The publicly trading North America producers have revealed a total of 320kbpd reduction in the 2020 guidance so far. The total loss of barrels could be much higher when private firms are factored in.

**The Trump administration is considering** several alternatives to help the US oil & gas industry as dozens of producers now face bankruptcy. The US Government has now taken action by soliciting bids on 30mbbls to fill its strategic reserves, with more to follow until reserves adds 77mbbls in total.

The White House is also looking at diplomatic action to get Russia and Saudi Arabia to back down from flooding the markets with crude oil. The US is expected to ask Saudi Arabia to return to their original, lower production levels. The administration is also looking to threaten Russia with sanctions as part of its engagement with Saudi Arabia to assure the kingdom that its rival will not easily benefit from Saudi Arabia's cut backs.

**Figure 4: Shale oil boom in shaky ground**



Source: *Investors.com*

## What Happens Next?

**Texas Railroad Commissioner Ryan Sitton** has opened a dialogue with OPEC. Mr Sitton said on *Twitter* “Just got off the phone with OPEC *Secretary General* Mohammad Barkindo. We all agree an international deal must get done to ensure economic stability as we recover from COVID-19. Mr. Barkindo was kind enough to invite me to the next OPEC meeting in June”. This does set a reconciliatory tone between the US, Saudi Arabia and Russia.

**US anti-trust laws prevent a formal deal**, according to the *WSJ*, and there is no suggestion the two sides would coordinate production decisions. Although the US Government cannot form a deal with the cartel, we believe individual states have legal authority within their own jurisdictions. The Texas Railroad Commission enjoys legal authority to order production declines but will have to justify a quota cut based on fundamental and policy objectives.

**May be a little too late.** These overtures by the US, whether it be the potential curtailment of production in Texas or diplomatic efforts by the US Government, may come a little too late. Keep in mind that Russia has been riled by US sanctions on the trading arm of Rosneft and Nord Stream 2, the proposed new gas pipeline between Russia and Europe. For Saudi Arabia, among other things, the US’ inaction during the attack on its critical facilities last September as well as the US congress’ NOPEC bill (a bill that will effectively break-up the cartel for anti-competitive practices) – on the table since President George W Bush’s administration and brought back to life during Donald Trump’s presidency – does not bode well under current circumstances.

**We believe that the best-case scenario would be for the US to attend the OPEC meeting** and to give its word on the production cuts. This therefore would make the other parties to OPEC+ more willing to return to the negotiating table. However, Saudi Arabia has so far refused to join the OPEC meeting planned for June, as it believes that it would serve no purpose if Russia is not ready to cut production, according to Persian Gulf officials.

**Ultimately, both Russia and Saudi Arabia will have to consider what is best for their countries and the oil market over the longer term.** If coordinating with the US provides a long-term solution to the crude oil supply balancing and more stable prices, then both countries will most likely take that route. However, if they view in favour of natural rebalancing (with the exit of shale oil producers, as Igor Sechin has implied), then we may need to wait for the rebalancing to happen.

**We believe that Saudi Arabia has the upper hand in this market disarray.** With time, we believe that other producers will provide the agreement that should be fair to all parties, especially Saudi Arabia. We note that Saudi Arabia has been steadfast in its production cut, with February production at 9.6mbpd (-950kbpd from its Oct 2018 baseline, 194% compliant). We see market rebalancing either through natural rebalancing or via a global coordinated production cut agreement. It remains to be seen which route will be chosen. The OPEC meeting, scheduled for 9-10 Jun, remains on OPEC’s website.

**Make no mistake, the next OPEC meeting will be tough.** According to the *WSJ*, when Saudi Arabia and OPEC meet again, the group will likely seek production cuts much larger than the 1.5mbpd extra barrel that Russia had walked out on. This is because the spread of the COVID-19 outbreak has now widened to Europe and the US. The cartel may propose a cumulative and collective cut of 6mbpd, rather than the 3.6mbpd that it was ready to accept earlier this month. “Russia will have to cut more than the cosmetic cuts it has been getting away with for a very long time” said a Saudi official.

## Crude Oil Price Outlook And Scenarios

### Looking back the past three months

**Crude oil price started of the year quite bullish**, reaching a peak at USD69.02 per bbl and averaged at USD63.60 per bbl in January. January's main event was Iran's most powerful military commander, General Qasem Suleimani killed by a US drone strike in Iraq as well as Phase One of the US-China trade war agreement signed.

**February crude oil price averaged down at USD55.00 per bbl** as China started to report the COVID-19 outbreak. At the time, the world was expecting containment, as China started to take drastic steps of lockdown of its population. In total c.60m people were in lockdown. The world watched with hopes of control and containment of the virus. In February, we published a report that traced the impact of virus outbreak to crude oil price in [Fear Of The Unknown](#). We also published [The Black Swan](#) where we believe that the COVID-19 outbreak is bringing about much uncertainty to the oil markets as well as global economy.

### March crude oil price crash

At the beginning of the month, we published a report [The Price Of Uncertainty](#) where we laid out the worst case scenario impact for the stocks under coverage at USD40.00 per bbl. We believe that the COVID-19 outbreak seemed to be getting out of control and could at some time this year, result in global economic slowdown/recession. At the beginning of March, total infections stood at 83,379 people with 2,858 deaths in 54 countries.

As of writing this report today, there are now 336,838 infections, with 14,616 deaths with the virus spreading to over 192 countries. OPEC+'s 6 Mar 2020 agreement fell apart on the disagreement as to how to handle the demand destruction brought about by the COVID-19 outbreak. Crude oil price has since crashed to USD25.00 per bbl (Brent, spot average).

**During the 2014-2016 crude oil price rout**, it took crude oil price 16 months to reach a low of USD26.39 per bbl on 20 Jan 2016. It took another five months to reach its first peak at USD51.33 per bbl in Jun 2016. This crude oil price crash was more rapid, reaching a low of USD24.56 per bbl within 12 days of the announcement of the collapse in the OPEC+ agreement.

Figure 5: Crude oil spot price, actual

(USD/bbl,spot)	4Q18		3Q19		4Q19		YTD20	
	End	Ave	End	Ave	End	Ave	End	Ave
<b>WTI</b>	45.4	59.0	54.1	56.4	61.1	56.9	22.4	48.7
<b>Brent</b>	53.2	67.7	59.9	61.9	66.4	62.5	25.2	53.2
<b>Dubai</b>	52.4	67.2	59.9	60.8	65.4	61.3	26.7	53.3
<b>Tapis</b>	57.1	70.6	65.7	66.6	73.9	68.1	33.6	61.5

Source: RHB

Figure 6: Crude oil spot price, actual



Source: Bloomberg, RHB



## Looking ahead

**Our 2020 crude oil price forecast is revised to USD40.00 per bbl from USD47.00 per bbl**, after taking into account Saudi Arabia's production plans as well as the uncontrollable and uncontainable COVID-19 outbreak. For 2021-2022, our forecasts are pared down to USD55.00 per bbl from USD60.00 per bbl as we expect a slower recovery from 2020. Our worst case and best case put crude oil price at USD28.30 per bbl and USD46.30 per bbl for 2020F. The major swing will be in 2Q20F when a flood of crude oil enters the market whilst demand is expected to contract significantly. 4Q20F should see another swing, where US shale oil production should start to decline. Should there be a compromise between Russia, Saudi Arabia and the US by June, crude oil prices could rebound to the USD50-60.00 per bbl range. We are not expecting that to happen at the moment.

At the time of writing our last regional report, [No Deal For OPEC+, Price War Begins](#), after the 6 Mar 2020 meeting, details of Saudi Arabia's crude oil production were still unclear. As such, we assumed the country will produce +/- 11mbpd, as this was the peak average Saudi Arabia produced in Nov 2018.

**Saudi Arabia is now expected to produce c.12.3mbpd** for the period of April-May. Saudi Aramco's CEO, Amin Nassar said that the company will to produce 12mbpd, and draw from its crude oil storage of 300kbpd for the period. Future months will be determined later but the company will be able to produce at 12mbpd for a year without further investment. We therefore update our base case now taking into account of the latest details.

**We expect shale oil producers to be the most affected** under the low crude oil price, with their breakeven at USD46.00 per bbl. We assume low crude oil prices will result in US shale oil production to be curtailed by 4Q20F. OPEC currently expects US shale oil production to average 8.32mbpd (+0.62mbpd YoY). Our base case and best case production decline are 1mbpd and 3mbpd in 4Q20F.

**Crude oil demand destruction is difficult to estimate.** However, with jet fuel demand accounting for 8% of total crude oil demand, and global air travel grinding to a halt, we assume total demand destruction to be around 8mbpd, assuming all air travel is halted. For our base case, we assume demand destruction of 6mbpd, 4mbpd, and 0mbpd for 2Q-4Q20F. For the full year, we estimate demand to contract by 2.8mbpd.

**With refined products demand still weak**, there have been reports that North Asian refiners have declined offers from Middle East producers for additional crude deliveries for April even at the current low prices as there is no room for additional intake for April deliveries. It is possible that higher volumes could be delivered to refiners in North Asian refiners for May deliveries.

**Our base case, worse case and best case scenarios are as follows:**

**Figure 7: Crude oil price forecast revisions and scenarios**

USD/bbl	2019F	1Q20F	2Q20F	3Q20F	4Q20F	2020F	2021F-2022F
<b>Base case</b>							
Brent, revised	64.0	53.0	25.0	37.0	45.0	40.0	55.0
Brent, old	64.0	53.0	40.0	47.5	47.5	47.0	60.0
Change from base case	-	-	(15.0)	(10.5)	(2.5)	(7.0)	(5.0)
<b>Worst case</b>							
Change from base case	64.0	53.0	20.0	20.0	20.0	28.3	55.0
		-	(5.0)	(17.0)	(25.0)	(11.8)	-
<b>Best case</b>							
Change from base case	64.0	53.0	30.0	42.0	60.0	46.3	55
		-	5.0	5.0	15.0	6.3	-

Source: RHB

24 March 2020

Energy | Regional Oil &amp; Gas

**Base case: USD40.00 per bbl**

Our base-case assumption is that demand contracts by 6mbpd and 4mbpd for 2Q-3Q20F and flat YoY growth for 4Q20F. 2020F demand contraction is expected at 2.8mbpd. We assume US shale oil production to decline by 1mbpd YoY in 4Q20F. We assume Saudi Arabia produces +/-12mbpd for the rest of the year and Libya produces 150kbpd.

**Figure 8: Base case crude oil price is forecasted at USD40.00/bbl for 2020F**

	2016	2017	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
<b>Crude oil price (USD/bbl)</b>													
Brent, revised	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64.0	53.0	25.0	37.0	45.0	40.0
Brent, old	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64.0	53.0	40.0	47.5	47.5	47.0
Change (USD/bbl)									-	(15.0)	(10.5)	(2.5)	(7.8)
<b>Demand and supply (mbpd)</b>													
<b>World demand</b>	<b>95.7</b>	<b>97.4</b>	<b>98.8</b>	<b>98.8</b>	<b>98.6</b>	<b>100.5</b>	<b>100.8</b>	<b>99.7</b>	<b>97.6</b>	<b>92.6</b>	<b>96.5</b>	<b>100.8</b>	<b>96.9</b>
YoY growth								0.8	(1.2)	(6.0)	(4.0)	-	(2.8)
<b>World supply</b>													
Non-OPEC	59.2	60.0	63.0	64.4	64.3	64.8	66.4	65.0	66.4	66.5	66.7	66.3	66.5
OPEC NGLs	4.6	4.6	4.8	4.8	4.8	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Total non-OPEC	63.8	64.6	67.7	69.2	69.2	69.5	71.2	69.8	71.3	71.3	71.6	71.1	71.3
YoY growth								2.0	2.1	2.1	2.1	(0.1)	1.5
OPEC production	31.7	31.5	31.3	30.0	29.5	28.9	29.1	29.3	27.9	30.1	30.1	30.1	29.6
<b>Total supply</b>	<b>95.5</b>	<b>96.1</b>	<b>99.1</b>	<b>99.1</b>	<b>98.6</b>	<b>98.3</b>	<b>100.3</b>	<b>99.1</b>	<b>99.2</b>	<b>101.4</b>	<b>101.7</b>	<b>101.2</b>	<b>100.9</b>
YoY growth								0.01	0.1	2.8	3.3	0.9	1.8
<b>Balance</b>	<b>(0.2)</b>	<b>(1.3)</b>	<b>0.2</b>	<b>0.4</b>	<b>0.0</b>	<b>(2.2)</b>	<b>(0.5)</b>	<b>(0.6)</b>	<b>1.6</b>	<b>8.8</b>	<b>5.1</b>	<b>0.4</b>	<b>4.0</b>
<b>OECD closing stock levels, mbbl</b>													
Commercial	3,007	2,860	2,873	2,877	2,936	2,945	2,902	2,902	3,047	3,840	4,301	4,338	4,338
Additional									145	793	461	37	1,436
SPR	1,601	1,569	1,552	1,557	1,549	1,544	1,535	1,535	1,535	1,535	1,535	1,535	1,535
Total	4,608	4,428	4,425	4,434	4,485	4,489	4,437	4,437	4,728	6,168	6,297	5,911	7,310

Source: OPEC, RHB

24 March 2020

Energy | Regional Oil &amp; Gas

**Worst-case scenario: USD28.30 per bbl for 2020F**

Our worst-case assumption is that demand contracts 8mbpd for 2Q-4Q20F. 2020F demand contraction is 6.3mbpd. We assume 2020F US shale oil production increases to average 8.32mbpd (+0.62mbpd YoY). We assume Saudi Arabia produces +/-12mbpd for the rest of the year and Libya increases its production by 1mbpd.

**Figure 9: Worst case crude oil price expected at USD28.30/bbl in 2020F**

	2016	2017	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
<b>Crude oil price (USD/bbl)</b>													
Brent, revised	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64	53.0	20.0	20.0	20.0	28.3
Brent, old	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64	53.0	40.0	47.5	47.5	47.0
Change (USD/bbl)									-	(20.0)	(27.5)	(27.5)	(18.8)
<b>Demand and supply (mbpd)</b>													
<b>World demand</b>	<b>95.7</b>	<b>97.4</b>	<b>98.8</b>	<b>98.8</b>	<b>98.6</b>	<b>100.5</b>	<b>100.8</b>	<b>99.7</b>	<b>97.6</b>	<b>90.6</b>	<b>92.5</b>	<b>92.8</b>	<b>93.4</b>
YoY growth								0.8	(1.2)	(8.0)	(8.0)	(8.0)	(6.3)
<b>World supply</b>													
Non-OPEC	59.2	60.0	63.0	64.4	64.3	64.8	66.4	65.0	66.4	66.5	66.7	67.3	66.7
OPEC NGLs	4.6	4.6	4.8	4.8	4.8	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Total non-OPEC	63.8	64.6	67.7	69.2	69.2	69.5	71.2	69.8	71.3	71.3	71.6	72.1	71.6
YoY growth								2.0	2.1	2.1	2.1	0.9	1.8
OPEC production	31.7	31.5	31.3	30.0	29.5	28.9	29.1	29.3	27.9	31.1	31.1	31.1	30.3
<b>Total supply</b>	<b>95.5</b>	<b>96.1</b>	<b>99.1</b>	<b>99.1</b>	<b>98.6</b>	<b>98.3</b>	<b>100.3</b>	<b>99.1</b>	<b>99.2</b>	<b>102.4</b>	<b>102.7</b>	<b>103.2</b>	<b>101.9</b>
YoY growth								0.0	0.1	3.8	4.3	2.9	2.8
<b>Balance</b>	<b>(0.2)</b>	<b>(1.3)</b>	<b>0.2</b>	<b>0.4</b>	<b>0.0</b>	<b>(2.2)</b>	<b>(0.5)</b>	<b>(0.6)</b>	<b>1.6</b>	<b>11.8</b>	<b>10.1</b>	<b>10.4</b>	<b>8.5</b>
<b>OECD closing stock levels, mbbl</b>													
Commercial	3,007	2,860	2,873	2,877	2,936	2,945	2,902	2,902	3,047	4,110	5,021	5,958	5,958
Additional									145	1,063	911	937	3,056
SPR	1,601	1,569	1,552	1,557	1,549	1,544	1,535	1,535	1,535	1,535	1,535	1,535	1,535
<b>Total</b>	<b>4,608</b>	<b>4,428</b>	<b>4,425</b>	<b>4,434</b>	<b>4,485</b>	<b>4,489</b>	<b>4,437</b>	<b>4,437</b>	<b>4,728</b>	<b>6,708</b>	<b>7,467</b>	<b>8,431</b>	<b>10,550</b>

Source: OPEC, RHB

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Energy | Regional Oil &amp; Gas

**Best-case scenario: USD46.30 per bbl**

Our best-case assumption is that demand contracts 4mbpd and 4mbpd for 2Q-3Q20F and flat YoY growth for 4Q20F. 2020F demand destruction is 2.3mbpd. We assume 2020F US shale oil production declines by 3mbpd YoY. We assume Saudi Arabia produces +/-12mbpd for the rest of the year and Libya produces 150kbpd.

**Figure 10: Best case crude oil price to average USD46.50/bbl**

	2016	2017	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
<b>Crude oil price (USD/bbl)</b>													
Brent, revised	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64	53.0	30.0	42.0	60.0	46.3
Brent, old	44.1	54.4	71.2	63.1	68.5	61.9	62.5	64	53.0	40.0	47.5	47.5	47.0
Change									-	(10.0)	(5.5)	12.5	(0.8)
<b>Demand and supply (mbpd)</b>													
<b>World demand</b>	<b>95.7</b>	<b>97.4</b>	<b>98.8</b>	<b>98.8</b>	<b>98.6</b>	<b>100.5</b>	<b>100.8</b>	<b>99.7</b>	<b>97.6</b>	<b>94.6</b>	<b>96.5</b>	<b>100.8</b>	<b>97.4</b>
YoY growth								0.8	(1.2)	(4.0)	(4.0)	-	(2.3)
<b>World supply</b>													
Non-OPEC	59.2	60.0	63.0	64.4	64.3	64.8	66.4	65.0	66.4	66.5	66.7	64.3	66.0
OPEC NGLs	4.6	4.6	4.8	4.8	4.8	4.7	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Total non-OPEC	63.8	64.6	67.7	69.2	69.2	69.5	71.2	69.8	71.3	71.3	71.6	69.1	70.8
YoY growth								2.0	2.1	2.1	2.1	(2.1)	1.0
OPEC production	31.7	31.5	31.3	30.0	29.5	28.9	29.1	29.3	27.9	30.1	30.1	30.1	30.3
<b>Total supply</b>	<b>95.5</b>	<b>96.1</b>	<b>99.1</b>	<b>99.1</b>	<b>98.6</b>	<b>98.3</b>	<b>100.3</b>	<b>99.1</b>	<b>99.2</b>	<b>101.4</b>	<b>101.7</b>	<b>99.2</b>	<b>100.4</b>
YoY growth								0.0	0.1	2.8	3.3	(1.1)	1.3
<b>Balance</b>	<b>(0.2)</b>	<b>(1.3)</b>	<b>0.2</b>	<b>0.4</b>	<b>0.0</b>	<b>(2.2)</b>	<b>(0.5)</b>	<b>(0.6)</b>	<b>1.6</b>	<b>6.8</b>	<b>5.1</b>	<b>(1.6)</b>	<b>3.0</b>
<b>OECD closing stock levels, mbbbl</b>													
Commercial	3,007	2,860	2,873	2,877	2,936	2,945	2,902	2,902	3,047	3,660	4,121	3,978	3,978
Additional									145	613	461	-143	1,076
SPR	1,601	1,569	1,552	1,557	1,549	1,544	1,535	1,535	1,535	1,535	1,535	1,535	1,535
<b>Total</b>	<b>4,608</b>	<b>4,428</b>	<b>4,425</b>	<b>4,434</b>	<b>4,485</b>	<b>4,489</b>	<b>4,437</b>	<b>4,437</b>	<b>4,728</b>	<b>5,808</b>	<b>6,117</b>	<b>5,371</b>	<b>6,590</b>

Source: OPEC, RHB



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90 - 100		ดีเลิศ	Excellent
80 - 89		ดีมาก	Very Good
70 - 79		ดี	Good
60 - 69		ดีพอใช้	Satisfactory
50 - 59		ผ่าน	Pass
ต่ำกว่า 50	No logo give	N/A	N/A

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ทั้งนี้บริษัทหลักทรัพย์ อาร์เอชบี (ประเทศไทย) จำกัด (มหาชน) มิได้ยืนยันหรือรับรองถึงความครบถ้วนและถูกต้องของผลสำรวจดังกล่าวแต่อย่างใด

ข้อมูล Anti-Corruption Progress Indicator 2560

ประกาศเจตนาธรรม CAC

A	ASK	CHG	FC	GREEN	JUTHA	MATCH	NINE	PIMO	RWI	SPPT	TFI	TU	VNT
AI	AU	CHOTI	FER	GSTEL	KASET	MATI	NMG	PK	SANKO	SPRC	THE	TVD	WAVE
AIE	BCH	CHOW	FPI	GUNKUL	KBS	MBAX	NNCL	PL	SAUCE	SR	TICON	TVO	WHA
AIRA	BJC	CIG	FSMART	HARN	KCAR	MC	NTV	PLANB	SC	SRICHA	TIP	TVT	WICE
AJ	BJCHI	COL	GEL	IFS	KTECH	MFEC	NUSA	POST	SCCC	SST	TKN	TWPC	WIJK
ALUCON	BLAND	COM7	GFPT	ILINK	KWC	MIDA	NWR	PRINC	SCN	STA	TLUXE	U	TRUE
AMATAV	BR	CPALL	GGC	INET	KYE	MILL	OGC	PRO	SEAOIL	SUPER	TMILL	UPA	
AOT	BROCK	CPF	GIFT	IRC	L&E	ML	PACE	PSTC	SE-ED	SUSCO	TMT	UREKA	
APCO	BRR	CPR	GJS	J	LEE	MTLS	PAF	PYLON	SENA	SWC	TNP	UWC	
AQUA	CEN	CSC	GLOBAL	JMART	LIT	NBC	PAP	QTC	SIRI	SYMC	TPA	VGI	
ARROW	CGH	EKH	GOLD	JMT	LVT	NCL	PATO	ROH	SMART	TAKUNI	TSE	VIBHA	
ASIA	CHEWA	EPCO	GPSC	JUBILE	MAKRO	NEP	PCSGH	ROJNA	SPACK	TBSP	TTI	VIH	

ได้รับการรับรอง CAC

ADVANC	BKI	CPN	FE	INTUCH	LANNA	MSC	PLAT	PTT	SAT	SNP	TCMC	TMD	UOBKH
AKP	BLA	CSL	FNS	IRPC	LHBANK	MTI	PM	PTTEP	SCB	SORKON	TFG	TNITY	WACOAL
AMANAH	BROOK	DCC	FSS	IVL	LHK	NKI	PPP	PTTGC	SCC	SPC	TGCI	TNL	
AP	BTS	DEMCO	GBX	K	LPN	NSI	PPS	Q-CON	SCG	SPI	THANI	TOG	
ASP	BWG	DIMET	GCAP	KBANK	MBK	OCC	PRANDA	QH	SGP	SSF	THCOM	TOP	
AYUD	CENTEL	DRT	GLOW	KCE	MBKET	OCEAN	PREB	QLT	SINGER	SSI	THRE	TPCORP	
BAFS	CFRESH	DTAC	HANA	KGI	MCOT	PB	PRG	RATCH	SIS	SSSC	THREL	TRU	
BANPU	CIMBT	DTC	HMPRO	KKP	MFC	PDI	PSH	RML	SITHAI	SVI	TIPCO	TSC	
BAY	CM	EASTW	HTC	KSL	MINT	PE	PSL	ROBINS	SMIT	SYNTEC	TISCO	TSSTH	
BBL	CNS	ECL	ICC	KTB	MONO	PG	PT	S & J	SMPC	TAE	TKT	TTCL	
BCP	CPI	EGCO	IFEC	KTC	MOONG	PHOL	PTG	SABINA	SNC	TCAP	TMB	TVI	

N/A

2S	ARIP	BSM	CSS	FMT	INOX	LTX	NPK	RCL	SFP	SUC	TITLE	TSR	VPO
AAV	AS	BTC	CTW	FN	INSURE	M	NPP	RICH	SGF	SUN	TIW	TSTE	VTE
ABICO	ASAP	BTNC	CWT	FOCUS	IRCP	MACO	NVD	RICHY	SHANG	SUTHA	TK	TTA	WG
ACAP	ASEFA	BTW	D	FORTH	IT	MAJOR	NYT	RJH	SIAM	SVH	TKS	TTL	WHAUP
ACC	ASIAN	BUI	DCON	FTE	ITD	MALEE	OHTL	ROCK	SIMAT	SVOA	TM	TTTM	WIN
ADAM	ASIMAR	CBG	DCORP	FVC	ITEL	MANRIN	OISHI	RP	SKE	SYNEX	TMC	TTW	WINNER
ADB	ASN	CCET	DDD	GC	JAS	MAX	ORI	RPC	SKN	T	TMI	TUCC	WORK
AEC	ATP30	CCP	DELTA	GENCO	JCT	M-CHAI	OTO	RPH	SKR	TACC	TMW	TWP	WORLD
AEONTS	AUCT	CGD	DIGI	GL	JKN	MCS	PAE	RS	SKY	TAPAC	TNDT	TWZ	WP
AF	BA	CHARAN	DNA	GLAND	JSP	MDX	PDG	RSP	SLP	TASCO	TNH	TYCN	WPH
AFC	BAT-3K	CHO	DTCI	GPI	JTS	MEGA	PERM	S	SMK	TC	TNPC	UAC	WR
AGE	BCPG	CHUO	EA	GRAMMY	JWD	METCO	PF	S11	SMM	TCB	TNR	UBIS	XO
AH	BDMS	CI	EARTH	GRAND	KAMART	MGT	PICO	SAFARI	SMT	TCC	TOA	UEC	YCI
AHC	BEAUTY	CITY	EASON	GTB	KC	MJD	PJW	SALEE	SOLAR	TCCC	TOPP	UKEM	YNP
AIT	BEC	CK	ECF	GULF	KCM	MK	PLANET	SAM	SPA	TCJ	TPAC	UMI	YUASA
AJA	BEM	CKP	EE	GYT	KDH	MM	PLE	SAMART	SPALI	TCOAT	TPBI	UMS	ZIGA
AKR	BFIT	CMO	EFORL	HFT	KIAT	MODERN	PMTA	SAMCO	SPCG	TEAM	TPCH	UNIQU	ZMICO
ALLA	BGRIM	CMR	EIC	HOTPOT	KKC	MPG	POLAR	SAMTEL	SPG	TFD	TIPL	UP	
ALT	BGT	CNT	EMC	HPT	KOOL	MPIC	POMPUI	SAPPE	SPORT	TFMAMA	TIPIP	UPF	
AMA	BH	COLOR	EPG	HTECH	KTIS	NC	PORT	SAWAD	SPVI	TGPRO	TPOLY	UPOIC	
AMARIN	BIG	COMAN	ERW	HUMAN	KWG	NCH	PPM	SAWANG	SQ	TH	TPP	UT	
AMATA	BIZ	CPH	ESSO	HYDRO	LALIN	NDR	PRAKIT	SCI	SSC	THAI	TR	UTP	
AMC	BKD	CPL	ESTAR	ICHI	LDC	NETBAY	PRECHA	SCP	SSP	THANA	TRC	UV	
ANAN	BLISS	CPT	ETE	ICN	LH	NEW	PRIN	SDC	STANLY	THG	TRITN	UVAN	
APCS	BM	CRANE	EVER	IEC	LOXLEY	NEWS	PRM	SE	STAR	THIP	TRT	VARO	
APEX	BOL	CRD	F&D	IHL	LPH	NFC	PTL	SEAFCO	STEC	THL	TRUBB	VCOM	
APURE	BPP	CSP	FANCY	III	LRH	NOBLE	RAM	SELIC	STHAI	THMUI	TSF	VI	
AQ	BSBM	CSR	FLOYD	INGRS	LST	NOK	RCI	SF	STPI	TIC	TSI	VNG	

Source: Thai Institute of Directors

ข้อมูลบริษัทที่เข้าร่วมโครงการแนวร่วมปฏิบัติของภาคเอกชนไทยในการต่อต้านทุจริต (Thai CAC) ของสมาคมส่งเสริมสถาบันกรรมการบริษัทไทย (ข้อมูล ณ วันที่ 17 ต.ค.)

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- ได้รับการรับรอง CAC

การเปิดเผยการประเมินดัชนีชี้วัดความคืบหน้าการป้องกันกรมีส่วนเกี่ยวข้องกับการทุจริตคอร์รัปชัน (Anti-Corruption Progress Indicators) ของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยที่จัดทำโดยสถาบันที่เกี่ยวข้องซึ่งมีการเปิดเผยโดยสำนักงานคณะกรรมการกำกับหลักทรัพย์และตลาดหลักทรัพย์นี้เป็นการดำเนินการตามนโยบายและตามแผนพัฒนาความยั่งยืนสำหรับบริษัทจดทะเบียนโดยผลการประเมินดังกล่าว สถาบันที่เกี่ยวข้องอาศัยข้อมูลที่ได้รับจากบริษัทจดทะเบียนตามที่บริษัทจดทะเบียนได้ระบุในแบบแสดงข้อมูลเพื่อการประเมิน Anti-Corruption ซึ่งอ้างอิงข้อมูลมาจากแบบแสดงรายงานข้อมูลประจำปี แบบ (56-1) รายงานประจำปีแบบ (56-2) หรือในเอกสารหรือรายงานอื่นที่เกี่ยวข้องซึ่งเป็นบุคคลภายนอก โดยมีได้เป็นการประเมินการปฏิบัติของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยและมิได้ใช้ข้อมูลภายในเพื่อการประเมิน เนื่องจากผลการประเมินดังกล่าวเป็นเพียงผลการประเมิน ณ วันที่ ปรากฏในผลการประเมินเท่านั้น ดังนั้นผลการประเมินจึงอาจเปลี่ยนแปลงได้ภายหลังวันดังกล่าว หรือรับรองความถูกต้องครบถ้วนของผลประเมินดังกล่าวได้อย่างใด