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Zinnwald Lithium PLC
06 June 2024

Prior to publication, the information contained within this announcement was deemed by the Company to constitute inside information as stipulated under the UK Market Abuse Regulation. With the publication of this announcement, this information is now considered to be in the public domain.

Zinnwald Lithium plc / EPIC: ZNWD.L / Market: AIM / Sector: Mining

6 June 2024

Zinnwald Lithium plc ("Zinnwald Lithium" or the "Company")

Further update to Mineral Resource Estimate

221% increase in Measured Resources to support materially increased production

Zinnwald Lithium Plc (AIM:ZNWD) is pleased to announce the publication of a further update to its independent Mineral Resource Estimate ("MRE") for its 100% owned Zinnwald lithium project ("Zinnwald" or the " Project") located in Saxony, eastern Germany.

A previous update to the Project's MRE, published on 21 February 2024, indicated that it was the second largest hard-rock resource in the European Union ("EU"). Following this, a geometallurgical testwork programme was undertaken to provide a higher level of confidence in the Mineral Resource within the mineralised albite granite, which surrounds the lenses of higher grade greisen mineralisation.

June 2024 MRE Highlights:

- Additional 25.0Mt @ 2,090ppm Li (52kt contained lithium metal) in the Measured category representing an increase of 221% in tonnes and 133% in contained metal in the Measured category compared with the February 2024 MRE.
- The Project now has sufficient material in Measured category alone to support over 20 years of production. This is a major milestone as it further de-risks the resource and adds a higher level of confidence in the detailed mine plan, which is key to future financing plans.
- The increase in the Measured category is contained exclusively within the broad mineralised zone, which comprises mineralised internal greisen and lower grade mineralised albite granite.
- The inclusion of the additional Measured category within the mineralised zone is as a result of Zinnwald Lithium carrying out metallurgical testwork on 35 variability drill core samples derived from the 2022 / 2023 drilling campaign. This was a recommendation by Snowden Optiro following the previous February 2024 MRE.
- The total Measured category is increased to 36.3Mt @ 2,500ppm Li (91kt contained lithium metal) while the total Indicated category is now 157.2Mt @ 2,150ppm Li (337kt contained lithium metal) as a result of the increase in the Measured category. The total Measured and Indicated category remains unchanged at 193.5Mt @ 2,220ppm Li (428kt contained lithium metal).
- The Inferred category remains unchanged at 33.3Mt @ 2,140ppm Li (71kt contained lithium metal).

Zinnwald Lithium CEO, Anton du Plessis, commented: *"We are delighted to announce substantially improved confidence in the Mineral Resource at the Zinnwald Project with a 3.2x increase in resource tonnes in the Measured category. The significant size of the measured resource coupled with the improved continuity underscores the potential for the Project to support materially increased production rates using large scale bulk underground mining techniques compared with what was contemplated in the 2022 Preliminary Economic Assessment."*

DETAILS

The Project's previous update to its MRE, announced on 21 February 2024, showed it was the second largest hard-rock resource in the EU. The Company undertook a further geometallurgical testwork programme to provide a higher level of confidence in the Mineral Resource within the broader mineralisation zone. This has resulted in an additional 25.0Mt being included in the Measured category. This represents a 221% increase in tonnage and a 133% increase in contained lithium within the Measured category compared to the February 2024 MRE. The Project now has sufficient material in Measured category alone to support over 20 years of production. This is a major milestone as it further de-risks the resource and adds a higher level of confidence in the detailed mine plan, which is key to financing plans.

This June 2024 MRE update does not incorporate any new drilling or sampling data, and as such, the block model estimate is unchanged. The February 2024 MRE incorporated 26,911m of new diamond core drilling across 84 drill holes completed since the previous MRE released in September 2018. The corresponding drill hole database now consists of 33,933m of drill core and 19,537 samples with lithium analyses since the Project started in 2011.

In addition to the high-grade greisen mineralisation, the focus of the recent 2022 / 2023 drilling was the lithium mineralisation hosted by the mineralised albite granite, as well as the internal lenses of higher grade greisen (termed the mineralised zone). The inclusion of the mineralised zone allows for a higher production rate and a potential optimisation of overall project economics.

The following statement of Mineral Resources has been prepared in accordance with National Instrument 43-101 Standards of Disclosure for Mineral Projects of the Canadian Securities Administrators ("NI 43-101") by independent consulting firm Snowden Optiro Ltd ("Datamine International") of Bristol, United Kingdom.

Table 1.1: Mineral Resource Statement for Zinnwald Lithium Project, effective 5 June 2024.

Classification	Domain	Tonnes (Mt)	Mean grade		Contained metal	
			Li (ppm)	Li_2O (%)	Li (kt)	LCE (kt)
Measured	**External Greisen (1)**	11.3	3,420	0.736	39	206
	Mineralised Zone (2)	25.0	2,090	0.449	52	277
	· Internal Greisen	1.5	3,240	0.697	5	27
	· Mineralised Granite	23.5	2,020	0.434	47	250
	Subtotal (1) and (2)	**36.3**	**2,500**	**0.538**	**91**	**483**
Indicated	**External Greisen (1)**	2.1	3,510	0.756	7	40
	Mineralised Zone (2)	155.1	2,130	0.459	331	1,762
	· Internal Greisen	13.2	3,330	0.717	44	234
	· Mineralised Granite	141.9	2,019	0.435	287	1,528
	Subtotal (1) and (2)	**157.2**	**2,150**	**0.463**	**338**	**1,802**
Measured + Indicated subtotal		**193.5**	**2,220**	**0.478**	**429**	**2,285**

Inferred	**External Greisen (1)**	0.8	3,510	0.756	3	15
	Mineralised Zone (2)	32.5	2,110	0.454	68	364
	· Internal Greisen	0.6	2,880	0.620	2	9
	· Mineralised Granite	31.9	2,090	0.450	67	355
	Subtotal (1) and (2)	**33.3**	**2,140**	**0.461**	**71**	**379**
Inferred subtotal		**33.3**	**2,140**	**0.461**	**71**	**379**

Notes

- Mineral Resource statement has an effective date of [5th June 2024].
- A Mineral Resource is reported using a cut-off grade of 1,100 ppm Li, which was calculated using the following assumptions: lithium hydroxide monohydrate price USD 23,800 /t, operating costs of USD $ 121.5/ t ROM; Li recovery of 69%; mining dilution and recovery of 10%.
- The requirement of a reasonable prospect of eventual economic extraction is met by having a minimum modelling width for mineralized zones, a cut-off grade based on reasonable inputs and an economic binding volume that lends itself to a potential scenario of underground extraction for undiluted in-situ resources.
- The Mineral Resource is reported at a minimum of 20m below historical underground mine workings (to avoid historic underground workings), and within Germany only.
- All tonnages reported are dry metric tonnes.
- Minor discrepancies may occur due to rounding and use of appropriate significant figures.
- LCE (lithium carbonate equivalent) calculation used - 5.323 x Li metal. LiOH*H2O (lithium hydroxide monohydrate) calculation used - 6.045 x Li Metal.
- Mineral resources which are not mineral reserves do not have demonstrated economic viability. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
- The results from the stope optimisation are used solely for the purpose of testing the "reasonable prospects for economic extraction" by underground methods and do not represent an attempt to estimate mineral reserves. There are no mineral reserves reported in this NI 43-101 resource update. The results are used as a guide to assist in the preparation of a Mineral Resource statement and to select an appropriate resource reporting cut-off grade. Stope optimisation does not represent an economic study.
- The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
- The Author is not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors, that could materially affect the current Mineral Resource Estimate.

Project Overview

Snowden Optiro was commissioned by Zinnwald Lithium plc to undertake a re-classification of the MRE of the Zinnwald Lithium deposit following an update to the MRE in February 2024.

The Zinnwald Lithium project is located in Saxony, Germany, very close to the German-Czech Republic border (Figure 1.1). The Zinnwald Lithium deposit is a typical greisen-hosted deposit and is located within the Central European Variscan (Hercynican) belt. The primary ore mineral for the deposit is the type locality for the mica mineral known as Zinnwaldite, which can contain up to 1.9 wt.% lithium.

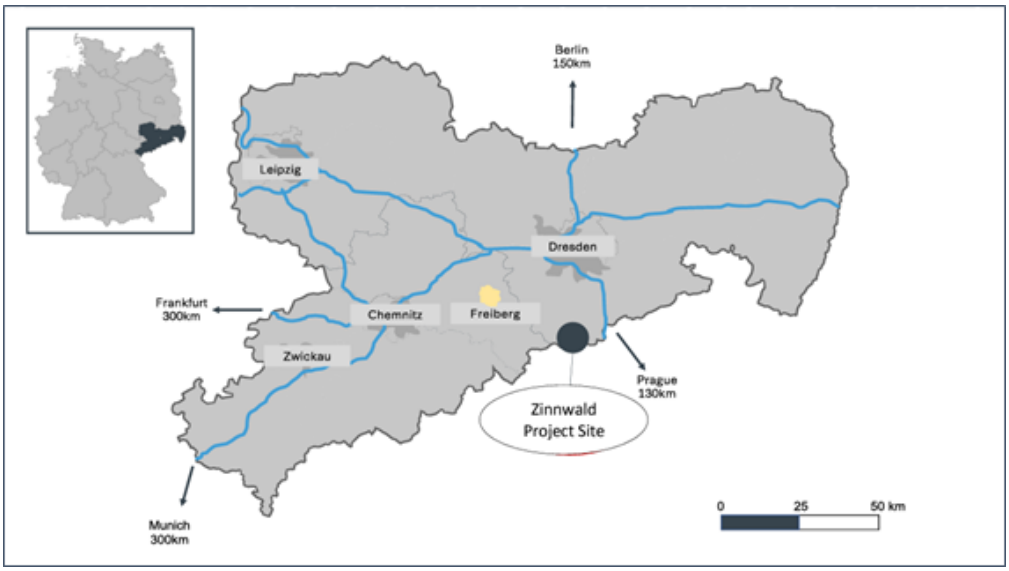


Figure 1.1: Zinnwald Lithium project location.

Source: Zinnwald Lithium

Mineral Resource Estimate

Zinnwald Lithium announced an updated MRE on 21 February 2024. This followed Zinnwald Lithium completing an infill drilling campaign in 2022 / 2023. This June 2024 update to the MRE is a re-classification of the 21 February 2024 MRE only. No new drilling or sampling data has been incorporated into the block model and no re-estimation has taken place.

May 2024 Geometallurgical Testwork

The February 2024 MRE reviewed all historic testwork completed on the Zinnwald deposit, which included bench scale and pilot scale testwork. Whilst the Qualified Person was satisfied that sufficient bulk metallurgical testing, including a pilot plant test, has been performed on both the greisen and mineralised granite domain, sufficient work had not been carried out to test for geological / mineralogical variation and how these variabilities affect metallurgical performance. The mineralised albite granite is mineralogically and geologically more heterogeneous compared with the greisens and it was determined that insufficient variability testing had been performed to date.

Following this review, Snowden Optiro recommended that Zinnwald Lithium conduct a geo-metallurgical testwork programme, comprising processing testwork and an accompanying qualitative and quantitative mineralogical study. Understanding variability in alteration of the host rock and zinnwaldite and its potential effect on processing performance was the direct objective of the testwork programme. The proposed Zinnwald flowsheet is basic and the primary and only recovery process is magnetic separation, which relies on the magnetic susceptibility of the ore mineral (zinnwaldite), and by extension the iron content of the ore mineral. Any variations in iron content may affect magnetic susceptibility and recoveries / grade of the concentrate.

The Qualified Person selected a total of 35 drill core samples for the purposes of the geometallurgical testwork programme. The testwork programme was designed at bench scale and incorporated the concentrator portion of the overall Zinnwald flowsheet. It was deemed that the concentrator flowsheet and concentrate recoveries were more susceptible to variations in feed than the pyro / hydro-metallurgical flow sheet.

The objective of the study was to test geological variability, primarily within the mineralised albite granite, but also within the internal and external greisens.

The laboratory scale testwork was conducted by Metso at the Research Centre in Pori, Finland. This facility has also been used by Metso for other Zinnwald Lithium testwork campaigns. The flowsheet was designed to replicate the proposed full-scale process, as close as reasonably possible. The sample preparation and the use of a SLon magnet mirrored the 2023 / 2024 pilot scale testwork campaign conducted by Metso.

The main findings from the geometallurgical testwork were:

- Variability in lithium recoveries exists in the mineralised albite granite samples (45.8% - 81.1%), with a mean of 64.5%.
- Lower variability in lithium recoveries exist in the greisen samples. No differentiation in recoveries can be determined between the internal (within the mineralised zone) and external greisens.
- Variation in recoveries appears to be associated with chlorite / sericite alteration (and to a lesser extent kaolinisation) of the albite granite, with the former potentially associated with zinnwaldite alteration. Conversely unaltered and haematised albite granite exhibits lower variability in recoveries.

Subsequent modelling of the alteration zones within the deposit demonstrate that alteration is not common and that it is often constrained to narrow joints and fault structures. Distribution is often disparate but occasionally forms broad zones that centre around major faults and continuous greisens / joints. Interrogation of the models confirms that approximately 20% of the mineralised albite granite domain is altered, inferring that approximately 20% of the mineralised albite granite will exhibit variable processing performance, due to host rock kaolinisation and host mineral alteration.

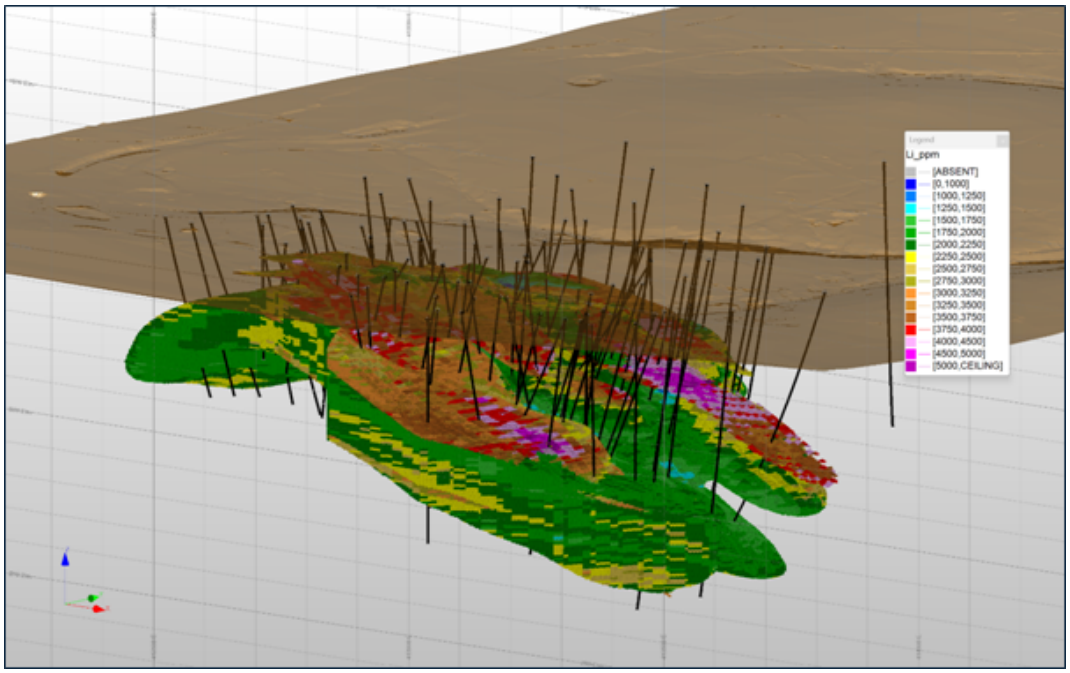
February 2024 Mineral Resource estimate

This Mineral Resource estimate required a reinterpretation and an updated geological model in order to represent the geological and mineralogical domains that have been defined by the most recent drilling campaign undertaken by Zinnwald Lithium during 2022 and 2023. The geological model includes mineralisation domains that are represented by the higher grade greisens "external", as well as a broader zone of lithium mineralisation contained within a mineralised albite lithium mica granite and "internal" higher grade greisens. The higher-grade external greisens are narrow in places but can reach up to 40m in true thickness and outcrop above the mineralised zone of granite and internal greisens with a typical separation but variable distance of approximately 10m. The broader mineralised zone has an average true thickness of approximately 80m and contains lenses of greisen that locally exhibit higher grades of lithium mineralisation. Both the mineralisation zone and the greisens mirror the strike and dip of the host rock intrusion- the albite granite, as is typical of many greisen related roof zone deposits.

Lithium mineralisation within all geological domains is hosted exclusively by polylithionite micas, or better known as "zinnwaldite" type micas.

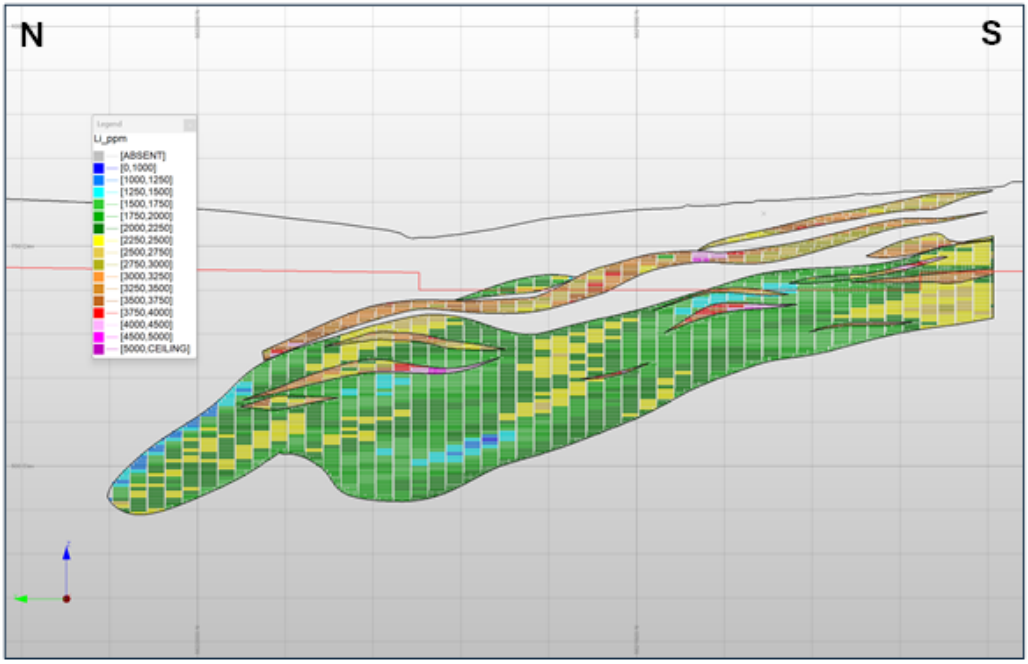
Lithium has been estimated using ordinary kriging methods, and density using simple kriging methods. Estimation has honoured the hard boundaries of the external greisens, internal greisens and mineralised granite domains, as well as using a dynamic anisotropic search method to honour the varying dip and dip directions of all estimation domains (Figure 1.2, Figure 1.3 and Figure 1.4).

Figure 1.2: 3D view looking north west. Mineral Resource block model showing distribution of lithium metal (Li_ppm) grades.



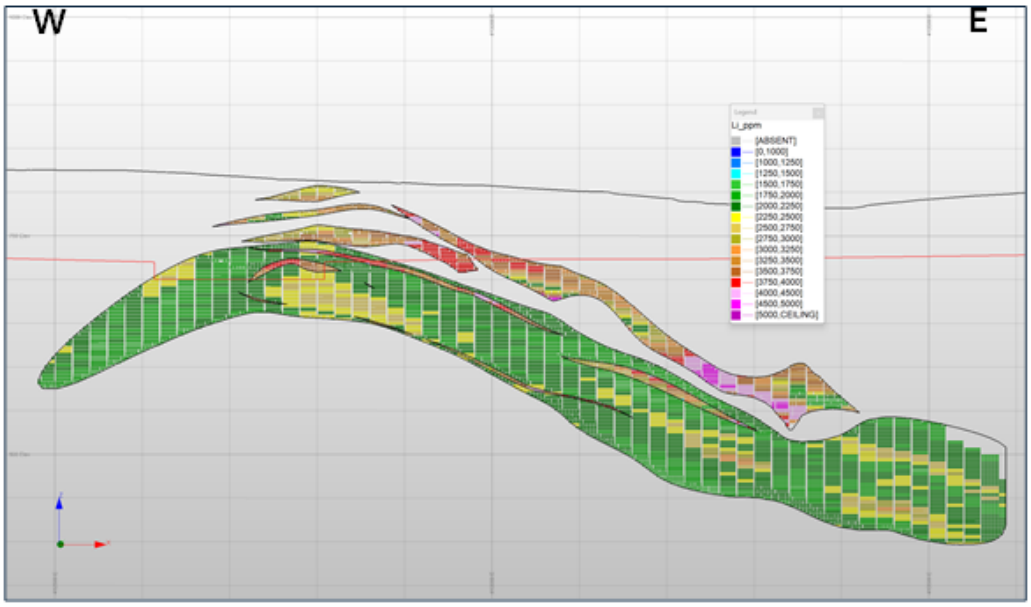
Block model showing lithium (Li_ppm) grade distribution.

Figure 1.3: N-S long section through the resource block model.



Block model showing lithium (Li_ppm) grade distribution, red line denotes reportable limit as defined by a 20m safety pillar below historical mine workings, black line denotes topography.

Figure 1.4: W-E cross section through the resource block model.



Block model showing lithium (Li_ppm) grade distribution, red line denotes reportable limit as defined by a 20m safety pillar below historical mine workings, black line denotes topography.

Classification

Snowden Optiro has taken multiple factors into account when considering classification:

- Drillhole spacing
- Geological model confidence
- Mineralisation continuity
- Metallurgical confidence
- Estimation pass
- Mineralisation thickness

The classification criteria for the resource are as follows:

Measured:

- External greisen units, below the 20m safety buffer, showing consistently mineralised zones supported by several drilling intersections at a spacing of approximately 80m. This corresponds to parts of the model where the geo-metallurgical behaviour is well understood, and the mineralisation shows suitable continuity. The classification does not include any extrapolated material beyond appropriately spaced drillholes and must be estimated in the first search pass.
- Mineralised zone, below the 20m safety buffer, showing consistently mineralised zones supported by several drilling intersections at a spacing of approximately 80m. This corresponds to parts of the model where the geo-metallurgical behaviour is well understood, and the mineralisation shows suitable continuity. Only zones of modelled unaltered granite have been included in the Measured category. The classification does not include any extrapolated material beyond appropriately spaced drillholes and must be estimated in the first search pass.

Indicated:

- External greisen units, below the 20m safety buffer, supported by drilling intersections on a spacing of 80-120m. The classification does not include any extrapolated material beyond appropriately spaced drillholes and must be estimated in the first search pass.

- Mineralised zone, below the 20m safety buffer, supported by drilling intersections on a spacing of 80-120m or at approximately 80m in zones of the domain that have been modelled as exhibiting alteration (kaolinisation / zinnwaldite alteration). The classification does not include any extrapolated material beyond appropriately spaced drillholes and must be estimated in the first search pass.

Inferred:

- External greisen units and the mineralisation zone, below the 20m safety buffer, supported by wider-spaced drilling. This corresponds to less certainty in geological / mineralisation continuity and consists of material estimated in the first and second pass and extrapolated beyond drillholes at the periphery of the model up to half drillhole spacing.

Snowden Optiro has recommended to Zinnwald Lithium that a further geometallurgical testwork programme be undertaken within the modelled alteration zones of the mineralised granite in order to provide a higher level of confidence in the Mineral Resource within the broader mineralisation zone. This is as a result of the 2024 geometallurgical testwork demonstrating a high variability in processing performance within the altered zones of the mineralised granite.

Reasonable Prospects for Eventual Economic Extraction

NI 43-101 defines a mineral resource as that portion of the mineral inventory that has reasonable prospects for economic extraction (RPEEE). CIM Best Practice Guidelines for estimating mineral resources require the factors significant to project economics be current, reasonably developed and based on generally accepted industry practice and experience. In establishing the cut-off grade, it must realistically reflect the location, deposit scale, continuity, assumed mining method, metallurgical processes, costs and reasonable long-term metal prices appropriate for the deposit.

Key assumptions have been provided to Snowden Optiro by Zinnwald Lithium for this MRE; these have been adjusted in accordance with the Company's understanding of costs associated with a higher production rate expected when mining a greater volume of material at a lower grade. This includes metallurgical recoveries and mineral processing costs based on the results of ongoing metallurgical testwork.

The grade-tonnage curve in Figure 1.5 demonstrates the robustness of the estimation to changes in cut-off grade around the 1,100 ppm Li grade.

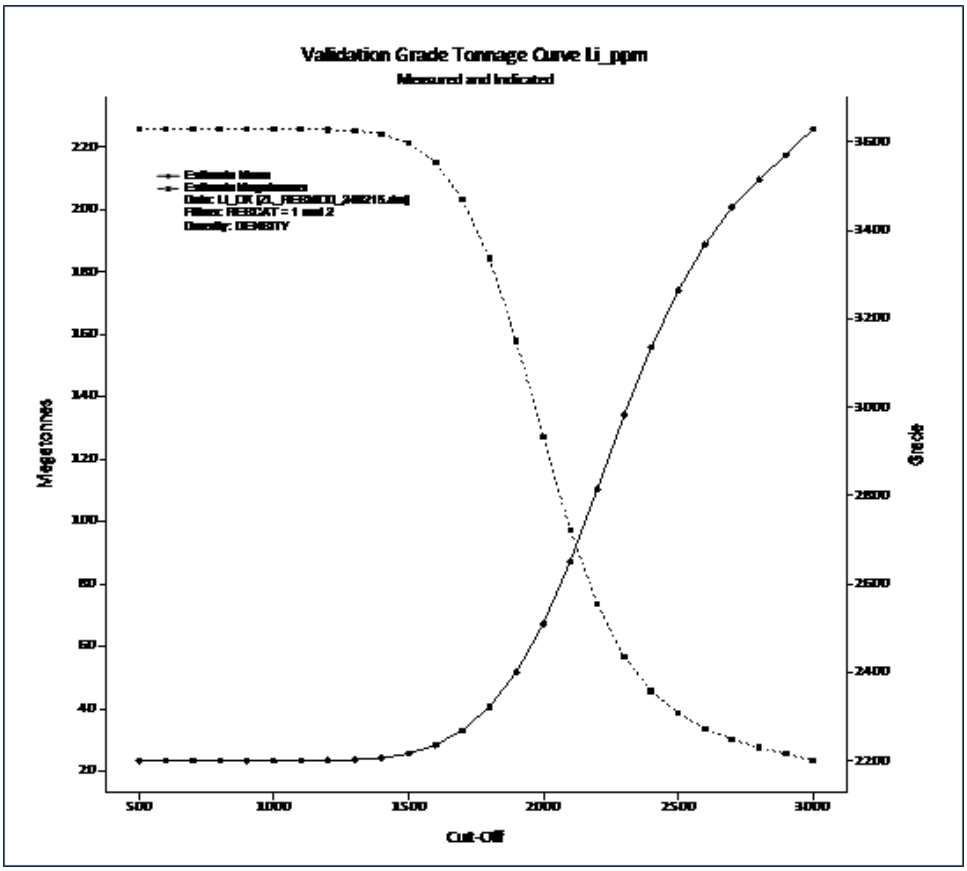


Figure 1.5: Grade-tonnage curve for the Zinnwald Lithium deposit, Measured and Indicated only.

Comparison with Previous Estimates

The most recent MRE for the deposit was completed on the 20 February 2024 by Snowden Optiro and was prepared and reported in accordance with National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"). The June 2024 MRE is an update to the February 2024 MRE and does not include a re-estimate, with the only material difference being a re-classification. A direct comparison is provided in Table 1.3.

Table 1.3: Comparison of the Snowden Optiro Feb 2024 MRE with the updated Snowden Optiro June 2024 MRE

Model	Classification	Type	Tonnes (Mt)	Mean Grade Li (ppm)	Contained Metal Li (kt)
Snowden Optiro (Feb 2024)	Measured	External Greisen (1)	11.3	3,420	39
		Mineralised Zone (2)	-	-	-
	Indicated	External Greisen (1)	2.1	3,510	7
		Mineralised Zone (2)	180.0	2,120	383
	Measured + Indicated		193.5	2,220	429
	Inferred	External Greisen (1)	0.8	3,510	3
		Mineralised Zone (2)	32.5	2,110	68

Model	Classification	Type	Tonnes (Mt)	Mean Grade Li (ppm)	Contained Metal Li (kt)
Snowden Optiro (June 2024)	Measured	External Greisen (1)	11.3	3,420	39
		Mineralised Zone (2)	25.0	2,090	52
	Indicated	External Greisen (1)	2.1	3,510	7
		Mineralised Zone (2)	155.1	2,130	331
	Measured + Indicated		193.5	2,220	429
	Inferred	External Greisen (1)	0.8	3,510	3
		Mineralised Zone (2)	32.5	2,110	68

Cut-off grade used for the Feb and June 2024 MRE was 1,100ppm.

The June 2024 MRE shows a 25Mt increase in the Measured category compared with the February 2024 MRE. This is as a result of better understanding processing performance variability and the relationship with variability of the deposit. Resultant alteration modelling within the mineralised granite has helped guide classification of Measured in regions of unaltered mineralised albite granite only. A drop in the Indicated category is as a result of the increase in the Measured category. No changes were made to the Inferred category.

Snowden Optiro has recommended to Zinnwald Lithium that further geometallurgical testing of alteration zones of the mineralised albite granite be undertaken in order to convert parts of the Resource currently defined as Indicated.

Qualified Persons

Laurie Hassall, Senior Consultant, MSci FIMMM '689775' FGS '1044219', of Snowden Optiro is the main author of the Technical Report, is responsible for the technical part of this announcement and is a Qualified Person under the terms of NI 43-101.

The technical disclosure in this announcement has been approved by Qualified Person EurGeol (#641) Christian Masurenko of Zinnwald Lithium, Dipl. Geo., Member EFG, Fellow SEG

ENDS

For further information visit www.zinnwaldlithium.com or contact:

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Notes

AIM quoted Zinnwald Lithium plc (EPIC: ZNWD.L) is focused on becoming an important supplier of lithium hydroxide to Europe's fast-growing battery sector. The Company owns 100% of the Zinnwald Lithium Project in Germany, which has an approved mining licence, is located in the heart of Europe's chemical and automotive industries and has the potential to be one of Europe's more advanced battery grade lithium projects.

Glossary and definition of terms

Title	Explanation
Cut-off grade	The lowest grade or quality of mineralized material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation or on physical or chemical attributes that define an acceptable product specification.
Indicated Mineral Resource	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.
Inferred Mineral Resource	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that may be limited or of uncertain quality and reliability.
Measured Mineral Resource	That part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

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