



## Company Profile

IronRidge Resources (IRR) is a West African focused exploration and development company, progressing the Ewoyaa Lithium project to production. The company also holds a portfolio of Gold projects in Ivory Coast and Chad which are in the process of being diverted into a new listed vehicle.

### Stock Data (GBX)

Listing	LON
52-week range	(22.45) 11.37-28.0
Market Cap	£120.6m
No. Shares	516,114,246
No. Shares*	570,114,246

### Major Shareholders\*

Assore Limited	21.05%
DGR Global Ltd.	12.81%
Piedmont Lithium	9.47%
Sumitomo Ltd.	5.58%
Vincent Mascolo	2.8%

\*Following the issue of the PLL Subscription Shares

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## IronRidge Resources Ltd. (LON: IRR)

IronRidge Resources (LON: IRR) has secured a US\$102m conditional binding agreement with Piedmont Lithium (NASDAQ: PLL ASX: PLL), the emerging major supplier of responsibly sourced, low cost lithium hydroxide to the North American and European markets. To date, PLL have secured agreements to supply lithium concentrate (SC6) to Tesla Inc. (NASDAQ: TSLA), developed plans to construct their own Hydroxide plant in North Carolina, and proposed plans for a Quebec plant in association with their strategic investment in Sayona Mining Ltd (ASX:SYA). The strategic IRR conditionally binding agreement will allow PLL to acquire 50% of the annual SC6 production of high purity, coarse grained spodumene concentrate with a low capital cost, low operating cost and particularly low carbon footprint within a promising jurisdiction.

This ultimately gives IronRidge's Ewoyaa project the credibility to be seen as a low cost, globally significant source of spodumene, and secures the teams position in the growing international battery supply chain.

## Key Points

- **Piedmont is a specialist in low cost, ESG-conscious Li-spodumene and Li-hydroxide production, building a portfolio of assets to supply growing North American and European demand.**
- **Earn-in and off-take agreement by Piedmont, pending general meeting and Australian Foreign Investment Review Board approval.**
- **IRR to divest gold assets into a new listed vehicle, leaving pure lithium play.**
- **Growing Ewoyaa lithium project and regional targets through 5 auger, 1 reverse circulation and 2 diamond drill rigs onsite currently, and a 3rd diamond rig on route.**
- **Drilling ongoing at the Ivory Coast gold portfolio, taking the Zaranou gold project towards maiden resource estimation.**

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## Opportunity

IronRidge, with their recent agreement with Piedmont Lithium, have secured a position in the highly competitive, responsibly sourced, traceable lithium supply chain. The agreement highlights the Ewoyaa Lithium projects pre-eminent characteristics of conventional, low cost metallurgy, proximity to operational infrastructure, and extensive exploration upside. According to the 2021 scoping study, these characteristics give the projects a highly competitive cost of production, indicating C1 costs are in the first quartile of world production, and a strong financial return.

## Piedmont Lithium: American Lithium Supply

Piedmont Lithium has the ambition to become one of North America's and Europe's major suppliers of Li-hydroxide, by consolidating major sources of low cost, high quality lithium-spodumene (conventional source of lithium for battery demand). In October 2020, the company signed an agreement with Tesla to supply 53,000t of SC6% for a 5 year, fixed price binding period, with a mutual agreement that can extend the terms to an additional 5yr. The concentrate will be then processed at Tesla's lithium hydroxide plant, with a planned date of delivery being between July 2022 and 2023.

Piedmont Lithium's flag ship asset is the 100% owned, Carolina Lithium project in North Carolina, USA. Having completed an updated Scoping study in 2021, the project holds a mineral resource of 39.2Mt @ 1.09% Li<sub>2</sub>O, which will produce both a lithium spodumene concentrate (248kt/yr) and Li-Hydroxide (30kt/yr) for a 20yr LOM. This boasts a post-tax NPV<sub>8</sub> of US\$1.9b and IRR of 31%, for an initial capital cost, including contingency, of US\$838m. The team are currently developing a Definitive Feasibility Study (DFS), which is planned to be completed by Q3, 2020. Current designs around the hydroxide plant allow for production to be ramped up substantially, following the companies projected growing hydroxide demand.



*Analyst Risk Profile: A schematic of risk exposure any investor should consider regarding the company. Based on the authors opinion incorporating company comparisons, experience and data available at time of writing.*

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## Piedmont: IronRidge Resources Agreement

Piedmont's recent interest in IronRidge's Ewoyaa has been a continuation of the companies move to secure high quality, low cost, lithium spodumene projects that the company can use to produce Li-Hydroxide. This they intend to do at a scale that can warrant agreements with major battery producers in North America and across Europe that demand a traceable supply chain from socially acceptable sources, and at a low cost.

The Ewoyaa project is located along the southern seaboard of Ghana, and is part of IronRidge's Ghana Lithium portfolio, which also includes the Saltpond and Cape Coast tenements with targets including Ndasiman and Amoanda, and to the east is the Egyasimanku Hill deposit and Hweda target. These LCT pegmatite lithium deposits are at surface and contain coarse grained, high purity lithium spodumene. In 2020 the team completed a maiden resource estimate of 14.5Mt @ 1.31% Li<sub>2</sub>O in the indicated and inferred category at the flagship Ewoyaa project. This was followed by a scoping study, based on the production of 295,000tpa of spodumene concentrate (SC6%), that boasted a post-tax NPV<sub>8</sub> of US\$345m and IRR of 125% over an 8-year life of mine (LOM), for a capital cost of US\$68m. The project holds a number of competitive advantages to place it in the lower end of the cash cost curve, these being the low-impurity content of the mineralisation, requiring simple gravitational separation to reach premium product grade SC6% concentrate. The project is also located 110km from the deep seaport of Takoradi making the Ewoyaa project, once in production, one of the lowest \$/t transport cost spodumene concentrate producers. Ongoing drilling is expected to grow the resource considerably, with an estimated addition of US\$40m to the NPV with every additional year of production at an FOB SC6 price US\$650/t.

Currently the team are running 5 auger drill rigs, identifying shallow spodumene pegmatite extensions in a regional exploration campaign. Focusing on the Ewoyaa project, IronRidge are drilling out the current resource with one reverse circulation rig, two diamond drill rigs, and with a third diamond rig to arrive. This additional drilling and growth of resource should show clear extensions to the projects LOM, with an updated resource estimation to follow soon after.

## IronRidge Portfolio

The company IronRidge Resources is itself going through a fundamental transformation, following the success the team have had over the last few years. Since 2019, the team has focused on exploration, with the target of delivering a maiden resource at the Ewoyaa Lithium project in Ghana, in addition to testing highly prospective gold targets on ground acquired in Ivory Coast and in Chad. Following repeat successes at each of their exploration campaigns, the team have now developed a portfolio of post discovery assets, each with scalability and major economic interest.

Having grown to a critical size, the management team have decided to divest the gold portfolio into a separate listed vehicle, enabling the market to more accurately value the assets in their appropriate investment case classes. The company has yet to release details surrounding the demerger.

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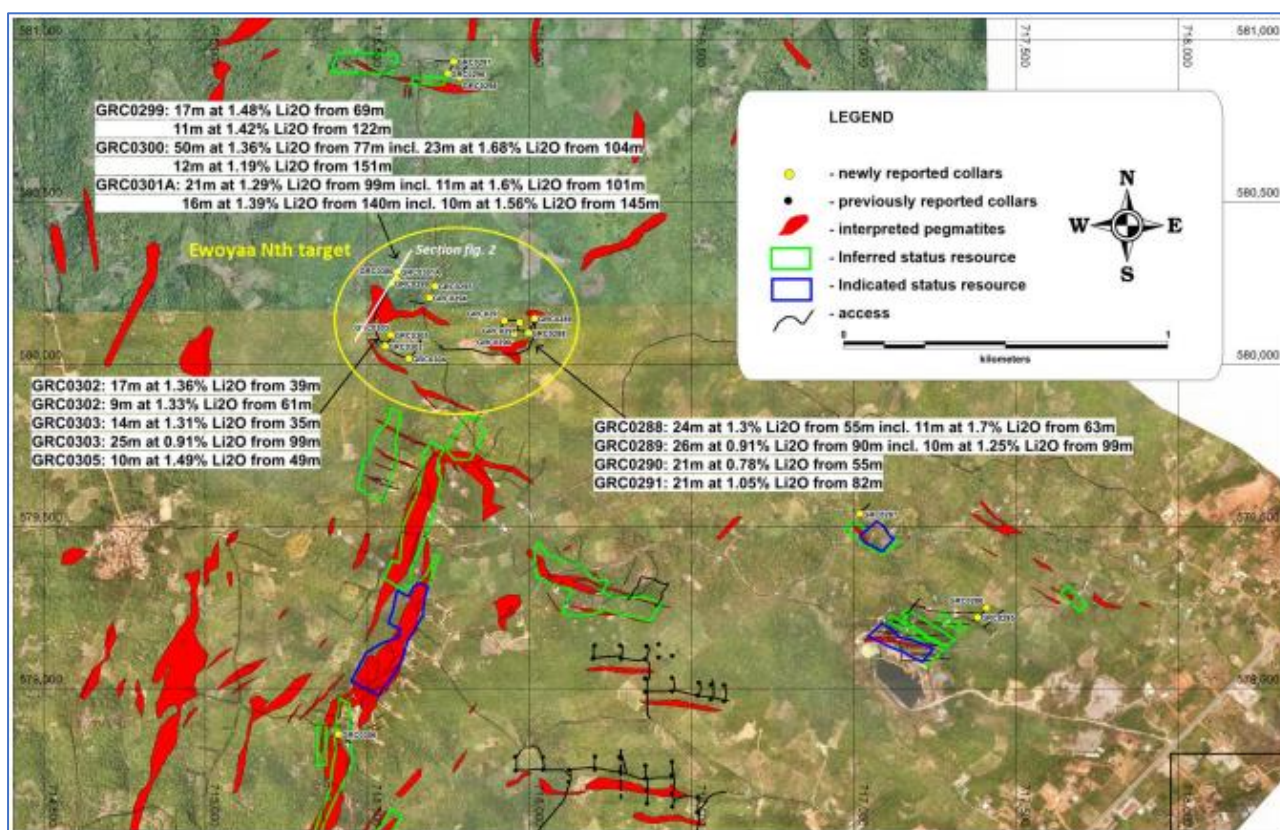
## Commercial Terms and Offtake agreement

The IronRidge and Piedmont agreement has been broken down into three stages. The initial stage requires Piedmont Lithium to subscribe for 54,000,000 ordinary shares at 20p (£10.8m (c.US\$15m)). This will include a 12-month lock-in.

At stage two, Piedmont will earn an initial 22.5% of the project by sole funding US\$5m into regional exploration targets and resource of the Ewoyaa project. In addition, US\$12m will go to the completion of the Definitive Feasibility Study, this being either a 1.5mtpa at 10yr LOM or a 2mtpa at 8yr LOM mining plan.

The third stage, funding the CAPEX cost of US\$70m, will give Piedmont a further 27.5% in the Ghana lithium portfolio. It should be noted that in the agreement both parties have agreed that any cost overruns and/ or savings that occur during these stages will be shared equally between the two companies

The agreement also entitles Piedmont to one board position, following the subscriptions, and an offtake agreement of 50% of annual lithium SC6% production. Pricing of the offtake will be determined through a formula, that is linked to the prevailing price of lithium products.



Map of Ewoyaa Lithium Project, with outlining of maiden resource estimation, as well as further 2021, pot-resource drilling of both extensions to the east and north.

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## Piedmont: Sayona Mining Agreement

In January 2021, Piedmont agreed to a US\$12m investment in Sayona Mining Ltd (ASX:SYA) for 40% of the Quebec lithium projects economics. This is broken down into a 9.9% interest in Sayona Mining for US\$3.1m and two unsecured convertible notes of approximately US\$3.0m. These convert upon the result of Piedmont acquiring an additional 10% equity interest in Sayona. Piedmont will also acquire a 25% interest at project level into Sayona Quebec for US\$5m in cash, helping to develop the DFS stage Authier Lithium project and exploration stage Tansim lithium projects. Piedmont also supported Sayona in the recently completed acquisition of the historically producing North American Lithium project. The final aspect of this agreement is the 50% binding spodumene concentrate supply agreement. This will deliver a minimum of 60kt/yr of SC6 concentrate or, 50% of the Sayona Quebec mine production at market price and on a life-of-mine (LOM) basis.

The interest of Sayona Quebec has been made clear by the Piedmont team, being that they are looking for projects that hold a critical mass of high-quality spodumene supply to support additional Li-hydroxide production. Quebec also holds the additional advantage of being a jurisdiction that can support high energy intensive Li-hydroxide conversion, through cost affective, environmentally responsible hydroelectric.

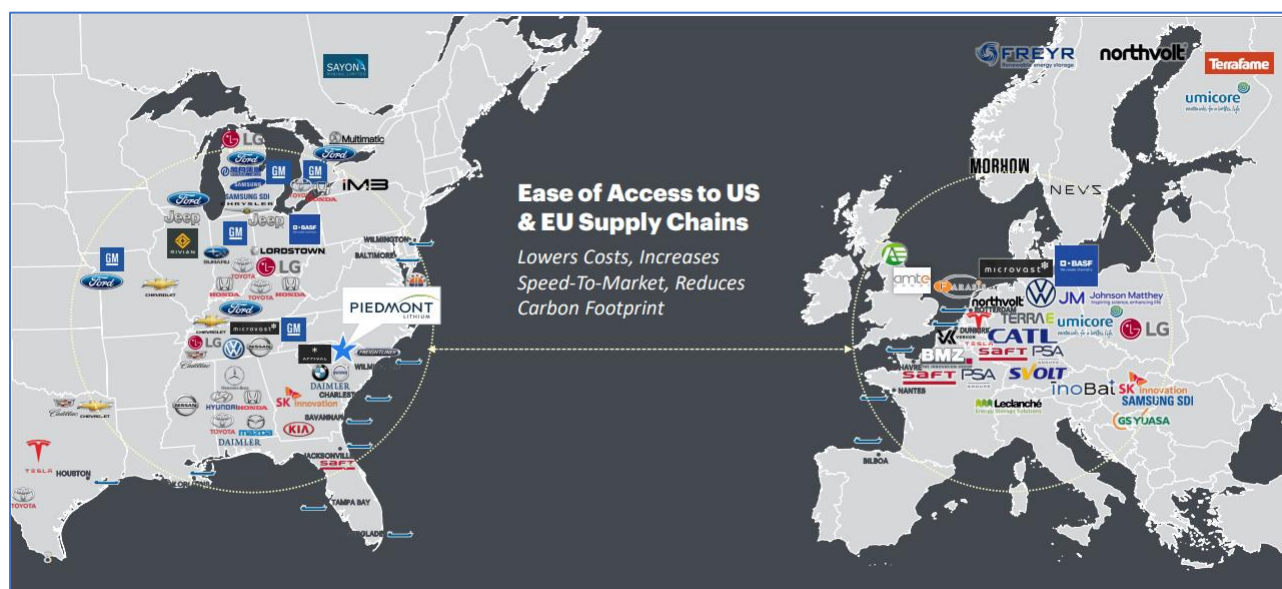


*Map of Piedmont Carolina Lithium project and the Sayona Quebec portfolio. Rail connections show commercial transport routes connecting both projects. From Piedmont presentation.*

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## Lithium production and supply chain

Following the IronRidge agreement, Piedmont intend to use the concentrate produced to supplement plans to upgrade their plant in North Carolina, from producing 30kt of Li-Hydroxide to 60kt in a two-stage development plan. Currently Piedmont are producing a DFS on the initial 30kt Li-Hydroxide plant but will simultaneously produce an updated scoping study incorporating the additional 30kt of production.



Map of North American and European consumers for reliably sourced, Li-Hydroxide. From Piedmont Lithium presentation.

In Quebec, critical mass of planned spodumene production has given the team sufficient confidence to look at developing a 30kt Li-Hydroxide plant, making Sayona Quebec not just the largest producer of SC6 in Canada, but with the quality of infrastructure and cost of production, could be a meaningful producer of Li-Hydroxide in North America.

Currently, Piedmont has stated that they are looking at supplying not just North America, but also the quickly growing European market. With the EU's strong focus on green-energy economy transition, the team have identified that the continent could host valuable strategic partners and consumers. Both strategic advisors, Evercore and JPMorgan, are working with the company to meet with major automotive companies, oil & gas groups, and miners, to secure strategic partnerships in developing the Carolina Lithium project.

For IronRidge, having secured 50% of the SC6 production, with no first rights of refusal obligations, and with financing of the project secured to production, the team are able to look at additional agreements. Further exploration to grow the LOM will help de-risk the project, and with long life projects such as Lithium-chemical plants, such offtake agreements that secure critical mass will be highly valuable.

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### **Ewoyaa Lithium Project**

Project Stage	Scoping (PFS completion)
Mineral Resources	14.5Mt @ 1.31% Li2O
SC6 Production	295,000 t/y
LiOH Production	n/a
Project Life	8 Years (est. >10 year post resource upgrade)
NPV8 post-tax	US\$345m
IRR post-tax	125%
Initial Capex	US\$65m

### **Carolina Lithium Project**

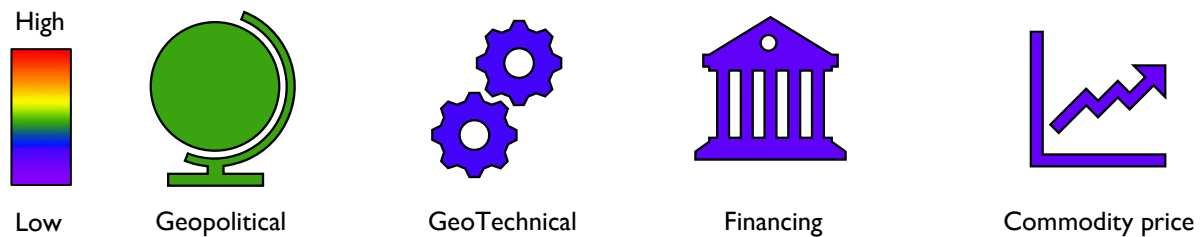
Project Stage	Scoping (DFS completion Q3, 2021)
Mineral Resources	39.2Mt @ 1.09% Li2O
SC6 Production	248,000 t/y
LiOH Production	30,000 t/y (Stage 2 +30,000 t/y)
Project Life	20 Years
NPV8 post-tax	US\$1,923m
IRR post-tax	31%
Initial Capex	US\$838m

### **Authier Lithium Project**

Project Stage	DFS
Ore Reserves	12.1Mt @ 1% Li2O
Mineral Resources	20.9Mt @ 1.01 Li2O
SC6 Production	113,000 t/y
LiOH Production	TBD ( est. 30,000 t/y)
Project Life	13 Years
NPV8 post-tax	C\$216m
IRR pre-tax	33.9%
Initial Capex	C\$120m

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## Analyst Risk Profile Opinion



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## Risks

Currently there are unknowns regarding the divestment of the gold assets into a new vehicle. Though this is believed to be a highly beneficial event for the projects market valuation, it does result in an unknown in what the structure will finally look like.

Feeding the Tesla demand, Piedmont Lithium will need to secure funding to move their Carolina project into production. This binding agreement could now be seen as insured by the potentially short lead time, low Capital hurdle rate of putting the Ewoyaa project into production, putting timing pressure and significance on IronRidge to deliver.

For IronRidge to reach an optimal valuation on price to earnings, the team will need to secure a second offtake agreement or clear line of sight to a potential consumer of their 50% share of SC6 production.

## Investment Synopsis

**The IronRidge team have proven themselves to be able to develop a project, and secure commercial agreements, without compromising investors interests. The company is now well positioned to capitalise on global electrification, and race to secure nationally strategic supply chains, with the new association of Piedmont, Tesla and, as well as links to further deals being developed by PLL's strategic advisors, Evercore and JPMorgan. The agreement with PLL also validates the commercial viability of the Ewoyaa project, being both metallurgically favourable, on operational infrastructure and with extensive exploration upside to be a significant, long life, low cost producer of Lithium Spodumene Concentrate.**

**In the coming months, the team will be delivering further drill results and an updated resource estimation from which the PFS study will be conducted. Alongside this, further exploration targets, from the regional Auger drilling campaign, will help confirm the extensive resource growth within the IRR Ghana lithium portfolio.**

**Another deliverable, that is also highly anticipated, is the divestment of the gold assets in Ivory Coast and Chad. With numerous drill rigs turning on two of the Ivory Coast projects, the new gold listed vehicle will be hitting the ground running. Focus will however be on the delivery of a maiden resource estimation at the Zaranou Portfolio, following 30,000m of historic drilling and an additional 50,000m from IronRidge, of both scout drilling and resource drilling, along the 47km long gold corridor licence.**

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