Vietnam

Neutral

Highlighted Companies

PetroVietnam Technical Services Corp
ADD, TP VND25,000, VND20,600 close

PVS, as an offshore engineering, procurement and construction (EPC) contractor, is the biggest beneficiary of PetroVietnam's increasing upstream capital expenditure. We expect PVS to participate in almost all the current key oil and gas projects, including Sao Vang Dai Nguyet, Block B, Su Tu Trang Phase 2 and others.

PetroVietnam Gas Jsc
HOLD, TP VND91,600, VND97,200 close

The quick depletion of cheap gas supplies would pressure GAS's input costs to rise, in our view. Meanwhile, we see little room for GAS to increase its output prices due to the flat outlook for crude oil prices in the short-to-medium term.

PetroVietnam Drilling & Well Services Corp
ADD, TP VND20,000, VND17,550 close

As Vietnam needs to scale up its oil and gas exploration activities quickly, we foresee PVD securing more domestic projects in the medium term. We also expect charter rates for offshore drillers to improve, with Brent oil prices expected to exceed US$60/bbl in the coming years.

Summary Valuation Metrics

P/E (x)	Dec-18E	Dec-19F	Dec-20F
PetroVietnam Technical Services	10.67	8.17	6.33
PetroVietnam Gas Jsc	15.46	19.09	20.97
PetroVietnam Drilling & Well Services	35.50	22.20	56.50
P/B (x)			
PetroVietnam Technical Services	0.69	0.63	0.63
PetroVietnam Gas Jsc	4.47	4.39	4.26
PetroVietnam Drilling & Well Services	0.49	0.49	0.50
Dividend Yield			
PetroVietnam Technical Services	3.11%	4.06%	5.24%
PetroVietnam Gas Jsc	3.32%	1.11%	0.78%
PetroVietnam Drilling & Well Services	0.00%	0.00%	0.00%

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Oil & Gas Exp & Prodn

Time for some bottom-fishing

- Midterm reinvestment economics requires crude oil price to stay at US$60-70/bbl, based on our estimates.
- We expect Vietnam to scale up oil and gas exploration, as national energy security is under threat.
- We initiate coverage on the oil and gas sector with a Neutral rating. Upstream oilfield services stocks, namely PVS and PVD, are our top picks.

Crude oil market has rebalanced

The crude oil market has rebalanced since 2016, in our view, thanks to stalled global supply growth and stronger demand from Asia Pacific. While we think global oil demand may peak by 2030F, we believe the world still needs to increase exploration to replace the current depleting supply. For 2019-22F, we expect the crude oil price to stay in the range of US$60-70/bbl.

We expect Vietnam to scale up oil and gas exploration, as national energy security is under threat

Assuming no further discoveries, we expect Vietnam's oil and gas production to decrease by c.12% annually between 2018-25F. We believe this will leave a big future supply gap to be filled as PetroVietnam (PVN, Unlisted) expects domestic demand for oil and gas to increase by 5-10% annually between 2018-25F. We expect Vietnam to increase exploring capital expenditure by 50% annually in 2019-20F in order to replenish current reserves and boost production output.

Upstream oilfield services plays, PVS and PVD, are our top picks

We hold a positive view on PetroVietnam Technical Services Corp (PVS), a diversified oilfield services company, as we think it is a key beneficiary of Vietnam's push for renewed dry gas reserves. With total order backlog of c.US$2,000m, we expect PVS to post a net profit CAGR of 25.4% in FY18-21F. We also hold a positive view on PetroVietnam Drilling & Well Services Corp (PVD), the sole commercial drilling contractor in Vietnam. We view PVD's rig fleet as young enough to benefit from the anticipated regional offshore drilling market upturn. We expect PVD's profitability to turn around in FY19-21F and forecast a net profit CAGR of 47.6%.

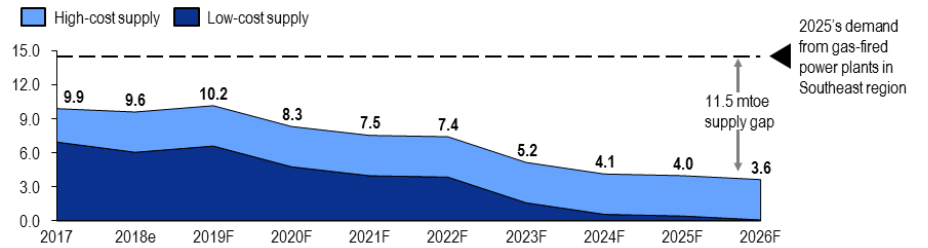
We hold a conservative view on GAS, the wholesale gas distributor

We foresee a challenging time ahead for PetroVietnam Gas (GAS), the monopoly wholesale distributor of dry gas in Vietnam. While the flat global oil price outlook in FY19-21F is likely to weigh on GAS's sales growth, Vietnam's depleting gas supply could drive up GAS's input costs. We forecast GAS's net profit to decrease by 7.8% p.a. in FY19-21F.

Sector risks and potential catalysts

The main downside risk is the geopolitical dispute between Vietnam and China, which may put major oil and gas projects on hold, especially the Blue Whale and Red Emperor projects, in our view. Potential upside catalysts include more supply disruptions (i.e. Saudi Arabia sanctions) and higher global oil demand from Asia and Europe.

Figure 1: Vietnam's natural gas outputs (bcm) assuming no new discoveries



SOURCES: VND RESEARCH, BANCO BILBAO VIZCAYA ARGENTARIA (BBVA), BLOOMBERG

Time for some bottom-fishing

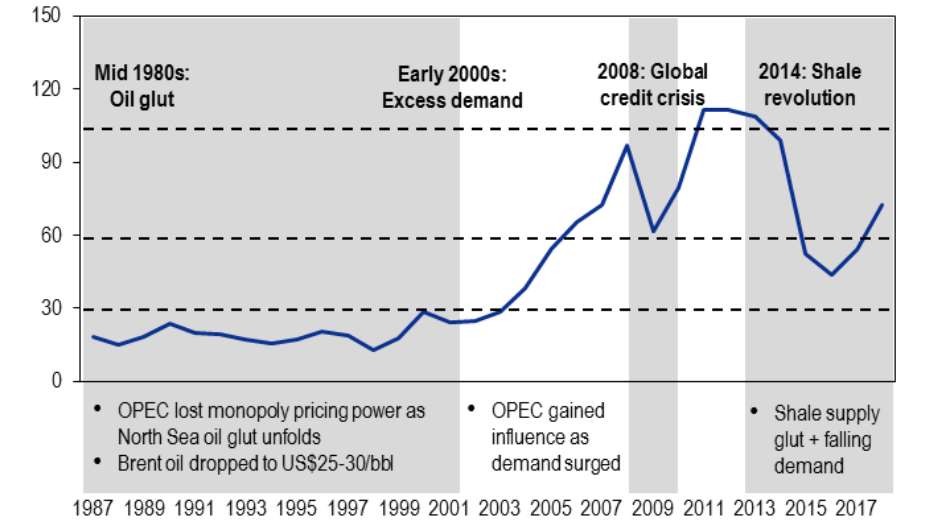
INVESTMENT SUMMARY

Crude oil market has been rebalanced

We believe global oil prices have come full circle since the historic collapse in 4Q14, driven by the supply glut from shale oil. We think the rebalancing of the oil market has been driven by stalled global supply growth and stronger demand from Asia Pacific. Accordingly, average Brent crude oil price touched US$54.1/bbl in 2017 (+24.0% yoy) and US$71.2/bbl in 2018 (+31.5% yoy).

Crude oil prices crashed in late-2014 as OPEC, in a bid to kill off competition from US shale oil, decided to flood the market with excess supply of oil which drove the price down dramatically. However, this strategy failed and OPEC had to agree on a supply cut to rebalance the market by the end of 2016. Crude oil prices have gradually recovered since then.

Figure 2: Historical Brent crude oil price (US$/bbl)

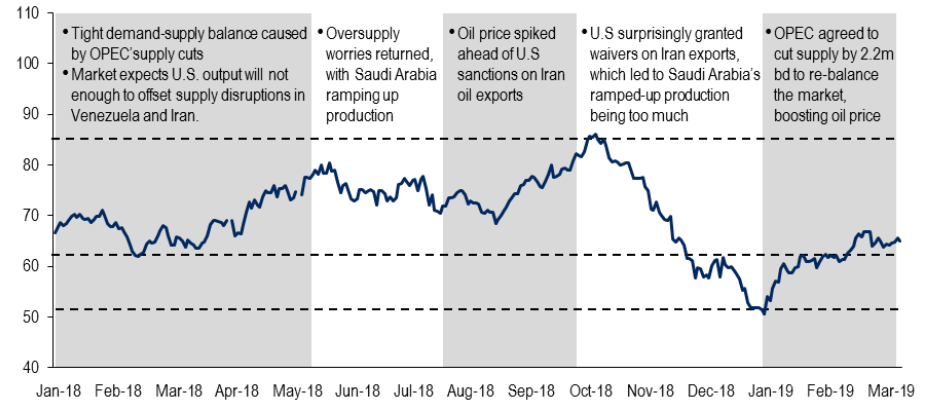


SOURCES: ENERGY INFORMATION ADMINISTRATION, VND RESEARCH, BLOOMBERG

While the correction in 4Q18 raised concerns about the crude oil price possibly falling back into bearish territory, we believe that sentiment is running ahead of fundamentals due to a combination of broad equity market sell-off and growing fears of a global economic slowdown, as well as due to Saudi Arabia's reduced geopolitical leverage to affect cuts, following the death of Saudi journalist Jamal Khashoggi in Oct 2018.

We believe the big correction oil prices in 4Q18 was transitory and driven more by sentiment than by fundamental. Since Jan 2019, global oil prices have stabilised and recovered, helped by the impact of certain key OPEC countries cutting supplies by 2.2mbd to rebalance the market.

Figure 3: Movements of Brent crude oil price (US$/bbl) in 2018



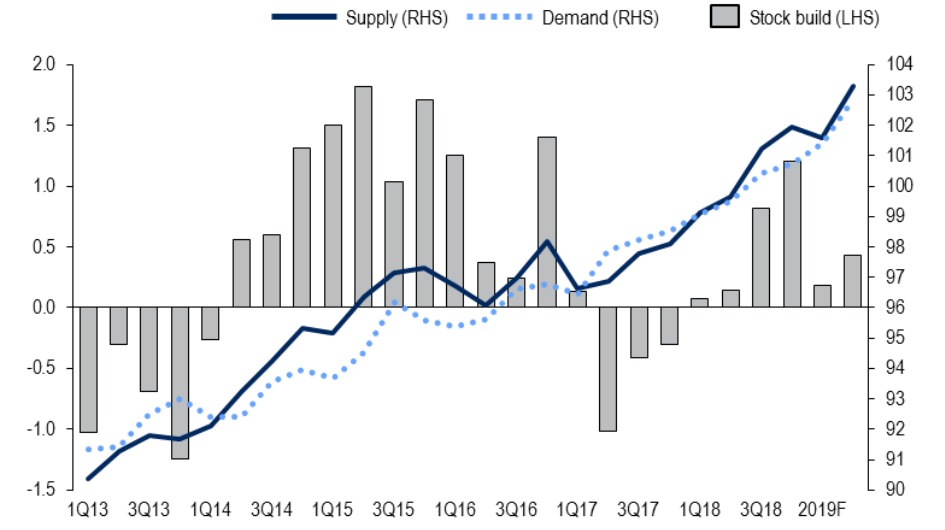
SOURCES: ENERGY INFORMATION ADMINISTRATION, VND RESEARCH, BLOOMBERG

Fundamentally, we still expect the global crude oil market to remain well balanced in 2019F, once the production cuts from Organization of the Petroleum Exporting Countries (OPEC) take effect and prevent inventories from building further. Barring a severe economic slump, we believe global oil demand will grow at roughly the pace seen in recent years, powered by emerging economies which, aside from China, continue to be in good health.

We also see the shale boom, which caused an oil-price crash in 2014, as not being sufficient to pose a significant threat to global crude oil prices in the medium term. Rystad Energy estimates that shale oil can only account for a maximum of 8-10% of global crude oil supply till 2040F.

Fundamentally, we still expect the global crude oil market to remain well balanced in 2019F, once the production cuts from OPEC take effect and prevent inventories from building further.

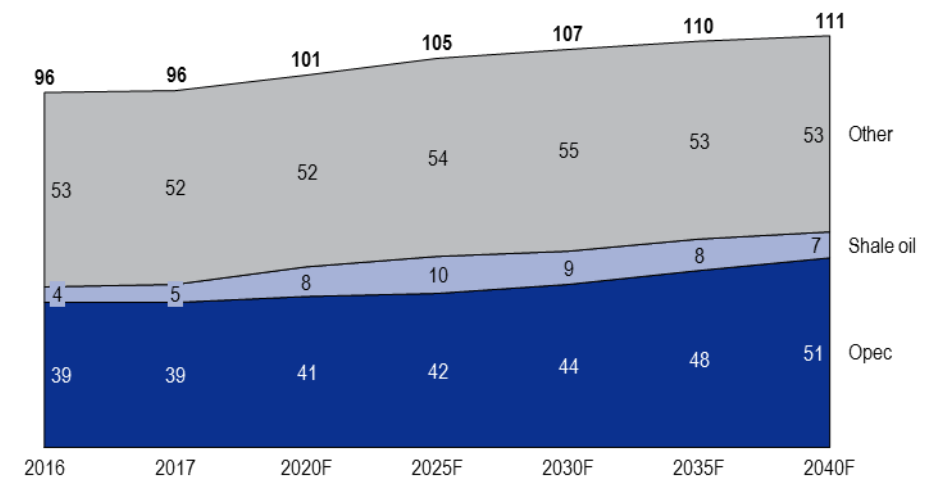
Figure 4: Crude oil demand-supply balance (mbd)



SOURCES: ENERGY INFORMATION ADMINISTRATION, VND RESEARCH

We also see the shale boom, which caused an oil-price crash in 2014, as not being sufficient to pose a significant threat to global crude oil price in the medium term.

Figure 5: Global oil demand (mbd) based on Rystad Energy estimates



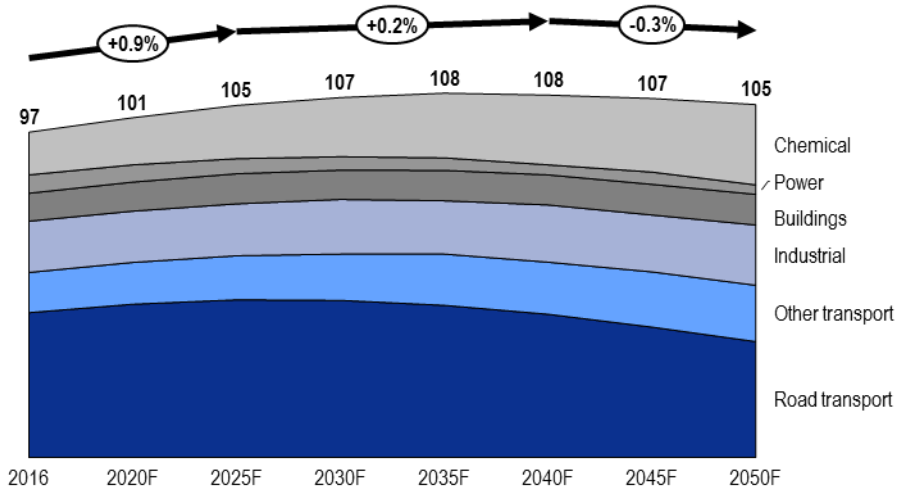
SOURCES: RYSTAD ENERGY, VND RESEARCH

In the long term, while Rystad Energy expects future oil demand growth to peak by 2030F, by which time other energy sources may become more cost-competitive (i.e. renewables and electric vehicles) and socially acceptable (nuclear), we still see a certain long-term need for crude oil due to its competitive pricing and widespread popularity.

We note that crude oil is used not just for transportation. In fact, the fastest-growing driver for oil consumption is chemicals. A rising middle class globally means the demand for petrochemicals will also increase as they are the base constituents of many basic products from paint to personal care items, growth in demand for which tends to track overall consumption growth; also, there are no obvious substitutes for these petrochemicals in their application areas.

As such, we see long-term growth in demand for petrochemicals by manufacturers, which should support oil demand, in our view.

Figure 6: Global oil supply if oil discoveries remain at 2017-18 levels (mbd)

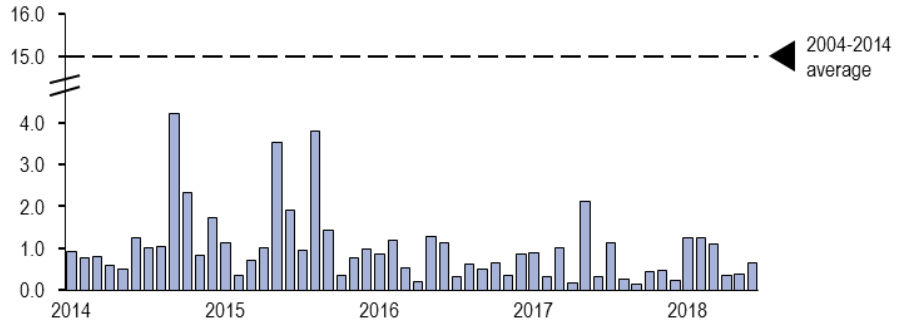


SOURCES: RYSTAD ENERGY ESTIMATES, VND RESEARCH

In terms of supply, there is also a pressing need to scale up global exploration activities to boost reserves. Due to significant cutbacks in exploration spending since 2014, global oil discoveries fell to just c.7billion metric tonnes of oil equivalent (btoe) in 2017, the lowest level since the 1940s and down sharply from an average of c.15 btoe per year discovered in the 2004-14 period (according to Energy Information Administration). Given the rapid depletion of existing oil fields, if exploration activities remain as sluggish as in 2017, the world is likely to face a supply shortage of c.35mbd by 2040F (according to Rystad Energy's estimates).

Due to significant cutbacks in exploration spending since 2014, global oil discoveries fell to just c.7 btoe. in 2017.

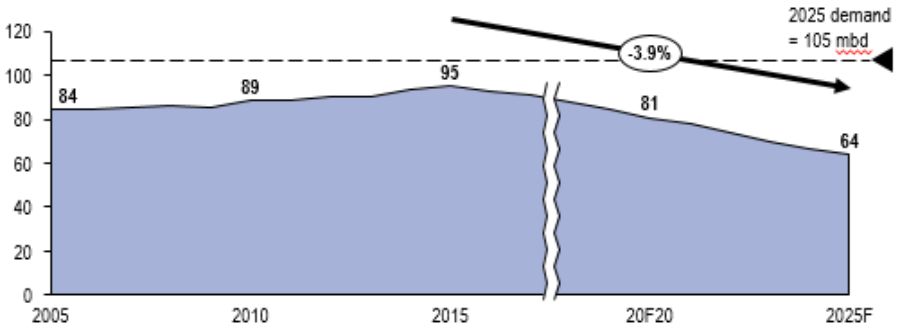
Figure 7: Global conventional oil discoveries (btoe)



SOURCES: ENERGY INFORMATION ADMINISTRATION, VND RESEARCH

Given the rapid depletion of existing oil fields, if exploration activities remain as sluggish as they were in 2017, the world is likely to face a supply shortage of c.35mbd by 2040F, according to Rystad Energy.

Figure 8: Global oil supply (mbd) if oil discoveries remain as low as 2017-18 levels



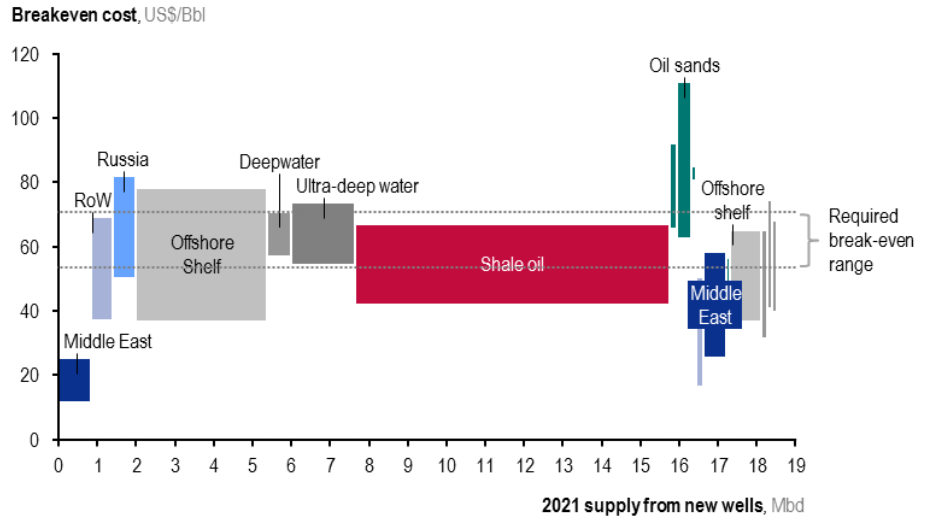
SOURCES: RYSTAD ENERGY ESTIMATES, VND RESEARCH

From 2019-21F, we expect that extraction economics will demand that crude oil price trades within the US$60-70/bbl range, with an approximately 50% increase in extraction costs from 2015 levels as the current shallow-water oil fields get

depleted and extraction moves to deeper-water oil fields with higher complexity and development cost.

From 2019-21F, we expect that extraction economics will demand that crude oil price trades within a US$60-70/bbl range, which is…

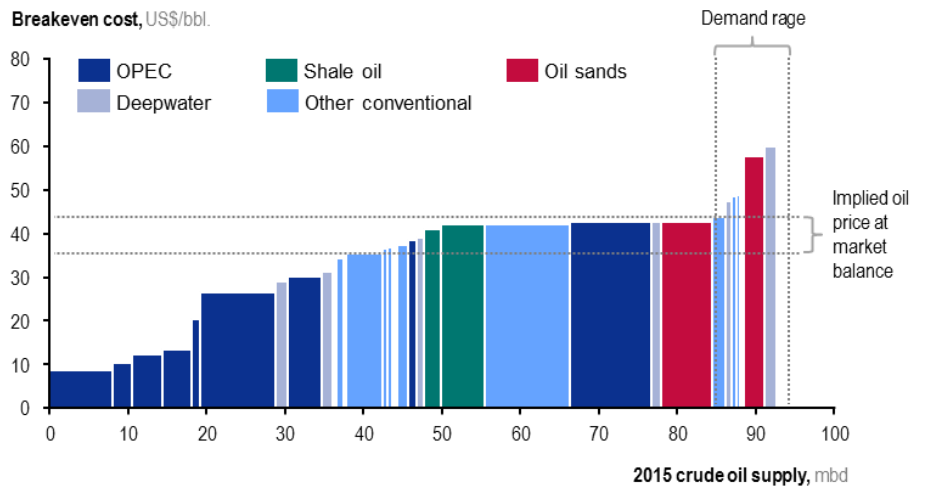
Figure 9: Breakeven cost of global new crude oil supply (US$/bbl) in 2019-21F



SOURCES: RYSTAD ENERGY ESTIMATES, VND RESEARCH

… approximately 50% higher than the extraction cost in 2015 as the current shallow-water oil fields get depleted and extraction moves to deeper-water oil fields with higher complexity and development cost.

Figure 10: Breakeven cost of global crude oil supply (US$/bbl) in 2015

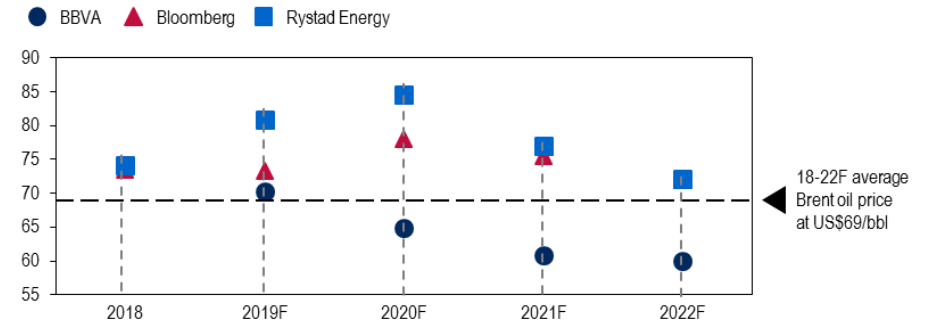


SOURCES: RYSTAD ENERGY ESTIMATES, VND RESEARCH

Typically, there is a broad range in general expectations of crude oil price for the 2019-22F period from international organisations. In our view, Brent crude oil price will stay above US60$/bbl over the next four years, which aligns with the US$60-70/bbl breakeven cost of new crude oil supply in 2019- 21F.

In our view, Brent crude oil price will stay above US$60/bbl over the next four years.

Figure 11: Brent crude oil price forecasts (US$/bbl) as at Dec 2018



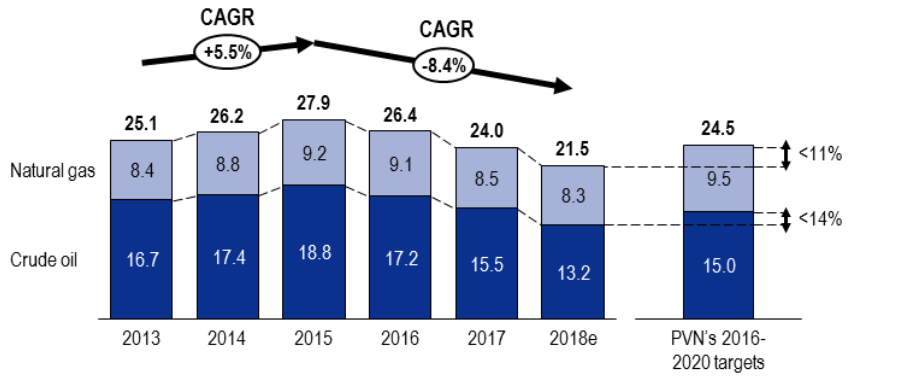
SOURCES: RYSTAD ENERGY, BLOOMBERG, BANCO BILBAO VIZCAYA ARGENTARIA (BBVA), VND RESEARCH

Vietnam's energy security is under threat in medium term

Vietnam's oil and gas production has been declining at an annual rate of c.8% in 2015-18. This steep drop in production has roughly tracked the decline in capital expenditure for exploration activities of PetroVietnam's (PVN, Unlisted) – the state-owned corporation responsible for national oil and gas activities in Vietnam - since 2015, due to depressed crude oil prices. This lack of exploration has led to insufficient new discoveries, with annual reserve growth falling to 4 million tonnes of oil equivalent (mtoe) in 2017, the lowest level in history (according to PetroVietnam).

Vietnam's oil and gas production has been declining at an annual rate of c.8% in 2015-18.

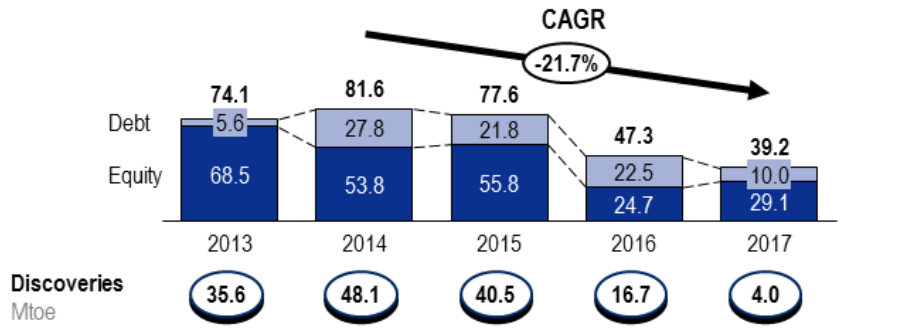
Figure 12: Vietnam's oil and gas production output (mtoe)



SOURCES: PETROVIETNAM, VND RESEARCH

The lack of exploration in the country has led to insufficient new discoveries, with annual reserves growth falling to 4mtoe in 2017, the lowest level in history.

Figure 13: PetroVietnam's capital expenditure (VND tr)

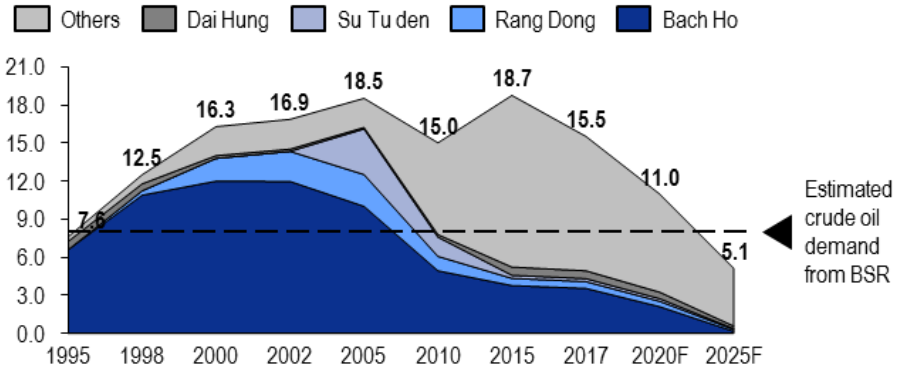


SOURCES: PETROVIETNAM, VND RESEARCH

Meanwhile, the majority of existing oilfields in Vietnam are already in their final stages of production, with production outputs declining by 15-30% per year since 2016. If there are no oil new discoveries, we believe the domestic supply of crude oil will not be sufficient to satisfy the feedstock demand from Binh Son Refinery (BSR VN: UpCOM, Not Rated) from 2020F onwards. Note that BSR currently relies entirely on domestic crude oil as feedstock.

If there are no new oil discoveries, we believe the domestic supply of crude oil will not be sufficient to satisfy the feedstock demand from Binh Son Refinery (BSR) from 2020F onwards.

Figure 14: Vietnam's crude oil outputs assuming no new oil discoveries (m tonnes)

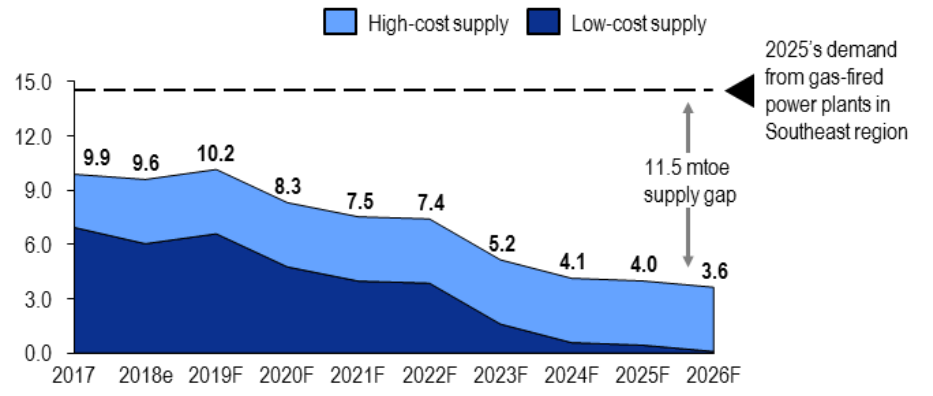


SOURCES: VIETNAM PETROLEUM INSTITUTE'S ESTIMATES, VND RESEARCH

The depletion of natural gas output is even more worrying to us as domestic natural gas demand is expected by PetroVietnam to grow 50% by 2025F when three new gas-fired power plants begin operation.

The depletion of natural gas output is even more worrying to us.

Figure 15: Vietnam's natural gas outputs (bcm) assuming no new discoveries



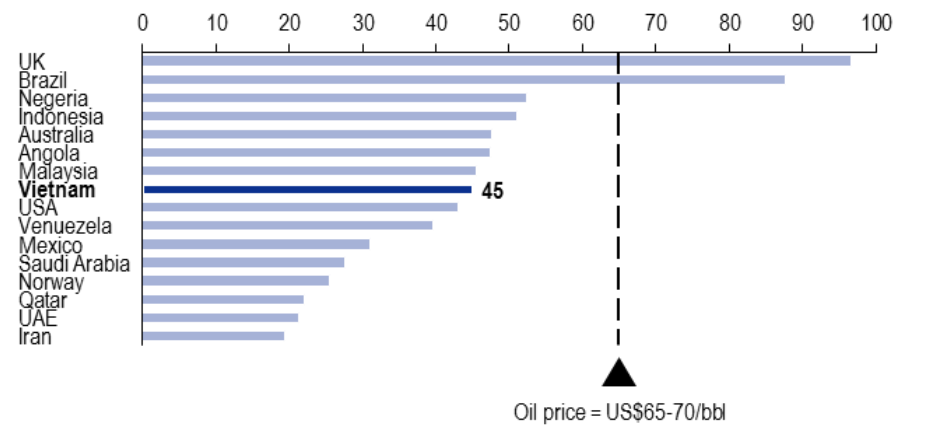
SOURCES: VIETNAM PETROLEUM INSTITUTE'S ESTIMATES, VND RESEARCH

We see a significant exploration scale-up already under way

The robust recovery of crude oil price since late 2016 has put Vietnam in a good position to step up exploration activities after years of subdued investments. The average oil extraction cost in Vietnam was ~US$45/bbl in 2018 (according to Rystad Energy), below consensus forecasts for Brent crude oil prices of US$65-70/bbl in 2019F. Given the looming energy security issues alluded to earlier, we believe this might help to boost Vietnam's exploration activities in the medium term.

The average oil extraction cost in Vietnam is ~US$45/bbl, below consensus forecasts for Brent crude oil prices of US$65-70/bbl in 2019F.

Figure 16: Breakeven field development cost (US$/bbl) by country in 2018



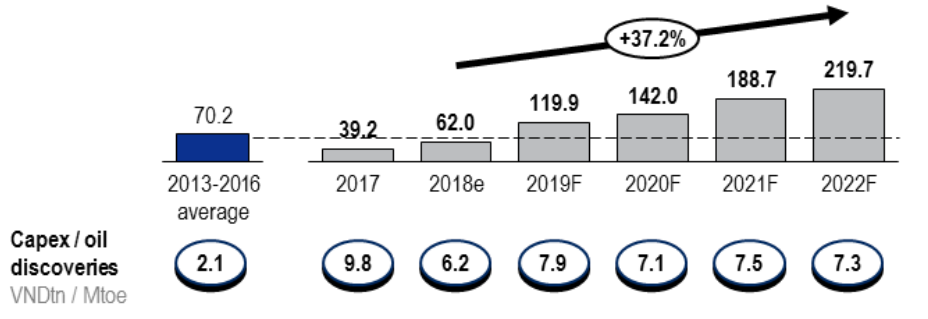
SOURCES: RYSTAD ENERGY'S ESTIMATES, VND RESEARCH

According to PVN's business plan until 2020F, the target for annual growth of oil and gas reserves is 20-40mtoe. This target, which is 2-4 times higher than the estimated reserves growth of 10mtoe in 2018 (according to PetroVietnam), is highly demanding given the escalated exploration cost of new discoveries, in our view. As shelf oil fields run dry, the frontier of exploration will be pushed to more remote areas which require higher levels of equipment, technology, and expensive specialists.

Under intense pressure to increase discoveries and given the higher cost of developing new oil fields, we expect Vietnam to increase capital expenditure for oil exploration by c.40% annually in 2019-22F in order to replenish current reserves and boost production output.

Under intense pressure to increase discoveries and given the higher cost of developing new oil fields, we expect Vietnam to increase capital expenditure for oil exploration by c.40% annually in 2019- 22F.

Figure 17: PetroVietnam's capex forecasts (VND tr) based on our estimates



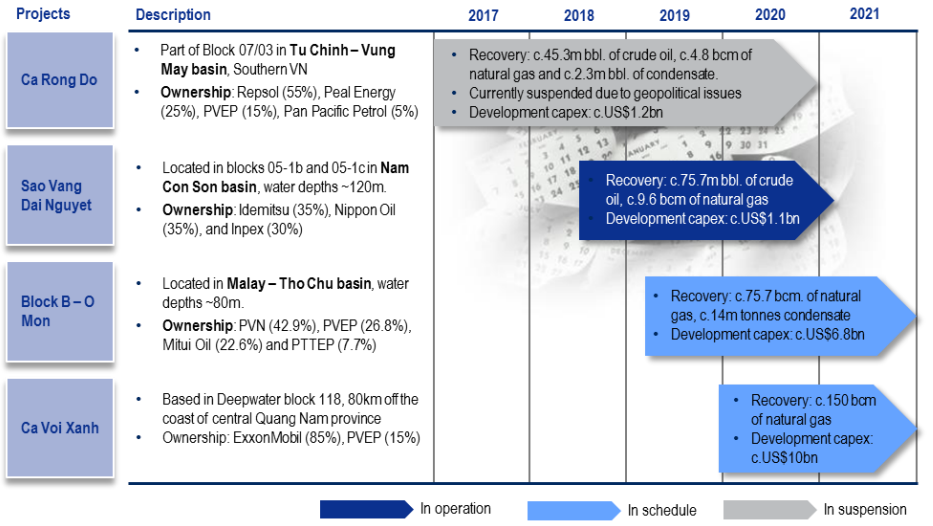
SOURCES: VND RESEARCH

In the medium term, PetroVietnam is planning large oil exploration and drilling projects like Ca Rong Do (Red Emperor), Ca Voi Xanh (Blue Whale) and Block B-O Mon. According to PetroVietnam, those projects are reported to have the largest oil and gas production potential in Vietnam.

Meanwhile, Sao Vang-Dai Nguyet and other gas fields are being developed in parallel with the second phase of Su Tu Trang (White Lion) project to ensure sufficient gas supply for the southeast region once two new gas-fired power plants, namely Nhon Trach 3 and Nhon Trach 4, come into operation in 2021F.

Ca Rong Do, Sao Vang Dai Nguyet, Block B – O Mon, and Ca Voi Xanh are the largest oil and gas projects in Vietnam to date.

Figure 18: PetroVietnam's key oil and gas projects in medium term



SOURCES: VND RESEARCH

We also see the proposed revision of the petroleum law to further boost foreign direct investment (FDI) in Vietnam's exploration activities in the coming years. At a recent energy seminar, Vice Chairman of Economic Committee – Mr Nguyen Duc Kien unveiled that the Law on Petroleum will be amended, possibly between 2019F and 2020F, to legally facilitate the development of Vietnam's oil and gas industry as well as a sustainable maritime economy until 2030F.

According to Vietnam Petroleum Institute's proposal, the revision of petroleum law should be focused on making the production-sharing contract (PSC) more attractive to foreign investors.

Figure 19: Possible revision of petroleum law 2008 – Production-sharing contract

	Current - Petroleum law 2008		Proposed revison	
Regulation	Min.	Max.	Min.	Max.
Income tax	10%-29%	7%-23%	32%	28%
Export duty	10%	10%	4%	0%
Allowable costs	50%	70%	70%	70%
Profit sharing to contractor	50%	83%	25%-83%	45%-90%
Resource tax - Crude oil	8%-25%	6%-20%	7%-23%	4%-20%
Resource tax - Natural gas	0%-10%	0%-6%	1%-6%	0%-6%

SOURCES: VIETNAM PETROLEUM INSTITUTE, VND RESEARCH

According to Vietnam Petroleum Institute's proposal, the revision of the petroleum law should be focused on making the production sharing contract

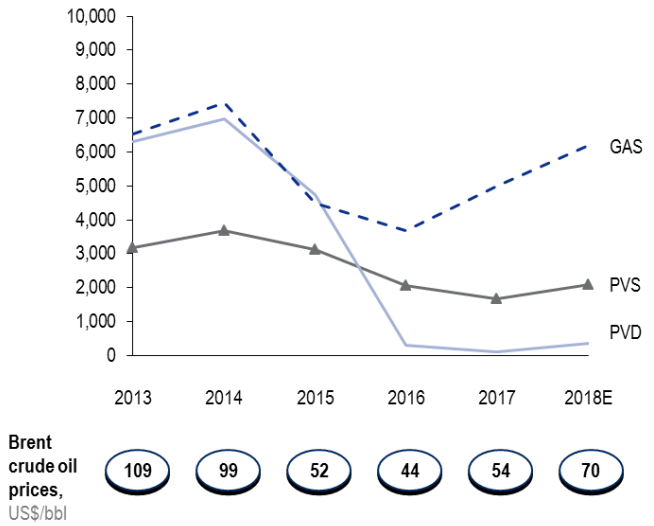
(PSC) more attractive to foreign investors. "In fact, foreign investors have spent US$45bn on exploration but they have brought just US$21bn back to their countries," said Mr Tran Sy Thanh, PetroVietnam Chairman in Sep 2018.

VALUATION AND RECOMMENDATION

Initiate sector coverage at Neutral, with upstream oilfield services stocks as our top picks

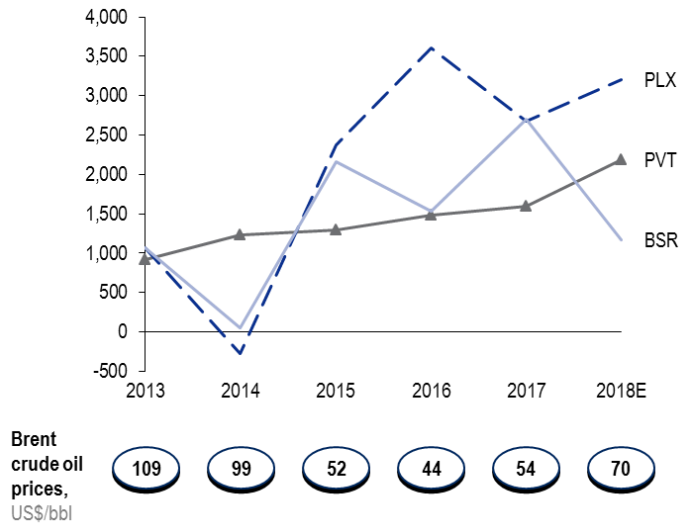
Typically, fluctuations in crude oil prices have the most impact on up-to-midstream oil and gas companies. Even so, the link between oil prices and earnings is generally nuanced for oil field service companies owing to their dependence on exploration & production (E&P) activity which tends to track oil prices but with a big time lag. Generally, it takes 1-2 years before oilfield service companies start benefiting from upward movements in crude oil prices due to the long lead times associated with a resumption of exploration activity.

Figure 20: EPS of key upstream oil and gas stocks (VND)



SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 21: EPS of key downstream oil and gas stocks (VND)



SOURCES: VND RESEARCH, COMPANY REPORTS

We hold a positive view on **PetroVietnam Technical Services Corp (PVS VN, Add, TP: VND25,000)** as we believe it will be the first beneficiary of the expected recovery in Vietnam's oil exploration activities. PVS is the sole domestic contractor that provides engineering, procurement and construction (EPC) services to offshore oil and gas projects in Vietnam. Currently, PVS is the main EPC contractor for the Sao Vang Dai Nguyet project (total contract value of c.US$850m). Other big projects in its pipeline are Su Tu Trang Phase 2, Nam Du – U Minh, Blue Whale, and Block B – O Mon. The total order backlog for these projects, while not yet disclosed in detail, could amount to US$2,000m, based on our estimates. We initiate on PVS with an Add and TP of VND25,000, based on a combination of DCF (weight 50%) and target FY19-21F P/E of 7.8x (weight 50%).

We also hold a positive view on **PetroVietnam Drilling & Well Services Corp (PVD VN, Add, TP: VND20,000)**. As the need for more oil and gas discoveries becomes increasingly pressing, Rystad Energy expects global capex for oilfield services to bounce back and post a CAGR of 10.2% in FY18-22F. Drilling contractors, in particular, are regarded as one of the earliest and primary beneficiaries of such an upturn in global spending for offshore oilfield services. We expect the jack-up utilisation rate to return to above 90% by 2023F (vs. c.65% in 2018). We initiate coverage on PVD with an Add rating and TP of VND20,000, based on a 50:50 weighting of DCF and 0.6x FY19-21F P/BV.

In contrast, we foresee a challenging time ahead for **PetroVietnam Gas Jsc (GAS VN, Hold, TP: VND91,600)**. We expect a declining profitability for the company's dry gas segment, which contributed some 50-55% of its total annual gross profit in the FY15-18 period. While the selling price of this segment has little upside due to the flat oil price outlook, the input price for this segment is also facing upward pressure due to the quick depletion of the cheap domestic gas supply. Thus, in FY18-21F, we forecast GAS's EPS to decrease by 7.8% p.a. We initiate coverage on GAS with a Hold rating and target price of VND91,600, based on an equal weighting of DCF and target FY19-21F P/E multiple of 18.0x.

At the same time, the scaling up of upstream exploration activities has had little impact on the profitability of downstream refiners and distributors such as Binh Son Refinery and Petrolimex (PLX VN, Not Rated).

Figure 22: Valuation snapshot for Vietnam oil and gas stocks under our coverage

Company	Bloomberg Ticker	Recom.	Share Price (local curr)	Target Price (local curr)	Market Cap (US$ m)	P/E (x)				3-year EPS (%)	P/BV (x)				ROE (%)			ROA (%)		
						5-yr	TTM	CY19F	CY20F		5-yr	TTM	CY19F	CY20F	5-yr	TTM	CY19F	5-yr	TTM	CY19F
PV GAS	GAS VN	HOLD	97,200	91,600	8,010	13.8	16.4	19.3	20.9	-10.6%	3.5	4.2	4.0	3.8	28.2%	23.6%	20.6%	18.8%	15.7%	15.4%
PV Technical Services	PVS VN	ADD	20,600	25,000	420	8.7	9.8	8.7	6.6	-25.7%	0.7	0.9	0.8	0.8	14.6%	6.7%	7.0%	5.2%	3.1%	4.5%
PV Drilling	PVD VN	ADD	17,550	20,000	290	16.2	38.0	20.3	20.1	-66.4%	1.1	0.6	0.5	0.5	14.8%	1.4%	2.6%	6.3%	1.1%	1.3%

SOURCES: VND RESEARCH, BLOOOMBERG (AS AT 26 MAR 2019)

Overall, we are more positive on mid-cap stocks PVS and PVD than the large-cap GAS. Apart from their stronger fundamental outlook, we expect PVS and PVD to benefit from the shift in investors' focus in the Vietnam stock market away from large-cap names to high-quality mid-cap names. In our view, there is still a sizeable valuation gap between the large-cap stocks and hundreds of mid-cap stocks (which are trading at half the large-cap valuations, based on our estimates). In 1 Jan-31 Mar 2019, Vietnam's mid-cap share prices have risen by nearly 13%, higher than the 8.5% increase in large-cap share prices.

Figure 23: Global oil and gas peer comparison

Company	Bloomberg Ticker	Recom.	Share Price (local curr)	Target Price (local curr)	Market Cap (US$ m)	P/E (x)				3-year EPS (%)	P/BV (x)				ROE (%)			ROA (%)		
						5-yr	TTM	CY19F	CY20F		5-yr	TTM	CY19F	CY20F	5-yr	TTM	CY19F	5-yr	TTM	CY19F
Gas distribution companies																				
PV GAS	GAS VN	HOLD	97,200	91,600	8,010	13.8	16.4	19.3	20.9	-10.6%	3.5	4.2	4.0	3.8	28.2%	23.6%	20.6%	18.8%	15.7%	15.4%
PTT PLC	PTT TB	HOLD	48.50	53.00	45,088	17.1	10.4	10.9	10.3	-29.0%	1.6	1.6	1.4	1.3	11.3%	7.7%	9.0%	6.6%	4.7%	6.4%
Indraprastha Gas	IGL IN	NOT RATED	301.3	N/A	2,650	17.7	25.4	N/A	N/A	28.0%	0.6	0.6	0.6	N/A	3.4%	2.2%	N/A	3.5%	4.7%	N/A
China Gas Holdings	384 HK	ADD	28.15	40.00	2,271	18.6	22.1	17.50	14.10	28.7%	3.6	5.3	3.8	2.7	19.5%	24.9%	25.4%	6.8%	10.4%	11.1%
Toho Gas Ltd	9533 JP	NOT RATED	5,070	N/A	43,500	24.0	30.0	N/A	N/A	-1.1%	1.5	1.3	N/a	N/A	7.7%	4.6%	N/A	4.1%	2.8%	N/A
Titas Gas Trans & Distri	TASGAS BD	NOT RATED	36.70	N/A	432	8.6	7.6	N/A	N/A	-21%	1.3	0.6	N/a	N/A	15.9%	6.6%	N/A	8.9%	3.6%	N/A
Petronas Gas Bhd	PTG MK	HOLD	17.70	18.50	9,217	23.5	18.4	18.0	19.6	-0.9%	3.9	2.8	2.7	2.6	17.3%	15.2%	15.0%	13.2%	10.8%	12.0%
Oil services companies																				
PV Technical Services	PVS VN	ADD	20,600	25,000	420	8.7	9.8	8.7	6.6	-25.7%	0.7	0.9	0.8	0.8	14.6%	6.7%	7.0%	5.2%	3.1%	4.5%
Mermaid Maritime	MMT SP	NOT RATED	0.08	N/A	119	23.0	N/A	N/A	N/A	-36.0%	0.6	0.3	N/A	N/A	-6.7%	-4.2%	N/A	-4.6%	-3.1%	N/A
Yinson Holdings	YNS MK	ADD	4.52	4.84	1,085	16.0	13.7	24.4	36.7	3.5%	3.3	1.9	1.5	1.5	17.5%	9.6%	6.6%	6.8%	4.0%	6.0%
Sembcorp Marine	SMM SP	ADD	1.68	2.46	2,604	21.6	N/A	103.2	68.7	-70.8%	2.2	1.3	1.5	1.5	6.9%	-8.6%	1.5%	2.7%	-2.3%	1.2%
Hyundai Engineering	000720 KS	ADD	51,600	68,000	4,979	12.1	18.2	13.9	13.2	-21.7%	1.0	0.9	1.0	0.9	7.6%	4.6%	7.6%	2.4%	1.6%	4.1%
Keppel Corp	KEP SP	ADD	6.21	8.28	8,159	10.2	12.1	11.5	10.1	-39.1%	1.5	0.9	0.9	0.8	12.2%	10.1%	8.3%	4.2%	4.7%	4.3%
Malaysia Marine Eng	MMHE MK	NOT RATED	0.79	N/A	212	21.9	36.0	N/A	N/A	-35.9%	1.3	0.4	N/A	N/A	2.4%	1.0%	N/A	1.2%	0.8%	N/A
Offshore drilling companies																				
PV Drilling	PVD VN	ADD	17,550	20,000	290	16.2	38.0	20.3	20.1	-66.4%	1.1	0.6	0.5	0.5	14.8%	1.4%	2.6%	6.3%	1.1%	1.3%
Velesto Energy Bhd	VEB MK	ADD	0.28	0.28	465	26.5	411.0	52.7	51.3	N/A	1.7	0.7	0.7	0.7	-16.2%	0.2%	1.3%	-6.1%	1.2%	1.8%
Sapura Energy Bhd	SAPE MK	ADD	0.34	0.57	511	34.6	N/A	N/A	N/A	N/A	1.1	0.2	0.4	0.4	-0.2%	-2.8%	-4.8%	0.2%	1.6%	0.9%
Ensco	OXHI LN	NOT RATED	4.42	N/A	1,846	10.7	N/A	N/A	N/A	N/A	0.5	0.2	N/A	N/A	-11.6%	-7.6%	N/A	-6.6%	-4.5%	N/A
Transocean	RIGN SW	NOT RATED	9.42	N/A	102,200	6.2	N/A	N/A	N/A	N/A	0.4	0.4	N/A	N/A	-7.7%	-15.5%	N/A	-4.2%	-8.3%	N/A
Rowan Companies	RDC LN	NOT RATED	12.11	N/A	1,473	13.5	N/A	N/A	N/A	N/A	0.5	0.3	N/A	N/A	0.2%	-6.7%	N/A	0.0%	-4.2%	N/A
Average - Gas distribution peers					**15,881**	**17.6**	**18.6**			**-19.9%**	**2.3**	**2.3**			**14.8%**	**12.1%**		**8.8%**	**7.5%**	
Average - Oil services peers					**2,511**	**16.2**	**18.0**			**-32.2%**	**1.5**	**0.9**			**7.8%**	**2.7%**		**2.6%**	**1.3%**	
Average - Offshore drilling peers					**17,797**	**18.0**	**224.5**			**-66.4%**	**0.9**	**0.4**			**-3.5%**	**-5.2%**		**-1.7%**	**-2.2%**	

Note: Not Rated forecasts based on Bloomberg consensus estimates; trailing 12 months (TTM)
SOURCES: VND RESEARCH, BLOOOMBERG (AS AT 26 MAR 2019)

RISKS AND POTENTIAL CATALYSTS

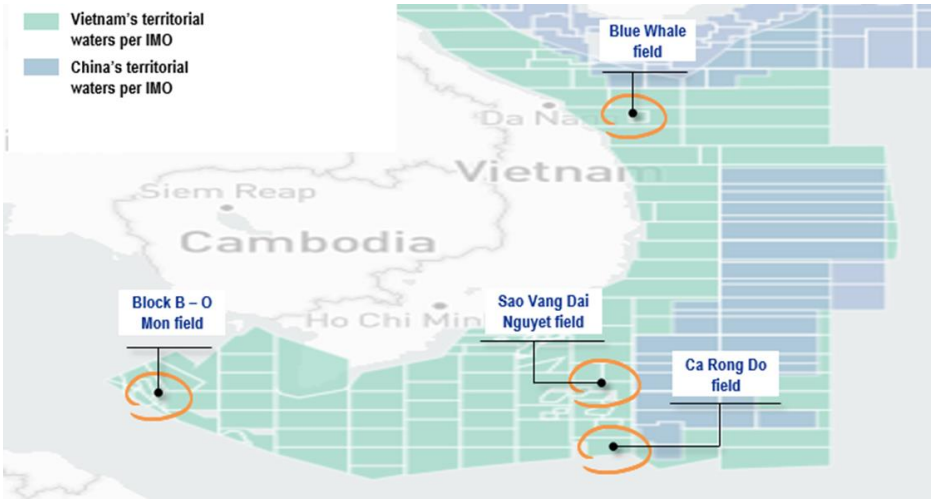
Downside risks

The key threat to Vietnam's oil and gas exploration ramp-up, in our view, is the ongoing territorial dispute with China in the East Sea. Some of Vietnam's major oil and gas projects such as Ca Rong Do and Blue Whale, fall within China's "nine-dash line," which serves as the basis for China's controversial claims to most of the resource-rich waterway in the East Sea. Such claims by China have been rejected by Vietnam as the nine-dash line extends over large portions of Vietnam's exclusive economic zone.

While China has never used the nine-dash line as an inviolable border to its sovereignty, a certain amount of pressure is still imposed on Vietnam's oil and gas exploration activities in these areas. In March 2018, the Ca Rong Do project was suspended indefinitely, supposedly due to pressure from China.

Despite geopolitical tensions in the East Sea being a concern, we believe major oil and gas projects in Vietnam will proceed in time to meet rising dry gas demand through domestic sources.

Figure 24: Location of key oil and gas projects in Vietnam



SOURCES: INTERNATIONAL MARITIME ORGANIZATION (IMO)

Despite geopolitical tensions with China being a considerable concern, we believe major oil and gas projects in Vietnam will proceed in time to meet rising dry gas demand through domestic sources. While Block B – O Mon project is not within the disputed area, Sao Vang Dai Nguyet project is located well within the long-time developed Nam Con Son basin, and Blue Whale project has the participation of Exxon Mobil (XOM US, Not Rated) – the giant US-based energy developer that thwarted China's protests in striking an exploration deal with Vietnam in 2008. With China clearly on the "back foot" in ongoing trade negotiations with the US, in our view, we believe it will be more careful in challenging US companies' interests in the South China Sea.

Potential upside catalysts

- Global geopolitical disputes cause more supply disruptions such as US sanctions on Saudi Arabia/Russia/Iran.
- Shale oil production growth is not as high as expected.
- Higher oil demand growth from Asia Pacific and Europe.

Vietnam

ADD *(previously NOT RATED)*

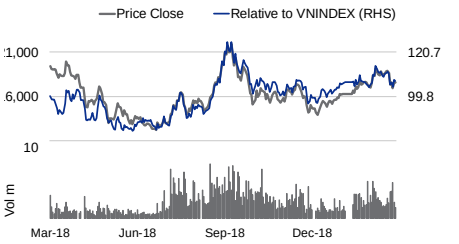
Consensus ratings*:	Buy 3	Hold 3	Sell 0

Current price:	VND17,550
Target price:	VND20,000
Previous target:	N/A
Up/downside:	14.0%
CGS-CIMB / Consensus:	2.8%
Reuters:	PVD.HM
Bloomberg:	PVD VN
Market cap:	US$289.6m
	VND6,719,021m
Average daily turnover:	US$1.47m
	VND34,080m
Current shares o/s:	383.3m
Free float:	34.0%

Source: Bloomberg

Key changes in this note

Not applicable.



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	2	17	-9.5
Relative (%)	3.5	8.7	7.2

Major shareholders	% held
PetroVietnam Group	50.4
Others	49.6

PetroVietnam Drilling & Well Services JSC

Patience is a virtue

- PVD's rig fleet is young enough to benefit from the oil services market upturn.
- We expect PVD's profitability to turn around in FY19-21F.
- We initiate coverage with an Add rating and target price of VND20,000.

We see PVD's rig fleet as young enough…

Compared to its global peers, PVD is still a fairly-competitive offshore driller, in our view, thanks to its relatively-young rig fleet. The average age of PVD's rig fleet is only eight years, which is much lower than the global average of 20 years. According to Bassoe Analytics, c.40% of the global jack-up fleet (as at 2018) is at least 30 years old.

…to benefit from anticipated global oilfield services market upturn

As the need for more oil and gas discoveries becomes increasingly pressing, Rystad Energy expects global capex for oilfield services to bounce back and post a CAGR of 10.2% in 2018-22F. Drilling contractors, in particular, are regarded as one of the earliest and primary beneficiaries of such an upturn in global spending for offshore oilfield services. We forecast jack-up utilisation rate to rise above 90% by 2023F (c.65% in 2018).

We differ in expecting PVD's profitability to turn around in FY19-21F

We expect PVD to make a major turnaround to net profit growth in FY19-21F. We forecast PVD to post revenue CAGR of 11.6% and EPS CAGR of 47.6% in FY18-21F. Our key assumptions are: 1) the jack-up charter rate increases from US$55k/day in FY18 to c.US$70k/day in FY21F. Our charter rate assumption aligns with the new charter rate of US$68k/day given to PVD I jack-up from 20 January 2019 (source: Bassoe Analytics), (2) the utilisation rate for PVD's jack-up fleet is stable over FY19-21F at 90% (the FY18 level), (3) the TAD rig starts working again in 2H20F at a charter rate of US$75k/day.

Initiate coverage with Add and target price of VND20,000

We initiate coverage on PVD with a Add rating and target price of VND20,000, based on a combination of DCF (weight 50%) and FY19-21F target P/BV multiple of 0.6x (weight 50%). Our DCF valuation is based on terminal growth of 1.2% and weighted average cost of capital (WACC) of 19.7%. We estimate PVD's WACC at 17.7% assuming: 1) a risk-free rate of 5.0%, 2) beta of 1.8 and 3) equity risk premium of 11%.

Risks and potential re-rating catalysts

Potential catalysts are: 1) Ca Rong Do project revives and PVD's TAD rig receives higher-than-expected charter rate, and 2) higher-than-expected charter rates for PVD's jack-up fleet. Downside risks include: 1) lower-than-expected global crude oil price, 2) PVD's TAD rig fails to resume operations post FY19F.

Financial Summary	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue (VNDb)	3,891	5,503	5,880	6,843	7,652
Operating EBITDA (VNDb)	393	696	613	718	1,074
Net Profit (VNDb)	45.3	187.9	352.7	355.6	604.6
Core EPS (VND)	118	490	920	928	1,577
Core EPS Growth	(65%)	315%	88%	1%	70%
FD Core P/E (x)	148.5	35.8	19.1	18.9	11.1
DPS (VND)	3.64	0.00	0.00	0.00	0.00
Dividend Yield	0.021%	0.000%	0.000%	0.000%	0.000%
EV/EBITDA (x)	18.22	9.87	10.94	9.20	5.40
P/FCFE (x)	NA	5.0	NA	282.7	6.3
Net Gearing	5.35%	4.07%	2.55%	1.49%	(4.69%)
P/BV (x)	0.51	0.50	0.50	0.50	0.48
ROE	0.34%	1.40%	2.60%	2.63%	4.38%
% Change In Core EPS Estimates					
CIMB/consensus EPS (x)			65,740	84,342	105,163

SOURCES: VND RESEARCH, COMPANY REPORTS

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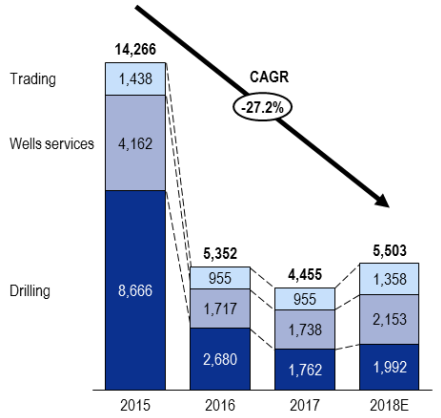
Patience is a virtue

INVESTMENT THESIS

PVD is still struggling financially amid a slow recovery in global offshore drilling market

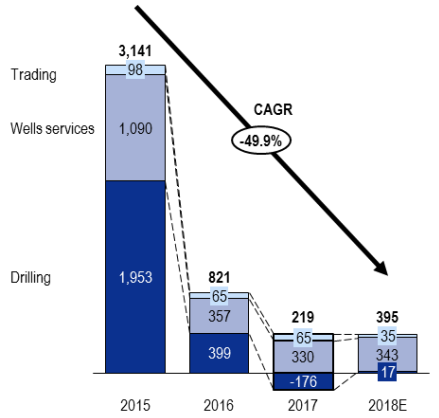
PetroVietnam Drilling and Well Services' (PVD) main business is to provide offshore exploration drilling for oilfield operators in Vietnam and Southeast Asia. The company's financial performance has deteriorated significantly since the crude oil price's collapse in late 2014. To be specific, the average daily charter rates for PVD's jack-up fleet have decreased by c.50% since 2015. Meanwhile, PVD's TAD rig has even stopped working since the end of 2016 due to the lack of job opportunities.

Figure 1: PVD's revenue breakdown by segment (VND bn)



SOURCES: VND RESEARCH, COMPANY REPORTS

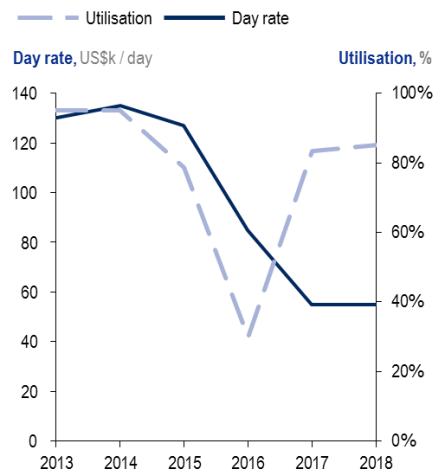
Figure 2: PVD's adjusted gross profit breakdown by segment (VND bn)



SOURCES: VND RESEARCH, COMPANY REPORTS

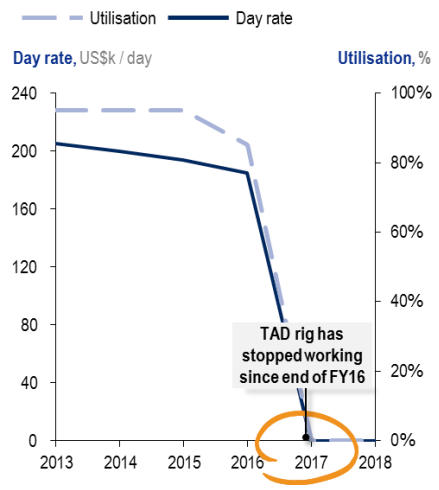
The average daily charter rates of PVD's jack-up fleet have decreased by c.50% since 2015. Meanwhile, PVD's TAD rig has even stopped working since late 2016 due to the lack of job opportunities.

Figure 3: PVD's charter rate and utilisation rate of jack-up fleet



SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 4: PVD's charter rate and utilisation rate of TAD rig



SOURCES: VND RESEARCH, COMPANY REPORTS

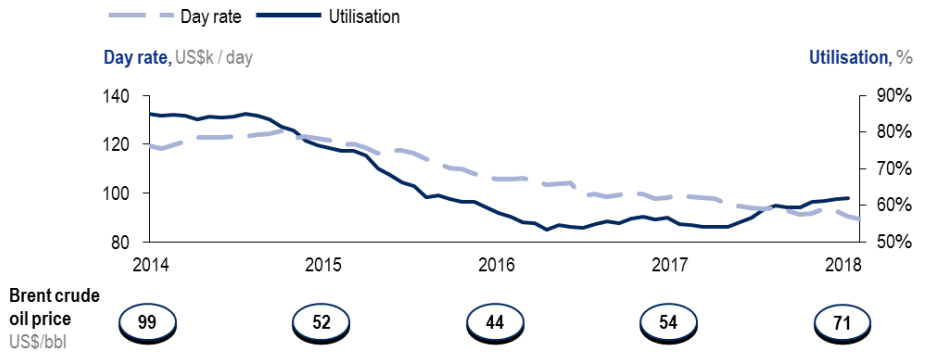
Recent weakness in PVD's financial performance mirrors the worldwide struggle in the offshore drilling market since late 2014. In particular, the charter rate and utilisation rate for the global jack-up fleet (independent leg cantilever, IC, 250 feet and above) has dropped by c.30% and c.25%, respectively, in 2018 from their peaks in mid-2015 (source: IHS Markit). From late 2016 to 2018, the demand for exploration drilling remained low despite recent recovery in the

crude oil price. Historically, the demand for drilling rigs has followed the crude oil price curve with a lag of c.1 year.

According to Rystad Energy, compared to other oilfield services such as engineering procurement construction and installation (EPCI) and subsea, the contract price of offshore drillers has suffered the most over 2014-17. This situation is largely due to the inflexible nature of offshore drilling business, which demands very high maintenance expenses for idle rigs (unutilised rigs). Typically, offshore drillers would rather accept a low contract price instead of leaving their rigs in idle mode. In addition, the longer the rig is idle, the higher the reactivation expense required once it returns to work.

Recent weakness in PVD's financial performance has mirrored the worldwide struggle in the offshore drilling market since late 2014.

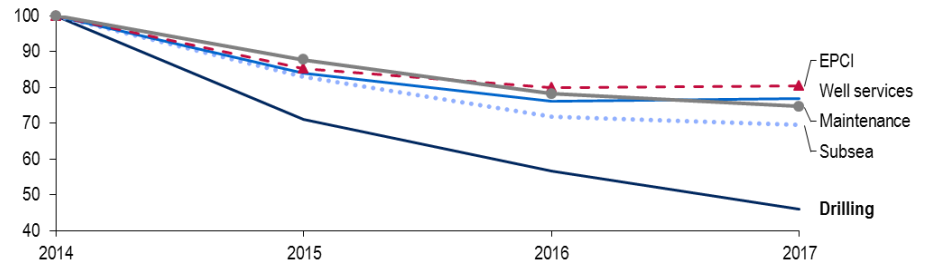
Figure 5: Global charter rate and utilisation of jack-up (IC 250ft and above)



SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG, IHS MARKIT

According to Rystad Energy, compared to other oilfield services such as EPCI and subsea, the contract price of offshore drillers has suffered the most over 2014-17.

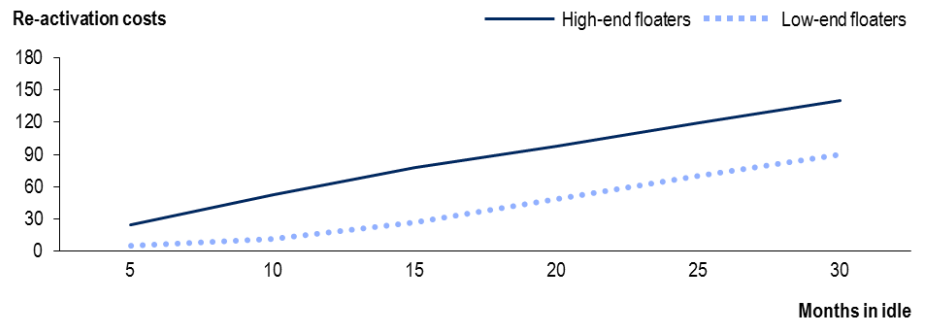
Figure 6: Offshore price index (2014 = 100 points)



SOURCES: RYSTAD ENERGY, VND RESEARCH

Typically, offshore drillers would rather accept a low contract price instead of leaving their rigs in idle mode as maintenance costs are high for idle rigs. In addition, the longer the rig is idle, the higher the reactivation expense required once it returns to work.

Figure 7: Expected reactivation costs (US$ m) vs. number of months idling



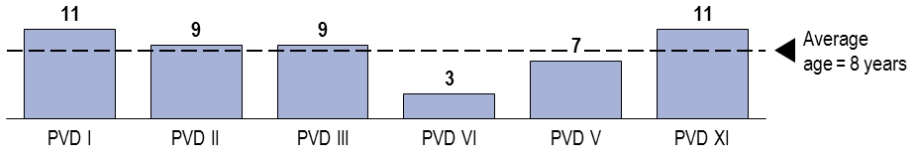
SOURCES: VND RESEARCH, ABG SUNDAL COLLIER

However, we view PVD's rig fleet as young enough…

Compared to its global peers, PVD is still a fairly-competitive offshore driller, in our view, thanks to its relatively-young rig fleet. The average age of PVD's rig fleet is only eight years, which is much lower than the global average of 20 years (according to Bassoe Analytics). Particularly, Bassoe Analytics also noted that c.40% of global jack-up fleet (as at 2018) is at least 30 years old. There are even 46 rigs (excluding those considered non-competitive) built long ago in the 1970s and which face huge efficiency problems.

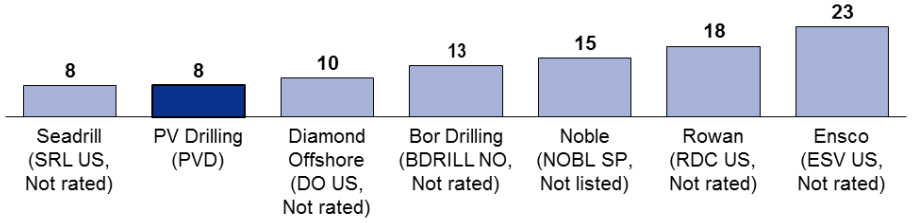
In the medium term, we think that rigs aged over 30 years are likely to be scrapped and rigs aged over 20 years are likely to be excluded from tenders as oil companies continue to focus on better technology, higher efficiency and reducing safety risk.

Figure 8: Average age of PVD's jack-up fleet (years), as at end 2018



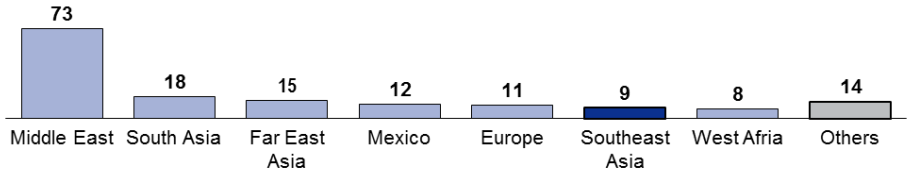
SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 9: Average age of jack-up fleet (years) by major global offshore drilling company, as at end 2018



SOURCES: VND RESEARCH, RIGZONE

Figure 10: The number of jack-up rigs aged above 28 years by location, as at end 2018



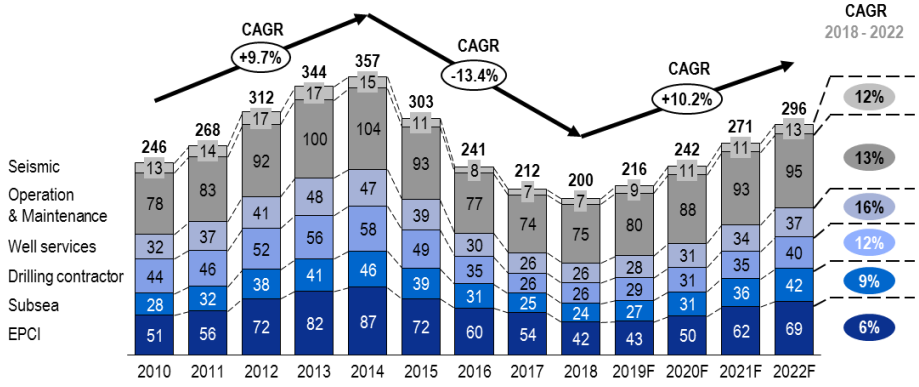
SOURCES: VND RESEARCH, RIGZONE

…to benefit from the anticipated global oilfield services market upturn »

According to Rystad Energy, the global offshore oilfield services market is likely to have reached its trough in 2018 in terms of profitability. As the need for more oil and gas discoveries becomes increasingly pressing, Rystad Energy expects the global capex for oilfield services to bounce back and post a CAGR of 10.2% in 2018-22F. This growth rate is considered highly positive for the oilfield service industry since it is even higher than the CAGR witnessed in FY10-14, when Brent crude oil price escalated from US$77/bbl to US$114/bbl.

As the need for more oil and gas discoveries becomes increasingly pressing, Rystad Energy expects that the global capex for oilfield services will bounce back and post a CAGR of 10.2% in 2018-22F.

Figure 11: Global capex for offshore oilfield services (US$ bn)

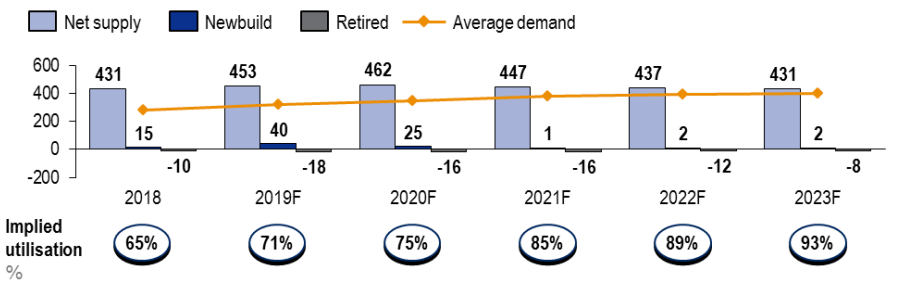


SOURCES: VND RESEARCH, RYSTAD ENERGY ESTIMATES

Drilling contractors, in particular, are regarded as one of the earliest and primary beneficiaries of such an upturn in global spending for offshore oilfield services. We expect the jack-up utilisation rate to return to above 90% by 2023F, after c.70% of obsolete jack-ups are retired by the market. Once the market utilisation rate surpasses 85%, drilling contractors are likely to start pushing for considerably higher charter rates, in our view.

We expect the jack-up utilisation rate to return to above 90% by 2023F, after c.70% of obsolete jack-ups are retired by the market.

Figure 12: Global supply and demand of jack-up fleet



SOURCES: VND RESEARCH, BASSOE ANALYTICS

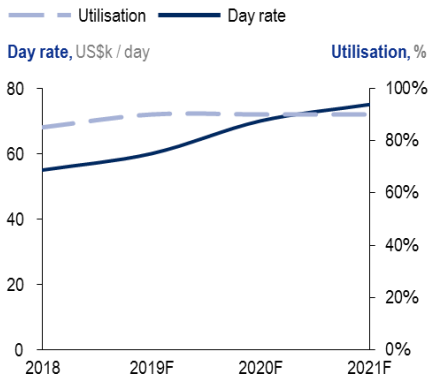
We expect PVD's profitability to turn around over FY18-21F

We expect PVD to make a major turnaround to net profit growth in FY18-21F, with EPS CAGR of 47.6%. Our main assumptions are as listed below:

1) We forecast the jack-up charter rate to increase from US$55k/day to c.US$70k/day in FY18-21F. Our charter rate assumption aligns with the new charter rate of US$68k/day given to PVD I jack-up by client Thang Long JOC from 20 January 2019 (source: Bassoe Analytics). Please refer to Figure 11 for specific charter rate per year.
2) We expect the utilisation rate of the jack-up fleet to remain stable at 90% over this period, the same as in FY18.
3) We expect the TAD rig to start working again from 2H20F at a charter rate of US$75k/day. We believe a potential client is Lam Son JOC, operating in the deep-water Thang Long Dong Do oilfield.
4) We expect PVD to recover c.VND90bn of bad debt from PetroVietnam Exploration Production Corporation (PVEP, Not listed) in FY19F.
5) We expect well services and trading segments' revenue and gross profit in FY18-21F to remain at FY18 levels.

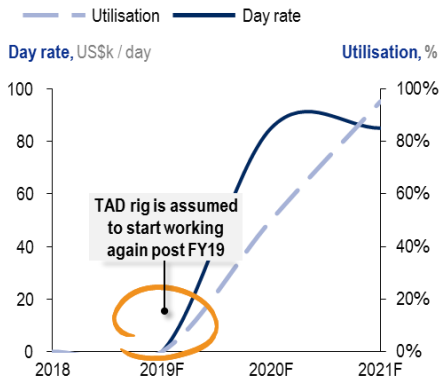
We forecast the jack-up charter rate to increase from US$55k/day to c.US$70k/day in FY18-21F. Meanwhile, we expect the TAD rig to start working again from 2H20F at a charter rate of US$75k/day.

Figure 13: Charter rate and utilisation rate of PVD's jack-up fleet, based on our estimates



SOURCES: VND RESEARCH'S ESTIMATES

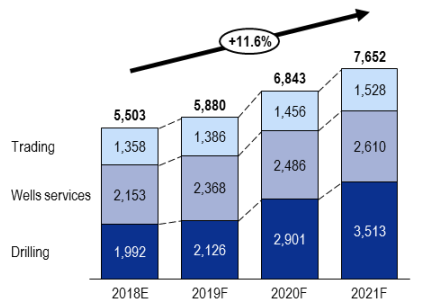
Figure 14: Charter rate and utilisation rate of PVD's TAD rig, based on our estimates



SOURCES: VND RESEARCH'S ESTIMATES

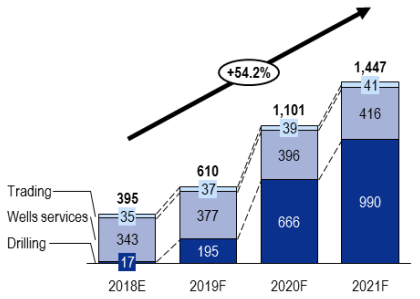
We forecast PVD to pose revenue CAGR of 11.6% and gross profit CAGR of 54.2% over FY18-21F, driven by a strong rebound in the drilling segment.

Figure 15: PVD's revenue (VND tr), based on our estimates



SOURCES: VND RESEARCH, COMPANY REPORTS

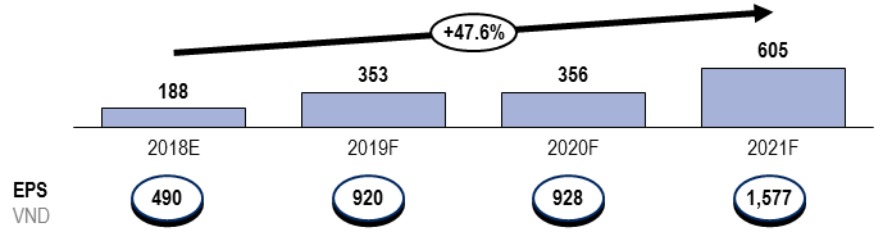
Figure 16: PVD's adjusted gross profit (VND tr) , based on our estimates



SOURCES: VND RESEARCH, COMPANY REPORTS

Overall, we project PVD's PATMI to grow at a CAGR of 47.6% in FY18-21F.

Figure 17: PVD's net profit (VND bn), based on our estimates



SOURCES: VND RESEARCH, COMPANY REPORTS

SWOT ANALYSIS

Figure 18: SWOT analysis

Strengths	Weaknesses
1. The sole commercial offshore drilling contractor in Vietnam with strong support from the government	1. The TAD rig remains in idle and incurs high maintenance expenses. This rig is only suitable for deep-water environment, hence making it more difficult for PVD to get it back to work.
2. Young rig fleet with average age of 8 years, compared to global average of 20 years.	2. The company has not had much experience in operating abroad.
3. High barriers to entry, as offshore drilling is a capital intensive market and highly regulated by the government	
Opportunities	**Threats**
1. We expect the demand for offshore drilling to recover in the medium term as the need for more oil and gas discoveries becomes increasingly pressing.	1. Brent crude oil price falls below US$60/bbl due to another technology revolution from shale oil. Low oil price will exert downward pressure on the contract prices of oilfield services in general.
2. We expect the Brent crude oil price to remain above US$60/bbl in the medium term, supporting the recovery in contract prices for oilfield services companies.	2. The TAD rig fails to return to work after FY19F. The longer the rig is cold-stacked, the higher the reactivation cost for PVD

SOURCES: VND RESEARCH ,

VALUATION AND RECOMMENDATION

Initiate coverage with Add and target price of VND20,000

We initiate coverage on PVD with a Add rating and target price of VND20,000, based on a combination of DCF (weight 50%) and FY19-21F target P/BV multiple of 0.6x (weight 50%).

Our DCF valuation of VND18,593 is based on terminal growth of 1.2% and weighted average cost of capital (WACC) of 19.7%. We estimate PVD's WACC at 19.7% assuming: 1) a risk-free rate of 5.4%, 2) beta of 1.8 and 3) equity risk premium of 11%.

Meanwhile, our target FY19-21F P/BV multiple of 0.6x is deduced from the average TTM P/BV multiple of global peers of 0.4x. We believe PVD deserves to trade at a higher P/BV multiple than its global peers, thanks to its younger rig fleet. In addition, we expect the looming rebound in the oilfield service markets to improve the average P/BV multiples of drilling contractors in the medium term.

Figure 19: DCF model – Summary of free cash flow (FCF)

VNDbn	Dec-16A	Dec-17A	Dec-18E	Dec-19F	Dec-20F	Dec-25F	Dec-30F	Dec-35F	CAGR 20-35F
Total revenue	5,360	3,891	5,503	5,880	6,843	10,787	14,064	15,513	5.6%
% yoy	*0.0%*	*-27.4%*	*41.4%*	*6.8%*	*16.4%*	*10.0%*	*3.7%*	*1.2%*	
COGS & OPEX	(5,199)	(4,286)	(5,416)	(5,599)	(6,578)	(9,492)	(12,376)	(13,651)	
Unlevered profit / EBIT	161	(396)	87	281	264	1,294	1,688	1,862	13.9%
Operating margin	*3.0%*	*-10.2%*	*1.6%*	*4.8%*	*3.9%*	*12.0%*	*12.0%*	*12.0%*	
Effective tax rate	*30.8%*	*76.4%*	*27.2%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	
EBIT * (1-Tax) or NOPAT	111	(93)	63	211	198	971	1,266	1,396	13.9%
+ Depreciation and amortisation	728	788	608	332	453	793	1,034	1,141	
% of revenue	*13.6%*	*20.3%*	*11.1%*	*5.6%*	*6.6%*	*7.4%*	*7.4%*	*7.4%*	
- Capex	(235)	(44)	(79)	(258)	(411)	(539)	(703)	(776)	
% of revenue	*-4.4%*	*-1.1%*	*-1.4%*	*-4.4%*	*-6.0%*	*-5.0%*	*-5.0%*	*-5.0%*	
+ Change in working capital	277	35	5	102	65	272	355	621	
% of revenue	*5.2%*	*0.9%*	*0.1%*	*1.7%*	*0.9%*	*2.5%*	*2.5%*	*4.0%*	
Interest and other financial activities, net	107	547	137	128	148	268	350	386	
% of revenue	*2.0%*	*14.1%*	*2.5%*	*2.2%*	*2.2%*	*2.5%*	*2.5%*	*2.5%*	
Unlevered free cash flow (UFCF)	**988,337**	**1,231,987**	**735,692**	**514,947**	**453,501**	**1,764,420**	**2,301,846**	**2,767,501**	
% yoy	*0.0%*	*24.7%*	*-40.3%*	*-30.0%*	*-11.9%*	*24.0%*	*4.2%*	*1.2%*	

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Figure 20: Cost of equity

Cost of equity	
Risk Free Rate	5.4%
Beta	1.80
Risk Premium	11.0%
Cost of Equity	**25.2%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 21: WACC and terminal growth

VNDbn	
Equity Value	9,582
Debt	3,330
Cost of Debt	5.0%
Tax Rate	25.0%
WACC	**19.7%**
Perpetual Growth Rate	**1.2%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Our target price of VND20,000 is based on a combination of DCF (weight 50%) and FY19-21F target P/BV multiple of 0.6x (weight 50%).

Figure 22: Blended target price

Method	Implied share price (VND)	Weight (%)	Weighted share price (VND)
DCF	18,593	50%	9,297
FY19-21F target P/BV of 0.6x	21,478	50%	10,739
Blended price		**100%**	**20,036**
Target price			**20,000**

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Figure 23: Global offshore drilling sector comparison

Company	Bloomberg Ticker	Recom.	Share Price (local curr)	Target Price (local curr)	Market Cap (US$ m)	P/E (x) 5-yr	P/E (x) TTM	P/E (x) CY19F	P/E (x) CY20F	3-year EPS (%)	P/BV (x) 5-yr	P/BV (x) TTM	P/BV (x) CY19F	P/BV (x) CY20F	ROE (%) 5-yr	ROE (%) TTM	ROE (%) CY19F	ROA (%) 5-yr	ROA (%) TTM	ROA (%) CY19F
Offshore drilling companies																				
PV Drilling	PVD VN	ADD	17,550	20,000	290	16.2	38.0	20.3	20.1	-66.4%	1.1	0.6	0.5	0.5	14.8%	1.4%	2.6%	6.3%	1.1%	1.3%
Velesto Energy Bhd	VEB MK	ADD	0.28	0.28	465	26.5	411.0	52.7	51.3	N/A	1.7	0.7	0.7	0.7	-16.2%	0.2%	1.3%	-6.1%	1.2%	1.8%
Sapura Energy Bhd	SAPE MK	ADD	0.34	0.57	511	34.6	N/A	N/A	N/A	N/A	1.1	0.2	0.4	0.4	-0.2%	-2.8%	-4.8%	0.2%	1.6%	0.9%
Ensco	OXHI LN	NOT RATED	4.42	N/A	1,846	10.7	N/A	N/A	N/A	N/A	0.5	0.2	N/A	N/A	-11.6%	-7.6%	N/A	-6.6%	-4.5%	N/A
Transocean	RIGN SW	NOT RATED	9.42	N/A	102,200	6.2	N/A	N/A	N/A	N/A	0.4	0.4	N/A	N/A	-7.7%	-15.5%	N/A	-4.2%	-8.3%	N/A
Rowan Companies	RDC LN	NOT RATED	12.11	N/A	1,473	13.5	N/A	N/A	N/A	N/A	0.5	0.3	N/A	N/A	0.2%	-6.7%	N/A	0.0%	-4.2%	N/A
Average - Offshore drilling peers					**17,797**	**18.0**	**224.5**			**-66.4%**	**0.9**	**0.4**			**-3.5%**	**-5.2%**		**-1.7%**	**-2.2%**	

Note: Not Rated forecasts based on Bloomberg consensus estimates; trailing 12 months (TTM
SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG (AS AT 26 MAR 2019)

Figure 24: Brief description of global comparable companies

Companies	Country of origin	Description
Mermaid Maritime (MMT SP, Not Rated)	Singapore	Mermaid Maritime PCL is a subsea and offshore drilling services company. It provides full turnkey services to oil and gas majors operating offshore such as subsea vessels, specialized diving equipment, remotely operated vehicles and drilling and accommodation rigs. Mermaid's operating segments are the Subsea group, Drilling group, and Holding. The Subsea group provides services including inspection, repair and maintenance (IRM), infrastructure installation support, remotely operated vehicle (ROV) Support, and cable.
Velesto Energy (VEB MK, Add, TP:RM0.28)	Malaysia	Velesto Energy Bhd is a Malaysia based company which provides services to the oil and gas industry. It is engaged in the provision of drilling services for exploration, development and production wells and workover services to the upstream sector of the oil and gas industry. It is also engaged in the provision of threading, inspection and repair services for Oil Country Tubular Goods in Malaysia and overseas. The company has a geographical presence in Malaysia, Indonesia, and Singapore.
Sapura Energy (SAPE MK, Add, TP:RM0.57)	Malaysia	Sapura Energy Bhd is an integrated oil and gas services and solutions provider. It is engaged in the exploration, development, production, rejuvenation, as well as decommissioning and abandonment stages of the value chain. Its Operating segments are Engineering and Construction, Drilling, Exploration and Production and Corporate. The group derives majority of revenue from Engineering and Construction business segment which includes installation of offshore platforms, marine pipelines and subsea services, engineering.
Ensco (OXHI LN, Not Rated)	United Kingdom	Ensco plc provides offshore contract drilling services to the oil and gas industry worldwide. It operates through three segments: Floaters, Jackups, and Other. The company owns and operates an offshore drilling rig fleet of 65 rigs, including 32 located in the Middle East, Africa, and the Asia Pacific, which comprise 3 rigs under construction; 14 located in North and South America, such as Brazil; and 19 located in Europe and the Mediterranean. It also offers management services on rigs owned by third-parties.
Transocean (RIGN SW, Not Rated)	Switzerland	Transocean Ltd., together with its subsidiaries, provides offshore contract drilling services for oil and gas wells worldwide. The company primarily offers drilling rigs, related equipment, and work crews; and ultra-deepwater and harsh environment drilling services. As of February 18, 2019, it owned or had partial ownership interests in, and operated 48 mobile offshore drilling units that consist of 31 ultra-deepwater floaters, 13 harsh environment floaters, and 4 midwater floaters.
Rowan Companies (RDN LN, Not Rated)	United States	Rowan Companies plc provides offshore contract drilling services to the oil and gas industry. The company operates through three segments: Deepwater, Jack-ups, and ARO. The Deepwater segment operates 4 ultra-deepwater drillships. The Jack-ups segment operates 15 self-elevating jack-up rigs. The ARO segment operates a fleet of 6 self-elevating jack-up rigs. The company operates in the United States Gulf of Mexico, Central and South America, the United Kingdom, the Middle East, Trinidad, and Norwegian sectors of the North Sea.

SOURCES: VND RESEARCH, COMPANY REPORTS

RISKS AND CATALYSTS

Downside risks

- Brent crude oil price falls below US$60/bbl due to another technology revolution from shale oil. Low oil price will exert downward pressure on the contract prices of oilfield services in general.
- The TAD rig fails to return to work after FY19F. This rig is currently being cold-stacked and incurs high maintenance expense of c.US$11k/day. We note that the longer the rig is cold-stacked, the higher the reactivation cost for PVD.
- Strong correction in global equity market can put downward pressure on the share price of PVD, which is quite volatile and has a high correlation with the overall movement of Vietnam's stock market.

Potential re-rating catalysts

- The charter rates of jack-up fleet are higher than expected thanks to stronger improvements in rig demand and market utilisation.
- Ca Rong Do project returns from suspension. We believe this project could provide large and highly-profitable drilling contracts for the currently cold-stacked TAD rig.

APPENDICES

Figure 25: Company background of PV Drilling

PetroVietnam Drilling & Well Services Corporation Website: www.pvdrilling.com.vn Headquarter: HCMC

BUSINESS OVERVIEW

VND Billion

PVD

Total revenue '18 = 5,503
Net profit '18 = 188
No. of employees = c.3,000

Main segments	Drilling	Well Services	Trading
Revenue '18	1,992	2,152	1,359
% total rev.	*36%*	*39%*	*25%*
Description	• Exploration drilling to explore for and subsequently extract petroleum	• Maintenance services done after the well has been drilled	• Trading of oil and gas equipments
CAGR 13-18	• *-26%*	• *-15%*	• *3%*

KEY MANAGEMENT

Names	Position
Mr Do Duc Chien	Vice Chairman
Mr Pham Tien Dung	Managing Director
Mr Tran Van Hoat	Deputy Director
Mr Dao Ngoc Anh	Deputy Director

OWNERSHIP STRUCTURE

Holders	Shares, Mil	%
PetroVietnam (PVN)	193.2	50.4%
Others	189.6	49.6%

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 26: Organisation structure of PVD

PVD *(Parent company)*

	Companies	PVD's ownership	Brief description
Subsidiaries	PVD Offshore	• 100.0%	• Specialise in drilling manpower supply, inspection, maintenance and drilling tool fabrication and oil spill response service.
	PVD Well Services	• 100.0%	• Specialise in providing well technical services such as drilling tools rental, casing and tubing running, managed pressure drilling and filtration services.
	PVD Logging	• 100.0%	• Specialise in providing high tech services in exploration and production of oil & gas industry. Pvd logging has also successfully provided its core services of geologist consultants since 2005
	PVD Tech	• 100.0%	• Core business includes: engineering – procurement - construction and installation (EPCI) of skids; oilfield services; trading and after sales service.
	PVD Training	• 51.8%	• Leading company in providing three core services: training and certification; skilled manpower supply and marine technical services
	PVD Deepwater	• 100.0%	• Provide deepwater drilling services in Vietnam territory and the region by providing and operating the semi-submersible tender assit drilling rig - PV Drilling V (TAD)
	PVD Overseas	• 81.6%	• Curently owns and operates the jack-up PV DRILLING VI - the latest modern rig in PV Drilling's rig fleet. PVD Overseas shall promote marketing, seeking new opportunities in international markets.
Joint ventures	BJ-PVD	• 49.0%	• Specialise in providing coiled tubing service, cementing service, stimulation service, hydraulic fracturing service and fluid filtration service.
	PVD-Expro	• 51.0%	• Supply well testing service to most of "big" oil & gas companies in Vietnam such as PVEP JOC, JVPC, Hoang Long – Hoan Vu, Cuu Long JOC.
	PVD Tubulars	• 51.0%	• Specialise in supply of drill-pipe, casing, tubing, coupling with wide range of different connections and providing procurement agent service and total tubular management services (TTM services).
	PVD-Baker Hughes	• 51.0%	• Provide a full spectrum of oilfield services from exploration to production such as: directional drilling, measurement while drilling & logging while drilling; coring services.
	Vietubes	• 51.0%	• Main lines of business are threading, processing, repairing, restoring casing tubes, drilling collars, drilling pipes, conducting pipes and accessories for oil and gas industry.
	PVD-OSI	• 51.0%	• Specialise in producing threading, machining various connectors for exploration & exploitation petroleum.

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 27: Profile of PV Drilling's key management executives

Mr. DO DUC CHIEN

Title: Vice Chairman, PV Drilling's Board of Directors
Date of birth: 1963
Date of appointment: 1/12/2015
Education:
- Bachelor of Law
- Bachelor of Politics

Experience: 19 years of experience in the oil and gas industry
Field of charge: Responsible for commerce, planning - investment supervision and regulations, policies for employees.

EMPLOYMENT HISTORY:

12/2015 - present:	Vice Chairman of PV Drilling;
4/2010 - 12/2015:	Chairman of PV Drilling;
2009 - 4/2010:	Chairman of Petrosetco;
2007 - 2009:	Chairman of Petroland;
2007	Deputy Director, Southern Construction Projects Management Committee, Petrovietnam;
1999 - 2006:	Corporate Office Manager, Standing Deputy Secretary, Party Committee Secretary of Petroleum Sector in Ho Chi Minh City;

Mr. PHAM TIEN DUNG

Title: Member of the Board of Directors, President & CEO of PV Drilling
Date of birth: 1967
Date of appointment: 5/8/2010
Education:
- Bachelor of Science (Mechanical Engineering)
- Bachelor of Art (English)

Experience: 27 years of experience in the oil and gas industry
Field of charge: Generally direct and manage the sustainable business growth, policies and business operation

EMPLOYMENT HISTORY:

8/2010 - Present:	President & CEO, PV Drilling;
2009 - 8/2010	Vice President & COO, PV Drilling;
2005 - 2009:	Vice President of PV Drilling, Director of PVD Drilling Division;
2001 - 2005:	Director of Drilling Services Enterprise, PV Drilling;
1997 - 2001:	Manager of PTSC Offshore Services Center;
1992 - 1997	Worked in different multinational corporations in Singapore, Australia, Thailand...

Ms.HO NGOC YEN PHUONG

Title: Member, PV Drilling's Board of Directors
Date of birth: 1967
Date of appointment: 27/7/2016
Education:
- Master of International Finance and Accounting, Swinburne University, Australia

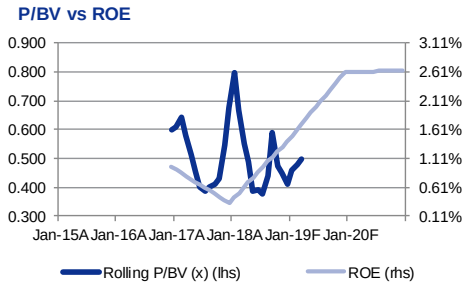
Experience: 23 years of experience in the field of finance, accounting and audit
Field of charge: Responsible for financing, accounting, auditing and the ERP system

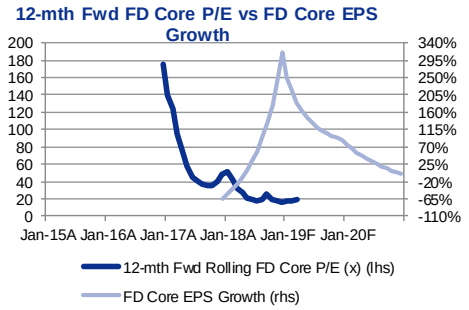
EMPLOYMENT HISTORY

7/2016 - present	Member of PV Drilling's Board of Directors
6/2016 - present	Director of Finance Division, Petrovietnam
7/2008 - 6/2016	Vice President and CFO, PV Drilling
2007 - 6/2008	CFO and Finance Manager, PV Drilling
2003 - 2007	Chief Finance Officer, S-Fone
2000 - 2003	Finance Controller, Holcim Joint Venture Vietnam
1998 - 2000	Chief Accountant, FDI VMEP (now SYM)

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS





Profit & Loss

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Net Revenues	**3,891**	**5,503**	**5,880**	**6,843**	**7,652**
Gross Profit	**192**	**395**	**610**	**1,101**	**1,447**
Operating EBITDA	**393**	**696**	**613**	**718**	**1,074**
Depreciation And Amortisation	-788	-608	-332	-453	-563
Operating EBIT	**-396**	**87**	**281**	**264**	**511**
Financial Income/(Expense)	-81	-67	57	61	83
Pretax Income/(Loss) from Assoc.	5	64	65	76	95
Non-Operating Income/(Expense)	623	140	6	11	12
Profit Before Tax (pre-EI)	**151**	**225**	**409**	**412**	**701**
Exceptional Items					
Pre-tax Profit	**151**	**225**	**409**	**412**	**701**
Taxation	-115	-61	-102	-103	-175
Exceptional Income - post-tax					
Profit After Tax	**36**	**163**	**307**	**309**	**526**
Minority Interests	10	24	46	46	79
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	**45**	**188**	**353**	**356**	**605**
Recurring Net Profit	45	188	353	356	605
Fully Diluted Recurring Net Profit	**45**	**188**	**353**	**356**	**605**

Cash Flow

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
EBITDA	392.6	695.6	612.6	717.5	1,073.7
Cash Flow from Invt. & Assoc.	(143.4)	(148.9)	(148.9)	(148.9)	(148.9)
Change In Working Capital	34.6	5.1	102.5	64.5	445.0
(Incr)/Decr in Total Provisions	41.0	(110.2)	0.0	0.0	0.0
Other Non-Cash (Income)/Expense	(241.6)	(471.1)	(203.6)	(305.2)	(372.6)
Other Operating Cashflow	312.6	531.4	494.8	606.3	701.4
Net Interest (Paid)/Received	(196.9)	(177.1)	(237.3)	(226.0)	(207.8)
Tax Paid	(84.2)	(142.9)	(102.3)	(103.1)	(175.3)
Cashflow From Operations	**114.6**	**181.9**	**517.9**	**605.2**	**1,315.6**
Capex	(44.3)	(78.7)	(258.1)	(410.6)	(382.6)
Disposals Of FAs/subsidiaries	0.3	0.6	0.0	0.0	0.0
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	(311.7)	1,203.7	0.0	0.0	0.0
Cash Flow From Investing	**(355.7)**	**1,125.7**	**(258.1)**	**(410.6)**	**(382.6)**
Debt Raised/(repaid)	(752.0)	41.0	(268.6)	(170.9)	138.8
Proceeds From Issue Of Shares					
Shares Repurchased					
Dividends Paid	(1.4)	0.0	0.0	0.0	0.0
Preferred Dividends					
Other Financing Cashflow	0.0	(969.5)	0.0	0.0	0.0
Cash Flow From Financing	**(753.4)**	**(928.5)**	**(268.6)**	**(170.9)**	**138.8**
Total Cash Generated	(994.5)	379.1	(8.8)	23.8	1,071.8
Free Cashflow To Equity	**(993.1)**	**1,348.6**	**(8.8)**	**23.8**	**1,071.8**
Free Cashflow To Firm	**(44.2)**	**1,484.7**	**497.1**	**420.7**	**1,140.7**

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS… cont'd

Balance Sheet

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Cash And Equivalents	3,952	3,277	3,217	3,193	4,219
Total Debtors	1,552	1,613	1,724	2,006	2,243
Inventories	754	755	759	827	894
Total Other Current Assets	26	26	28	33	37
Total Current Assets	**6,284**	**5,671**	**5,729**	**6,060**	**7,394**
Fixed Assets	14,821	14,462	14,389	14,346	14,166
Total Investments	578	695	695	695	695
Intangible Assets	0	0	0	0	0
Total Other Non-Current Assets	134	173	173	173	173
Total Non-current Assets	**15,533**	**15,331**	**15,257**	**15,215**	**15,035**
Short-term Debt	1,343	362	337	321	708
Current Portion of Long-Term Debt					
Total Creditors	896	992	1,140	1,326	1,483
Other Current Liabilities	1,667	1,423	1,520	1,769	1,978
Total Current Liabilities	**3,905**	**2,777**	**2,997**	**3,416**	**4,169**
Total Long-term Debt	3,330	3,477	3,234	3,079	2,831
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	1,110	907	907	907	907
Total Non-current Liabilities	**4,439**	**4,384**	**4,141**	**3,986**	**3,738**
Total Provisions	0	0	0	0	0
Total Liabilities	**8,345**	**7,162**	**7,138**	**7,402**	**7,907**
Shareholders' Equity	13,208	13,583	13,545	13,522	14,092
Minority Interests	265	258	304	350	429
Total Equity	**13,473**	**13,841**	**13,848**	**13,872**	**14,521**

Key Ratios

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue Growth	(27.4%)	41.4%	6.8%	16.4%	11.8%
Operating EBITDA Growth	(55.8%)	77.2%	(11.9%)	17.1%	49.6%
Operating EBITDA Margin	10.1%	12.6%	10.4%	10.5%	14.0%
Net Cash Per Share (VND)	-1,880	-1,469	-923	-540	1,776
BVPS (VND)	34,463	35,440	35,341	35,281	36,769
Gross Interest Cover	-2.05	0.51	1.79	1.77	3.73
Effective Tax Rate	76.4%	27.2%	25.0%	25.0%	25.0%
Net Dividend Payout Ratio	3.08%	NA	NA	NA	NA
Accounts Receivables Days	144.4	105.0	103.6	99.8	101.3
Inventory Days	76.43	53.91	52.43	50.58	50.63
Accounts Payables Days	69.74	58.57	71.71	76.42	80.34
ROIC (%)	(2.03%)	0.47%	1.54%	1.47%	2.86%
ROCE (%)	(1.07%)	1.55%	3.28%	3.18%	4.54%
Return On Average Assets	0.45%	1.01%	1.25%	1.23%	2.10%

Key Drivers

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Oil Price (US$/bbl)	54.0	72.0	65.0	68.0	70.0
Volume Growth (%)	-4.6%	-0.5%	-0.8%	0.4%	-0.2%
Ratio Of Up To Downstream (x)	N/A	N/A	N/A	N/A	N/A
Operating Cash Cost (US$/bbl)	N/A	N/A	N/A	N/A	N/A
Ratio Of High To Low Margin (x)	N/A	N/A	N/A	N/A	N/A

SOURCES: VND RESEARCH, COMPANY REPORTS

Vietnam

HOLD *(previously NOT RATED)*

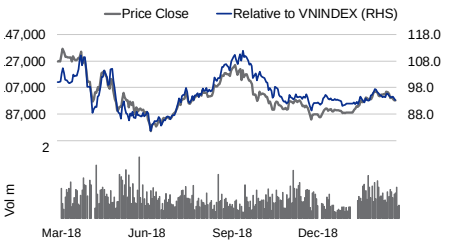
Consensus ratings*:	Buy 4	Hold 2	Sell 0

Current price:	VND97,200
Target price:	VND91,600
Previous target:	N/A
Up/downside:	-5.81%
CGS-CIMB / Consensus:	-7.8%
Reuters:	GAS.HM
Bloomberg:	GAS VN
Market cap:	US$8,019m
	VND186,035,936m
Average daily turnover:	US$2.02m
	VND46,621m
Current shares o/s:	1,914m
Free float:	4.2%

Source: Bloomberg

Key changes in this note

N/A



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-1.3	12.4	-23.4
Relative (%)	0.2	4.1	-6.7

Major shareholders	% held
PetroVietnam Group	95.8
Others	4.2

PetroVietnam Gas JSC

Challenging times ahead

- We expect a flat oil price outlook to weigh on PetroVietnam Gas's (GAS) sales growth. We forecast EPS to decrease by 7.8% p.a in FY18-21F.
- Depleting gas supply to put pressure on input costs, while demand growth and capacity expansion should partly offset rising costs.
- Initiate coverage with a Hold rating and target price of VND91,600.

Flat oil price outlook could weigh on sales growth

In 2019-21F, we expect Bloomberg consensus forecasts for Brent crude oil to be US$62-US$65/bbl, down 10.1% from the estimated level in FY18. In our view, despite the recent robust recovery, Brent crude oil price is unlikely to return to the pre-2014 level of c.US$100/bbl. Given the flat crude oil price outlook, coupled with unchanged sales volume, we expect GAS's revenue to increase by a CAGR of 5.1% over FY18-21F.

Depleting gas supply puts pressure on input costs

The dry gas segment has been instrumental to GAS's profitability, contributing 50-55% of its total annual gross profit in FY15-18. While we believe the selling price of this segment has little upside due to the flat oil price outlook, the input price for this segment is also facing upward pressure due to the quick depletion of the cheap domestic gas supply. We forecast the dry gas segment's COGS to increase by a CAGR of 9.9% in FY18-21F.

Demand and capacity expansion to partly offset rising costs

According to Wood Mackenzie, the demand for dry gas in Vietnam is poised to increase twofold over 2020-35F due to the expected construction of several new gas-fired power plants, such as Nhon Trach 3 – 4 and O Mon 3 – 4. We expect the combination of higher dry gas demand and larger transportation capacity to increase GAS's transportation revenue by c.85% over 2020-25F, and partially offset the potential loss in gross profit for the dry gas segment.

We forecast EPS to decrease by 7.8% p.a. in FY18-21F

In FY18E, GAS posted EPS growth of 26.4% yoy, mainly due to a strong recovery in Brent crude oil price (+27.7% yoy). However, for FY18-21F, we forecast GAS's EPS to decrease by 7.8% p.a. due to the flat oil price outlook and rising input costs.

Initiate coverage with a Hold and target price of VND91,600

We initiate coverage on GAS with a Hold rating and target price of VND91,600, based on an equal weighting of DCF and target FY19-21F P/E multiple of 18.0x. Key downside risks include: 1) faster-than-expected depletion of cheap gas supply and 2) sharp fall in crude oil price. Meanwhile, key upside catalysts are: 1) higher oil price due to geopolitical disputes, and 2) gas fields under development, such as Blue Whale and Block B – O Mon, starting operations sooner than expected.

Analyst(s)

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Financial Summary	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue (VNDb)	64,570	75,627	74,677	80,631	87,774
Operating EBITDA (VNDb)	14,219	17,212	15,797	15,877	17,978
Net Profit (VNDb)	9,577	12,102	10,313	9,555	9,500
Core EPS (VND)	5,004	6,323	5,388	4,992	4,963
Core EPS Growth	36.6%	26.4%	(14.8%)	(7.4%)	(0.6%)
FD Core P/E (x)	19.43	15.37	18.04	19.47	19.58
DPS (VND)	3,796	4,110	4,126	4,179	4,155
Dividend Yield	3.90%	4.23%	4.24%	4.30%	4.27%
EV/EBITDA (x)	11.93	9.55	10.63	11.01	10.52
P/FCFE (x)	14.4	182.8	16.4	24.1	20.9
Net Gearing	(41.7%)	(49.3%)	(43.2%)	(29.3%)	4.9%
P/BV (x)	4.48	4.07	4.25	4.50	4.71
ROE	23.8%	27.8%	23.1%	22.4%	23.5%
% Change In Core EPS Estimates					
CIMB/consensus EPS (x)			0.91	0.78	0.75

SOURCES: VND RESEARCH, COMPANY REPORTS

Challenging times ahead

INVESTMENT THESIS

Flat oil price outlook could weigh on sales growth

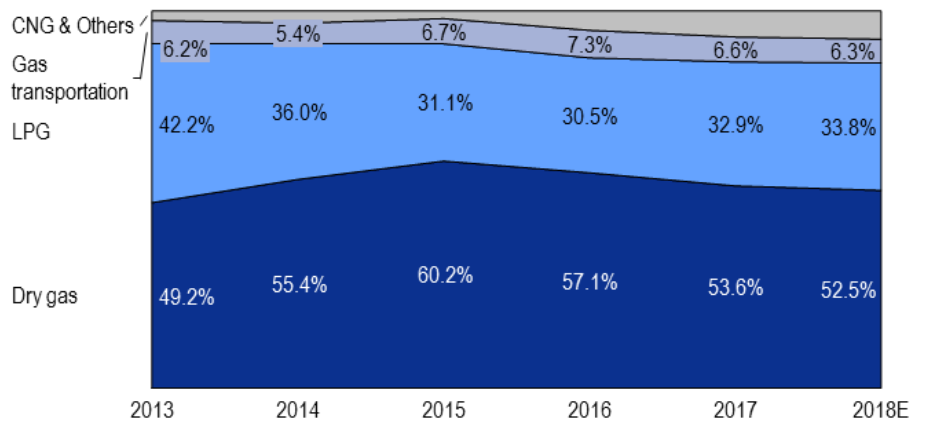
The principal activities of PetroVietnam Gas (GAS) are: 1) to collect and distribute dry gas, and 2) to produce and distribute liquid petroleum gas (LPG). The company also participates in producing and distributing other gas products such as condensate and compressed natural gas (CNG).

Most of GAS's dry gas sales volume (c.60% of volume to gas-fired power plants and c.10% of volume to fertiliser producers) have their selling prices directly linked to the movement of global crude oil prices. The general formula is: 46% x Singapore fuel oil price + transportation tariff (source: PetroVietnam).

The rest of GAS's sales volume is regulated by the government with fixed selling prices, adjusted annually by c.2% for inflation.

Meanwhile, the selling prices of LPG are directly linked with global LPG prices. GAS often uses Saudi Aramco's (SARC, Unlisted) LPG prices as its benchmark.

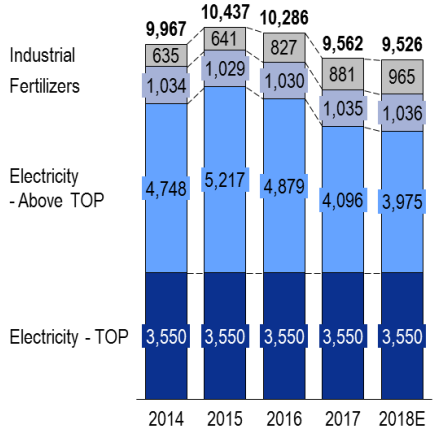
Figure 1: GAS's revenue structure by segment



SOURCES: VND RESEARCH, COMPANY REPORTS

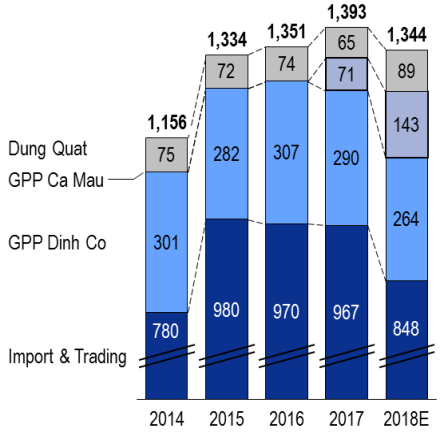
The majority of GAS's dry gas volume is distributed to gas-fired power plants. Meanwhile, GAS only produces c.40% of total LPG volume in-house from its two gas processing plants (GPP) Ca Mau and Dinh Co in 2018. The majority of its LPG volume is distributed for residential and industrial usage.

Figure 2: GAS's sales volume of dry gas to end users (mcm)



SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 3: GAS's LPG sales volume by source (k tonnes)



SOURCES: VND RESEARCH, COMPANY REPORTS

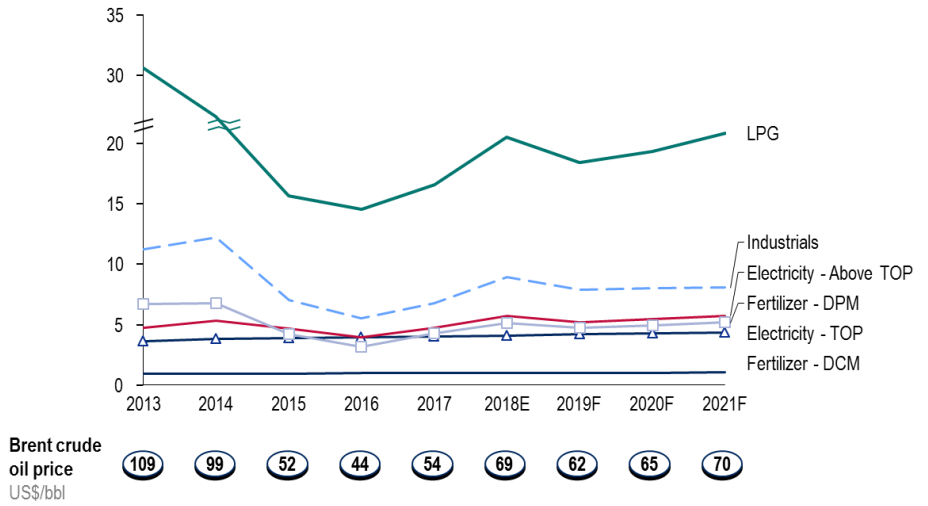
We forecast GAS's revenue to increase by a CAGR of 5.1% over FY18-21F due to the flat crude oil price outlook and unchanged sales volume.

For 2019-21F, we observe that Bloomberg consensus forecasts for Brent crude oil price of US$62-US$65/bbl are down 10.1% from the estimated level in 2018.

In our view, despite the recent robust recovery, the crude oil price is unlikely to return to the pre-2014 level of c.US$100/bbl. We believe the revolution of US shale oil has permanently changed the global supply curve and we see long-term sustainable crude oil price in the range of US$60-US$70/bbl.

- *The selling price for electricity - Take or Pay (TOP) volume was c.US$4.1/mmbtu in 2018, with annual increase of c.2% for inflation effect.*
- *The selling price for: 1) electricity – above TOP, and 2) Phu My fertiliser (DPM) is based on the formula: 46% x Singapore fuel oil price + transportation tariff.*
- *The selling price for industrial usage is negotiated annually and generally aligns with the trend of Singapore fuel oil price.*
- *GAS only collects transportation tariff for the dry gas volume distributed to Ca Mau fertilizer (DCM).*
- *The selling price of LPG is directly linked to global LPG price.*

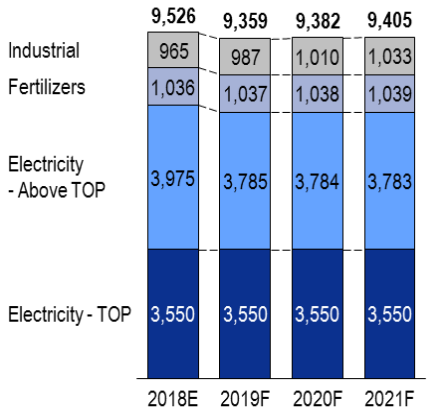
Figure 4: GAS's selling prices for dry gas and LPG (US$/mmbtu)



SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG

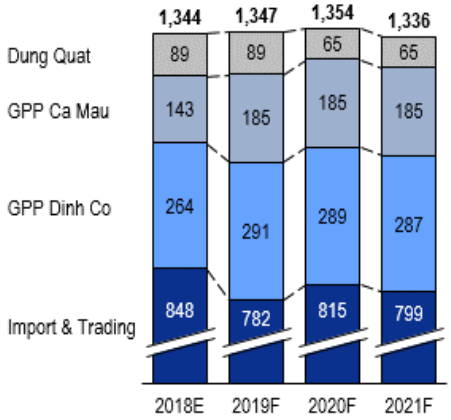
With largely unchanged sales volume...

Figure 5: GAS's dry gas sales volume by end user, based on our estimates (mcm)



SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

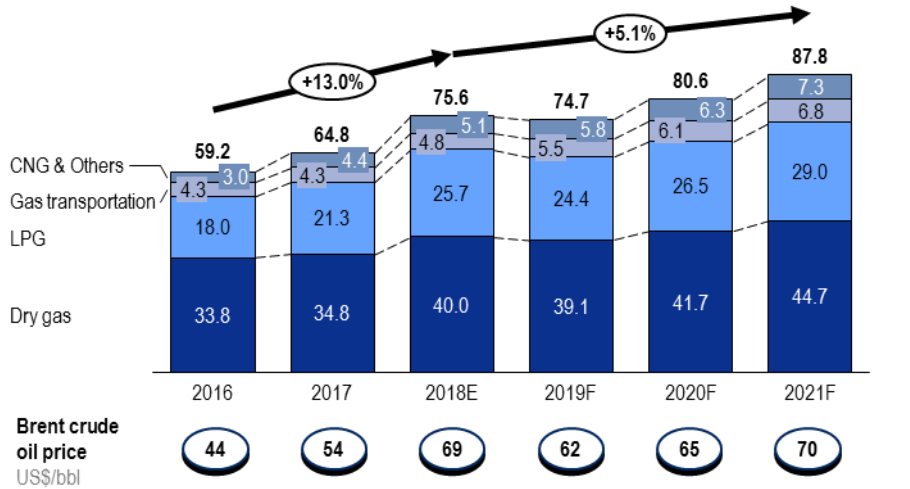
Figure 6: GAS's LPG sales volume by source, based on our estimates (k tonnes)



SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

…combined with a flat crude oil price outlook, we expect GAS's revenue to increase by a CAGR of 5.1% during FY18-21F.

Figure 7: GAS's revenue based on our estimates (VND tr)

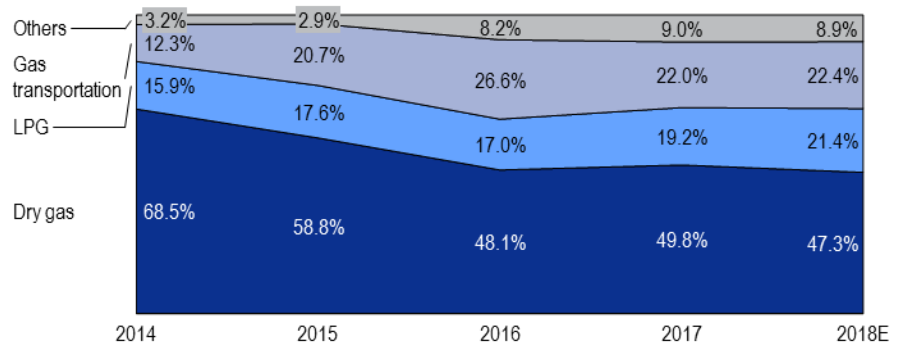


SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Depleting gas supply puts pressure on input costs

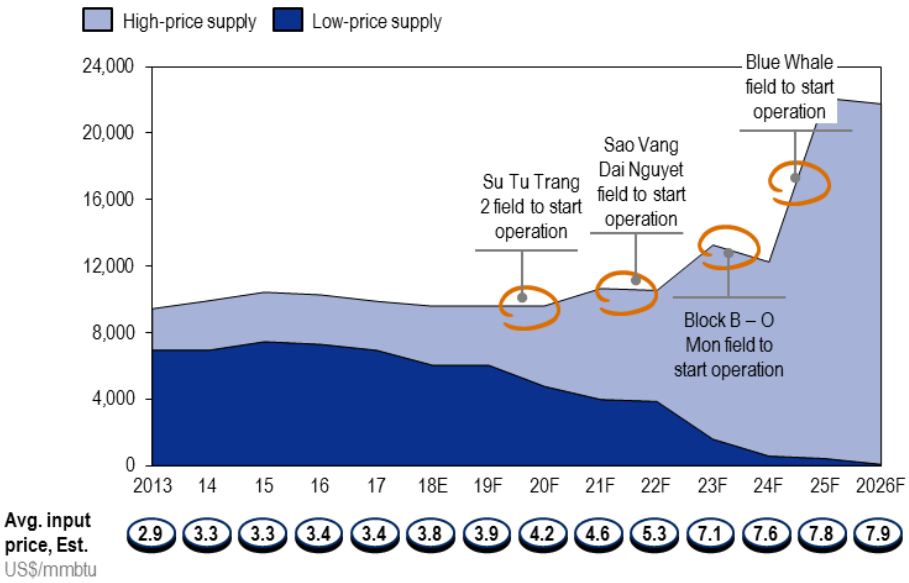
The dry gas segment has been instrumental to GAS's profitability, contributing 50-55% of its total annual gross profit in FY15-18. While we believe the selling price of this segment has little upside due to the flat oil price outlook (as we mentioned earlier), the input price of this segment is facing upward pressure due to a quick depletion of cheap domestic gas supply. We forecast the dry gas segment's COGS to increase by a CAGR of 9.9% in FY18-21F.

Figure 8: GAS's gross profit structure by segment



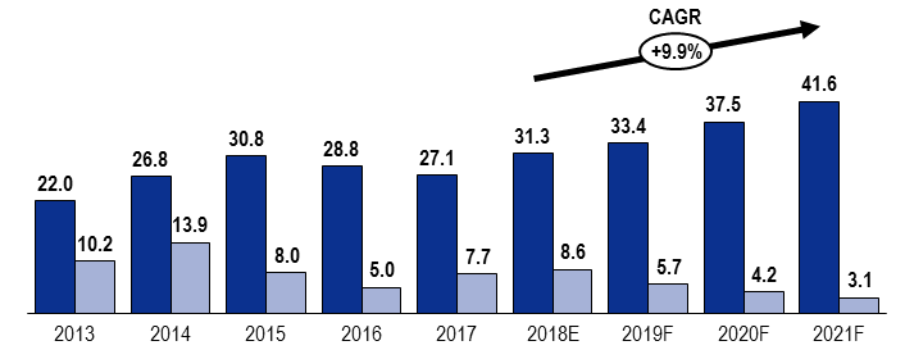
SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 9: Supply of domestic dry gas (mcm)



SOURCES: VND RESEARCH, VIETNAM PETROLEUM INSTITUTE

Figure 10: Cost of sales and gross profit of dry gas segment (VND tr)

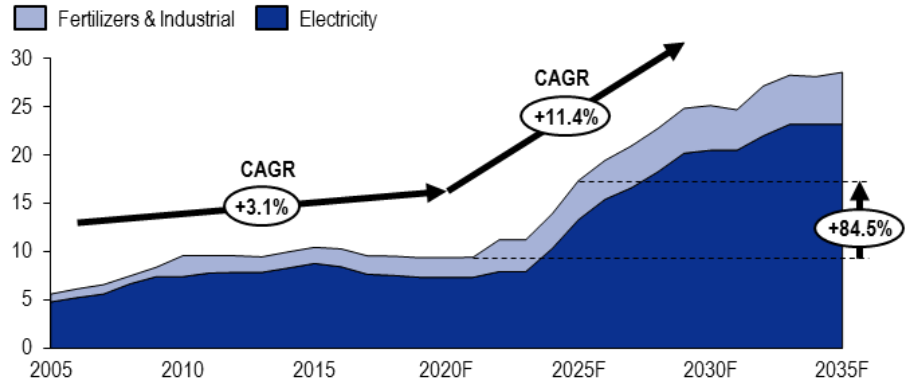


SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Demand and capacity expansion to partly offset rising costs

According to Wood Mackenzie, the demand for dry gas in Vietnam is poised to increase twofold over 2020-35F due to the expected construction of several new gas-fired power plants, such as Nhon Trach 3 – 4 and O Mon 3 – 4. With Vietnam's electricity demand expected to increase three-fold to 500bn kWh in 2030F, according to Vietnam Electricity Group, the development of these new gas-fired power plants is critical to ensure sufficient future supply.

Figure 11: Vietnam's dry gas demand (2005-35F (bcm)



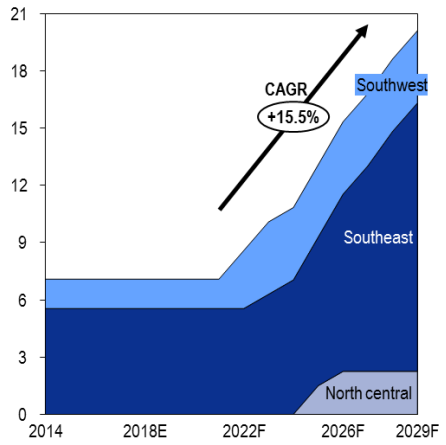
SOURCES: VND RESEARCH, WOOD MACKENZIE

Figure 12: Plans for gas-fired power plants under the Power Development Plan VII

Power plants	Capacity (MW)	Target start-up year
Nhon Trach 3	750	2022
Nhon Trach 4	750	2022
Son My 2.1	750	2023
Son My 2,2	750	2024
Son My 2.3	750	2025
Son My 1.1	750	2026
Son My 1,2	750	2027
Son My 1,3	750	2028
O Mon 3	750	2020
O Mon 4	750	2021
O Mon 2	750	2026
Kien Giang 1	750	2021
Kien Giang 2	750	2022
Mien Trung 1	750	2023
Dung Quat 1	750	2023
Mien Trung 2	750	2024
Dung Quat 2	750	2024
Quang Tri 1	600	2025
Mien Trung 3	750	2026
Total in plan	**14,100**	

SOURCES: MINISTRY OF INDUSTRY AND TRADE

Figure 13: Installed capacity of gas-fired power plants (k MW)



SOURCES: VIETNAM PETROLEUM INSTITUE

We believe the increase in demand will benefit GAS's transportation business as it remains the sole wholesale gas distributor in Vietnam. By the end of 2018, GAS had started construction on several new pipeline systems that will enable it to transport gas from fields under development, such as Sao Vang Dai Nguyet and Block B – O Mon. We expect GAS's piped transportation capacity to more than double by 2023F.

Meanwhile, from 2025F, as Vietnam will need to import LNG to meet the expected increase in electricity demand, GAS also plans to construct three new terminals to import LNG from overseas.

We expect the combination of higher demand for dry gas and larger transportation capacity to increase GAS's transportation gross profit by c.85% over 2020-25F, which should partially offset the potential loss in gross profit in the dry gas segment.

GAS has started to build several new pipeline systems and LNG terminals to prepare themselves for much higher dry gas demand in the future.

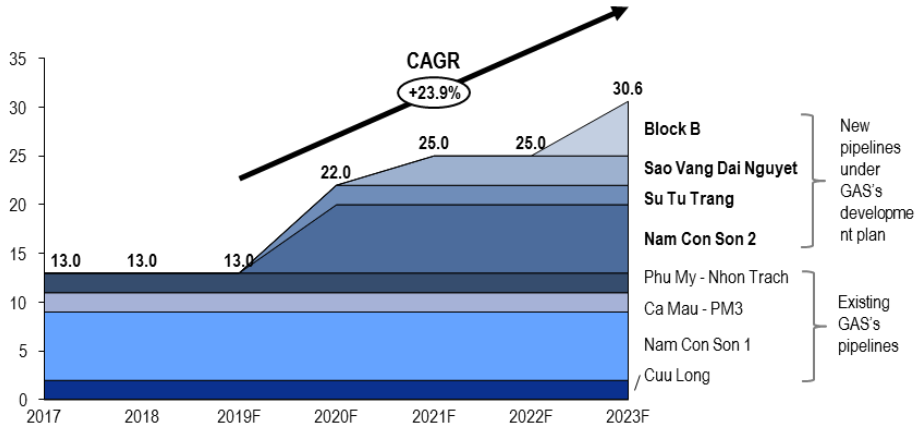
Figure 14: New pipeline and LNG terminals, according to GAS's guidance

Project name	Current status	Capex. (US$m)	Capacity (mcm/yr)	Year of operation
Block B pipeline	Preparing for construction	1,118	5,600	2023F
Nam Con Son phase 2	Under construction	946	7,000	2021F
Su Tu Trang pipeline	Preparing for construction	160	2,000	2020F
Sao Vang Dai Nguyet pipeline	Under feasibity study	150	3,000	2021F
Thi Vai LNG terminal	Preparing for construction	620	1,370	2022F
Son My LNG terminal	Under feasibity study	1,350	4,110	2023F

SOURCES: VND RESEARCH, COMPANY REPORTS

We see GAS's piped transportation capacity to increase more than twofold over 2019-23F.

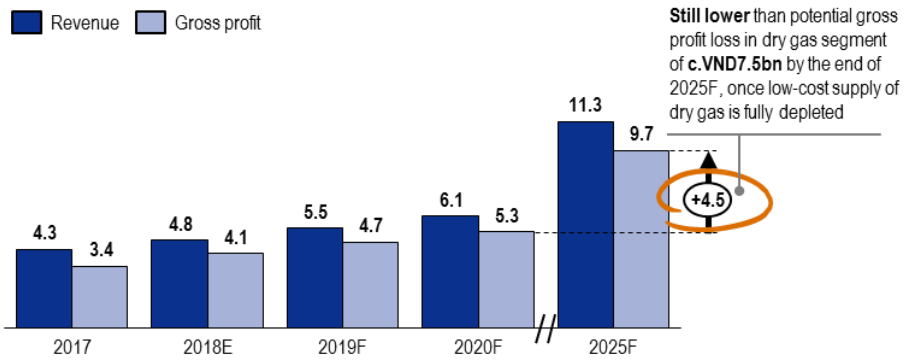
Figure 15: GAS's pipeline transportation capacity (bcm/year)



SOURCES: VND RESEARCH, COMPANY REPORTS

We expect the combination of higher dry gas demand and larger transportation capacity to increase GAS's transportation gross profit by c.85% over 2020-25F, and partially offset the potential loss in gross profit in the dry gas segment.

Figure 16: GAS's transportation revenue and gross profit, based on our estimates (VND tr)



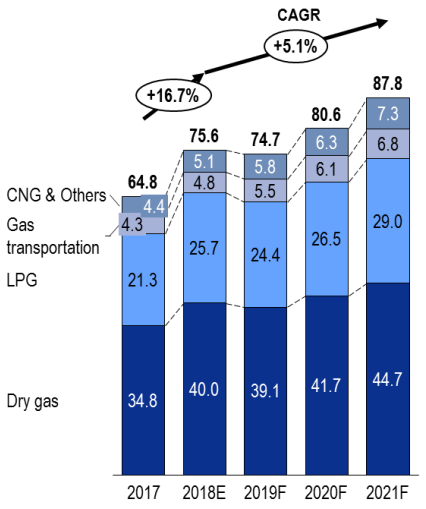
SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

We forecast EPS to decrease by 7.8% p.a. in FY18-21F

In FY18E, GAS posted robust EPS growth of 26.4% yoy, mainly due to a strong recovery in crude oil price (+27.7% yoy). However, over the FY18-21F period, we forecast GAS's EPS to decrease by 7.8% p.a. due to the flat oil price outlook and rising input costs.

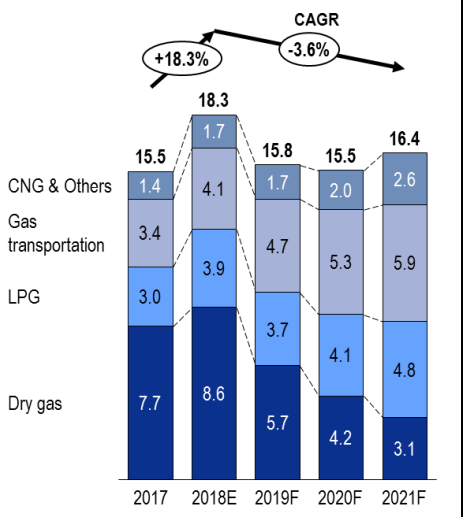
While we expect the dry gas segment to remain a significant revenue contributor, we project its gross profit contribution to decline.

Figure 17: GAS's revenue by segment, based on our estimates (VND tr)



SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

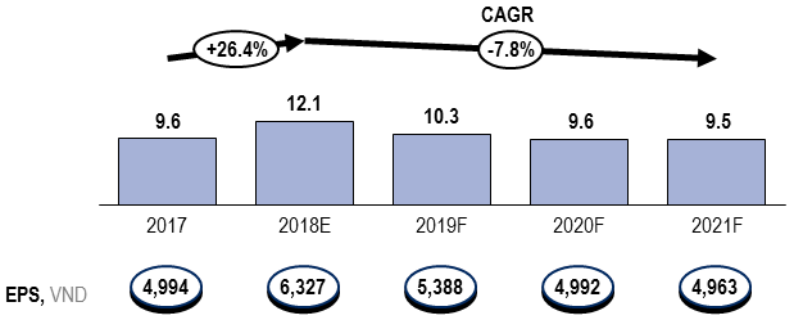
Figure 18: GAS's gross profit by segment, based on our estimates (VND tr)



SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

In FY18-21F, we forecast GAS's EPS to decline by 7.8% p.a. due to the flat oil price outlook and rising input costs.

Figure 19: GAS's net profit, based on our estimates (VND tr)



SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

SWOT ANALYSIS

Figure 20: SWOT analysis

Strengths	Weaknesses
1. State-owned corporation with absolute monopoly in Vietnam's gas infrastructure and wholesale distribution of dry gas.	1. Pricing policy is highly influenced by the government.
2. GAS also controls nearly 70% of the domestic market for liquefied petroleum gas and boasts extensive distribution network throughout the country.	2. Low-cost dry gas supply is quickly depleting, leading to upwards pressure in input cost.
3. GAS is one of the largest publicly traded Vietnamese companies and also actively pursuing collaboration with foreign partners.	
Opportunities	**Threats**
1. Demand for dry gas in Vietnam is expected to increase significantly in 2018-2025F period.	1. Delays in the construction of the new pipeline and LNG terminals could prevent GAS from expanding its transportation capacity.
2. Potential participation in upstream dry gas production can lead to more diversified profit streams in the future.	2. Sharp fall in crude oil price would depress GAS's selling prices for dry gas to key end users.

SOURCES: VND RESEARCH, BORR DRILLING

VALUATION AND RECOMMENDATION

Initiate coverage with a Hold and TP of VND91,600

We initiate coverage on GAS with a Hold rating and target price of VND91,600, based on a combination of DCF (weight 50%) and FY19-21F target P/E multiple of 18.0x (weight 50%).

Our DCF valuation of VND91,272 is based on terminal growth of 1.2% and weighted average cost of capital (WACC) of 19.9%. We estimate GAS's WACC at 17.7% assuming: 1) a risk-free rate of 5.0%, 2) beta of 1.2 and 3) equity risk premium of 11%.

Our FY19-21F target P/E multiple of 18.0x is deduced from the regional sector P/E median of 18.0x. Using a 3-year average forward FY19-21F EPS of VND5,080, we derive our P/E-based valuation of VND92,063.

Figure 21: DCF model – Summary of free cash flow

VNDbn	Dec-16A	Dec-17A	Dec-18F	Dec-19F	Dec-20F	Dec-25F	Dec-30F	Dec-35F	CAGR 20-35
Total revenue	59,145	64,570	75,627	74,677	80,631	145,986	174,934	194,811	6.1%
% growth y-o-y	*0.0%*	*9.2%*	*17.1%*	*-1.3%*	*8.0%*	*5.0%*	*3.0%*	*1.7%*	
COGS & OPEX	(50,667)	(53,065)	(61,091)	(62,597)	(69,129)	(130,658)	(156,566)	(174,356)	
Unlevered profit / EBIT	8,478	11,505	14,537	12,080	11,503	15,329	18,368	20,455	3.9%
Operating margin	*14.3%*	*17.8%*	*19.2%*	*16.2%*	*14.3%*	*10.5%*	*10.5%*	*10.5%*	
Effective tax rate	*-21.8%*	*-21.0%*	*-19.5%*	*-20.9%*	*-20.9%*	*-20.9%*	*-20.9%*	*-20.9%*	
EBIT * (1-Tax) or NOPAT	10,325	13,925	17,376	14,601	13,903	18,528	22,201	24,724	3.9%
+ D&A	3,309	2,713	2,676	3,716	4,374	8,702	10,561	11,755	
% of revenue	*5.6%*	*4.2%*	*3.5%*	*5.0%*	*5.4%*	*6.0%*	*6.0%*	*6.0%*	
- CapEx	(3,230)	(2,180)	(714)	(5,974)	(8,063)	(2,920)	(3,499)	(3,896)	
% of revenue	*-5.5%*	*-3.4%*	*-0.9%*	*-8.0%*	*-10.0%*	*-2.0%*	*-2.0%*	*-2.0%*	
+ Δ WC	(310)	(302)	(446)	(267)	(383)	(825)	(1,015)	(1,130)	
% of revenue	*-0.5%*	*-0.5%*	*-0.6%*	*-0.4%*	*-0.5%*	*-0.6%*	*-0.6%*	*-0.6%*	
Interest and other financial activities, net	692	960	818	1,225	825	1,171	1,311	1,463	
% of revenue	*1.2%*	*1.5%*	*1.1%*	*1.6%*	*1.0%*	*0.8%*	*0.7%*	*0.8%*	
UFCF	**10,785,962**	**15,117,104**	**19,709,274**	**13,301,725**	**10,655,555**	**24,656,091**	**29,559,354**	**32,916,180**	
% growth y-o-y	*0.0%*	*40.2%*	*30.4%*	*-32.5%*	*-19.9%*	*4.8%*	*3.0%*	*1.7%*	

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Figure 22: WACC and terminal growth

VNDbn	
Equity Value	239,244
Debt	9,050
Cost of Debt	4.2%
Tax Rate	20.0%
WACC	**17.7%**
Perpetual Growth Rate	**1.7%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 23: Cost of equity

Cost of equity	
Risk Free Rate	5.0%
Beta	1.20
Risk Premium	11.0%
Cost of Equity	**18.2%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Our target price for GAS is VND91,600, based on a combination of DCF (weight 50%) and target FY19-21F P/E multiple of 18.0x (weight 50%).

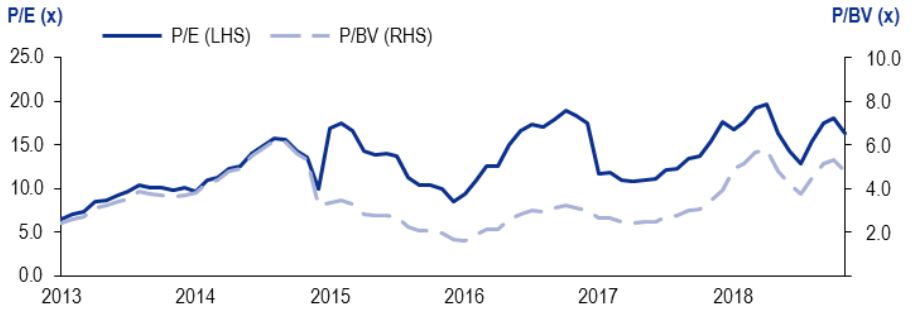
Figure 24: Blended target price

Method	Implied share price (VND)	Weight (%)	Weighted share price (VND)
DCF	91,272	50%	45,636
FY19-21F target P/E of 18x	92,063	50%	46,032
Blended value			**91,668**
Target price			**91,600**

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

GAS's 5-year average forward P/E and P/BV are 15.0x and 3.5x, respectively.

Figure 25: GAS's historical P/E and P/BV



SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG

Figure 26: Global gas distribution peer comparison

Company	Bloomberg Ticker	Recom.	Share Price (local curr)	Target Price (local curr)	Market Cap (US$ m)	P/E (x) 5-yr	P/E (x) TTM	P/E (x) CY19F	P/E (x) CY20F	3-year EPS (%)	P/BV (x) 5-yr	P/BV (x) TTM	P/BV (x) CY19F	P/BV (x) CY20F	ROE (%) 5-yr	ROE (%) TTM	ROE (%) CY19F	ROA (%) 5-yr	ROA (%) TTM	ROA (%) CY19F
Gas distribution companies																				
PV GAS	GAS VN	HOLD	97,200	91,600	8,010	13.8	16.4	19.3	20.9	-10.6%	3.5	4.2	4.0	3.8	28.2%	23.6%	20.6%	18.8%	15.7%	15.4%
PTT PLC	PTT TB	HOLD	48.50	53.00	45,088	17.1	10.4	10.9	10.3	-29.0%	1.6	1.6	1.4	1.3	11.3%	7.7%	9.0%	6.6%	4.7%	6.4%
Indraprastha Gas	IGL IN	NOT RATED	301.3	N/A	2,650	17.7	25.4	N/A	N/A	28.0%	0.6	0.6	0.6	N/A	3.4%	2.2%	N/A	3.5%	4.7%	N/A
China Gas Holdings	384 HK	ADD	28.15	40.00	2,271	18.6	22.1	17.50	14.10	28.7%	3.6	5.3	3.8	2.7	19.5%	24.9%	25.4%	6.8%	10.4%	11.1%
Toho Gas Ltd	9533 JP	NOT RATED	5,070	N/A	43,500	24.0	30.0	N/A	N/A	-1.1%	1.5	1.3	N/a	N/A	7.7%	4.6%	N/A	4.1%	2.8%	N/A
Titas Gas Trans & Distri	TASGAS BD	NOT RATED	36.70	N/A	432	8.6	7.6	N/A	N/A	-21%	1.3	0.6	N/a	N/A	15.9%	6.6%	N/A	8.9%	3.6%	N/A
Petronas Gas Bhd	PTG MK	HOLD	17.70	18.50	9,217	23.5	18.4	18.0	19.6	-0.9%	3.9	2.8	2.7	2.6	17.3%	15.2%	15.0%	13.2%	10.8%	12.0%
Average - Gas distribution peers					**15,881**	**17.6**	**18.6**			**-19.9%**	**2.3**	**2.3**			**14.8%**	**12.1%**		**8.8%**	**7.5%**	

Note: Not Rated forecasts based on Bloomberg consensus estimates; trailing 12 months (TTM)
SOURCES: VND RESEARCH, BLOOOMBERG (AS AT 26 MAR 2019)

Figure 27: Brief description of global comparable companies

Companies	Country of origin	Description
PTT PLC (PTT TB, Hold, TP:THB53.0)	Thailand	An integrated national petroleum and petrochemical company. Its operations are divided into six units: Coal, Petrochemical, International Trading, Oil, Gas, and PTTEP. Historically, the International Trading and Petrochemicals businesses have produced the most sales and service volume for the group. International Trading encompasses several activities, and is pivotal to the company's ability to import and export crude oil, condensate, petroleum products, liquefied petroleum gas
Indraprastha Gas (IGL IN, Not rated)	India	Utility company that derives nearly all of its revenue from the sale of natural gas. The Company supplies compressed natural gas (CNG) to the transport sector and piped natural gas (PNG) to domestic, industrial, and commercial sector customers. Most of the natural gas sold is in the form of compressed natural gas. CNG is an alternative to fossil fuels that is distributed from the Company's portfolio of fueling stations to power a variety of vehicles.
China Gas Holdings (384 HK, Not rated)	China	Involved in the wholesale and retail businesses of natural gas and LPG, in China. The Group has secured a total of over 305 piped gas concessions, 13 long-distance natural gas distribution pipeline projects, 571 compressed natural gas/liquefied natural gas refilling stations for vehicles, and 98 LPG distribution projects in China. In total, the Company has connected 14.7 million residential households and achieved a penetration rate of 48.1%.
Toho Gas Ltd (9533 JP, Not rated)	Japan	Natural gas provider operating in the Tokai region of the Japanese island of Honshu. Toho Gas is mainly involved in the supply and distribution of natural gas and LPG, to urban areas within Tokai. The company segments its operations into Gas Sales, Gas Appliance Sales and Related Construction, and LPG and Other Energies business units. Toho Gas's Gas Sales division derives the vast majority of total revenue from the sale and supply of natural gas to manufacturing companies
Titas Gas Trans & Distr (TAGAS BD, Not rated)	Bangladesh	Principally engaged in the business of natural gas distribution. It operates through the segments are distribute the same to the consumers in power, fertilizer, industrial, captive power, and commercial. Geographically it operates through the region of Bangladesh. Majority of the firm's revenue generated from the Natural Gas Distribution.
Petronas Gas Bhd (PTG MK, Not rated)	Malaysia	Gas infrastructure and utilities company of which Malaysia's nationalized oil corporation, PETRONAS, holds a majority interest. Petronas Gas segments its primary operations into Gas Processing, Gas Transportation, Utilities, and Regasification businesses. While each of these contributes significantly to the company's total revenue, its Gas Processing and Gas Transportation units combine to generate the majority. In Gas Processing, Petronas Gas receives processing fees under multi-year contracts.

SOURCES: VND RESEARCH, COMPANY REPORTS

RISKS AND CATALYSTS

Downside risks »

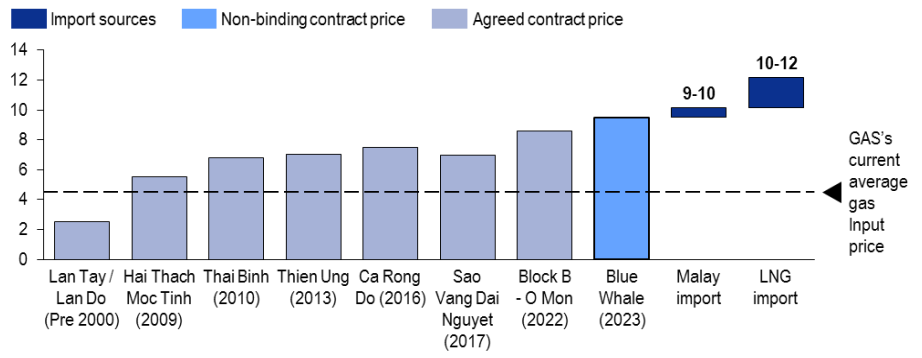
- Delays to key projects such as Block B – O Mon and Blue Whale could push GAS to import LNG sooner than expected and in larger amounts than it

otherwise would have. We believe that the LNG import price would be higher than domestic dry gas, further increasing GAS's input costs.

- Cheap gas supply could be depleted faster than expected and further increase GAS's input costs.
- Delays in the construction of the new pipeline and LNG terminals could prevent GAS from expanding its transportation capacity.
- Sharp fall in crude oil price would depress GAS's selling prices for dry gas to key end users.

Delays to key projects such as Block B – O Mon and Blue Whale can push GAS into having to import LNG sooner than expected and at larger amounts than it otherwise would have. Note that LNG import price will be higher than that of domestic dry gas, further increasing GAS's input costs, in our view.

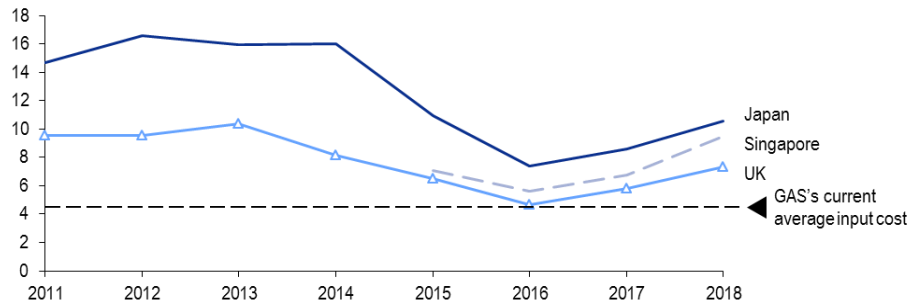
Figure 28: Vietnam's wellhead gas pricing in 2018 (US$/mmbtu)



SOURCES: VND RESEARCH, RYSTAD ENERGY

LNG import prices can also be highly volatile as they largely track crude oil price movements. If global crude oil price returns to pre-2014 levels, GAS's input gas cost will come under severe upwards pressure.

Figure 29: LNG spot prices (US$/mmbtu)



SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG?

Potential re-rating catalysts

- From 2021F, we believe GAS is likely to participate in upstream natural gas production with 25% indirect ownership of the Su Tu Trang well - phase 2. Given that this gas well is still under development and details on pricing have not yet been disclosed by GAS, we have not factored it into our model and consider it an upside catalyst only. In our estimation, if GAS manages to yield a regional average net income of c.US$16/boe from the Su Tu Trang phase 2 project, GAS will have an additional net income of c.VND900bn p.a. until 2035F.
- GAS may be able to pass on the increase in input prices to its end users (mainly gas-fired power plants and fertiliser producers). However, we believe this can only happen if Vietnam significantly increases the current electricity retail price. At the moment, the production cost of gas-fired power plants is highly uncompetitive compared to other electricity sources and much higher than the average electricity retail price in Vietnam.
- Geopolitical disputes could create more disruptions to crude oil supply, driving up oil prices.
- New gas projects such as Blue Whale and Block B – O Mon starting operations sooner than expected, would reduce the need for GAS to import dry gas from overseas.

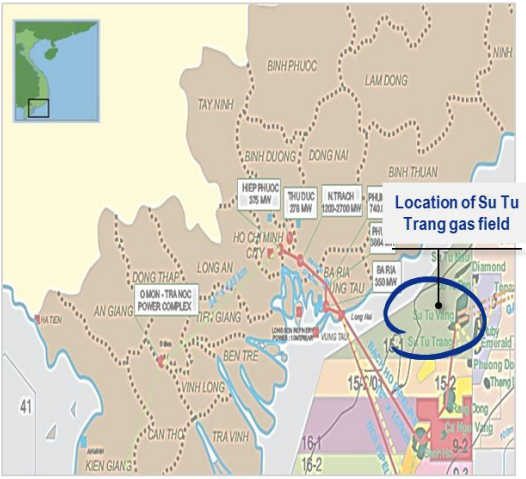
GAS is likely to participate in upstream natural gas production with 25% indirect ownership of Su Tu Trang well - phase 2. As this gas well is still under development and details on pricing have not yet been disclosed by PV Gas, we have not factored it into our model and regard it as an upside catalyst only.

Figure 30: Overview of Su Tu Trang Phase 2 project (as at 2018)

Location	• Block 15-1, Cuu Long Basin
Ownership	• PetroVietnam (50.0%) • Perenco (23.25%) • Korea National Oil Company (14.25%) • SK Corp (9.0%) • Geopetrol (3.5%)
Gas reserves	• 20 bcm in c.20 years of operation

Overview of Su Tu Trang Phase 1
- Su Tu Trang gas field (White Lion) has been in production since 2012 is at a water depth of 50m and about six kilometers away from the existing Su Tu Den field (Black Lion).
- The first phase of the project is expected to produce c.2 bcm of dry gas until 2023.

Development plan of Phase 2
- Phase 2 will see the construction of additional extraction, central processing platforms and pressurized pumps to maintain annual gas extraction levels at 1.5 bcm/annum until 2035.
- PV GAS will invest indirectly through PetroVietnam Exploration and Production (PVEP) and contribute US$500m to the Project. .

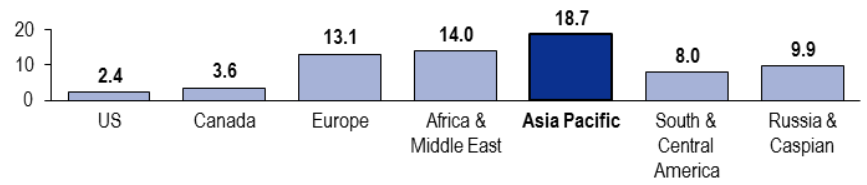


Evacuation route
- Gas streams from Phase 2 will be piped directly onshore through the Nam con Son 2 pipeline, travelling a 117km offshore, and 39km onshore trip. This will be the main gas line for Dinh Co 2 Gas treatment plant (construction expected to finish in Q4/2020) with annual capacity of 300,000 tons of LPG,

SOURCES: VND RESEARCH, COMPANY REPORTS

If GAS manages to yield a regional average net income of c.US$16/boe from the Su Tu Trang phase 2 project, the company would have additional net income of c.VND900bn/annum until 2035F, based on our estimates.

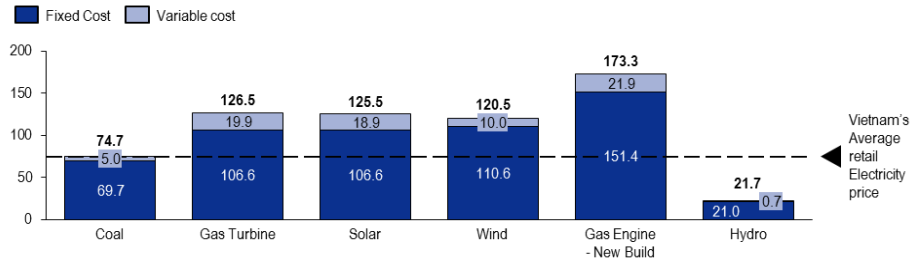
Figure 31: Average upstream oil and gas production net income as at 2018 (US$/boe)



SOURCES: VND RESEARCH, JADESTONES

GAS may be able to pass on the increase in input prices to its end users (mainly gas-fired power plants). However, the production cost of gas-fired power plants is largely uncompetitive compared to other electricity sources and also much higher than the average retail electricity price in Vietnam.

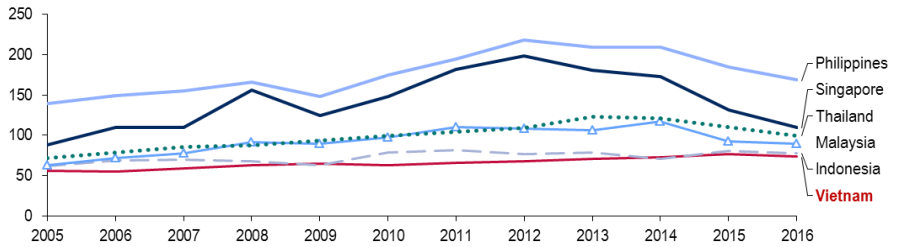
Figure 32: Levelised cost of electricity by source in 2017 (US$/MWh)



SOURCES: VND RESEARCH, COMPANY REPORTS

We believe this can only happen if Vietnam significantly increases the current electricity retail price, which remains the lowest among Southeast Asian countries.

Figure 33: Average retail electricity prices by country (US$/MWh)



SOURCES: VND RESEARCH, WOOD MACKENZIE

APPENDIX

Figure 34: Company profile of PV GAS as at end-2018

PetroVietnam Gas Joint Stock Corporation Website: www.pvgas.com.vn Headquarter: HCMC

BUSINESS OVERVIEW

VND Billion

GAS

Total revenue '17 = 64,830
Net profit '17 = 9,685
No. of employees = 3,668

Main segments	Dry gas	LPG	Gas transport	Others
Revenue '17	34,777	21,317	4,296	4,440
% total rev.	53.6%	32.9%	6.6%	6.9%
Description	• Wholesale and distributing dry gas	• Producing and distributing LPG	• Piped gas transportation	• Largely CNG and condensate production
CAGR 13-17	• +1.9%	• -6.3%	• +1.5%	• +28.4%

KEY MANAGEMENT

Names	Position
Mr Le Nhu Linh	Chairman
Mr Duong Manh Son	Managing Director
Mr Pham Dang Nam	Deputy Director
Mr Nguyen Thanh Nghi	Deputy Director

OWNERSHIP STRUCTURE

Holders	Shares, Mil	%
PetroVietnam (PVN)	1832.8	95.76%
Others	81.1	4.24%

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 35: Organisational structure of PV GAS as at end-2018

PV GAS *(Parent company)*
- Conduct wholesale and piped transportation of dry gas
- Produce, trade, and import LPG

	PV Pipe *(99.9% ownership)*	PV Coating *(52.9% ownership)*	PV Gas Distribution *(50.5% ownership)*	PV Gas North *(35.9% ownership)*	PV Gas South *(35.3% ownership)*
Main functions	• Produces steel plate, such as plain carbon steel grades to high strength grades	• Provision of pipeline and bend coating services for gas projects	• Produces CNG and distribute of low-pressure gas for industrial usages	• Distribution of LPG and CNG in northern Vietnam	• Distribution of LPG and CNG in northern Vietnam

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 36: Presence of PV Gas in Vietnam's natural gas value chain as at end-2018

	Production	Wholesale and piped transportation	Processing	Retail
				
PV GAS's presence in Vietnam's natural gas value chain	• Have 25% indirect ownership of Su Tu Trang 2 gas field which may come into production by 2020	• Currently have 4 piped gas transportation system with total capacity of 13 bcm/year • Future piped capacity can increase by two-fold	• Have two gas processing plants (GPP), namely Dinh Co and Ca Mau with total capacity of 500k tonnes p.a • GPP Dinh Co 2, 700k tonnes p.a in capacity, may operate in 2020	• Account for c.60% of domestic LPG retail market, distributing c.780k tonnes of LPG per year • Have c.200 owned retail stores and over 2,000 agent retail stores

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 37: Profile of PV GAS's key management executives as at end-2018

Mr. MAI HUU NGAN
Head of Board of Supervisors

Working process:

05/1988 - 10/1991	General Accounting, Mechanical Construction Enterprise, Petroleum Design and Construction Company (today as Petrovietnam Construction Joint Stock Company);
11/1991 - 12/2002	General Accountant, in charge of Accounting, Service Enterprise providing materials and goods, Petroleum Tourism Service Company (today as Petrovietnam General Services Corporation);
12/2002 - 07/2007	Chief Accountant of Gas Transportation Enterprise (today as South East Gas Transmission Company), PV GAS;
08/2007 - 01/2016	Chief Accountant of PV GAS;
01/2016 to present	Head of Supervisory Board of PV GAS.

Mr. NGUYEN CONG MINH
Supervisor

Working process:

08/1985 - 08/1988	Student officer, C56A, D2, Financial Officer School, Ministry of National Defense;
09/1988 - 04/2003	Assistant Finance Committee, Head of Administration - Business - Services, Head of Finance Department of Defense Sport Center II, General Staff of Zone 7;
05/2003 - 03/2005	Head of Finance Division of Vocational Training School No. 7;
04/2005 - 11/2009	Director of Thai Son Vocational Training Center, Official of the Political division, Thai Son Company / Viet-Russian Tropical Center, Ministry of National Defense;
12/2009 - 07/2011	Deputy General Director of Sai Gon-Cao Lanh Seafood joint Stock Company, Viet-Russian Tropical Center, Ministry of National Defense;
08/2011 - 03/2016	Deputy Head of Accounting division, Project Management Unit of Ca Mau Gas Processing Plant, PV GAS;
04/2016 to present	Supervisor at PV GAS.

Mr. NGUYEN QUOC HUY
Vice President

Working process:

09/1994 - 01/1997	Specialist of Gas Technology and Gas Operation Center, PV GAS;
01/1997 - 12/2001	Chief of Technical Department - Gas Operation Center, PV GAS;
12/2001 - 08/2002	Chief of Technical Department - Operation Center, Deputy Manager of Thi Vai Terminal Warehouse, PV GAS;
08/2002 - 10/2002	Vice Director of Operation Center, Deputy Manager of Thi Vai Terminal Warehouse, PV GAS;
10/2002 - 10/2006	Vice Director of Gas Processing Enterprise, Manager of Thi Vai Terminal Warehouse, PV GAS;
10/2006 - 03/2008	Vice Director of Vung Tau Gas Processing Company, PV GAS;
03/2008 - 01/2010	Director of Vung Tau Gas Processing Company, PV GAS;
01/2010 to present	Vice President, PV GAS.

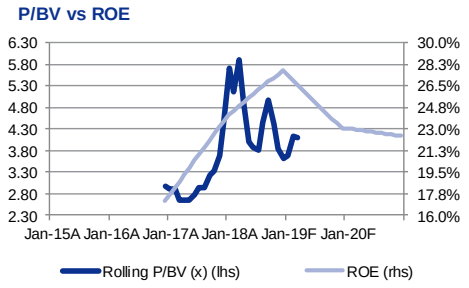
Mr. NGUYEN MAU DUNG
Vice President

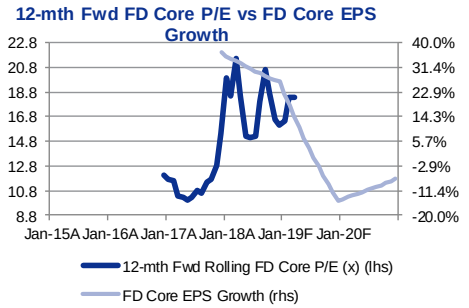
Working process:

12/1991 - 12/1994	Worked at Vung Tau Petroleum Construction Enterprise;
01/1995 - 01/2005	Worked at Petroleum Construction and Design Company;
01/2005 -12/2006	Graduate student at University of Economics HCMC;
01/2007 - 12/2007	Head of Technical Department of PetroVietnam Engineering Consultancy Joint Stock Company;
01/2008 - 02/2009	BOD Member, Vice Director of Hanoi Petroleum Construction Co., Ltd.;
03/2009 - 04/2011	BOD member, Director of PetroVietnam Coating Joint Stock Company (PV Coating);
04/2011 - 05/2011	BOD Chairman of PVID; Director of PetroVietnam Steel Pipe Joint Stock Company (PV Pipe);
05/2011 - 04/2012	Vice President of PV GAS, BOD Chairman of PVID, Director of PV Pipe.
05/2012 to present	Vice President, PV GAS.

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS





Profit & Loss

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Net Revenues	**64,570**	**75,627**	**74,677**	**80,631**	**87,774**
Gross Profit	**15,036**	**18,305**	**15,801**	**15,520**	**16,389**
Operating EBITDA	**14,219**	**17,212**	**15,797**	**15,877**	**17,978**
Depreciation And Amortisation	-2,713	-2,676	-3,716	-4,374	-5,962
Operating EBIT	**11,505**	**14,537**	**12,080**	**11,503**	**12,016**
Financial Income/(Expense)	844	861	1,077	665	67
Pretax Income/(Loss) from Assoc.	-3	-4	-3	-4	-4
Non-Operating Income/(Expense)	119	-40	151	163	177
Profit Before Tax (pre-EI)	**12,465**	**15,355**	**13,305**	**12,327**	**12,256**
Exceptional Items					
Pre-tax Profit	**12,465**	**15,355**	**13,305**	**12,327**	**12,256**
Taxation	-2,622	-2,999	-2,777	-2,573	-2,558
Exceptional Income - post-tax					
Profit After Tax	**9,843**	**12,355**	**10,528**	**9,754**	**9,698**
Minority Interests	-266	-253	-216	-200	-199
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	**9,577**	**12,102**	**10,313**	**9,555**	**9,500**
Recurring Net Profit	9,577	12,102	10,313	9,555	9,500
Fully Diluted Recurring Net Profit	**9,577**	**12,102**	**10,313**	**9,555**	**9,500**

Cash Flow

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
EBITDA	14,219	17,212	15,797	15,877	17,978
Cash Flow from Invt. & Assoc.	-1,225	-1,620	-1,176	-1,187	-1,256
Change In Working Capital	3,158	-590	796	-34	606
(Incr)/Decr in Total Provisions	99	25	0	0	0
Other Non-Cash (Income)/Expense	-1,631	-1,858	-2,491	-3,549	-5,722
Other Operating Cashflow	2,467	2,884	10,102	8,879	14,586
Net Interest (Paid)/Received	-302	-446	-267	-383	-635
Tax Paid	-2,400	-3,113	-2,777	-2,573	-2,558
Cashflow From Operations	**14,386**	**12,495**	**19,984**	**17,030**	**22,998**
Capex	-2,180	-714	-5,974	-8,063	-17,555
Disposals Of FAs/subsidiaries	17	0	5	6	7
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	-882	-6,463	-3,504	-3,580	-3,580
Cash Flow From Investing	**-3,044**	**-7,178**	**-9,473**	**-11,638**	**-21,128**
Debt Raised/(repaid)	1,555	-4,300	801	2,331	7,048
Proceeds From Issue Of Shares					
Shares Repurchased					
Dividends Paid	-7,265	-7,866	-7,896	-7,999	-7,953
Preferred Dividends					
Other Financing Cashflow	-20	50	50	50	50
Cash Flow From Financing	**-5,729**	**-12,115**	**-7,045**	**-5,617**	**-854**
Total Cash Generated	5,613	-6,798	3,466	-225	1,016
Free Cashflow To Equity	**12,897**	**1,018**	**11,312**	**7,724**	**8,918**
Free Cashflow To Firm	**11,643**	**5,763**	**10,778**	**5,775**	**2,505**

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS… cont'd

Balance Sheet

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Cash And Equivalents	27,079	28,308	25,293	20,532	13,080
Total Debtors	9,175	10,232	9,582	10,346	11,262
Inventories	1,645	1,952	1,848	2,043	2,240
Total Other Current Assets	357	462	462	462	462
Total Current Assets	**38,257**	**40,955**	**37,184**	**33,383**	**27,044**
Fixed Assets	15,396	18,540	20,798	24,487	36,080
Total Investments	281	280	280	280	280
Intangible Assets	0	0	0	0	0
Total Other Non-Current Assets	7,955	2,804	2,804	2,804	2,804
Total Non-current Assets	**23,632**	**21,624**	**23,882**	**27,571**	**39,164**
Short-term Debt	1,738	1,490	1,734	2,445	3,906
Current Portion of Long-Term Debt					
Total Creditors	2,529	2,899	2,696	2,911	3,169
Other Current Liabilities	6,645	6,810	6,810	6,810	6,810
Total Current Liabilities	**10,912**	**11,199**	**11,240**	**12,166**	**13,885**
Total Long-term Debt	7,312	3,396	3,952	5,573	11,160
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	394	519	519	519	519
Total Non-current Liabilities	**7,706**	**3,915**	**4,472**	**6,092**	**11,679**
Total Provisions	0	0	0	0	0
Total Liabilities	**18,618**	**15,114**	**15,712**	**18,259**	**25,565**
Shareholders' Equity	41,490	45,687	43,792	41,333	39,480
Minority Interests	1,782	1,778	1,562	1,362	1,164
Total Equity	**43,272**	**47,465**	**45,355**	**42,696**	**40,643**

Key Ratios

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue Growth	9.2%	17.1%	(1.3%)	8.0%	8.9%
Operating EBITDA Growth	20.6%	21.1%	(8.2%)	0.5%	13.2%
Operating EBITDA Margin	22.0%	22.8%	21.2%	19.7%	20.5%
Net Cash Per Share (VND)	9,420	12,238	10,244	6,539	-1,038
BVPS (VND)	21,678	23,870	22,881	21,596	20,627
Gross Interest Cover	41.07	33.00	73.00	49.81	28.54
Effective Tax Rate	21.0%	19.5%	20.9%	20.9%	20.9%
Net Dividend Payout Ratio	75.9%	65.0%	76.6%	83.7%	83.7%
Accounts Receivables Days	59.50	46.83	48.42	45.23	44.93
Inventory Days	10.82	11.45	11.78	10.94	10.95
Accounts Payables Days	17.57	15.87	15.88	14.39	14.19
ROIC (%)	31.7%	45.9%	39.8%	35.4%	31.6%
ROCE (%)	25.4%	30.6%	26.0%	24.7%	23.9%
Return On Average Assets	15.5%	18.7%	15.6%	15.1%	15.2%

Key Drivers

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Oil Price (US$/bbl)	54.0	72.0	65.0	68.0	70.0
Volume Growth (%)	-4.6%	-0.5%	-0.8%	0.4%	-0.2%
Ratio Of Up To Downstream (x)	N/A	N/A	N/A	N/A	N/A
Operating Cash Cost (US$/bbl)	N/A	N/A	N/A	N/A	N/A
Ratio Of High To Low Margin (x)	N/A	N/A	N/A	N/A	N/A

SOURCES: VND RESEARCH, COMPANY REPORTS

Vietnam

ADD *(previously NOT RATED)*

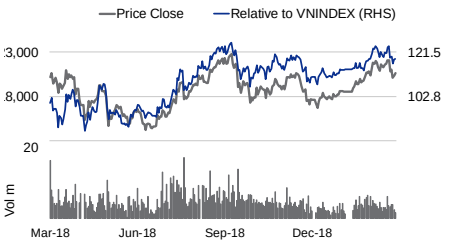
Consensus ratings*:	Buy 6	Hold 1	Sell 0

Current price:	VND20,600
Target price:	VND25,000
Previous target:	N/A
Up/downside:	21.4%
CGS-CIMB / Consensus:	6.0%
Reuters:	PVS.HM
Bloomberg:	PVS VN
Market cap:	US$424.4m
	VND9,846,106m
Average daily turnover:	US$2.54m
	VND58,459m
Current shares o/s:	478.0m
Free float:	34.0%

Source: Bloomberg

Key changes in this note

N/A



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-1	16.4	2
Relative (%)	0.5	8.1	18.7

Major shareholders	% held
PetroVietnam Group	51.4
VinaCapital	5.5
Dragon Capital	4.0

PetroVietnam Technical Services

Let the good times roll

- We believe PetroVietnam Technical Services (PVS) could be a key beneficiary of Vietnam's push for renewed dry gas reserves.
- We expect it to deliver strong earnings growth (net profit CAGR of 25.4%) in FY18-21F.
- Initiate coverage with Add and target price of VND25,000.

A diversified oilfield services company with strong financial health

PVS provides a variety of technical services to the oil and gas industry, ranging from exploration support, field construction and oil production to supply bases. Despite facing difficulties from weak market conditions since the collapse of crude oil prices in 2014, PVS has successfully maintained strong financial health (FY18 net margin of 7.0% and FY18 ROE of 9.3%), underpinned by high liquidity ratios (current ratio of 2.0x), low leverage (debt/equity ratio of 0.1x) and a high cash balance (cash per share of VND16.80 at the end-FY18E).

Key beneficiary of Vietnam's push for renewed dry gas reserves

PVS is the sole domestic contractor that provides engineering, procurement and construction (EPC) services to offshore oil and gas projects in Vietnam. Currently, PVS is the main EPC contractor for the Sao Vang Dai Nguyet project (total contract value of c.US$850m). Other big projects in its pipeline are Su Tu Trang Phase 2, Nam Du – U Minh, Blue Whale, and Block B – O Mon. The total order backlog for these projects, while not yet disclosed in detail, could amount to US$2,000m, based on our estimates.

Strong earnings growth expected in FY18-21F

With several big projects on the horizon, we forecast PVS to post a sales CAGR of 19.6% and net profit CAGR of 25.4% in FY18-21F. Based on the scope of work for these projects, PVS's mechanical & engineering (M&C) and floating production storage & offloading (FPSO/FSO) segments are likely to benefit the most once these projects get off the ground.

Initiate coverage with Add and target price of VND25,000

Initiate on PVS with an Add and TP of VND25,000, based on a combination of DCF (weight 50%) and target FY19-21F P/E of 7.8x (weight 50%), based on historical 5-year mean P/E.

Potential re-rating catalysts and risks

If the geopolitical issues facing Ca Rong Do are resolved and the project starts up again, we estimate it could add: 1) c.VND500bn (engineering works) to PVS's net profit in FY18-21F, and 2) c.VND300bn p.a. (FPSO vessel for field operators) to net profit post FY21F. Downside risks are geopolitical issues hampering progress of key oil and gas projects.

Financial Summary	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue (VNDb)	16,729	14,667	13,627	21,180	26,362
Operating EBITDA (VNDb)	710	871	1,311	1,662	1,961
Net Profit (VNDb)	801	1,023	1,194	1,572	2,015
Core EPS (VND)	1,793	2,213	2,499	3,288	4,216
Core EPS Growth	(18.9%)	23.4%	12.9%	31.6%	28.2%
FD Core P/E (x)	11.49	9.31	8.24	6.26	4.89
DPS (VND)	594	1,064	1,243	1,118	1,265
Dividend Yield	2.88%	5.17%	6.03%	5.43%	6.14%
EV/EBITDA (x)	-0.74	-1.40	-2.09	-2.15	-2.51
P/FCFE (x)	NA	8.40	4.12	7.33	5.10
Net Gearing	(50.7%)	(58.6%)	(66.5%)	(70.6%)	(74.4%)
P/BV (x)	0.86	0.87	0.78	0.75	0.70
ROE	7.6%	9.3%	10.0%	12.2%	14.8%
% Change In Core EPS Estimates					
CIMB/consensus EPS (x)			1.38	1.52	1.49

SOURCES: VND RESEARCH, COMPANY REPORTS

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Let the good times roll

INVESTMENT THESIS

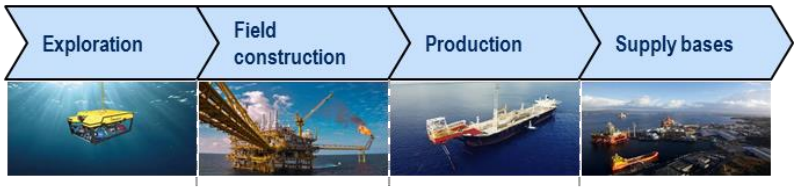
A diversified oilfield services company with strong financial health and significant net cash position

PVS provides a variety of technical services to the oil and gas industry, ranging from exploration support, field construction and oil production to supply bases. The two business segments that contribute the most to PVS's revenue and gross profit are mechanical and engineering (M&C, 47.4% and 42.1% of FY18E's revenue and gross profit, respectively) and floating production storage and offloading (FPSO/FSO, 11.0% and 47.3% of FY18E revenue and gross profit, respectively).

PVS's business segments are described below:

1. Mechanical & engineering (M&C): Provides offshore construction services to oil and gas projects in Vietnam
2. Floating, production, storage and offloading (FPSO/FSO): Provides full-service leasing of FPSO/FSO vessels to oil and gas operators.
3. Port base: Provides management, administration, and port operation services to oil and gas operators.
4. Seismic survey (ROV): Provides 2D and 3D seismic survey and data-processing services to oil and gas explorers.
Other segments: Includes the provision of offshore support vessels, operation and maintenance services, hospitality, and security services.

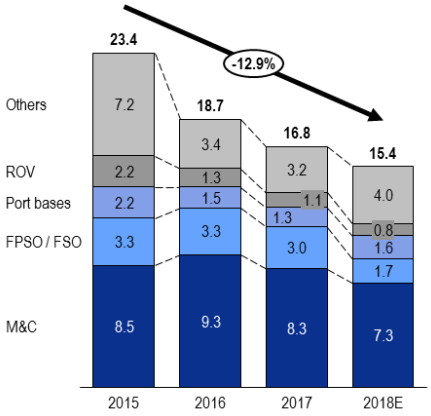
Figure 1: PVS's presence in Vietnam's oil and gas value chain



PVS's presence in Vietnam's oil and gas value chain	Exploration	Field construction	Production	Supply bases
	• Possess 2D, 3D and other seismic survey vessels, which deliver data and image processing supports for exploration drilling • Possess 15 offshore support vessels to service exploration activities	• PVS is the sole domestic player in providing engineering and construction services to offshore projects. • PVS also participate in constructing some on-shore projects such as power and fertilizer plants	• PVS indirectly owns 3 FPSOs and 2 FSOs via its joint-ventures with foreign partners, providing crude oil storage and production in offshore oil fields • PVS will invest in another FSO for Sao Vang Dai Nguyen project in 2019	• PVS currently owns and operates 8 ports in Vietnam, in which 5 ports can be used as petroleum supply bases.

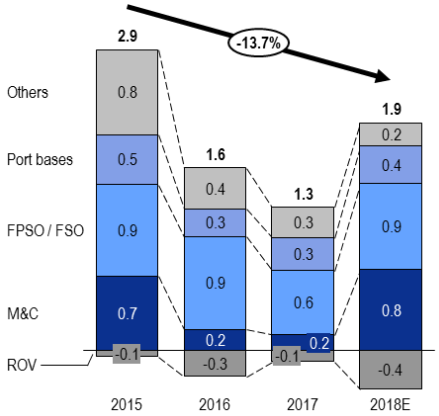
SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 2: PVS's revenue breakdown by segment (VND tr)



SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 3: PVS's adjusted gross profit by segment (VND tr)



SOURCES: VND RESEARCH, COMPANY REPORTS

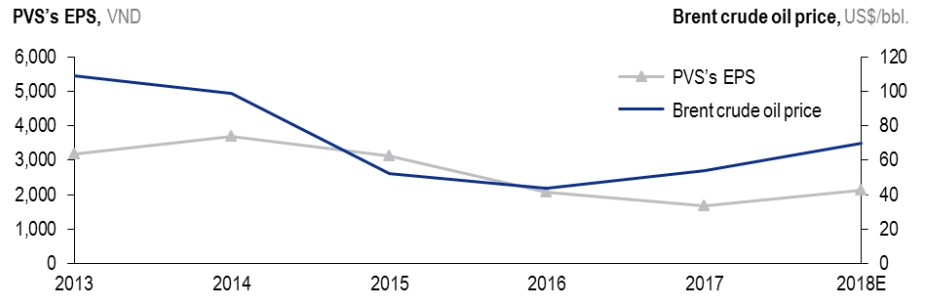
The collapse of crude oil prices in late-2014 led to significant spending cuts by major oil and gas operators, hence reducing PVS's net profit in recent years. Even though global crude oil prices recovered somewhat in 2017 and 2018, the financial performance of PVS has not improved in tandem. Generally, it takes 1-2 years before oilfield services companies like PVS start benefiting from upward

movements of crude oil prices due to the long lead times associated with a resumption of exploration activity.

Despite the difficulties from weak market conditions, PVS has successfully maintained strong financial health (FY18 net margin of 7.0% and FY18 ROE of 9.3%), underpinned by high liquidity ratios (current ratio of 2.0x), low leverage (debt/equity ratio of 0.1x) and a high cash balance (cash per share of VND16.80 at the end-FY18E).

The collapse of the crude oil price in late 2014 led to significant spending cuts by major oil and gas operators, which reduced PVS's EPS in recent years.

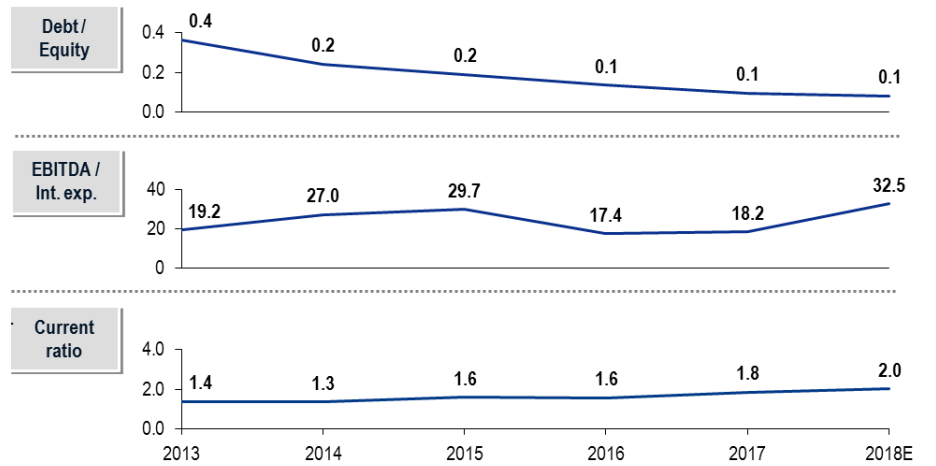
Figure 4: PVS's profitability vs. crude oil price movements



SOURCES: VND RESEARCH, COMPANY REPORTS

Despite difficulties from weak market conditions, PVS has managed to maintain strong financial health.

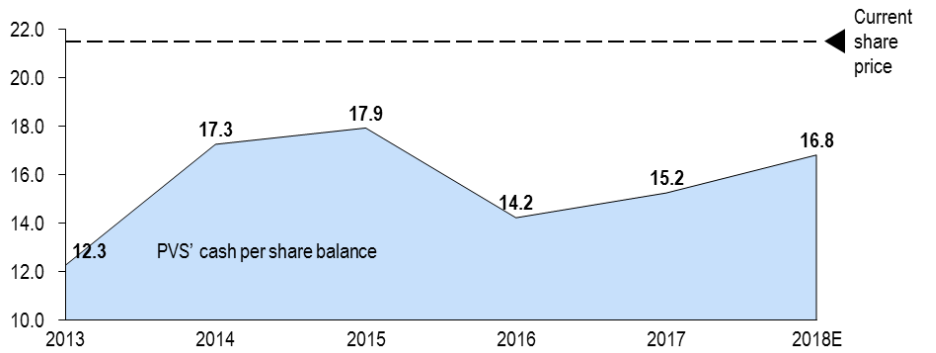
Figure 5: PVS's key liquidity and leverage ratios



SOURCES: VND RESEARCH, COMPANY REPORTS

PVS's cash and cash equivalent accounted for c.35% of the company's total assets at end-FY18.

Figure 6: PVS's cash per share vs. PVS's share price (VND)



SOURCES: VND RESEARCH, COMPANY REPORTS

Key beneficiary of Vietnam's push for renewed domestic dry gas reserves

PVS is the sole domestic contractor providing engineering, procurement and construction (EPC) services to offshore oil and gas projects in Vietnam. Given its dominant market position, we expect PVS to participate in almost all of Vietnam's major oil and gas projects in the coming years.

Currently, PVS is the main EPC contractor for the ongoing Sao Vang Dai Nguyet project (total contract value of c.US$850m). Other big projects in its pipeline are Su Tu Trang Phase 2, Nam Du – U Minh, Blue Whale, and Block B – O Mon. The total order backlog for these projects, while not yet disclosed in detail, could amount to US$2,000m, based on our estimates. Ca Rong Do is another big upcoming project, but is currently suspended (possibly for another two years) due to a force majeure event in Mar 2018.

All of these projects are key to ensuring Vietnam's national energy security over the next few decades. We believe these projects are well timed to meet the imminent rise in dry gas demand domestically. (Please refer to our sector report for more information.)

Figure 7: PVS's key projects in FY19-22F

Key projects	Contract value, US$m	2018F	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Sao Vang Dai Nguyet	• c.850	EPC + FSO contracts							
Su Tu Trang Phase 2	• c.500			EPC contract					
Nam Du – U Minh	• c.650			EPC + FPSO contracts					
Blue Whale	• N/a				Not yet disclosed				
Block B – O Mon	• c.1,000						EPC contracts		
Ca Rong Do	• c.1,700	In suspension							

SOURCES: VND RESEARCH, COMPANY REPORTS

PVS is the main EPC contractor for the Sao Vang Dai Nguyet project. The company is responsible for constructing a central processing platform, which will include production well slots and support dry trees. In addition, PVS's joint venture Malaysian-Vietnam Offshore Terminal will also supply an FSO vessel to the project, starting from 2H20F.

Figure 8: Overview of Sao Vang Dai Nguyet project

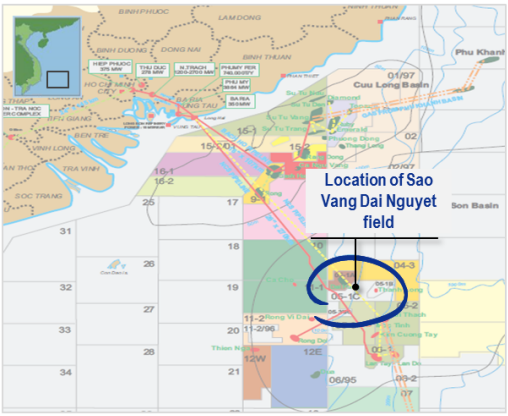
Location	• Block 05-1b and 05-1c, Nam Con Son Basin
Ownership	• Idemitsu Kosan (43.1%) • Teiko Oil (36.9%) • PetroVietnam (20.0%)
Project type	• Gas field

Overview of the Project

- The production sharing contract for the Blocks 05-1b and 05-1c was signed in October 2004 by the partners of the blocks and Vietnam Oil and Gas Group (Petrovietnam). The blocks cover an area of approximately 1,570km² and lie in water depths of 120m.

Development plan

- The fields are planned to be developed through a central processing platform (CPP), which will include production well slots and support dry trees.
- Dry gas from the Sao Vang Dai Nguyet field will be transported to an onshore terminal at Dinh Co gas processing plant via Nam Con Son 2 pipeline.



Oil and gas reserves

- The discovered petroleum initially in place (DPIIP) for the blocks is estimated to be 75.7 million barrels of oil equivalent (Mboe), 343.7 billion cubic feet (bcf) of natural gas and 18.4 million barrels (Mbbl) of natural gas liquids.

SOURCES: VND RESEARCH, COMPANY REPORTS

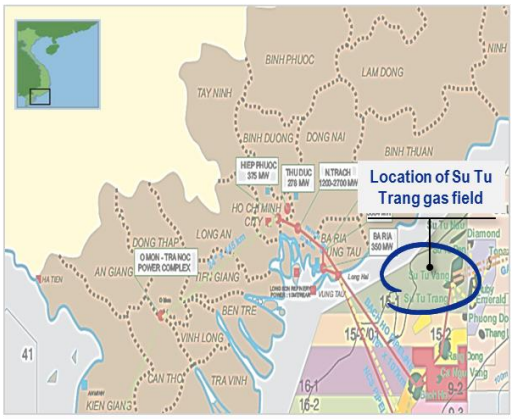
Su Tung Trang phase 2 is a high-potential project for PVS in FY18-21F. For this project, we expect PVS to construct additional central processing platforms for the field.

Figure 9: Overview of Su Tu Trang Phase 2 project

Location	• Block 15-1, Cuu Long Basin
Ownership	• PetroVietnam (50.0%) • Perenco (23.25%) • Korea National Oil Company (14.25%) • SK Corp (9.0%) • Geopetrol (3.5%)
Project type	• Gas field

Overview of the Project
- Su Tu Trang gas field (White Lion) has been in production since 2012 is at a water depth of 50m and about six kilometers away from the existing Su Tu Den field (Black Lion).

Development plan
- Phase 1 of this project was already completed by end of 2012. PVS was the main contractor for providing overall project engineering, procurement and fabrication works.
- Phase 2 of this project will see the construction of additional extraction, central processing platforms and pressurized pumps to maintain annual gas extraction levels at 1.5 bcm/annum until 2035.



Oil and gas reserves
- In Phase 2, gas exploitation is hoped to begin in 2020, with the volume of dry gas extraction to reach 1.5 billion cubic metres a year.
- Phase 2 will provide the main source of dry gas for the Dinh Co 2 gas processing plant, which will become operational by the end of 2020.

SOURCES: VND RESEARCH, COMPANY REPORTS

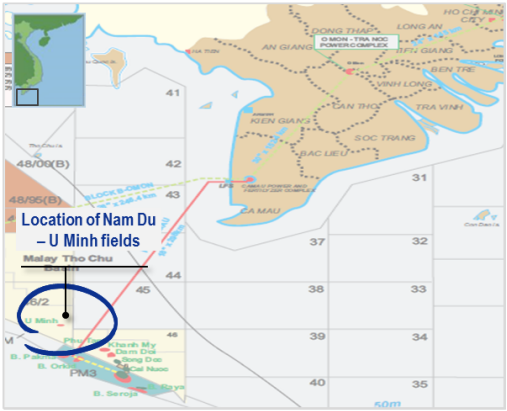
Nam Du – U Minh is a potential project for PVS in FY20-22F. The project will require the construction of two wellhead platforms and one FPSO vessel to serve production activities.

Figure 10: Overview of Nam Du – U Minh project

Location	• Block 46/07 and Block 51, Malay Tho Chu basin
Ownership	• Jadestone Energy (70%) • PetroVietnam Exploration Production Corporation (30%)
Timeline	• 2020-2022

Overview of the Project
- The Nam Du discovery is located within the Block 46/07 PSC on the north-eastern margin of the Malay-Tho Chu Basin, approximately 200 kilometers offshore Vietnam in a water depth of 47.9 meters.
- In 2H18, Jadestone is progressing with the front end engineering design stage. Final investment decision for the project is expected in 2H19.

Development plan
- Jadestone is aiming to connect its Nam Du and U Minh gas condensate fields to the PM-3 subsea gas export pipeline. Wellhead platforms will be located on each field, as well as a FPSO for condensate storage.



Oil and gas reserves
- The gas from Nam Du and U Minh will provide backfill into the pipeline resulting from declines at the PM-3 project.
- Jadestone estimates the Nam Du – U Minh gas fields contain about 200 billion cubic feet of wet gas.

SOURCES: VND RESEARCH, COMPANY REPORTS

Block B – O Mon is one of the largest gas projects in Vietnam to date, with total investment of roughly US$10bn. We expect PVS to be the sub-contractor responsible for constructing some operation platforms for the project.

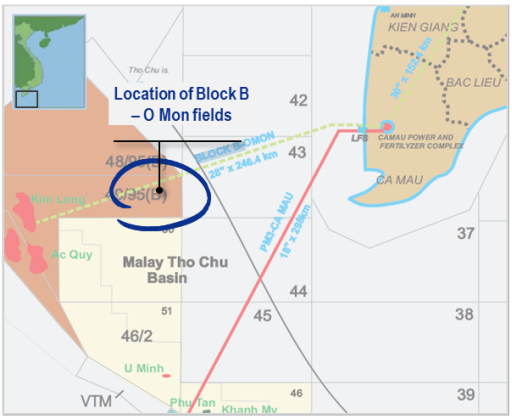
However, the development timeline for Block B – O Mon is uncertain due to current financing difficulties. We expect this project to only commence in 3QFY23F, at the earliest.

Figure 11: Overview of Block B – O Mon project

Location	• Blocks B, 48/95 and 52/97, Malay – Tho Chu basin
Ownership	• PetroVietnam (42.9%) • PetroVietnam Exploration Production Corporation (26.8%) • Mitsui Oil Exploration (22.6%) • PTTEP (7.7%)
Timeline	• 2022-2025

Overview of the Project
- Blocks B, 48/95 and 52/97 lie offshore Vietnam in water depths ranging from 60m to 80m. The blocks cover an area of 3,200km² in the Malay-Tho Chu basin, southwest of Vietnam.

Development plan
- The Block B field development will include one central technology platform, 46 operations platforms, a housing platform, one condensate vessel and drilling of 750 production wells. The development is planned to supply dry gas to new gas-fired power plants in Kien Giang and O Mon regions. A tender barge and one jack-up rig are required to perform the drilling operation.



Oil and gas reserves
- Initial estimates declared in-place gross gas at approximately 6tcf (170bcm) and condensates at 4mcm, while recoverable gas reserves (2P categories) were at 3.78tcf (107bcm) and condensates at 2mcm. Total project life is expected to be 20 years..

SOURCES: VND RESEARCH, COMPANY REPORTS

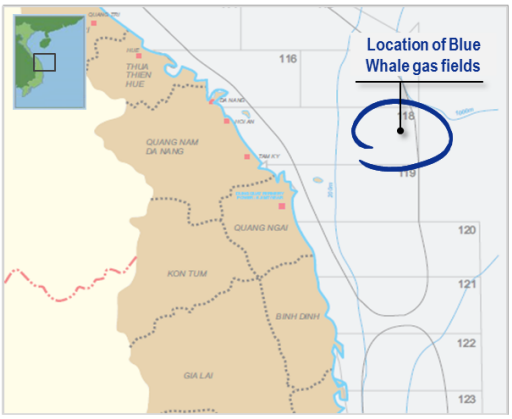
Ca Voi Xanh is the largest gas field discovered in Vietnam to date. The project is expected to supply an especially important source of natural gas for electricity generation and the petrochemical industry. However, as the project has not reached final investment decision (FID), we have not integrated this project into our PVS financial forecasts for FY18-21F.

Figure 12: Overview of Ca Voi Xanh project

Location	• Blocks 117, 118 and 119, Song Hong Basin
Ownership	• ExxonMobil (64.0%) • PetroVietnam Exploration Production Corporation (15.0%) • PetroVietnam (21.0%)
Timeline	• 2021-2024

Overview of the Project
- The Blue Whale field is located in block 117-119, which extends from Vietnam's shoreline and falls within Vietnam's 200 nautical mile exclusive economic zone. However, China also lays claims to the same rights to Block 118 via the notorious so-called nine-dash line.

Development plan
- The development consists of an offshore platform, a pipeline to shore, an onshore gas treatment plant (GTP) and pipelines that supply gas for power generation for four power plants. A decisive step has recently been taken by ExxonMobil by inviting bids for front-end engineering and design (FEED) work.



Oil and gas reserves
- The Blue Whale project is the biggest and most complicated gas project to be undertaken in Vietnam to date. The estimated reserves is 150 billion m3, 3 times of Lan Tay and Lan Do Fields in Nam Con Son Gas Project, the current largest gas fields in Vietnam.

SOURCES: VND RESEARCH, COMPANY REPORTS

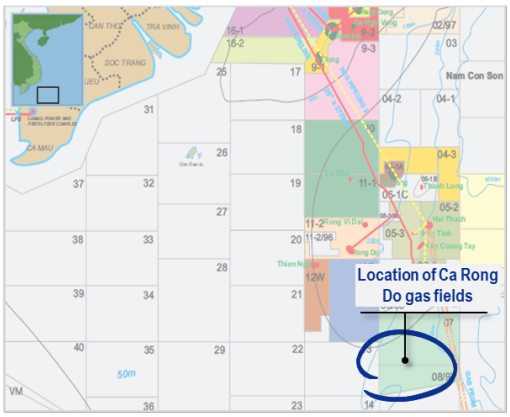
The Ca Rong Do project is considered key in slowing the decline of Vietnam's oil and gas production in FY18-20F. However, due to unexpected geopolitical issues, the project was suspended in Mar 2018. PVS is the main EPC contractor for the project, responsible for constructing a tension leg wellhead platform and supplying an FPSO vessel for oil production. As the project is unlikely to resume before 2021F, we eliminate this project from our PVS financial forecasts for the FY18-21F period.

Figure 13: Overview of Ca Rong Do project

Location	• Block 07-03, Tu Chinh Ma May basin
Ownership	• Talisman Energy (55.0%) • Mubadala (25.0%) • PetroVietnam (15.0%) • Pan Pacific Petroleum (5.0%)
Timeline	• In suspension from March 2018

Overview of the Project
- Ca Rong Do field is 440 km off the coast of southern Vietnam. In waters depth 350 metres (1,148 ft) deep, it is breakeven at c.US$60/bbl. But the project location lies near the U-shaped "nine-dash line" claimed by China. In March 2018, the project was suspended and declared force majeure due to China's pressure.

Development plan
- The project was expected to have a tension leg wellhead platform (TLWP), a tender assisted drilling vessel, and a floating production storage and offloading (FPSO) vessel. PVS was in the process of constructing the TLWP when the project is suspended in March 2018.



Oil and gas reserves
- The field's estimated potential recovery is around 45 million barrels of crude oil, 172 billion cubic feet of natural gas and 2.3 million barrels of condensate, a super light form of crude oil that is mostly a byproduct of gas production.

SOURCES: VND RESEARCH, COMPANY REPORTS

Strong earnings growth expected in FY18-21F »

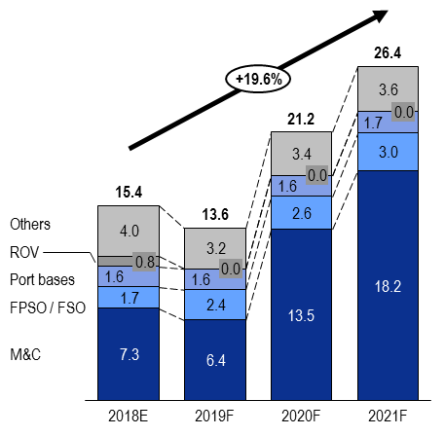
With several big projects on the horizon, we forecast PVS to post a sales CAGR of 19.6% and net profit CAGR of 25.4% in FY18-21F. Based on the scope of work for these projects, PVS's M&C and FPSO/FSO segments are expected to benefit the most once these projects get off the ground.

In addition, we anticipate PVS's profitability in FY18-21F to improve, thanks to the discontinuation of the loss-making remote-operated vehicle (ROV) seismic survey segment from FY19F. We note that this segment alone incurred gross losses of c.VND400bn in FY18, equivalent to 21.1% of PVS's adjusted gross profit in FY18.

With several big projects on the horizon, we forecast PVS to post a sales CAGR of 19.6% and adjusted gross profit CAGR of 18.2% in FY18-21F.

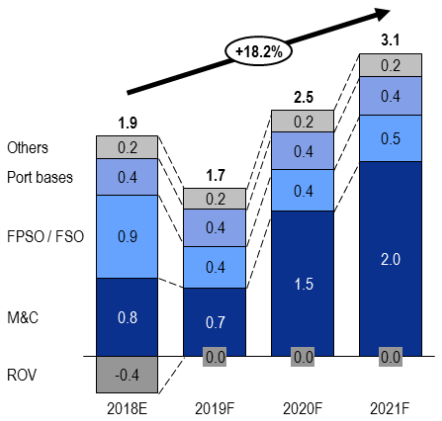
We note that the adjusted gross profit of the FPSO/FSO segment in FY18E was abnormally high, thanks to the non-recurring profit recorded from the asset re-valuation of FSO Orkid and FPSO Ruby.

Figure 14: Our forecasts for PVS's revenue, by segment (VND tr)



SOURCES: VND ESTIMATES, COMPANY REPORTS

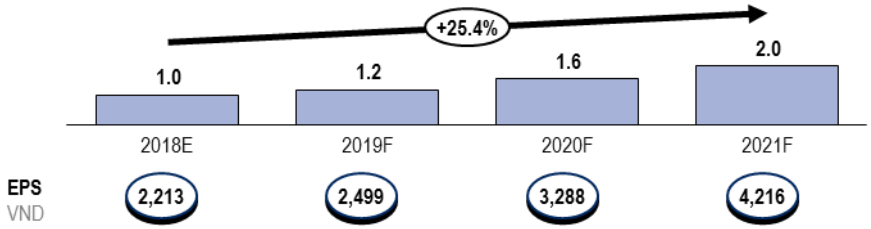
Figure 15: Our forecasts for PVS's adjusted gross profit, by segment (VND tr)



SOURCES: VND ESTIMATES, COMPANY REPORTS

We forecast PVS to post a net profit CAGR of 25.4% in FY18-21F

Figure 16: Our forecasts for PVS's net profit (VND tr)



SOURCES: VND RESEARCH, COMPANY REPORTS

VALUATION AND RECOMMENDATION

Initiate coverage with Add and target price of VND25,000

We initiate coverage on PVS with an Add rating and target price of VND25,000, based on a combination of DCF (weight 50%) and target FY19-21F P/E multiple of 7.8x (weight 50%).

Our DCF valuation for PVS is VND24,295, based on terminal growth of 1.0% and weighted average cost of capital (WACC) of 22.5%. We estimate PVS's WACC at 21.7% assuming: 1) a risk-free rate of 5.0%, 2) beta of 1.75, and 3) equity risk premium of 11%.

Figure 17: DCF model – Summary of free cash flow (FCF)

VNDbn	Dec-16A	Dec-17A	Dec-18E	Dec-19F	Dec-20F	Dec-25F	Dec-30F	Dec-35F	CAGR 20-35F
Total revenue	18,720	16,729	14,667	13,627	21,180	33,247	36,758	39,013	4.2%
% yoy	*0.0%*	*-10.6%*	*-12.3%*	*-7.1%*	*55.4%*	*2.8%*	*1.6%*	*1.0%*	
COGS & OPEX	(18,620)	(16,704)	(14,363)	(12,886)	(20,044)	(31,437)	(34,757)	(36,890)	
Unlevered profit / EBIT	100	24	304	741	1,136	1,810	2,001	2,124	4.3%
Operating margin	*0.5%*	*0.1%*	*2.1%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	*5.4%*	
Effective tax rate	*-30.7%*	*-22.0%*	*-42.7%*	*-22.0%*	*-22.0%*	*-22.0%*	*-22.0%*	*-22.0%*	
EBIT * (1-Tax) or NOPAT	69	19	174	578	886	1,411	1,561	1,656	4.3%
+ Depreciation and amortisation	871	685	567	567	520	678	752	799	
% of revenue	*4.7%*	*4.1%*	*3.9%*	*4.2%*	*2.5%*	*2.0%*	*2.0%*	*2.0%*	
- Capex	(448)	(436)	(355)	(329)	(512)	(804)	(889)	(943)	
% of revenue	*-2.4%*	*-2.6%*	*-2.4%*	*-2.4%*	*-2.4%*	*-2.4%*	*-2.4%*	*-2.4%*	
+ Change in working capital	(767)	677	(204)	(28)	(1,257)	(1,162)	(1,300)	(1,384)	
% of revenue	*-4.1%*	*4.0%*	*-1.4%*	*-0.2%*	*-5.9%*	*-3.5%*	*-3.5%*	*-3.5%*	
Interest and other financial activities, net	1,140	978	655	763	830	1,354	1,496	1,587	
% of revenue	*6.1%*	*5.8%*	*4.5%*	*5.6%*	*3.9%*	*4.1%*	*4.1%*	*4.1%*	
Unlevered free cash flow (UFCF)	**865,052**	**1,923,111**	**837,543**	**1,551,331**	**467,309**	**1,478,070**	**1,619,860**	**1,715,855**	
% yoy	*0.0%*	*122.3%*	*-56.4%*	*85.2%*	*-69.9%*	*0.6%*	*2.1%*	*1.0%*	

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Figure 18: Cost of equity

Cost of equity	
Risk Free Rate	5.4%
Beta	1.75
Risk Premium	11.0%
Cost of Equity	**24.7%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Figure 19: WACC and terminal growth

VNDbn	
Equity Value	9,559
Debt	1,155
Cost of Debt	6.0%
Tax Rate	22.0%
WACC	**22.5%**
Perpetual Growth Rate	**1.0%**

SOURCES: VND RESEARCH, COMPANY REPORTS

Our target price is rounded down to VND25,000, based on a combination of DCF (weight 50%) and target FY19-21F P/E multiple of 7.8x (weight 50%).

Figure 20: Blended target price

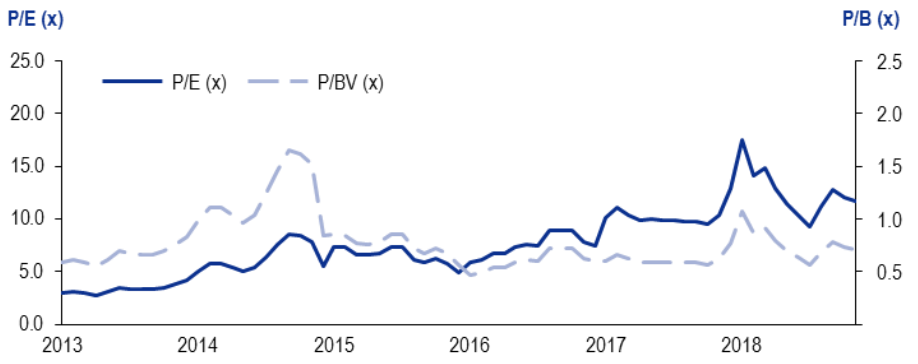
Method	Implied share price (VND)	Weight (%)	Weighted share price (VND)
DCF	24,295	50%	12,148
FY19-21F target P/E of 7.8x	25,804	50%	12,902
Blended value		**100.0%**	**25,050**
Target price			**25,000**

SOURCES: VND RESEARCH ESTIMATES, COMPANY REPORTS

Our target FY19-21F P/E multiple of 7.8x is derived from PVS's historical 5-year average P/E multiple. Using a 3-year forward FY18-21F EPS of VND3,308, our implied valuation based on P/E is VND25,804.

Our target FY19-21F P/E multiple of 7.8x is derived from PVS's historical 5-year average P/E multiple.

Figure 21: PVS's historical P/E and P/BV



SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOMBERG

Figure 22: Global oil services peer comparison

Company	Bloomberg Ticker	Recom.	Share Price (local curr)	Target Price (local curr)	Market Cap (US$ m)	P/E (x) 5-yr	P/E (x) TTM	P/E (x) CY19F	P/E (x) CY20F	3-year EPS (%)	P/BV (x) 5-yr	P/BV (x) TTM	P/BV (x) CY19F	P/BV (x) CY20F	ROE (%) 5-yr	ROE (%) TTM	ROE (%) CY19F	ROA (%) 5-yr	ROA (%) TTM	ROA (%) CY19F
Oil services companies																				
PV Technical Services	PVS VN	ADD	20,600	25,000	420	8.7	9.8	8.7	6.6	-25.7%	0.7	0.9	0.8	0.8	14.6%	6.7%	7.0%	5.2%	3.1%	4.5%
Mermaid Maritime	MMT SP	NOT RATED	0.08	N/A	119	23.0	N/A	N/A	N/A	-36.0%	0.6	0.3	N/A	N/A	-6.7%	-4.2%	N/A	-4.6%	-3.1%	N/A
Yinson Holdings	YNS MK	ADD	4.52	4.84	1,085	16.0	13.7	24.4	36.7	3.5%	3.3	1.9	1.5	1.5	17.5%	9.6%	6.6%	6.8%	4.0%	6.0%
Sembcorp Marine	SMM SP	ADD	1.68	2.46	2,604	21.6	N/A	103.2	68.7	-70.8%	2.2	1.3	1.5	1.5	6.9%	-8.6%	1.5%	2.7%	-2.3%	1.2%
Hyundai Engineering	000720 KS	ADD	51,600	68,000	4,979	12.1	18.2	13.9	13.2	-21.7%	1.0	0.9	1.0	0.9	7.6%	4.6%	7.6%	2.4%	1.6%	4.1%
Keppel Corp	KEP SP	ADD	6.21	8.28	8,159	10.2	12.1	11.5	10.1	-39.1%	1.5	0.9	0.9	0.8	12.2%	10.1%	8.3%	4.2%	4.7%	4.3%
Malaysia Marine Eng	MMHE MK	NOT RATED	0.79	N/A	212	21.9	36.0	N/A	N/A	-35.9%	1.3	0.4	N/A	N/A	2.4%	1.0%	N/A	1.2%	0.8%	N/A
Average - Oil services peers					**2,511**	**16.2**	**18.0**			**-32.2%**	**1.5**	**0.9**			**7.8%**	**2.7%**		**2.6%**	**1.3%**	

Note: Not Rated forecasts based on Bloomberg consensus estimates; trailing 12 months (TTM)
SOURCES: VND RESEARCH, COMPANY REPORTS, BLOOOMBERG (AS AT 26 MAR 2019)

Figure 23: Brief description of global comparable companies

Companies	Country of origin	Description
Mermaid Maritime (MMT SP, Not rated)	Thailand	Mermaid Maritime PCL is a subsea and offshore services company. It provides full turnkey services to oil and gas majors operating offshore such as subsea vessels, specialized diving equipment, remotely operated vehicles and drilling and accommodation rigs. Mermaid's operating segments are the Subsea group, Drilling group, and Holding. The Subsea group provides services including inspection, repair and maintenance (IRM), infrastructure installation support, remotely operated vehicle (ROV) Support, and cable.
Yinson Holdings (YNS MK, Add, TP:RMB4.35)	Malaysia	Yinson Holdings Bhd is a transportation and logistics company domiciled in Malaysia. The company organises itself into two segments: offshore & marine and other operations. The marine segment, which generates the vast majority of revenue, leases, trades, and operates vessels; offers chartering for other floating marine assets; provides consulting services for ship management; and provides other marine-related services. The other operations segment makes investments, and offers business and management
Sembcorp Marine (SMM SP, Add, TP:S$2.21)	Singapore	Singapore-based Sembcorp Marine is a leading global marine and offshore engineering group with a 50-year record. The company specializes in ship repair, shipbuilding, ship conversion, rig building, and offshore engineering and construction. The company operates worldwide, with key hubs in Brazil, India, the United Kingdom, Indonesia, and China. Its Singapore operations comprise six shipyards, including one of the largest integrated yards globally, Sembmarine Integrated Yard at Tuas.
Hyundai Engineering (000720 KS, Hold, TP:W68,000)	South Korea	Hyundai Engineering & Construction Co Ltd works in the construction industry, and has completed civil, building, plant, and energy projects. It constructs buildings, structures, and infrastructure primarily geared toward transportation, power stations, gas facilities, and real estate. The company operates four business segments: building works, civil works, plant works/electrical works, and other. Procuring materials and delivering timely performance to develop large, complex structures are focuses of the business.
Keppel Corp (KEP SP, Add, TP:S$8.28)	Singapore	Singapore-based Keppel is one of the world's largest offshore rig builders, with more than three decades of experience. As a conglomerate with marine, property, infrastructure, and other businesses, Keppel generates more than half of its revenue from its offshore and marine segment, which builds and repairs world-class drilling rigs used in offshore oil and gas exploration and production. Keppel follows a "near market, near customer" strategy, operating multiple shipyards in regions with a significant client presence.
Malaysia Marine & Heavy Engineering (MMHE MK, Not rated)	Malaysia	Malaysia Marine and Heavy Engineering Holdings Bhd is a marine and heavy engineering solutions provider for a range of offshore and onshore facilities and vessels. The company operates through three segments. Its Heavy engineering segment is engaged in the provision of service for oil and gas engineering, construction and conversion works. The Marine segment offers repair services and dry docking of liquefied natural gas carriers.

SOURCES: VND RESEARCH, COMPANY REPORTS

RISKS AND CATALYSTS

Downside risks

- Geopolitical issues could hamper the progress of key oil and gas projects such as Block B – O Mon, Blue Whale, and Su Tu Trang phase 2. If these projects are suspended, we think the profitability of PVS would be severely negatively affected.
- Crude oil price stays below US$55/bbl in FY19-20F due to: 1) lower demand caused by a significant economic slowdown, and 2) technological revolution in shale oil extraction, which could enable the US flood the oil market with more cheap supply.

Potential re-rating catalysts

- If the geopolitical issues surrounding Ca Rong Do are resolved and this project starts up again, we estimate it could add: 1) c.VND500bn to PVS's net profit in FY18-21F from related engineering works, and 2) c.VND300bn per year to PVS's net profit post FY21F from supplying a floating production storage and offloading (FPSO) vessel to field operators.

APPENDICES

Figure 24: Company profile of PVS as at end-2018

PetroVietnam Technical Services Corporation

Status: Public (HNX: PVS)
Website: www.ptsc.com.vn
Headquarter: HCMC
Industry: Oilfield services

BUSINESS OVERVIEW

VND Billion

PVS

Total revenue '17 = 16,812
Net profit '17 = 801
No. of employees = ~9,500

Main segments	Engineering & construction	FPSO / FSO	Support vessels	Others
Revenue '17	8,272	2,957	2,048	3,535
% total rev.	*49.2%*	*17.6%*	*12.2%*	*21.0%*
Description	• Provide construction & engineering services	• Leasing out and operating FPSO / FSO	• Leasing out vessels for exploration activities	• Including seismic survey, ports, maintenance
CAGR 13-17	• -4.7%	• +28.1%	• -21.2%	• -20.7%

KEY MANAGEMENT

Names	Position
Mr Thai Quoc Hiep	Chairman
Mr Phan Thanh Tung	Managing Director
Mr Nguyen Huu Hai	Deputy Director
Mr Le Manh Cuong	Deputy Director

OWNERSHIP STRUCTURE

Holders	Shares, Mil	%
PetroVietnam (PVN)	229.5	51.4%
VinaCapital	26.9	6.0%
Dragon Capital	10.8	2.4%
Templeton Frontiers	0.2	0.5%
Others	1,773.1	39.7%

SOURCES: VND RESEARCH, COMPANY REPORTS

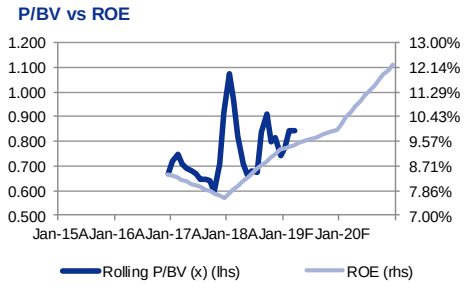
Figure 25: Organisational structure of PVS as at end-2018

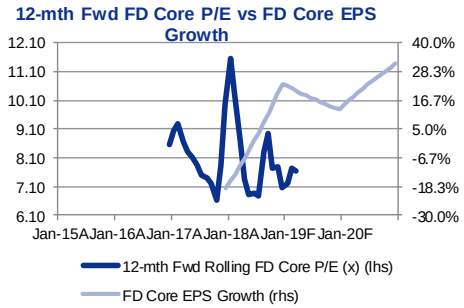
PVS *(Parent company)*

	Companies	PVS's ownership	PVS's ownership
Subsidiaries	PTSC Quang Ngai	• 95.2%	• Managing, exploiting and providing service vessels. • Fabrication, construction, repair and maintenance of oil works industry.
	PTSC Thanh Hoa	• 54.7%	• Managing, operating, trading and exploiting general ports. • Manufacturing, construction, repair and maintenance of oil projects.
	Dinh Vu Petroleum Services Port	• 51.0%	• Management, administration, business, general port operation and container port.
	PTSC Production Services	• 51.0%	• Management, exploitation, operation and maintenance of floating oil storage crude (FSO), floating storage and crude oil handling (FPSO)
	Phu My Petroleum Services Port	• 59.6%	• Management, administration, business, general port operation and container port.
	PTSC CGGV	• 51.0%	• 2D and 3D seismic survey; 2D and 3D seismic data processing offshore and within the territory of Vietnam
	Petroleum Security Services	• 51.0%	• Business security services.
	Sao Mai Ben Dinh Investment Corp	• 51.0%	• Managing, operating, trading and exploiting general ports.
	Labuan Technical Services	• 100.0%	• Providing service ships for oil and gas exploitation activities.
Joint ventures	Rong Doi MV12	• 33.0%	• Investing and providing floating services, storing, and exporting crude oil (FSO) for customer KNOC. Owns FSO MV12 vessel.
	PTSC Southeast Asia	• 51.0%	• Investing and providing floating services, storing, and exporting crude oil (FSO) for customer Bien Dong POC. Owns FSO Bien Dong vessel.
	PTSC Asia Pacific	• 51.0%	• Investing and providing floating services, storing, production and exporting crude oil (FPSO) for customer Bien Dong POC. Owns FPSO Lam Son vessel.
	Malaysian Vietnam Offshore Terminal	• 49.0%	• Investing and providing floating services, storing, and exporting crude oil (FSO) for customer TML. Owns FSO Orkid vessel.
	Vietnam Offshore Terminal Ruby	• 60.0%	• Investing and providing floating services, storing, production and exporting crude oil (FPSO) for customer Bien Dong POC. Owns FPSO Ruby vessel.
	PV Shipyard	• 28.8%	• New construction, repair and conversion of oil and gas drilling rigs and ships.

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS





Profit & Loss

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Net Revenues	**16,729**	**14,667**	**13,627**	**21,180**	**26,362**
Gross Profit	**805**	**1,078**	**1,463**	**2,260**	**2,835**
Operating EBITDA	**710**	**871**	**1,311**	**1,662**	**1,961**
Depreciation And Amortisation	-685	-567	-567	-520	-519
Operating EBIT	**24**	**304**	**744**	**1,141**	**1,443**
Financial Income/(Expense)	229	437	416	384	379
Pretax Income/(Loss) from Assoc.	485	734	259	322	552
Non-Operating Income/(Expense)	264	-516	87	136	169
Profit Before Tax (pre-EI)	**1,002**	**959**	**1,507**	**1,983**	**2,543**
Exceptional Items					
Pre-tax Profit	**1,002**	**959**	**1,507**	**1,983**	**2,543**
Taxation	-221	-409	-332	-436	-560
Exceptional Income - post-tax					
Profit After Tax	**782**	**549**	**1,175**	**1,547**	**1,983**
Minority Interests	19	474	19	25	32
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	**801**	**1,023**	**1,194**	**1,572**	**2,015**
Recurring Net Profit	801	1,023	1,194	1,572	2,015
Fully Diluted Recurring Net Profit	**801**	**1,023**	**1,194**	**1,572**	**2,015**

Cash Flow

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
EBITDA	710	871	1,311	1,662	1,961
Cash Flow from Invt. & Assoc.	-704	-1,010	-695	-724	-947
Change In Working Capital	677	-204	-28	-1,257	-809
(Incr)/Decr in Total Provisions	187	150	0	0	0
Other Non-Cash (Income)/Expense	295	87	196	322	581
Other Operating Cashflow	495	435	574	526	524
Net Interest (Paid)/Received	-44	-33	-10	-9	-8
Tax Paid	-630	-149	-164	-215	-276
Cashflow From Operations	**985**	**148**	**1,185**	**304**	**1,026**
Capex	-436	-355	-329	-512	-637
Disposals Of FAs/subsidiaries	9	4	4	4	4
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	-882	1,593	1,593	1,593	1,593
Cash Flow From Investing	**-1,308**	**1,242**	**1,267**	**1,085**	**959**
Debt Raised/(repaid)	-367	-256	-65	-46	-53
Proceeds From Issue Of Shares					
Shares Repurchased					
Dividends Paid	-284	-509	-594	-534	-605
Preferred Dividends					
Other Financing Cashflow	0	0	0	0	0
Cash Flow From Financing	**-651**	**-765**	**-659**	**-580**	**-658**
Total Cash Generated	-975	626	1,793	808	1,328
Free Cashflow To Equity	**-691**	**1,134**	**2,387**	**1,343**	**1,932**
Free Cashflow To Firm	**-279**	**1,423**	**2,462**	**1,397**	**1,994**

SOURCES: VND RESEARCH, COMPANY REPORTS

BY THE NUMBERS… cont'd

Balance Sheet

(VNDb)	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Total Cash And Equivalents	7,286	8,035	9,828	10,636	11,964
Total Debtors	5,402	4,951	4,810	7,475	9,304
Inventories	438	469	376	585	727
Total Other Current Assets	438	368	342	531	661
Total Current Assets	**13,564**	**13,823**	**15,355**	**19,228**	**22,657**
Fixed Assets	3,679	2,863	2,625	2,617	2,736
Total Investments	4,965	4,490	4,490	4,490	4,490
Intangible Assets	0	0	0	0	0
Total Other Non-Current Assets	1,664	1,367	1,124	923	759
Total Non-current Assets	**10,308**	**8,720**	**8,238**	**8,030**	**7,984**
Short-term Debt	255	721	670	634	592
Current Portion of Long-Term Debt					
Total Creditors	3,388	3,311	3,039	4,728	5,940
Other Current Liabilities	3,717	2,812	2,862	4,448	5,536
Total Current Liabilities	**7,360**	**6,844**	**6,570**	**9,810**	**12,067**
Total Long-term Debt	901	193	179	169	158
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	3,530	3,351	3,351	3,351	3,351
Total Non-current Liabilities	**4,431**	**3,544**	**3,531**	**3,521**	**3,510**
Total Provisions	0	0	0	0	0
Total Liabilities	**11,791**	**10,388**	**10,101**	**13,330**	**15,577**
Shareholders' Equity	10,745	11,322	12,641	13,050	14,155
Minority Interests	1,336	833	852	877	909
Total Equity	**12,081**	**12,155**	**13,493**	**13,927**	**15,064**

Key Ratios

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Revenue Growth	(10.6%)	(12.3%)	(7.1%)	55.4%	24.5%
Operating EBITDA Growth	(26.9%)	22.8%	50.5%	26.7%	18.0%
Operating EBITDA Margin	4.24%	5.94%	9.62%	7.84%	7.44%
Net Cash Per Share (VND)	13,724	14,898	18,785	20,572	23,461
BVPS (VND)	24,054	23,687	26,447	27,303	29,615
Gross Interest Cover	0.6	11.3	93.4	157.0	217.6
Effective Tax Rate	22.0%	42.7%	22.0%	22.0%	22.0%
Net Dividend Payout Ratio	35.5%	49.7%	49.7%	34.0%	30.0%
Accounts Receivables Days	125.4	128.8	130.7	106.1	116.2
Inventory Days	23.61	12.18	12.68	9.30	10.18
Accounts Payables Days	81.63	84.09	91.22	71.91	79.24
ROIC (%)	0.4%	5.4%	15.3%	27.0%	39.0%
ROCE (%)	2.6%	6.1%	8.6%	10.6%	12.0%
Return On Average Assets	2.42%	0.86%	3.65%	4.87%	5.80%

Key Drivers

	Dec-17A	Dec-18A	Dec-19F	Dec-20F	Dec-21F
Oil Price (US$/bbl)	54.0	72.0	65.0	68.0	70.0
Volume Growth (%)	-4.6%	-0.5%	-0.8%	0.4%	-0.2%
Ratio Of Up To Downstream (x)	N/A	N/A	N/A	N/A	N/A
Operating Cash Cost (US$/bbl)	N/A	N/A	N/A	N/A	N/A
Ratio Of High To Low Margin (x)	N/A	N/A	N/A	N/A	N/A

SOURCES: VND RESEARCH, COMPANY REPORTS

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Other jurisdictions: In any other jurisdictions, except if otherwise restricted by laws or regulations, this report is only for distribution to professional, institutional or sophisticated investors as defined in the laws and regulations of such jurisdictions.

RECOMMENDATION FRAMEWORK

Stock Ratings	Definition:
Add	The stock's total return is expected to reach 15% or higher over the next 12 months.
Hold	The stock's total return is expected to be between negative 10% and positive 15% over the next 12 months.
Reduce	The stock's total return is expected to fall below negative 10% over the next 12 months.

The total expected return of a stock is defined as the sum of the:(i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.

Sector Ratings	Definition:
Overweight	An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
Neutral	A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
Underweight	An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.

Country Ratings	Definition:
Overweight	An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark.
Neutral	A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.
Underweight	An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark.

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