

Malaysia Oil & Gas

POSITIVE

[Unchanged]

FPSO boom!

Robust tenders pipeline; bring it on!

Demand for FPSO is exceptionally strong this year. Up to 19 new jobs with USD17b capex are up for grabs among 8 key FPSO operators. Should this materialize, it will surpass the high of 17 units awarded in 2010. Established FPSO contractors with: (i) strong track record and (ii) financials to boot could realistically win 2-4 jobs each. Yinson (YNS MK; TP: MYR9.45) is our key BUY in this space.

Analyst

Liaw Thong Jung
(603) 2297 8688
tjliaw@maybank-ib.com

Up to 19 new awards lined up for 2019

We expect a solid order intake over the next 12 months. Up to 19 FPSO jobs could possibly be awarded this year. Of the 19: (i) 2/3 of the FPSO awards will be for leased units and (ii) 9 awards will comprise large size FPSOs (capex size of >USD1b). Brazil is a key market, accounting for 6 of the identified large/complex prospects.

Financial strength will define capacity intake

While the demand side is booming, realistically, there are only about 8 active and experienced FPSO operators left in the market and a select few with the financial and execution capability to meet this request. SBM, Modec and Yinson are the three key FPSO players with strategic partnerships (Mitsui, Mitsubishi and Sumitomo) that are constantly participating for tenders. Expectations are for them to be disciplined in bidding and execution, winning 2-3 new jobs this year, a realistic target in our view, without triggering operational risk.

Yinson: Key pick for the FPSO play

Yinson is the most leveraged to ride on the entrenched recovery in the FPSO segment. With 2 projects (Helang & Abigail-Joseph) on track for delivery in 4QCY19, Yinson has the capacity to take on new projects. Yinson could realistically win 2-3 jobs from the 5 firm tenders (with capex size of USD4b-5b) that it is currently bidding for. Based on the back of envelope estimate, one USD1b capex job would add about MYR2.00/ shr to our NPV estimate. With that, we raise our TP to MYR9.45, incorporating 2 FPSO wins with capex of USD2b.

Stock	Bloomberg code	Mkt cap (USD'm)	Rating	Price (LC)	TP (LC)	Upside (%)	P/E (x)		P/B (x)		Div yld (%)	
							18E	19E	18E	19E	18E	19E
Dialog Group	DLG MK	4,398	Buy	3.26	3.58	10	40.9	38.6	5.0	4.8	1.0	1.1
Yinson Holdings	YNS MK	1,362	Buy	5.21	9.45	81	13.4	16.7	1.7	1.3	2.4	1.5
Sapura Energy	SAPE MK	1,185	Buy	0.31	0.55	77	nm	nm	0.5	0.1	1.3	1.9
Velesto Energy	VEB MK	560	Buy	0.29	0.33	16	nm	80.5	0.5	0.8	0.0	0.0
Bumi Armada	BAB MK	281	Hold	0.20	0.20	0	5.0	5.5	0.3	0.3	0.0	0.0
MMHE	MMHE MK	264	Buy	0.69	1.00	45	nm	nm	0.4	0.5	0.0	0.0
Wah Seong	WSC MK	125	Buy	0.68	0.83	23	5.8	6.9	0.5	0.5	0.0	0.0
Icon Offshore	ICON MK	24	Hold	0.09	0.09	0	nm	nm	1.0	1.3	0.0	0.0
Alam Maritim	AMRB MK	21	Sell	0.10	0.06	(37)	nm	nm	0.2	0.2	0.0	0.0
Barakah	BARAKAH MK	10	Sell	0.05	0.01	(86)	nm	nm	0.7	1.8	0.0	0.0

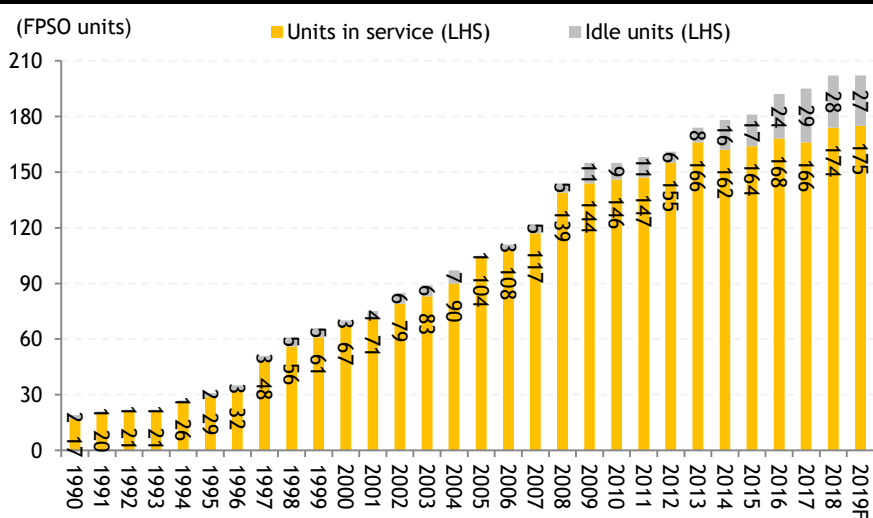
FPSO: Fleet status globally

There are 202 FPSOs worldwide now, relatively unchanged from a year ago. Of these, 87% or 175 units are currently active. The remaining 27 units (13%) are either:

- (i) idle but available for hire (25 units; 12%) or
- (ii) out of service (2 units; 1%) for extended repairs.

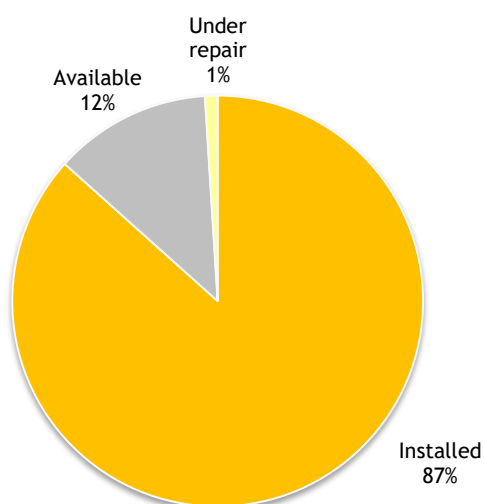
About 55% of the FPSO fleet is owned by oil companies that own the fields that they are employed on. The rest are owned by FPSO operators/ contractors, financial institutions and other companies that charter the FPSOs.

Fig 1: FPSO: Fleet size worldwide



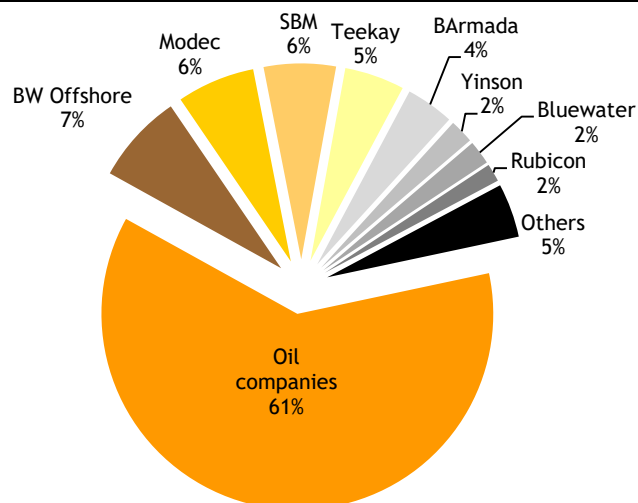
Source: Emerging Maritime Associates (EMA), Maybank KE

Fig 2: FPSOs status of 202 units



Source: Emerging Maritime Associates (EMA), Maybank KE

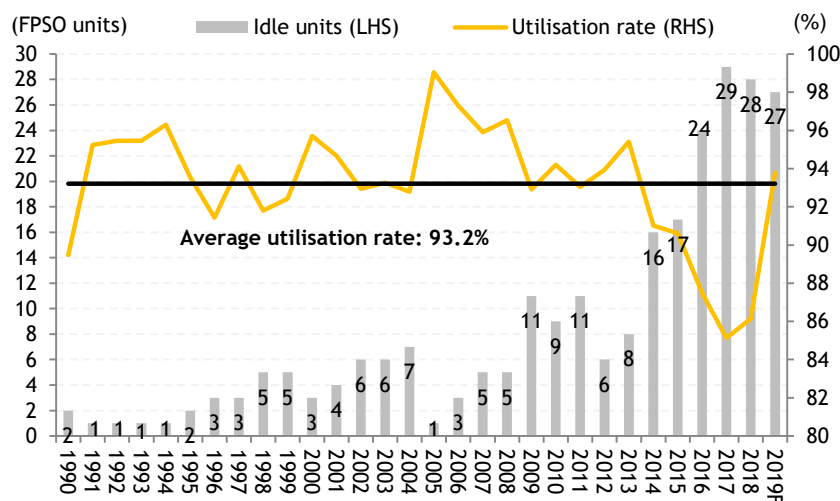
Fig 3: FPSOs ownership status



Source: Fearnley Offshore Maybank KE

Utilization level on the rise. Overall FPSO's fleet utilization is now at 94%, up 7.7-ppts YoY, a positive (19-years average: 93%). The YoY rise in utilization since 2017 is not unexpected, as it tends to be concurrent with the recovery in the oil market. That said, its utilization level has also surpassed the 90% threshold for the first time since 2014.

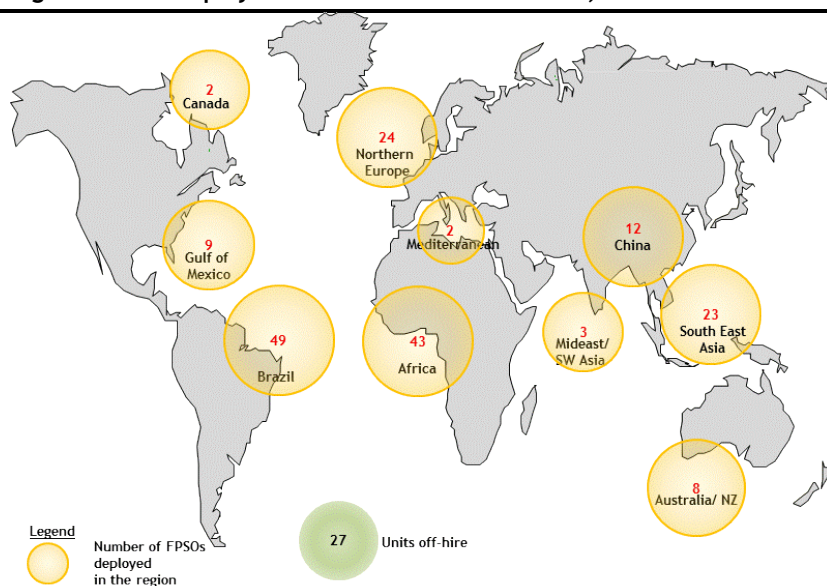
Fig 4: FPSO fleet utilisation rate



Source: Emerging Maritime Associates (EMA), Maybank KE

175 FPSOs are currently in service. The numbers are relatively unchanged, on a YoY basis. 4 regions dominate FPSO activities - Brazil (49 units), Africa (43), North Sea (24) and South East Asia (SEA; 23) remain the epicenter of FPSO activities, accounting for 79% of the global fleet deployment.

Fig 5: Current deployment of FPSO fleet worldwide; 175 units in the field

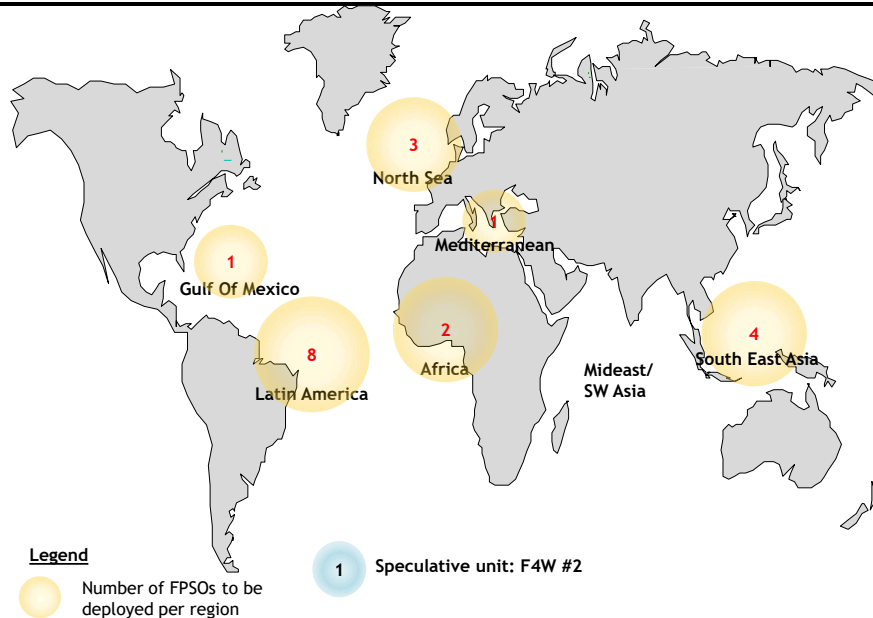


Source: Emerging Maritime Associates (EMA), Maybank KE

FPSO order backlog at 19 units now, with 7/ 3/ 8/ 1 units scheduled to be installed in 2019/ 20/ 21/ 22 respectively.

Geographically, most of the orders are from South America (8 units), mainly from Petrobras' in-house managed projects. This is followed by SEA and North Sea markets, taking up 4 and 3 units each. West Africa (2), North America (1) and Mediterranean (1) make up the rest.

Fig 6: 19 FPSO units on order



Source: Emerging Maritime Associates (EMA), Maybank KE

Fig 7: FPSOs order backlog

Owner	Contract	Field/ unit name	Area	Operator	Start-up
Bluewater	Lease	Aoka Mizu	North Sea	Hurricane	2019
Modec	Lease	Amoca	North America	Eni	2021
Modec	Lease	Carioca MV30	South America	Petrobras	2021
Modec	Lease	Guanabara MV31	South America	Petrobras	2021
SBM	Lease	Liza Destiny	South America	ExxonMobil	2020
SBM	Lease	F4W (Liza 2)	South America	ExxonMobil	2021
Yinson	Lease	Helang	SEA	JX Nippon	2019
Yinson	Lease	FPSO Abigail-Joseph	Africa	First E&P	2019
Technip FMC	EPC	Greater Tortue	Africa	BP	2021
AMR, Sandakan & Emas Off	EPC	MDA-MBH	SEA	Husky	2020
COOEC	EPC	HYSY 119	SEA	CNOOC	2020
Fluor	EPC	Penguins	North Sea	Shell	2021
Petrobras	EPC	P-71 (Sururu)	South America	Petrobras	2021
Petrobras	EPC	P-68 (Lula ex. Sul)	South America	Petrobras	2019
Petrobras	EPC	P-70 (Atapu South)	South America	Petrobras	2019
Petrobras	EPC	P-77 (Buzios 4)	South America	Petrobras	2019
Saipem	EPC	Kaombo 2	Africa	Total	2019
SBM	EPC	F4W #2	TBA	TBA	TBA
Statoil	EPC	Johan Castberg	North Sea	Statoil	2022
Technip FMC	EPC	Karish	Mediterranean	Energiean	2021

Source: Fearnley Offshore, Maybank KE

Second-hand FPSOs on the rise. The number of idle FPSOs has certainly risen since 2015, and has reached a historical high in 2018 with some 25 units sitting idle.

Redeployment plus factor. Nonetheless, there is still a high level of interest for redeployment prospects, as an alternative option to conversion and/ or newbuilds. There are several mature projects requiring this, since redeployed assets offer:

- (i) substantial cost savings in capex and
- (ii) shorter schedule deliveries (compared to conversion/ newbuilds).

In addition, for some projects, redeployment is the only means to achieving a commercially viable solution.

Many will be scrapped. That said, it is unrealistic to assume that all of the idle units will be redeployed in the market. Majority of them will be scrapped for these units are either in poor condition or do not provide a good fit with the prospective field requirements.

Fig 8: FPSO idle units available for hire

Idle since	Units	Idle FPSOs	Year converted	Storage capacity (bbls)	Oil production (bpd)	Mooring type	Owner
2011	1	Munin	1997	595,950	60,000	External turret	Bluewater
2012	0	-	-	-	-	-	-
2013	2	Bohai Ming Zhu	2002	1,000,000	45,000	Tower soft yoke	CNOOC
		OSX 2	2012	1,300,000	100,000	Turret	OSX 2 Leasing BV
2014	2	Bourbon Opale	2004		10,000		Bourbon Offshore
		Perintis	1984	640,000	35,000	External turret	M3Nergy
2015	4	Demeter Acacia (ex-Toisa Pisces)	1997				
		Glas Dowl	2011	660,000	60,000	Tandem	Bluewater
		OSX 1	2010	950,000	80,000	Swivel turret	OSX 1 Leasing BV
		Stybarrow Venture MV16	2007				
2016	7	Armada Claire	2013	800,000	30,000	Rise turret	BArmada
		BW Athena	2012	50,000	28,000	Turret	BW Offshore
		Dynamic Producer	1987				
		EPV Balai Mutiara	2002				
		Hai Yang Shi You 102	1990	368,000	12,000		CNOOC
		Petrojarl Varg	1998	470,000	57,000	Turret	Teekay
		RCL Natuna	1995				
2017	2	Berge Helene	2003/ 2005	1,650,000	75,000	External turret	BW Offshore
		Perisai Kamelia	2013	725,000	6,000		Perisai/ Emas
2018	7	Armada Perdana	2009	1,106,000	40,000	12 point spread	BArmada
		Deep Producer 1	1981				
		Dhirubhai 1	1979				
		Firenze	1989	750,000	12,000	Single point turret	ENI
		MTC Ledang	1992	350,000	10,000		MTC Engineering
		Nganhurra	2006	900,000	100,000		Woodside
		Petrojarl Cidade de Rio Das Ostras	2007	214,000	25,000	Spread	Teekay

Source: Various, Maybank-KE

Fig 9: FPSO transactions in 2017-18

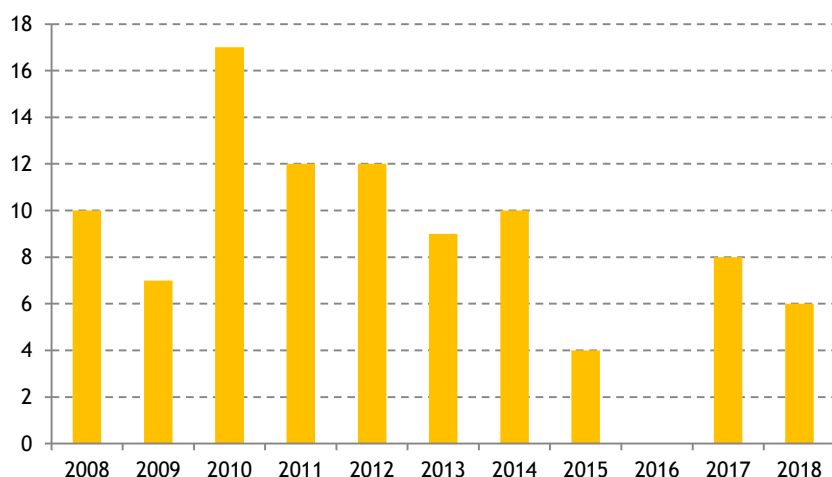
Contract	Unit/Field	Country	Operator	Owner	Award Date
Suspended	OSX-1/ CRD	Vietnam	Repsol	Yinson	Jan-17
S&P	Armada Perkasa	Nigeria	Amni	Bumi Armada	Jan-17
Lease	MTC Ledang/ Ophir	Malaysia	Ophir Production	MTC Energy	Feb-17
S&P	Crystal Ocean	Mexico	Pemex	Rubicon	Mar-17
Lease	BW Adolo (Azurite)	Gabon	BW Energy	BWO	Apr-17
Lease	Liza	Guyana	ExxonMobil	SBM	Jun-17
Turnkey	Yombo	Congo-Brazz	Perenco	Perenco	Jun-17
S&P	Song Doc Pride MV19	Vietnam	Truong Son JOC	Modec	Jun-17
Speculative	F4W	Guyana	ExxonMobil	SBM	Jul-17
S&P	Turritella	GOM	Shell	SBM	Jul-17
Scrapped	FPSO Opportunity	Malaysia	Unemployed	Petrofac	Jul-17
Scrapped	Armada Intrepid	Indonesia	Unemployed	Bumi Armada	Jul-17
Scrapped	FPSO Marlim Sul	Brazil	Unemployed	SBM	Jul-17
Lease	Aoka Mizu/ Lancaster	UK	Hurricane	Bluewater	Sep-17
Lease	MV 30 (Sepia)	Brazil	Petrobras	Modec	Oct-17
Turnkey	Johan Castberg	Norway	Statoil	Equinor	Nov-17
Lease	MV31 (Mero 1)	Brazil	Petrobras	Modec	Dec-17
Turnkey	Penguins	UK	Shell	Shell	Jan-18
Turnkey	Karish	Israel	Energear	Energear	Mar-18
Lease	FPSO Helang/ Layang	Malaysia	JX Nippon	Yinson	Apr-18
Turnkey	HYSY 119 (Liuhua)	China	CNOOC	CNOOC	May-18
Scrapped	MV14	Brazil	Petrobras	Modec	Jul-18
Lease	Area 1 / Amoca	Mexico	Eni	Modec	Oct-18
Speculative	F4W 2	TBN	TBN	SBN	Nov-18
Turnkey	Greater Tortue	Mauritania	BP	BP	Dec-18

Source: Fearnley Offshore

Prospects and Outlook

Booming! The FPSO market is thriving. Following a fairly solid order intake since 2017, the FPSO market is entering its 3rd year of recovery. The next 36 months are expected to be very promising and exciting, in terms of new contract awards. There is a high number of mature FPSO projects that is progressing towards the awards.

Fig 10: FPSO awards from 2008-18



Source: Fearnley Offshore, Maybank KE

Over 50 potential FPSO prospects over the next 36 months. With oil price steadying above USD50/bbl, with manageable volatility, oil companies have initiated a large number of tenders over the last 12 months and continue to release new tenders. About half of the projects appear fairly robust as they are large field developments backed by NOCs and oil majors.

- Fearnley Offshore has identified up to 54 potential projects that operators are considering to award in the 2019-21 period while EMA forecasts 50 projects over the same period, based on its high-case basis.

Fig 11: Potential FPSO awards over the next 36 months

Country	Operator	Project	Award	Status
Australia	ConocoPhillips	Barossa	2019	FEED
Australia	Woodside	Browse 1	2021	Pre-FEED
Australia	Woodside	Browse 2	2021	Pre-FEED
Australia	Santos	Dorado	2020	Under Study
Australia	Western Gas	Equus	2020	Pre-FEED
Timor-Leste	Carnarvon	Buffalo	2020	Under Study
Canada	Equinor	Bay du Nord	2020	Pre-FEED
Mexico	Premier	Zama	2020	Under Study
Mexico	BHP/Pemex	Trion & Maximino	2020	Under Study
Cyprus	Noble Energy	Aphrodite	2020	Under Study
Denmark	Ineos	Herje/Solsort	2020	Under Study
Norway	Lundin	Alta Gotha	2021	Under Study
Norway	OMV	Wisting	2021	Under Study
UK	Siccar Point	Cambo	2019	Pre-FEED

Source: Fearnley Offshore

Fig 12: Potential FPSO awards over the next 36 months (continued)

Country	Operator	Project	Award	Status
UK	Alpha Petroleum	Cheviot	2019	Pending FID
UK	Equinor	Rosebank	2020	Recycle
China	CNOOC	Enping North	2019	Under Study
China	CNOOC	Liuhua 11-1	2020	Under Study
India	ONGC	KG-DWN	2019	Tendering
India	Reliance	MJ	2019	Tendering
India	ONGC	NBP	2019	Under Study
Indonesia	Inpex	Abadi	2020	Pre-FEED
Indonesia	Mitsui E&P	Ande Ande Lumut	2021	Under Study
Indonesia	Husky	Madura EPS	2019	Under Study
Indonesia	Premier	Tuna	2021	EOI Pending
Malaysia	Petronas	Limbayong	2019	Tendering
Thailand	Chevron	Ubon	2019	Under Study
Vietnam	Jadestone	Nam Du, U Minh	2019	Tendering
Brazil	Petrobras	Sergipe-Alagoas I	2020	Under Study
Brazil	QGEF	Atlanta Phase 2	2019	Under Study
Brazil	Petrobras	Buzios 5	2019	Tendering
Brazil	Equinor	Carcara (BM-S-8)	2020	Pre-FEED
Brazil	Petrobras	Itapu	2019	Under Study
Brazil	Petrobras	Marlim Revit.1	2019	Tendering
Brazil	Petrobras	Marlim Revit.2	2019	Tendering
Brazil	Petrobras	Mero 2	2019	Tendering
Brazil	Karoon Energy	Neon (Echidna)	2019	Tendering
Brazil	Equinor	Pao de Acucar (BM-C-33)	2021	Under Study
Brazil	Petrobras	Parque das Baleias	2019	Tendering
Falklands	Premier Oil	Sea Lion	2019	FEED
Guyana	ExxonMobil	Liza #2 (Liza Unity)	2019	Pending FID
Guyana	ExxonMobil	Liza #3 (Payara)	2019	FEED
Guyana	ExxonMobil	Ranger	2019	Under Study
Angola	BP	Blk 31 SE	2020	Under Study
Congo-Braz	Eni	Marine XII	2019	Under Study
Congo-Braz	Eni	Marine XII - Nene	2018	Under Study
Cameroon	NewAge LTD	Etinde	2019	Under Study
Congo-Braz	Eni	Marine XII - Nene	2020	Under Study
Ghana	Aker Energy	Beech	2019	Under Study
Ghana	Aker Energy	Pecan	2019	Pending FID
Nigeria	First E&P	Anyala & Madu	2019	Pending FID
Nigeria	Shell	Bonga Southwest	2019	Pending FID
Nigeria	Eni	Zabazaba	2019	On hold
Senegal	Woodside/Cairn	SNE	2019	FEED

Source: Fearnley Offshore

Up to 19 FPSO prospects lined up for 2019. We estimate that up to 19 awards (best case scenario) with an aggregated capex value of USD17b are likely to roll out over the next 12 months.

Large-size FPSOs to dominate jobs. Of the 19 potential projects, 9 are large-sized FPSOs (capex size of USD1b+), 5 are small size (USD500m and below) and 4 are mid-size types (USD500m to sub-USD1b).

Redeployment prospects on the rise. Of the potential 19 jobs, 10 are redeployment prospects and 2/3 of the upcoming FPSO awards are for leased units.

Fig 13: Potential FPSO awards in 2019

Country	Operator	Project	Status	Hull type	Lease/own/lease-own	Capex (USD'm)
Australia	ConocoPhillips	Barossa	FEED	New	Lease-own	2,000
	Western Gas	Equus	FEED	New	Own	800
Brazil	Karoon	Neon	Pending FID	Redeployment	Lease	400
	Petrobras	Buzios 5	Tenders submitted	New/ conversion	Lease	1,400
	Petrobras	Marlim 1	Tenders submitted	Conversion/ redeployment	Lease	700
	Petrobras	Marlim 2	Tenders submitted	Conversion/ redeployment	Lease	700
	Petrobras	Mero 2	LOI with SBM	New/ conversion	Lease	1,500
	Petrobras	Parque Das Baleias	Tenders submitted	New/ conversion	Lease	1,000
Ghana	Aker Energy	Greater Pecan	Tenders submitted	Conversion/ redeployment	Lease	1,000
Guyana	ExxonMobil	Liza 2	Pending FID	New	Lease-own	1,500
India	ONGC	KG-DWN-98/ 2	Awarded to BArmada-Sharpooji	Conversion	Lease	1,000
	Reliance	KG-D6/ MJ field	Tenders submitted	New/ conversion	Lease-own	1,250
Malaysia	PETRONAS	Limbayong	Tender in progress	Conversion/ redeployment	Conversion	600
Nigeria	First E&P	Abigail-Joseph	Awarded to Yinson	Redeployment	Lease	150
Norway	Var Energi	Balder X	Pending FID	Redeployment	Own	400
Senegal	Woodside	SNE-Lupalupa/Baobab	FEED	Conversion/ redeployment	Lease	1,000
UK	Alpha Petroleum	Cheviot	LOI with Teekay	Redeployment	Lease	500
	Siccar Point	Cambo Hub	Tenders submitted	New/ redeployment	Lease	500
Vietnam	Jadestone	Nam Du/ U Minh	Tender in progress	Conversion/ redeployment	Lease	400

Source: Emerging Maritime Associates (EMA), Fearnley Offshore, Maybank KE

4 contracts awarded so far. To-date, two have already been awarded:

- i. First E&P's Abigail-Joseph project to Yinson and
 - ii. ONGC's KG-DWN-98/2 projects to BArmada-Sharpooji consortium
- while two were given Letter of Intent (LOI):
- i. Petrobras' Mero 2 to SBM and
 - ii. Alpha Petroleum's Cheviot to Teekay.

9 other projects identified have a high degree of certainty of rolling out. Of the 19 projects highlighted above and excluding the LOIs and awards, the ones highlighted in red (9 units in total) also appear to be making good progress towards a realistic award in the near term. Most of these will come from Brazil.

With a USD13b capex. Overall, the market could realistically expect up to 13 FPSO contracts (with an aggregated capex size of USD13b) to be awarded this year. That is twice the number of contracts awarded in 2018, which is above the average of 8.6 contracts reported by Fearnley Offshore over the last 10 years.

Highlight #1: Brazil's FPSO tenders

It is estimated that Brazil is prospecting for 13 FPSOs over the next 3 years. According to EMA's scenario analysis, Petrobras is set to order: (i) 1-3 units on a low-case basis, 2-4 units p.a. in the mid-case and 3-5 units p.a. on a high-case basis. For 2019, there is a high likelihood that it may hit a high case scenario. We have highlighted the 5 prospects below:

Buzios 5

Modec will likely pip Exmar to this project. Based on ground checks, Petrobras has agreed terms with Japan's Modec for a FPSO unit to this field following the failure of the original low bidder, Exmar to conclude its financing arrangements. While Petrobras has yet to issue an official declaration of award to Exmar, Modec has unofficially been declared the winner for this job.

Some local content required for this job. The original first oil was initially targeted to start by 2021 but will likely slip due to this delay in award. We understand that Modec has lined up a yard, touted to be China's Cosco Shipping Heavy Industries for the engineering, procurement and construction (EPC) works on this. There is some (but not full) local content requirement for this FPSO.

USD700k day rates for a 21-year firm charter. According to Upstreamonline, the agreed dayrates are in the range of USD700k, above Exmar's proposed rate of USD635k (considered by many industry insiders as low; over aggressive) but below its original price of USD815k. The FPSO comes with a 21-year charter contract.

The Buzios-5 FPSO will provide Petrobras with a 180k bpd of crude processing capacity plus 6m cubic meter per day of natural gas handling capacity.

Mero 2

SBM secured LOI for this FPSO, beating Modec to this project. MISC was due to submit a proposal for this but pulled out as it could not conform to the deadline.

A 22.5-year working charter, with planned scheduled production in 2022. The Mero 2 FPSO, which will be similar to Mero 1, will have the capacity to produce 180k bpd of crude oil and handle 12mmscfd of natural gas.

USD690k DCR. The offered day rate was USD690k.

40% local content requirement. The contract will feature local content of up to 40% for engineering, machinery and equipment, as well as construction, integration and assembly.

Marlim Revitalisation 1 & 2

Modec and Yinson in the race. Petrobras completed the qualification process for this tender in Mar 2019, resulting in the exclusion of Teekay-Ocyan JV (due to concerns over some terms; e.g. knock-for knock insurance provisions), which left Modec and Yinson in the race.

No local content requirement for these tenders. The contract comes with a 22.5-year firm charter with a 2022 delivery deadline.

Tender options. Petrobras has framed the tender into 3 different bidding options:

- **Package A:** Covering Marlim 1 FPSO for 80k bpd oil & 7m cu m per day of natural gas;
- **Package B:** Covering Marlim 2 FPSO for 70k bpd oil & 4m cu m per day of natural gas and

- **Package C: Covering Marlim 1 & 2 FPSOs.**

Modec and Yinson could each win one. Modec initially opted for all 3 packages but has narrowed its options to just Package A & B (dropped Package C option) after having its bids revived for Buzios 5.

A win-win scenario. According to Upstreamonline, Yinson's day rates proposals came in at USD750k and USD650k per day for the respective units, which is thought to be about USD100k higher than Modec's proposed rates.

Dayrates comparables. The price if confirmed, reflects Modec's competitiveness with an established position in Brazil. Modec already has mature supply chain, logistics arrangements and track record there with financing structures.

Parque das Baleias (Caxareu/ Pirambu)

Yinson vs. Saipem-Bluewater. Bids for this project were received on 1 Mar 2019 but commercial envelopes have not been opened yet.

No local content requirement for this tender. The contract offers a 22-year firm charter with a 2022 delivery deadline. The FPSO is scheduled to enter into production in 2022 and will have a capacity to produce 100k bpd oil and 5mmscfd of natural gas.

Highlight #2: Ghana's FPSO tenders

Greater Pecan

Yinson and SBM are the two leading contenders in the running to supply a FPSO for Aker Energy's Greater Pecan project off Ghana, based on Upstreamonline. Modec and BArmada were originally in the race for this tender but were understood to have fallen off the pace. Bids were received on 1 Mar 2019.

Minimal local content requirement. Aker is closing in on submitting the integrated plan of development for complex off Ghana. The FPSO will be owned and operated by the contractor with a processing oil capacity of 110k bpd and storage capacity of 1.6m crude oil.

Details of the Greater Pecan field. Aker holds a 50% in the Deepwater Tano-Cape Three Points (DWT-CTP) block together with Lukoil (38%), Ghana National Petroleum Corp (10%) and Fueltrade (2%). Recall that Hess sold its stake in this field to Aker IN Feb 2018 for USD100m.

About 334m barrels of oil will be developed in the first phase with a further 110m-210m boe to be exploited later. Break-even price is touted to be less than USD35/bbl.

Highlight #3: Malaysia's FPSO tenders

Limbayong

3-cornered fight for this tender. According to Upstreamonline, MISC-Yinson, MTC Group-Sharpoorji and Sabah International Petroleum have been pre-qualified for this job.

Details of the FPSO. The unit would need to be able to process 40k bpd of oil and 150mmscfd of gas while injecting 75k bpd of water.

Prospects and Outlook

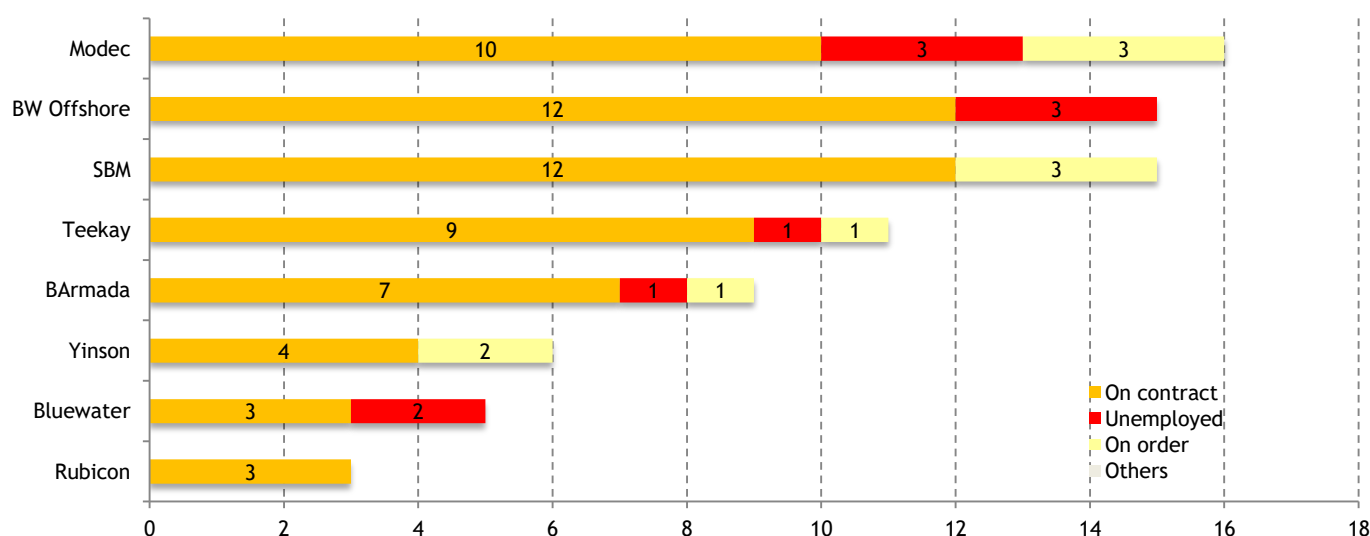
Opportunities abound. Based on the robust tender pipeline this year, it is turning into a contractors market now. It is estimated that each established FPSO contractor could realistically take on 2-3 new works p.a. in 2019, provided they have the balance sheet strength, track record and execution capabilities.

Strategic partnerships, access to capital equally key. The FPSO business is capex-intensive and having strategic partnership(s) will be a big plus when it comes to accessing capital.

- **Alliances made to-date.** Modec has an alliance with Mitsui, SBM with Mitsubishi Corp (since 2011) while Yinson is partnering the Sumitomo-K Line, JGC Corp and Development Bank of Japan consortium (since 2017). Together, they have signed long term co-operation agreement to jointly purpose FPSO projects worldwide.
- **JVs.** We see that BArmada has been partnering Shapoorji for tenders in India, Yinson-PTSC in Vietnam, Teekay-Ocyan and Saipem-Bluewater, just to name a few for tenders to complement their financial strength and technical capabilities.

Modec, SBM and Yinson have been among the busiest FPSO players in the market over the past 2 years. They have picked up a combined 9 FPSO orders over the past two years with a few more expected in the pipeline. Brazil, Ghana, Guyana and Asia are touted to be the targeted markets for these new jobs highlighted earlier on.

Fig 14: FPSO contractors fleet size



Source: Various, Maybank KE

Assessing FPSO's capacity to take on new jobs in 2019. While the demand side is booming, realistically, there are only 8 active and experienced FPSO operators left in the market now and a select few with the financial and execution capability to meet this demand.

That said, with several large and complex FPSOs tenders rolled out to-date, the market is expected to be tighter come 2H19. Some projects, in our view may be deferred to the following years as the FPSO players optimize their financial resources.

As such, we take a look at six FPSO players in assessing their prospects:

#1: Assessing Modec's (6269 JP; Not Rated) capacity:

Modec is the most aggressive among its peers in the tendering process. To-date, it has 4 jobs in hand:

- i. *Sepia*; a 21-year charter. First oil by 2021. The converted FPSO is designed to produce 180k bpd/ 212mmscfd of oil/ gas with storage capacity of 1.4m bbls.
- ii. *Mero*, formerly known as *Libra*; a 22-year firm charter. First oil by 2021. The converted FPSO is designed to produce 180k bpd/ 424mmscfd oil/ gas with storage capacity of 1.4m bbls.
- iii. *Amoca*; a 15+5-year charter, first oil by 2021. The FPSO is designed to produce 90k bpd oil, 75mmscfd gas with storage capacity of 900k bbls.
- iv. *SNE field*, first oil by 2022. FPSO is designed to produce 100k bpd of oil.

2 more in the bag soon? Notwithstanding that, Modec is touted to be close to securing 2 new jobs in Brazil; the *Buzios 5* and *one of the Marlim 1 & 2 projects*. This would bring its total WIP projects to-date to 6 units, which could potentially be an operational risk in our view.

It has a strong parent in Mitsui. Modec models its business more as an EPC contractor than an FPSO operator. Therefore, its shareholding at most of its FPSO units at sub-50% levels; an asset-light model. Hence, the earnings from these FPSOs are equity accounted. As such, it is in a net cash position.

Fig 15: Modec's FPSOs

FPSO	Shareholding (%)
Cidade de Campos dos Goytacazes MV29	20.1
Cidade de Caraguatatuba MV27	20.1
Prof. John Evans Atta Mills	20.1
Cidade de Itaguaí MV26	20.1
Cidade de Mangaratiba MV24	29.4
Cidade de São Paulo MV23	34.0
Kwame Nkrumah MV21	Ownership was transferred to clients
Cidade de Angra dos Reis MV22	42.5
Cidade de Santos MV20	50.0
Cidade de Niterói MV18	45.0
Cidade do Rio de Janeiro MV14	40.6
Baobab Ivoirien MV10	50.0

Source: Modec, Maybank KE

#2: Assessing SBM's (SBMO NA; Not Rated) capacity:

SBM has 3 jobs in hand:

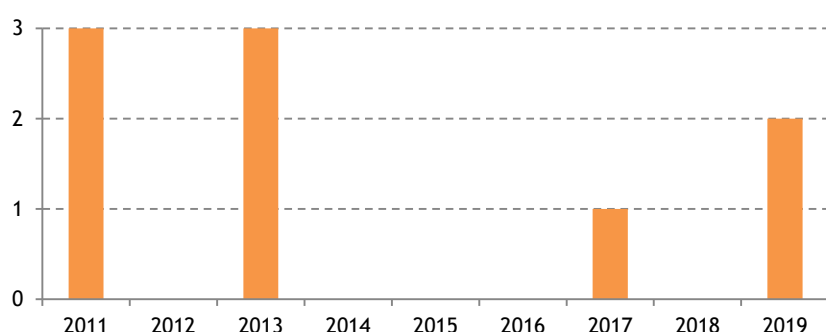
- i. *Liza Destiny*; on track to start-up by 1Q2020 at Guyana.
- ii. *Liza Unity* at Guyana, awarded in May 2019. The design is based on using its standardized hull *Fast4Ward* concept. The FPSO is designed to produce 220k bpd oil, store 2m bbls. Delivery of the FPSO is expected in 2022.

- iii. **Mero 2 in Brazil.** SBM secured the LOI from Petrobras for a 22.5 year charter. The FPSO is designed to produce 180k bpd oil/ 12mmscfd gas and store 1.4m bbls of oil.

Prospecting for projects. It has established its market position in Brazil and Guyana and is trying to penetrate into the Ghana FPSO market by putting in bids for the Greater Pecan project. There are about 4 tenders each coming out from Brazil in 2020 (Carcara, Seap 1, Itapu, Gato Do Mato) and 2021 respectively and 3 from Guyana in 2019-21.

2 wins to-date; capacity to take up more jobs will be limited for this year. With 2 new jobs in hand, SBM has indicated that it will be disciplined in its bidding and execution, targeting 2-3 FPSO project wins per year. The capacity to take on more jobs will be constrained by its balance sheet. Its net gearing level is at 106%. Historically, SBM has secured 9 jobs since 2011; averaging one a year (won 3 jobs p.a. in 2011 and 2013 respectively).

Fig 16: SBM's historical FPSO win rate



Source: Various, Maybank KE

#3: Assessing Yinson's (YNS MK; BUY; TP: MYR9.45) capacity:

2 jobs in hand; to be delivered in 4Q19. They are the:

- (i) **Helang/ Layang in Malaysia and**
- (ii) **FPSO Abigail-Joseph in Nigeria. Redeployed FPSO Allan for this.**

Prospecting for 5 firm tenders. Yinson is bidding for:

- (i) **Petrobras' Marlim 1 or 2 and**
- (ii) **Parque das Baleias projects in Brazil,**
- (iii) **Aker Energy's Greater Pecan project in Ghana and**
- (iv) **PETRONAS' Limbayong project in Malaysia.**

Partnership deals for big, complex works. The capex size for these 5 tenders would total USD4b-5b. Yinson will partner: (i) Sumitomo for Petrobras' tender and (ii) MISC for the Limbayong jobs.

Most leveraged to win multiple works this year. Of the 5 bids, we expect Yinson to secure at least two FPSO contracts. It has the operating and financial clout to take up works with up to capex size of USD2b-3b **WITHOUT:**

- (i) stretching its balance sheet, which is ranked 2nd best in the market (behind Modec; its net gearing level is at 53%) and
- (ii) triggering an operational risk.

Yinson has the track record in all the countries that it is bidding in except Brazil.

Needs to do a cash call if it takes on 3 jobs. This is a possibility, not unrealistic. With 3 jobs, we posit that Yinson will be a bit stretched in terms of execution but this is not entirely impossible.

#4: Assessing BArmada's (BAB MK; HOLD; TP: MYR0.20) capacity:

One job in hand. The BArmada-Sharppoorji consortium, a 30:70 JV recently won ONGC's NELP Block DWN 98/2 development cluster-II field off the coast of Kakinada, India. This is a 9+7 year charter worth USD2.8b with a 2022 delivery deadline.

Stretched financials. Its net gearing level stood at 272% as at end-Dec 2018. The urgent need to address its stretched balance sheet remains its priority. Its net debt/ EBITDA ratio of 8x is high and a concern.

Many challenges to address ahead. It needs to optimize its cost structure, downsize headcount, lift asset utilization and monetize some of its floating assets.

Until these are addressed, BArmada will be not be in a position to compete for projects, in our view.

#5: Assessing BW Offshore's (BWO NO; Not Rated) capacity:

It has remodeled its business and focus. Its strategy is to be the preferred partner of small- to medium-sized E&P companies in developing O&G fields. That said, its parent is now investing in E&P for BWO to redeploy its FPSOs.

A relatively small balance sheet compared to its peers; sub-USD1b. It targets redeployment works and has no intention to sink in big capex.

#6: Assessing Teekay's (TOO US; Not Rated) capacity:

New entry of a new shareholder. Teekay Corp agreed to sell its remaining interest in Teekay offshore to Brookfield Business Partners for USD100m.

Needs clarity on business direction.

Fig 17: Teekay Offshore's FPSOs fleet

Unit	Stake (%)
Cidade de Itajai	50
Pioneiro De Libra	50
Petrojarl Cidade de Rio das Ostras	100
Petrojarl I	100
Petrojarl Knarr	100
Petrojarl Varg	100
Piranema Spirit	100
Voyageur Spirit	100
Sevan Hummingbird	100
Petrojarl Banff	100
Petrojarl Foinaven	100

Source: Teekay Offshore

Putting things into perspective, in terms of prospective wins ahead:

- i. **Modec** will like add Buzious 5 and one of the Marlim projects to its orderbook, which will raise its order backlog to 6 units.

With 6, its capacity to take on more will be constrained by operational risk rather than financials, in our view. Most of its projects in hand are slated for deliveries in 2011-22. That said, execution risk will override its financial strength in this aspect.

Verdict: Modec to win 2 projects (Buzious 5 & Marlim) in 2019

- ii. **SBM's** recent win in Brazil (Mero 2) suggests that its legacy issue (suspension by Petrobras) is already water under the bridge.

SBM has officially declared that it will be disciplined in bidding and execution; with 2+ FPSO project wins per year. With FPSOs Liza and Mero 2 in the bag, it has reached its intended target for the year.

While it could take on one more job this year (competing with Yinson for the Pecan job), its balance sheet will be tested; it reported 1.1x net gearing level and 4.6x EV/ EBITDA in FY18.

That said, with demand outstripping supply, SBM is taking the sensible route in being selective on tenders that it pursues. In the longer term, it has targeted Brazil and Guyana as key prospects; with 8 and 2 possible tenders in Brazil and Guyana in 2020-21 respectively.

Verdict: SBM to win 2 projects (Liza & Mero 2) in 2019

- iii. **Yinson**, in our view, is most leveraged to add on new jobs this year. With 2 projects (Helang & Abigail-Joseph) on track for delivery in 4Q19, Yinson has the capacity to take on new orders.

In our view, it is in a position to take on at least 2 jobs. With Modec having recently revised its bidding options for the Marlim tender (i.e. bidding for one job; either Marlim 1 or 2 and not two prospects), both Yinson and Modec will end up securing one Marlim job each. Getting this will mark Yinson's maiden entry into the Brazilian FPSO market.

Notwithstanding that, we understand that Petrobras' Parque das Baleias bid has been narrowed down to between Yinson and Saipem-Bluewater, an equal chance.

Meanwhile, the Greater Pecan job is a race between SBM and Yinson. We posit that Yinson has the edge over SBM, for it already has an established operating presence in Ghana (FPSO JAK). This is important for it offers: (i) a lower operating cost structure and (ii) a better understanding of the country's legal and tax framework.

Bagging 3 is a high possibility, in our view (Marlim, Parque or Greater Pecan). However, if it takes on 3 jobs, it will likely undertake a cash call to fund these projects. The capex for each FPSO could be in the USD1-1.3b region.

Verdict: Yinson to win 2-3 projects (Marlim, Parque dAs Baleias and Greater Pecan) in 2019

Best case scenario for 2019: 4 awards, inclusive of Limbayong.

Valuations & recommendation

Yinson is our key pick in the FPSO space. Putting things into perspective, we like management's teamwork/ business acumen/ strategic direction and the financial strength over BArmada.

Has the capacity to take on 2+ new jobs in 2019. The tender pipeline for FPSOs remains strong over the next 12 months, with Yinson prospecting for 5 key bids (three in Brazil and one each in Ghana and Malaysia) with capex size of USD4b-5b. Of the 5, we posit that Yinson has a strong chance of winning up to 4 jobs.

Raise SOP-based TP to MYR9.45. Our revised base-case TP now incorporates 2 new jobs, with capex size of about USD2b. We estimate that these 2 jobs will add MYR400m p.a. to net profit from 2022. Our estimates are based on a 7% WACC assumption.

Maintain HOLD on BArmada. The urgent need to address its balance sheet will take precedence over earnings growth. Its other key focuses include: improving on FPSO Kraken's performance, cutting costs, lifting OSV utilisation and monetizing unutilized assets. Our SOP-TP is MYR0.20.

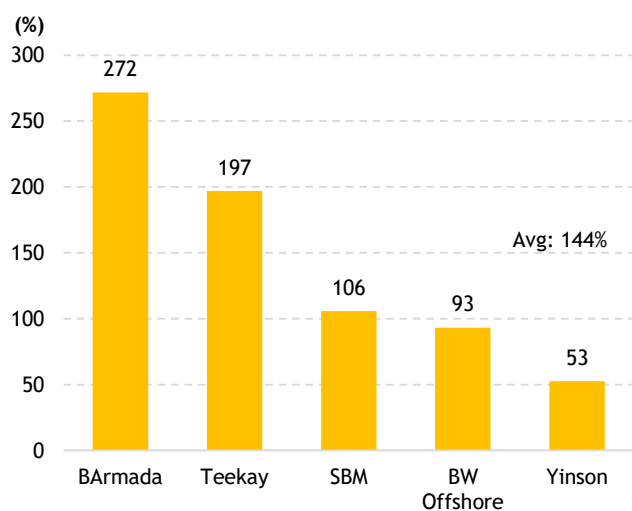
Fig 18: Peer comparatives

Stock	Bloomberg code	Mkt Cap (USD'm)	Rating	Price (LC)	TP (LC)	Upside (%)	P/E (x)		P/B (x)		Div yld (%)	
							18A	19E	18A	19E	18A	19E
Yinson	YNS MK	1362	Buy	5.21	9.45	81	13.4	16.7	1.7	1.3	2.4	1.5
Bumi Armada	BAB MK	281	Hold	0.20	0.20	0	5.0	5.5	0.3	0.3	0.0	0.0
Global peers												
SBM Offshore	SBMO NA	3759	NR	16.32	NM	NM	15.9	21.2	1.3	1.2	2.2	2.0
Modec	6269 JT	1503	NR	2889	NM	NM	7.4	10.7	1.1	1.0	1.8	1.6
BW Offshore	BWO NO	1156	NR	55	NM	NM	28.6	12.1	0.7	1.0	0.0	0.0
Teekay Offshore	TOO US	460	NR	1.12	NM	NM	4.3	4.5	0.5	0.3	3.6	0.0

Source: Bloomberg, Maybank KE

FPSO operators: Peer comparison

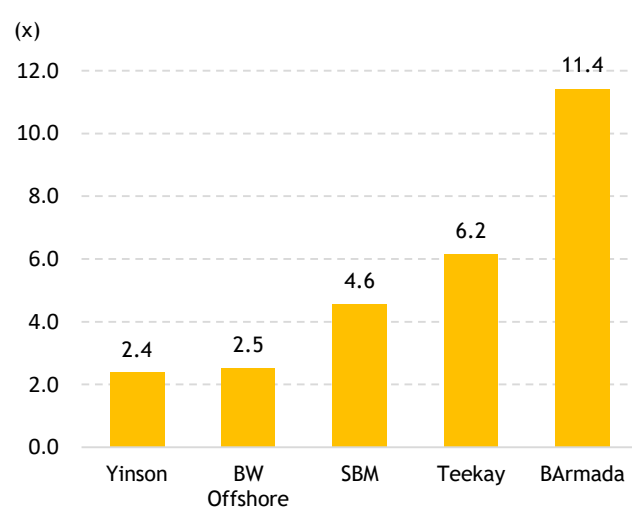
Fig 19: FPSO: Peers net gearing ratio



Source: Various, Maybank KE; # Modec is in net cash position

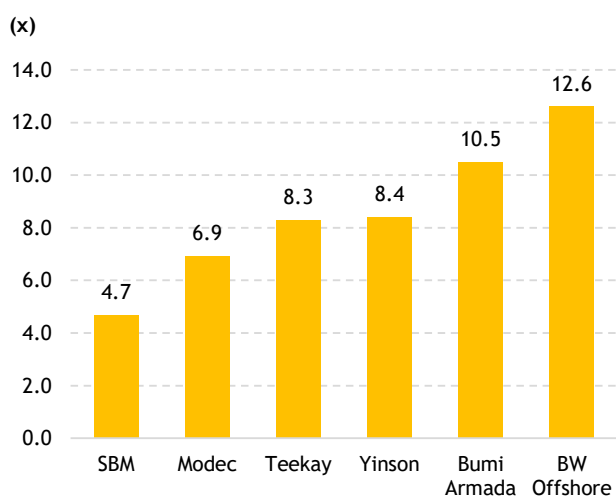
*Note: The figures are based on the latest FYEs.

Fig 20: FPSO: Peers net debt/ EBITDA ratio



Source: Various, Maybank KE; # Modec is in net cash position

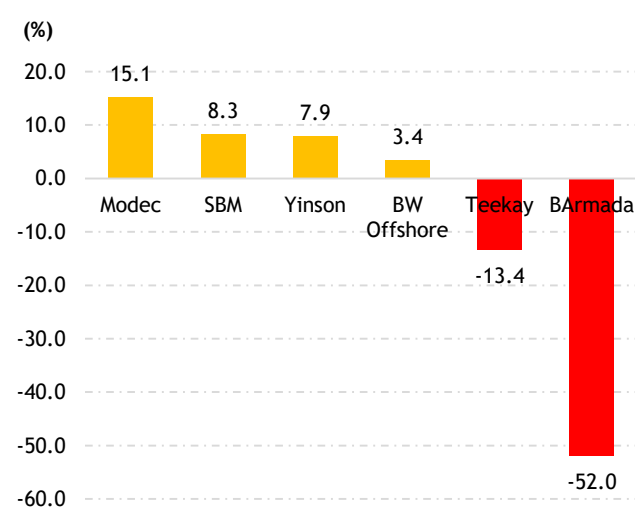
Fig 21: FPSO: Peers EV/EBITDA ratio



Source: Various, Maybank KE

*Note: The figures are based on the latest FYEs.

Fig 22: FPSO: Peers net debt/ EBITDA level



Source: Various, Maybank KE

Fig 23: FPSO: Contractor fleet overview

Contractor	Working	On order	Unemployed
SBM	Espirito Santo	Liza Destiny	
	Kikeh	F4W (Liza 2)	
	Mondo	F4W #2 (Speculative)	
	Saxi		
	Capixaba		
	Aseng FPSO		
	Cidade de Anchieta		
	Cidade de Paraty		
	Cidade de Ihabela		
	N'Goma		
	Cidade de Marica		
	Cidade de Saquarema		
BW Offshore	Cidade de Sao Vicente		Cidade de Sao Mateus
	Sendje Berge		BW Athena
	Catcher		Berge Helene
	Yuum K'ak'naab		
	Abo		
	Espoir Ivorien		
	BW Joko Tole		
	Petroleo Nautipa		
	Polvo		
	BW Pioneer		
	BW Adolo		
	Umuroa		
Modec	Baobab Ivorien MV10	Carioca MV30 (Sepia)	Stybarrow Venture MV16
	Cidade de Niteroi MV18	Guanabara MV31 (Libra)	Modec Venture 11
	Cidade de Santos MV20	Amoca (LOI)	Cidade de Rio de Janeiro MV14
	Cidade de Campos dos Goytacazes MV29		
	Cidade de Angra dos Reis MV22		
	Cidade de Mangaratiba MV24		
	Prof. John Evans Atta Mills MV25		
	Cidade de Caraguatatuba MV27		
	Cidade de Sao Paulo MV23		
	Cidade de Itaguaí MV26		
Teekay	Pioneiro de Libra		Cidade de Rio das Ostras
	Petrojarl Foinaven		Petrojarl Varg
	Hummingbird Spirit		
	Piranema Spirit		
	Petrojarl Cidade de Itajai		
	Voyageur Spirit		
	Knarr		
	Petrojarl 1		
	Ramform Banff		

FPSO: Contractor fleet overview (continued)

Contractor	Working	On order	Unemployed
Bumi Armada	Te Giac Trang Armada Sterling Armada Kraken Armada Olombendo Karapan Armada Sterling III Armada Sterling II Armada Perdana	KG-DWN-98/2	Armada Claire
Yinson Production	Knock Allan Knock Adoon John Agyekum Kufuor PTSC Lam Son	Helang Abigail-Joseph	
Bluewater	Haewin Brim Bleo Holm Aoka Mizu		Munin Glas Dowr
Rubicon	Rubicon Intrepid Front Puffin Rubicon Vantage		
Petrofirst Infrastructure	Jasmine Venture Lewek Emas		
MISC	Bunga Kertas Cendor Ruby II (40%) Kikeh (51%) FPSO Espirito Santo (49%)		
Saipem	Cidade de Victoria Gimboa		
PTSC	Ruby II Lam Son (51%)		
Sabah Intl. Pet.	Ratu Nusantara		FPSO Perentis
Ocean Yield			Dhirubai-1
Perisai			Perisai Kamelia
BLT	Brotojoyo		
Petroserv			Dynamic Producer
TH Heavy Eng.			Deep Producer
Qeios Galvao	Capixaba (20%) Cidade de Iihabela (JV) Cidade de Paraty (x%)		
Odebrecht	Pinoneiro de Libra (50%)		

Yinson Holdings (YNS MK)

Well positioned to win multiple jobs this year

TP raised to MYR9.45. BUY

The FPSO business is booming with up to 19 prospects lined up for 2019. With one win in the bag (FPSO Abigail-Joseph) and five firm bids to-date, we forecast Yinson to win two more projects this year, a realistic target. For that, we have raised our SOP-based TP by 75%, incorporating the two job wins, with total capex size of USD2b.

Robust tender pipeline

Demand for FPSO is exceptionally strong this year. Of the 19 tenders lined up, Yinson is prospecting for five key tenders in three countries. They are the: (i) Petrobras' Marlim Revitalisation 1 & 2 and Parque das Baleias projects in Brazil, (ii) Aker Energy's Greater Pecan tender in Ghana and (iii) PETRONAS' Limbayong bid in Malaysia, with a combined capex value of USD4b-5b. Considering that Brazil is a new market for Yinson, it will partner Sumitomo for all the tenders there given (i) the size of the contracts (>USD1b each) and (ii) the country risk; a new market.

Has the capacity to take on 2+ new jobs

With the two FPSOs; Helang and Abigail-Joseph on track to deliver by 4QCY20, Yinson has the capacity to take on new jobs. While Yinson has a strong chance in four of the bids, winning two with capex size of USD2b would be a very realistic target without straining its balance sheet and avoids potential systemic risk. That said, taking on 3 new jobs is still possible. While Yinson will be a bit stretched in terms of execution, it is not entirely impossible. Putting things into perspective, Yinson will likely need to do a cash call should it take on three jobs this year.

Market has yet to price in this prospect

Based on our back-of-envelope analysis, every USD1b capex project will add about: (i) MYR2/shr to our NPV and (ii) -MYR200m net profit p.a. In short, this is equivalent to its FPSO JAK contract. That said, we have raised our TP by 75% to MYR9.45, incorporating for 2 new jobs with USD2b capex worth. The key risks are execution and access to capital.

FYE Jan (MYR m)	FY18A	FY19A	FY20E	FY21E	FY22E
Revenue	910	1,035	1,037	1,428	1,433
EBITDA	645	801	741	959	970
Core net profit	342	268	269	370	372
Core EPS (sen)	31.4	24.5	24.6	33.8	34.0
Core EPS growth (%)	52.6	(21.8)	0.4	37.3	0.6
Net DPS (sen)	10.0	6.0	6.0	6.0	6.0
Core P/E (x)	13.4	16.7	21.2	15.4	15.3
P/BV (x)	1.7	1.3	1.6	1.5	1.4
Net dividend yield (%)	2.4	1.5	1.2	1.2	1.2
ROAE (%)	11.6	7.9	7.9	10.1	9.3
ROAA (%)	5.3	3.7	3.3	4.0	3.7
EV/EBITDA (x)	10.8	8.3	10.3	7.4	6.8
Net gearing (%) (incl perps)	90.1	52.5	40.9	24.2	10.6
Consensus net profit	-	-	262	387	435
MKE vs. Consensus (%)	-	-	2.7	(4.5)	(14.5)

Liaw Thong Jung
tjliaw@maybank-ib.com
(603) 2297 8688

BUY

Share Price	MYR 5.21
12m Price Target	MYR 9.45 (+81%)
Previous Price Target	MYR 5.40

Company Description

Yinson is the Top 6 FPSO operator in the world by fleet size. OSV and non-O&G (transport & trading) operations are complementary businesses.

Statistics

52w high/low (MYR)	5.26/4.06
3m avg turnover (USDm)	2.2
Free float (%)	51.9
Issued shares (m)	1,093
Market capitalisation	MYR5.7B
	USD1.4B

Major shareholders:

LIM HAN WENG	16.0%
Kumpulan Wang Persaraan	14.0%
Employees Provident Fund	11.2%

Price Performance



	-1M	-3M	-12M
Absolute (%)	10	15	13
Relative to index (%)	7	18	18

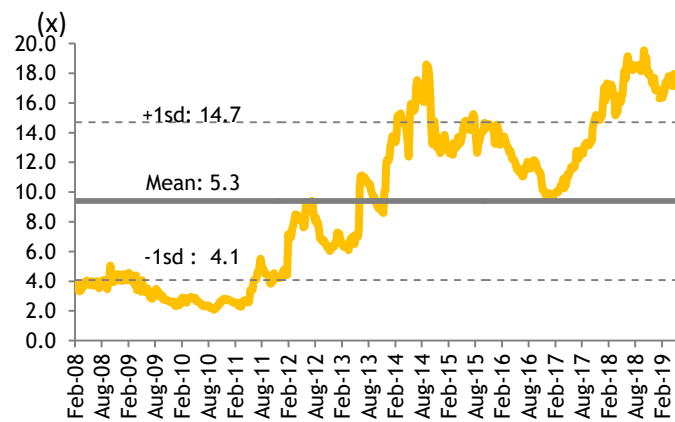
Source: FactSet

Fig 18: Valuations

Floating assets	Stake	Firm	Firm + Extension	Maybank-IB	Details
	(%)	(MYR'm)	(MYR'm)	(MYR'm)	
FSO Bien Dong	49	43.0	179.6	179.6	NPV (firm + extension), 5.3% WACC; debt-free
FPSO Lam Son	49	64.5	136.5	64.5	NPV (firm; on yearly renewal), debt-free
FPSO Adoon	100	312.2	312.2	312.2	NPV (firm + extension; on yearly renewal), 5.3% WACC; debt-free
FPSO JAK	74	1,654.9	2,224.6	2,224.6	NPV (firm + extension), 6.7% WACC
FPSO Helang	100	179.0	1,001.6	1,001.6	NPV (firm + extension), 7.4% WACC
FPSO Abigail-Joseph	100	632.1	956.2	632.1	NPV (firm; redeployment of FPSO Allan); 10.5% WACC
2 new FPSOs	100	4,449.1	4,449.1	4,449.1	Equivalent to 2 FPSO JAK ops; USD2b capex
Sub-total		7,335.0	9,237.7	8,848.0	
Residual value		661.4	661.4	661.4	6 assets @ 10% of capex
OSV		60.0	60.0	60.0	50% of BV
Cash		760.7	760.7	760.7	Holding co. cash; adjusted for associate & perps
Total		8,817.1	10,719.8	10,330.1	
Share base (m)		1,093.2	1,093.2	1,093.2	
SOP/ shr		8.07	9.81	9.45	Based on MYR 4.10: USD1.00

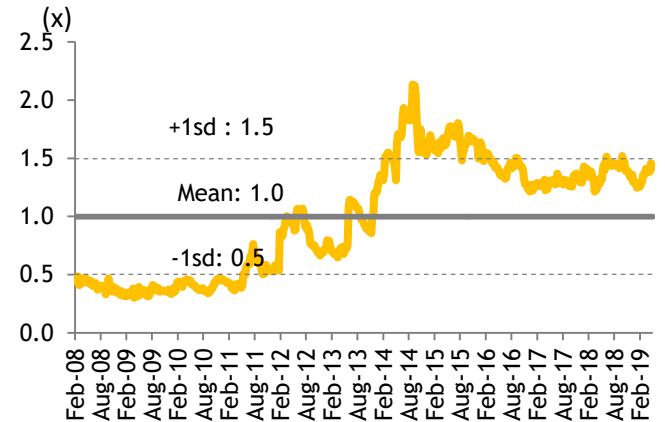
Source: Company data, Maybank Kim Eng

Fig 19: Yinson: 12M forward PER band



Source: Bloomberg, Maybank Kim Eng

Fig 20: Yinson: 12M forward PBV band

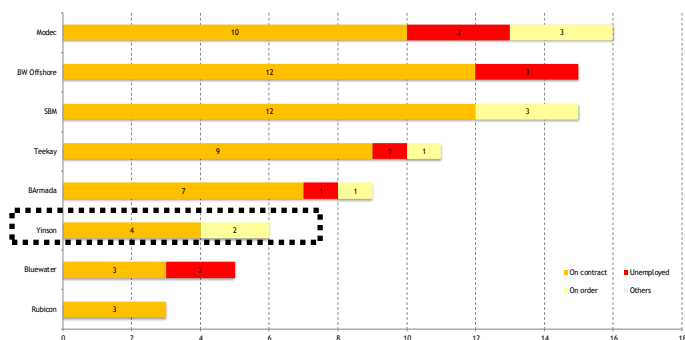


Source: Bloomberg, Maybank Kim Eng

Value Proposition

- Arguably one of the most profitable (in terms of ROE) FPSO operators globally. 6th largest independent FPSO leasing entity worldwide in terms of fleet size (with operating presence in Asia and Africa). OSV is its complementary business.
- Unlike its peers, its FPSO contracts are generally more bankable (strong counterparties), providing steady visibility (long-term charters, termination protection) with reasonable project IRRs.
- Has an experienced, lean management team with strong execution capabilities - proven track record in consistently delivering projects on budget, on time.

Top FPSO operators in the world

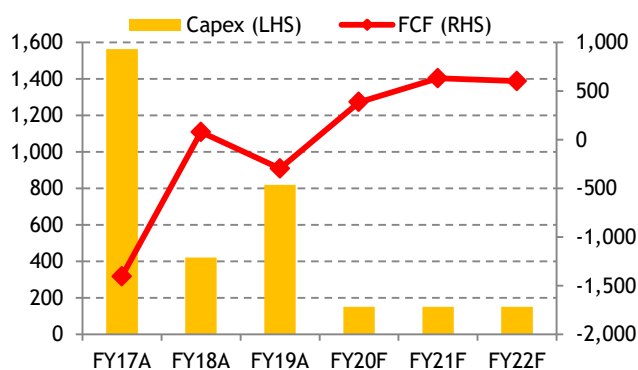


Source: Company

Financial Metrics

- Key earnings drivers are Yinson's bare-boat & O&M charters, as well as utilisation and opex. Variations in any of these parameters will impact profitability.
- With low oil prices, cost management and capital discipline are key emphases in this cycle.
- Despite the heavy capex, net gearing has been manageable, reflective of prudent financial management and cashflow generation from its FPSO operations.

Capex and FCF trend (MYR'm)



Source: Company

Price Drivers

Historical share price trend



Source: Company, Maybank Kim Eng

Swing Factors

Upside

- Rebound in crude oil price will be the most dominant near-term share price driver.
- New job wins (prospecting for 2-3 firm tenders) will contribute to a significant jump in earnings.
- M&A action is not entirely ruled out as values are undemanding following the recent steep drop in asset prices.

Downside

- Further weakness in oil price will affect share price performance.
- Poor execution capabilities and/or contract(s) termination related to its FPSO operations and inferior cost management would have a detrimental effect on earnings and market perception.



FYE 31 Jan	FY18A	FY19A	FY20E	FY21E	FY22E
Key Metrics					
P/E (reported) (x)	13.3	20.2	21.2	15.4	15.3
Core P/E (x)	13.4	16.7	21.2	15.4	15.3
P/BV (x)	1.7	1.3	1.6	1.5	1.4
P/NTA (x)	1.8	1.5	1.8	1.7	1.5
Net dividend yield (%)	2.4	1.5	1.2	1.2	1.2
FCF yield (%)	2.3	nm	6.7	11.8	10.5
EV/EBITDA (x)	10.8	8.3	10.3	7.4	6.8
EV/EBIT (x)	14.7	12.2	15.4	11.6	10.6

INCOME STATEMENT (MYR m)

Revenue	910.2	1,034.9	1,037.4	1,428.1	1,432.9
Gross profit	546.4	594.4	570.6	807.0	809.7
EBITDA	645.0	801.2	741.4	958.7	970.1
Depreciation	(219.5)	(284.5)	(245.7)	(345.8)	(345.8)
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	474.9	550.0	495.8	612.9	624.3
Net interest income / (exp)	(107.5)	(185.6)	(183.9)	(188.3)	(189.5)
Associates & JV	43.8	12.8	27.0	23.9	18.1
Exceptionals	(49.4)	(33.4)	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	361.8	343.9	338.9	448.5	452.8
Income tax	(69.7)	(79.5)	(23.7)	(31.4)	(31.7)
Minorities	0.1	(29.5)	(45.9)	(47.3)	(49.0)
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	292.2	234.9	269.3	369.7	372.1
Core net profit	341.6	268.3	269.3	369.7	372.1

BALANCE SHEET (MYR m)

Cash & Short Term Investments	637.1	1,217.3	1,570.7	3,254.7	3,788.5
Accounts receivable	331.3	282.1	282.8	389.3	390.6
Inventory	4.4	9.9	10.0	13.7	13.7
Reinsurance assets	0.0	0.0	0.0	0.0	0.0
Property, Plant & Equip (net)	4,535.2	5,298.2	5,202.5	5,006.7	4,810.9
Intangible assets	23.7	401.5	401.5	401.5	401.5
Investment in Associates & JVs	596.9	484.8	511.8	535.7	553.8
Other assets	321.8	389.6	389.6	389.6	389.6
Total assets	6,450.4	8,083.3	8,368.8	9,991.1	10,348.5
ST interest bearing debt	363.1	373.0	373.0	373.0	373.0
Accounts payable	326.6	399.6	400.6	551.4	553.3
LT interest bearing debt	2,647.1	2,748.4	2,783.4	3,903.4	3,903.4
Other liabilities	481.0	938.0	938.0	938.0	938.0
Total Liabilities	3,817.3	4,459.3	4,495.3	5,766.1	5,768.0
Shareholders Equity	2,632.6	3,321.3	3,525.0	3,829.1	4,135.7
Minority Interest	0.6	302.7	348.5	395.9	444.9
Total shareholder equity	2,633.2	3,624.0	3,873.5	4,225.0	4,580.5
Total liabilities and equity	6,450.4	8,083.3	8,368.8	9,991.1	10,348.5

CASH FLOW (MYR m)

Pretax profit	361.8	343.9	338.9	448.5	452.8
Depreciation & amortisation	219.5	284.5	245.7	345.8	345.8
Adj net interest (income)/exp	0.0	0.0	0.0	0.0	0.0
Change in working capital	(320.5)	483.4	0.3	40.6	0.5
Cash taxes paid	(69.7)	(79.5)	(23.7)	(31.4)	(31.7)
Other operating cash flow	(14.4)	(28.6)	(26.8)	16.7	(17.6)
Cash flow from operations	526.6	504.6	534.3	820.2	749.9
Capex	(420.2)	(818.5)	(150.0)	(150.0)	(150.0)
Free cash flow	106.4	(314.0)	384.3	670.2	599.9
Dividends paid	(65.3)	(131.6)	(65.6)	(65.6)	(65.6)
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	(383.0)	111.2	35.0	1,120.0	0.0
Other invest/financing cash flow	374.5	892.7	0.0	0.0	0.0
Effect of exch rate changes	0.0	0.0	0.0	0.0	0.0
Net cash flow	32.6	558.3	353.7	1,724.6	534.3

FYE 31 Jan	FY18A	FY19A	FY20E	FY21E	FY22E
Key Ratios					
Growth ratios (%)					
Revenue growth	19.1	13.7	0.2	37.7	0.3
EBITDA growth	127.3	24.2	(7.5)	29.3	1.2
EBIT growth	170.8	15.8	(9.9)	23.6	1.9
Pretax growth	77.4	(5.0)	(1.5)	32.3	1.0
Reported net profit growth	48.3	(19.6)	14.6	37.3	0.6
Core net profit growth	55.6	(21.4)	0.4	37.3	0.6
Profitability ratios (%)					
EBITDA margin	70.9	77.4	71.5	67.1	67.7
EBIT margin	52.2	53.1	47.8	42.9	43.6
Pretax profit margin	39.7	33.2	32.7	31.4	31.6
Payout ratio	37.2	27.9	24.4	17.7	17.6
DuPont analysis					
Net profit margin (%)	32.1	22.7	26.0	25.9	26.0
Revenue/Assets (x)	0.1	0.1	0.1	0.1	0.1
Assets/Equity (x)	2.5	2.4	2.4	2.6	2.5
ROAE (%)	11.6	7.9	7.9	10.1	9.3
ROAA (%)	5.3	3.7	3.3	4.0	3.7
Liquidity & Efficiency					
Cash conversion cycle	(265.1)	(184.2)	(202.9)	(184.4)	(213.2)
Days receivable outstanding	111.3	106.7	98.0	84.7	98.0
Days inventory outstanding	4.8	5.8	7.7	6.9	7.9
Days payables outstanding	381.2	296.8	308.5	275.9	319.1
Dividend cover (x)	2.7	3.6	4.1	5.6	5.7
Current ratio (x)	1.6	1.4	1.7	2.7	3.1
Leverage & Expense Analysis					
Asset/Liability (x)	1.7	1.8	1.9	1.7	1.8
Net gearing (%) (incl perps)	90.1	52.5	40.9	24.2	10.6
Net gearing (%) (excl. perps)	90.1	52.5	40.9	24.2	10.6
Net interest cover (x)	4.4	3.0	2.7	3.3	3.3
Debt/EBITDA (x)	4.7	3.9	4.3	4.5	4.4
Capex/revenue (%)	46.2	79.1	14.5	10.5	10.5
Net debt/ (net cash)	2,373.0	1,904.0	1,585.6	1,021.6	487.8

Source: Company; Maybank

Bumi Armada (BAB MK)

Needs to put the house in order first

Not able to compete with global peers for now

We see no catalyst to excite in the short- to mid-term. The urgent need to address its over-stretched balance sheet remains its priority. This setback hinders its capacity to ride the booming FPSO market. Its other key focuses include: improving FPSO Kraken's performance, cutting costs, lifting OSV utilisation and monetising unutilised assets (assets disposal). At this juncture, BArmada is fairly valued. Maintain HOLD. Our MYR0.20 TP is SOP-based.

Weak financials a major setback

Despite the robust tender pipeline in FPSO market this year, BArmada is, in our view, incapable of capitalising on this boom. Its net debt/ gearing level remains stretched; at MYR8.8b/ 266% as at end-Mar 2019. On an annualised basis, its net debt/ EBITDA ratio of 7.8x is high, a concern. While it did bag ONGC's 9+7 year charter for the NELP Block DWN 98/ 2 Development cluster-II field in India this year, its stake in this project was just at 30% vs. its partner; Shapoorji's 70%. That said, with its weak financials, we are curious as to how it plans to finance its 30%. In our view, one possible way would be for Shapoorji to carry BArmada on equity money in exchange for project execution expertise.

Many challenges still to address ahead

That said, BArmada is also facing other pressing matters. It needs to optimise its cost structure, downsize headcount, lift utilisation and monetise floating asset to lighten its balance sheet. Of the 7 assets, FPSO Olombendo is the most attractive. Having said that, matching pricing by both parties will be a challenge.

See better prospects elsewhere

Until these issues are resolved, the stock will likely be sidelined, in our view. We advocate Yinson for exposure to the booming FPSO business; from the perspectives of its better prospects, financials and valuations.

HOLD

Share Price	MYR 0.20
12m Price Target	MYR 0.20 (+0%)
Previous Price Target	MYR 0.20

Company Description

A Top 5 FPSO operator in the world with OSV and T&I units complementing its business

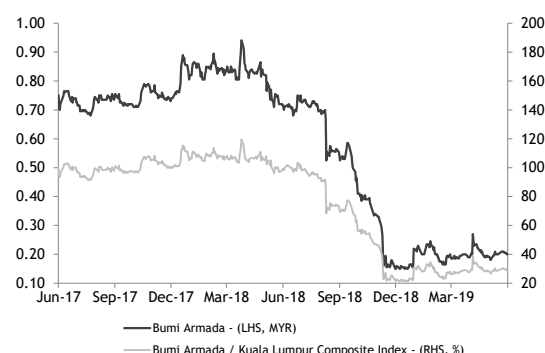
Statistics

52w high/low (MYR)	0.75/0.15
3m avg turnover (USDm)	4.8
Free float (%)	53.3
Issued shares (m)	5,877
Market capitalisation	MYR1.2B
	USD282M

Major shareholders:

KRISHNAN TATPARANANDAM ANANDA	34.9%
Permodalan Nasional Bhd.	12.5%
Employees Provident Fund	5.9%

Price Performance



	-1M	-3M	-12M
Absolute (%)	3	5	(72)
Relative to index (%)	(0)	7	(71)

Source: FactSet

FYE Dec (MYR m)	FY17A	FY18A	FY19E	FY20E	FY21E
Revenue	2,402	2,419	2,616	2,621	2,622
EBITDA	1,343	801	931	936	935
Core net profit	219	183	212	227	237
Core EPS (sen)	3.7	3.1	3.6	3.9	4.0
Core EPS growth (%)	nm	(16.6)	16.3	6.9	4.2
Net DPS (sen)	0.0	0.0	0.0	0.0	0.0
Core P/E (x)	20.5	5.0	5.5	5.2	5.0
P/BV (x)	0.8	0.3	0.3	0.3	0.3
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
ROAE (%)	6.3	(52.0)	6.1	6.2	6.0
ROAA (%)	1.1	1.1	1.4	1.5	1.5
EV/EBITDA (x)	10.6	12.6	10.8	10.4	10.0
Net gearing (%) (incl perps)	175.3	271.6	247.4	225.3	204.9
Consensus net profit	-	-	225	319	307
MKE vs. Consensus (%)	-	-	(5.7)	(28.8)	(22.9)

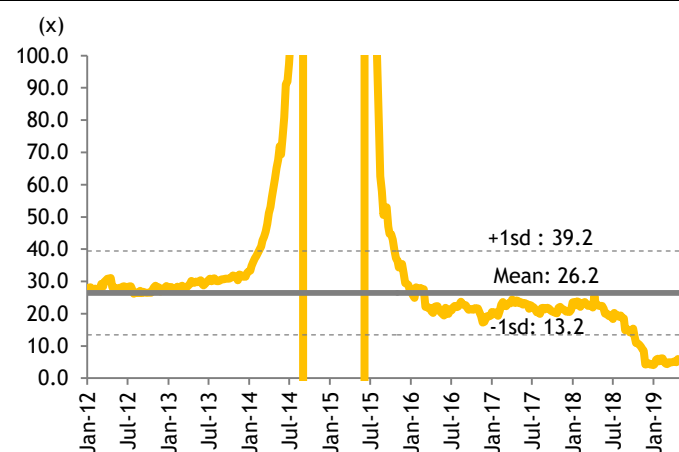
Liaw Thong Jung
tjliaw@maybank-ib.com
(603) 2297 8688

SOP valuation

Operations	(MYR'm)	Details
- TGT1 (Vietnam)	835	NPV (6-year extension), 5.6% WACC
- D1 (India) - 50%	266	NPV (firm); 5.6% WACC
- C7 (India) - 50%	266	NPV (firm); 5.6% WACC
- Kraken - 100%	1,470	NPV (firm); 7.0% WACC
- Olombendo - 100%	4,831	NPV (firm); 5.8% WACC
- Madura (Indonesia) - 50%	385	NPV (firm); 5.8% WACC
- Malta FSU	609	NPV (firm); 5.8% WACC
- Kakinada - 30%	486	NPV (firm); 7.0% WACC
FPSO	9,146	
Residual value	876	5% of capex
Less: Net debt	(8,839)	Based on FY19
Total	1,184	Based on MYR4.00:USD1.00
Share base (m)	5,871	
SOP per share	0.20	

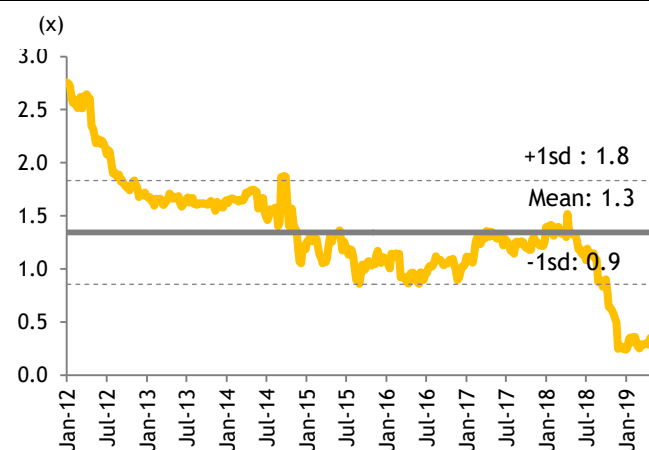
Source: Company data, Maybank Kim Eng

BArmada: 12M forward PER band



Source: Bloomberg, Maybank Kim Eng

BArmada: 12M forward PBV band

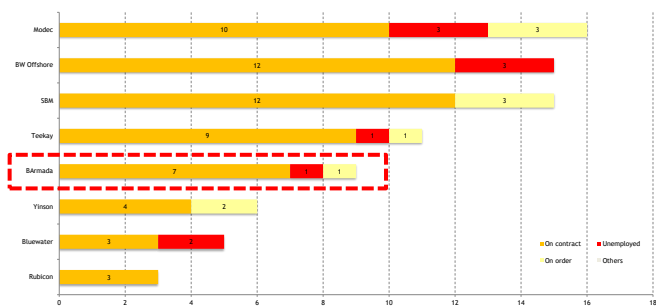


Source: Bloomberg, Maybank Kim Eng

Value Proposition

- A Top 5 FPSO operator in the world by fleet size. Operating presence in Asia, Africa and Europe. T&I and OSV (loss-making) are complementary businesses.
- Unlike OSV and T&I operations, FPSO's contracts are more bankable, providing steady visibility (long-term charters, termination protection) with reasonable project IRRs.
- FPSOs tender pipeline is strong. Winning a job is a catalyst.

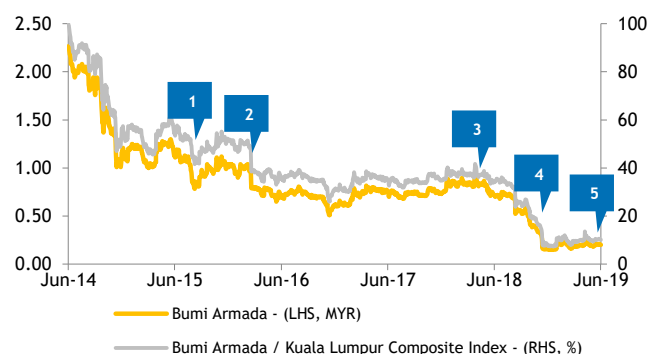
Top 10 FPSO companies worldwide



Source: Company

Price Drivers

Historical share price trend

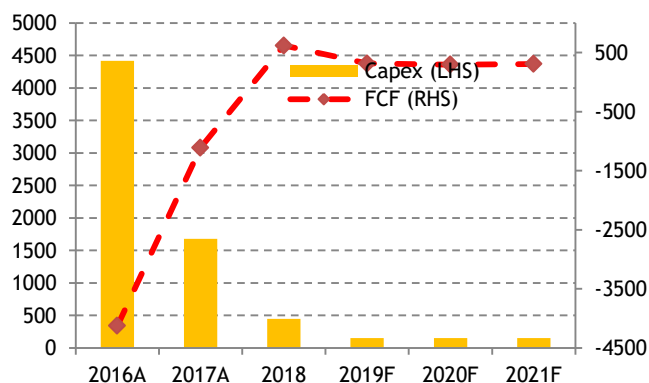


Source: Company, Maybank Kim Eng

Financial Metrics

- Bare-boat & O&M charters, utilisation and opex are BArmada's key earnings drivers. Variations in any of these parameters will impact profitability.
- Cost management, capital discipline and execution capabilities are key emphases for FPSO operators.
- Group's FCF will turn positive in 2018 as several FPSOs come onstream.
- Following the heavy capex in recent years, improving its net gearing level is crucial, reflective of the cashflow generation from its FPSO operations.

Capex and FCF trend (MYR'm)



Source: Company

Swing Factors

Upside

- Strengthening of crude oil price will be the most dominant near term stock driver.
- Seamless execution of its FPSOs/FSU projects in hand will contribute to a significant jump in earnings.
- M&A action is not entirely ruled out as values are undemanding following the recent steep drop in share price.

Downside

- Further weakness in oil price will hurt share price performance.
- Poor execution capabilities and/or contract(s) termination related to its FPSO operations and inferior cost management would have a detrimental effect on earnings and perception.
- Expansion of non-core operations (T&I and OSV) will not be well received at this point of the industry cycle.
- With a high gearing level, weak cashflows could impede debt servicing efforts.

tjliaw@maybank-ib.com



FYE 31 Dec	FY17A	FY18A	FY19E	FY20E	FY21E
Key Metrics					
P/E (reported) (x)	12.2	nm	5.5	5.2	5.0
Core P/E (x)	20.5	5.0	5.5	5.2	5.0
P/BV (x)	0.8	0.3	0.3	0.3	0.3
P/NTA (x)	0.8	0.3	0.3	0.3	0.3
Net dividend yield (%)	0.0	0.0	0.0	0.0	0.0
FCF yield (%)	nm	68.0	26.9	25.6	26.4
EV/EBITDA (x)	10.6	12.6	10.8	10.4	10.0
EV/EBIT (x)	18.5	33.4	18.9	18.1	17.5

INCOME STATEMENT (MYR m)

Revenue	2,402.2	2,418.7	2,616.3	2,621.5	2,622.3
Gross profit	805.9	501.2	810.5	815.5	815.5
EBITDA	1,342.6	801.3	930.5	935.5	935.5
Depreciation	(575.4)	(499.4)	(400.0)	(400.0)	(400.0)
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	767.2	301.9	530.5	535.5	535.5
Net interest income / (exp)	(431.0)	(522.1)	(408.6)	(396.0)	(384.6)
Associates & JV	164.3	166.2	166.0	166.1	166.7
Exceptionals	133.2	(2,485.5)	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	492.2	(2,296.9)	287.9	305.7	317.6
Income tax	(115.8)	(22.3)	(85.4)	(88.4)	(90.9)
Minorities	(24.2)	16.4	10.0	10.0	10.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	352.2	(2,302.8)	212.5	227.2	236.7
Core net profit	219.0	182.7	212.5	227.2	236.7

BALANCE SHEET (MYR m)

Cash & Short Term Investments	1,846.1	1,226.4	1,210.2	1,212.5	1,253.7
Accounts receivable	727.2	749.7	768.8	770.3	770.5
Inventory	4.2	7.3	5.3	5.3	5.3
Reinsurance assets	0.0	0.0	0.0	0.0	0.0
Property, Plant & Equip (net)	9,235.1	6,692.7	6,442.7	6,192.7	5,942.7
Intangible assets	0.0	0.0	0.0	0.0	0.0
Investment in Associates & JVs	669.0	1,022.9	1,188.8	1,354.9	1,521.6
Other assets	6,353.5	5,836.1	5,836.1	5,836.1	5,836.1
Total assets	18,835.0	15,535.2	15,452.0	15,371.8	15,330.0
ST interest bearing debt	5,497.9	7,063.3	7,063.3	7,063.3	7,063.3
Accounts payable	598.8	563.5	609.6	610.8	610.9
Insurance contract liabilities	0.0	0.0	0.0	0.0	0.0
LT interest bearing debt	6,025.0	3,317.2	2,985.5	2,686.9	2,418.2
Other liabilities	1,192.0	1,221.0	1,221.0	1,221.0	1,221.0
Total Liabilities	13,314.0	12,165.0	11,879.3	11,582.0	11,313.5
Shareholders Equity	5,497.3	3,363.2	3,575.7	3,802.9	4,039.6
Minority Interest	23.7	6.9	(3.1)	(13.1)	(23.1)
Total shareholder equity	5,521.0	3,370.1	3,572.6	3,789.9	4,016.5
Total liabilities and equity	18,835.0	15,535.2	15,452.0	15,371.8	15,330.0

CASH FLOW (MYR m)

Pretax profit	492.2	(2,296.9)	287.9	305.7	317.6
Depreciation & amortisation	575.4	499.4	400.0	400.0	400.0
Adj net interest (income)/exp	0.0	0.0	0.0	0.0	0.0
Change in working capital	(1,263.4)	694.6	29.0	(0.3)	(0.1)
Cash taxes paid	(115.8)	(22.3)	(85.4)	(88.4)	(90.9)
Other operating cash flow	1,040.8	2,358.8	0.0	0.0	0.0
Cash flow from operations	564.9	1,067.4	465.5	450.8	459.9
Capex	(1,676.3)	(448.5)	(150.0)	(150.0)	(150.0)
Free cash flow	(1,111.4)	618.9	315.5	300.8	309.9
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	(1,523.2)	(1,142.4)	(331.7)	(298.5)	(268.7)
Other invest/financing cash flow	1,464.9	(96.2)	0.0	0.0	0.0
Effect of exch rate changes	0.0	0.0	0.0	0.0	0.0
Net cash flow	(1,169.7)	(619.7)	(16.2)	2.3	41.2

FYE 31 Dec	FY17A	FY18A	FY19E	FY20E	FY21E
Key Ratios					
Growth ratios (%)					
Revenue growth	82.3	0.7	8.2	0.2	0.0
EBITDA growth	241.8	(40.3)	16.1	0.5	(0.0)
EBIT growth	nm	(60.6)	75.7	0.9	(0.0)
Pretax growth	nm	nm	nm	6.2	3.9
Reported net profit growth	nm	nm	nm	6.9	4.2
Core net profit growth	nm	(16.6)	16.3	6.9	4.2
Profitability ratios (%)					
EBITDA margin	55.9	33.1	35.6	35.7	35.7
EBIT margin	31.9	12.5	20.3	20.4	20.4
Pretax profit margin	20.5	nm	11.0	11.7	12.1
Payout ratio	0.0	0.0	0.0	0.0	0.0
DuPont analysis					
Net profit margin (%)	14.7	nm	8.1	8.7	9.0
Revenue/Assets (x)	0.1	0.2	0.2	0.2	0.2
Assets/Equity (x)	3.4	4.6	4.3	4.0	3.8
ROAE (%)	6.3	(52.0)	6.1	6.2	6.0
ROAA (%)	1.1	1.1	1.4	1.5	1.5
Liquidity & Efficiency					
Cash conversion cycle	(1.9)	1.9	(11.2)	(14.9)	(14.9)
Days receivable outstanding	101.9	109.9	104.5	105.7	105.8
Days inventory outstanding	1.2	1.1	1.3	1.1	1.1
Days payables outstanding	105.1	109.1	116.9	121.6	121.7
Dividend cover (x)	nm	nm	nm	nm	nm
Current ratio (x)	0.5	0.3	0.3	0.3	0.3
Leverage & Expense Analysis					
Asset/Liability (x)	1.4	1.3	1.3	1.3	1.4
Net gearing (%) (incl perps)	175.3	271.6	247.4	225.3	204.9
Net gearing (%) (excl. perps)	175.3	271.6	247.4	225.3	204.9
Net interest cover (x)	1.8	0.6	1.3	1.4	1.4
Debt/EBITDA (x)	8.6	13.0	10.8	10.4	10.1
Capex/revenue (%)	69.8	18.5	5.7	5.7	5.7
Net debt/ (net cash)	9,676.8	9,154.1	8,838.6	8,537.8	8,227.9

Source: Company; Maybank

Research Offices

REGIONAL

Sadiq CURRIMBHOY
Regional Head of Research & Economics
(65) 6231 5836
sadiq@maybank-ke.com.sg

WONG Chew Hann, CA
Regional Head of Institutional Research
(603) 2297 8686
wchewh@maybank-ib.com

ONG Seng Yeow
Regional Head of Retail Research
(65) 6231 5839
ongsengyeow@maybank-ke.com.sg

ECONOMICS

Suhaimi ILIAS
Chief Economist
Malaysia | Philippines | China
(603) 2297 8682
suhaimi_ilias@maybank-ib.com

CHUA Hak Bin
Regional Thematic Macroeconomist
(65) 6231 5830
chuahb@maybank-ke.com.sg

LEE Ju Ye
Singapore | Thailand
(65) 6231 5844
leejuye@maybank-ke.com.sg

Linda LIU
Singapore | Vietnam
(65) 6231 5847
lindaliu@maybank-ke.com.sg

Dr Zamros DZULKAFLI
(603) 2082 6818
zamros.d@maybank-ib.com

Ramesh LANKANATHAN
(603) 2297 8685
ramesh@maybank-ib.com

FX

Saktiandi SUPAAT
Head of FX Research
(65) 6320 1379
saktiandi@maybank.com.sg

Christopher WONG
(65) 6320 1347
wongkl@maybank.com.sg

Tan Yanxi
(65) 6320 1378
tanymx@maybank.com.sg

Fiona LIM
(65) 6320 1374
fionalim@maybank.com.sg

STRATEGY

Sadiq CURRIMBHOY
Global Strategist
(65) 6231 5836
sadiq@maybank-ke.com.sg

Willie CHAN
Hong Kong | Regional
(852) 2268 0631
williechan@kimeng.com.hk

FIXED INCOME

Winson PHOON, ACA
(65) 6812 8807
winsonphoon@maybank-ke.com.sg

Se Tho Mun Yi
(603) 2074 7606
munyi.st@maybank-ib.com

MALAYSIA

WONG Chew Hann, CA *Head of Research*
(603) 2297 8686 wchewh@maybank-ib.com
• Strategy

Desmond CH'NG, ACA
(603) 2297 8680
desmond.chng@maybank-ib.com
• Banking & Finance

LIAW Thong Jung
(603) 2297 8688 tjliaw@maybank-ib.com
• Oil & Gas Services- Regional

ONG Chee Ting, CA
(603) 2297 8678 ct.ong@maybank-ib.com
• Plantations - Regional

Mohshin AZIZ
(603) 2297 8692 mohshin.aziz@maybank-ib.com
• Aviation - Regional • Petrochem

YIN Shao Yang, CPA
(603) 2297 8916 samuel.y@maybank-ib.com
• Gaming - Regional • Media

TAN Chi Wei, CFA
(603) 2297 8690 chiwei.t@maybank-ib.com
• Power • Telcos

WONG Wei Sum, CFA
(603) 2297 8692 weisum@maybank-ib.com
• Property

LEE Yen Ling
(603) 2297 8691 lee.yl@maybank-ib.com
• Glove • Ports • Shipping • Healthcare

Ivan YAP
(603) 2297 8612 ivan.yap@maybank-ib.com
• Automotive • Semiconductor • Technology

Kevin WONG
(603) 2082 6824 kevin.wong@maybank-ib.com
• REITs • Consumer Discretionary

Adrian WONG, CFA
(603) 2297 8675 adrian.wkj@maybank-ib.com
• Constructions

Jade TAM
(603) 2297 8687 jade.tam@maybank-ib.com
• Consumer Staples

Mohd Hafiz HASSAN
(603) 2082 6819 mohdhafiz.ha@maybank-ib.com
• Building Materials • Small & Mid Caps

Amirah AZMI
(603) 2082 8769 amirah.azmi@maybank-ib.com
• Media • Plantations

TEE Sze Chiah *Head of Retail Research*
(603) 2082 6858 szechiah.t@maybank-ib.com

Nik Ihsan RAJA ABDULLAH, MSTA, CFTe
(603) 2297 8694
nikmohdihsan.ra@maybank-ib.com

SINGAPORE

Neel SINHA *Head of Research*
(65) 6231 5838 neelsinha@maybank-ke.com.sg
• Strategy • Industrials
• SMID Caps - Regional

CHUA Su Tye
(65) 6231 5842 chuasutye@maybank-ke.com.sg
• REITs

Luis HILADO
(65) 6231 5848 luishilado@maybank-ke.com.sg
• Telcos • Transport

LAI Gene Lih, CFA
(65) 6231 5832 laigenelih@maybank-ke.com.sg
• Technology • Healthcare

Thilan WICKRAMASINGHE
(65) 6231 5840 thilanw@maybank-ke.com.sg
• Banks

SZE Jia Min
(65) 6231 5845 jiamin@maybank-ke.com.sg
• Consumer

INDIA

Jigar SHAH *Head of Research*
(91) 22 4223 2632 jigar@maybank-ke.co.in
• Strategy • Oil & Gas • Automobile • Cement

Neerav DALAL
(91) 22 4223 2606 neerav@maybank-ke.co.in
• Software Technology • Telcos

Vishal PERIWAL
(91) 22 4223 2605
vishalperiwal@maybank-ke.co.in
• Infrastructure

Kshitiz PRASAD
(91) 22 4223 2607
kshitiz@maybank-ke.co.in
• Banks

INDONESIA

Isnaputra ISKANDAR *Head of Research*
(62) 21 8066 8680
isnaputra.iskandar@maybank-ke.co.id
• Strategy • Metals & Mining • Cement

Rahmi MARINA
(62) 21 8066 8689
rahmi.marina@maybank-ke.co.id
• Banking & Finance

Aurellia SETIABUDI
(62) 21 8066 8691
aurellia.setiabudi@maybank-ke.co.id
• Property

Janni ASMAN
(62) 21 8066 8687
janni.asman@maybank-ke.co.id
• Cigarette • Healthcare • Retail

Luthfi RIDHO
(62) 21 8066 8690
luthfi.ridho@maybank-ke.co.id
• Economics

PHILIPPINES

Minda OLONAN *Head of Research*
(63) 2 849 8840
minda_olonan@maybank-atrke.com
• Strategy • Conglomerates

Katherine TAN
(63) 2 849 8843
kat_tan@maybank-atrke.com
• Banks • Conglomerates • Ports

Luis HILADO
(65) 6231 5848 luishilado@maybank-ke.com.sg
• Telcos

Romel LIBO-ON
(63) 2 849 8844
romel_libo-on@maybank-atrke.com
• Property

Kayzer LLANDA
(63) 2 849 8839
Kayzer_llanda@maybank-atrke.com
• Utilities

THAILAND

Maria LAPIZ *Head of Institutional Research*
Dir (66) 2257 0250 | (66) 2658 6300 ext 1399
Maria.L@maybank-ke.co.th
• Strategy • Consumer • Materials • Services

Teerapol Udomvej, CFA
(66) 2658 6300 ext 1394
teerapol.u@maybank-ke.co.th
• Healthcare

Ekachai TARAPORN TIP *Head of Retail Research*
(66) 2658 5000 ext 1530
Ekachai.t@maybank-ke.co.th

Sutthichai KUMWORACHAI *Deputy Head*
(66) 2658 5000 ext 1400
sutthichai.k@maybank-ke.co.th
• Energy • Petrochem

Surachai PRAMUALCHAROENKIT
(66) 2658 5000 ext 1470
Surachai.p@maybank-ke.co.th
• Auto • Conmat • Contractor • Steel

Suttatip PEERASUB
(66) 2658 5000 ext 1430
suttatip.p@maybank-ke.co.th
• Media • Commerce

Termporn TANTIVIVAT
(66) 2658 5000 ext 1520
termporn.t@maybank-ke.co.th
• Property

Jaroontan WATTANAWONG
(66) 2658 5000 ext 1404
jaroontan.w@maybank-ke.co.th
• Transportation • Small cap

Thanatphat SUKSRICHAVALIT
(66) 2658 5000 ext 1401
thanatphat.s@maybank-ke.co.th
• Media • Electronics

Sorrahbol VIRAMETEEKUL
Head of Digital Research
(66) 2658 5000 ext 1550
sorrahbol.v@maybank-ke.co.th
• Food, Transportation

Wijit ARAYAPISIT
(66) 2658 5000 ext 1450
wijit.a@maybank-ke.co.th
• Strategist

Kritsapong PATAN
(66) 2658 5000 ext 1310
kritsapong.p@maybank-ke.co.th
• Chartist

Apsit PATTARASAKOLKIAT
(66) 2658 5000 ext 1405
Apsit.p@maybank-ke.co.th
• Chartist

VIETNAM

LE Hong Lien, ACCA
Head of Institutional Research
(84 28) 44 555 888 x 8181
lien.le@maybank-kimeng.com.vn
• Strategy • Consumer • Diversified

LE Nguyen Nhat Chuyen
(84 28) 44 555 888 x 8082
chuyen.le@maybank-kimeng.com.vn
• Oil & Gas

QUAN Trong Thanh
(84 28) 44 555 888 x 8184
thanh.quan@maybank-kimeng.com.vn
• Banks

NGUYEN Thi Ngan Tuyen
Head of Retail Research
(84 28) 44 555 888 x 8081
tuyen.nguyen@maybank-kimeng.com.vn
• Food & Beverage • Oil&Gas • Banking

TRUONG Quang Binh
Deputy Head of Retail Research
(84 28) 44 555 888 x 8087
binh.truong@maybank-kimeng.com.vn
• Rubber Plantation • Tyres & Tubes • Oil & Gas

TRINH Thi Ngoc Diep
(84 28) 44 555 888 x 8208
diep.trinh@maybank-kimeng.com.vn
• Technology • Utilities • Construction

NGUYEN Thi Sony Tra Mi
(84 28) 44 555 888 x 8084
mi.nguyen@maybank-kimeng.com.vn
• Port Operation • Pharmaceutical
• Food & Beverage

NGUYEN Thanh Lam
(84 28) 44 555 888 x 8086
thanhlam.nguyen@maybank-kimeng.com.vn
• Technical Analysis

APPENDIX I: TERMS FOR PROVISION OF REPORT, DISCLAIMERS AND DISCLOSURES

DISCLAIMERS

This research report is prepared for general circulation and for information purposes only and under no circumstances should it be considered or intended as an offer to sell or a solicitation of an offer to buy the securities referred to herein. Investors should note that values of such securities, if any, may fluctuate and that each security's price or value may rise or fall. Opinions or recommendations contained herein are in form of technical ratings and fundamental ratings. Technical ratings may differ from fundamental ratings as technical valuations apply different methodologies and are purely based on price and volume-related information extracted from the relevant jurisdiction's stock exchange in the equity analysis. Accordingly, investors' returns may be less than the original sum invested. Past performance is not necessarily a guide to future performance. This report is not intended to provide personal investment advice and does not take into account the specific investment objectives, the financial situation and the particular needs of persons who may receive or read this report. Investors should therefore seek financial, legal and other advice regarding the appropriateness of investing in any securities or the investment strategies discussed or recommended in this report.

The information contained herein has been obtained from sources believed to be reliable but such sources have not been independently verified by Maybank Investment Bank Berhad, its subsidiary and affiliates (collectively, "MKE") and consequently no representation is made as to the accuracy or completeness of this report by MKE and it should not be relied upon as such. Accordingly, MKE and its officers, directors, associates, connected parties and/or employees (collectively, "Representatives") shall not be liable for any direct, indirect or consequential losses or damages that may arise from the use or reliance of this report. Any information, opinions or recommendations contained herein are subject to change at any time, without prior notice.

This report may contain forward looking statements which are often but not always identified by the use of words such as "anticipate", "believe", "estimate", "intend", "plan", "expect", "forecast", "predict" and "project" and statements that an event or result "may", "will", "can", "should", "could" or "might" occur or be achieved and other similar expressions. Such forward looking statements are based on assumptions made and information currently available to us and are subject to certain risks and uncertainties that could cause the actual results to differ materially from those expressed in any forward looking statements. Readers are cautioned not to place undue relevance on these forward-looking statements. MKE expressly disclaims any obligation to update or revise any such forward looking statements to reflect new information, events or circumstances after the date of this publication or to reflect the occurrence of unanticipated events.

MKE and its officers, directors and employees, including persons involved in the preparation or issuance of this report, may, to the extent permitted by law, from time to time participate or invest in financing transactions with the issuer(s) of the securities mentioned in this report, perform services for or solicit business from such issuers, and/or have a position or holding, or other material interest, or effect transactions, in such securities or options thereon, or other investments related thereto. In addition, it may make markets in the securities mentioned in the material presented in this report. One or more directors, officers and/or employees of MKE may be a director of the issuers of the securities mentioned in this report to the extent permitted by law.

This report is prepared for the use of MKE's clients and may not be reproduced, altered in any way, transmitted to, copied or distributed to any other party in whole or in part in any form or manner without the prior express written consent of MKE and MKE and its Representatives accepts no liability whatsoever for the actions of third parties in this respect.

This report is not directed to or intended for distribution to or use by any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation. This report is for distribution only under such circumstances as may be permitted by applicable law. The securities described herein may not be eligible for sale in all jurisdictions or to certain categories of investors. Without prejudice to the foregoing, the reader is to note that additional disclaimers, warnings or qualifications may apply based on geographical location of the person or entity receiving this report.

Malaysia

Opinions or recommendations contained herein are in the form of technical ratings and fundamental ratings. Technical ratings may differ from fundamental ratings as technical valuations apply different methodologies and are purely based on price and volume-related information extracted from Bursa Malaysia Securities Berhad in the equity analysis.

Singapore

This report has been produced as of the date hereof and the information herein may be subject to change. Maybank Kim Eng Research Pte. Ltd. ("Maybank KERPL") in Singapore has no obligation to update such information for any recipient. For distribution in Singapore, recipients of this report are to contact Maybank KERPL in Singapore in respect of any matters arising from, or in connection with, this report. If the recipient of this report is not an accredited investor, expert investor or institutional investor (as defined under Section 4A of the Singapore Securities and Futures Act), Maybank KERPL shall be legally liable for the contents of this report, with such liability being limited to the extent (if any) as permitted by law.

Thailand

Except as specifically permitted, no part of this presentation may be reproduced or distributed in any manner without the prior written permission of Maybank Kim Eng Securities (Thailand) Public Company Limited. Maybank Kim Eng Securities (Thailand) Public Company Limited ("MBKET") accepts no liability whatsoever for the actions of third parties in this respect.

Due to different characteristics, objectives and strategies of institutional and retail investors, the research reports of MBKET Institutional and Retail Research Department may differ in either recommendation or target price, or both. MBKET Retail Research is intended for retail investors (<http://kelive.maybank-ke.co.th>) while Maybank Kim Eng Institutional Research is intended only for institutional investors based outside Thailand only.

The disclosure of the survey result of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information. The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey may be changed after that date. MBKET does not confirm nor certify the accuracy of such survey result.

The disclosure of the Anti-Corruption Progress Indicators of a listed company on the Stock Exchange of Thailand, which is assessed by Thaipat Institute, is made in order to comply with the policy and sustainable development plan for the listed companies of the Office of the Securities and Exchange Commission. Thaipat Institute made this assessment based on the information received from the listed company, as stipulated in the form for the assessment of Anti-corruption which refers to the Annual Registration Statement (Form 56-1), Annual Report (Form 56-2), or other relevant documents or reports of such listed company. The assessment result is therefore made from the perspective of Thaipat Institute that is a third party. It is not an assessment of operation and is not based on any inside information. Since this assessment is only the assessment result as of the date appearing in the assessment result, it may be changed after that date or when there is any change to the relevant information. Nevertheless, MBKET does not confirm, verify, or certify the accuracy and completeness of the assessment result.

US

This third-party research report is distributed in the United States ("US") to Major US Institutional Investors (as defined in Rule 15a-6 under the Securities Exchange Act of 1934, as amended) only by Maybank Kim Eng Securities USA Inc ("Maybank KESUSA"), a broker-dealer registered in the US (registered under Section 15 of the Securities Exchange Act of 1934, as amended). All responsibility for the distribution of this report by Maybank KESUSA in the US shall be borne by Maybank KESUSA. This report is not directed at you if MKE is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that Maybank KESUSA is permitted to provide research material concerning investments to you under relevant legislation and regulations. All U.S. persons receiving and/or accessing this report and wishing to effect transactions in any security mentioned within must do so with: Maybank Kim Eng Securities USA Inc. 400 Park Avenue, 11th Floor, New York, New York 10022, 1-(212) 688-8886 and not with, the issuer of this report.

UK

This document is being distributed by Maybank Kim Eng Securities (London) Ltd ("Maybank KESL") which is authorized and regulated, by the Financial Conduct Authority and is for Informational Purposes only. This document is not intended for distribution to anyone defined as a Retail Client under the Financial Services and Markets Act 2000 within the UK. Any inclusion of a third party link is for the recipients convenience only, and that the firm does not take any responsibility for its comments or accuracy, and that access to such links is at the individuals own risk. Nothing in this report should be considered as constituting legal, accounting or tax advice, and that for accurate guidance recipients should consult with their own independent tax advisers.

DISCLOSURES

Legal Entities Disclosures

Malaysia: This report is issued and distributed in Malaysia by Maybank Investment Bank Berhad (15938-H) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets and Services License issued by the Securities Commission in Malaysia. **Singapore:** This report is distributed in Singapore by Maybank KERPL (Co. Reg No 198700034E) which is regulated by the Monetary Authority of Singapore. **Indonesia:** PT Maybank Kim Eng Securities ("PTMKES") (Reg. No. KEP-251/PM/1992) is a member of the Indonesia Stock Exchange and is regulated by the Financial Services Authority (Indonesia). **Thailand:** MBKET (Reg. No.0107545000314) is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission. **Philippines:** Maybank ATRKES (Reg. No.01-2004-00019) is a member of the Philippines Stock Exchange and is regulated by the Securities and Exchange Commission. **Vietnam:** Maybank Kim Eng Securities Limited (License Number: 117/GP-UBCK) is licensed under the State Securities Commission of Vietnam. **Hong Kong:** KESHK (Central Entity No AAD284) is regulated by the Securities and Futures Commission. **India:** Kim Eng Securities India Private Limited ("KESI") is a participant of the National Stock Exchange of India Limited and the Bombay Stock Exchange and is regulated by Securities and Exchange Board of India ("SEBI") (Reg. No. INZ000010538). KESI is also registered with SEBI as Category 1 Merchant Banker (Reg. No. INM 000011708) and as Research Analyst (Reg No: INH000000057) **US:** Maybank KESUSA is a member of/ and is authorized and regulated by the FINRA - Broker ID 27861. **UK:** Maybank KESL (Reg No 2377538) is authorized and regulated by the Financial Conduct Authority.

Disclosure of Interest

Malaysia: MKE and its Representatives may from time to time have positions or be materially interested in the securities referred to herein and may further act as market maker or may have assumed an underwriting commitment or deal with such securities and may also perform or seek to perform investment banking services, advisory and other services for or relating to those companies.

Singapore: As of 20 June 2019, Maybank KERPL and the covering analyst do not have any interest in any companies recommended in this research report.

Thailand: MBKET may have a business relationship with or may possibly be an issuer of derivative warrants on the securities /companies mentioned in the research report. Therefore, Investors should exercise their own judgment before making any investment decisions. MBKET, its associates, directors, connected parties and/or employees may from time to time have interests and/or underwriting commitments in the securities mentioned in this report.

Hong Kong: As of 20 June 2019, KESHK and the authoring analyst do not have any interest in any companies recommended in this research report.

India: As of 20 June 2019, and at the end of the month immediately preceding the date of publication of the research report, KESI, authoring analyst or their associate / relative does not hold any financial interest or any actual or beneficial ownership in any shares or having any conflict of interest in the subject companies except as otherwise disclosed in the research report.

In the past twelve months KESI and authoring analyst or their associate did not receive any compensation or other benefits from the subject companies or third party in connection with the research report on any account what so ever except as otherwise disclosed in the research report.

MKE may have, within the last three years, served as manager or co-manager of a public offering of securities for, or currently may make a primary market in issues of, any or all of the entities mentioned in this report or may be providing, or have provided within the previous 12 months, significant advice or investment services in relation to the investment concerned or a related investment and may receive compensation for the services provided from the companies covered in this report.

OTHERS

Analyst Certification of Independence

The views expressed in this research report accurately reflect the analyst's personal views about any and all of the subject securities or issuers; and no part of the research analyst's compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in the report.

Reminder

Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct its own analysis of the product and consult with its own professional advisers as to the risks involved in making such a purchase.

No part of this material may be copied, photocopied or duplicated in any form by any means or redistributed without the prior consent of MKE.

Definition of Ratings

Maybank Kim Eng Research uses the following rating system

BUY	Return is expected to be above 10% in the next 12 months (excluding dividends)
HOLD	Return is expected to be between - 10% to +10% in the next 12 months (excluding dividends)
SELL	Return is expected to be below -10% in the next 12 months (excluding dividends)

Applicability of Ratings

The respective analyst maintains a coverage universe of stocks, the list of which may be adjusted according to needs. Investment ratings are only applicable to the stocks which form part of the coverage universe. Reports on companies which are not part of the coverage do not carry investment ratings as we do not actively follow developments in these companies.

Malaysia

Maybank Investment Bank Berhad
(A Participating Organisation of
Bursa Malaysia Securities Berhad)
33rd Floor, Menara Maybank,
100 Jalan Tun Perak,
50050 Kuala Lumpur
Tel: (603) 2059 1888;
Fax: (603) 2078 4194

Stockbroking Business:
Level 8, Tower C, Dataran Maybank,
No.1, Jalan Maarof
59000 Kuala Lumpur
Tel: (603) 2297 8888
Fax: (603) 2282 5136

Singapore

Maybank Kim Eng Securities Pte Ltd
Maybank Kim Eng Research Pte Ltd
50 North Canal Road
Singapore 059304

Tel: (65) 6336 9090

Hong Kong

Kim Eng Securities (HK) Ltd
28/F, Lee Garden Three,
1 Sunning Road, Causeway Bay,
Hong Kong

Tel: (852) 2268 0800
Fax: (852) 2877 0104

London

Maybank Kim Eng Securities
(London) Ltd
PNB House
77 Queen Victoria Street
London EC4V 4AY, UK

Tel: (44) 20 7332 0221
Fax: (44) 20 7332 0302

Indonesia

PT Maybank Kim Eng Securities
Sentral Senayan III, 22nd Floor
Jl. Asia Afrika No. 8
Gelora Bung Karno, Senayan
Jakarta 10270, Indonesia

Tel: (62) 21 2557 1188
Fax: (62) 21 2557 1189

New York

Maybank Kim Eng Securities USA
Inc
400 Park Avenue, 11th Floor
New York, New York 10022,
U.S.A.

Tel: (212) 688 8886
Fax: (212) 688 3500

India

Kim Eng Securities India Pvt Ltd
2nd Floor, The International,
16, Maharishi Karve Road,
Churchgate Station,
Mumbai City - 400 020, India

Tel: (91) 22 6623 2600
Fax: (91) 22 6623 2604

Philippines

Maybank ATR Kim Eng Securities Inc.
17/F, Tower One & Exchange Plaza
Ayala Triangle, Ayala Avenue
Makati City, Philippines 1200

Tel: (63) 2 849 8888
Fax: (63) 2 848 5738

Thailand

Maybank Kim Eng Securities
(Thailand) Public Company Limited
999/9 The Offices at Central World,
20th - 21st Floor,
Rama 1 Road Pathumwan,
Bangkok 10330, Thailand

Tel: (66) 2 658 6817 (sales)
Tel: (66) 2 658 6801 (research)

Vietnam

Maybank Kim Eng Securities Limited
4A-15+16 Floor Vincom Center Dong
Khoi, 72 Le Thanh Ton St. District 1
Ho Chi Minh City, Vietnam

Tel : (84) 844 555 888
Fax : (84) 8 38 271 030

Saudi Arabia

In association with
Anfaal Capital
Villa 47, Tujjar Jeddah
Prince Mohammed bin Abdulaziz
Street P.O. Box 126575
Jeddah 21352

Tel: (966) 2 6068686
Fax: (966) 26068787

South Asia Sales Trading

Kevin Foy
Regional Head Sales Trading
kevinfoy@maybank-ke.com.sg
Tel: (65) 6636-3620
US Toll Free: 1-866-406-7447

Indonesia

Iwan Atmadjaja
iatmadjaja2@bloomberg.net
(62) 21 8066 8555

New York

James Lynch
jlynch@maybank-keusa.com
Tel: (212) 688 8886

Philippines

Keith Roy
keith_roy@maybank-atrke.com
Tel: (63) 2 848-5288

North Asia Sales Trading

Andrew Lee
andrewlee@kimeng.com.hk
Tel: (852) 2268 0283
US Toll Free: 1 877 837 7635

London

Greg Smith
gsmith@maybank-ke.co.uk
Tel: (44) 207-332-0221

India

Sanjay Makhija
sanjaymakhija@maybank-ke.co.in
Tel: (91)-22-6623-2629