

# Davenport Resources Limited (DAV)

2 November 2016

## Fast tracking a significant potash resource in Germany

### Proposing to list on ASX as "DAV" by mid-Dec 2016

- Fertiliser prices have underperformed over the past five years on the back of weak crop prices, and in the case of potash, poor producer discipline. However, global food security as a thematic is not one that is going to go away. **Hancock Prospecting's recent (25 October 2016) US\$300m investment in UK-listed Sirius Mineral's (LSE:SXX) Yorkshire Polyhalite Project, illustrates the growing strategic importance of the fertiliser space.**
- With limited opportunities for ASX investors to gain exposure to pure Potash plays, we believe that DAV offers exciting capital upside potential for speculative investors as the Project is progressively de-risked.
- The IPO offers 25-30 million shares @ A\$20cps to raise up to A\$6m.** Post listing, DAV will hold 100% of a very significant deposit in the South Harz Potash District in central Germany; a long-established potash-producing region.
- The Exploration Target for one of the exploration licences is estimated by the former Central Exploration Office of the East German potash mining industry (ERCOSPLAN) at between 292 and 1,285Mt of contained potash (K<sub>2</sub>O). DAV's near term (2-3 year) objective is to establish a JORC-2012 compliant Resource. Because of the historical regional data base and drilling record, a 2-3 hole confirmation drill program should be sufficient to determine a maiden Resource. Drilling is planned to commence in mid-2Q 2017.
- At an assumed (initial) 7.5% conversion of the Exploration Target, we forecast a maiden Inferred Resource of some 60Mt of K<sub>2</sub>O (contained).
- Employing a Resource value of A\$2.50/t K<sub>2</sub>O (a 50% discount to our calculated peer average price of A\$4.50/t K<sub>2</sub>O Resource – to account for the early-stage nature of project development), we suggest an **indicative value for Davenport's Küllstedt Project of A\$135m.**
- This equates to A\$1.56ps @ 78.5m shares (undiluted) or A\$0.87ps @ 156.2m fully-diluted.**
- There are potentially additional potash project opportunities in Europe that may be available to DAV.
- Market capitalisation of just A\$15.7m on listing, will increase to A\$31m upon further issue of up to 67.7 milestone share if mining approvals are obtained within six (6) years after project acquisition,** for a 500,000t per annum (minimum) potash mine on the South Harz Project. Note: the 67.7 million milestone shares are subject to 24 months escrow after issuance. In addition, there are ~6 million shares escrowed for 12 months from IPO date. Note that the milestone issues relate only to the potash projects, not the Southern Cross Bore IOCG project in the Northern Territory.
- The capital cost required for a mine of this size could be +\$US500m => DAV would require a JV partner (Note: we see K&S, Germany's largest producer operating in the South Harz region, as a natural JV partner).

See [Davenport Prospectus](#) for details of the IPO and Application Form.

**IPO Share Price A\$0.20ps**

**Target Price A\$0.87ps**

*(fully-diluted to 156.2 M shares)*

Recommendation:

**Speculative Buy**

Risk Assessment: **Higher**

### Resources – Potash

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DAV Capital Structure post IPO	Max subscription (A\$6m)	
	Number (m)	A\$m
Existing shares	12.0	2.4
To vendor (East Expl)	36.5	7.3
Equity Offer	30.0	6.0
<b>Undiluted</b>	<b>78.5</b>	<b>15.7</b>
Milestone shares	67.7	13.5
Options (max)	10.0	2.0
<b>Fully diluted</b>	<b>156.2</b>	<b>31.2</b>

### Potash Price (US\$/t)



Source: InfoMine



## Executive Summary

- The Davenport Resources ("Davenport"), (ASX: DAV) listing on ASX is scheduled for mid-Dec 2016. On completion of the IPO, **Davenport will acquire the Kllstedt and Grfentonna Potash Exploration Licences (450km<sup>2</sup>) situated in Germany's extensive South Harz Potash District.**
- A notable aspect of the IPO is the relatively low price being paid for very significant tonnages of potash. Project development will however take time.
- **Germany is the world's fifth biggest potash producer** and South Harz has historically been an important potash producing area, with regional production of up to 100Mt prior to 1993. Past mining and exploration within the Kllstedt licence include three vertical shafts (which operated up to 1924 (excised from the tenement); some 34 regional potash and oil exploration drill holes; and resource estimates carried out in 1964 and 1980.
- In March 2015, potash mining specialists ERCOSPLAN (formerly the Central Exploration Office for the East German potash mining industry) estimated an **Exploration Target for the Kllstedt Exploration Licence of between 4 and 5 billion tonnes, grading between 7.2 and 25% K<sub>2</sub>O (potash), for contained K<sub>2</sub>O of between 292 and 1,285Mt.** Although not yet finely determined, the tonnage is clearly significant. To put it into perspective, BHP's world-class Jansen Project in the Elk Point basin contains a reported Mineral Resource of 1,356Mt K<sub>2</sub>O (5.3Bt grading 25.6% K<sub>2</sub>O).
- **Funds raised from the IPO will be largely directed at a two-year drill program at Kllstedt to confirm historical drilling records and allow estimation of a JORC Inferred Resource.** ERCOSPLAN have been involved in the planning and location of the drill holes, while discussions with the Mining Authority for the Thuringia Region to seek the necessary permits required have commenced. Davenport also proposes to complete over the next two years a desktop review of the Grfentonna Exploration Licences with a view to estimating an Exploration Target.
- We estimate that the initial drilling programme could allow for some 7.5% of the Exploration Target to be converted to a JORC - compliant Inferred Resource. Based on a mid-point Exploration Target of 789Mt of K<sub>2</sub>O, **we forecast that Davenport could be in a position to announce a maiden JORC 2012 Inferred Resource estimate for the Kllstedt Project of ~60Mt K<sub>2</sub>O within 2-3 years.**
- We calculate that the limited number of ASX-listed pure potash plays with JORC-compliant Resources are valued at a m'cap-weighted average price of ~A\$4.50/t K<sub>2</sub>O (albeit within a wide valuation range of between A\$0.10 and A\$6.61/t). Assuming a Resource value of A\$2.25/t K<sub>2</sub>O (i.e., at a 50% discount to the peer average to capture the early-stage nature of the Project), we suggest a **target value for Davenport Resources of A\$135m** = A\$1.56ps @ 78.5m undiluted shares or A\$0.87ps @ 156m fully-diluted shares.
- Thus, and without attaching any value to the Grfentonna licence or any value to Davenport's 600km<sup>2</sup> of exploration licences near Alice Springs (Southern Cross Bore IOCG Project), **we suggest that Davenport Resources offers the potential for significant upside relative to the indicative IPO market capitalisation of ~A\$16m** (pre IPO costs and assuming A\$6m maximum subscription).

Exploration licences acquired in established potash producing area in Germany

IPO to fund 2-3 hole confirmation drilling program and convert (portion of) exploration target to JORC-compliant Resource

At a suggested A\$2.25/t K<sub>2</sub>O contained, a forecast maiden Resource of 60mt is valued at A\$135m (A\$0.87ps)

## Background

In August 2015, Davenport Resources (Davenport) entered into an agreement to acquire 100% of the share capital of East Exploration Pty Ltd - a private Australian company (Potash West 55% interest) - and owner of the South Harz potash project in Germany. A condition of the acquisition Term Sheet was Davenport's listing on the ASX, with the acquisition consideration consisting of 36,458,333 fully paid ordinary shares in Davenport (A\$7.29m @ A\$0.20ps), plus 67,708,334 in milestone shares (A\$13.54m). An option and exclusivity fee of A\$250,000 (used to further work at the project) has already been paid to East Exploration. In addition to the proposed acquisition of East Exploration, Davenport retains ownership of the Southern Cross Bore IOCG (Iron Ore Copper Gold) Project, 75Km north of Alice Springs, in the Northern Territory.

German assets bought for A\$7.29m (in Davenport scrip) plus a potential additional A\$13.54m in milestone shares if project moves to production

## South Harz Potash Project - Germany

East Exploration holds two exploration licences covering a combined area of ~472km<sup>2</sup> (Küllstedt 241km<sup>2</sup>, Gräfentonna 216km<sup>2</sup>) in the South Harz Potash District in central Germany. A well-developed country infrastructure is utilised by current regional potash producers, including K&S. Note that Germany (+4Mtpa) is the world's fifth largest potash producing country, behind China (5Mtpa), Belarus (7Mtpa), Russia (10Mtpa), and Canada (17Mtpa).

Figure 1: Location map



Exploration licences located within an established potash producing region in central Germany

Source: Davenport Resources

**Davenport’s initial primary focus will be directed at the Küllstedt Exploration Licence.** Past mining and exploration within the licence include three vertical shafts which operated up to 1924 (excised from the tenement), some 34 regional potash and oil exploration drill holes, and resource estimates carried out in 1964 and 1980. In early 2015, East Exploration commissioned German mining and engineering consultancy ERCOSPLAN (formerly the Central Exploration Office for the East German potash mining industry) to review and summarise the results of all available geological data relating to the licence, and to estimate an Exploration Target for the area. In March 2015, [Potash West announced that ERCOSPLAN estimated an Exploration Target](#) for the Küllstedt Exploration Licence of between 4 and 5 billion tonnes, grading between 7.2 and 25% K<sub>2</sub>O (potash), for contained K<sub>2</sub>O of between 292 and 1,285Mt.

Exploration Target of up to 1.3bn tonnes of potash (K<sub>2</sub>O) estimated by independent consultant in 2015

**Figure 2: Küllstedt Exploration Target**

Table 1 - Küllstedt Exploration Target			
Tonnage (MMT) <sup>1</sup>	Grade Range %K <sub>2</sub> O <sup>2</sup>	Grade Range %KCl <sup>3</sup>	Potash (K <sub>2</sub> O) Tonnage (MMT) <sup>4</sup>
4,055 – 5,141	7.2 - 25	11.8 – 41	292 – 1,285

1 - The volume of the potash seam was estimated from the geological model which has been constructed using historical drillhole data. The tonnage was derived from the style of mineralisation and its characteristic density which can vary between 1.83 t/m<sup>3</sup> and 2.32 t/m<sup>3</sup>. This amounts to a tonnage range of between 4,055 million metric tonnes and 5,141 million metric tonnes of mineralized rock.

2 - The grade range was estimated from assayed drill intersections of the potash seam which range from 7.2% to 25% K<sub>2</sub>O

3 - Conversion of assay K<sub>2</sub>O to KCl product multiply by 1.6393

4 - The tonnages of K<sub>2</sub>O were obtained by multiplying the tonnage of mineralized material with the corresponding K<sub>2</sub>O grade of the potash seam, which range from 7.2% to 25%. Accordingly, the minimum K<sub>2</sub>O tonnage is 292 million metric tonnes and the maximum K<sub>2</sub>O tonnage is 1,285 million metric tonnes.

Source: Potash West

## Proposed exploration strategy

The Exploration Target above is solely based on historical drill data, the work was of high quality but the lack of drill core precludes the declaring of a JORC compliant resource. Davenport’s immediate priority is to complete a series of confirmation drill holes in order to confirm the thickness and grade of the potash intersected in the historical holes, and to acquire existing seismic data over the area to confirm the continuity of the underlying stratigraphy.

Upon successful completion of the program, management believes it will be in a position to convert a part of the Exploration Target into a **JORC 2012-compliant Inferred Resource**.

The initial two-year drilling program consists of two (2) confirmation holes (Confirmation Hole 1: 650-700m, Confirmation Hole 2: ~980m) twinning existing exploration holes that have intersected potash. Depending on results, a third drill hole may be drilled in year 2. A correlation of the assay results from the proposed drill holes to the historic drill results would add a high degree of confidence in the credibility of other historical drilling and allow the group to “fast-track” an initial JORC-compliant Inferred Resource estimate.

ERCOSPLAN have been involved in the planning and location of the drill holes, while discussions with the Mining Authority for the Thuringia Region to seek the necessary permits required have commenced.

In addition, Davenport is looking to estimate an Exploration Target for the Gräfontonna licence via a thorough geological review of past exploration drilling.

The cost of the exploration programme (excluding a possible third hole) is some A\$3.4m. See table below. Work is planned to commence immediately after completion of the acquisition and ASX listing.

**Figure 3: Exploration project costings (A\$)**

		Year 1	Year 2
Küllstedt	Site preparation & logistics	400,000	200,000
	Drill rig mobilisation, drilling & consumables	1,240,000	800,000
	Technical services -geology, logging, wireline logging, assays	250,000	100,000
	Site rehabilitation	210,000	110,000
<b>Subtotal</b>		<b>2,100,000</b>	<b>1,210,000</b>
Gräfontonna	Geological review and exploration target generation	50,000	50,000
<b>Subtotal</b>		<b>50,000</b>	<b>50,000</b>
<b>Total</b>		<b>2,150,000</b>	<b>1,260,000</b>

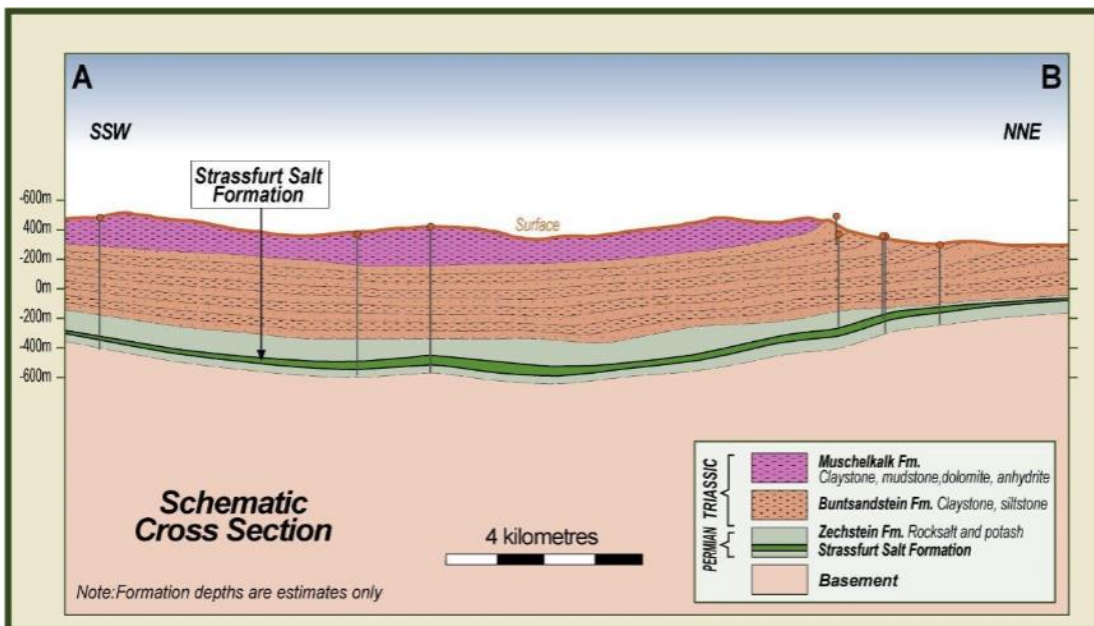
Source: Davenport Resources

## Geology

**The potash seams (Strassfurt Salt Formation) are contained within a Permian-age evaporite basin, some 500-1,000m below surface.** The overlying rocks consist of a marine sequence of sandstones, mudstones, marl, dolomite and siltstones. Within the Küllstedt licence, potash mineralisation ranges in thickness between 32m and 255m, with Carnallite (KMgCl<sub>3</sub> 6(H<sub>2</sub>O)) potash mineralisation prevailing in the northern part of the tenement, and Sylvite (KCl) potash mineralisation more dominant in the south.

Sylvite (KCl) is the preferred mineral in potash layers due to its higher inherent potassium content (~63% K<sub>2</sub>O)

**Figure 4: Küllstedt schematic cross section**



Source: Davenport Resources

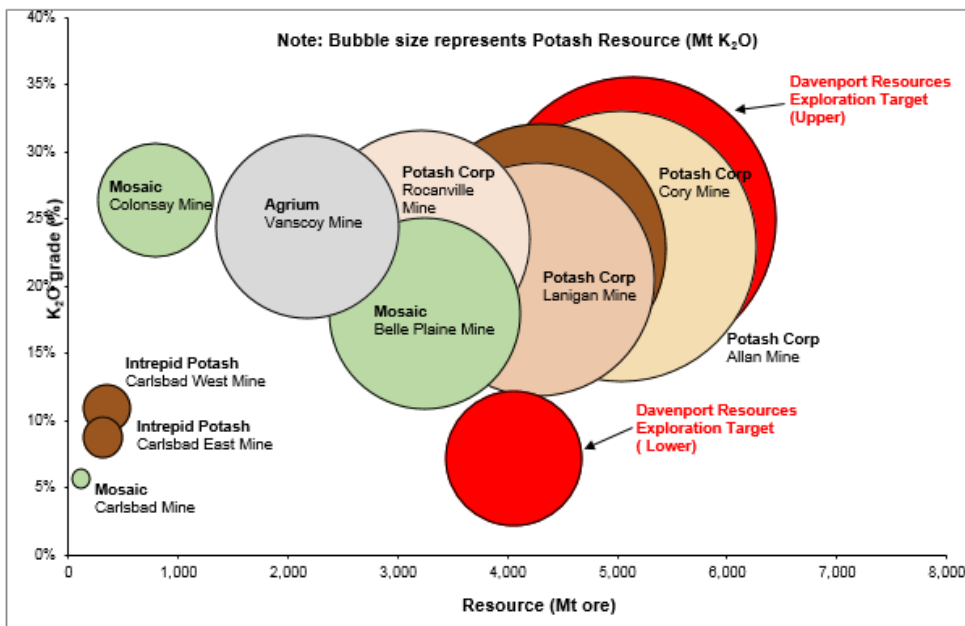
## Peer comparative

Successfully converting (in full) the group’s 292Mt (lower) to 1,285Mt (upper) K<sub>2</sub>O Exploration Target into a Resource would put the Kullstедt deposit firmly into “world-class” category. We note that the upper Exploration Target is some 5% below BHP Billiton’s (ASX: BHP) Jansen Project in the Elk Point basin which contains a reported Measured + Indicated Mineral Resource of 1,356Mt K<sub>2</sub>O (5.3Bt grading 25.6% K<sub>2</sub>O).

We calculate that the upper and lower tonnages of the Davenport Exploration Target straddle the Resources of some of the most important producing mines from listed industry heavyweights Potash Corporation (TSX:POT), Mosaic (NYS:MOS), and Agrium (TSX:AGU). See graph below.

Exploration Target is comparable in size to major “world class” Resources

**Figure 5: Davenport Exploration Targets versus Resources from key global producing mines**



Note: The Exploration Target (ranging between 292-1,285Mt potash) as estimated by ERCOSPLAN, is speculative, and cannot be directly compared to Resources estimated under JORC or equivalent international mineral reserve reporting standards.

Source: Davenport Resources Prospectus (original source: CSA Global), compiled by State One Stockbroking

Although a number of ASX-listed companies have reported JORC-compliant potash Resources (i.e. BHP, Orocobre, Potash West, Aguaia, Rum Jungle, Galaxy Resources), there are relatively few pure-play potash stocks on the local market. We calculate that ASX-listed potash stocks (with Resources) are valued at a m’cap-weighted average price of ~A\$4.50/t K<sub>2</sub>O (albeit within a wide valuation range of between A\$0.10 and A\$6.61/t).

**Figure 6: ASX-listed potash plays (A\$/t Resource)**

Code	Company	M’Cap (A\$m)	Resource (Mt K <sub>2</sub> O)	Resource value (A\$/t)
SO4	Salt Lake Potash	53	85	0.63
RWD	Reward Minerals	54	564	0.10
AMN	Agrimin	74	23	3.22
DNK	Danakali	83	142	0.59
HFR	Highfield Resources	403	61	6.61

Source: Companies, IRESS, compiled by State One Stockbroking

Note: SO4, RWD, AMN, and DNK Resources are for sulphate of potash (SOP). Note the wide range of Resource values. FYI Resources (ASX: FYI, M’Cap A\$5m) not included, as the group has no Resource estimate.

## Davenport Resources: indicative value

Assuming the near-term two-year drill programme converts 7.5% of the Exploration Target mid-point to an Inferred Resource, and employing a Resource value of A\$2.50/t K<sub>2</sub>O (a 50% discount to our calculated peer average price of A\$4.50/t K<sub>2</sub>O Resource – to account for the early-stage nature of project development), we suggest an **indicative value for Davenport’s Küllstedt Project of A\$135m**.

At the peer average Resource value of A\$4.50/t K<sub>2</sub>O (i.e., no discount), the valuation doubles to A\$271m.

**Figure 7: Küllstedt Project - valuation**

Indicative value for  
the Küllstedt  
Project: A\$135m

	Exploration Target		
	Lower	Upper	Mid-Point
Tonnes (Mt ore)	4,055	5,141	
Grade (% K <sub>2</sub> O)	7.2%	25.0%	
K <sub>2</sub> O (Mt)	292	1,285	789
<i>Estimated % of Exploration Target converted to Inferred Resource</i>	7.5%	7.5%	7.5%
=> Potential Resource (Mt K <sub>2</sub> O)	22	96	60
	@ A\$4.50/t K <sub>2</sub> O (peer average)		
=> Potential Resource Value (A\$m)	99	434	271
	@ A\$2.25/t K <sub>2</sub> O (50% discount to peer average)		
=> Potential Resource Value (A\$m)	49	217	135

Source: Davenport Resources, State One Stockbroking forecasts

Note: The first tranche of 33.85m milestone shares convert to fully paid ordinary shares if a JORC 2012-compliant Inferred Resource of at least 9Mt K<sub>2</sub>O (50Mt ore at or above 18% k<sub>2</sub>O) is announced within four (4) years after the acquisition of East Exploration. The second 33.85m tranche of milestone shares convert to ordinary shares if mining approvals, government and water and energy contracts, have been obtained to allow for the construction and operation of a 500ktpa (minimum) potash mine on the South Harz Project within six (6) years after the acquisition.

Thus, and without attaching any value to the Gräfontonna licence or any value to Davenport’s 600km<sup>2</sup> of exploration licences near Alice Springs (Southern Cross Bore IOCG Project), we suggest that Davenport Resources offers the potential for significant upside - relative to the indicative IPO market capitalisation - as the Exploration Target at Küllstedt is progressively converted into a Resource.

## South Harz Project risks

- ❖ **Geology:** There has been no field-based exploration completed on either the Küllstedt or Gräfontonna Exploration Licences since the 1990s. Geology-specific risks include potash seam thickness and grade variation, geometry and depth of the potash seam, faulting and geotechnical conditions.
- ❖ **Social and Environmental licence:** Tenements located in Germany will be subject to various political, economic and other risks and uncertainty.
- ❖ **Funding:** Whilst funding from the IPO should allow Davenport to meet the proposed early stage exploration objectives, additional significant funding will likely be required to expand the Resource and/or upgrade the Resource category (confidence), and to address geotechnical risks.

## IPO

Davenport has lodged a prospectus for an offer of up to 30 million shares at A\$0.20ps to raise A\$6m. The minimum subscription is 25 million shares to raise A\$5m.

**Figure 8: Indicative IPO timetable**

Initial lodgement of prospectus	31 August 2016
Record Date for Priority Offers	8 September 2016
Lodgement of replacement prospectus	24 October 2016
Opening date	26 October 2016
Priority Offers and General Offer Closing Date	25 November 2016
Broker Firm Offer Closing Date	25 November 2016
Shares allotted	6 December 2016
Despatch of holding statements	8 December 2016
Date of quotation on ASX (subject to ASX approval)	14 December 2016

Source: Company

Note: Please note that existing Potash West and Davenport shareholders at record date (8 September 2016) have a priority entitlement of A\$1m and A\$0.5m respectively.

## Capital structure

At the minimum and maximum subscription of A\$5m and A\$6m respectively, Davenport's indicative market capitalisation is calculated to be A\$14.7m and A\$15.7m respectively. \*

**Figure 9: Capital structure (excluding milestone shares and options)**

<i>Davenport shares:</i>	<i>Minimum subscription (\$5 million)</i>		<i>Maximum subscription (\$6 million)</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
Existing shares	12,000,262	16.4%	12,000,262	15.3%
Consideration shares for the acquisition of East Exploration ^	36,458,333	49.6%	36,458,333	46.5%
Equity Offer shares offered under this Prospectus (at 20 cents each)	25,000,000	34.0%	30,000,000	38.2%
<b>Total Shares</b>	<b>73,458,595</b>	<b>100%</b>	<b>78,458,595</b>	<b>100%</b>
Anticipated approximate market capitalisation at the Equity Offer price (20 cents):	14.69 million		15.69 million	

Source: Davenport Resources Prospectus

\* Note: Excludes two tranches of milestone shares totalling 67.7m shares; excludes 10m options (exercise price A\$0.25)



## Year 1 and Year 2 use of funds (assuming max subscription of A\$6m)

- K ullstedt A\$3.31m (56% of total spend): Site preparation and logistics, drill rig mobilisation, drilling & consumables, technical services, site rehabilitation.
- Gr afentonna A\$100k (~2% of total spend): Geological review and target generation.
- Southern Cross Bore (Australia) A\$248k (~4% of total spend): Tenement rent & fees, exploration and rehabilitation.
- Administration (A\$997k, 17%) & working capital (A\$450k, 7.5%)
- Costs of the offers and acquisition of East Exploration (A\$890k, 13.5%): broker commissions, ASX listing and ASIC lodgement fees, legal fees, experts' reports, share registry costs, IR and other.

56% of funds will be used to develop the K ullstedt Project

## Board *(Source: Davenport Resources Prospectus)*

### 6.1 Current and Proposed Board

As at the date of this Prospectus, the Board of the Company consists of Mr Christopher Bain (proposed Managing Director), Mr Rory Luff (Non-Executive Director) and Mr Angus Edgar (Non-Executive Director).

Mr Patrick McManus is proposed for election at the General Meeting on the basis that he will take office upon and subject to completion of the acquisition of East Exploration.

The Board at Listing will therefore consist of three current directors and Mr McManus.

Mr McManus will become the new Chairman.

#### (a) Proposed Director & Non-Executive Chairman

##### **Patrick McManus - BSc (Hons), MBA, FAusIMM, FAICD**

Patrick McManus has a degree in mineral processing from Leeds University and an MBA from Curtin University. A mining professional for more than 30 years, his work has taken him to many sites within Australia and overseas, including Eneabba and the Murray Basin in Australia, and Madagascar, Indonesia and the United States. During that time, Patrick has worked in operational, technical and corporate roles for RioTinto, RGC Limited and Bemax Resources Limited. He was a founding director and, from January 2007 to March 2010, managing director of ASX-listed Corvette Resources Limited. Patrick McManus is the Managing Director of Potash West NL.

Mr McManus is proposed to become the new Non-Executive Chairman of the Board.

The election of Mr McManus as a director is a proposed resolution at the General Meeting. Mr McManus will not take office as a director of Davenport until the acquisition is completed.

#### (b) Current Directors

##### **Christopher Bain - B App Sc (App Geol), Dip Geo Sc, MAusIMM, GAICD**

Mr Christopher Bain is a current Non-Executive Director of Davenport and will be appointed as Managing Director upon completion of the acquisition of East Exploration. Mr Bain is a geologist and mineral economist, with over 35 years experience including underground mining and exploration throughout Australia. He has lead mining research teams on both the buy and sell side and successfully managed a boutique resource equity investment fund. As a corporate advisor he has been instrumental in mining project divestitures and acquisitions, valuations, capital raisings and managed several initial public offers (IPOs) and ASX listings. Mr Bain is a non-executive director of ASX listed KGL Resources Ltd and Metalicity Ltd.

##### **Rory Luff – BCom**

Mr Rory Luff is a current Non-Executive Director of Davenport. He is the founder of BW Equities, a specialist Melbourne equities advisory firm and has over 15 years experience in the financial services industry. Rory has spent most of his career in the financial markets advising resources companies on capital raisings and financial markets strategy.

##### **Angus Edgar**

Mr Angus Edgar is a current Non-Executive Director of Davenport. He has been employed in the finance/stockbroking industry since 1985. During that time he has provided corporate advisory services to private and ASX listed companies and has been instrumental in the listing of several new companies onto the ASX. Mr Edgar has agreed to a six-month engagement as a Director following ASX listing of Davenport.

## Fertilisers - Background

A fertiliser is any material of natural (i.e. guano, manure) or synthetic origin that is applied to soils or to plant tissues (usually leaves), and which supplies the plant with nutrients.

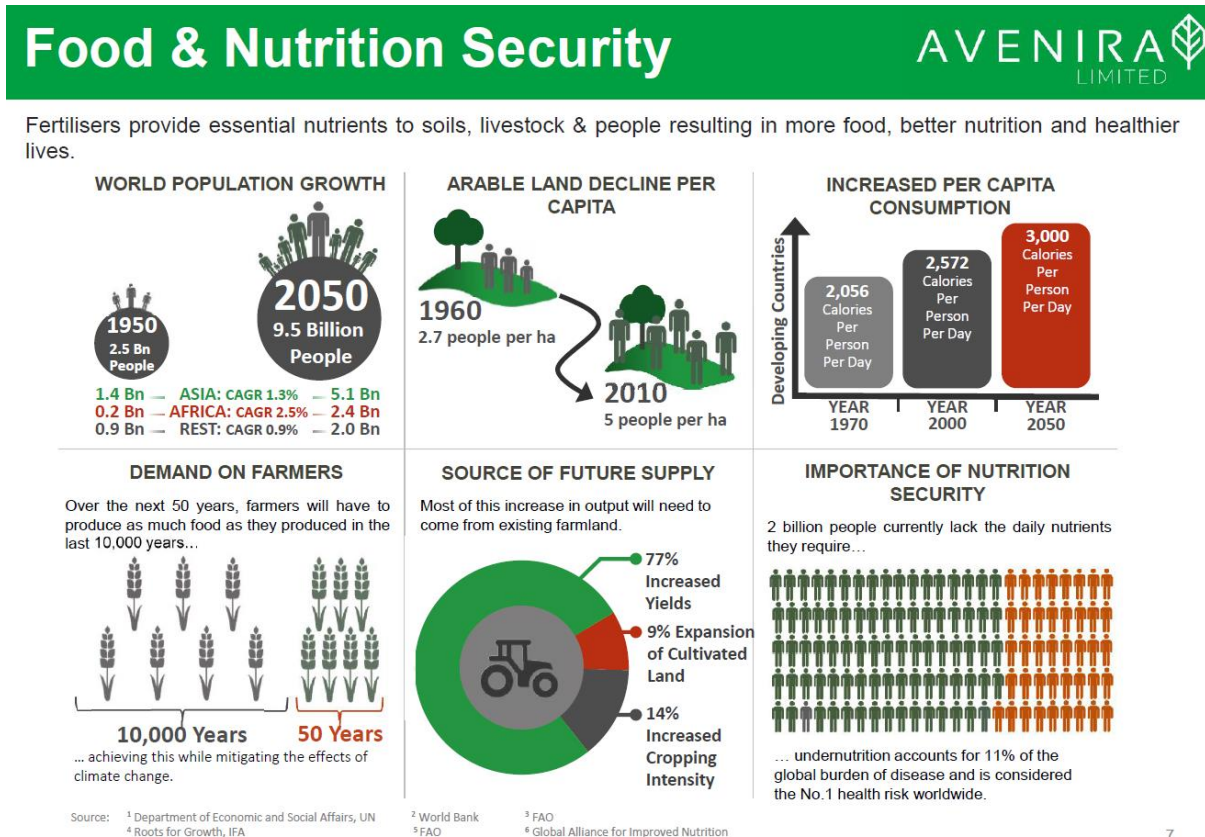
Fertilisers typically provide, in varying proportions:

- Three main macronutrients,
  - Nitrogen (N): leaf growth
  - Phosphorous (P): development of roots, flowers, seed, fruit
  - **Potassium (K):** stem growth, movement of water in plants.
- Three secondary macronutrients – Calcium, Magnesium, Sulphur.
- Micronutrients – Cu, Fe, Mn, Mo, Zn, B, other.

Fertilisers can be classified according to whether they provide a single nutrient (N, P, or K) or two or more nutrients (i.e., NPK fertilisers).

Over the past 40 years (1976-2016), N, P, and K consumption in fertilisers has grown at 1.4%, 1.7%, and 2.8%pa respectively. Global population growth, combined with economic growth in developing countries (leading to increased demand for more protein-rich diets) will undoubtedly require an increase in (global) agricultural productivity. This in turn, is expected to increase fertiliser demand above historical CAGRs.

Figure 10: Factors driving fertiliser demand



Source: Avenira

**Potash fertilisers**

Potash is any of various mined and manufactured salts that contain potassium (K). Common terminology used in the potash industry is tabled below.

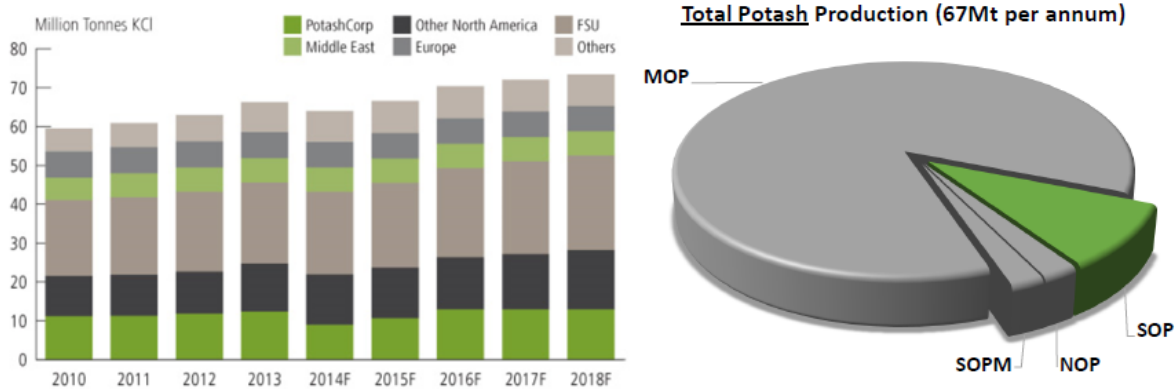
**Figure 11: Types of potash**

	Chemical or Mineral Name	Chemical Formula	Common Name
Element	Potassium	K	Potash
	Sodium	Na	Soda
Mineral	Sylvite	KCl	Potash salt
	Carnallite	KCl.MgCl <sub>2</sub> .6H <sub>2</sub> O	Potash salt
	Halite	NaCl	Common table salt
Ore	Sylvinitite	KCl,NaCl	Sylvite & Halite
	Carnallitite	KCl.MgCl <sub>2</sub> .6H <sub>2</sub> O, NaCl	Carnallite & Halite
Product	Potassium Chloride	KCl	Potash, Muriate of Potash
Unit of Measure	Potassium Oxide	K <sub>2</sub> O	Potash

Source: Davenport Resources Prospectus

Potash demand/supply is typically expressed in units of Potassium Chloride (KCl), also known as Muriate of Potash (MOP). Global potash production in 2015 was 67Mt of KCl, with the bulk (85%) in MOP form, 10% as Sulphate of Potassium (SOP), and the balance (5%) as Nitrate of Potash (NOP) and Sulphate of Potash Magnesia (SOPM).

**Figure 12: Global potash operational capacity (LHS) and production type (RHS)**

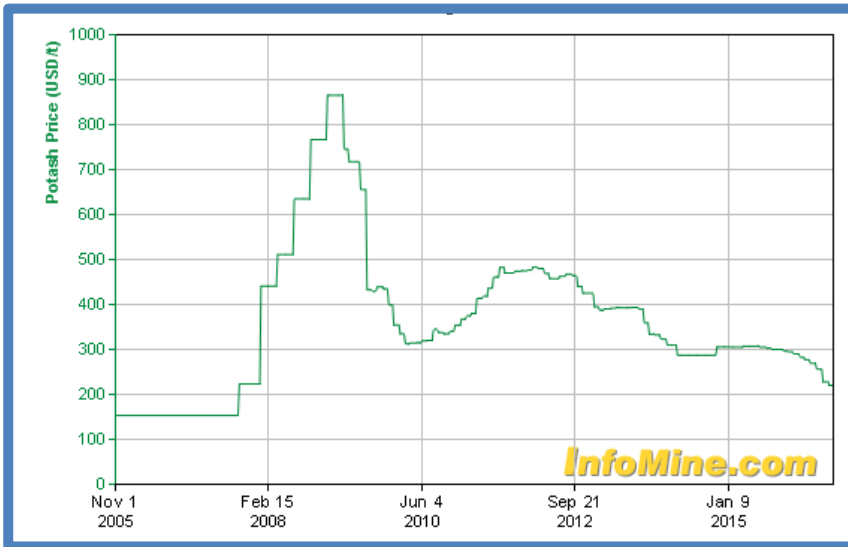


Source: PotashCorp, Agrimin

The current potash (KCL) price of US\$220/t is significantly below the 2008 high of ~US\$875/t, and almost half the \$400/t price when BHP Billiton made a (failed) US\$40bn bid to acquire PotashCorp in 2010 (Note: POT’s current m’cap is some US\$13.7bn). Prices for the key fertiliser ingredient tumbled following the 2013 breakup of the business/marketing alliance between the Republic of Belarus (Belaruskai) and Russia (Uralkali). This led to increased global production during a time of reduced demand, as farmers spent less on fertiliser amid low agricultural commodity prices.

While demand has been less robust in recent years, major potash producer PotashCorp believes that the long-term need for fertiliser to increase yield to meet food demand should restore demand to levels more in line with historical growth rates of ~3%pa (or 2Mt KCl pa).

Figure 13: Potash price (US\$/t), 2005-Present



Source: InfoMine

Along with an anticipated pick-up in demand, we note recent press reports indicating that weak [potash prices have prompted calls to recreate the Belaruskai-Uralkali \(BPC\) marketing operation](#). Increased cooperation amongst two players that control some 32% of global KCL capacity would probably benefit supply/demand dynamics. In addition, Saskatoon-based [Potash Corp. of Saskatchewan and Agrium Inc. of Calgary have confirmed they are in all-share merger talks](#) — a combination that would control some 22% of global KCL capacity and produce a fertilizer giant worth more than US\$36 billion (including debt). Increased producer discipline amongst major industry players could be a key factor in a commodity price recovery.

Offsetting this, there are several new sources of potash supply that could potentially keep potash prices under pressure. German K+S AG (FRA:SDF) is expected to begin producing potash at its Legacy project in Saskatchewan, Canada, later this year. Another large project, the Garlyk mining and processing factory in Turkmenistan, is set to kick off operations in early 2017.

Sirius Minerals (LON:SXX) has [already lined up contractors](#) to start building its vast potash mine beneath a U.K. national park. York mine is set to start construction in 2018, initially generating 10Mtpa of polyhalite, before it enters a second phase that will double that production to 20Mtpa.

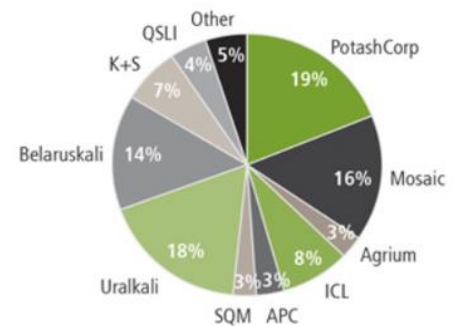
Russia's EuroChem is developing two potash mines — Usolskiy and VolgaKaliy, with an expected 2.3 million tons of annual production each in the first phase of development.

BHP's [Jansen Project](#) (60% complete) in Canada is looking to produce some 8Mtpa of phosphate after 2020 (although recent comments from management indicate that the project may be mothballed if prices do not recover before the end of the decade).

**In conclusion, we believe that potash (KCL) prices are likely to stabilise at current price levels, and to trend slightly higher and trade at between US\$200-US\$300/t over the next 2-3 years.**

Potash prices have been under pressure from poor producer discipline, new entrants, and slowdown in demand

Percentage of 2013 KCL Capacity\*



Source: PotashCorp

We expect prices to be trading between US\$200-300/t over the next 2-3 years

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