## Quarterly Report

## Key Highlights

## Transformational acquisition of Lattice Energy

- Proposed acquisition will create a leading ASX-listed upstream oil and gas mid-cap, with an expanded footprint across multiple basins, production hubs and jurisdictions.
- Increases 2 P reserves by ${ }^{\sim} 200 \%$ to 232 MMboe $^{1}$ and pro forma production guidance by ${ }^{\sim} 150 \%$ to $25-27 \mathrm{MMboe}^{2}$.
- Integration planning well advanced, with dedicated transition teams appointed.


## Strong production supported by successful field development activities

- Quarterly Beach production of 2.6 MMboe up $2 \%$ from the prior quarter.
- Seven Western Flank oil wells brought online and six artificial lift installations commissioned.
- Incremental production from the Bauer facility expansion and Middleton gas compression.


## High drilling success rates and new field discoveries

- 23 wells drilled at a success rate of $78 \%$, including three new discoveries.
- Gas exploration success at Lowry-1 in Beach's 100\% owned Western Flank acreage; validates phase 1 expansion of the Middleton facility from 25 MMsfd to 40 MMscfd .
- Oil discovery at Marauder-1 in ex PEL 104/111; encouraging for future Birkhead Formation appraisal.
- 100\% drilling success rate from 15 Cooper Basin JV wells, including a new gas discovery in Queensland.


## Continued strong cash generation, supported by focused cost and operating discipline

- Sales revenue of $\$ 178$ million, up $17 \%$ from the prior quarter.
- Net operating cash flow of $\$ 90$ million; net cash increased by $\$ 50$ million (pre-final dividend payment).


## Comments from Chief Executive Officer, Matt Kay

"Beach has continued its strong momentum from FY17 into the new financial year with success in the field, $\$ 90$ million of operating cash flow generated, and announcement of the company transforming acquisition of Lattice Energy.

The multi-year Cooper Basin capital program commenced and delivered early success. Active field development works saw seven new Western Flank oil wells commence production and six artificial lift installations commissioned. Incremental production from these activities contributed to a $2 \%$ increase in production to 2.6 MMboe , consistent with our objective to sustain production levels.

Drilling activity produced positive results. In our $100 \%$ owned gas acreage, a liquids-rich discovery at Lowry-1 confirmed this acreage as a growth engine for Beach. Lowry-1 has provided the impetus needed to progress phase 1 expansion of the Middleton facility from 25 MMscfd to 40 MMscfd . Planning is well advanced as we continue our active FY18 gas drilling campaign. Beach completed its first operated horizontal well in the Western Flank, with Bauer-26 drilled and brought online in less than two months. The Cooper Basin JV also continues to achieve outstanding results. A $100 \%$ drilling success rate saw 15 wells cased and suspended as future producers, including a new gas field discovery in Queensland.

On 28 September 2017, we announced the acquisition of Lattice Energy, a significant milestone as we execute our strategy to become a premier upstream oil and gas company in the region. The combined operations will propel Beach from a single-basin onshore producer, to a multi-basin, onshore and offshore producer with significant gas processing capabilities across Australia and New Zealand. A diverse portfolio of quality assets brings with it significant optionality and high impact, value creating growth opportunities. Integration planning is well advanced as we target completion in the next few months."

| Beach Energy Limited | 31 October 2017 | www.beachenergy.com.au |
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## Acquisition of Lattice Energy

## Transaction overview

On 28 September 2017, Beach announced that it had entered into a binding agreement to acquire Lattice Energy for $\$ 1,585$ million, a transformational acquisition which directly aligns with Beach's strategy. The transaction will deliver a step-change in production and reserves, diversity across production hubs and gas processing infrastructure, and an expanded asset portfolio with significant optionality and value creating growth opportunities.
Lattice Energy will be acquired on a cash and debt free basis with Beach to receive the benefit of cash flows from 1 July 2017. The acquisition is to be funded through existing cash reserves, new debt facilities and a $\$ 301$ million 3 for 14 pro-rata entitlement offer. On 2 October 2017, Beach announced that the accelerated institutional entitlement offer had been completed with a near record take-up rate of over 98\%. On 19 October 2017, Beach announced that the retail entitlement offer had been successfully completed and was strongly supported by eligible shareholders.

## Key highlights

The acquisition of Lattice Energy is transformational for Beach, significantly enhancing the company's scale and creating a leading ASX-listed upstream oil and gas mid-cap with diversity of production and growth options. The combination will expand Beach's footprint across multiple basins, production hubs and jurisdictions, and increase Beach's 2P reserves by $\sim 200 \%$ to 232 MMboe $^{1}$ and FY18 pro forma production guidance by $\sim 150 \%$ to $25-27 \mathrm{MMboe}^{2}$. Lattice Energy will also deliver a step-change in operatorship capabilities and expertise, including gas processing and offshore production.


The transaction is financially compelling and value accretive across a broad range of metrics:

- ${ }^{\sim} 155 \%$ 2P reserves accretive on a per share basis (as at 30 June 2017).
- $\quad>60 \%$ operating cash flow accretive on a per share basis in the first full year of ownership.
- Return on equity on incremental equity raised of $30 \%+$.
- Ramping up to an annual run-rate of $\$ 20$ million of readily identifiable synergies (pre-tax) during the first full year of ownership ${ }^{6}$.
- Strong and stable cash flow generation underpinned by long term gas sales agreements with high quality counterparties.


## Quarterly update and transaction status

On announcement of the acquisition, Beach provided pro forma FY18 production guidance for the combined operations of $25-27 \mathrm{MMboe}^{2}$, showing the production from which Beach receives economic benefit. Accountability for Lattice production remains with Lattice until completion of the transaction, at which time Beach will obtain the economic benefit of production from 1 July 2017. The following overview of Q1 FY18 Lattice production is provided for information purposes. Upon completion of the transaction, further detail will be provided, as well as updated FY18 guidance (if required).

| Lattice Energy Production |  | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr Change |
| :--- | :---: | :---: | :---: | :---: |
| Cooper Basin | PJe | 4.1 | 3.9 | $(4 \%)$ |
| Otway Basin | PJe | 15.3 | 13.1 | $(14 \%)$ |
| Bass Basin | PJe | 2.1 | 2.5 | $\mathbf{2 2 \%}$ |
| Perth Basin | PJe | 1.2 | 1.3 | $\mathbf{2 \%}$ |
| Taranaki Basin | PJe | 4.9 | 4.8 | $(1 \%)$ |
| Total Production | PJe | $\mathbf{2 7 . 6}$ | $\mathbf{2 5 . 6}$ | (7\%) |
|  | MMboe | $\mathbf{4 . 7}$ | $\mathbf{4 . 4}$ |  |

Similarly, Beach provided pro forma FY18 capital expenditure guidance for the combined operations of $\$ 425-535$ million $^{7}$. Guidance comprises previously communicated Beach capital expenditure of \$220-260 million, and Lattice capital expenditure of \$205-275 million. In Q1 FY18, Lattice incurred capital expenditure of $\$ 35$ million. A detailed review of the Lattice capital program will be undertaken during integration, with any material changes to the program or guidance communicated accordingly.
Completion of the acquisition is subject to approvals from the New Zealand Overseas Investment Office and New Zealand Minister of Energy and Resources, as well as usual conditions precedent. Subject to approvals, completion is expected to occur in the next few months. To ensure day-1 readiness and undisrupted focus on day-to-day operations, dedicated transition teams have been appointed with integration planning well advanced. Appointments include oversight committees comprising representatives from Beach, Lattice and Origin, and external specialist resources.


Key Statistics (Beach standalone)

|  | September <br> Q1 FY17 | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr <br> Change |
| :--- | :---: | :---: | :---: | :---: |
| Production (kboe) | 2,905 | 2,502 | $\mathbf{2 , 5 5 3}$ | $2 \%$ |
| Sales Volumes (kboe) | 3,290 | 2,835 | $\mathbf{2 , 8 8 3}$ | $2 \%$ |
| Sales Revenue (\$ million) | 169 | 152 | $\mathbf{1 7 8}$ | $17 \%$ |
| Oil Price (\$/bbl) | 62.6 | 69.5 | $\mathbf{7 7 . 6}$ | $\mathbf{1 2 \%}$ |
| Net Cash (\$ million) | 94 | 198 | $\mathbf{2 3 0}$ | $\mathbf{1 6 \%}$ |

## Financial (Beach standalone)

## Sales volumes

Quarterly sales volumes of 2,883 kboe were $2 \%$ higher than the prior quarter and in line with increased production volumes. Gas liquids volumes were impacted by timing of shipments.

| Sales Volumes |  | September Q1 FY17 | $\begin{gathered} \text { June } \\ \text { Q4 FY17 } \end{gathered}$ | September Q1 FY18 | Qtr on Qtr Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Oil } \\ \text { (kbbl) } \end{gathered}$ | Own Product | 1,637 | 1,184 | 1,290 | 9\% |
|  | Third Party | 147 | 136 | 153 | 13\% |
|  | Total Oil | 1,784 | 1,320 | 1,443 | 9\% |
| Sales Gas and Ethane (PJ) | Own Product | 7.3 | 7.5 | 6.1 | (19\%) |
|  | Third Party | 0.1 | 0.1 | 0.1 | (17\%) |
|  | Total Gas | 7.4 | 7.6 | 6.2 | (19\%) |
| $\begin{aligned} & \text { LPG } \\ & \text { (kt) } \end{aligned}$ | Own Product | 10.7 | 8.5 | 19.8 | 132\% |
|  | Third Party | 0.4 | 1.3 | 0.7 | (46\%) |
|  | Total LPG | 11.1 | 9.8 | 20.5 | 109\% |
| Condensate (kbbl) | Own Product | 142 | 120 | 214 | 78\% |
|  | Third Party | 4 | 6 | 4 | (31\%) |
|  | Total Condensate | 146 | 126 | 218 | 72\% |
| Total Oil and Gas Sales (kboe) |  | 3,290 | 2,835 | 2,883 | 2\% |
| Total - Own Product (kboe) |  | 3,115 | 2,662 | 2,703 | 2\% |
| Total - Third Party (kboe) |  | 175 | 173 | 180 | 4\% |

## Sales revenue

Total sales revenue of $\$ 178$ million was $17 \%$ higher than the prior quarter, mainly due to a $12 \%$ increase in the average realised Australian dollar oil price to $\$ 78 / \mathrm{bbl}$, and a $9 \%$ increase in oil sales volumes. The average realised sales gas and ethane price increased by $3 \%$ to $\$ 6.38 / \mathrm{GJ}$.

| Sales Revenue (\$ million) | September Q1 FY17 | $\begin{aligned} & \text { June } \\ & \text { Q4 FY17 } \end{aligned}$ | September Q1 FY18 | Qtr on Qtr Change |
| :---: | :---: | :---: | :---: | :---: |
| Oil | 111.6 | 91.7 | 112.0 | 22.1\% |
| Sales Gas and Ethane | 43.9 | 47.4 | 39.5 | (17\%) |
| LPG | 5.0 | 5.3 | 11.6 | 118\% |
| Condensate | 8.4 | 7.8 | 14.7 | 89\% |
| Sales Gas and Gas Liquids | 57.3 | 60.5 | 65.8 | 9\% |
| Total Oil and Gas | 168.9 | 152.2 | 177.8 | 17\% |
| Total - Own Product | 158.9 | 141.6 | 166.1 | 17\% |
| Total - Third Party | 10.0 | 10.6 | 11.7 | 10\% |
| Average Realised Prices | September Q1 FY17 | $\begin{gathered} \text { June } \\ \text { Q4 FY17 } \end{gathered}$ | September Q1 FY18 | Qtr on Qtr Change |
| All Products (\$/boe) | 51.3 | 53.7 | 61.7 | 15\% |
| Oil (\$/bbl) | 62.6 | 69.5 | 77.6 | 12\% |
| Sales Gas and Ethane (\$/GJ) | 5.9 | 6.2 | 6.4 | 3\% |
| LPG (\$/t) | 446.9 | 543.6 | 566.2 | 4\% |
| Condensate (\$/bbl) | 57.6 | 61.6 | 67.6 | 10\% |

## Capital expenditure

Capital expenditure of $\$ 46$ million was in line with the prior quarter. As previously announced, Beach has commenced a multi-year capital program designed to fully appraise undeveloped reserve and prospective resource potential of the Cooper Basin.

| Capital Expenditure <br> (\$ million) | September <br> Q1 FY17 | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr <br> Change |
| :--- | :---: | :---: | :---: | :---: |
| Exploration and Appraisal | 6.5 | 14.3 | 10.5 | $(26 \%)$ |
| Development, Plant and <br> Equipment | 23.9 | 31.6 | 35.7 | $\mathbf{1 3 \%}$ |
| Total | $\mathbf{3 0 . 4}$ | $\mathbf{4 5 . 9}$ | $\mathbf{4 6 . 2}$ | $\mathbf{1 \%}$ |

## Liquidity

Beach increased net cash by $\$ 32$ million, with quarter-end reserves of $\$ 230$ million. Material cash flows included net operating cash flow of $\$ 90$ million, capital expenditure of $\$ 46$ million, dividend payments of $\$ 18$ million and receipt of proceeds from asset sales. Beach also utilised existing cash reserves to repay $\$ 150$ million in outstanding debt. Available liquidity at quarter-end is set out below.

| Liquidity <br> (\$million) | September <br> Q1 FY17 | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr <br> Change |
| :--- | :---: | :---: | :---: | :---: |
| Cash Reserves | 243.5 | 348.0 | 229.5 | $(118.5)$ |
| Drawn Debt | 150.0 | 150.0 | - | $(150.0)$ |
| Net Cash | $\mathbf{9 3 . 5}$ | $\mathbf{1 9 8 . 0}$ | $\mathbf{2 2 9 . 5}$ | $\mathbf{3 1 . 5}$ |
| Undrawn Facilities | 350.0 | 350.0 | 500.0 | 150.0 |

## Capital structure

Beach's capital structure as at 30 September 2017 is set out below.

|  | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr <br> Change |
| :--- | :---: | :---: | :---: |
| Fully Paid Ordinary Shares | $1,873,812,484$ | $1,873,812,484$ | - |
| Unlisted Employee Rights | $6,820,796$ | $6,820,796$ | - |

## Hedging

Beach seeks to hedge sufficient volumes to cover up to $70 \%$ of its total oil production costs and total corporate costs. A range of instruments is used to protect against downside oil price scenarios, and all hedging transactions since June 2016 have been entered into using zero-cost instruments. The following hedges were in place as at 30 September 2017.

| Hedges <br> (Brent) | $\begin{aligned} & \text { Collar } \\ & \$ 40-111 \\ & \text { per bbl } \end{aligned}$ | $\begin{aligned} & \text { Collar } \\ & \$ 40-102 \\ & \text { per bbl } \end{aligned}$ | 3-way Collar \$50-96 106 per bbl | Collar per bbl | 3-way Collar \$40-90100 per bbl | Total Hedged Volumes (bbl) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FY18 <br> (remaining) | 172,500 | 345,000 | 277,500 | 825,000 | 285,000 | 1,905,000 |
| FY19 | - | - | - | 285,000 | 577,500 | 862,500 |
| Total | 172,500 | 345,000 | 277,500 | 1,110,000 | 862,500 | 2,767,500 |

## Operations (Beach standalone)

## Production

Quarterly production of 2,553 kboe was $2 \%$ higher than the prior quarter and benefited from various field development and production optimisation activities. In Beach's operated Western Flank acreage, six artificial lift installations were commissioned and seven wells commenced production, including the first Western Flank horizontal oil well in the Bauer Field. Production was also supported by the capacity expansions at the Bauer and Middleton facilities commissioned in Q4 FY17. In the Cooper Basin JV, faster drill times and high drilling success rates have increased well inventory and enabled ongoing connection of new producers.

| Production | September <br> Q1 FY17 | June <br> Q4 FY17 | September <br> Q1 FY18 | Qtr on Qtr <br> Change |
| :--- | :---: | :---: | :---: | :---: |
| Total Oil (kbbl) | $\mathbf{1 , 6 3 1}$ | $\mathbf{1 , 2 8 0}$ | $\mathbf{1 , 3 1 6}$ | $\mathbf{3 \%}$ |
| Sales Gas and Ethane (PJ) | 6.1 | 5.9 | 5.8 | $(2 \%)$ |
| LPG (kt) | 14.2 | 13.4 | $\mathbf{1 5 . 1}$ | $\mathbf{1 3 \%}$ |
| Condensate (kbbl) | 117 | 103 | 124 | $\mathbf{2 1 \%}$ |
| Total Sales Gas and Gas Liquids (kboe) | $\mathbf{1 , 2 7 4}$ | $\mathbf{1 , 2 2 2}$ | $\mathbf{1 , 2 3 7}$ | $\mathbf{1 \%}$ |
| Total Oil and Gas (kboe) | $\mathbf{2 , 9 0 5}$ | $\mathbf{2 , 5 0 2}$ | $\mathbf{2 , 5 5 3}$ | $\mathbf{2 \%}$ |

## Cooper Basin

## Western Flank Oil - ex PEL 91

## (Beach 100\%)

Oil production of $858 \mathrm{kbbl}(9,330$ bopd) was $5 \%$ higher than the prior quarter and benefited from broad ranging field activities and the Q4 FY17 commissioning of the Bauer facility expansion.
Successful field activities included connection of six vertical wells (Arno-1, Bauer-20,-25, Bauer North-1, Pennington-5,-6) and Beach's first Western Flank horizontal well, Bauer-26. Bauer26 was brought online in August 2017 at an initial free-flow, water-free production rate of approximately 450 bopd. Artificial lift will be installed at Bauer-26 in H2 FY18, which is expected to provide a material uplift in production from this well.
Production optimisation projects included installation of four beam pumps, two electric


Artificial lift installation post Bauer Field pad drilling. submersible pumps, and a flowline connecting the Hanson Field to the Bauer to Lycium pipeline. This flowline has enabled oil production to be pumped from the Hanson facility, eliminating the need for up to four truck movements per day.

## Western Flank Oil - ex PEL 92

(Beach 75\% and operator, Cooper Energy 25\%)
Average daily oil production of 2,520 barrels (gross) was 5\% higher than the prior quarter, with total net oil production of 174 kbbl . Production benefited from optimisation projects undertaken at the Callawonga facility in Q4 FY17, including reconfiguration of the inlet manifold and header network.

Work commenced to complete and tie-in the five Callawonga Field development wells drilled in Q4 FY17. Three wells will be brought online as free-flow Namur Sandstone producers, and two as McKinlay Member producers. All wells are expected to commence production in Q2 FY18.

## Western Flank Oil - ex PEL 104 / 111

(Beach 40\%, Senex 60\% and operator)
Average daily oil production of 2,580 barrels (gross) was $9 \%$ higher than the prior quarter, with total net oil production of 95 kbbl . The Marauder-1 Birkhead Formation oil discovery was brought online late in the quarter at an initial production rate of approximately 650 bopd.

## Queensland Oil - ATP 299

(Beach 40\%, Santos $60 \%$ and operator)
ATP 299 contributed 34 kbbl (net) of oil production, $2 \%$ lower than the prior quarter.

## Western Flank Gas and Gas Liquids ex PEL 106; ex PEL 513 / 632

(Ex PEL 106: Beach 100\%; ex PEL 513 / 632: Beach 40\%, Santos 60\% and operator)

Commissioning of compression at the Middleton facility in Q4 FY17 enabled higher daily gas and gas liquids production rates in ex PEL 106. During the quarter, the Middleton facility reached a peak daily production rate of up to 4.8 kboe, which included gas liquids of more than 1.0 kboe.

Higher production rates were offset by a 12-day shut-in for scheduled maintenance at the Middleton facility. Consequently, quarterly production of 310 kboe ( 3,370 boepd) was $2 \%$ higher than the prior quarter and comprised sales gas of 213 kboe (down 5\%), LPG of 49 kboe (up 7\%) and condensate of 48 kboe (up $47 \%$ ).

Quarterly production included record monthly production achieved in September 2017.

Flowline installations commenced for connection of Mokami-1 and Crockery-1 into the Middleton facility, with initial production expected in Q2 FY18. Planning also progressed for a further expansion of the Middleton facility from, 25 MMscfd to 40 MMscfd . The Lowry- 1 gas discovery in ex PEL 106 this quarter provided the required level of support to proceed with this expansion.
Ex PEL 513 / 632 contributed 27 kboe (net) of sales gas and gas liquids production, down 7\% from the prior quarter due to natural field decline.

## Cooper Basin JV

(Various non-operated interests)
Sales gas and gas liquids production of 900 kboe (net) was $1 \%$ higher than the prior quarter and comprised sales gas of 764 kboe (down 1\%), LPG of 74 kboe (up 18\%) and condensate of 62 kboe (up 9\%). Drilling efficiencies have resulted in faster drill times and consequently more wells drilled. Combined with high drilling success rates, replenishment and ongoing connection of well inventory has supported stable production rates.

Oil production of 155 kbbl (net) was $12 \%$ lower than the prior quarter. Natural field decline was partially mitigated by recent production optimisation initiatives and recent well connections.

## Development

## Cooper Basin

## Western Flank Oil - ex PEL 91

## (Beach 100\%)

Beach successfully completed its first operated horizontal well in the Western Flank. Bauer-26 comprised a lateral section of approximately 400 metres and targeted the McKinlay Member, a thin sandstone overlaying the Namur Sandstone, with accumulations covering areas larger than the Namur fields. The McKinlay Member is a proven oil reservoir, however has not been subjected to focused development. The formation is considered suitable for geosteered horizontal drilling, with potential for high daily production rates. Bauer-26 was landed successfully within the McKinlay Member and intersected net oil pay of approximately 350 metres. The well was brought online in August 2017 with an initial free-flow production rate of approximately 450 bopd. Review of further McKinlay development locations is underway, with follow-up wells planned for H2 FY18 and FY19.

## South Australian Oil - Cooper Basin JV

(Fixed Factor Area JV: Beach 20.21\%, Santos 66.6\% and operator, Origin 13.19\%)
A four-well oil appraisal and development campaign was successfully completed in the Merrimelia Field, located approximately 35 kilometres north of the Moomba processing facility. The campaign included two development wells, Merrimelia-65 and Merrimelia-66. Merrimelia-65 was drilled to develop additional Birkhead Formation reserves on the southwest flank of the field. The well intersected 7.7 metres of net oil pay in the target zone and was cased and suspended as a future producer. Merrimelia-66 was a lateral well drilled on the southeast flank of the field to target the Murta Formation. The well was cased and suspended as a future producer following intersection of oil shows throughout the Murta reservoir.

## Queensland Oil - Cooper Basin JV <br> (Total 66 JV: Beach 30\%, Santos 70\% and operator)

A three-well oil development and appraisal campaign was successfully completed in the Zeus-Minos-Tennaperra Complex, located approximately 60 kilometres southwest of the Jackson oil facility. The campaign included one development well, Zeus-12, which aimed to accelerate production and enhance recoveries from the Birkhead Formation. The well intersected 4.5 metres of net oil pay within the primary target and was cased and suspended as a future producer.
(Naccowlah Joint Venture: Beach 38.5\%, Santos 55.5\% and operator, other partners 6.0\%)
The Irtalie East-6 oil development well is located approximately 25 kilometres southwest of the Jackson oil facility. The well was drilled from the existing Irtalie East-3 pad as a standalone deviated well and targeted the Birkhead Formation. Irtalie East-6 was cased and suspended as a future producer following intersection of approximately nine metres of net oil pay in the target formation. Well results are under review and may support follow-on drilling from the same location to different bottom-hole locations.

## South Australian Gas - Cooper Basin JV <br> (Fixed Factor Area JV: Beach 20.21\%, Santos 66.6\% and operator, Origin 13.19\%)

A two-well pad development campaign was successfully completed in the Jack Lake Field, located approximately 40 kilometres northwest of the Moomba processing facility. Jack Lake-6 and Jack Lake-7 targeted stacked sand intervals within the Patchawarra Formation, with the aim to access remaining gas in place at field boundaries. The wells intersected net gas pay of approximately 40 metres and 54 metres, respectively, and were cased and suspended as future producers.

## Queensland Gas - Cooper Basin JV <br> (Southwest Queensland JV: Beach $23.2 \%$, Santos 60.06\% and operator, Origin 16.74\%)

A two-well gas development campaign was successfully completed in the Roti Field, located approximately 35 kilometres east of the Ballera processing facility. The campaign followed successful drilling in the Roti South and Windigo fields in 2016 and subsequent mapping using updated depth conversions. Roti-5 and Roti-6 are located in the central section of the field and targeted gas reserves in the Epsilon and Patchawarra formations. Both wells were cased and suspended as future producers. Roti-5 intersected 8.5 metres of net gas pay in the Patchawarra Formation. Roti-6 intersected 2.4 metres of net gas pay in the Epsilon Formation and 9.6 metres of net gas pay in the Patchawarra Formation.

## Exploration and appraisal

## Cooper Basin

## Western Flank Gas

## PRL 26 (Beach 100\%); Ex PEL 92 (Beach 75\% and

 operator, Cooper Energy 25\%)Beach commenced its FY18 operated gas exploration and appraisal campaign, which is focused on the Southwest Patchawarra (SWP) and Permian Edge (PE) play fairways. Both fairways contain combination structural and stratigraphically trapped conventional gas targets in the Patchawarra Formation.

The second exploration well of the campaign, Lowry-1, is located in the SWP play fairway approximately four kilometres northwest of the Middleton facility in PRL 26. The well targeted stratigraphically trapped liquids-rich gas in the sands of the Patchawarra Formation. Lowry-1 intersected 3.3 metres of net pay and was cased and suspended as a future producer. A two hour drill stem test was conducted over the interval $2,586-2,593$ metres. The well flowed at 9.4 MMscfd on a 48/64" choke at 955 psi flowing pressure. Approximately 34 bbl of condensate was recovered at a rate of approximately 400 bopd. Analysis of test results confirms Lowry-1 as a new discovery which is not connected to nearby producing fields.

The discovery provides necessary support to progress phase 1 expansion of the Middleton gas facility from 25 MMscfd to 40 MMscfd .

The first exploration well of the campaign, Louth-1, was drilled in ex PEL 92, approximately five kilometres west of the recent Mokami discovery. The well was drilled to test the most westerly extension of the PE play fairway, which is a relatively underexplored western pinch-out of the Patchawarra Formation. Despite encouraging gas shows, reservoir quality was deemed insufficient for commerciality and the well was plugged and abandoned.

## South Australia Gas - Cooper Basin JV

(Fixed Factor Area Joint Venture: Beach 20.21\%, Santos 66.6\% and operator, Origin 13.19\%)

Koree South-2 was drilled as a standalone gas appraisal well, located approximately 50 kilometres southwest of the Moomba gas facility. The well was drilled to appraise potentially liquids-rich sands in the upper Patchawarra Formation, and to accelerate production from sands in the lower Patchawarra Formation, from which gas is currently produced at Koree South-1. Koree South-2 was cased and suspended as a future gas producer. Beach interpreted net gas pay of approximately eight metres in the upper Patchawarra sands and approximately two metres of net gas pay in the lower Patchawarra sands.

## Queensland Gas - Cooper Basin JV

(Southwest Queensland Joint Venture: Beach 23.2\%, Santos $60.06 \%$ and operator, Origin 16.74\%)
The final well of a six-well near-field gas exploration campaign in southwest Queensland was successfully completed. Okotoko North-1, the final well of the campaign was located on the Jackson-Naccowlah gas trend, approximately 20 kilometres northeast of the Ballera gas facility. The near-field exploration well tested a four-way dip closure analogous to those in neighbouring producing fields, and targeted the Toolachee and Patchawarra formations. The well intersected approximately eight metres of net gas pay across the primary targets and was cased and suspended as a future producer.

Okotoko North-1 is a new gas field discovery which presents potential for further development and appraisal wells, and follow-up near-field exploration drilling.

A four-well gas campaign consisting of two appraisal and two development wells commenced on the Costa / Judga Complex, located approximately 20 kilometres east of the Ballera processing facility. The first appraisal well of the campaign, Judga-4, was drilled to test the northern extent of the Judga Field and targeted the Patchawarra Formation as a primary objective and the Toolachee and Epsilon formations as secondary objectives. The well intersected 11 metres of net gas pay in the primary target and was cased and suspended.

## Western Flank Oil - ex PEL 104 / 111

(Beach 40\%, Senex 60\% and operator)
The Marauder-1 oil exploration well discovered a new field approximately two kilometres north of the producing Growler and Spitfire fields. The prospect was identified from the Mollichuta 3D seismic survey and drilled to test a seismic feature mapped at the same stratigraphic level as the Growler and Spitfire fields. Marauder-1 encountered oil shows within the target Birkhead Formation, with the operator's evaluation of logs indicating 8.6 metres of net pay across a 17.5 metre gross oil bearing interval. A drill stem test over the interval from $1,744.2$ to $1,764.6$ metres recovered 84 barrels of approximately 48 degree API oil. Oil flowed to surface after 79 minutes and continued to flow for the full 184 minute flow period on a $32 / 64$ " choke. The flow rate was calculated to be 655 barrels of oil per day, with no indication of formation water throughout the drill stem test. Marauder-1 commenced production in Q1 FY18.

Martlet North-2 was drilled as a deviated oil appraisal well targeting a Namur Sandstone accumulation approximately 250 metres northeast of the producing Martlet North-1 well. The well was drilled from the Martlet North-1 pad and aimed to improve overall field recovery. Martlet North-2 was plugged and abandoned due to lack of commercial pay.

## Western Flank Oil - ex PEL 91 (Beach 100\%)

The second well of a two-well oil appraisal campaign was completed in the Chiton Field, located approximately two kilometres south of the Bauer Field. The campaign was designed to appraise the extent and productivity of the McKinlay Member to the south and east of currently producing wells, where there has been limited appraisal drilling to date. The second well of the campaign, Chiton-5, was plugged and abandoned due to lack of commercial pay. Both wells were step-out prospects which helped define field boundaries. Results will assist with design of the final development plan for the Chiton Field.

Beach commenced its FY18 operated Birkhead oil exploration and appraisal campaign. The Birkhead Formation is a proven oil reservoir in Western Flank fields, however has not been subjected to play-wide, focused exploration and appraisal. The FY18 program aims to establish commerciality and size of existing discoveries, appraise field extensions, discover new accumulations and design cost effective development programs.

The first of up to three vertical exploration wells, Donington-1, was drilled to appraise a potential southern extension of the Kangaroo-1 discovery. The well intersected oil shows in the Birkhead Formation, however reservoir quality was insufficient for commerciality. The well was subsequently side-tracked to target seismic attributes further north. Similar reservoir quality was encountered and the well was plugged and abandoned.

The second vertical well of the campaign, Goldsmith-1, was drilled four kilometres north of Kangaroo-1 to test a potential northern extension of the Kangaroo Field. Oil shows were intersected in the target interval, however low reservoir quality resulted in side-tracking of the well approximately 400 metres west of the original target. The side-track did not intersect reservoir in the target interval and Goldsmith-1 was subsequently plugged and abandoned.

These vertical exploration wells were designed to test the true up-side of the Kangaroo Field. Based on the results, future drilling will be focused on the lower risk area in closer proximity to the Kangaroo Field. This will be appraised and developed along with existing Birkhead oil discoveries in the Stunsail, Pennington, and Stanleys fields. Drilling of development wells is planned to commence at the end of H1 FY18 upon completion of Beach's operated gas exploration campaign.

## South Australian Oil - Cooper Basin JV

(Fixed Factor Area JV: Beach 20.21\%, Santos 66.6\% and operator, Origin 13.19\%)
The four-well oil appraisal and development campaign in the Merrimelia Field included two appraisal wells, Merrimelia-63 and Merrimelia67. Merrimelia-63 tested reservoir limits of the Birkhead Formation along the northeast flank of the field as a primary objective, and the Mackunda and Murta formations as secondary objectives. The well intersected 1.2 metres of net oil pay in the primary target and was cased and suspended as a future producer. Merrimelia-67 was drilled on the southwest flank of the field and targeted the Murta Formation as a primary objective with secondary targets in the Mackunda, Birkhead, McKinlay and Namur reservoirs. The well intersected 3.3 metres of net oil pay in the primary target and was cased and suspended as a future producer.

## Queensland Oil - Cooper Basin JV (Total 66 JV: Beach 30\%, Santos 70\% and operator)

The three-well oil development and appraisal campaign in the Zeus-Minos-Tennaperra Complex included two appraisal wells, Zeus-11 and Tennaperra-5. Zeus-11 targeted the Birkhead Formation and was drilled to appraise the northwest flank of the Zeus structure. The well intersected 4.4 metres of net oil pay and was cased and suspended as a future producer. Tennaperra-5 also targeted the Birkhead Formation and was drilled to appraise the southern flank of the Tennaperra structure. The well intersected 4.7 metres of net oil pay and was cased and suspended as a future producer.

## Otway Basin

## South Australian Gas - PPL 62

(Beach 100\%)
Beach commenced drilling operations in the onshore Otway Basin with spudding of Haselgrove-3, a conventional gas exploration well. Haselgrove-3 is located on state forestry land approximately eight kilometres south of Penola. The well is proximal to Beach's Katnook gas processing facility and pipeline network, and the SEA Gas transmission system.

Haselgrove-3 is targeting the Pretty Hill and Sawpit sandstones. At quarter-end, Haselgrove3 was drilling ahead at 798 metres, with a total vertical depth target of approximately 3,900 metres.

Drilling of Haselgrove-3 is being supported by the South Australian Government through the Plan for Accelerating Exploration gas grant scheme, which aims to bring new gas to market within three years. Under the terms of the $\$ 6$ million grant, if a discovery at Haselgrove-3 is deemed to be commercial, Beach will enter bilateral negotiations with prospective South Australian customers for supply of gas at prevailing market terms.


## Cooper and Eromanga Basins



## Well results

| Area | Category | Wells <br> Spudded | Rig <br> Released | Successful <br> Wells | Success <br> Rate | Successful Wells |
| :--- | :--- | :---: | :---: | :---: | :---: | :--- |
|  | Oil - Exploration | 3 | 3 | 1 | $33 \%$ | Marauder-1 |
| Cooper <br> Basin | Oil - Development | 5 | 6 | 4 | $67 \%$ | Merrimelia-63, -67; <br> Tennaperra-5; Zeus-11 |
|  | Gas - Exploration | 3 | $\mathbf{5}$ | 5 | $100 \%$ | Bauer-26; Irtalie East-6; <br> Merrimelia-65, -66; Zeus-12 |
|  | Gas - Appraisal | 2 | 2 | 2 | $67 \%$ | Okotoko North-1; Lowry-1 |
|  | Gas - Development | 4 | 4 | 2 | $100 \%$ | Judga-4; Koree South-2 |
| Otway <br> Basin | Gas - Exploration | 1 | - | - | $100 \%$ | Jack Lake-6, -7; Roti-5, -6 |
| Total Wells | $\mathbf{4}$ | $\mathbf{2 4}$ | $\mathbf{2 3}$ | $\mathbf{1 8}$ | $\mathbf{7 8 \%}$ |  |
| All Exploration Wells | 7 | 6 | 3 | $50 \%$ |  |  |
| All Appraisal Wells | 8 | 8 | 6 | $75 \%$ |  |  |
| All Development Wells | 9 | 9 | 9 | $100 \%$ |  |  |

## Corporate and Commercial

## Portfolio rationalisation

Beach reviews its portfolio of assets on an ongoing basis to ensure assets align with the company's growth strategy and shareholder value objectives. Accordingly, during the quarter Beach entered into agreements for divestment or exit from various permits, as noted below.

- Beach entered into an agreement with Australian Gasfields Limited for the sale of oil exploration permits PL 184 and ATP 932. Completion by the end of January 2018 is expected, subject to satisfaction of various conditions precedent.
- Beach gave notice of its withdrawal from PEP 150 in the onshore Otway Basin, Victoria. Completion is subject to finalisation of assignment documentation.
- NOPTA approved the transfer of Beach's interest in WA-48-R in the Carnarvon Basin to an existing joint venture partner.


## Subsequent Events

## Issue of Annual Report and AGM notice of meeting

On 20 October 2017, Beach issued its 2017 Annual Report, Corporate Governance Statement, Sustainability Report and notice of meeting in relation to the AGM. The AGM will be held on Thursday, 23 November 2017 at 10.30am (Adelaide time). All documents can be found on Beach's website.

## Issue of fully paid ordinary shares

Pursuant to the institutional and retail components of the entitlement offer to partially fund the acquisition of Lattice Energy, 401,543,843 new fully paid ordinary shares were issued. As at 31 October 2017, Beach had 2,275,356,327 fully paid ordinary shares on issue.

## End Notes

1. Pro forma calculations as at 30 June 2017. ~200\% increase in $2 P$ reserves calculated as pro forma Beach and Lattice Energy 2P reserves divided by Beach's 2P reserves as at 30 June 2017. 2P reserves estimates of 75 MMboe attributed to Beach assets are extracted from Beach's announcement filed with the ASX on 18 August 2017. 2P reserves estimates of 836 PJe or 143 MMboe attributed to the Lattice Energy assets are extracted from Origin's 2017 annual reserves report included in Origin's 2017 full year report filed with the ASX on 16 August 2017 and 2P reserves estimate of 81 PJe ( 14 MMboe ) post rebalancing and acquisition of Otway Basin reserves extracted from Origin's announcement filed with the ASX on 11 September 2017 (Origin Benaris announcement). The conversion from PJe to MMboe is calculated as 5.83 MMboe per PJe. In accordance with ASX Listing Rules, Beach expects to announce its assessment of reserves and contingent resources attributable to the Lattice Energy assets after the Acquisition completes as at 30 June 2018.
2. Pro forma production calculation based on Beach's advised FY18 guidance as presented in Beach's FY17 Preliminary Full Year Results released to the ASX on 21 August 2017 combined with Beach's estimate of potential FY18 production range for Lattice Energy's assets.
3. Includes Cooper Basin Operated Senex (CBOS) - Senex operated PEL 637 and PEL 638 exploration joint venture.
4. Includes Halladale, Speculant and Vic/L1(v) Black Watch which are $100 \%$ owned by Lattice Energy and assumes a $95 \%$ interest in Otway (Thylacine, Geographe).
5. Includes a $39 \%$ operated interest in Trefoil, Rockhopper and White Ibis.
6. Annual run-rate of $\$ 20$ million synergies (pre-tax) post integration comprising overhead and corporate savings.
7. Beach's FY18 capital expenditure guidance per announcement to the ASX on 27 July 2017. Lattice Energy's FY18 capital expenditure expected to be in the range of $\$ 205$ million to $\$ 275$ million. A detailed review will be undertaken during integration.

## Glossary

| \$ | Australian dollars |
| :---: | :---: |
| AGM | Annual General Meeting |
| ATP | Authority to Prospect |
| bbl | Barrels |
| Beach | Beach Energy Ltd |
| Bcf | Billion cubic feet |
| bfpd | Barrels of fluid per day |
| boe | Barrels of oil equivalent - the volume of hydrocarbons expressed in terms of the volume of oil which would contain an equivalent volume of energy |
| bopd | Barrels of oil per day |
| Cooper Energy | Cooper Energy Ltd |
| Cooper Basin | Includes both Cooper and Eromanga basins |
| Cooper Basin JV | The Delhi operations, which incorporate the SACB JVs and SWQ JVs |
| Delhi | Delhi Petroleum Pty Ltd |
| EP | Exploration Permit |
| Ex PEL 91 | PRLs 151 to 172 and various production licences |
| Ex PEL 92 | PRLs 85 to 104 and various production licences |
| Ex PEL 101 | PRLs 173 and 174 and various production licences |
| $\begin{aligned} & \text { Ex PEL } 104 \text { / } \\ & 111 \end{aligned}$ | PRLs 136 to 150 and various production licences |
| Ex PEL 106 | PRLs 129 and 130 and various production licences |
| Ex PEL 107 | PRLs 175 to 179 |
| $\begin{aligned} & \text { Ex PEL } 513 \text { / } \\ & 632 \end{aligned}$ | PRLs 191 to 206 and various production licences |
| FY(18) | Financial year (2018) |
| GJ | Gigajoule |
| H(2) (FY18) | (Second) half-year period (of FY18) |
| kbbl | Thousand barrels of oil |
| kboe | Thousand barrels of oil equivalent |
| kt | Thousand tonnes |
| Lattice Energy | Lattice Energy Ltd |
| LPG | Liquefied petroleum gas |
| MMbbl | Million barrels of oil |
| MMboe | Million barrels of oil equivalent |


| MMscfd | Million standard cubic feet of gas per <br> day |
| :--- | :--- |
| NOPTA | National Offshore Petroleum Titles <br> Administrator |
| Origin | Origin Energy Ltd |
| PEL | Petroleum Exploration Licence |
| PEP | Petroleum Exploration Permit |
| PPL | Petroleum Production Licence |
| PRL | Petroleum Retention Licence |
| PJ | Petajoule |
| Q(1) (FY18) | (First) quarter of (FY18) |
| Qtr | Quarter |
| SACB JV | South Australian Cooper Basin Joint <br> Ventures, which include the Fixed |
| Factor Area (Beach 20.21\%, Santos <br> 66.6\%, Origin 13.19\%) and the <br> Patchawarra East Block (Beach <br> 17.14\%, Santos 72.32\% and Origin <br> 10.54\%) |  |
| Santos | Santos Ltd |
| Senex | Senex Energy Ltd <br> SWQ JVSouth West Queensland Joint <br> Ventures, incorporating various <br> equity interests (Beach 20-40\%) |

