Disclaimer

Piedmont Lithium (PLL): A "Made in America" Promotion

"A mine is a hole in the ground with a liar on top." – Mark Twain

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We are short Piedmont Lithium ("PLL", "Piedmont", "the Company"), a pre-production lithium miner we believe is a US-flag waving stock promotion. We believe Piedmont has little hope of ever producing battery-grade lithium from its "centerpiece" North Carolina mine, given overwhelming local pushback and management ineptitude. Moreover, we think that Piedmont's claims of Carolina, that it is "the best lithium asset on the planet" and is set to become the lowest-cost miner on the global cost curve, are laughable. Carolina holds a grade of just 1.08% Li_2O, an abhorrent 11.6x strip ratio, and a short 11 year life. Piedmont has owned the asset since 2016 yet remains without permits, without funding, without offtake agreements, and without a CEO possessing real-world operating experience. We also think Piedmont underestimates its LiOH plant capex costs by over $300 million, hence contributing to an artificially high NPV which PLL touts to investors. While legitimate lithium miners bring supply online, we think Piedmont and its shareholders will be left in the dust.

In our view, Piedmont's promotion has been architected by the Company's long-time Chairman Levi Mochkin, who was previously barred from the Australian Securities and Investment Commission for alleged manipulation of mining stocks. Levi then ran Avenue Group (OTC:AVNU), a tech company turned oil and gas explorer which was delisted in 2012 for failing to file financial statements. Avenue also paid Levi's brother, Mendel Mochkin, millions in shares and options through MeM Energy Partners LLC. For his part, Mendel's MeM Energy Partners LLC was named as a co-defendant in a 2019 lawsuit brought by the City of Almaty, Kazakhstan in relation to the $5 billion Kazakh bank embezzlement scandal. Per the complaint, Mendel ran PR on behalf of Mukhtar Ablyazov, who allegedly murdered his business partner, looted billions from the fund, and laundered money through entities including those controlled by Mendel Mochkin. Furthermore, Mendel was on the board of Mustang Alliances, Inc (OTC:MSTG), an exploration-stage gold and silver miner. In 2015, SEC charges against a stock promotion outfit labelled Mustang a pump-and-dump scheme. Members of that same outfit then pled guilty to DOJ charges for, among other things, "the largest theft of customer data from a U.S. financial institution in history."

In addition to the exploits of the Mochkin brothers and those connected to them, we count at least six additional public mining ventures tied to now-former Piedmont insiders – largely affiliated with the Apollo Group, an Australian resource investment firm – which have collapsed. We find it telling that despite Piedmont's near-constant stock promotion, insiders have rushed for the exits, apparently without any desire to stay to witness the fruits of their labors:

- In September 2020, Piedmont formed a "binding" agreement to supply spodumene to Tesla, with deliveries to begin sometime between July 2022 and July 2023.
- In December 2020, long-time director Ian Middlemas left the Company. We count Middlemas as having a director or chairman role in at least 5 other collapsed ASX-listed mining stocks.
- In June 2021, both Piedmont Chairman Levi Mochkin and Piedmont Co-Founder Anastasios ("Taso") Arima resigned. Mochkin had joined in 2006 and Arima joined in 2016, and led the charge of buying the Company's North Carolina assets.
- In August 2021, Piedmont's so-called "binding" Tesla agreement was reported to be delayed indefinitely, just after these key resignations and after Piedmont sold $122 million of stock at $70 per share.

- In March 2022, both Piedmont's COO David Klanecky and VP of Corporate Communications Brian Risinger left the Company. Risinger had previously signed off on communications to Gaston County, North Carolina officials and residents, where Piedmont still requires rezoning yet has alienated local stakeholders.

We see this string of departures as a harbinger of the Company's doomed North Carolina assets, even as the Company continually promotes these assets as its "centerpiece", often via paid stock promotion outlets. We think Piedmont has little to no chance of ever getting its North Carolina assets to commercial production.

Piedmont faces tremendous local opposition to the mine, including from local commissioners, press, and public opinion. Piedmont must obtain both state mining permits and local zoning changes, yet the Company's flippant approach has depleted local goodwill. Without this, we feel Piedmont's aspirations for North Carolina are DOA.

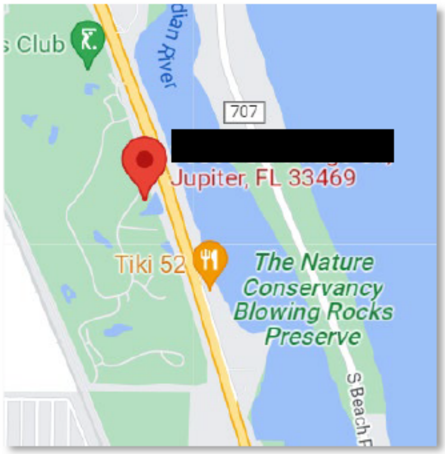
Piedmont further claims that its North Carolina mine would operate at the lowest point in the global cost curve. We find this assertion entirely unsupported and believe the mine is a third-rate asset:

- The Carolina mine holds an astronomical 11.6x strip ratio. In layman's terms, for every ton of lithium, Piedmont will produce 11.6 tons of waste ("overburden"), or over 232 million tons, which is equivalent to 637 Empire State Buildings. Comparable projects we reviewed possessed much lower strip ratios ranging from 1.6x (Thacker Pass) to 4.5x (Western Australia's Earl Grey). In fact, Piedmont's Technical Reports indicate that the level of waste would be so high that a secondary waste pile would be required, which is not yet included in current permitting applications. We think this proposition could further outrage local stakeholders who are already turned off by Piedmont's carpetbagging.

- Piedmont's Carolina Lithium also holds a grade of just 1.08%, far lower than the assets Piedmont claims it will best. For example, IGO Limited's (ASX:IGO) Greenbushes, widely regarded as one of the best operations in the world, has reported actual production of 2.36% Li_2O on a YTD basis, more than double the grade of Piedmont's mine. We count at least 9 additional mining operations online or coming online which hold higher grades than Piedmont's Carolina. With such a poor grade and such a high strip ratio, Piedmont's cost leadership claims become laughable. When we asked one decades-long lithium operator what they thought of Piedmont's claim to be a low-cost leader, they stated that "It will never happen. It's bullshit, it's not going to happen. That's just business: [Piedmont makes those claims] to raise money."

Piedmont also claims that it can build its lithium hydroxide plant ("LHP-2") for just $572 million. Based on our analysis of the costs of comparable projects, as well as our conversations with two decades-long lithium experts, we think Piedmont is a few hundred million dollars light on its cost estimates. We include our analysis below.

Piedmont's roster doesn't inspire much confidence in their ability to execute. Piedmont's current CEO Keith D. Phillips joined the Company in July 2017 and has zero prior experience in running a mining business. Instead, Phillips was a career-long stock analyst, who ironically owns a sprawling 4,068 square foot Florida home bordering the Blowing Rocks Nature Preserve:



Phillips took to a May 2022 conference presentation to tell investors that "we're totally focused this year on execution", yet talk is cheap; Piedmont continually breaks its promises to shareholders.

- In April 2018, Piedmont claimed it "remained on track to begin construction [in North Carolina] in early 2020." In July 2021, Piedmont then claimed it hoped to "begin construction in April 2022." In June 2022, Piedmont remains without state permits, without local rezoning, and without funding.
- In August 2021, Phillips stated he hoped the Carolina Lithium project – which per the Company itself requires $988 million in total capex – would be fully-funded through a DOE-backed Advanced Technology Vehicles Manufacturing ("ATVM") loan and a partnership by mid-2022. Piedmont remains without an ATVM loan and without a funding partner.
- Most recently, Piedmont stated that it hoped to submit its Title V air emissions permit application by Q2 2022, yet our communications with the North Carolina Division of Air Quality ("DAQ") indicates that the Company has still not applied for this permit with just two weeks left in the quarter.

Instead of executing against its business promises, Piedmont appears hell-bent on promoting its stock. The Company has paid at least three stock promotion outfits including RedChip, Proactive, and The National Investor, and CEO Phillips has appeared on Fox Business as recently as June 1. Piedmont's investor materials and commentary are also rife with references to "helping secure America's energy independence", yet management now redirects investor enthusiasm towards the Company's similarly lousy assets in Alberta and Ghana. We think that after Piedmont realized the Carolina mine wouldn't break ground anytime soon, the Company scrambled to secure a new story to sell investors in the form of other low quality pre-production miners all under the guise of "diversification." Yet we see Piedmont's investment in Sayona Mining (ASX:SYA) as another punt on a low-quality asset with little chance of producing by mid-2023 as promised. Sayona holds similarly low grades, and over the past decade it has burned through over $400 million in capital while its prior two owners went bankrupt. We also find glaring issues in Sayona's NPV calculation for North American Lithium ("NAL"), which we estimate is, at best, $354 million vs. Sayona's most recent NPV of $571 million.

Piedmont's investor presentation laughably compares PLL to Livent (LTHM) and MP Materials (MP) solely on the basis of market capitalization. Yet Livent is calling for $320 million in EBITDA at the midpoint in 2022, and has operated lithium mines for decades. Similarly, MP generated $318 million in LTM EBITDA and its Mountain Pass rare earths mine has operated since the 1950s. Since 2017, Piedmont has generated zero revenues, burned $127 million in free cash, inflated its share count by 4x, and left investors with a string of broken promises. In short, the Company wants to compare itself to marathoners, and even claims that it will outrun these marathoners. We suggest the Company first learn to crawl.

We View the Piedmont Promotion as Architected by Industry-Barred Levi Mochkin

Piedmont was architected by long-time Chairman Levi Mochkin, who in 2001 was barred from the Australian securities industry "in relation to trading activity in various securities", primarily in mining stocks:

ENFORCEABLE UNDERTAKING

AUSTRALIAN SECURITIES AND INVESTMENTS COMISSION

SECTION 93AA

The commitments in this undertaking are offered to the Australian Securities & Investments Commission by:

Levi Mochkin
9/99 William Street
MELBOURNE VIC 3000

Concerns of ASIC

1.3 During the course of the investigation, ASIC had concerns that, in relation to trading in the shares of Australian Gold Resources Ltd, Johnson's Well Mining Ltd and Quantum Resources Ltd during the period 1 August 1997 to 30 October 1998, Mochkin may have contravened sections 997 and 998 of the Law or may have acted in a manner that was not honest, efficient and fair. During this period, ASIC had concerns that Mochkin:

- Dominated the market for the shares;
- Exercised a wide discretion in relation to timing and price of orders when executing orders to buy and sell the shares for various clients;
- Failed to buy available shares when he had outstanding orders;
- Caused trades to be executed at prices higher than the last sale price;
- Placed bids within 20 minutes before the close of the market;
- Executed trades for clients when there were prior outstanding orders for other clients;
- Placed bids for clients without written orders or in excess of existing orders;
- Had outstanding buy/sell orders at the same time for the same client and failed to execute those orders;
- Failed to complete buy orders for clients;
- Bought shares at prices in excess of client's instructions.

Levi Mochkin Then Runs Avenue Group: an Enlisted Brother, a Delisted Stock

Levi Mochkin re-emerged on the operational side of the mining penny stock game, where he took over as CEO and ~35% shareholder of Avenue Group Inc (OTCBB:AVNU). Avenue went public as a self-styled technology company ("I.T. Technology, Inc.") during the tech bubble, but rebranded to an oil and gas company. In March 2008, Avenue formed a directorship and consulting agreement with MeM Energy Partners, LLC, run by Levi's brother, Mendel Mochkin. SEC filings indicate that Levi and Mendel owned 98 million and 35 million shares respectively yet in 2012, the stock was delisted for failing to file financial statements. The company's last 10-Q (for the quarter ended March 31, 2009) showed $1,249 in oil and gas revenues and losses of $339,266.

Levi and Mendel Mochkin at the Avenue-owned Heletz oil field, which they touted could produce 10 million barrels of oil. (source)

For his part, Levi's brother Mendel Mochkin and his firm, MeM Energy Partners, are also worth mentioning. In 2019, MeM was named in a lawsuit filed in relation to the looting of Kazakhstan's sovereign welfare fund. Per the complaint, Mendel ran PR on behalf of Mukhtar Ablyazov, who allegedly murdered his business partner, looted billions from the bank, and laundered it through entities including one controlled by Mendel Mochkin.

219. On or about August 30, 2013, Sater, and/or Ridloff acting at Sater's direction, transferred $2,250,000 from the TCMI Account to an entity named MeM Energy Partners LLC ("MeM").

220. According to public sources and filings with the U.S. Securities and Exchange Commission, MeM is owned and/or controlled by an individual named Mendel Mochkin.

221. On information and belief, Mochkin was informed by Sater that the Stolen Funds for the Tri-County Deal belonged to Ablyazov, and constituted a breach of the Worldwide Freezing Orders.

222. Sater described this payment to MeM as a finders' fee to the Local Counsel. In reality, however, Mochkin had done work on behalf of Ablyazov to generate negative publicity about the Republic of Kazakhstan and to improve Ablyazov's public image after his flight from justice in the United Kingdom and sentence for criminal contempt. On information and belief, the $2,250,000 payment to MeM was actually intended to compensate Mochkin for that work.

> TCMI resold the Tri-County Mall note to a third party in July 2013 for $45,000,000. *Id.* ¶ 245. The funds were paid into an account held by TCMI that Sater and Ridloff controlled. *Id.* ¶¶ 247–49. They immediately disbursed more than $5,000,000 to entities controlled by Sater and other participants in the scheme. *Id.* ¶ 250. They also transferred $2,250,000 from the proceeds of the sale to MeM Energy Partners LLC, a company with no role in the Tri-County Mall transaction but whose owner, Mendel Mochkin, had done public relations work for Ablyazov following his flight from the United Kingdom and sentence for criminal contempt. *Id.*

In 2011, Mendel Mochkin joined Mustang Alliances, Inc. (OTC:MSTG), an exploration-stage miner searching for gold and silver in Honduras. He was given 100,000 shares, a minimum salary of $120,000 per year, and stock options. Mochkin resigned in August 2012. In 2015, the SEC charged a group of defendants, all residents of Israel,[1] alleging "multiple pump-and-dump schemes dating back to at least mid-2011." Mustang Alliances, Inc. is named among the 6 schemes, which the SEC alleged began in early 2012:

> 2. During 2011 through 2012, defendants Aaron and Shalon unlawfully promoted, and, with defendant Orenstein, unlawfully schemed to defraud investors in, the stocks of at least the following six microcap issuers: Southern Home Medical Equipment, Inc.; Greenfield Farms Grassfed Beef, Inc.; Next Generation Energy Corporation; Mustang Alliances, Inc.; IDO Security, Inc.; and Premier Brands, Inc.

The DOJ also indicted the same group in 2015 for "the largest theft of customer data from a U.S. financial institution in history." The leader of the operation, Gery Shalon, was also alleged to have operated: an illegal internet gambling business, illicit payment processors, a malware business, and Coin.mx, an illegal Bitcoin exchange that violated anti-money laundering laws. The 23-count indictment included wire fraud, money laundering, aggravated identity theft, and securities fraud, among others. Shalon pled guilty and was ordered to pay over $400 million. He consented to the judgment in November 2021 and is awaiting sentencing.

PLL's Long-Time Insiders – Now Resigned – Have Overseen Numerous Past Stock Collapses

We find that in addition to the exploits of the Mochkins and their associates, many of Piedmont's former insiders responsible for promoting the Company's lithium narrative have presided over several other public mining companies which have ended in broken promises and massive losses for shareholders, often as part of the Australia-based "Apollo Group" of companies. For example, Paringa Resources (ASX:PNL) was delisted from the NASDAQ and the company declared bankruptcy in 2020 after its Kentucky-based coal mines faced operational and technical issues. Similarly, Berkeley Energia Ltd's (ASX:BKY) had tried since 2016 to build an open-cast uranium mine in Spain, yet in 2021 was denied permits due to a lack of reliability and high uncertainty over radioactive

[1] The group of promoters did not include Mendel Mochkin, who was on the board of Mustang Alliances.

waste storage. Our view is that Piedmont is the latest in a long line of promotional stories sold to the public markets by this group.

Company	Individuals and Roles
Apollo Minerals Ltd (ASX:AON)	Ian Middlemas, Director Robert Behets, Director
Cradle Resources (ASX:CXX)	Ian Middlemas, Chairman Robert Behets, Director
Odyssey Gold (ASX:ODY)	Ian Middlemas, Chairman Levi Mochkin, Executive Director of Business Development Robert Behets, Non-Executive Director
Paringa Resources (ASX:PNL)	Ian Middlemas, Chairman Gregory Swan, Secretary Anastasios ("Taso") Arima, Director
Salt Lake Potash (ASX:SO4)	Ian Middlemas, Chairman
Berkeley Energia Ltd (ASX:BKY)	Ian Middlemas, Chairman Robert Behets, MD and Director
Piedmont Lithium (ASX & NASDAQ:PLL)	Levi Mochkin, Chairman (April 2006 to June 2021) Anastasios ("Taso") Arima, Director (October 2016 to June 2021) Ian Middlemas, Director (September 2009 to December 2020) Gregory Swan, Secretary (October 2012 to appx. June 2021) Robert Behets, Director (February 2016 to May 2018)

Source: respective ASX and SEC filings

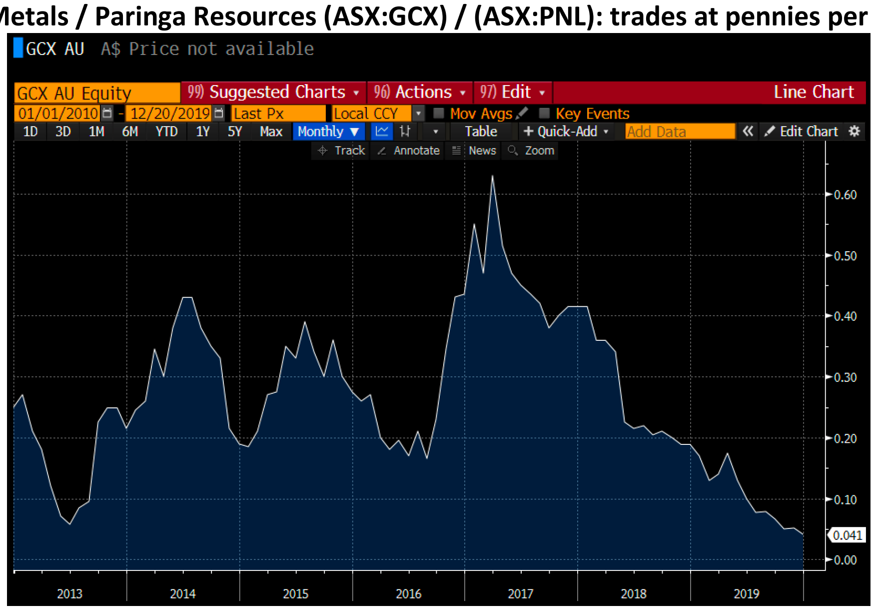
Upon Ian Middlemas' December 2020 departure from Piedmont, CEO Keith Phillips stated that "I want to thank Ian Middlemas for his strong leadership and personal mentoring during the time I've been with Piedmont." We're not sure exactly what this mentorship was worth, given Middlemas's track record.

Salt Lake Potash (ASX:SO4): entered receivership in October 2021.

Apollo Minerals Ltd (ASX:AON) – now trades at $0.074 per share.

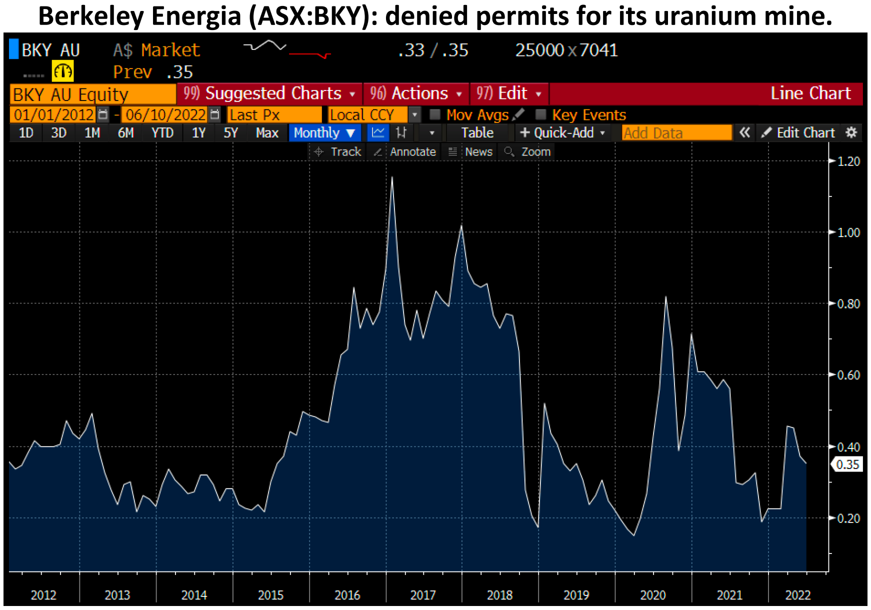
Cradle Resources (ASX:CXX) – stock suspended.

GCX Metals / Paringa Resources (ASX:GCX) / (ASX:PNL): trades at pennies per share.



Odyssey Gold (ASX:ODY): shares have fallen ~97% since IPO.

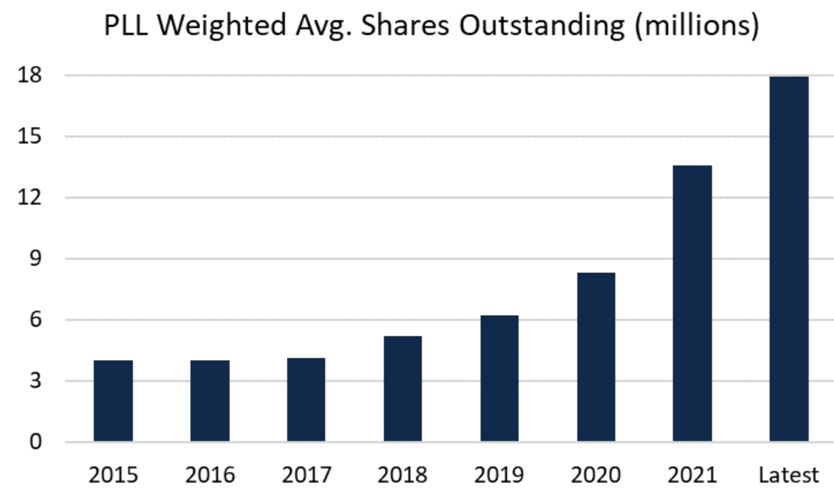
Berkeley Energia (ASX:BKY): denied permits for its uranium mine.



Levi Mochkin Joins PLL, Acquires North Carolina Assets, Issues Millions in Stock Options…

In 2006, Levi Mochkin took over WCP Diversified Investments, which operated a WC Penfold stationary store in Melbourne, Australia. Mochkin renamed the Company WCP Resources Limited (ASX:WCP), and per a 2006 interview, Mochkin "aimed to grow the company and to get involved in gold, and uranium and oil and gas."

Thus began a decade-long cycle of announcement of new projects/ventures followed by press releases touting promising results, only to end in a wind-down of the project amid minimal success. All the while, shareholders have been diluted ruthlessly:



We Think Piedmont's Carolina Lithium Project Fails to Reach the Starting Line

In September 2016, WCP acquired the core of Piedmont's North Carolina assets. As part of the acquisition, the Company brought on Anastasios "Taso" Arima and Lamont Leatherman and issued them millions in unlisted stock options "in consideration for introducing the Project opportunity to the Company and as an incentive for future performance." In August 2017, WCP Resources changed its name to Piedmont Lithium. Piedmont now calls the North Carolina Lithium Project "the centerpiece of our operations", yet we think this centerpiece is a third-rate asset which we doubt will make it to the starting line.

Proposed North Carolina Operations Face Overwhelming Local Pushback

Piedmont's Carolina plans require both a state mining permit and a Gaston County rezoning in addition to a variety of additional permits, such as a Title V air permit. We think Piedmont will ultimately fail to secure the necessary rezoning required to commence its Carolina operations. The rezoning decision is in the hands of the Gaston County Board of Commissioners, and we view Piedmont as having irreparably damaged the relationship with local commissioners and stakeholders.

Gaston County has 610 residents per square mile, not only a far cry from the otherwise desolate tracts of land in Western Australia characterized by "fly-in, fly-out" lithium mining operations, but 7x the average density of the US overall. These residents have created petitions, protests, and Facebook pages opposing the plans due to anticipated negative economic and environmental effects. HuffPost and the Financial Times have also produced exposés on Piedmont's woes in the region. Yet it seems to us that Piedmont has done little to assuage these concerns, especially over the past year:

- In March 2021, Piedmont was meant to meet with the Board of Commissioners, yet cancelled the meeting, claiming that the Company was not ready to present.

- In July 2021, then-Chair of the Board Tom Keigher stated that, "I think, in my opinion, they've gone about this about as bad as any company that tried to move into our county."

- In August 2021, the Gaston County Commissioners voted unanimously to impose a 60-day moratorium on all mining activities, which prevented Piedmont from conducting any exploratory drilling.

- In January 2022, Piedmont issued an economic impact study which claimed the project would lead to total positive economic impact of $688 million and total employment impact of 1,051 jobs by 2027. Yet as noted by county commissioners, the study failed to include negative impacts. Local press has also criticized Piedmont's hired preparer, Dr. John Connaughton, for previous studies he's conducted which fail to live up to their claims. For example, Connaughton proposed that the Charlotte-based NASCAR Hall of Fame would gather 550,000 visitors in the first year, create 1,000 new jobs, and generate $61.8 million in positive economic impact. Yet the Hall of Fame only gathered half as many visitors and has become an economic drain on the city. Connaughton also promoted the economic prospects of the Whitewater Center, a non-profit outdoor recreational facility. Yet the facility defaulted on its construction loans and had to rely on public money. Per a 2011 piece by WFAU, Charlotte's NPR affiliate:

  "He says it's no coincidence they all predicted positive outcomes; the negative ones never saw the light of day. 'Whether it becomes public or not, is not in my hands,' explains Connaughton. 'It's in the hands of the individual company who's paid for the product in the report. And a lot of times they're not happy with the economic impact and they simply don't release it.' Connaughton says that's happened to him at least 10 times, but he won't name the projects." In our view, Piedmont's commissioning of a self-serving economic impact study has served to further dig the Company a hole with local stakeholders. In response, commissioner Tracy Philbeck has reportedly argued that Gaston County ought to do its own study of the mine, rather than simply accepting as gospel information from Piedmont Lithium.

- In February 2022, WCNC, an NBC Charlotte affiliate, revealed emails obtained through public records requests that appeared to resemble an attempted bribe of Chairman Commissioner Chad Brown, who is also a sales representative at a local steel distributor. The email which Piedmont sent to Brown's personal email address reads, "We would like to get a better understanding of the current construction environment as you see it and what resources your company provides." Piedmont has denied the implications.

Piedmont remains without a state mining permit, which it intends to obtain prior to an official bid for rezoning in Gaston County. The Company has been engaged with the North Carolina Division of Environmental Quality ("DEQ"), and in January 2022, the DEQ issued a list of concerns regarding Piedmont's plans. These include worries around Piedmont's acreage now extending to two cemeteries, as well as a variety of environmental concerns. Piedmont now has a July 2022 deadline for further response, which it has yet to submit, to our knowledge.

Piedmont will also require a Title V (air quality) permit, which the Company stated it would apply for by the end of Q2 2022. Our correspondence indicates that as of June 8, Piedmont still has yet to apply for the Title V permit:


Taylor, Shawn A Wed, Jun 8,
to me

Hi [redacted]

The Division of Air Quality has yet to receive a new permit application from Piedmont Lithium.

Best,
Shawn

Shawn Taylor, he/him
Public Information Officer, Division of Air Quality
North Carolina Department of Environmental Quality

Carolina's 11.6x Strip Ratio Poses a Massive Economic and Environmental Problem

Piedmont has repeatedly claimed that its Carolina Lithium will be the lowest cost producer on the global cost curve (see PLL's June 2021 and May 2022 presentations, for example). CEO Phillips has stated that "We think it's the best lithium asset on the planet, and we think the community should be inordinately proud of it." We think these claims are laughable in light of Carolina's astounding 11.6x strip ratio, measly 1.08% grade, and 11-year life.

A strip ratio is a measure of a mine's waste materials ("overburden") relative to the ore recovered. Less overburden generally contributes to better project economics and less environmental impact. However, **Piedmont's Carolina mine holds an astonishing 11.6x ratio, meaning that over the life of the mine, the Company expects to generate 232.5 Mt of waste**, as shown from the Company's Bankable Feasibility Study (BFS) below:

The results reported are based upon a scenario which utilizes extraction of Probable reserves from property currently under mine permit application filed with NC DEMLR and additional controlled tonnes which are anticipated to be added to the permit following additional property acquisitions. These tonnes are currently excluded from the permit due to geometric constraints and offset requirements, but are anticipated to be permitted in the future. Table 8 shows the production target.

Table 8: Total Production Target for Piedmont Properties

Property	ROM Tonnes Processed (Mt)	Waste Tonnes Mined (Mt)	Stripping Ratio (W:O t:t)	ROM Li_2O Undiluted Grade (%)	ROM Li_2O Diluted Grade (%)	Production Years	Tonnes of SC6 (Mt)
Core	20.09	232.52	11.58	1.10	0.996	1-11	2.57
Central	0	0	0	-	-	-	0
Huffstetler	0	0	0	-	-	-	0
Total	20.09	232.52	11.58	1.10	0.996	1-11	2.57

Piedmont's strip ratio greatly outstrips those of existing lithium mining projects:

Project	Mt Reserves	Strip Ratio
Sonora - Mexico	243.8	3.4
Thacker Pass - Nevada	179.4	1.6
Wodgina - Western Aus	151.9	3.1
Pilgangoora - Western Aus	108.0	3.8
Earl Grey - Western Aus	94.0	4.5
Greenbushes - Western Aus	86.4	3.3
Whabouchi - Quebec	36.6	3.0
Average of Above Projects		**3.2**
Piedmont - North Carolina	**20.1**	**11.6**
Piedmont vs. Average		**3.6x**

Sources: Mining Data Online, company presentations

In fact, this waste is so voluminous that if Piedmont is to mine all the lithium it hopes to, it would need a secondary waste pile which is not yet included in the current permitting application. Per the BFS:

> "Also, a secondary waste pile, located on currently controlled property, is not included in the current permit application but is needed to develop the reserves as shown in the BFS."

In other terms, Piedmont's waste will weigh 637x the Empire State Building. Per the Company's most recent Technical Report:

> "Additional 79.4 Mt of waste storage would be stored in the future waste storage area on currently controlled property which will require a mine permit modification for use."

The technical report also includes a recommendation to "Research acquisition possibilities [i.e., purchases of additional land] along the northeast, east, and southwest project boundaries for additional resource development, as well as added waste disposal areas."

We think that not only could these ridiculous overburden levels leave Piedmont's economics far worse than the Company portrays, but will leave already discontented North Carolinians with further grievances.

Piedmont is a Third-Rate Asset: 1.08% Li_2O Grade is Far Worse Than Peers

We think Carolina's relatively low grade vs. peers poses problems for the Company's low-cost narrative and claims to possess "the best lithium asset on the planet", especially when considered alongside its high strip ratio.

Consider Greenbushes, the world's largest and highest grade spodumene operation with an estimated 178.5 Mt at 2.0% Li_2O. IGO Limited (ASX:IGO), which owns 49% of Greenbushes, reported that YTD, the mine produced an average grade of 2.36% Li_2O and generated revenues of AUD$546.2 million and EBITDA of AUD$427.5 million for the quarter. We also count numerous new projects coming online well prior to Piedmont's now revised timeline of "2025 or 2026" for Carolina, each of which hold far better grades than Piedmont's 1.08%:

Company – Mine	Grade	Projected Start
Pilbara – Pilgangoora	1.19%	Now Producing
Mineral Resources – Mt Marion	1.37%	Now Producing
Albemarle/Mineral Resources – Wodgina	1.17%	2022/Producing
Sigma Lithium – Grota Do Cirilo	1.49%	2022
Core Lithium – Finniss	1.35%	2022
Liontown – Kathleen Valley	1.40%	2024
Firefinch – Goulamina	1.45%	2024
SQM/Wesfarmers	1.40%	2024
Frontier Lithium – PAK	1.54%	TBD

Sources: Mining Data Online, company reports

We asked one decades-long lithium expert their view on the Company's claims to produce the lowest cost lithium. They stated that "It will never happen. It's bullshit, it's not going to happen. That's just business: [Piedmont makes those claims] to raise money." We concur with his view.

Piedmont's Plant Capex Estimates Appear Aggressive, In Our View

We think that Piedmont will have immense difficulty securing permits for its Carolina operations, including its mine and its second LiOH plant ("Plant Two", "LHP-2") with a capacity of 30,000 tpy LiOH. Yet even if Piedmont's Carolina lithium plant and LHP-2 are to be permitted, funded, and constructed, we think the Company's cost estimates for its plants are several hundred million short. Piedmont claims LHP-2 will cost just $572 million; we think it will cost $750 to $900 million, at least. Consider recently announced plants to be built by industry leaders:

- China's Tianqi Lithium – which controls roughly half of the world's lithium production – began construction on its Australia-based Kwinana refinery in 2017. Its Phase 1 plant, set for capacity of 24,000 tpy LiOH, cost $725 million and began production this year. This equates to project costs of **$30,208 per tpy.**

- In February 2021, Covalent Lithium, a Wesfarmers and SQM joint venture, approved the final investment decision on their Mt. Holland project, which will include both an open pit mine and a refinery. Construction began in July 2021 and is anticipated to commence LiOH production in the second half of 2024, implying a 3-year timeline from construction to commissioning. The project is anticipated to cost $1.4 billion for 50,000 tpy of capacity, or **$28,000 per tpy.**

- In December 2021, Posco reported that it expects to spend $830 million to build a 25,000 tpy LiOH plant in Argentina. The project broke ground in March 2022 and is anticipated to be completed in the first half of 2024. Assuming no overruns or delays, the project would cost **$33,200 per tpy.**

In contrast, Piedmont's capex of $572 million for 30,000 tpy of capacity implies capex of just $19,067 per tpy, far lower than peers. We think that Piedmont, which has continuously broken its promises to investors and is led by a CEO who has never built an LiOH plant before, will struggle to undercut industry leaders' unit costs by 30%.

We also asked two independent decades-long lithium experts what they expected Piedmont's plant to cost. One expert suggested that Piedmont ought to expect a cost of $30,000 per ton, implying $900 million in capex, 57% higher than the Company's estimate and directly in line with comparable projects as per the above. A second expert suggested that if construction were to be started tomorrow, a total cost of $750 million would be reasonable. However, they reminded us that "costs are always going up over time", so by the time Piedmont has begun, we ought to expect a higher figure.

Piedmont Management Continually Fails to Follow Through on Promises to Shareholders

Piedmont's current claims about its capabilities are best examined through the Company's historical statements, in which we find a near constant pattern of overpromising and underdelivering.

- In April 2018, Piedmont told investors that it "has established a general timeline to submit major permit applications by the end of 2018 with a target permit approval date prior to the end of 2019." However, in April 2019, Piedmont then told investors that it "remains on schedule to update its Mineral Resource estimate and Scoping Study near mid-year; to receive required permits and regulatory approvals by year-end; and to complete a Definitive Feasibility Study ("DFS") by the end of 2019." Piedmont further reassured that the Company "remains on track to begin construction in early 2020…"

- In March 2020, Piedmont reassured that "Background studies to be used in the chemical plant permit applications are ongoing and proceeding on schedule. We still plan to submit these permit applications shortly after completion of the chemical plant PFS and expect to receive these permits during 2020."

- In September 2020, Piedmont announced "a binding agreement" with Tesla for the supply of spodumene from the Company's Carolina lithium mine. The initial deliveries were meant to begin from July 2022 to July 2023. In August 2021, the Tesla deal was indefinitely postponed, with Piedmont clearly in no position to supply Tesla with self-produced spodumene in the near-term. Instead, in November 2021, Tesla signed agreements with Ganfeng Lithium, and in February and March 2022, Tesla secured offtake agreements with Liontown Resources and Core Lithium, respectively.

- In December 2020, Piedmont finally obtained a Title V air permit for its lithium plant (not its mine) then told investors that it "expects to apply for a North Carolina State Mining Permit and to complete local rezoning processes for the integrated project in the first half of 2021." Based on prior reassurances, construction should have already been underway for months when these statements were made.

- In July 2021, Reuters published an article revealing problems that Piedmont faced in trying to break ground in North Carolina. Among the various issues was that Piedmont claimed that their State Mining Permit was "in the works", yet the Company still had not applied for the permit. Phillips stated that they hoped to "begin construction in April 2022 and be in production by the second half of 2023," another prediction which fell totally flat.

- In August 2021, CEO Phillips claimed that the North Carolina state permit review process would take 6 to 9 months, putting an approval between February 2022 and May 2022. However, in a February 10, 2022 interview with Proactive Investors – which Piedmont pays for promotional services – Phillips once again walked back the timeline, stating instead that "We essentially just applied, so we're in month 6. We hope to have a good conclusion to that in the next several months … That process is actually going quite well."

- In August 2021, Phillips also stated that he expects the North Carolina lithium project to be fully funded by mid-2022, including through a possible partial sale of the project to a partner, and through the DOE's Advanced Technology Vehicles Manufacturing ("ATVM") loan program. In September 2021, Piedmont submitted a "draft loan application" to the ATVM, yet now in June 2022, Piedmont has yet to obtain an ATVM loan, and has not attracted any partners to buy out or otherwise fund a portion of the project.

- In April 2022, Phillips stated in a promotional interview with Kitco Mining that "we hope to be in production at Carolina Lithium in 2 to 3 years."

On the subject of funding, we find it worthwhile to clarify recent comments by CEO Phillips, who stated in a May 24, 2022 interview that "We raised money in March through JP Morgan and Evercore and a group of others, we raised a total of $120 million, we now have $166 million in cash. That's all the money we need well into 2023." We see this as a statement that, while true, is misleading, as Piedmont has now pushed its timeline for its Carolina mine and plant – which require over $1.5 billion in capex and remain unfunded – into 2025 to 2026.

Piedmont Now Pushes a 2025 to 2026 Timeline for Carolina & Lithium Hydroxide Plants

It seems to us that Piedmont management would rather spend time on the interview circuit promoting the EV revolution and coming lithium shortages rather than ensuring that the Company will actually produce any lithium. As of the Company's most recent investor presentation, Piedmont estimates first production dates of its Carolina Lithium and associated Hydroxide plant are still "to be determined":

OUR PROJECTS[1]

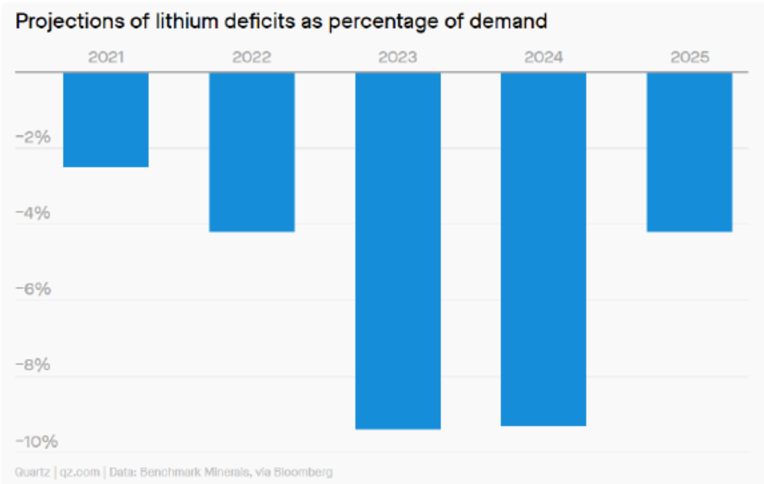
	PLL Interest	Capex	Net Present Value[8] (100% Project Basis) Base Case[2]	Net Present Value[8] (100% Project Basis) Spot Case[2]	Steady-State EBITDA (100% Project Basis) Base Case[2]	Steady-State EBITDA (100% Project Basis) Spot Case[2]	Est. First Production
CAROLINA LITHIUM[3] *Gaston County, North Carolina, USA* 242,000tpy SC6 30,000tpy LiOH	100%	$988mm	$2.8bb	$11.8bb	$592mm	$2.0bb	tbd
LITHIUM HYDROXIDE PLANT – 2[4] *USA Location tbd* 30,000tpy LiOH	100%	$572mm	$2.2bb	$8.6bb	$346mm	$1.2bb	tbd
EWOYAA[5] *Cape Coast, Ghana* 150,000tpy SC6[8]	50%[7]	$70mm	$789mm	n/a	$178mm	n/a	H1 2024
ABITIBI HUB *Quebec, Canada* 113,000tpy SC6[8]	37%[9]	tbd	tbd	tbd	tbd	tbd	H1 2023

Integrated Project Lithium Hydroxide Project Spodumene Concentrate Project

On June 1, 2022, CEO Keith Phillips conducted an interview on Fox Business, in which he again walked back North Carolina production timelines, blamed the ever-nebulous "process" for delays, and instead talked up the Company's international investments:

> "We're probably **three years away from first production** in North Carolina. We have other assets that have come on board more quickly, but it just takes a long time, there's no way to accelerate the process of geology, metallurgy, et cetera."
>
> "We're moving along fine, **our project will come online in 2025 or 2026**, which is really when we're just going to get to the sweet spot of the shortage of lithium globally."

Not only does "2025 or 2026" represent a further delay from the claims Phillips made in April 2022 of "2 or 3 years" which implied 2024 to 2025, but we think likely sticks a fork into the Tesla agreement, which has already been indefinitely delayed and is contingent on deliveries beginning by July 2023. Piedmont's anticipated start of production would also fall past anticipated peak lithium shortages, as per consultancy Benchmark Minerals, which the Company separately references in its own materials. See that shortages are thought to peak in 2023, leaving Piedmont a day late and a dollar short, rather than "in the sweet spot" as Phillips claims:



Further to that end, both Goldman Sachs and Credit Suisse have recently expressed their views that the current shortage will end sooner than expected:

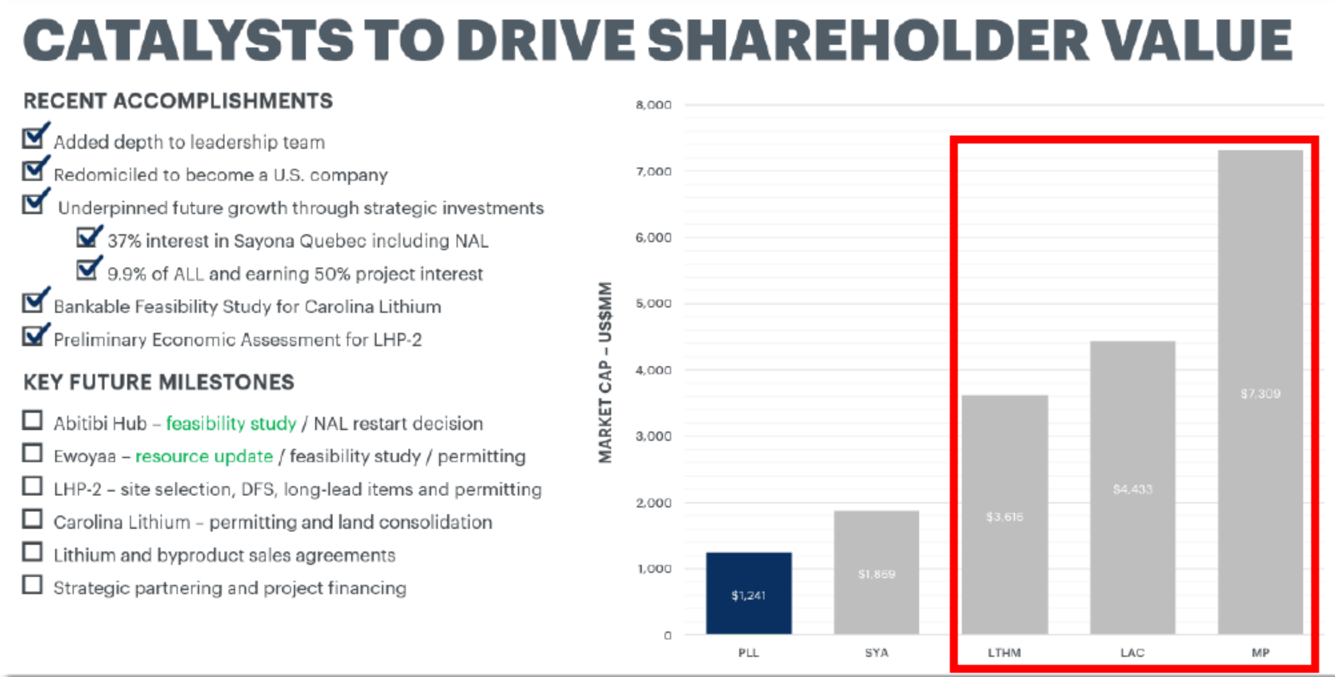
- A Goldman Sachs research note published on May 29 called for battery metal prices to crash over the next two years as oncoming supply drives prices back towards their target of $16,000/ton.

- Credit Suisse echoed Goldman's outlook days later, stating that "We now see a balanced [lithium] market in 2023/24, and surpluses threaten from 2025, a major change from previous deficit forecasts...If construction and probable projects only are completed, with no others, the market could remain in balance until 2026....But if all the projects, including those we class as 'possible' advance, then surpluses may get out of hand in 2025-26."

We think that as the pendulum swings from extreme fear of shortages to a more normalized supply/demand outlook, Piedmont and its continual empty reassurances will be left in the dust.

More Promotional Postering from Piedmont

Piedmont's investor presentation touts the Company's market cap against established players including Livent (LTHM), Lithium Americas (LAC), and MP Materials (MP) to imply that its shares are undervalued. Yet Piedmont doesn't offer any commensurate comparison on the basis of asset base, revenue, cash generation, or otherwise:



We think Piedmont offers little value in comparison to the Company's self-selected comparables:

- Livent Corporation (LTHM) was spun out from FMC Corporation (FMC) in 2018 and holds key lithium assets in Argentina, where the company has been producing for decades. LTHM has also produced lithium hydroxide since 2017 and is expanding its asset base both through capex and acquisitions. Livent calls itself "a leading vertically integrated pure-play producer of low-cost lithium" and is calling for $755 to $835 million in revenues and $290 to $350 million in Adj. EBITDA in 2022.

- Lithium Americas Corp. (LAC) is currently constructing the largest lithium carbonate brine operation in over 20 years in Argentina, with an anticipated capacity 40,000 tpy of Li_2CO_3 to be started up in the second half of 2022. LAC also holds other assets in Argentina and is advancing its Thacker Pass assets in Nevada.

- MP Materials Corp (MP) owns Mountain Pass, which produces rare earth metals. MP supplies 15% of the world's rare earths and has been operating since the 1950s. For the last twelve months, MP generated $318 million in EBITDA and analysts expect $449 million in EBITDA in 2023.

In comparison, since year-end 2017, Piedmont has generated zero revenues, burned $127 million in free cash, inflated its share count by 4x, and left investors with a string of broken promises.

We View Piedmont's Sayona Investment as a Punt on Another Third-Rate Asset

In January 2021, Piedmont announced an agreement with Sayona Mining (ASX:SYA) to purchase equity stakes in Sayona and its subsidiary, Sayona Quebec Inc, giving Piedmont an effective 35% stake in Sayona. The companies also announced a spodumene supply agreement, with Sayona Quebec to supply the greater of 60,000 tpy or 50% of its production on a life-of-mine basis. We think Sayona's NAL is another third-rate asset which Piedmont which will again end in disappointment.

Sayona's Quebec mine is a low-quality asset which faced multiple operational issues, leading to its two bankruptcies. Sayona hopes to bring the asset online in 2023, yet the company also faces local environmental pushback. We find further red flags in Sayona's portrayal of the project's NPV, which we think is worth at best roughly $354 million, a fraction of NAL's stated $571 million NPV and Sayona's ~$802 million valuation.

The history of the project is fraught. In 2008, North American Lithium ("NAL"), previously known as Quebec Lithium, was purchased by RB Energy, a Vancouver-based reverse merger. In 2013, a frigid winter in northern Quebec forced RB to stop its crushing and grinding operations as the ore in the storage silos froze. The company then ran into problems with its processing infrastructure, meaning commercial production was delayed. In 2014, RB filed for bankruptcy after failing to raise additional capital.

In 2016, China-based Jilin Nickel acquired the assets, formed North American Lithium, and sold it to Contemporary Amperex Technology Co. Ltd. (CATL). In 2017, NAL restarted mining, yet NAL struggled to convert the ore to spodumene concentrate. Per an interview with NAL Director Martin Blanchette: "The equipment is the same, but the chemistry is very different … For the first few months we'd try something but we really didn't know what we were going to get. It was like we were blindfolded." Thus, the mine only ever operated at two-thirds capacity. In 2018, production was halted, and in 2019, NAL filed bankruptcy. In August 2021, Sayona closed on the assets for $196 million CAD (~$155M USD).

Sayona's prefeasibility study for its North American Lithium project in Quebec appears to us to overstate its economics. Sayona claims an after-tax NPV of $571 million for the project, given the assumption of average spodumene prices of $1,242 per ton past 2024:

> **Marketing and Pricing**
>
> Sayona has relied upon the Q1 2022 price forecast from consultancy Wood Mackenzie to assess its long-term pricing assumption for the spodumene price. Given recent market and spodumene price volatility, Sayona elected to consider a second source of pricing, the latest Q1-2022 Benchmark Mineral Intelligence price forecast. As such, over the next two years (2023-24), Sayona has elected to take the yearly average prices of each forecast for non-contracted spodumene volume.
>
> For the contracted volume to Piedmont Lithium Inc (refer ASX announcement 11 January 2021), a price of US$900/t is assumed over 2023-24, while the remainder of the concentrate production uses market prices. From 2025 and beyond, Sayona is reverting back to market prices for the entire production as it seeks to pursue a lithium transformation project on-site, leveraging prior investments, in line with its commitments with the Government of Québec related to its acquisition of NAL.

However, Sayona has a pricing cap in place for its Piedmont contract, not just through 2024, but through the life of the mine. See per Sayona's January 2021 announcement:

> "Piedmont has also agreed a binding offtake arrangement under which it will acquire up to 60,000 tpa of spodumene concentrate or 50% of Sayona Québec's production, whichever is greater ("Supply Agreeme nt"). The Supply Agreement is **for Sayona Québec's life-of-mine operations** and is based on market pricing with a minimum price of US$500/t and a maximum price of US$900/t…"

Thus, keeping all other factors constant, if we adjust Sayona's $571 million NPV to account for a $900 spodumene selling price to Piedmont through the life of mine, we come to an NPV of just $354 million, or 38% lower than Sayona's claims.[2]

[2] Assumes 50% offtake (81,633 tpy) to Piedmont at $900/ton, 50% (81,633 tpy) at market prices ($1,242/ton).

Prior to NAL, Sayona promoted its Authier project, which it formerly called its “most advanced” and “flagship” project. Per its feasibility study, Authier is also meant to supply 33% of NAL’s ore to be processed at the plant. However, just as we see with Piedmont, Sayona has faced both delays and backlash from local stakeholders, as the mine is proposed to be located nearby the Saint-Mathieu-Berry esker, considered one of the best sources of drinking water in the world.

Sayona hasn’t helped its cause; in 2018, the company attempted to evade the required environmental investigation required for new mines by claiming that the mine’s production would be just 1,900 metric tonnes per day, just below the 2,000 tonne threshold required for an Environmental Impact Assessment and Review (“EIAR”). The company has since acknowledged its plan called for 2,100 tonnes per day, which it later increased further to 2,600 tonnes per day.

Consider from Sayona’s 2017 investor presentation that the company called for construction by Q4 2018. Based on this table, we see Sayona as effectively 4 years delayed on its plans since then. The company remains a back-and-forth with the Public Hearings Bureau on the Environment (“BAPE”) since 2018.

In sum, we see Piedmont’s Sayona investment as another punt on a third-rate asset under the guise of diversification as the Company’s Carolina operations fail to live up to the hype.