Onto something special

Metals & Mining

We initiate coverage on Adavale Resources with a 12-month target price of $0.04 – representing a 91.9% upside from the current share price of $0.021. The company is focused on the exploration of nickel resources at its Kabanga Jirani Nickel Sulphide Project in Kagera, Tanzania. Adavale's first two diamond drill (DD) holes at its Luhuma Central emerging prospect within its flagship Kabanga Jirani Nickel Sulphide Project intersected significant intervals of nickel sulphide mineralisation with nickel grades of up to 0.99%, validating a historically reported (1994) massive sulphide intersection by BHP. We believe Adavale's first two DD results at Luhuma Central have largely validated Adavale's exploration strategy and have built confidence in the prospectivity of the company's other priority target areas within the Luhuma trend.

Targeting prospects adjacent to the world's largest undeveloped nickel sulphide deposit: Adavale's Kabanga Jirani exploration licences are adjacent and along strike from Kabanga Nickel Deposit, one of the world's largest high-grade nickel sulphide deposits (58Mt at 2.62% nickel), indicating the geological prosperity of the project area for significant nickel sulphide discoveries. With the development of Kabanga Nickel Deposit towards production now underway, any possible nickel sulphide discoveries in the region, such as in Adavale's Kabanga Jirani Nickel Project, are likely to substantially benefit in terms of cost reductions through the infrastructure improvements in the area.

Nickel, a green energy metal with soaring demand: While nickel demand from stainless steel manufacturing is expected to continue to grow steadily, demand for nickel is expected to double by 2040 due to the metal's use in EV batteries. On the supply side, the lower environmental and operational cost of processing less abundant sulphide ores has made nickel sulphide deposits highly sought after in an ever-increasing ESG regulations environment.

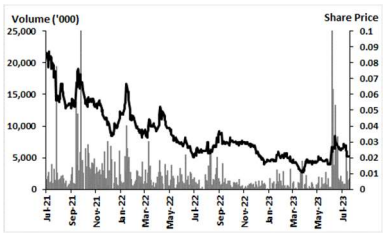
Valuation range of A$0.037–0.043 per share

We value Adavale at A$0.037 per share in a base-case scenario and A$0.043 in a bull-case scenario using a cost-based comparable approach. BHP's investment into the Kabanga Nickel Deposit valued the project at US$658m, 2.25x the cumulative exploration expenditure of US$293m at the project. Using a similar valuation multiple metric of 2.25x, times the cumulative exploration expenditure at Adavale's Kabanga Jirani of A$10.9m, we calculate the fair value of the project at A$24.5m in our base case scenario. The key risks to our investment thesis include funding risk, geological risk, jurisdiction risk and commodity price risk.

Adavale Resources Valuation (A$ m)	**Base Case**	**Bull Case**
Cumulated Exploration Costs	10.9	10.9
Valuation Multiple (x)	2.25	2.69
Kabanga Jirani Nickel Sulphide Project Value	24.5	29.4
Implied Share Price (A$)	**0.037**	**0.043**
Current Share Price (A$)	0.021	0.021
Upside (%)	*76.9%*	*106.8%*
Mid-point Target Price (A$)	**0.040**	
Price / NAV (X)	0.52x	

Date	19 July 2023
Current Price (A$)	0.021
Target Price (A$)	0.037-0.043
Price / NAV (x)	0.52x
Market Cap (A$m)	11.0
52-week L/H (A$)	0.009 / 0.042
Free Float (%)	79.2%
Bloomberg	ADD.AU
Reuters	ADD.AX

Price Performance (in A$)



Business description

Adavale Resources Limited (ASX: ADD) is an exploration company targeting projects in the "battery materials" space. The company is currently focused on both its 100% owned Kabanga Jirani Nickel Project and 2 Farm-in "Luhuma" licences adjacent and along strike from the world's largest undeveloped high grade nickel sulphide resource of 58Mt at 2.62% Ni. Adavale is also progressing exploration on its 100% owned uranium tenements in South Australia. Adavale Resources is based in West Leederville, WA.

Analyst

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Investment Rationale

Listed on the ASX (ASX: ADD), Adavale Resources is a nickel sulphide exploration company that holds 100% of the Kabanga Jirani Nickel Sulphide Project, a portfolio of 10 highly prospective granted licences covering c. 1,216km^2 along the East African Nickel Belt in Tanzania. The six southernmost licences are proximal to the world-class Kabanga Nickel Deposit (58Mt at 2.62% Ni). Adavale has farmed-in to two more highly prospective licences contiguous to its seven southernmost licences, adding a further 99km^2 to its portfolio. Adavale's licences were selected based on their strong geochemical and geophysical signatures from the previous exploration by BHP. Adavale also holds exploration licences for their sedimentary uranium potential within the northern part of the highly prospective Lake Frome Embayment in South Australia.

Adavale's first two diamond drill (DD) holes at its Luhuma Central emerging prospect within its flagship Kabanga Jirani Nickel Sulphide Project intersected significant intervals of nickel sulphide mineralisation with nickel grades of up to 0.99%, validating a historically reported (1994) massive sulphide intersection by BHP. We believe Adavale's first two DD results at Luhuma Central have largely validated Adavale's exploration strategy and have built confidence in the prospectivity of the company's other priority target areas within the Luhuma trend.

Targeting prospects adjacent to the world's largest undeveloped nickel sulphide deposit

Adavale's Kabanga Jirani exploration licences are adjacent and along strike form Kabanga nickel deposit, one of the world's largest high-grade nickel sulphide deposits, where 58Mt of nickel sulphide resources have been defined at a grade of 2.62% nickel.

From a geological perspective, Adavale's Kabanga Jirani tenements and the Kabanga project area are located within the East African nickel belt (Figure 1) which extends 1,500km along a north-east trend that extends from Zambia in the south-west, through the Democratic Republic of Congo, Tanzania and Uganda in the north-east. The intrusions that host the known potentially economic nickelbearing massive sulphide zones in the Kabanga project area are found within steeply dipping and overturned metasediments. The results of large scale early stage exploration techniques over Adavale's tenements in proximity to the Kabanga project area has indicated the presence of multiple mafic-ultramafic intrusions, which are the hosts to nickel bearing sulphides, at similar depths to the Kabanga deposit.

Numerous highly prospective priority nickel target areas have been generated at the Kabanga Jirani Nickel Sulphide Project

Adavale's drill targets at Kabanga Jirani have been selected based on coincident Heli-borne Electro Magnetic (HEM), gravity anomalies and localised previous exploration results.

Adavale has conducted gravity, EM and geochemical surveys over the vast majority of its tenements at the Kabanga Jirani Nickel Sulphide Project. In addition, the company has also acquired data for 25 historic (1990s) drill holes where geological logs indicated up to 7.43m of massive sulphides.

The combination of geochemical responses, gravity, and EM anomalies, as well as historical drilling data, has allowed the company to filter out the background noise from the extensive exploration data and vector into the areas of highest interest and generate numerous highly prospective priority drill targets. This means the company's ongoing drilling programs at the project have a high chance of resulting in significant nickel sulphide intersections being reported to the market in the short to medium term, in our opinion.

Very positive drilling results have been reported at the emerging Luhuma Central prospect

The Luhuma Trend is a recognised narrow strike extensive zone within Adavale's Kabanga North-East Licence that is host to a series of mafic-ultramafic intrusions from which several historical massive nickel sulphide intersections have been reported. As this area is known to contain

Adavale's both diamond drill holes at Luhuma Central intersected nickel-bearing massive sulphides.

prospective host rocks and known sulphide mineralisation, it is considered highly prospective. In May 2023, the Company secured a new PL known as Luhuma Central that hosted a number of historical drill holes and historically reported massive nickel intersections over 8m at 1.14% Ni. Therefore, Luhuma Central became a priority drilling prospect. Adavale's first two diamond drill (DD) holes at Luhuma Central intersected significant intervals of nickel sulphide mineralisation with nickel grades of up to 0.99%, validating a historically reported (1994) massive sulphide intersection by BHP. Third DD hole targeting massive nickel sulphides at Luhuma Central Prospect is currently underway.

Kabanga Nickel Deposit's development towards production bodes extremely well for Adavale

BHP and the Government of Tanzania are both backing Kabanga Nickel Deposit's development towards production.

BHP has acquired a 15% stake in the Kabanga Nickel Project. BHP has so far invested US$100m into the project (the deposit and the nickel refining technology) and is aiming to increase its stake in the project to 60.7% through additional investments to develop the world-class Kabanga Nickel Deposit. The Government of Tanzania (GOT) has also signed a binding Framework Agreement (FA) for the development of the Kabanga nickel deposit and subsequently earned a 16% interest in the project. **The development of Kabanga Nickel Deposit will bring infrastructure improvements to the area, along with the establishment of goods and service providers to support all aspects of the project, including mining, processing and refining. With this level of infrastructure established, feasibility studies for the development of any possible nickel sulphide discoveries in the region, such as in Adavale's Kabanga Jirani Nickel Project, are likely to substantially benefit in terms of cost reductions.**

Nickel, a green energy metal with soaring demand

The lower environmental and operational cost of processing less abundant sulphide ores has made nickel sulphide deposits highly sought after in an ever-increasing ESG regulations environment.

While nickel demand from stainless steel manufacturing is expected to continue to grow, the metal's use in EV batteries is considered the major driving factor for the nickel market growth, expected to double nickel demand by 2040. On the supply side, while there's no shortage of nickel resources on earth, the majority of these resources are laterite ores, which require nickel recovery processes that entail high environmental costs. This has made less abundant nickel sulphide ore resources highly sought after due to their lower environmental and operational cost of processing.

A cost-based comparable approach indicates Adavale is trading at a significant discount to its neighbouring project

Adavale's ongoing drilling at Kabanga Jirani provides a continuous news flow and increases chances of potentially significant nickel sulphide intersection at the project being reported, leading to a potentially significant re-rating in the company's share price.

We value Adavale at A$0.037 per share in a base-case scenario and A$0.043 per share in a bull-case scenario using a cost-based comparable approach. Our target price range indicates substantial upside potential to the current share price of A$0.021 per share. Currently, Adavale's exploration investment into the Kabanga Jirani Nickel Sulphide Project is being valued below the implied valuation of the Kabanga Nickel Deposit compared to the exploration investment leading to the discovery and defining resources at the project. BHP's investment into the Kabanga Nickel Deposit valued the project at US$658m, 2.25x the cumulative exploration expenditure of US$293m at the project. Using a similar valuation multiple metric of 2.25x, times the cumulative exploration expenditure at Adavale's Kabanga Jirani of A$10.9m, we calculate the fair value of the project at A$24.5m in our base case scenario. Given the potential cost benefits to Kabanga Jirani from the development of the Kabanga Deposit, we have estimated a 20% higher valuation in our bull case scenario.

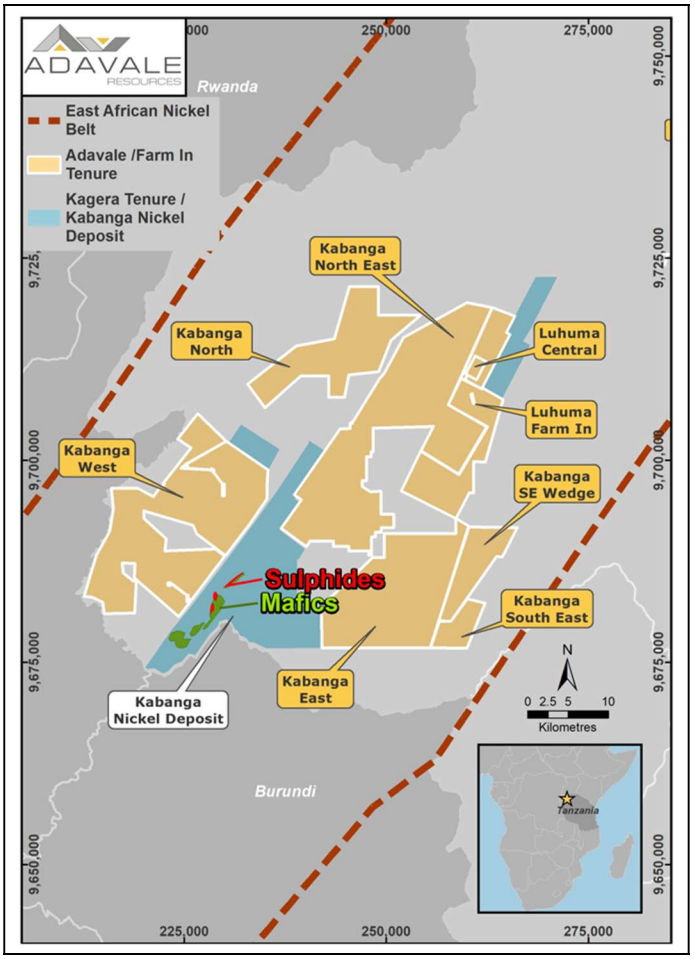
The key risks to our investment thesis include funding risk, geological risk, jurisdiction risk and commodity price risk.

The key risks to our investment thesis include geological risk, commodity price risk, jurisdiction risk and funding risk, as Adavale does not generate cash flows currently and is reliant on capital raisings to fund its operations. We believe Adavale's share price can potentially re-rate towards our target price range in the next twelve months by an improving macroeconomic environment and potentially pleasing drilling results at the Kabanga Jirani Nickel Sulphide Deposit.

Kabanga Jirani — Adavale's flagship Nickel Sulphide Project

Adavale's 100% owned Kabanga Jirani Nickel Project is located in Kagera, Tanzania, and comprises a portfolio of 10 highly prospective granted licenses covering c. 1,216km^2 along the Karagwe-Ankolean belt in Tanzania. The seven southernmost licenses are proximal to the world-class Kabanga Nickel Deposit (58Mt at 2.62% Ni). Adavale has farmed-in to two more highly prospective licenses contiguous to its seven southernmost licenses (Luhuma Farm-in), adding a further 99km^2 to its portfolio to 1,315km^2. Adavale's licenses were selected based on their strong geochemical and geophysical signatures from the previous exploration undertaken by BHP.

Figure 1: Adavale's Kabanga Jirani and Luhuma farm-in licenses



Kabanga Jirani tenements are proximal the world-class Kabanga Nickel Deposit (58Mt at 2.62% Ni).

Source: company

Targeting prospects adjacent to the world's largest undeveloped nickel sulphide deposit

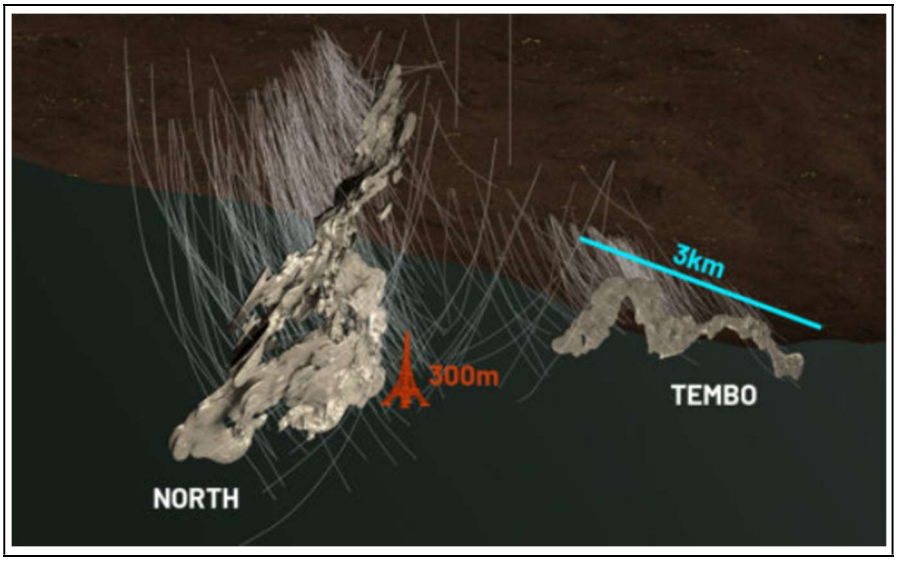
Adavale's Kabanga Jirani exploration licences are adjacent and along strike form Kabanga nickel deposit, one of the world's largest high-grade nickel sulphide deposits[1] (Figure 1), where 58Mt of nickel sulphide resources have been defined at a grade of 2.62% nickel.

[1] According to Lifezone Metals, the current majority owner of the Kabanga Nickel Project.

According to the Kabanga Mineral Resource Estimate as at 15 February 2023, released by Lifezone Metals, Kabanga project's majorty owner by a c. 70% stake in the project, the majority of the resources defined at the Kabanga Nickel Project are in the higher confidence Measured and Indicated categories, containing an average nickel grades of 2.62% and copper grades of 0.35% and cobalt grades of 0.19%2. Lifezone has also reported a recovery percentage of 87.2% for nickel, 85.1 for copper and 88.1% for cobalt.

Lifezone has reported that more than US$293 million has been spent by the previous owners of the Kabanga project, Glencore Canada Corporation and Barrick Gold Corporation, to accurately delineate the ore body (Figure 2), enabling an accelerated UDFS (Updated Definitive Feasibility Study) for an underground mining operation at the project.

Figure 2: The nickel sulphide ore body defined at the Kabanga Project



Source: Lifezone Metals

Kabanga Jirani tenements are located in a favourable geological setting for potential nickel sulphide discoveries.

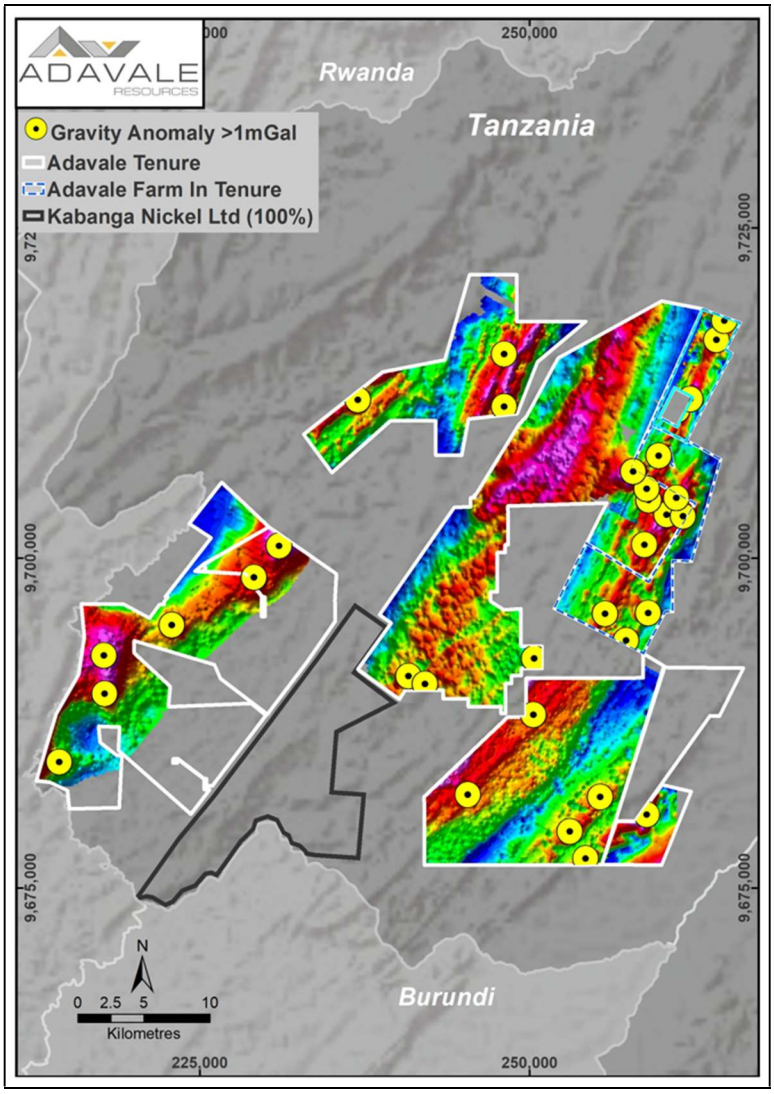
From a geological perspective, Adavale's Kabanga Jirani tenements and the Kabanga project area are located within the East African nickel belt (Figure 1) which extends 1,500km along a north-east trend that extends from Zambia in the south-west, through the Democratic Republic of Congo, Tanzania and Uganda in the north-east. The intrusions that host the known potentially economic nickelbearing massive sulphide zones in the Kabanga project area are found within steeply dipping and overturned metasediments. The results of large scale early stage exploration techniques over Adavale's tenements in proximity to the Kabanga project area has indicated the presence of multiple mafic-ultramafic intrusions, which are the hosts to nickel bearing sulphides, at similar depths to the Kabanga deposit.

Numerous priority nickel target areas have been generated at the Kabanga Jirani Nickel Project

24,000 gravity readings over c. 1,000 km^2 of the Adavale's Kabanga Jirani Nickel Project area generated a total of 32 newly discovered and unexplored gravity targets. The number and order of magnitude of the gravity targets generated confirmed the prospectivity and large-scale nickel exploration potential of Adavale's licences within the globally significant East African Nickel Belt.

[2] https://lifezonemetals.com/lifezone-metals-announces-completion-of-s-k-1300-technical-report-summary-disclosing-a-total-of-40-4-mt-resource-attributable-to-lifezone-metals-for-the-kabanga-nickel-project-in-tanzania/

Figure 3: Regional gravity survey areas showing location of identified targets



Source: company

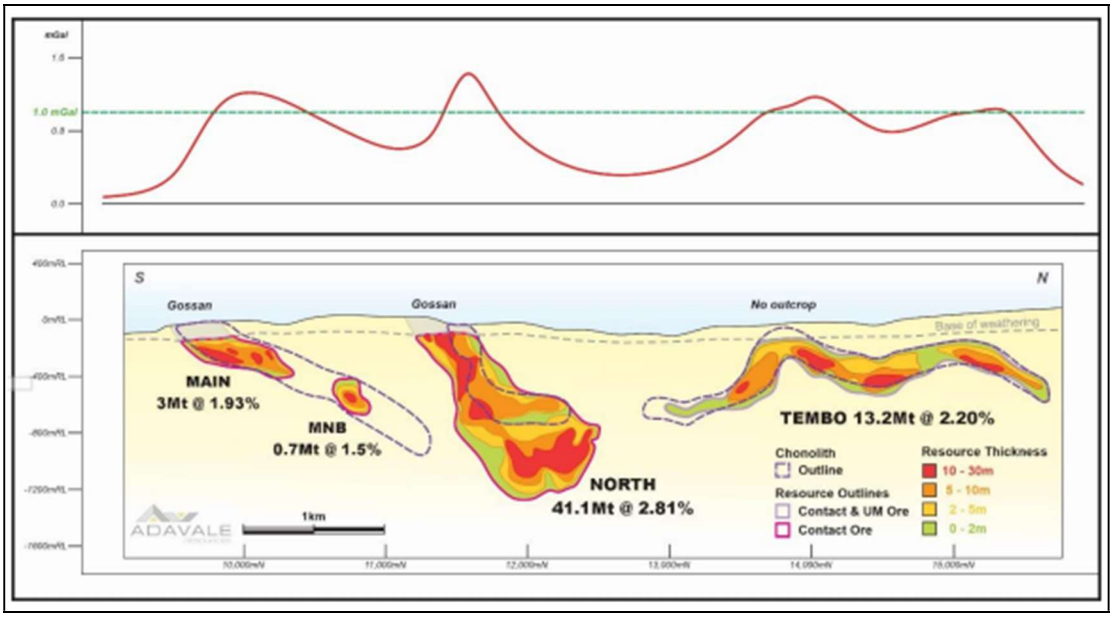
Gravity surveys detect rock density using gravity variations. Metals tend to be denser than surrounding rocks, meaning that a positive gravity anomaly may pick up a metal concentration.

Gravity surveys measure variations in gravity. The ability for rock density to be detected using gravity variations is the basis for the use of gravity surveys in mining exploration. Rock below the earth's surface is not homogeneous. It is composed of materials of different density. Denser rocks contain more mass and therefore exert a greater force of gravitational attraction. Rock density varies with different mineral compositions and the amount of pore space between the individual mineral grains. Metals tend to be denser than surrounding rocks, meaning that a positive gravity anomaly may pick up a metal concentration[3].

Adavale's selection of gravity targets was based on the company's forward modelling of the theoretical gravity response that would have been generated by conducting a gravity survey across the mafic-ultramafic intrusions hosting the 58Mt Kabanga deposit (Figure 4). This modelling, using public domain information, clearly demonstrates that these outcropping and near surface non-outcropping intrusions would have expressed as gravity anomalies in exess of 1mGal and detectable by Adavale's regional gravity survey.

[3] https://www.geologyforinvestors.com/gravity-surveys/

Figure 4: Forward modelled theoretical Gravity signatures (mGal) over known nickel resources at Kabanga



Source: Company

Gravity surveys would've generated strong anomaly signatures over the Kabanga Nickel deposits. This means gravity anomalies over Kabanga Jirani can provide important clues where to look for nickel mineralization.

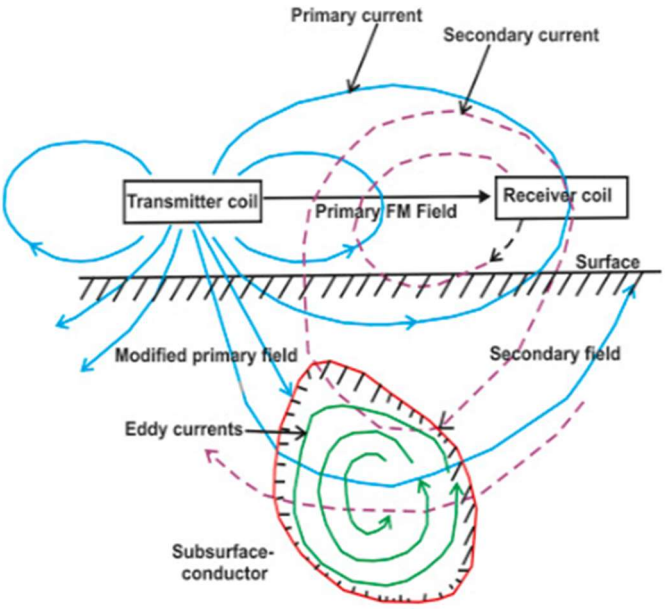
Adavale then identified multiple priority gravity targets with highest mGal amplitude anomalies for the initial Heli-borne Electro Magnetic (HEM) survey.

Electromagnetic (EM) surveys are proficient in direct detection of conductive sulfide deposits.

Electromagnetic (EM) survey, both airborne and ground, is one of the most commonly used methods in mineral exploration. The technique is proficient in direct detection of conductive sulfide deposits, in which large conductivity contrasts exist between the orebodies and country/host rocks or thin overburden cover. The survey is based on responses of the ground to the propagation of EM fields composed of an alternating electric intensity and magnetizing force. A primary or inducing field is generated by passing an alternating current through a coil (a loop of wire called a transmitter coil) placed over the ground. The primary field spreads out in space, both above and below the ground, and is detected with minor reduction in amplitude by a suitable receiving coil in the case of a homogeneous subsurface. The magnetic component of an EM field penetrating through ground induces alternating currents or "eddy currents" to flow within the conductor in the presence of a conducting orebody. The eddy currents generate their own secondary EM field distorting the primary field. The receiver responds to the resultant of arriving primary and secondary fields so that the response differs in phase, amplitude, and direction from the response to the primary field. These differences between the transmitted and received EM field reveal the presence of a conductor and provide information on its geometry and electrical properties. The induction of current flow results from the magnetic component of the EM field. The total process of EM induction has been generalized in Figure 5. The depth of penetration of an EM field depends upon its frequency and the electrical conductivity of the medium through which it is propagating[4].

[4] https://www.sciencedirect.com/topics/earth-and-planetary-sciences/electromagnetic-survey

Figure 5: Conceptual diagram of EM induction processing system



Source: Sciencedirect.com

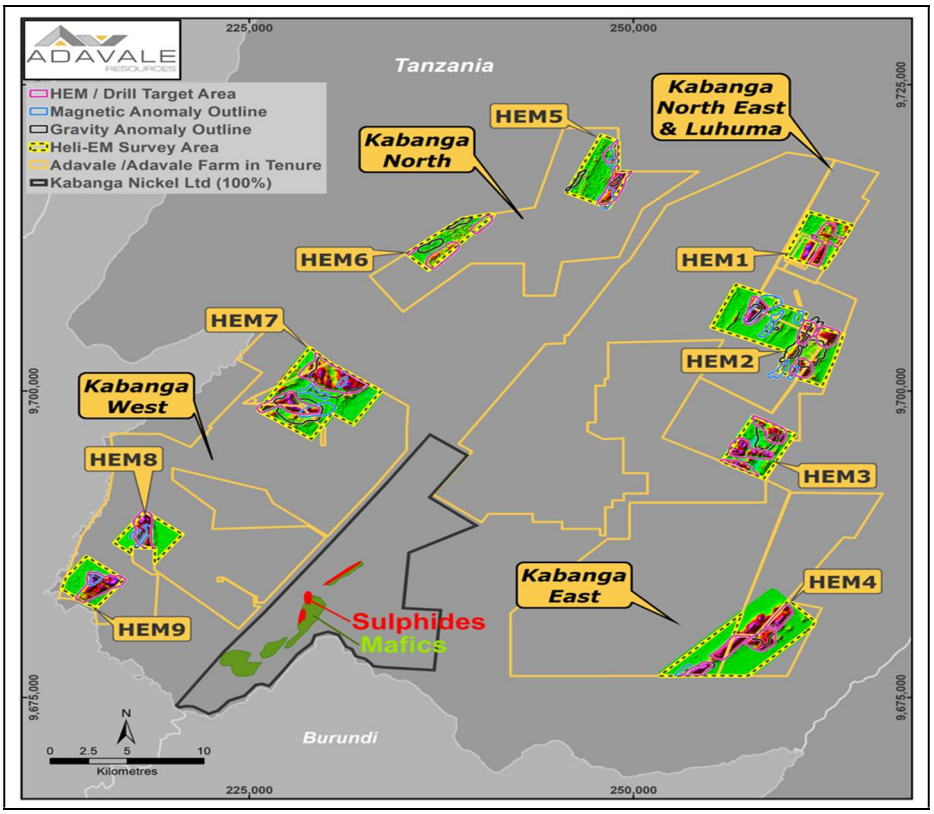
Figure 6: Heli-borne EM survey at the Kabanga Jirani Nickel Project

Source: Company

Adavale's drill targets at Kabanga Jirani have been selected based on coincident Heli-borne Electro Magnetic (HEM), gravity anomalies and localised previous exploration results.

9 HEM target areas were flown using deep penetrating high-powered Time Domain EM (TDEM) and magnetic survey equipment over 210 km^2 to the depths of c. 500m in August and September 2022. TDEM systems are one of the two main approaches to generate EM fields. TDEM systems suddenly switch the primary field off and observe the decay of the induced eddy currents to map the potential presence of conductive ore bodies deep in the ground. Drilling target areas were then selected based on coincident Heli-borne Electro Magnetic (HEM), gravity anomalies and localised previous exploration results.

Figure 7: HEM survey area plan showing broad internal target areas and the location of the Kabanga nickel sulphide deposits and associated mafic intrusions



Source: company

Initial drilling program and additional geochemical surveys have led to highly prospective drill target areas

Initial drilling results at Kabanga Jirani were promising, intersecting rock types that typically host nickel sulphide deposits.

Initial stage drilling of 4 dimond holes totalling 1,471m drilling was completed in late 2022 at HEM2, HEM 4 and HEM 9 target areas. Both drill holes at HEM 2 were considered the most promising, intersecting rock types that typically host nickel sulphide deposits. The drilling provided a clear indication that the potential to host a more primitive nickel sulphide rich ultramafic component exists at HEM 2 at depth and further to the east form the area drilled, as an areas of exploration focus.

Drilling was suspended in late December due to the onset of the wet season in the region until after the end of wet season in April 2023. During the intervening period, a series of geochemical soil sampling programs were implemented, starting in the high-priority area northeast of Luhuma. The intention was to analyse the soil results against gravity anomalies to assist with prioritising drill hole targeting.

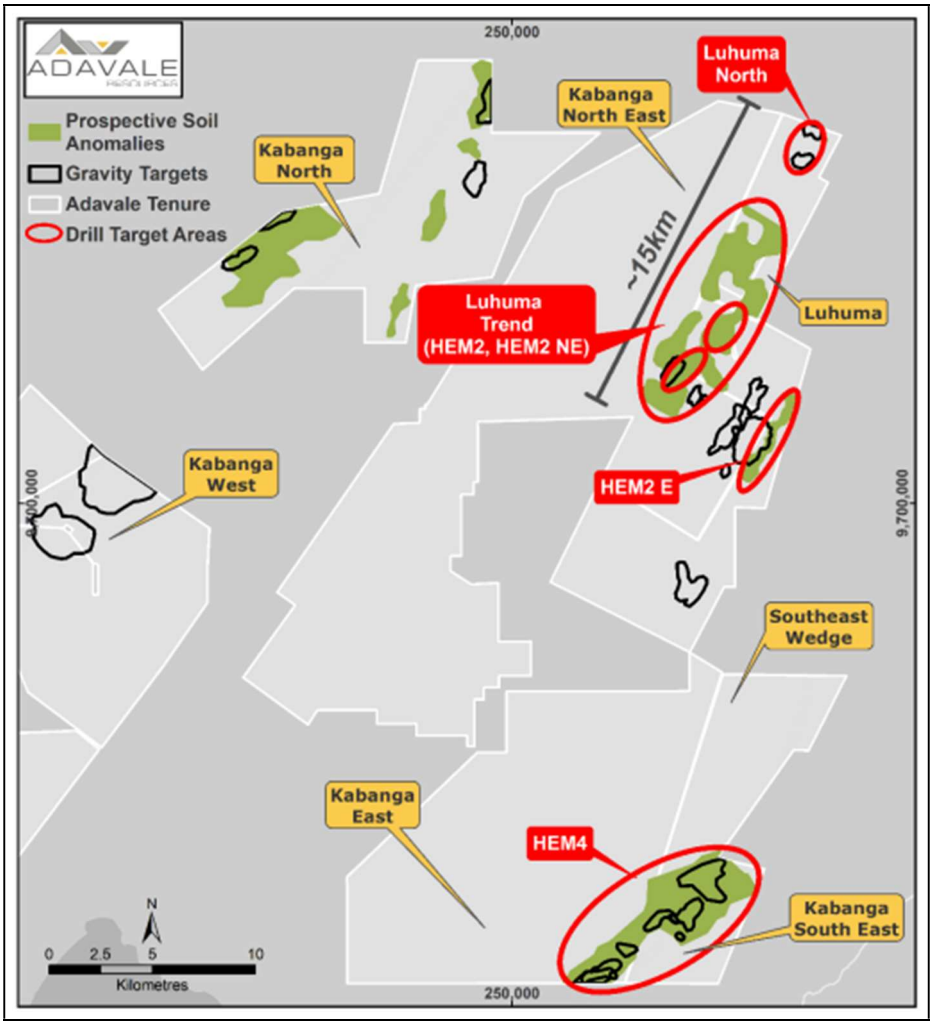
A total of approximately 10,000 samples were collected during the recent geochemical soil survery. The samples were collected on a 400m × 25m line spacing across specific areas within the company's southern tenement package. In addition, some gaps from earlier surveys were infilled during the program. The samples were analysed using pXRF at the exploration camp.

> *XRF (X-ray fluorescence) is a non-destructive analytical technique used to determine the elemental composition of materials. XRF analysers determine the elemental composition of a sample by measuring the fluorescence (or secondary) X-ray emitted from elements in a sample when those are excited by a primary X-ray source. Each of the elements present in a sample produces a set of characteristic X-ray lines ("a fingerprint") that is unique for that specific element, which is why XRF spectroscopy is an excellent technology for qualitative analysis and quantitative determination of material composition. By using these portable XRF analysers, geologists can obtain large volumes of exploration data for mapping and financial reporting as well as help identify areas for infill sampling, drilling or more detailed investigation.*
>
> *(Source: thermofisher.com)*

The soil geochemical program confirmed a coherent copper anomaly of 15km strike length, which the company considers to be important given the association of copper and cobalt with nickel mineralisation at the Kabanga deposit. Adavale's Kabanga Jirani Nickel Project contains massive sulphide, disseminated sulphide and lateritic nickel across much of the tenement area. In order to filter out the geochemical response from surficial lateritic nickel, the company assays for and measures the response of nickel, copper and cobalt as well as various mafic indices such as Cr, V, Fe, etc. **The combination of geochemical responses, as well as gravity and EM anomalies, allows the company to filter out the background noise from the extensive exploration data and vector into the areas of highest interest and current priority drill targets.**

In addition, the company also acquired data for 25 historic (1990s) drill holes where geological logs indicated up to 7.43m of massive sulphides. All this focused the company's 2023 exploration program on the eastern side of its southern licenses as delineated in Figure 8, with priority given to the targets within the highly prospective Luhuma Trend.

Figure 8: Location of targets generated from the latest geochemical soil survey conducted during 2023 and previous HEM, gravity and exploration



Source: company

Very positive drilling results reported at the emerging Luhuma Central prospect

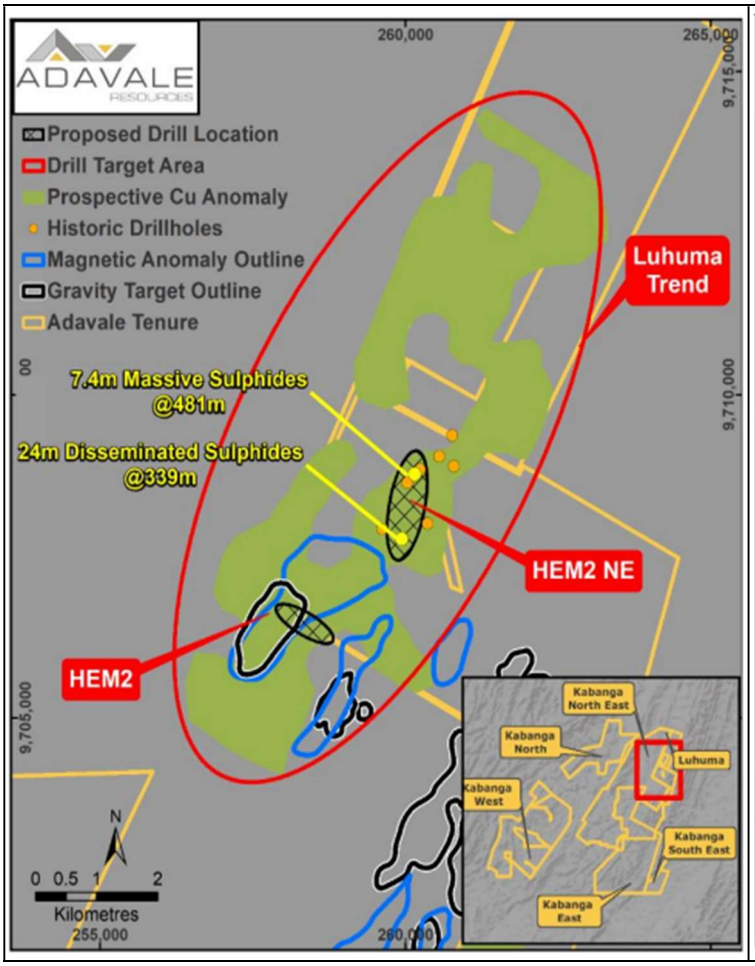
Adavale's 2023 drilling program at Kabanga Jirani includes 5,000m of drilling, comprising 12 RC holes to depths of c. 150m and 8-10 DD holes to depths of c. 350m.

In March 2023, Adavale announced it has secured $2m financing in the form of covertible notes to fund the company's 2023 drilling program at its Kabanga Jirani Nickel Project in Tanzania. The drilling program will include an initial Reverse Circulation (RC) and Diamond Drilling (DD) campaign of 5,000m, comprising 12 RC holes to depths of c. 150m and 8-10 DD holes to depths of c. 350m. Having the financing in place and with high-conviction dill targets already defined at the project, Adavale did not wast time in commencing the drilling program once the wet season ended in April 2023. The company mobilised RC and DD rigs to the high priority Luhuma Trend location in early May 2023.

The Luhuma Trend is a recognised narrow strike extensive zone within Adavale's Kabanga North-East Licence that is host to a series of mafic-ultramafic intrusions from which several historical massive nickel sulphide intersections have been reported. The denser mafic-ultramafic intrusions of the Luhuma Trend are clearly evident from the gravity surveys completed over the area by Adavale in 2022. The green polygon in Figure 8 shows the extent of the copper anomaly that is broadly coincident with the Luhuma Trend. As this area is known to contain prospective host rocks and known sulphide mineralisation, it is considered highly prospective. Adavale's next phase of exploration objective has been to include modern geophysical data, such as audio

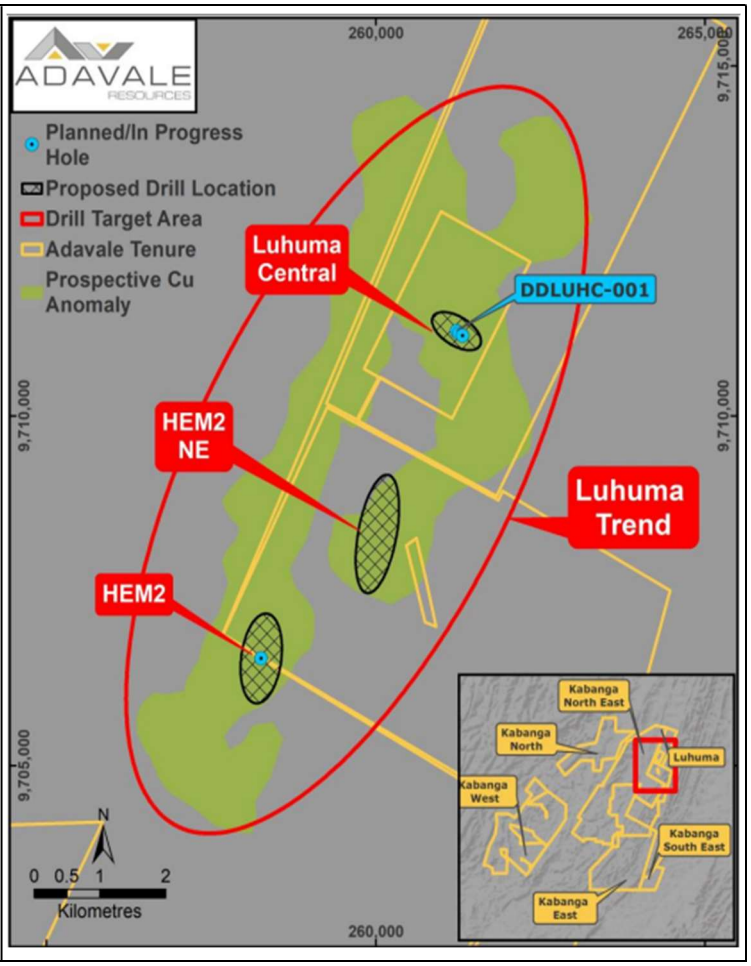
magnetotelluric (AMT) surveys, combined with the knowledge of existing mineralisation to drill diamond holes at priority drill sites within the trend.

Figure 9: Luhuma Trend soil geochemical survey anomalies, target areas and proposed drill locations



Source: company

Figure 10: Plan view of current and proposed drilling at Luhuma Central and priority drilling locations at HEM 2 and HEM 2 NE



Source: company

In May 2023, the Company secured a new PL (Prospecting Licence) known as Luhuma Central that hosted a number of historical drill holes and historically reported massive nickel intersections over 8m at 1.14% Ni. Therefore, Luhuma Central became a priority drilling prospect.

Prior to drilling, three 400m spaced AMT lines were surveyed over Luhuma Central to assist drill planning and drill targeting. Figure 10 shows the strong coincidence between electromagnetics (base map), magnetics (blue outline) and AMT conductors (red dashed lines). The base map (EM) shows the zone of conductivity extends for about 1km, indicating the potential for the discovery of a large nickel sulphide deposit in the area similar to those found by Kabanga Nickel Ltd, in our opinion.

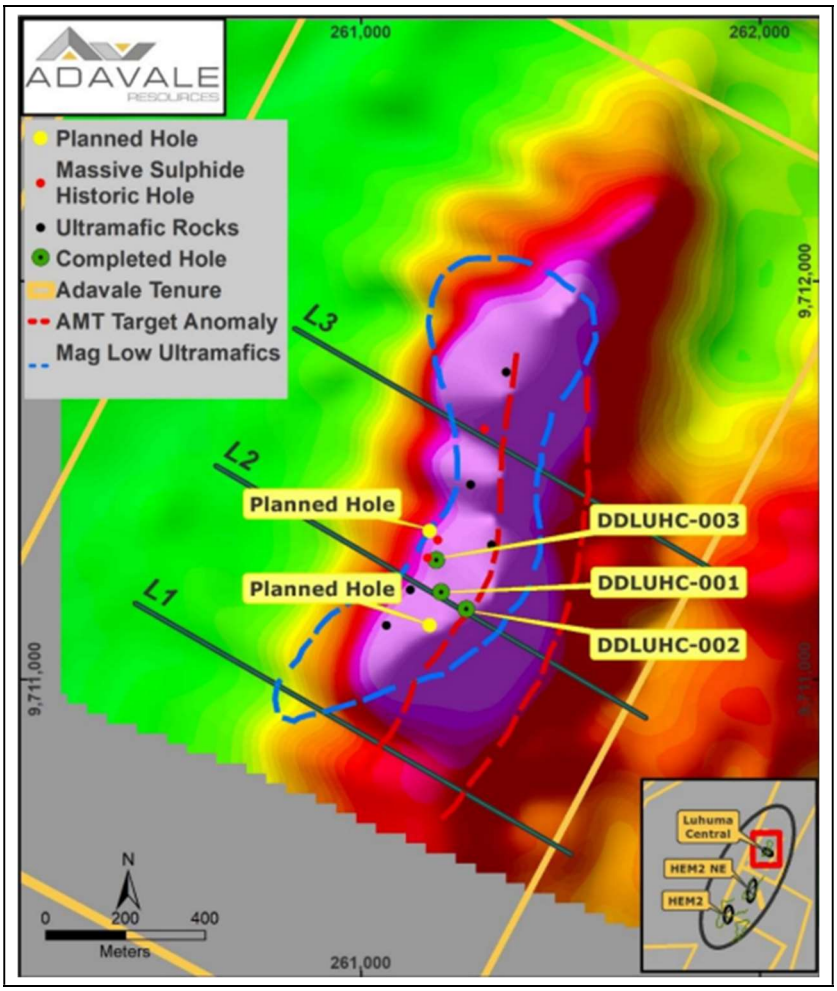
Adavale has used areas with strong coincident between electromagnetics, magnetics, and AMT conductors to choose drill locations.

Audio Magnetotellurics (AMT) surveys are typically employed for investigating deep structures in the earth, and similar to EM surveys, they are used for the detection of conductive sulphide deposits, in which large conductivity contrasts exist between the orebodies and country/host rocks or overburden cover.

Figure 11 also shows the plan view of current (green dots) and proposed drill hole locations (yellow dots) at Luhuma Central plus historical holes (red dot indicates massive sulphides

intercepted, black dots indicate ultramafic rocks intercepted) together with the location of the AMT lines L1 to L3 that have been surveyed by Adavale. The blue outline shows the magnetic low intercepted to be the host mafic-ultramafic intrusion, and the red corridor is the AMT anomaly projected to the surface and interpreted as the mineralised trend.

Figure 11: Plan view of current and proposed drill hole locations at Luhuma Central plus historical holes together with the location of the AMT lines L1 to L3



Source: company

On 6 June 2023, Adavale announced the completion of the first diamond drill hole at the Luhuma Central prospect (DDLUH001), which was undertaken to validate a historically reported (1994) massive sulphide intersection by drill hole LUH006 (Figure 11). Pleasingly, Adavale's first DD hole at Luhuma Central intersected 4.13m of massive nickel sulphide with 0.99% nickel contained within a broader interval of 12.15m at 0.46% nickel from 221.35m, as well as 2m at 0.57% nickel from 249m. Adavale quickly planned for two follow up drillholes to be drilled around this massive sulphide intersection.

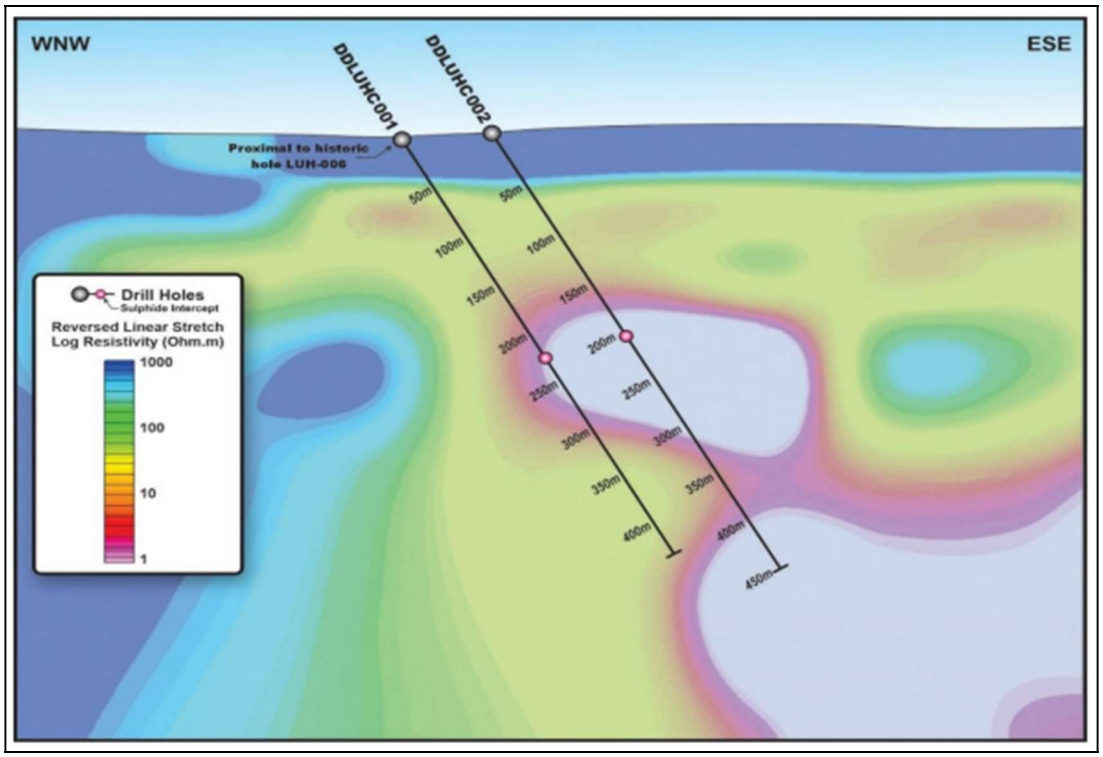
Adavale's both diamond drill holes at Luhuma Central intersected nickel-bearing massive sulphides.

On 19 June 2023, Adavale announced the second diamond drill hole at Luhuma Central (DDLUH002), located 60m to the east of the first dirl hole on the same AMT line, has also intersected 4.90m of blebby and heavily disseminated sulphides with the occasional thin semi-massive veinlet between 200.7m and 205.6m downhole. The following assay results then confirmed 4m at 0.52% nickel from 200.55m at the second drill hole.

Intersections at both DD holes are coincident with a strong discrete AMT anomaly that can be traced to the north and south on AMT lines L1N and L3N (Figure 11). The positive drill results achieved so far at Luhuma Central has confirmed the correlation between this AMT anomaly and nickel sulphide mineralisation. Therefore, step-out drilling to test the AMT anomaly to the north and south is currently being planned. Adavale will have all diamond drill holes cased for future

Downhole Electromagnetic (DHEM) surveys, which are expected to commence shortly at the Luhuma Central diamond holes. DHEM is a critical tool to effectively drill the interpreted 1-1.5km AMT anomaly extension at Luhuma Central. DHEM surveys are used to generate drill targets based on the "off-hole" conductive responses that are logged. This has the benefit of increasing the effectiveness of drilling, which can materially reduce the number of drilling metres required when evaluating an emerging prospect like the Luhuma Central.

Figure 12: Section L2 showing sulphide intercepts in DDLUH001 and DDLUH002 corresponding with the AMT anomaly



Source: company

Kabanga Nickel Deposit's development towards production bodes extremely well for Adavale

BHP and the Government of Tanzania are both backing Kabanga Nickel Deposit's development towards production.

Kabanga Nickel Limited announced in January 2022 that BHP Group (ASX: BHP), the world's largest mining company as of March 2023[5], has invested US$40m into the Kabanga Nickel Project, with an agreement for further future investment in the project subject to achieving certain agreed milestones. The money was to use to accelerate the development of the Kabanga Nickel Project in Tanzania, the world's largest development-ready nickel sulphide deposit, targetting a minimum annual nickel equivalent production of 65,000 tonnes with more than 30 years life of mine and exploration upside potential[6].

The government of Tanzania has a 16% interest in the Kabanga Nickel Project through a local partnership entity, Tembo Nickel Corporation (Tembo), and Kabanga Nickel Ltd holds the balance. BHP first tranche of US$40m investment in the project gave it an 8.9% equity stake in Kabanga Nickel Ltd (7.5% in Tembo) and its second tranche of US$50m investment in the project, completed in February 2023, increased BHP's interest in Kabanga Nickel Ltd to 17% (15% in Tembo). BHP also has an option to further increase its direct equity interest in Kabanga Nickel Ltd

[5] https://www.statista.com/statistics/272706/top-10-mining-companies-worldwide-based-on-market-value/

[6] https://lifezonemetals.com/bhp-to-make-an-initial-us50-million-investment-in-kabanga-nickel-and-lifezone-with-further-investments-to-be-agreed/

to 60.7%, subject to the satisfaction of certain conditions, including the satisfactory completion of, and agreement on, the definitive feasibility study for the Kabanga project and other approvals.

BHP has also invested US$10m in Lifezone Metals to advance their proprietary hydrometallurgical processing technology (the "Hydromet technology"), which has the potential to be a more cost-efficient alternative to conventional smelting with a significantly lower environmental impact. Recent test results indicated that the Kabanga project's nickel concentrate is amenable to processing using the Hydromet Technology[7].

According to Kabanga project's Technical Report Summary, announced by Lifezone Metals on 27 February 2023, the initial assessment assumes the mining method is underground stopping with backfill, and the extracted mineralised material will feed into an onsite concentrator. Concentrate is assumed to be transported to an off-site hydrometallurgical processing facility in Kahama to produce final nickel, copper and cobalt metal, with transport of the final metal to Dar es Salaam and export to markets for sale.

Figure 13: Location map of proposed Kabanga Nickel Mine and Kahama Refinery in Tanzania

Source: Lifezone Metals

Government of Tanzania owns 16% of the Kabanga Nickel Project and BHP has so far acquired a 15% stake in the project with an option to increase its stake to 60.7% with further investments into the project.

Besides BHP's support, the Kabanga project is fully backed by the Government of Tanzania (GOT). GOT signed a binding Framework Agreement (FA) with Kabanga Nickel in January 2021 for the development of the Kabanga nickel deposit and subsequently earned a 16% interest in the project. Under the FA terms, a joint stock company called Tembo (16% owned by GOT) has been formally established for the mining, processing and refining of Class 1 nickel with cobalt and copper co-products.

According to a 15 May 2023 article from Atoine Drogoul of Africa Practice[8], mining is a crucial sector for Tanzania, generating more than US$2.5 billion annually and accounting for over 50% of the country's exports by value. Tanzania's President, Samia Suluhu Hassan, has pledged a "commitment to the development of the mining sector", with the aim of the mining sector accounting for 10% of the country's GDP by 2025, up from 6.7% in 2020. To achieve this goal, the public sector management has been renewed with a focus on project delivery and Framework Agreements with consistent terms are being executed with international mining company investors.

[7] https://lifezonemetals.com/lifezone-metals-announces-completion-of-bhps-additional-us50-million-investment-in-kabanga-nickel/

[8] https://www.miningreview.com/base-metals/tanzania-a-new-dawn/

According to The Exchange Africa, the straightforward strategic plan from President Samia since she assumed office in March 2021 has led to a tripling of foreign investment in Tanzania in 2022, according to the data from the Tanzania Investment Centre (TIC)[9]. The increased foreign investment in Tanzania, including BHP's investment in the Kabanga project, indicates investors' increasing confidence in the country's administration and political stability, in our opinion.

Tanzania is considered one of the safer and more politically stable African nations.

The Global Peace Index (GPI) is an annual report that measures and ranks the peacefulness of 163 countries to determine the world's most peaceful countries. The GPI is published annually by the Institute for Economics and Peace, which measures 23 indicators of peace, which are grouped into three categories: Ongoing International and Domestic Conflict, Societal Safety and Security, and Militarization. Example indicators include the number and duration of internal conflicts, relationships with neighbouring countries, political instability, the level of violent crimes, and the level of perceived criminality in society. Each indicator's results are then merged to create a single unified GPI value for each country. The lower the GPI score, the more peaceful—and by extension, the safer—the country is considered to be.

According to World Population Review[10], Tanzania's 2021 GPI of 1.892 earned it the title of the **seventh-safest country in Africa (among 54 African counties) and 58th-safest in the world for 2021**. The country's 2022 GPI rose to 2.001, which placed it 86th in the world and 19th in Africa. This was due in part to the country's struggle to contain the COVID-19 pandemic, which also prompted the US Department of State to issue a Level 4 Travel Advisory for Tanzania. Fortunately, by late 2022 the country had regained its traditional Level 2 travel advisory, which increases Tanzania's chances of a return to the top 10 safest African countries in the future, in our opinion.

The development of Kabanga Nickel Deposit will bring about significant cost reductions and benefits to Adavale's Kabanga Jirani Project.

The development of Kabanga Nickel Deposit will bring infrastructure improvements to the area, along with the establishment of goods and service providers to support all aspects of the project, including mining, processing and refining. With this level of infrastructure established, feasibility studies for the development of any possible nickel sulphide discoveries in the region, such as in Adavale's Kabanga Jirani Nickel Project, are likely to substantially benefit in terms of cost reductions. Should this happen, then Adavale would anticipate real capital cost reductions from:

- Introduction of relevant infrastructure; and
- Operating cost reductions; and
- Relevant investors and skilled workers to be drawn to the Kabanga region.

According to Lifezone Metals, A memorandum of understanding has been signed with Tanesco, the Tanzanian national electricity supplier, regarding the connections of interim and permanent power supply for construction and operational needs via a new high-voltage overhead line to Kabanga. Consultation is also ongoing with Tanroads and Tanzania Railways Corporation regarding the upgrades and improvements of existing roads to support Kabanga's concentrate road transport from Kabanga to Kahama and rail to allow final metals product transport from Kahama to Dar es Salaam.

[9] https://theexchange.africa/countries/tanzania/why-businesses-invest-in-tanzania/

[10] https://worldpopulationreview.com/country-rankings/safest-countries-in-africa

Lake Surprise Uranium Project, Adavale's non-core asset

Adavale's Lake Surprise Uranium Project is located in South Australia, 550km north of Adelaide and 70km east of Marree. The project's 4 tenements cover a total area of 1,078km^2 in a region that is prospective for sandstone hosted roll-front uranium mineralisation. Strong radiometric anomalies occur in the Project area and uranium minerals have been found in outcrop.

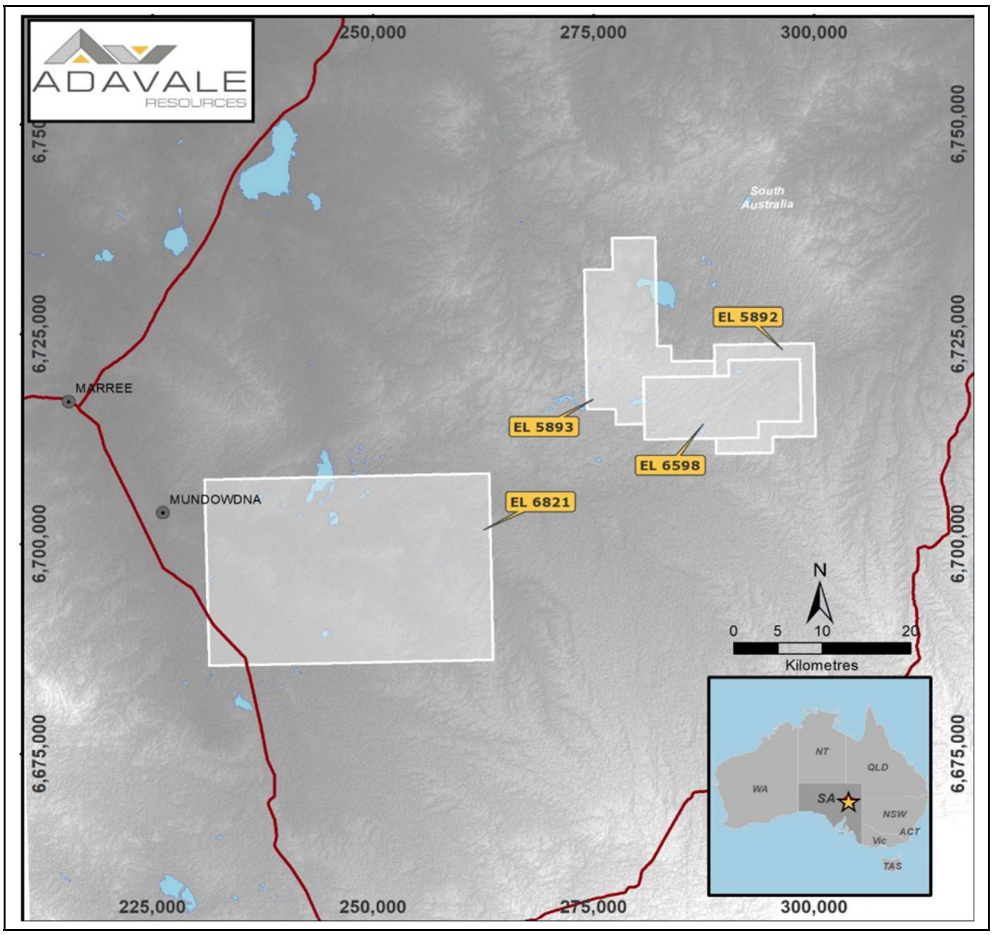
Adavale explored the original tenements in this area between 2007 and 2011 with 486 holes drilled in that period. Several geophysical and geochemical anomalies were identified, and two large and continuous geochemical anomalies have been defined by this work. The current tenement holding reflects what the company believes are the best areas that have been explored, and the areas that have the best potential to host additional deposits within geological structures.

Adavale's Lake Surprise Uranium Project's geologigal setting is favourable for sandstone hosted roll-front uranium mineralisation.

Roll-front uranium deposits are generally hosted within permeable and porous sandstones or conglomerates. The mechanism for deposit formation is a dissolution of uranium from the formation or nearby strata and the transport of this soluble uranium into the host unit. When the fluids change redox state, generally in contact with carbon-rich organic matter, uranium precipitates to form a 'front'.

The Roll-front subtype deposits typically represent the largest of the sandstone-hosted uranium deposits and one of the largest uranium deposit types with an average of 21 million lb (9,500 t) U3O8. Included in this class are the Inkai deposit in Kazakhstan and the Smith Ranch deposit in Wyoming. Probably more significant than their larger size, roll-front deposits have the advantage of being amenable to low-cost in-situ leach recovery. (Source: wikipedia.org)

Figure 14: Plan view of Lake Surprise Uranium Project tenements



Source: company

The Lake Surprise Project area was identified in 2015 by a Geoscience Australia EM survey as an area that potentially hosts similar orebodies to the ones closer to the Flinders Ranges. **Rocks of the Flinders Ranges and surrounding areas are highly enriched in uranium due to geological processes and it is amongst the world's most prolific uranium provinces.** Known uranium orebodies on the eastern side of the Flinders Ranges include Beverley, Honeymoon, Goulds Dam and Yarramba, and the Mt Gee project. Several of these projects lie in the northern Flinders Ranges about 60 Km from the Lake Surprise Project area (Figure 15).

Figure 15: Location map of the Lake Surprise Uranium Project

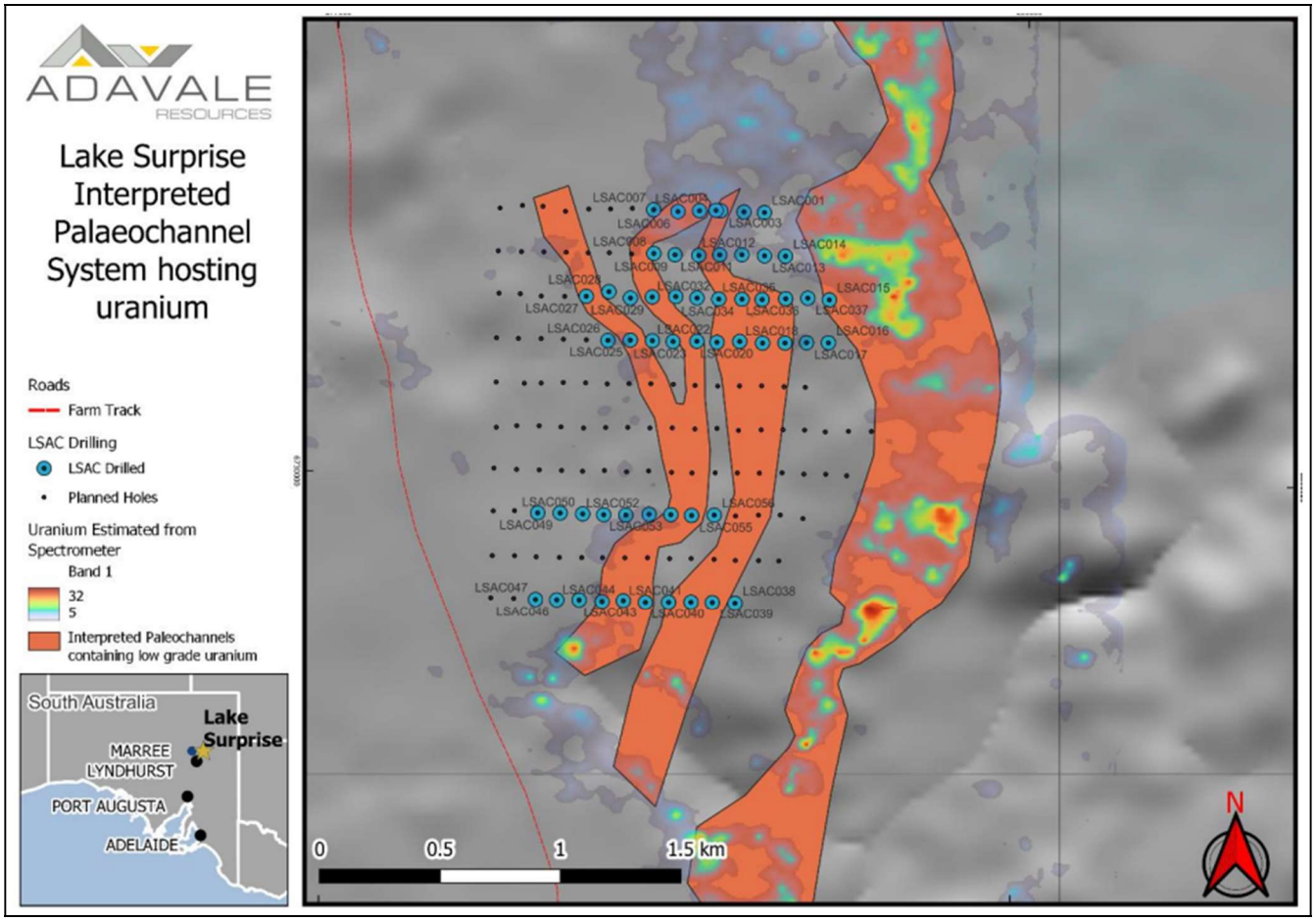
Source: company

Adavale has minimal exploration expenditure at Lake Surprise Uranium Project and remain focused on nickel exploration at Kabanga Jirani.

In the latest development at the Lake Surprise Project, Adavale drilled 56 holes for a total of 742m for the cost of only $70,000 in a reconnaissance program designed to penetrate the silcrete horizons and test a prospective zone in the tenemnet EL5893 (Figure 14). The prospective zone was identified from previous exploration that showed a helium anomaly, surface gamma anomaly and rock chip data.

The drilling intersected anomalous uranium with associated gamma anomalies and indicated an increase in cocentration of anomalous readings, trending in a southerly direction, within Adavale's tenure. 24 samples were selected for chemical analysis based on pXRF and gamma log readings. The lab assay results produced a peak result of 87 ppm Uranium, which is not considered to be economic but indicative of further potential, particularly towards the south. In the next step Adavale is planning to use this knowledge to plan geophysics to better map the target horizons and support future drilling.

Figure 16: Location map of the completed drillholes at the Lake Surprise Uranium Project



Source: company

Nickel, a green energy metal with soaring demand

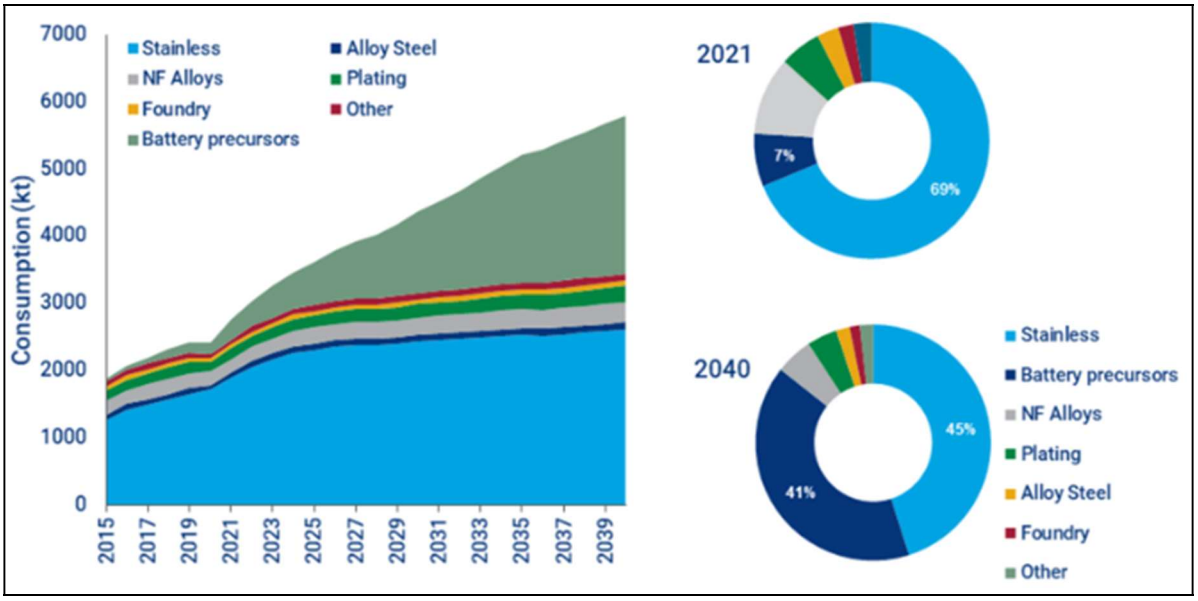
While nickel demand from stainless steel manufacturing is expected to continue to grow, the metal's use in EV batteries is considered the major driving factor for the nickel market growth.

On the demand side, the nickel market is segmented by application into stainless steel, alloys, plating, casting, batteries, and other applications. Over the medium term, the growth of the nickel market is likely to be driven by the increasing demand for nickel in stainless steel alloys. Currently, about two-thirds of nickel sold each year goes into stainless steel. In general, 8% of nickel is present in the commonly used grade of stainless steel. Owing to its corrosion resistance, durability, and abundance in availability, stainless steel is used in various sectors, including food and beverage, construction, aerospace, transport, medical, chemical, etc. Also, increasing demand for nickel in EV batteries, energy storage systems in wind turbines, or solar panels at a lower cost is considered the major driving factor for the nickel market growth.

According to a research report by Wood Mackenzie in April 2022[11], while stainless steel will continue to be the main first use for nickel, the major engine of demand growth over the next two decades will be batteries. From only 7% of the total market in 2021, Wood Mackenzie expects battery use to grow to 40% of nickel consumption by 2040. That is expected to push nickel demand to double in size to six million tonnes per year.

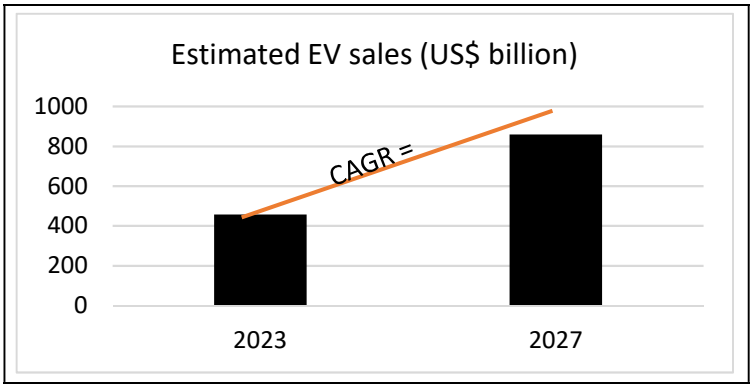
[11] https://www.woodmac.com/news/opinion/nickel-and-copper-building-blocks-for-a-greener-future/

Figure 17: Nickel usage in batteries is expected to double the global demand for nickel by 2040



Source: Wood Mackenzie

Figure 18: The rapid pace of EV adoption is expected to significantly increase demand for nickel



Source: Statistica and East Coast Research

The increasing importance of nickel due to its role in the decarbonisation megatrend led to the addition of the metal to the US critical minerals list in February 2022. The list is to be updated every 3 years and contains a list of 50 mineral commodities critical to the US economy and national security after an extensive multi-agency assessment.

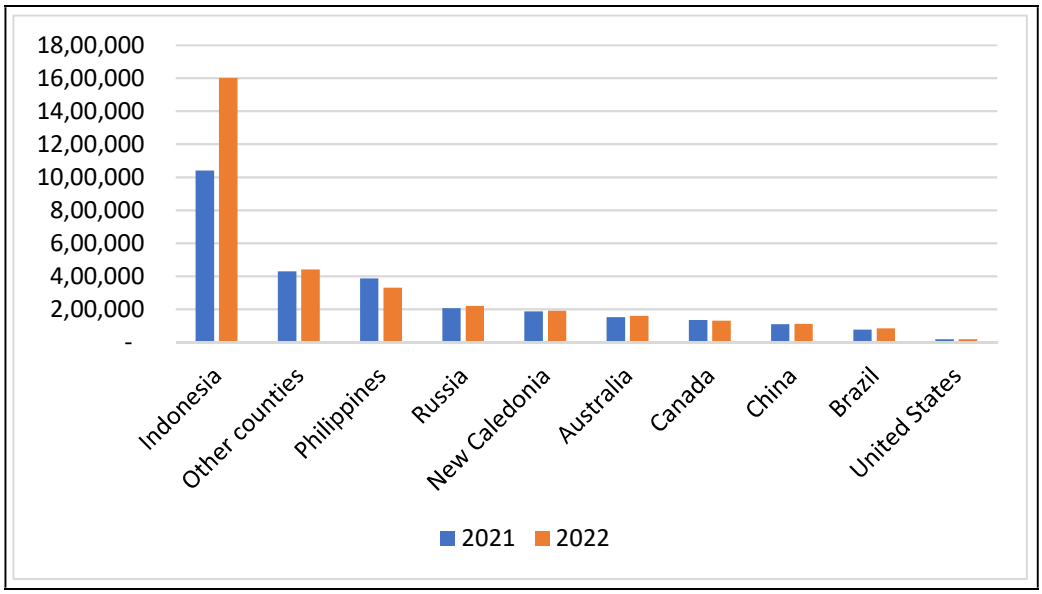
On the supply side, nickel is commonly present in two principal ore types – sulphide or laterite ores. Sulphide ores are typically derived from volcanic or hydrothermal processes and usually include copper (Cu) and/or cobalt, and sometimes other precious metals such as gold or platinum and palladium (generally grouped as platinum group metals or PGMs). Laterite ores are formed near the surface following extensive weathering, and occur abundantly in tropical climates around the equator or arid regions of central Western Australia or southern Africa.

While there's no shortage of nickel resources on earth, the majority of these resources are laterite ores, which require nickel recovery processes that entail high environmental costs.

In terms of known nickel resources, approximately 60% is found in laterites while 40% is contained in sulphides[12]. However, most nickel production has been historically derived from sulphide ores. The major reason for this is the difficulty of processing nickel laterites compared to sulphides – laterite ores require extensive and complex treatment to extract nickel, through the use of large quantities of sulphuric acid at high temperatures and pressures, resulting in expensive waste treatment and disposal of the chemicals used in the extraction process. There used to be very few mining projects extracting laterite ores, and these examples have had major technical and financial difficulties that took several years to resolve satisfactorily (e.g. Moa Bay in Cuba or GreenvaleYabulu in Australia). The mining, processing and smelting of sulphide ores follows conventional pyrometallurgical technology and is well understood and implemented[13].

However, From the late 1990's, major new Ni laterite projects have been developed using improvements in materials and processing technology such as 'high pressure acid leaching' (HPAL). Although some were financial and technical failures (e.g. Cawse and Bulong, Western Australia), the Murrin Murrin (WA) project survived to produce near design capacity. As a result, many new Ni laterite mines came online and in 2010, global nickel production from laterites exceeded nickel sulphide-based production for the first time. A major concern with this increasing proportion of laterite nickel is that, although technology such as HPAL now exists to make processing of laterite ores more viable (technically and financially), it is widely perceived to be at a higher environmental cost. In our opinion, this adds to the attractiveness of Adavale's Kabanga Jirani Nickel Project, as it's targeting more environmentally sustainable nickel sulphide resources.

Figure 19: Nickel mine production by country (tonnes)

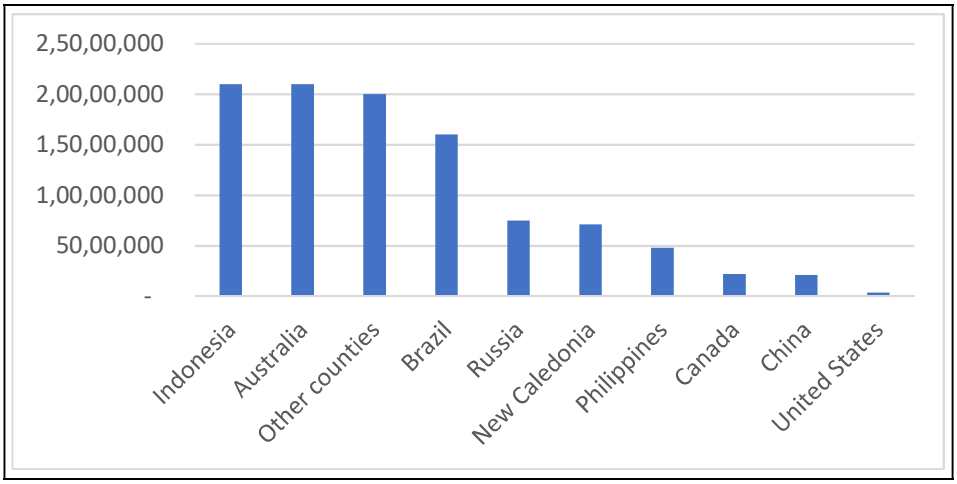


Source: U.S. Geological Survey and East Coast Research

[12] https://pubs.usgs.gov/periodicals/mcs2023/mcs2023-nickel.pdf

[13] https://users.monash.edu.au/~gmudd/files/2009-CMS-01-Nickel-Sulf-v-Lat.

Figure 20: Global nickel reserves as of the end of 2022 by country



Source: U.S. Geological Survey and East Coast Research

The majority of the nickel production capacity growth in the last decade has come from developing laterite projects in Indonesia.

As you can see in Figure 19 and Figure 20, Indonesia and Australia have the largest nickel reserves in the world and Indonesia is by far the largest nickel miner in the world. The two countries each claim 21% of the world total nickel reserves of >100Mt. However, the majority of nickel reserves in Australia are in laterite ores while Indonesia's nickel is mined almost entirely from laterite ore resources.

The world total nickel mine production in 2022 showed a 20 per cent increase to the previous year, up from 2.73Mt to 3.3Mt, with almost all the increased production attributable to Indonesia (Figure 19). The largest share of the increase was facilitated by the ongoing commissioning of integrated nickel pig iron and stainless-steel projects. In addition, several companies continued to develop projects to produce intermediate matte or mixed nickel-cobalt hydroxide that were intended to be used as feedstock to produce battery grade nickel sulphate, according to U.S. Geological Survey (USGS).

According to CSIS[14], while Indonesia is rich in laterite ore resources that are a good feedstock for Class 2 products used in steel production, it doesn't have sulphide ore resources, which in general are a good fit for producing Class 1 nickel. However, laterite resources can be used as feedstock to produce intermediate products like mixed hydroxide precipitate (MHP) via hydrometallurgical processes such as HPAL. MHP can be further refined to Class 1 nickel. In a new development, MHP is also used directly to produce battery cathodes, skipping the step of refining Class 1 products, which allows for a better-integrated supply chain from mine to cathode.

Class 1 and Class 2 refer to the type of Nickel product that gets produced. Class 1 Nickel tends to be LME deliverable and meets a purity standard of 99.8%, or higher. It is used in applications such as alloys, alloy steels, plating products, and increasingly, that purity of Nickel will be required for Nickel sulphate into EV batteries. Class 2 is basically a Nickel-containing product that is less than 99% pure. Generally, Class 2 is used in stainless steel and alloy steel applications where those processes have a robust refining step in the process where they can take materials that are less pure, or they are happy to have the iron that comes along with Ferronickel because iron is needed to make stainless steel or make alloy steel.

Nickel Recycling is also expected to increase. According to USGS, most secondary nickel in the US in 2022 was in the form of nickel content of stainless steel scrap. Nickel in alloyed form was recovered from the processing of nickel-containing waste. Most recycled nickel was used to produce new alloys and stainless steel. In 2022, as part of the Bipartisan Infrastructure Law, more than US$600 million was allocated to projects to recover nickel from spent lithium-ion batteries

[14] https://www.csis.org/analysis/indonesias-nickel-industrial-strategy

and for the synthesis of nickel-containing precursor and cathode active materials. In 2022, recycled nickel in all forms accounted for approximately 56% of apparent consumption.

Environmentally sustainable supply remains a challenge despite abundant nickel resources

The lower environmental and operational cost of processing sulphide ores has made nickel sulphide deposits highly sought after in an ever-increasing ESG regulations environment.

Based on Wood Mackenzie's projection, an additional 1.65 million tonnes of nickel needs to be brought into production between 2026 and 2038. Given that an additional 1.8Mt of nick will have been brought online between 2011 and 2023, the additional required nickel supply of 1.65Mt to 2038 has to be feasible. However, the vast majority of new capacity development over the past decade has been in Indonesia from laterite ore resources and has had significant environmental side effects.

Although nickel resources on Earth are relatively abundant, the majority of these resources are in the form of laterite ore with nickel recovery processes that are not environmentally sustainable. This adds significant value to the somewhat limited nickel sulphide resources, in our opinion. Therefore, the increasing ESG awareness and regulation should act as a positive factor in the favour of Adavale's Kabanga Jirani Nickel Project, targeting potential nickel sulphide deposits.

Exposure to uranium: a bonus for Adavale investors

Uranium is a highly dense metal that occurs in most rocks and is mostly used as fuel in nuclear power plants. According to World Nuclear Association[15], about 440 reactors with a combined capacity of about 390 GWe require some 74,000 tonnes of uranium oxide concentrate containing about 62,500 tonnes of uranium (tU) from mines (or the equivalent from stockpiles or secondary sources, such as ex-military weapons) each year. The higher demand from increased capacity, however, has been largely offset by the increased efficiency of nuclear power plants - over the 20 years from 1970, there was a 25% reduction in uranium demand per kWh output in Europe due to such improvements, which continue today. The result has been the relatively stagnant uranium prices in the last 3-4 decades (Figure 21), except for 2007 when a major mine was flooded and caused a supply shock to the market. Therefore, for most of the last few decades, uranium prices were trading at prices below the cost of production for many miners and mining has only been viable for the lowest-cost producers. However, there are reasons to be more optimistic about future uranium prices.

The accelerating decarbonisation megatrend is encouraging the use of nuclear power in less developed economies as a way of curbing carbon emissions.

Following the Russian invasion of Ukraine in February 2022 and the subsequent bans on the import of Russian uranium by Western allies, major economies continue to announce plans to increase nuclear power capacity to strengthen energy security while looking for alternative sources of uranium from friendly nations, such as Australia. This is noteworthy that Australia is the world's third-largest producer of uranium, after Kazakhstan and Canada.

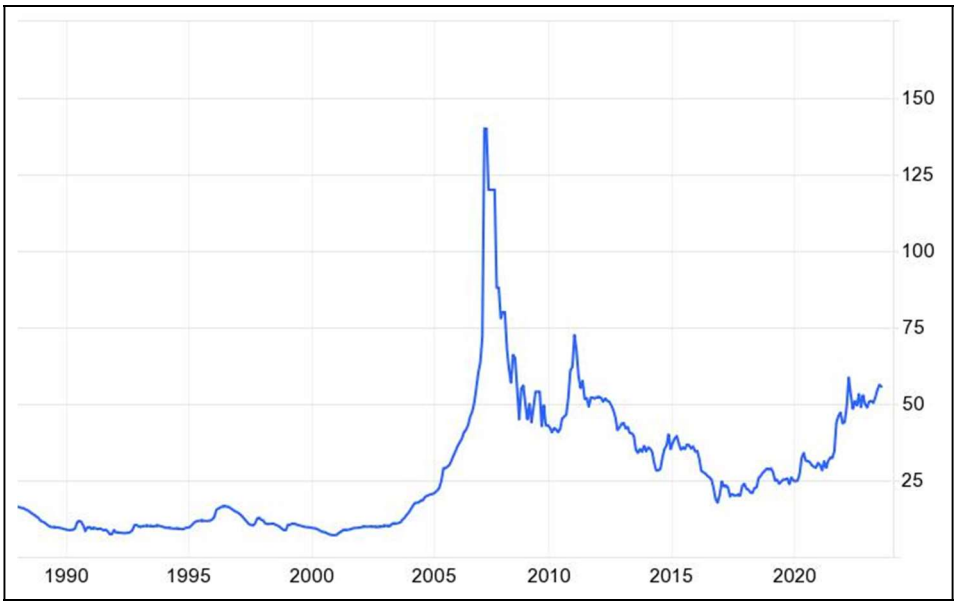
In addition, the accelerating decarbonisation megatrend in the global economy is expected to act as a pushing factor for higher uranium demand. While more advanced economies are moving towards preferred renewable energy sources to kerb the use of fossil fuels, less developed economies, such as China, are increasing their nuclear energy capacity to decrease their carbon emissions. In 2021, China announced its plans to spend US$440bn to build 150 new nuclear reactors in the next 15 years, more than what the rest of the world has built in the past 35 years. China says its plans could prevent about 1.5 billion tons of annual carbon emissions, more than what's generated by the U.K., Spain, France, and Germany combined.

Therefore, the combination of nations' energy security concerns, along with their lower carbon emissions targets, solidifies expectations of strong uranium-buying activity for decades to come, in our opinion. This can prove Adavale's uranium exploration activities at its Lake Surprise

[15] https://world-nuclear.org/information-library/nuclear-fuel-cycle/uranium-resources/uranium-markets.aspx

Project in a tier 1 jurisdiction in Australia potentially very attractive for investors in the long term.

Figure 21: Uranium prices (USD/lbs) have started a revival in the last 2 years



Source: Trading Economics

A uranium prices break above the 70-80 US$/lbs range is likely to encourage investments in uranium exploration and mining.

A useful uranium price threshold to consider by investors interested in investing in uranium companies is the 70-80 US$/lbs range. According to industry pundits, A stabilised uranium prices above the 70-80 US$/lbs range makes uranium mining quite sustainable and profitable for many mines, and it would allow uranium companies to finance their projects. Should that happen, we can also expect a strong rally in the share prices of companies with exposure to uranium assets, such as Adavale.

Valuation: A cost-based comparable approach indicates Adavale is trading at a significant discount to its neighbouring project

Adavale is an early-stage exploration company and does not own defined resources at either of its projects. In the absence of defined resources, free cash flows or economic studies, we have come to a conclusion that a cost-based comparable valuation approach will be suitable for valuing Kabanga Jirani Nickel Project, Adavale's flagship project. We have used the recent transactions in the neighbouring Kabanga Nickel Project as a comparable to give us an idea of how much the exploration successes and investments into the Kabanga Jirani Nickel Project should be worth now. **We have not included any value from the Lake Surprise Uranium Project in our valuation of Adavale, which remains a significant upside potential to our valuation should the uranium prices break above the aforementioned US$70-80 range.**

Adavale first initiated its entry into the nickel sulphide exploration program in Tanzania when it applied for two nickel tenements in January 2020, adjoining the world-class Kabanga Nickel Sulphide deposit. These tenements were granted in March 2020 for a period of 5 years.

Following the appointment of the new Board and Management at the end of August 2020, the company obtained the historical and comprehensive UNDP and BHP exploration data package. The package comprised a significant body of exploration work undertaken in Tanzania's Kabanga Nickel Belt region between the mid-1970s and 2008. The wealth of relevant data contained in the package guided Adavale's technical team to recommend the application for additional prospecting

licences. The company subsequently applied for the Kabanga East, Kabanga West, Burigi, Burigi North and Ruiza NE Licences, which all have been granted. All of the company's licences are surrounded or are proximal to the world-class Kabanga Nickel Project (58Mt @2.62% Ni). The licences have collectively been named the Kabanga Jirani Nickel Project; Jirani is the Swahili word meaning "neighbour."

During the year, Adavale was granted Prospecting Licence PL12350/2023 covering an area of 3.74km^2 from the Government of Tanzania (Luhuma Central). In 2021, the company executed a binding farm-in agreement for 2 licenses PL11692/2021 and PL11693/2021 with significant nickel sulphide exploration potential (See Appendix II for the agreement's terms). BHP drilled c. 25 holes within the Luhuma area before terminating their activities in Tanzania due to the conflict in neighbouring Burundi. BHP's exploration activities showed the Luhuma tenements encompass the under-explored Luhuma layered mafic-ultramafic intrusion (LMUI) adjacent to the company's existing Kabanga NE licence. BHP's hole LUH06 at Luhuma Central returned a massive sulphide intersect of 8.4m grading 1.14% nickel. Adavale's recently announced massive sulphide intersections at both of its diamond drill holes in the vicinity of BHP's LUH06 provide strong evidence that the LMUI is a mineralised system that has substantial exploration potential.

Adavale commenced the initial exploration program at the Kabanga Jirani Nickel Project in mid-November 2020. Since then, based on the company's ASX announcements, a cumulative of c. A$7.3m has been spent on exploration activities, with only a small fraction of this amount having been spent on the Lake Surprise Uranium Project. You can see a description of the company's exploration activities during this period in Figure 22. This amount does not include the c. A$2m spent by the company on its other operating activities, including payments to suppliers and employees and is the amount that has been put into the ground only.

Adavale's expenses at the Lake Surprise Uranium Project have been negligible, compared to those of the nickel explorations at Kabanga Jirani. For example, the aircore drilling program of 56 holes for 742m that was completed at Lake Surprise in 3Q23, cost the company a mere A$70,000. As such, we have assumed the company's cumulative exploration expenses attributable to the Kabanga Jirani Nickel Project at A$7m, with only A$0.3m assumed to have been spent on the Lake Surprise Uranium Project during the same period (the last 3 years).

Figure 22: Adavale's actual and estimated operating cash outflows since the commencement of exploration programs at Kabanga Jirani

(A$m, Year-end June)	FY21	FY22	1HY23	3Q23	4Q23e	
Cash flows from operating activities						**SUM**
Payments to suppliers and employees	(0.4)	(0.7)	(0.6)	(0.1)	(0.1)	(2.0)
Payments to exploration and evaluation expenditure	**(0.9)**	**(3.6)**	**(1.8)**	**(0.7)**	**(0.3)**	**(7.3)**
Net cash outflows from operating activities	(1.3)	(4.3)	(2.4)	(0.8)	(0.5)	(9.3)

Source: Company, East Coast Research

Figure 23: Kabanga Jirani Nickel Project has been the main focus of Adavale in the last 3 years

Period	Activity	Explanation
4Q23	Nickel Exploration	2 diamond holes were drilled at the Luhuma Central Prospect plus additional geochemical soil survey conducted during the period.
	Uranium Exploration	No particular activities during the period have been reported at the Lake Surprise Uranium Project as of the time of writing this report.
3Q23	Nickel Exploration	4 holes (RC/DD) were drilled at the Kabanga Jirani Nickel Project, and additional geochemical soil surveys were conducted during the period.
	Uranium Exploration	An aircore program of 56 holes for 742m was completed at Lake Surprise.
1HY23	Nickel Exploration	24,000 gravity readings over an area of 1,000 km^2 and follow-up EM surveys over 9 of the 32 gravity targets, 4 RC and DD holes were also completed at the project during the period.
	Uranium Exploration	The company completed a slim-hole RC hammer drilling program, 56 holes for 742m drilled.
FY22	Nickel Exploration	In the first half of the financial year, the company completed a total of 18 holes (DD/RC), totalling 4,448m over the project, 3,000m of DD and the rest RC.
	Uranium Exploration	The company completed a 400km gamma survey during the period.
FY21	Nickel Exploration	In the first half of the financial year, the company completed a total of 4 drill holes and undertook some gravity and magnetic surveys.
	Uranium Exploration	The company was largely in the process of extending its exploration licences at the Lake Surprise Uranium Project.

Source: Company, East Coast Research

Adavale's Nickel exploration success at Kabanga Jirani and Luhuma is also owed to the previous exploration work and expenditure by BHP in the area, including the drilling of 25 holes, besides EM and geochemical surveys covering much of the areas. We have estimated the current cost of BHP's drilling alone at A$3.9m, using guidance provided by Adavale's management.

Figure 24: Current cost of BHP's drilling at Kabanga Jirani and Luhuma

BHP's exploration expenditure (US$m)	
No. of holes drilled*	25
Average Depth (metres)^	550
Current average cost per metre^ (US$)	198.8
Estimated costs of drilling (US$m)	2.0
AUD/USD exchange rate	0.70
Estimated costs of drilling (A$m)	**3.9**

Notes: * Based on company ASX Announcements.
^Based on communications with Adavale's management.
Source: Company, East Coast Research

In our base-case scenario, we have used a cost multiple of 2.25x the exploration expenditure at the Kabanga Jirani Nickel project to arrive at our valuation. We have arrived at the 2.25x multiple using the recent BHP investment in the Kabanga Nickel Project that valued the project at US$658m.

BHP's investment in the Kabanga Nickel Deposit valued the project at 2.25x the exploration expenditure incurred at project to develop the currently defined resources.

BHP's first tranche of US$40 million investment in the Kabanga project converted into an 8.9% equity stake in Kabanga Nickel (7.5% see-through interest in Tembo Nickel Corp), and the second tranche of US$50 million, completed in February 2023, increased BHP's equity stake in Kabanga Nickel to 17.8% (15% see-through interest in Tembo), thereby valuing the project at US$658 million, post-money. Tembo Nickel is the joint venture owner of the project, owned 84% by Kabanga Nickel and 16% by the Government of Tanzania, set to undertake mining, processing, and refining to Class 1 nickel with cobalt and copper co-products near the asset.

According to Lifezone Metals, more than $293 million was spent by prior owners of the Kabanga Nickel deposit, Glencore and Barrick, to accurately delineate the ore body. This means the project was valued by BHP as 2.25x the exploration expenditure that had gone into the project.

Figure 25: Cost-based valuation multiple calculations based on BHP's implied valuation of Kabanga Nickel Project

Valuation multiple calculations	
BHP's Kabanga Nickel Project Implied Valuation (US$m)	658
Cumulative Kabanga Nickel's exploration expenditure (US$m)	293
Implied cost-based valuation multiple	**2.25x**

Source: Lifezone Metals, East Coast Research

The cost benefits from the development of the Kabanga Nickel Deposit justify a premium for Kabanga Jirani valuation.

The development of the Kabanga Nickel Deposit will bring infrastructure improvements to the area, along with the establishment of goods and service providers to support all aspects of the project, including mining, processing, and refining. With this level of infrastructure established, feasibility studies for the development of any possible nickel sulphide discoveries in the region, such as in Adavale's Kabanga Jirani Nickel Project, are likely to substantially benefit in terms of cost reductions. As such, we have used a 20% premium to our base-case scenario to arrive at our bull-case scenario valuation to reflect the potential cost benefits that Kabanga Jirani is likely to enjoy compared to the Kabanga Nickel Project.

We have arrived at a valuation of A$0.037 per share in the base case and A$0.043 per share in the bull case scenario (Figure 26). Our mid-point target price of A$0.04 represents a Price/NAV of 0.52x, indicating a substantial valuation headroom to the current share price.

Figure 26: Adavale's cost-based comparable valuation (post equity dilution)

Adavale Resources Valuation (A$ m)	Base Case	Bull Case
Cumulated Exploration Costs	10.9	10.9
Valuation Multiple (x)	2.25	2.69
Kabanga Jirani Nickel Sulphide Project Value	24.5	29.4
Adavale's Enterprise Value	24.5	29.4
Net Debt (cash)	(4.5)	(4.5)
Equity Value	**28.9**	**33.8**
Number of Shares (diluted in millions)^	778.4	778.4
Implied Share Price (A$)	**0.037**	**0.043**
Current Share Price (A$)	0.021	0.021
Upside (%)	76.9%	106.8%
Mid-point Target Price (A$)	**0.040**	
Price / NAV (X)	0.52x	

^Includes only the shares on issue and shares from the conversion of convertible notes as all the outstanding options are out of money.
Source: Company, East Coast Research

Additional shares on issue

It is important to note that we have assumed a higher number of shares than is on issue at the moment. The company has 523.3m shares on issue currently and is offering an additional 191.5m shares in an ongoing share placement and rights issue, which we have added to our diluted share count. For the details of Adavale's capital structure, refer to Appendix II.

Re-rating of Adavale

Adavale is currently trading significantly below our mid-point target valuation. Meeting the following milestones can enable a re-rating on the stock, thereby pushing the share price towards our target valuation range:

Adavale's ongoing drilling at Kabanga Jirani provides a continuous news flow and increases chances of potentially significant nickel sulphide intersection at the project being reported, leading to a potentially significant re-rating in the company's share price.

- **Further excellent drilling results** following up on the recent results announced will improve investors' sentiment about the prosperity of the Kabanga Jirani Nickel Project to potentially resemble a similarly attractive nickel sulphide discovery to that of the Kabanga Nickel Deposit.
- Any **increase in Nickel prices** will have a direct impact on the attractiveness of the Kabanga Jirani Nickel Project to facilitate future financing of the company's exploration activities at the project.
- **An announcement of a takeover offer** at a significant premium to the overcoming market price will be very convincing for the market as to the true value of Adavale and is very likely to bring about a re-rating on the stock. With BHP's significant investment into the neighbouring Kabanga Nickel Deposit, we see a chance that BHP might like to get its hands back on the asset that it previously owned to benefit from the potential synergies between the two projects, Kabanga and Kabanga Jirani.
- **A stabilised uranium price above the US$70-80 range** is likely to bring about investments into the uranium projects, thereby increasing the value of Adavale's Lake Surprise Uranium Project.
- **An improvement of the macroeconomic picture** and the subsequent relaxation of financial markets will have a positive impact on the company's ability to raise funds at more attractive prices to continue its value-accretive operations, and thereby increase the company's valuation.

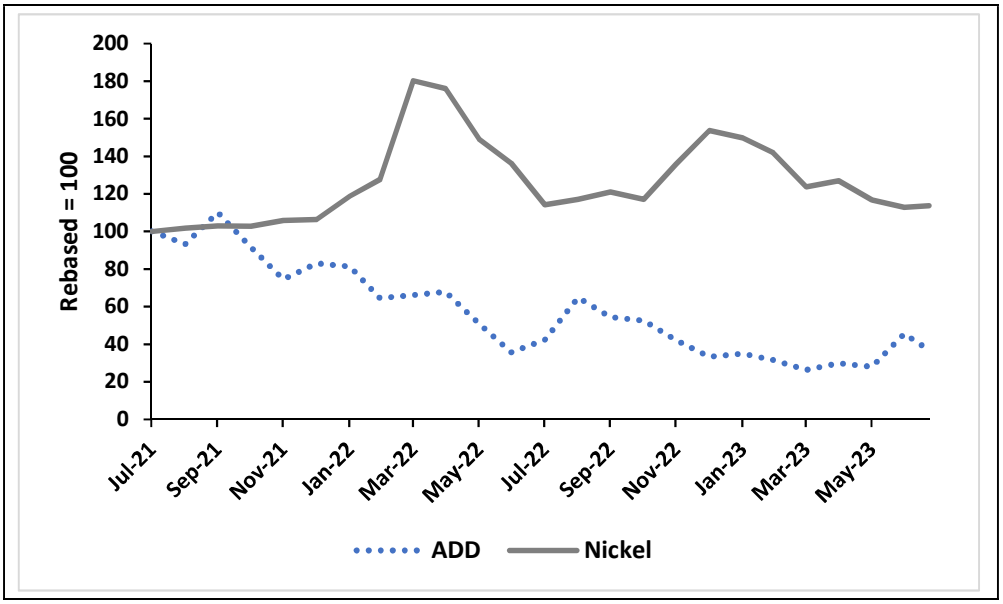
Risks

Although we believe that Adavale makes up an attractive speculative opportunity, we foresee the following key risks to our investment thesis:

The key risks to our investment thesis are funding risk, geological risk, jurisdiction risk and commodity price risk.

- **Underlying commodity price risk**: Adavale's investment attractiveness is very sensitive to nickel price fluctuations, which depend on macroeconomic factors and global demand and supply dynamics of the underlying commodity. Any prolonged drop in nickel prices will be detrimental to our investment thesis.
- **Funding risk**: Adavale presently does not generate cash flows and is reliant on capital raisings to fund its operations. Timely raising of funds on favourable terms will likely be a challenge for the company's management, given the currently tight financial markets.
- **Execution risk**: The majority of future growth for Adavale is expected to come from potential nickel resource discoveries at Kabanga Jirani. Any prolonged period between the company's drilling result announcements, as well as possible dismal drilling results, are likely to jeopardise investor sentiment.
- **Geological risk**: For an early-stage exploration company like Adavale, there's a risk that the company never discover economically viable resources.
- **Jurisdiction risk**: Adavale's flagship project, Kabaga Jirani, is located in Tanzania, West Africa. Although Tanzania is considered one of the safer and more politically stable African countries, nevertheless, the country has a certain level of jurisdiction risks that need to be taken into consideration by potential investors.

Figure 27: Adavale's share price has significantly declined in the last 2 years despite nickel prices holding up



Source: Ycharts and East Coast Research

Appendix I: Adavale's Capital Structure

Figure 28: Adavale's capital structure post equity dilution

Class	In Millions	% of Fully Diluted	Notes
Quoted Securities			
Ordinary Shares on Issue*	714.8	60.3%	
Option Listed*	284.1	24.0%	$0.03 expiring 31 December 2025
Unquoted			
Options	112.3	9.5%	All of them out of money
Performance Rights	11.3	0.9%	
Convertible Notes**	63.67	5.4%	No. of shares from conversion
Diluted no. of shares^	**778.42**	65.5%	
Fully Diluted no. of Shares	1186.1		The sum of all securities on isse (post cap. Raise)

*Assuming a full uptake of the currently ongoing placement and rights issue offer to raise c. $3.64m.
** Assuming a conversion price of 0.03 per share for 191 convertible notes with a face value of $10,000.
^ Includes only the shares on issue and shares from the conversion of convertible notes, as all the outstanding options are out of money.
Source: Company, East Coast Research

Appendix II: Adavale's SWOT Analysis

Figure 29: SWOT analysis

Strengths	Weakness
(1) Early exploration results, including initial drilling results at Kabanga Jirani and Luhuma are very promising. (2) Exploring nickel in an area close to the Kabanga Nickel Deposit, one of the world's largest nickel sulphide deposits, indicating the favourable geological setting of the Kabanga Jirani project area. (3) Targeting highly desirable nickel sulphide deposits. (4) Kabanga Nickel Project's development is bringing ready infrastructure to the area. (5) Highly experienced leadership team in place.	(1) Kabanga Jirani Nickel Project's location in Tanzania, West Africa, poses some degree of jurisdiction risk to Adavale's investors. (2) Adavale is not generating any cash currently and is reliant on capital raisings to continue its operations.
Opportunities	**Threats**
(1) Lake Surprise Uranium Project can become much more valuable should the uranium prices revive. (2) Proximity of Kabanga Jirani to the Kabanga nickel deposit leads to a possibility for a takeover offer from BHP.	(1) High macroeconomic uncertainty leading to high volatility in commodity prices, impacting the investment attractiveness of the Kabanga Jirani Nickel Project. (2) Tight credit markets due to the currently high economic uncertainty levels make raising capital on favourable terms difficult for Adavale to continue its exploration activities at Kabanga Jirani.

Source: East Coast Research

Appendix III: Luhuma Farm-In Agreement Terms

In FY22, Adavale Resources executed a binding farm-in agreement with the Tanzanian businessman, Mr Ally Mbarak Nahdi, for 2 licences PL11692/2021 and PL11693/2021 (Luhuma Nickel Project). The Farm-in Agreement is structured as an option, but is in the nature of a farm-in and has four stages as per below, payable per licence:

Stage 1: Adavale has the immediate and exclusive right to explore and evaluate the licences for 12 months upon payment of US$12.5k cash – and US$25k worth of Adavale shares. During the first 12 months, Adavale must spend at least the minimum exploration expenditure as required by the Mining Commission, which is US$500 per annum per square kilometre across the 98.89km^2.

Stage 2: If Adavale is satisfied with the exploration results and prospectivity of the licences then on or before the 1st year anniversary Adavale has the right to earn-in 65% ownership of the licences upon paying the vendor US$25k cash and $75k worth of Adavale shares. Adavale must continue to spend at least the minimum annual exploration expenditure of US$500 per square kilometre.

Stage 3: If Adavale continues to be satisfied with the exploration results and prospectivity of the licences then on or before the 2nd year anniversary Adavale has the right to earn-in 80% ownership of the licences upon paying the vendor US$50k cash and US$112.5k worth of Adavale shares. Adavale must continue to spend at least the minimum annual exploration expenditure of $500 per square kilometre.

Stage 4: If Adavale continues to be satisfied with the exploration results and prospectivity of the licences and has earned-in and acquired a total 80% ownership, then Adavale has the right of first refusal to match any independent bona fide arm's length third party offer to buy out the remaining 20% participating interest in the licences held by the licence holder on or before the 3rd year anniversary from the Effective Date (being the 3rd business day after the conditions precedent have been satisfied). If the licence holder wishes to sell the 20% participating interest in the licence during the period, he must also give notice to Adavale and set out the terms in which he proposes to sell and the parties shall use best endeavours to negotiate agreeable terms.

On estimation of an economic Ore Reserve pursuant to the JORC Code within the Prospecting Licences, Adavale shall use its best endeavours to convert the Prospecting Licences to Mining Licences. Should an operational mine come into production from such Mining Licences, the Vendor shall receive a Net Smelter Return of 1.5% from the sale of minerals produced at the mine paid on a monthly basis.

In February 2022, Adavale completed the Stage 1 payment, including issuing 1,778,458 fully paid ordinary shares in accordance with the agreement, thereby earning-in 65% ownership of the Luhuma Nickel Project licences.

Appendix IV: Management Team

Figure 30: Adavale's management and board members

Name and Designation	Profile
Mr. Grant Pierce OAM • Non-Executive Chairman 	Grant is a qualified mining engineer with 30 years of operating experience in both Australia and Africa. He has managed both open-pit and underground mines across a range of mineral commodities. In addition, he has held numerous senior development roles, taking green and brown field projects to either shovel-ready status or into production.
Mr. David Riekie • Executive Director 	David is an experienced director in the capacity of both Executive and Non-Executive roles of ASX listed companies. His career has spanned multiple continents. Within Africa Namibia, Tanzania, Eritrea, South Africa, DRC and Mozambique are notable. He has overseen exploration and resource development, scoping and feasibility studies, production optimisation, stakeholder engagement, acquisition programs and expansion initiatives.
Mr. John Hicks • Non-Executive Director 	John is a geologist with over 40 years of experience in the Australian mining and exploration industry. From 1998, Mr Hicks has operated as an independent geological consultant. John has worked at Panoramic Resources starting as an independent geological consultant, before becoming exploration manager in 2005 and general manager of exploration. He held various geological positions with several Australian resource companies including Hamersley Iron, Australian Consolidated Minerals, WMC, and Mining Project Investors. He has been an independent geological consultant for Poseidon Nickel since early 2020. He held various geological positions with several Australian resource companies including Hamersley Iron, Australian Consolidated Minerals, WMC, and Mining Project Investors. He has been an independent geological consultant for Poseidon Nickel since early 2020.
Mr. Allan Ritchie • Chief Executive Officer 	Allan graduated from the University of Technology in Sydney in 1986 with a Bachelor of Business and subsequently attained a post graduate Diploma in Applied Finance from the Financial Services Institute of Australia. Allan's distinguished career spans 30 years in both the energy and resources sectors, in investment banking and leadership roles in both private and publicly listed companies.
Mr. Leonard Math • Chief Financial Officer and Company Secretary 	Leonard graduated with a Bachelor of Business (Double Major in Accounting & Information Systems) from Edith Cowan University in 2003 and became a Chartered Accountant in September 2008. He has held multiple Director, CFO and Company Secretary roles in the resource sector, most recently being with Okapi Resources Limited and AVZ Minerals Limited, the latter giving him exposure to working in Africa.

Mr. Gerald Mturi • General Manager (Tanzania) 	Gerald is a qualified accountant, having commenced his career in 1996 with global energy company Total. He's held the positions of Senior Mine Accountant and Country Manager for Resolute Mining Limited in Tanzania and more recently has been the Executive Secretary of the Tanzanian Chamber of Mineral and Energy.
Mr. Paschal Wadeya • Chief Geologist (Tanzania) 	Paschal graduated from the University of Dar es Salaam in 2009 with a Bachelor of Geology and Mathematics. He has over 10 years' experience in field exploration in a range of commodities including gold, iron ore, coal, graphite and nickel within various geological settings in Tanzania.

Source: Company

Appendix V: Analyst's Qualifications

Behzad Golmohammadi, the lead analyst on this report, is an equity research analyst at Shares in Value (East Coast Research).

- Behzad has a bachelor's degree in Engineering (Industrial) and a master's degree in Applied Finance (Investing) from Sydney Business School, where he was the top performer in his cohort. He has also passed the first two levels of the CFA Program.
- Behzad has several years of experience working as an Equity Research Analyst and Technical Analyst in Australia and overseas and has a broad knowledge of ASX-listed companies. He has been a speaker at the Australian Technical Analysts Association (ATAA).

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