

1 Nov 2016

DANAKALI LTD (DNK)

Site visit to Eritrea confirms world class SOP project

We recently returned from Eritrea to visit DNK's very large potash (SOP) project. We were very impressed with the country itself, and with the Colluli project. Management has a very good relationship with the Government, and we were able to have meetings with several ministers. It is clear that the Colluli project is high on the Government's development agenda. We visited the Massawa port facilities (a container port where Nevsun is currently exporting copper and zinc concentrate). The port is a reasonable size and appears to be running efficiently, with a laydown area already allocated to DNK. Massawa itself is a mid-sized industrial and local tourist city and should have a good pool of skilled labour for the Colluli mine.

Access roads a potential for cost savings

The road from Massawa to Colluli is in poor condition, but the Government is planning to upgrade it, and we saw some evidence that works have begun. The recent DFS assumes a 24hour cycle time for trucks based on current road conditions. This appears conservative based on actual trip times (it took our party ~6hours in 4WD), but is a reasonable average assumption given there would be significant delays on the current roads. The distance itself is only 180km, and is flat, sparsely populated and only travels through one modest township where speed could be limited. It would seem that relatively cheap upgrades could dramatically improve transport times. The DFS assumes logistic costs of US\$66/t ex shipping. If road conditions were eventually upgraded to allow Australian style road trains, we see potential for transport of ~US\$20/t (we assume DFS costs in our valuation).

Site unpopulated (and very, very large!)

The Colluli deposit is very large. At night the Yara (Danakil) and ICL (Afar Dallol) camps are visible across the border into Ethiopia in the distance. There is a modest and unassuming army presence given the border location (note there is no history of conflict in the area), and we had no problems with access. The locals appear to be free to move, most likely even across the border. We visited local communities who were very supportive of the mine. The region is arid with no formal agriculture. There is a government presence with schools and health clinics in most villages. We saw ruins of the railway operations from the original Italian potassium chloride (MOP) mine which was established in the region in the early 1900's and an old sulphur processing plant. Had the history of Eritrea and Italy/Europe been different, the Danakil region could already be industrialised. It is very well located to the coast, there is a good service corridor, there is potential for geothermal power, and there are several high quality minerals that could be economic once logistics are reduced (eg rock salt, gypsum).

Retain Speculative Buy with a price target of 73cps

Problems in the development of Yara and ICL (see [link](#)) projects regarding tax and government funded infrastructure and logistics, suggest that Colluli is the most likely to be developed project. The opening up of Eritrea to foreign investment gives someone the opportunity to develop a very large industrial salts/chemical business. We would not be surprised to see industry acquire the project given such potential. Otherwise, DNK may grow into a speciality minerals business (the closest ASX peer could be something like ILU.asx).

Share Price	\$0.385
Valuation	\$0.91
Price Target (12 month)	\$0.73

Brief Business Description:

Very large and economic potash (SOP) project in Eritrea. Mining licence expected in CY16.

Hartleys Brief Investment Conclusion

The long mine life and high quality SOP make the project attractive. Eritrea location suggest trade sale possible.

Chairman & MD

Seamus Cornelius (Chairman)

Paul Donaldson (MD)

Top Shareholders

Well Efficient	12.0%
JP Morgan	9.1%
Kam Lung Investment Dpt.	5.0%

Company Address

Level G, 31 Ventnor Ave
West Perth, WA, 6005

Issued Capital 221.9m

- fully diluted 253.3m

Market Cap A\$85.4m

- fully diluted A\$97.5m

Cash (30 Sep 16a) A\$10.6m

Debt (30 Sep 16a) A\$0.0m

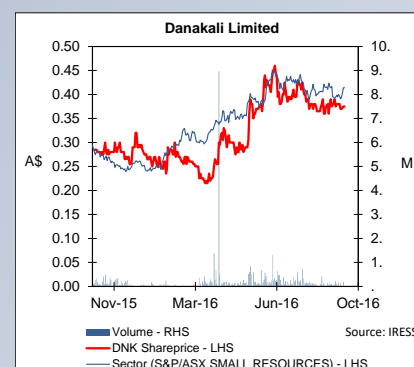
EV A\$74.8m

EV/Resource lb A\$0.53/t

EV/Reserve lb A\$0.64/t

	Prelim. (A\$m)	FY18e	FY19e	FY20e
Prod (Mt)	0.0	0.2	0.4	
Op Cash Flw	-2.9	32.8	76.8	
Norm NPAT	-14.9	17.3	57.9	
CF/Share (cps)	-2.8	3.2	10.8	
EPS (cps)	-3.8	4.3	14.1	
P/E	-13.9	11.9	3.6	

	Mt	Grade	Mt KzO
Resources (KzO)	1290	11.0%	141.6
Reserves (KzO)	1110	10.5%	116.7



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Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Danakali Limited, for which it has earned fees and continues to earn fees. See back page for details.

SUMMARY MODEL

Danakali Limited DNK						Share Price \$0.385	1 November 2016 Speculative Buy						
Key Market Information							Directors						
Share Price						\$0.385	Company Information						
Market Capitalisation - ordinary						85	Level G, 31 Ventnor Ave						
Net Debt (cash)						-\$11m	West Perth, WA, 6005						
Market Capitalisation - fully diluted						98	+61 8 6315 1444						
EV						76	+61 8 9486 7093						
Issued Capital						222	www.danakali.com						
Options (ITM)						31.4							
Issued Capital (fully diluted inc. all options)						253.3							
Issued Capital (fully diluted inc. all options and new capital)						589							
Valuation						\$0.91							
12month price target						\$0.73							
P&L							Top Shareholders						
	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21		m shares	% ord				
Net Revenue	A\$m	0.0	0.0	81.7	161.7	160.0	Well Efficient	26.6	12.0%				
Total Costs	A\$m	-4.7	-4.9	-45.7	-81.3	-79.5	JP Morgan	20.2	9.1%				
EBITDA	A\$m	-4.7	-4.9	36.0	80.5	80.5	Kam Lung Investment Dpt.	11.1	5.0%				
- margin		-	-	44%	50%	50%							
Depreciation/Amort	A\$m	-3.6	-12.0	-19.4	-23.2	-26.0							
EBIT	A\$m	-8.3	-17.0	16.6	57.2	54.5							
Net Interest	A\$m	1.7	2.1	0.7	0.6	1.2							
Pre-Tax Profit	A\$m	-6.5	-14.9	17.3	57.9	55.7							
Tax Expense	A\$m	0.0	0.0	0.0	0.0	0.0							
Normalised NPAT	A\$m	-6.5	-14.9	17.3	57.9	55.7							
Abnormal Items	A\$m	0.0	0.0	0.0	0.0	0.0							
Reported Profit	A\$m	-6.5	-14.9	17.3	57.9	55.7							
Minority	A\$m	0.0	0.0	0.0	0.0	0.0							
Profit Attrib	A\$m	-6.5	-14.9	17.3	57.9	55.7							
Balance Sheet							Reserves & Resources						
	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	Mt	Sylvinit	Carnallite	Kainitite	KCl	NaCl	
Cash	A\$m	154.4	52.6	18.6	45.6	77.6	TOTAL RESOURCE	1,290	265	398	627	11%	347
Other Current Assets	A\$m	0.0	0.0	7.8	15.5	15.3	Measured	304	90	80	134	11%	28
Total Current Assets	A\$m	154.4	52.6	26.4	61.1	93.0	Indicated	952	160	304	488	11%	180
Property, Plant & Equip.	A\$m	73.3	160.2	188.8	196.5	201.3	Inferred	34	15	14	5	10%	139
Exploration	A\$m	0.0	0.0	0.0	0.0	0.0	TOTAL RESERVE	1,110	253	360	497	11%	-
Investments/other	A\$m	64.7	64.7	64.7	64.7	64.7							
Tot Non-Curr. Assets	A\$m	138.0	224.9	253.5	261.2	266.1							
Total Assets	A\$m	292.4	277.5	279.9	322.3	359.0							
Short Term Borrowings	A\$m	-	-	-	-	-							
Other	A\$m	0.5	0.5	4.4	7.8	7.7							
Total Curr. Liabilities	A\$m	0.5	0.5	4.4	7.8	7.7							
Long Term Borrowings	A\$m	151.0	151.0	132.1	113.3	94.4							
Other	A\$m	-	-	-	-	-							
Total Non-Curr. Liabil.	A\$m	151.0	151.0	132.1	113.3	94.4							
Total Liabilities	A\$m	151.5	151.6	136.6	121.1	102.1							
Net Assets	A\$m	140.9	126.0	143.3	201.2	256.9							
Net Debt	A\$m	-3.4	98.4	113.5	67.7	16.8							
nd / nd + e		-2.5%	43.8%	44.2%	25.2%	6.1%							
Cashflow							Production Summary						
	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	Unit	Dec 19	Dec 20	Dec 21	Dec 22		
Operating Cashflow	A\$m	-4.4	-4.9	32.1	76.2	80.5	Mill Throughput	Mt	1.0	2.0	2.0	2.0	
Income Tax Paid	A\$m	0.0	0.0	0.0	0.0	0.0	Potash equiv	tonne	0.2	0.4	0.4	0.4	
Interest & Other	A\$m	1.7	2.1	0.7	0.6	1.2	Potash equiv (Attrib)	tonne	0.1	0.2	0.2	0.2	
Operating Activities	A\$m	-2.7	-2.9	32.8	76.8	81.7	Potash (SOP)	tonne	0.2	0.4	0.4	0.4	
Property, Plant & Equip.	A\$m	-76.7	-98.9	-47.9	-31.0	-30.8	NaCl (industrial)	tonne	0.0	0.0	0.0	0.0	
Exploration and Devel.	A\$m	0.0	0.0	0.0	0.0	0.0	NaCl (de-icing)	tonne	0.0	0.0	0.0	0.0	
Other	A\$m	-64.7	0.0	0.0	0.0	0.0	Conversion of resources not in reserves	%					
Investment Activities	A\$m	-141.4	-98.9	-47.9	-31.0	-30.8	Mine Life	yr	40.8	39.8	38.8	37.8	
Borrowings	A\$m	151.0	0.0	-18.9	-18.9	-18.9							
Equity or "tbc capital"	A\$m	129.4	0.0	0.0	0.0	0.0							
Dividends Paid	A\$m	0.0	0.0	0.0	0.0	0.0							
Financing Activities	A\$m	280.5	0.0	-18.9	-18.9	-18.9							
Net Cashflow	A\$m	136.3	-101.8	-34.0	27.0	32.0							
Shares							Costs						
	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	Unit	Dec 19	Dec 20	Dec 21	Dec 22		
Ordinary Shares - End	m	537	537	537	537	537	Cost per milled tonne	\$/t	81.6	76.3	74.6	74.5	
Ordinary Shares - Weighted	m	369	537	537	537	537	EBITDA / tonne milled ore	\$/t	72.0	80.5	80.5	79.6	
Diluted Shares - Weighted	m	369	537	537	537	537	Total cash costs	\$/t equiv.	457.5	406.3	397.6	397.1	
							Total cash costs	\$/t equiv.	345.7	311.5	308.1	309.7	
							- ex shipping	\$/t equiv.	288.0	252.1	247.8	248.9	
							C1: Operating Cash Cost = (a)	\$/t equiv.	408	381	373	372	
							- ex shipping	\$/t equiv.	332	304	295	294	
							(a) + Royalty = (b)	\$/t equiv.	408	382	373	372	
							C2: (a) + depreciation & amortisation = (c)	\$/t equiv.	602	498	503	515	
							(a) + actual cash for development = (d)	\$/t equiv.	887	536	527	526	
							AISC: (c) + Royalty	\$/t equiv.	602	498	503	515	
							(d) + Royalty	\$/t equiv.	887	536	527	526	
							C1: Operating Cash Cost = (a)	\$/t equiv.	308	293	289	290	
							- ex shipping (mine gate)	\$/t equiv.	251	233	229	230	
							Price Assumptions						
							Unit	Dec 19	Dec 20	Dec 21	Dec 22		
							AUDUSD	A\$/US\$	0.76	0.77	0.78	0.78	
							Potash (SOP) - landed India	US\$/t	620	620	620	620	
							NaCl (industrial)	US\$/t	90	90	90	90	
							NaCl (de-icing)	US\$/t	60	60	60	60	
							Hedging						
							Dec 19	Dec 20	Dec 21	Dec 22			
							Hedges maturing?	No	No	No	No		
							Sensitivity Analysis						
							Valuation						
							Base Case						
							0.92						
							Spot Prices						
							0.87 (-5.2%)						
							Spot USD/AUD 0.76, Uranium \$37/lb.						
							AUDUSD +/-10%						
							0.87 / 0.98 (-5.2% / 7.0%)						
							SOP +/-10%						
							1.28 / 0.56 (39.0% / -39.0%)						
							Production +/-10%						
							1.26 / 0.58 (37.1% / -37.1%)						
							Operating Costs +/-10%						
							0.79 / 1.05 (-13.9% / 13.9%)						
							Unpaid Capital (In the money)						
							Year Expires	No. (m)	\$m	Avg price	% ord		
							31-Dec-16	5.7	1.9	0.34	3%		
							31-Dec-17	4.6	1.3	0.28	2%		
							31-Dec-18	19.3	6.4	0.33	9%		
							31-Dec-19	1.8	1.0	0.55	1%		
							TOTAL	31.4	10.6	0.34	14%		
							Share Price Valuation (NAV)						
							Risked Est. A\$m		Est. A\$/share				
							50% Colluli (pre-tax NAV at disc. rate of 12%)		671				
							Other Exploration		75				
							Forwards		0				
							Corporate Overheads		-31				
							Net Cash (Debt)		11				
							Tax (NPV future liability)		-196				
							Options & Other Equity		7				
							Total		537				
									0.91				
Analyst: Trent Barnett +61 8 9268 3052 "tbc capital" could be equity or debt. Our valuation is risk-adjusted for how this may be obtained. Sources: IRESS, Company Information, Hartleys Research						Last Updated: 31/10/2016							

Background

Danakali is developing its large potash project in Eritrea. The project will initially focus on the production of sulphate of potash (SOP). The reserve is very large (1.1Bt @10.76% K₂O) with an expected mine life >200years, producing 425kt-850kt pa SOP at low cash costs (~US\$290/t CIF). The project is unique in its scale, open-pit mining, favourable combination of potassium bearing salts suitable for production of SOP, SOP-M and MOP and ability for low cost expansions to lift production.

Digestible capital requirement for DNK

Phase 1 capex is estimated at US\$298m. Mining is open pit mining using conventional truck and shovel and surface miners (no blasting required), with a low strip ratio (1.9x). The Company expects first production is possible in late CY18, but we are more conservative in our modelling. The Company expects the mining licence approvals before year end (CY16).

The project is via a 50/50 JV with the Eritrean Government (ENAMCO). The agreement states that DNK is responsible to fund 30% of the equity (implicitly this is a loan to the JV for the Governments share). The Company anticipates that the project can be funded with 70% debt, and hence DNK requires funds for the 30% equity (~US\$90m based on DFS estimates).

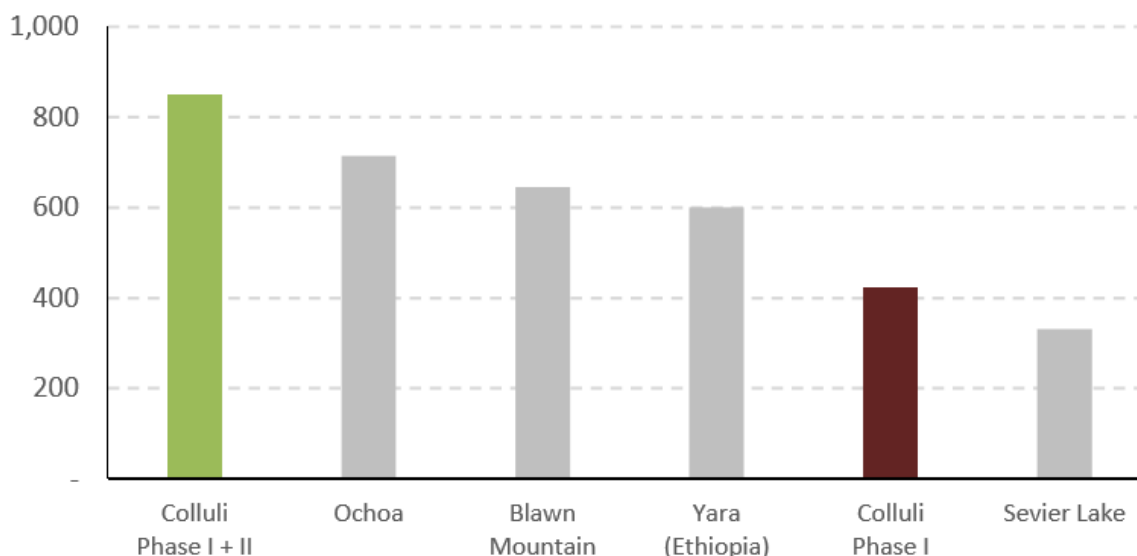
Hartleys estimates Stage 1 EBITDA ~A\$80m pa to DNK

We assume Stage 1 EBITDA of ~A\$80m pa (DNK share), which should more than double after Stage 2 (year 5). Our pre-tax NPV₁₂ for DNK is ~A\$500m (project NPV roughly double). Consequently, despite the large capital requirement, the project is highly economic.

Our DNK base valuation is 91cps. Using spot prices (US\$600/t), our pre-tax NPV₁₂ for DNK is ~A\$500m (project NPV roughly double), with Stage 1 EBITDA ~\$75m pa (\$150m pa to JV). Our spot price valuation is \$0.86.

Fig. 1: World class SOP project

Annual production (ktpa)



Source: DNK

Fig. 2: Asmara (the capital of Eritrea)



Source: Hartleys Research

Fig. 3: Massawa Port (DNK plans to export)



Source: Hartleys Research

Fig. 4: Allocated lay-down area for DNK and the neighboring Nevsun Laydown

Allocated DNK laydown



Operating Nevsun Laydown



Source: Hartleys Research

Fig. 5: Road from Massawa Port to Colluli

Country side is flat, and road upgrade relatively cheap



Wash-out points that should be easily fixed



Turnoff from public road to site access road



Source: Hartleys Research

Fig. 6: Colluli Processing Site (to be built on high purity gypsum!)



Source: Hartleys Research

Fig. 7: Colluli Resource (>70 year reserve, >200year resource)



Source: Hartleys Research

Fig. 8: Native Sulphur at Colluli – the presence of hardrock Kainite with Sylvinite is why Colluli can produce SOP cheaply



Source: Hartleys Research

Fig. 9: Historic infrastructure already surveyed routes for pipelines



Source: Hartleys Research

Fig. 10: Other projects are nearby, but over the border in Ethiopia



Source: DNK

VALUATION

We assume startup capex of ~A\$420m. Given the proposed financing structure, we assume 70% debt funding and 30% equity funding. We assume that 100% of cash flows are paid to the third party debt and then loan by DNK to the Government (~A\$60m) until the expansion in 2023, after which we assume DNK receives 50% of free cash flow (~\$100m pa DNK share). Given the very long mine life, the NPV is strong despite it being several years before DNK receives free cash flow.

We assume DNK issues ~330m new shares.

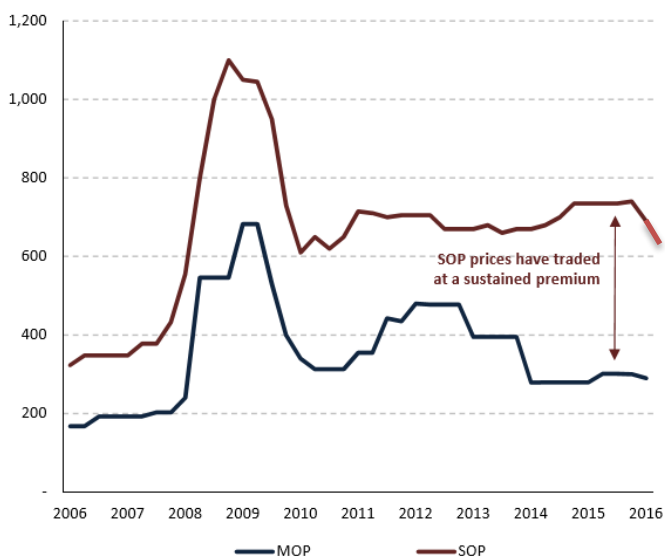
Fig. 11: Key assumptions and risks for valuation

Assumption	Risk of not realising assumption	Downside risk to valuation if assumption is incorrect	Comment
SOP prices ~US\$600/t	High	Upside / downside	Our valuation is sensitive to commodity price assumptions. Current spot prices would significantly increase our valuation.
Economic mine life of 40 years	Low	High (although also could be upside)	We believe our mine life assumptions are realistic/conservative based on current resources.
Debt funding	High	Extreme	We assume the project can be debt funded. We assume an interest rate of 12%.
Equity funding	High	Extreme	We assume DNK can raise the equity to fund its share, plus provide the loan for the JV partners share.
First production	High	Moderate	We assume first production in late CY19, this is later than Company guidance.
Conclusion			
<i>Given the early stage of the project development, we view DNK as high risk. The ability to fund the capital is the biggest threat to our valuation, in our view</i>			

Source: Hartleys

Fig. 12: Historic SOP prices

Historic MOP and SOP prices (US\$/t)¹



Source: DNK

PRICE TARGET

We have changed our twelve month price target to \$0.73 (from \$0.66 previously).

Price Target Methodology	Weighting	Spot	12 mth out
NPV base case (disc. rate 12.0%), debt/equity funded 70/30	50%	\$0.91	\$0.97
Divested pre-production (75% discount to NPV)	30%	\$0.59	\$0.66
Cash backing	15%	\$0.05	\$0.03
NPV spot prices debt/equity funded 70/30	5%	\$0.87	\$0.93
Risk weighted composite		\$0.68	
12 Months Price Target		\$0.73	
Shareprice - Last		\$0.385	
12 mth total return (% to 12mth target + dividend)		91%	

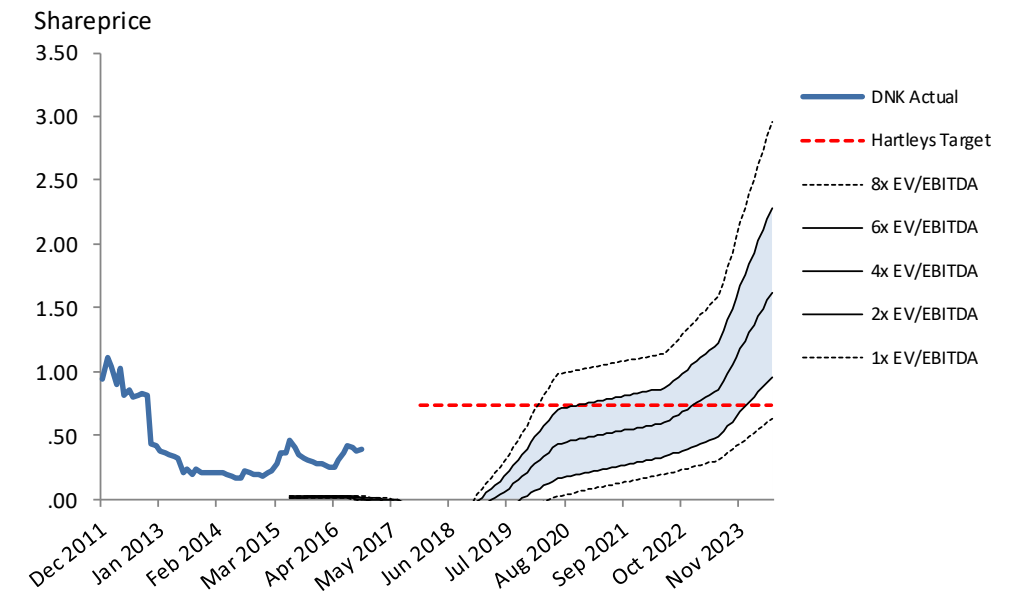
Source: Hartleys Estimate

RISKS

The key risks are funding, geological risk, construction risk, commodity prices, processing risk and country risk. Hence we view DNK as high risk.

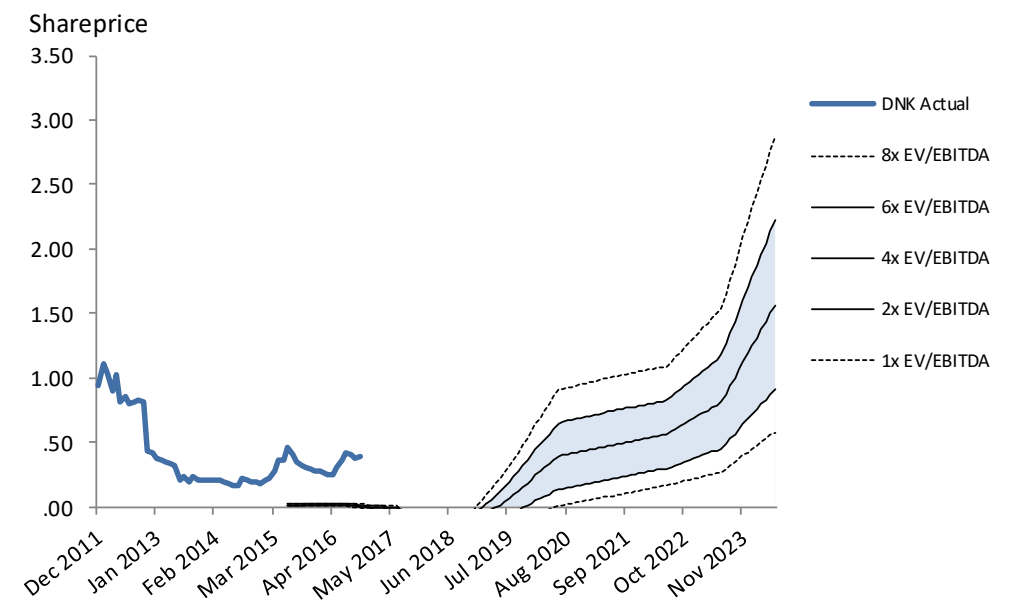
EV/EBITDA BANDS

Fig. 13: *Using Hartleys base case commodity forecasts*



Source: Hartleys Estimates, IRESS

Fig. 14: *Using spot commodity prices*



Source: Hartleys Estimates, IRESS

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Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

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Hartleys has completed part of capital raising for Danakali Limited ("Danakali") in the past 12 months for which it earned fees.

Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Danakali for which it will earn fees.

The analyst travelled to site at the expense of DNK, with all associated costs being covered by DNK.

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