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Andalas Energy and Power Plc*

21 June 2019

Stock Data

Share Price:	0.14p
Market cap.:	£0.85m
Shares in issue:	604.0m
Fully diluted equity:	729.3m

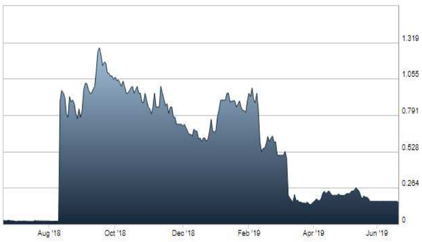
Company Profile

Sector:	Oil & Gas
Exchange:	AIM
Ticker:	ADL

Activities

Andalas is an AIM-quoted oil and gas E&P company with a portfolio of exploration and appraisal interests located in the UKCS and Indonesia.

Performance data



Directors

Robert Arnott:	Chairman
Simon Gorringe:	CEO
Graham Smith:	Non-Executive Director
Ross Warner:	Legal & Commercial

Important Notice

***Optiva Securities acts as joint broker to Andalas Energy and Power plc.**

Betun-Selo KSO agreement

Andalas has agreed to undertake a four-well workover programme on the producing Betun oil field located on the Betun-Selo KSO in Indonesia. There is scope for further development on the neighbouring Selo field and Andalas may drill a well in the event that the Betun work programme is successful. The initial work programme will be financed by a £0.5m drawdown on a £2.0m unsecured convertible loan note facility. Investors have a solid degree of downside protection in that the outstanding balance on the loan note will be repaid out of incremental production increases derived from the initial work programme.

Andalas has agreed to undertake a four well workover programme and provide operating services and personnel to PT Petroenim Betun-Selo (PBS) with regard to the Betun field, part of the Betun-Selo KSO. Betun currently produces c.70 bopd and the planned work programme is targeting at least an additional 80 bopd of incremental production in the low case. Andalas will earn 90% of hydrocarbon sales derived from incremental production until its services are repaid in full under the terms of its agreement with PBS.

Upon completion of the work programme outlined above, Andalas has an option to acquire a full participating interest in the Betun-Selo KSO which will be determined by a formula driven primarily by Andalas' total expenditure during the undertaking of the work programme.

The work programme will be financed by a £2.0m unsecured interest-free convertible loan note facility arranged by Optiva Securities. Of this, the initial four well workover programme will be financed by a £0.5m (c.$0.65m) drawdown in order to increase production from existing levels in the short term.

Betun-Selo KSO is comprised of two separate fields located on the island of South Sumatra (see later map). The Betun field, which has 2P reserves of 1.6 mmbbls was awarded to PBS by Pertamina in 2012 and has eight years remaining on the KSO. Current production is derived from four producing wells in the Talang Akar and Batu Raja formations which Andalas is targeting for workover activity and increased production.

The Selo field is not currently producing, however, the Talang Akar formation interval is located at considerably shallower depths compared to Betun and the company estimates that a new well targeting this historically productive horizon is likely to cost less than $1.5m. Selo is estimated by Andalas to contain mid case contingent resources of 2.6 mmbbls and mean prospective resources of up to 6.8 mmboe gross over three horizons.

In the event that the Betun work programme does not deliver the anticipated results and Andalas does not proceed, investors have a significant degree of downside protection as the outstanding balance on the loan note will be repaid from the proceeds of incremental oil production.

Although there are a significant number of variables at play within the company's near term operations, some of which are currently unknown such as Andalas' ultimate participating interest, we have established an indicative initial gross valuation for the Betun-Selo KSO of $26.4m. This is based on reserves and resources within the Talang Akar formation only. Should we include additional deeper targets within Selo, which could be targeted in the future, we believe that the KSO could be worth almost $34m (gross) on a conservatively risked basis, of which Andalas will hold a significant participating interest.

Betun-Selo services agreement

Andalas has agreed to undertake a work programme and provide operating services and personnel to PT Petroenim Betun-Selo (PBS)* for which PBS has agreed to pay for these services out of 90% of the proceeds of incremental oil production resulting from the services delivered.

The work programme as agreed by Andalas will comprise the workover of existing wells on the Betun field. This work will include perforating untapped zones, scale squeeze (dissolving and removing unwanted scale built up inside well tubing) of low production zones, installation of casing gas compressors and pumps with increased capacity. This programme is expected to cost approximately $650,000.

Option to acquire participating interest

PBS has granted an option to Andalas to acquire a participating interest in the Betun-Selo KSO which will be determined by the formula PI=WP/(WP+V) x 100% where:

- PI is the participating interest.
- WP is the total expenditure incurred by Andalas in the undertaking of the work programme outlined above.
- V is $3.6m plus the cumulative cash contributions made by CAV* to PBS from the effective date until the date of the exercise of the option minus the cumulative cash distributions made by PBS to CAV over the same time period.

If we assume that Andalas spends only $0.65m on the workover programme and the cumulative cash contributions between CAV and PBS equalise at zero, we estimate that Andalas would hold a participating interest of approximately 18% in Betun-Selo upon exercise of the option. However, any increase to Andalas' expenditure above the expected minimum of $0.65m increases the company's ultimate PI substantially (see later section of report for additional details).

The option to acquire a participating interest in the KSO may be exercised by Andalas at any time up to six months after completion of the four well workover programme. Upon exercise, any amount owing to Andalas shall cease to be repayable.

*The Betun-Selo contractor, PBS is controlled by PT Celebes Artha Ventura (CAV) which trades under the name Celebes Capital and claims to be the largest venture capital fund by assets under management in Indonesia.

The Betun-Selo KSO

The Betun-Selo KSO was awarded to PBS by Pertamina in November 2012 with a 15 year term, of which eight years are remaining. The KSO is comprised of two separate fields located in South Sumatra: the Betun field and the Selo field. These are outlined clearly on the map overleaf. The Betun field is located c.30km north-northwest of the city Parbamulih while the Selo field is situated approximately 60 km west-northwest of Parbamulih.

Betun was discovered in 1949 and field development commenced in 1950 with the last well, BTN-18 being drilled in 1986. The field was abandoned by state oil company Pertamina and picked up as a KSO by PBS in 2012.

The KSO (Kerja Sama Operasi) which translates as 'joint operation' is a form of PSC (Production Sharing Contract) which the Indonesian government instigated to encourage new players to pursue opportunities in smaller oil field developments.

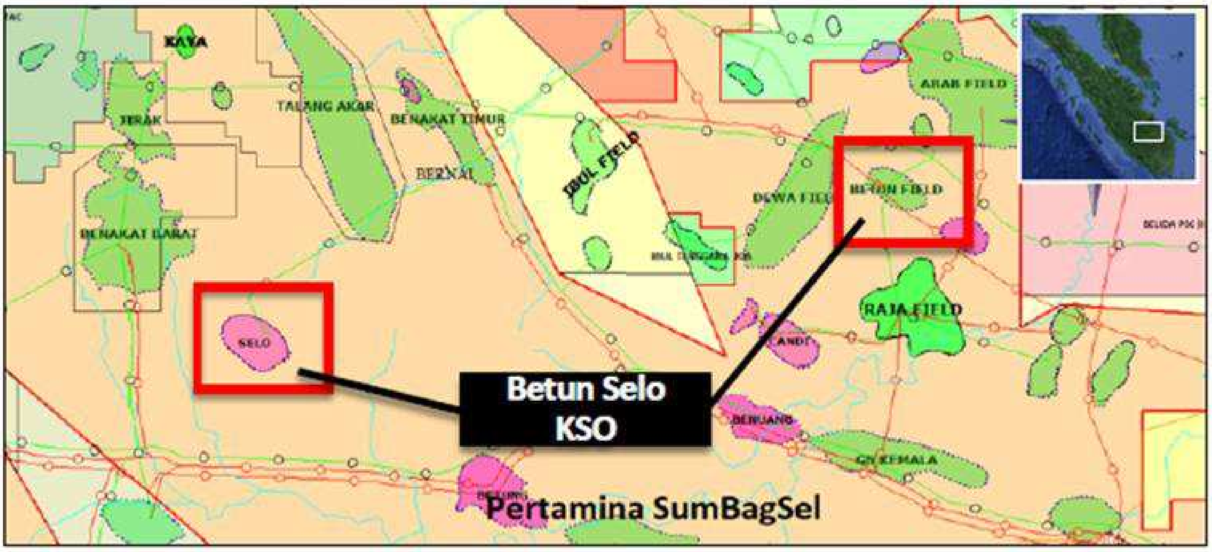
Primary targets within Betun

Andalas has identified the principal producing targets as the Talang Akar and Batu Raja formations at depths of 1,800m to 2,000m. There are currently four producing wells on Betun: BTN 01, 03, 04 and 14, one suspended well; BTN 17 and one water disposal well; BTN 5. The company states that BTN 17 could operate as possible gas producer to provide fuel gas for the field and an additional well; BTN 18 could also function as a second water injector on the field. Of the four production wells, BTN 03 is shut-in pending workover activities by Andalas.

All the Betun wells are produced by artificial lift, utilising sucker rod tubing pumps with beam pumping units (e.g. nodding donkeys) rather than natural reservoir pressure given the maturity of the field. Current production is approximately 70 bopd and the wells produce into a facility comprising an inlet manifold, a production separator (capacity of 5,000 barrels of fluid production – i.e. including water production), a tank farm with one 500 barrels capacity vertical storage tank, one 300 barrels horizontal storage tank and one 500 barrels shipping tank. There are also water treatment/injection pumps and an oil shipping custody transfer facility on site. All production is shipped to the Pertamina EP Adera Field through a 4-inch trunkline.

A 3D seismic survey was performed over Betun in 2015 and while Andalas does not anticipate further drilling activity, the results of the seismic suggest that additional drilling could be possible in the future.

Location of the Betun-Selo KSO licence



Source: Andalas

The Selo field

Selo was discovered in 1936 and developed in 1940 with the last well, Selo-20 drilled in 1959. The wells targeted the Talang Akar formation although this interval is considerably shallower in Selo with targets located in the 800m-900m range.

At present there are no accessible wellbores suitable for workovers and no production facilities on the field implying that Selo has been effectively abandoned. Nevertheless, analysis of recent passive seismic work in addition to reprocessing and analysis of existing 2D seismic data on the field has indicated targets in the Lower Talang Akar and Basement structures suitable for drilling. Andalas estimates that new wells could deliver 75-250 bopd of production.

Remaining reserves at Betun-Selo

The Betun Selo KSO is estimated to contain the following reserves and resources according to internal preliminary studies by Andalas.

Remaining reserves and resources on Betun-Selo

Field		**Reserves**			
		1P	**2P**	**3P**	
Betun[1] (Talang Akar formation)[3]	mmbbls	0.7	1.6	2.1	
		Contingent resources[2]			**COGS**
		1C	**2C**	**3C**	
Selo - Shallow target (Talang Akar formation)[3]	mmbbls	1.3	2.6	4.3	70%
		Prospective resources[2]			**COGS**
		Low	**Mean**	**High**	
Selo - Deep target (Lahat) Oil	mmbbls	0.9	1.3	1.7	60%
Selo - Deep target (Lahat) Gas	BCF	21.3	33.0	9.4	60%

1. Reserves volumes extracted from 2013 ITB GG&R Report provided by operator

2. Reserves and resource volumes estimated using guidance provided by the SPE. Refer to the March 2007 SPE/WPC/AAPG/SPEE Petroleum Resources Management System ("PRMS") and the 2011 SPE Guidelines for the Application of the PRMS.

3. TAF: Talang Akar Formation Source: *2013 ITB GG&R Report, **Internal estimates2018

Financing

Andalas will finance its work programme on Betun-Selo with a £2.0m unsecured interest free convertible loan note arranged by the company's broker, Optiva Securities. The facility providers have agreed to provide an immediate drawdown of £560,000 to fund the work programme as outlined previously. The commitment by the facility providers to subscribe for the loan notes may be called upon by Andalas when production exceeds 150 bopd and in agreed amounts. The facility is for group purposes and not restricted on its use within Andalas' wider activities.

At this stage, discretion over the size and timeframe of drawdowns is based upon mutual consent from both Andalas and Optiva, and the company may also terminate any commitments under the facility and make repayments of any amounts drawn without incurring penalties.

The initial commitment fee of £30,000 is to be paid on initial drawdown by Andalas as a result of acceptance of the facility and will be payable on the anniversary of that acceptance date in the event that commitments on the loan notes remain outstanding. Andalas shall also pay a drawdown fee of 5% on amounts drawn by the company and has agreed to issue Optiva with warrants permitting the broker to subscribe for new shares at an exercise price equal to a 5% discount to the 10-day volume weighted average share price of Andalas shares in an amount equal to 5% of the amounts drawn under the facility.

Any drawdown fees may be satisfied by the issue of new shares in Andalas, cash or a combination of both. In this regard, the shares will be valued at a 5% discount to the volume weighted average bid price of the shares over the ten days trading prior to the relevant date subject to a floor price of 0.15p per share.

The loan notes may be converted into ordinary shares on the election of Andalas or the note holder at any time at an issue price being equal to the higher of 0.15p and a 5% discount to the closing bid price on the day immediately prior to draw down. The final repayment date for any loan notes issued to the facility providers is 30 June 2020.

Project analysis and valuation

There are a significant number of variables at play within the company's near term operations, some of which are not yet known to us. However, in order to clarify the likely outcome of the Betun work programme, we believe it pertinent to apply a number of assumptions pertaining to the performance of the Betun field after the proposed workover programme and the terms of the services agreement with PBS. We have assumed that:

- The four-well workover programme is completed in the months of July and August 2019.
- Results of the workover programme are evident by September 2019.
- Incremental production from four producing wells (BTN 14, 01, 03, 04) delivers an additional 140-150 bopd.
- Assume that existing production from Betun is c.70 bopd on gradual decline implying total field output of c.210 bopd in the base case.
- Andalas draws down on convertible loan note facility to fund workover programme.
- Andalas receives a 90% share of the revenue from incremental production as payment under the services after the payment of First Tranche Production (currently 20%).
- Assuming no preliminary work on Selo at this stage, the balance of the loan note is repaid within approximately 12 months in the base case.
- Preliminary expenditure on Selo over the next six months will extend the repayment of the loan note.

Option to proceed on Selo based on Betun results

There is scope for further development on the neighbouring Selo field and we understand that Andalas may drill a well on the basis of results from the Betun work programme, currently unknown. We also note that in the event that the Betun work programme does not deliver the anticipated results, Andalas is unlikely to proceed with a well on Selo in the six month window following completion of the workover programme.

Although this implies that incremental production to repay the balance of the loan note will take longer than the initially assumed 12 months, the company will continue to receive incremental revenue for the period after the loan is repaid assuming field production exceeds 70 bopd, thus reducing overall risk for investors.

If the company elects to drill a new well on Selo, we estimate that the gross cost would be $1.0m-$1.5m for a well targeting the shallower Talang Akar interval and up to $2.0m for a deeper well probing the deeper Lahat oil and gas formations.

Potential value indicators

At this early stage, it is not possible to determine Andalas ultimate participating interest in Betun should it successfully complete the Betun workover programme and subsequently proceed with a participating interest in the KSO. However, we have endeavoured to illustrate the potential value of a range of participating interests in the KSO to Andalas in the event that the company's operational expectations are met.

Applying a calculated NPV for the 1P reserves on the Betun field of $11.36 per barrel, we have valued the 2P reserves at $18.2m on a gross basis. This valuation is predicated on at least $11.0m of historic costs recovered from production revenue during the remaining eight years of the KSO.

Although the Selo field has been previously produced, the field is essentially abandoned and ADL has applied contingent and prospective resource numbers at this stage as outlined earlier. Within these, we have elected to include only the contingent resources from the shallower Talang Akar oil horizon at this stage given that we believe that this is likely to represent the primary drilling target for the company assuming a successful outcome from the Betun workover programme.

We have applied a highly conservative risk factor of 60% to our indicative valuation for Selo to reflect the status of the field and the higher risk contingent resources in addition to the fact that we would assume that most of the NPV-enhancing historical costs will have been recovered with production from Betun. As such, our initial indication is that the shallow oil target on Selo could be worth $8.3m gross on a risked basis, a metric which is likely to be enhanced substantially in the event that a well is drilled on Selo or additional horizons are developed.

As noted previously, Andalas' ultimate expenditure is a key driver of the company's ultimate PI in the KSO and this is a metric that is also not possible to gauge currently. Nevertheless, we have illustrated the potential value of the Betun-Selo to Andalas of a range of possible interests as outlined below. Assuming that the cash contributions between CAV and PBS equate to zero, it is clear that the Andalas' ultimate interest and the subsequent valuation of its interest in the KSO escalates significantly as its contribution to the work programme increases.

Valuation indicators for Andalas' interest in Betun-Selo KSO

Work programme expenditure (W)	USD	650,000	900,000	1,150,000	1,400,000	1,650,000
V Factor	USD	3,600,000	3,600,000	3,600,000	3,600,000	3,600,000
Cash contributions (CAV to PBS)	USD	0	0	0	0	0
Cash contributions (PBS to CAV)	USD	0	0	0	0	0
Participating interest (PI)	%	18%	25%	32%	39%	46%
Indicative value of KSO	$m	26.4	26.4	26.4	26.4	26.4
Indicative value to ADL	**$m**	**4.8**	**6.6**	**8.4**	**10.3**	**12.1**

Source: Optiva estimates

Potential upside

As noted above, our initial assessment of the Selo field only factors in the shallow Talang Akar oil interval at this stage. If we include indicative value for the additional deeper oil and gas targets as outlined earlier, we believe the ultimate value of Betun-Selo could be a further $7.2m on a gross risked basis, elevating the value of the KSO to $33.6m at this stage.

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