

John Passalacqua on First Phosphate's groundbreaking achievements in the phosphate mining industry

written by InvestorNews | March 17, 2024

In an insightful interview with Tracy Weslosky of InvestorNews during PDAC 2024, John Passalacqua, CEO and Director of [First Phosphate Corp.](#) (CSE: PHOS), shared the company's strategic priorities and groundbreaking achievements in the phosphate mining industry, particularly its specialization in the lithium iron phosphate (LFP) battery sector. Passalacqua highlighted that First Phosphate's main objective at PDAC 2024 was to engage with government officials from various levels, emphasizing the event's significance as a meeting point for leaders from Canada, the United States, and internationally. He also underscored the unique position of First Phosphate as the only company fully dedicated to extracting and purifying phosphate specifically for the LFP battery industry, a factor that significantly sets them apart from other phosphate mining operations that typically focus on fertilizer production.

One of the most compelling aspects of First Phosphate's strategy is its focus on producing high-grade purified phosphoric acid from phosphate issued from volcanic rock, a process essential for manufacturing LFP batteries. Passalacqua proudly announced a recent milestone where the company successfully converted phosphate ore into phosphate concentrate and then into purified phosphoric acid in partnership with Prayon in Belgium. This achievement underlines First Phosphate's capability to contribute significantly to the LFP market in North America, a

market that is just beginning to emerge according to industry experts. Additionally, Passalacqua addressed the company's financial strategy, noting a successful capital raise of \$8.2 million against a target of \$2 million and securing a \$170 million line of credit with the Export-Import Bank of the United States (EXIM), reflecting strong investor confidence and strategic government backing for their initiatives.

First Phosphate's recent [announcement](#) of signing a memorandum of understanding with Groupe Goyette for logistics at the Hébertville-Station intermodal facility in Quebec further illustrates their strategic approach to infrastructure and supply chain development. This agreement aims to facilitate rapid transportation for the company's mining and industrial outputs, crucial for their clientele in the EV and energy storage sectors. The appointment of Armand MacKenzie as Vice-President, Government Relations, and the comprehensive plans for a purified phosphoric acid plant at Port Saguenay, Quebec, are testaments to the company's ambitious roadmap towards establishing a robust LFP battery ecosystem in North America. These steps, coupled with strategic partnerships and significant project developments, position First Phosphate as a pivotal player in the LFP battery supply chain, contributing not only to the battery industry but also promising economic, social, and job creation benefits in the Quebec region.

To access the complete InvestorNews interview, [click here](#)

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About First Phosphate Corp.

First Phosphate is a mineral development company fully dedicated to extracting and purifying phosphate for the production of

cathode active material for the Lithium Iron Phosphate (“LFP”) battery industry. First Phosphate is committed to producing at high purity level, in responsible manner and with low anticipated carbon footprint. First Phosphate plans to vertically integrate from mine source directly into the supply chains of major North American LFP battery producers that require battery grade LFP cathode active material emanating from a consistent and secure supply source. First Phosphate holds over 1,500 sq. km of royalty-free district-scale land claims in the Saguenay-Lac-St-Jean Region of Quebec, Canada that it is actively developing. First Phosphate properties consist of rare anorthosite igneous phosphate rock that generally yields high purity phosphate materially devoid of high concentrations of harmful elements.

To learn more about First Phosphate Corp., [click here](#)

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Collaboration Deal with Sumitomo, Nano One to Boost LFP Cathode Production in Canada

written by InvestorNews | March 17, 2024

Nano One Materials Corp. (TSX: NANO) operates the sole North American lithium iron phosphate (LFP) production facility located in Candiac, Quebec, with plans to convert the existing facility to the One-Pot process for production up to 2,000tpa by the end of 2024. The company will expand the production in Quebec to meet demand and its business model incorporates licensing and joint ventures for global expansion.

John Passalacqua on the First Phosphate MOU with NorFalco, a Division of Glencore Canada

written by InvestorNews | March 17, 2024

In a recent interview between Tracy Weslosky of InvestorIntel and John Passalacqua, CEO and Director of First Phosphate Corp. (CSE: PHOS | FSE: KD0), viewers gain deeper insight into the recently announced MOU with NorFalco, a division of Glencore

Canada. This collaboration is strategic as NorFalco provides access to sulfuric acid, a crucial element in the production of purified phosphoric acid. Purified phosphoric acid is a vital precursor to lithium iron phosphate (LFP) batteries, and reflects the significant role this partnership may play in First Phosphate's plans to produce purified phosphate for LFP battery production in North America.

The Nano One manufacturing hub represents a game-changing opportunity to secure sustainable and clean battery supply chains in NA

written by InvestorNews | March 17, 2024

One of the largest gaps in the North American EV metals supply chain is the need for 'western supply' of lithium iron phosphate ("LFP") cathodes used in most standard range electric cars, smaller electric cars, commercial vehicles, and stationary energy storage. These demand areas are set to surge this decade, yet where is the non-China supply of LFP going to come from?

John Passalacqua on First Phosphate's Position as a Key Supplier to the LFP Battery Market for EVs

written by InvestorNews | March 17, 2024

In this InvestorIntel interview, Tracy Weslosky talks with [First Phosphate Corp.](#)'s (CSE: PHOS | FSE: KD0) CEO and Director John Passalacqua about the growing mass market adoption of LFP (Lithium Iron Phosphate) batteries globally in the Electric Vehicle (EV) industry.

With EV manufacturers such as Tesla in their Model 3 and Model Y now using LFP batteries in their vehicles to reduce cost, John goes on to provide an update on First Phosphate's deposit in the Saguenay-Lac-St-Jean Region of Quebec, Canada.

With a purity 33% higher than the current world's standard, John discusses how 90% of First Phosphate's resource can be converted into purified, battery-grade, phosphoric acid allowing them to focus primarily on the LFP battery industry. Phosphoric acid is a critical component in LFP batteries.

John also provides [an update](#) on First Phosphate's LFP production technology licensing agreement with [Integrals Power Limited](#). Highlighting the benefits of Integrals Power's technology, including its suitability for colder temperatures and different production types, John discusses how purified phosphoric acid and iron sulfate from First Phosphate's deposits will be used for LFP battery production, targeting the emerging North American EV industry.

To access the full InvestorIntel interview, [click here](#)

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To learn more about First Phosphate Corp., [click here](#)

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First Phosphate Unlocking

High-Purity Phosphate for the Rapidly Expanding EV LFP Battery Industry

written by InvestorNews | March 17, 2024

Lithium iron phosphate (“LFP”) batteries are rapidly gaining market share

A major trend in the world of batteries and electric vehicles is the move towards lithium-iron phosphate (“LFP”) batteries. Not only do they cost less than rival nickel manganese cobalt (“NMC”) batteries, but they last approximately 2-times longer and are much safer (almost zero risk of fire).

The one drawback is their energy density, meaning an electric car’s range with LFP is less than the comparable NMC batteries. However, advancements in LFP technology now mean a base model (rear-wheel drive) Tesla Model 3 with LFP batteries has an EPA range estimate of [272 miles or 438 kilometers](#). That range is more than enough range for most people.

This explains why LFP battery sales are surging globally and now account for close to [30% market share](#). Most auto OEMs in China offer LFP battery EVs and globally [Tesla Inc.](#) (NASDAQ: TSLA), [Ford Motor Company](#) (NYSE: F), [Volkswagen AG](#) (Xetra: VOW3 | OTC PK: VWAGY), [Rivian Automotive, Inc.](#) (NASDAQ: RIVN), [Mercedes-Benz Group AG](#) (Xetra: MBG | OTC PK: MBGAF), [Hyundai Motor Co. Ltd.](#) (KRX: A0053850 | OTC: HYMTF), and others are also recently embracing the technology.

FIGURE 1: Tesla Model 3 RWD comes with an LFP battery

TESLA

US



Model 3

Est. Delivery: May 2023

[Enter Delivery ZIP Code](#)

Purchase Price

Potential Savings*

272 mi

Range (EPA
est.)

140 mph

Top Speed

5.8 sec

0-60 mph

Rear-Wheel Drive

Source: [Tesla website](#)

The [IEA](#) Global EV Outlook 2023 states:

“Lithium iron phosphate (LFP) cathode chemistries have reached their highest share in the past decade. This trend is driven mainly by the preferences of Chinese OEMs. Around 95% of the LFP batteries for electric LDVs went into vehicles produced in China, and BYD alone represents 50% of demand. Tesla accounted for 15%, and the share of LFP batteries used by Tesla increased from 20% in 2021 to 30% in 2022.....LFP batteries contrast with other chemistries in their use of iron and phosphorus rather than the nickel, manganese and cobalt found in NCA and NMC batteries. The downside of LFP is that the energy density tends to be lower than that of NMC. LFP batteries also contain phosphorus, which is used in food production. If all batteries today were LFP, they would account for nearly 1% of current agricultural phosphorus use by mass, suggesting that conflicting demands for phosphorus may arise in the future as battery demand increases.”

In the next part of the article, we shift our focus to a company poised to supply the phosphate (“P”) in LFP batteries.

First Phosphate Corp.

[First Phosphate Corp.](#) (CSE: PHOS | FSE: KD0) is the only publicly-listed mineral development company that is fully dedicated to extracting and purifying phosphate for the production of cathode active material for the LFP battery industry.

The Company plans to vertically integrate from the mine source directly into the supply chains of major North American LFP battery producers that require battery-grade LFP cathode active material.

First Phosphate has more than 1,500 square kilometers (370,000 acres) of royalty-free land claims in the Saguenay-Lac-St-Jean Region of Quebec, Canada. The claims contain rare 'anorthosite igneous phosphate' rock that generally yields high-purity phosphate material devoid of high concentrations of harmful elements.

First Phosphate states:

"95% of the World's Phosphate is found in heavy metal laden Sedimentary Rock.

Only 4% of the World's Phosphate is found in Clean Igneous Carbonatite Rock.

Only 1% of the World's Phosphate is found in Even Cleaner Igneous Anorthosite, found mostly in Quebec, Canada."

This means that First Phosphate has a rare type of phosphate and hence a first mover advantage to become a western supplier of pure phosphate for the LFP cathode manufacturers.

Lac à l'Original, Mirepoix, Vanel Trilogy flagship project

First Phosphate's flagship project (Lac à l'Original, Mirepoix, Vanel Trilogy) has an Indicated pit-constrained Mineral Resource of [15.8 million tonnes \(Mt\) at grades of 5.18% P₂O₅ \(phosphorus pentoxide\), 4.23% TiO₂ \(titanium dioxide\), and 23.90% Fe₂O₃ \(iron oxide\)](#) and an Inferred pit-constrained Mineral Resource of 33.2 Mt at grades of 5.06% P₂O₅, 4.16% TiO₂ and 22.55% Fe₂O₃.

There is also resource upside potential at the Project and with more than 1500 km² of additional phosphate-bearing land claims.

Metallurgical test work indicates an anticipated apatite grade of at least 38% P₂O₅ at [over 90% recovery](#). The Lac à l'Original Deposit contains very low levels of potentially hazardous components, such as arsenic, heavy metals, and radioactive elements.

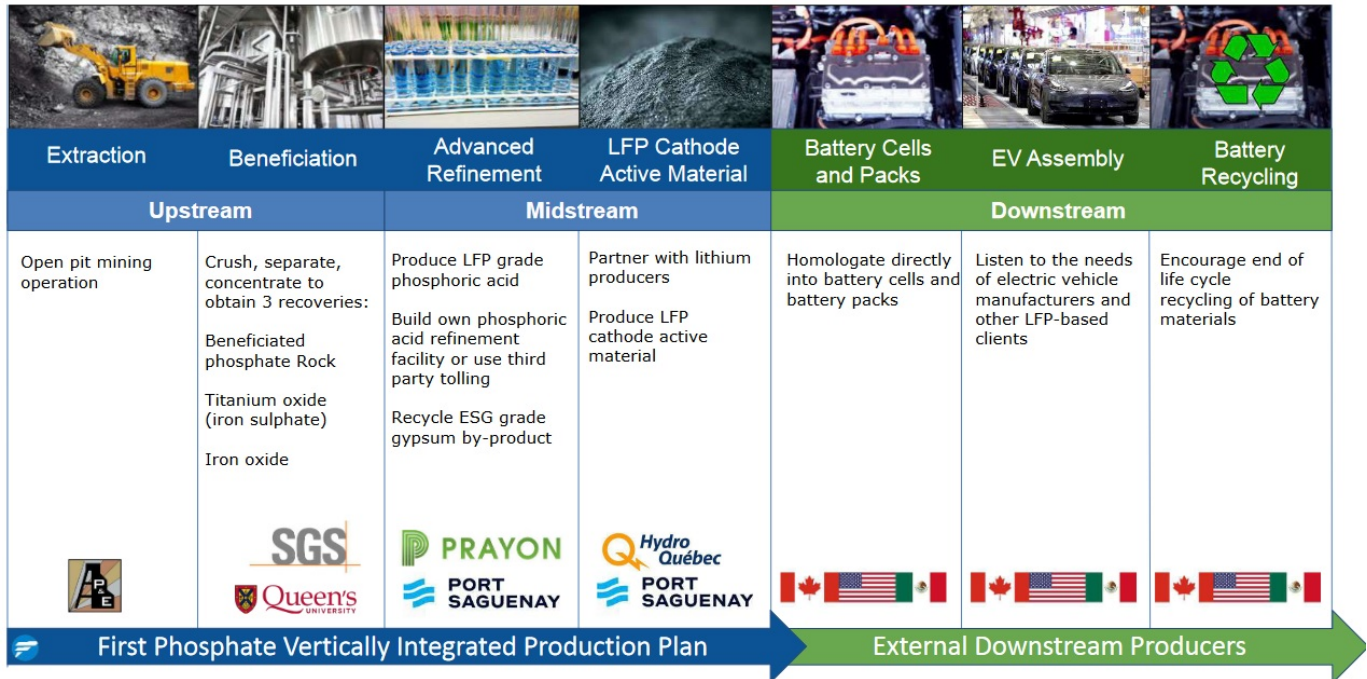
The Project site is accessible and usable in all four seasons, with heavy-haul road access, and is 140 km driving distance from the deep water, Port of Saguenay. There is access to clean Quebec hydroelectricity.

First Phosphate plans to develop midstream phosphate refining (purification) and LFP cathode active material production at the Port of Saguenay in Quebec.

The Company is currently working on its Preliminary Economic Assessment ("PEA").

FIGURE 2: First Phosphate Corp.'s vertically integrated production plan to produce LFP cathode active material

First Phosphate in the ESG-Driven LFP Battery Ecosystem



Source: [First Phosphate Corp. company presentation](#)

FIGURE 3: Reasons to buy First Phosphate Corp.

Reasons to Buy First Phosphate

1. Geographic Advantage

Flagship property with exploration upside
(>1500 km² of royalty-free claims)



- Quebec, Canada is a friendly mining jurisdiction and electric vehicle hub for North America
- Strong government support for industry
- Meets Inflation Reduction Act Requirements

2. The Right Type of Phosphate

World's cleanest source of phosphate rock from igneous anorthosite



- Devoid of harmful elements, low sulphur
- Produces large amounts of LFP battery grade purified phosphoric acid
- Environmentally clean, circular advanced mining and refinement methods. Solventless phosphate extraction

3. Driven by EV Battery Market

Phosphate with characteristics to go from mine to LFP cathode active material



- Process using clean Quebec Hydro
- Traceable, ethical, ESG, secure supply source
- Ability to supply across North America from Saguenay-Lac-St-Jean

Source: [First Phosphate Corp. company presentation](#)

Closing remarks

The trend towards a greater market share of LFP batteries used in EVs and energy storage is extremely strong.

In the past, the LFP demand and supply chain was entirely in China. This changed significantly in 2022 and continues to gain momentum in 2023 with almost all major Western auto OEMs embracing LFP battery technology for their standard-range electric cars.

Due to issues surrounding LFP patents, the West was largely unable to manufacture its own LFP batteries, but this has now changed. New LFP cathode plants are now being [planned](#) and soon will be built in the West. This includes Ford's recently announced [US\\$3.5 billion](#) plan to build an LFP battery facility in the USA licensing CATL's technology.

The high-purity phosphate supply chain will need to try to keep pace with these changes. Leading the charge is First Phosphate, trading on a market cap of [C\\$21 million](#). Be sure to take a look at this company, preferably sooner rather than later.

Skyrocketing LFP demand has experts asking, "How fast can Nano One scale production?"

written by Tracy Weslosky | March 17, 2024

Lithium iron phosphate ("LFP") batteries are rapidly gaining market share due to their improved energy density, longer cycle

life, improved safety, generally lower costs, and no requirement for nickel and cobalt. It certainly makes sourcing the critical materials much easier as lithium and graphite become the only critical materials needed. No need to source cobalt from the Congo or [nickel](#) from Russia.

Furthermore, the LFP trend is now expanding out from China to other regions as Chinese patents expire. In October last year, Tesla [announced](#) it is switching all of its standard range Model 3 and Model Y electric cars globally to LFP batteries. Multiple OEMs have since followed Tesla's lead. The problem is now that the [Inflation Reduction Act](#) will only reward U.S or U.S free trade countries if their batteries are made locally (not in China), but there are very few western LFP battery facilities.

Nano One Materials now owns the only LFP battery facility in North America

In news [announced](#) on October 31, [Nano One Materials Corp.](#) (TSX: NANO) has now completed the acquisition of Johnson Matthey Battery Materials Ltd., who just happens to own the only LFP battery factory (the "Candiac facility") in North America. Many in the market failed to appreciate the significance. And let me lay out – there is a massive demand for western made LFP batteries, and there is an extremely small current western supply to access.

Highlights of the announcement are:

"The Acquisition helps expedite Nano One's business strategy for LFP and other battery materials and includes:

- A talented and dedicated workforce of 46 professionals with almost 400 years of scale-up, commercialization, and cathode manufacturing know-how on LFP.
- **The only existing North American lithium iron phosphate**

(“LFP”) production facility.

- An 80,000 square foot, 2,400 tpa capacity LFP production facility on 9.5 acres, strategically located near Montréal.
- Certification systems supplying tier 1 cell manufacturers for the automotive sector.”

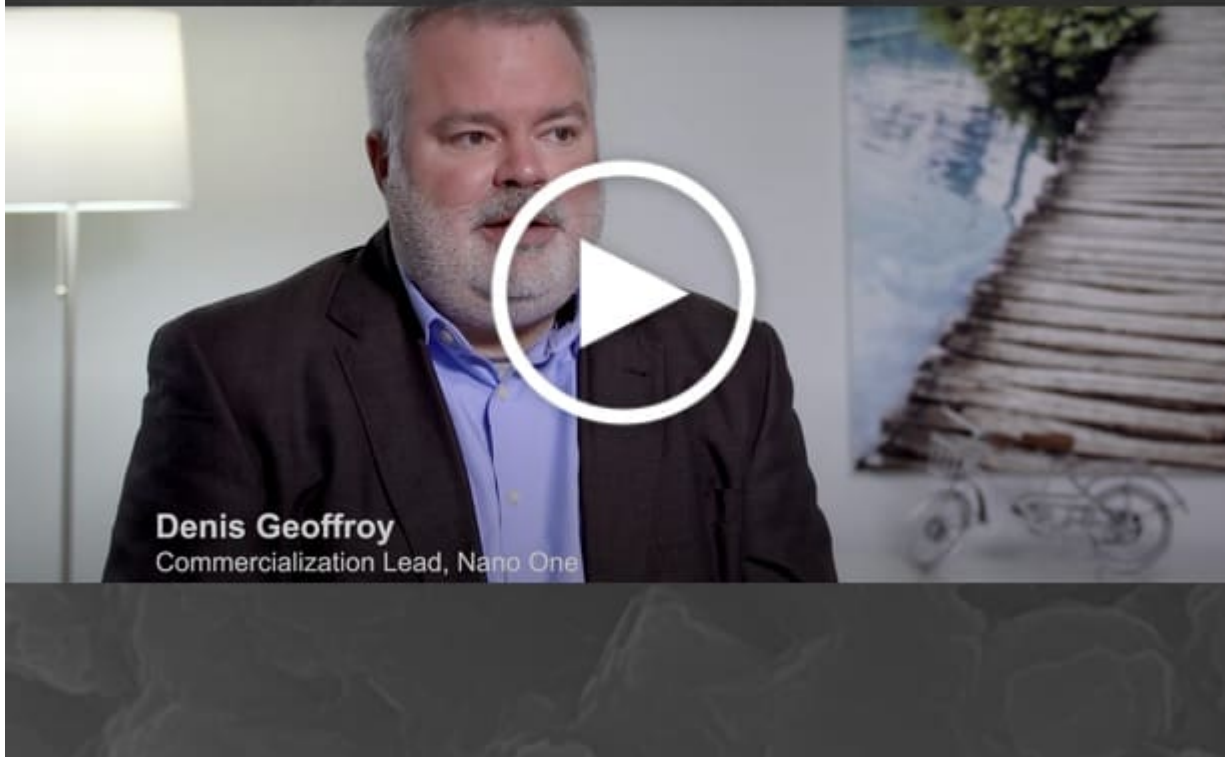
Note: Bold emphasis by the author.

Another key factor many in the market fail to appreciate is the difficulty in obtaining experienced battery manufacturing personnel. In the case of the above-mentioned deal, Nano One was able to secure a very key person, namely Denis Geoffroy. Denis was an early contributor to Phostech Lithium, which led the first commercial manufacturing of LFP cathode active materials globally. Nano One CEO Dan Blondal summed it up well [stating](#):

“Today marks the beginning of an exciting new chapter in the Nano One story. I am pleased to report that the entire team in Candiatic has transitioned to Nano One and this positions us with the most experienced LFP workforce in North America.”

Denis Geoffrey is the Chief Commercialization Officer of Nano One

We're building a commercialization team to scale our tech for a localized battery supply chain



Source: [Nano One Materials website](#) ([video link](#))

In terms of the next steps Nano One [states](#):

"The Company will begin with trials in the Candiatic facility to validate the production of LFP using the Company's patented One-Pot process. Results from these trials will drive business, commercial and plant conversion decisions in 2023."

One would think Tesla and other North American based electric car and battery OEMs would be taking notice of how this all develops, and off-take deals could potentially soon emerge.

The rise and rise of LFP batteries

LFP batteries outsold NMC batteries last year in China, rapidly gaining market share (see below).

LFP battery demand skyrocketing – LFP outsold NMC in China as of March 2022

‘Skyrocketing demand’

Like Wood Mackenzie, Clean Energy Associates (CEA) noted the competitive dynamic heating up between LFP and NMC batteries. Safety advantages, long lifecycle and lower costs have led to EV makers starting to accept the trade-off of lower energy density in adopting LFP batteries, both firms have noted.

LFP has already been accepted by the stationary battery energy storage system (BESS) sector, where energy density tends to be a less decisive factor.

CEA said LFP outsold NMC among batteries sold by Chinese manufacturers, with its market share growing through the year: of 100GWh of lithium batteries used for EVs and ESS, 44% were NMC and the majority of the remainder LFP.

Source: [Energy Storage News](#)

Looking ahead this decade it looks likely that LFP will continue to gain market share from NMC and become the preferred battery cathode type. Energy Storage News quotes research from Wood Mackenzie [stating](#): “Lithium iron phosphate (LFP) will be the dominant battery chemistry over nickel manganese cobalt (NMC) by 2028.”

Time will tell, but certainly, the current trend is towards LFP gaining market share globally. In North America the LFP demand will massively outweigh the supply, putting Nano One Materials in the box seat this decade, as a LFP battery manufacturer. The question really will be – **How fast can Nano One scale production?**

Nano One trades on a market cap of [C\\$266 million](#).