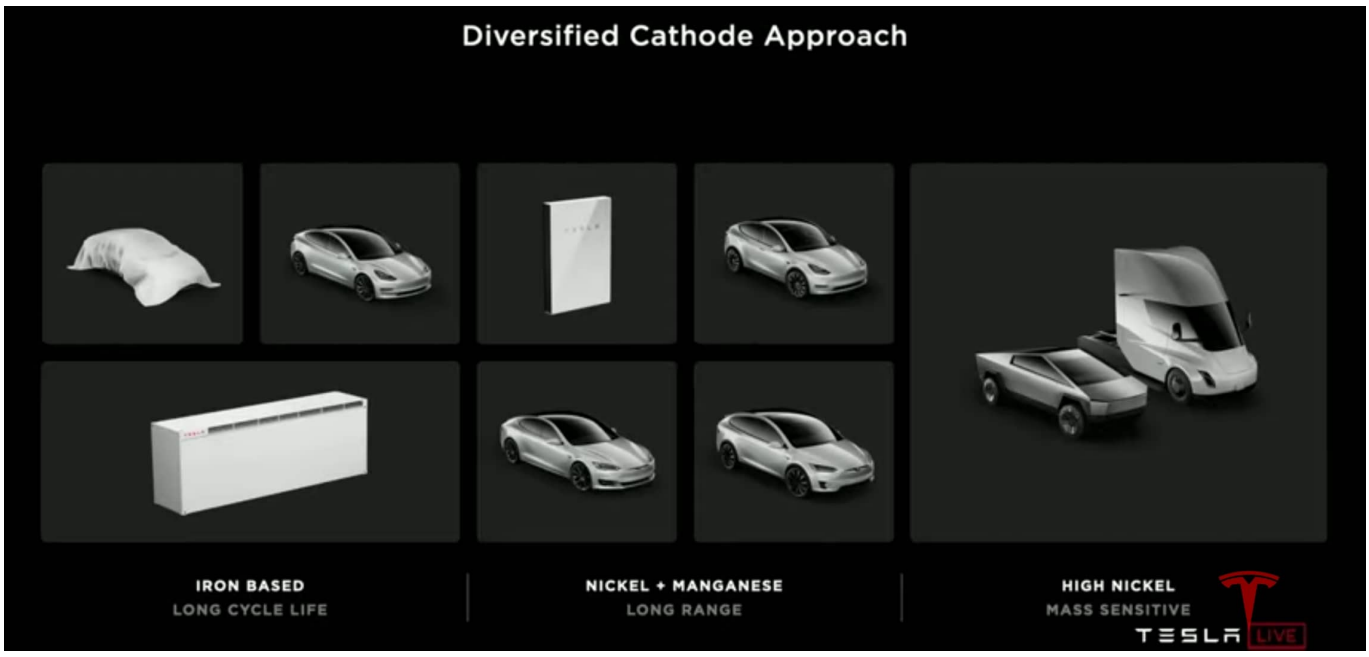
Nano One looks to be moving in the same direction as EV leader Tesla

At Tesla Battery Day in September 2020 Tesla discussed how they plan to have a three prong approach to batteries – Lithium Iron Phosphate (LFP), **Nickel Manganese (NM or LMN)**, and high nickel (NCA or NMC). Today I look at the nickel manganese battery and a company that is moving in the same direction as Tesla. That company is Nano One Materials Corp. (TSXV: NNO) ("Nano One").

Tesla's planned mix of battery cathode types – Li Iron Phosphate (LFP), Nickel-Manganese (NM), high nickel (NCA) (NMC)



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Nano One specializes in improving battery cathodes. In particular the Company's focus is to make low cost, high performance, cathode powders used in lithium ion batteries.

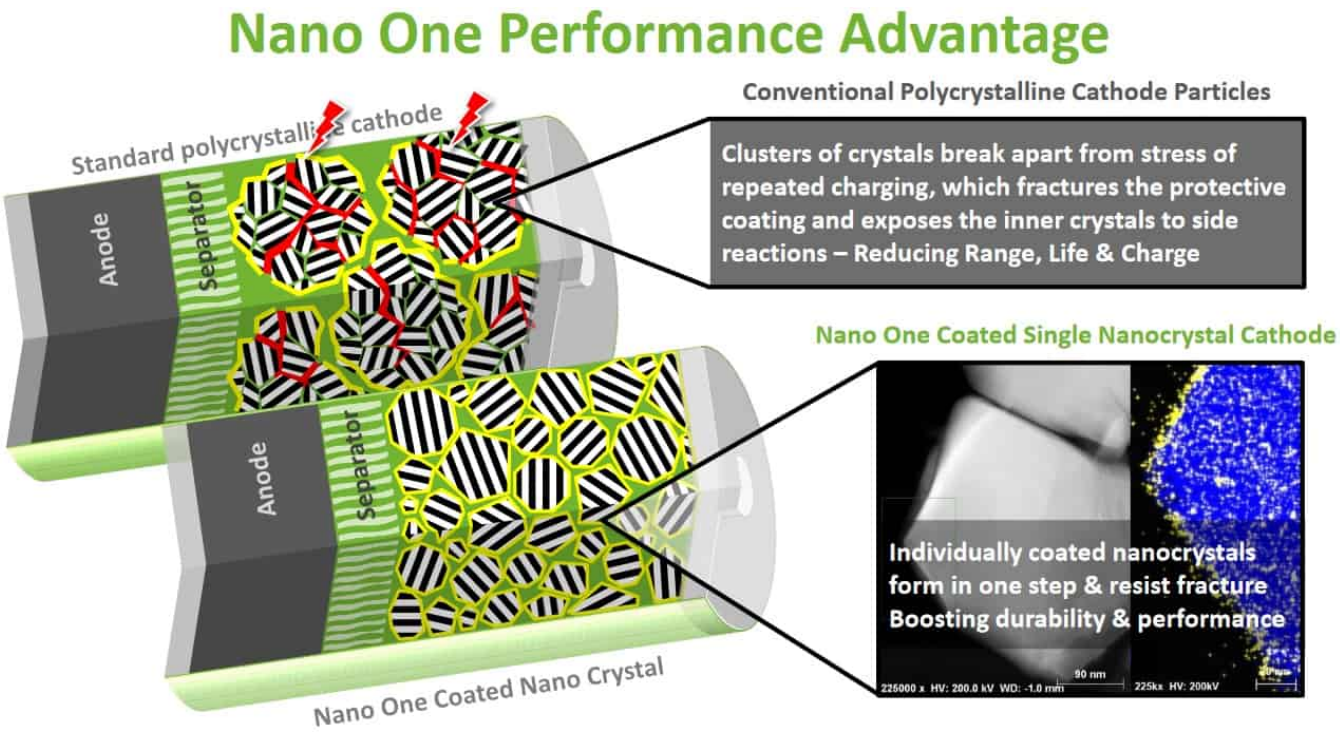
In October 2020, Nano One announced that they have developed a breakthrough in longevity for a cobalt free high voltage battery that has been successfully demonstrated at automotive rates of charge and discharge for over 900 cycles. The battery uses a low cost, cobalt-free **Lithium Nickel Manganese (LNM)** cathode active material made with Nano One's proprietary One-Pot process.

The problem with removing the cobalt can be that the battery becomes less stable or has a lower lifespan (less cycles). However in this case Nano One has managed to achieve 900 cycles, which is heading towards the 1,500 cycles that a Tesla Model 3 achieves using a more expensive nickel-cobalt-aluminum (NCA) battery. The other reason for removing cobalt is that the world supply of cobalt is limited and mostly comes from the Democratic Republic of the Congo – A country rampant with issues such as corruption, child labor and exploitation. Many analysts are forecasting severe cobalt supply shortages after 2023 just as the EV boom takes off. This explains why Tesla and Nano One are working towards a nickel-manganese battery with no cobalt.

Nano One's Chief Technology Officer Dr. Stephen Campbell explains:

"We are able to avoid rapid capacity fade and premature failure and have successfully demonstrated a high voltage lithium ion battery cell with significant cycle life – this is an exceptional outcome. The enabling technology is Nano One's patented LNM cathode material operating up to 4.7 volts and made using our patented One Pot process. **The LNM voltage is 25% higher than commercial lithium ion batteries, improving efficiency, thermal management and power.**"

Nano One's Coated Single Nanocrystal Cathode gives a performance advantage



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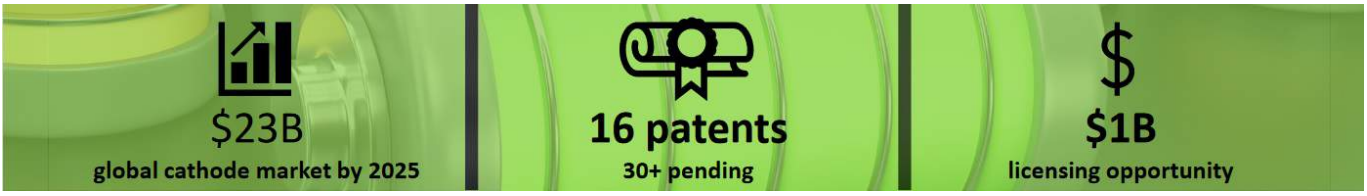
In June 2020, Nano One announced the development of a coated, **single crystal cathode** material for lithium ion batteries that is providing **up to 4 times improvement in longevity**. The technology is applicable to all of Nano One's cathode materials.

Perhaps not surprisingly, Nano One was able to raise an oversubscribed equity raising of approximately $14.37M at an offering price of $2.72 per Unit (one share and half a warrant). The Company intends to use the net proceeds for research and development, capital equipment purchases and facility expansion, intellectual property acquisition, business development, working capital and general corporate purposes.

Nano One continues to have successful breakthroughs in improving lithium-ion battery cathodes, most importantly in all types of cathodes (iron based, nickel-manganese, and high nickel-cobalt). Combine this with their excellent established development partners Pulead (the global leader in LFP cathodes), Volkswagen (a leading OEM), and Saint-Gobain then

it should not be surprising to see Nano One start to commercialize their patented technology in the near future.

The global cathode market is forecast to be a US$23 billion market by 2025 and includes a US$1 billion potential licensing opportunity which Nano One is targeting. Nano One's goal is to achieve ~$70M pa in revenues by 2025 at high profit margins.



Nano One's stock is up 118% over the past year so early investors are certainly being rewarded. With the EV boom set to accelerate due to Tesla's planned US$25,000 car by 2023, it should leave plenty of opportunity for Nano One to make their mark.

Dan Blondal on Nano One's breakthrough in lithium-ion cathode materials and the 'million mile battery'

"The idea of a single crystal cathode has been around for a while but the conventional methods for making them are very expensive. You want to spend as little time in the furnace as possible and we have developed a way to do that. Our crystals form very readily in the furnace and they self coat in the furnace so you don't have to have a secondary coating process. We have simplified the process. It is less complex and because

the crystals form quickly we get an inexpensive way of making them that doesn’t have the downside of spending too long in the furnace.” States Dan Blondal, CEO, Director & Founder of Nano One Materials Corp. (TSXV: NNO), in an interview with InvestorIntel’s Tracy Weslosky.

Dan went on to say that even with single crystal there is degradation but if you coat that single crystal the cathode material lasts four times longer. Dan further added, “by making the material more durable you can get many more charges out of it. The electric battery that goes into a car is somewhat restricted by the durability of the materials. If the material is not very durable then you have to make the battery a bit bigger. A more durable battery allows you to either drive a million miles which is important for taxi drivers, buses and utilities, or charge is much faster because as the battery is more durable it can take more aggressive charge or drive a little bit further everyday.”

To access the complete interview, click here

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A breakthrough in longer lasting lithium-ion cathode materials brings ‘the million mile battery’ dream closer to

reality

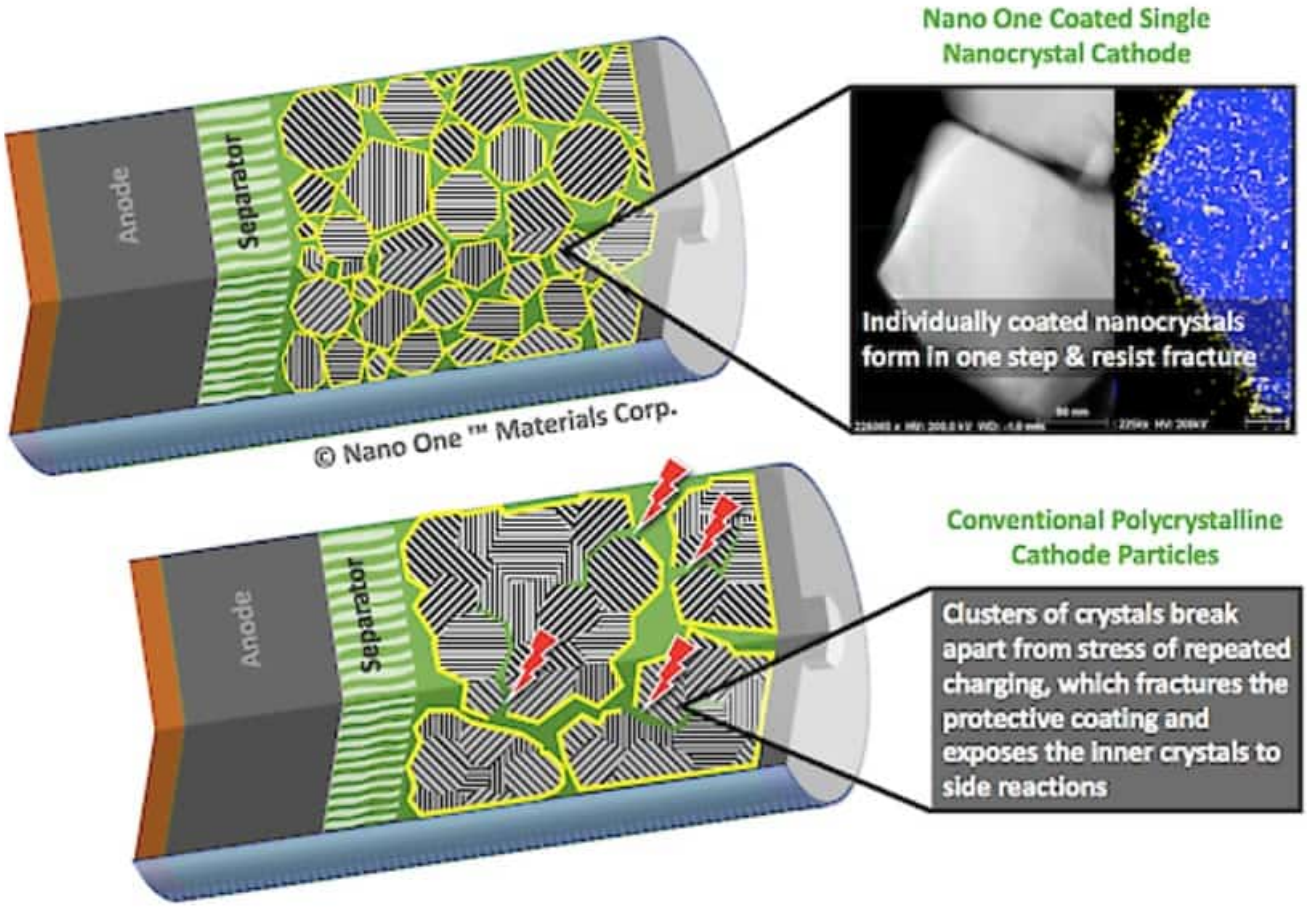
The biggest new trend in the electric vehicle (EV) and battery industry right now is ‘the million mile battery’. The significance for the industry is huge. Imagine owning an electric car that can last for one million miles, or 1.6 million kilometers. This is a lifespan several fold longer than what current cars can offer. Owners will no longer need to worry about replacing their EV battery after 8-10 years.

Even bigger is that fleet owners can own just one EV and run it for over 1 million miles. The taxi and trucking industry will be lining up for million mile EVs as it would be economic suicide not to own one. The EV industry is set to celebrate the breakthrough of longer lasting more durable cathodes that lead to better batteries capable of fast charging and a million miles lifetime

Nano One Materials Corp. (TSXV: NNO) (NNOMF) has just announced a breakthrough in ‘longer lasting’ lithium-ion cathode materials. The Company has developed a coated single nanocrystal cathode material which provides protection against undesirable side reactions and the stresses of repeated charge and discharge cycling.

Nano One’s patented One-Pot process combines all input components – lithium, metals, additives and coatings – in a single reaction to produce a precursor that, when dried and fired, forms quickly into a single crystal cathode material simultaneously with its protective coating.

Nano One’s patented method to produce a single crystal cathode material with a protective coating



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Dr. Stephen Campbell, Chief Technology Officer of Nano One Materials Corp. stated:

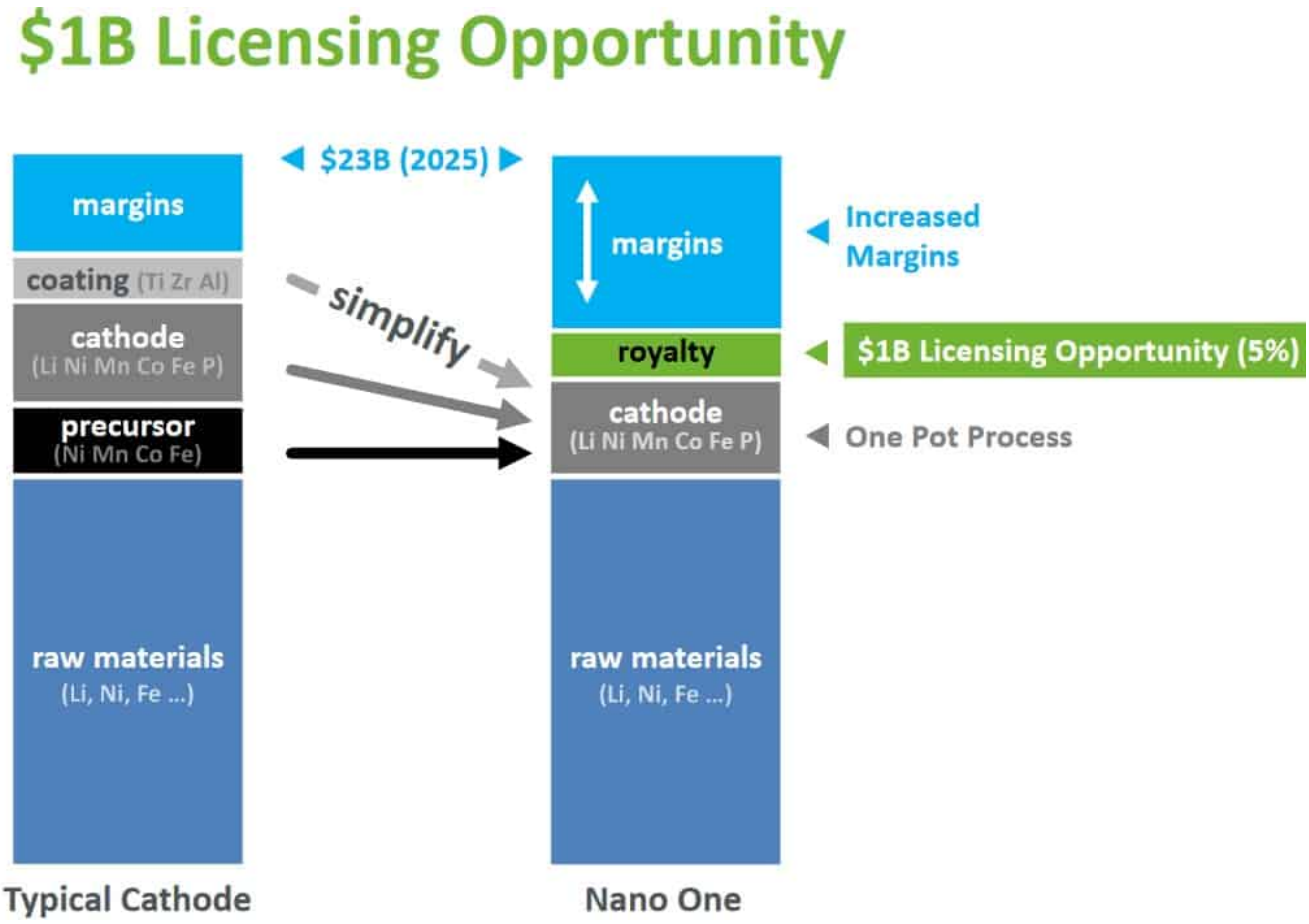
“We are focused on optimizing this for NMC811 and I am pleased to present recent results that show how protective coatings on a robust crystal structure can make cathode powders more durable and longer lasting. **Increased durability is critical in enabling extended range, faster charging and even million mile batteries for electric vehicles**……By forming protective coatings on individual nanocrystals, Nano One eliminates process steps and is engineering new materials with enhanced durability for various applications including electric vehicles. These are positive results and we are optimizing the materials for third party evaluation on the path to commercializing this technology.”

The issues of range, charging times, and battery longevity are

all critical to electric vehicles. This highly significant breakthrough, along with others, will lead to longer range, fast charging with less damage, and million mile batteries for EVs. The technology is really game changing in so many ways and should help pave the way for wider spread adoption of EVs in future years, especially for fleet operators such as taxis, buses, trucks, and other EVs that require heavy use.

Nano One is already very well partnered into the EV/battery supply chain via partnerships with industry giants such as Volkswagen, Pulead, Saint-Gobain and other undisclosed global automotive interests. Added to this recent raisings and government support means Nano One has about $16 million of cash to further their patents, research and business plans & co-development activities.

Cathode manufacturers can enjoy increased margins even after paying Nano One a royalty



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Closing remarks

Nano One is leading the cathode industry with innovative and critical technological breakthroughs to make batteries better. The battery cathode market is forecast to be worth $23 billion in revenues by 2025, and Nano One's goal is to achieve up to $1 billion in licensing fees revenue for their patented cathode technologies. Given their progress so far that is looking like a highly achievable goal.

Nano One also works on the development of processing technology for the production of nano-structured materials. The Company is focused on building a portfolio of intellectual property and technology know-how for applications in markets that include energy storage, specialty ceramics, pharmaceutical, semiconductors, aerospace, dental, catalysts, and communications.

On a current market cap of only C$110 million it is not too late for investors to get onboard. These are truly very exciting times for Nano One, and for the EV/battery industry as a whole. The big winner will also be the consumers of fast charging EVs with batteries that can charge faster and last a million miles or more. I can't wait to buy one myself.

[Publisher's Note: Special thanks for the rights to publish the above artwork from Brendon Grunewald of the Polar Conservation Organisation]

Well partnered (and well-

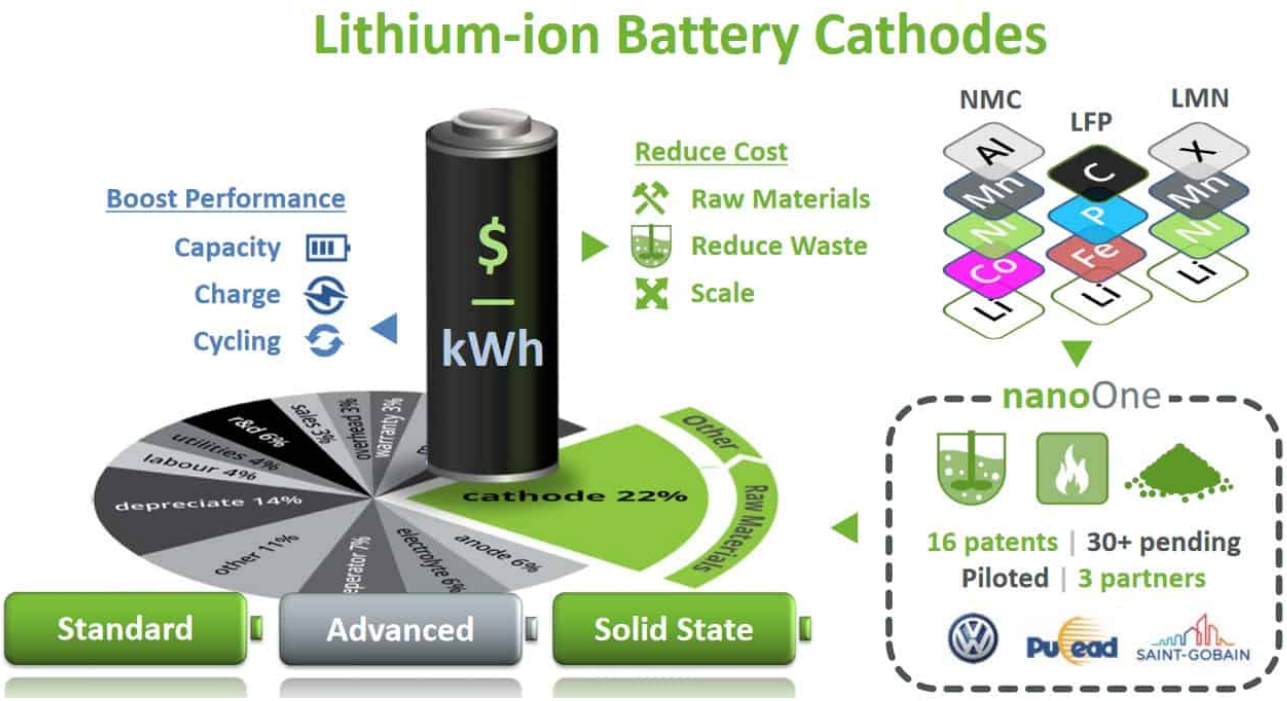
funded) with key battery suppliers, Nano One charges forward on ‘Mission Possible’…

Nano One secures an additional $11 million in cash to provide a multi-year funding runway for their work on lithium-ion battery cathodes

For companies that are not yet producing revenues, the threat of running out of funding is a significant business risk. As the COVID-19 disruption deepens and some companies run low on cash, Nano One Materials has secured an additional $11 million in funding which will provide them with “a multi-year runway extending over three years.” This essentially removes the short-term funding risk making the stock a safer buy for investors.

Nano One Materials Corp. (TSXV: NNO) is working on making lithium-ion batteries better. Nano One has developed patented and scaleable industrial processes for producing low cost, high performance, battery materials typically used in the battery cathode. The processing technology enables lower-cost feedstocks, simplifies production, and advances performance for a wide range of cathode materials.

Nano One is working to make lithium-ion battery cathodes cheaper and better



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Nano One's recent funding success

- $11m raised from private and institutional groups
- $5.25m grant from Sustainable Development Technology Canada (SDTC)

In connection with the closing of the $11m financing, Nano One issued 9,565,000 units at a price of $1.15 per unit with each unit comprising of one common share in the capital of the Company (the "Shares") and one-half of one common share purchase warrant (the "Warrants"). Each whole Warrant is exercisable into one share at an exercise price of $1.60 per until February 21, 2023.

The proceeds from the financing will be used for corporate development, facilities expansion, technology advancement and general working capital.

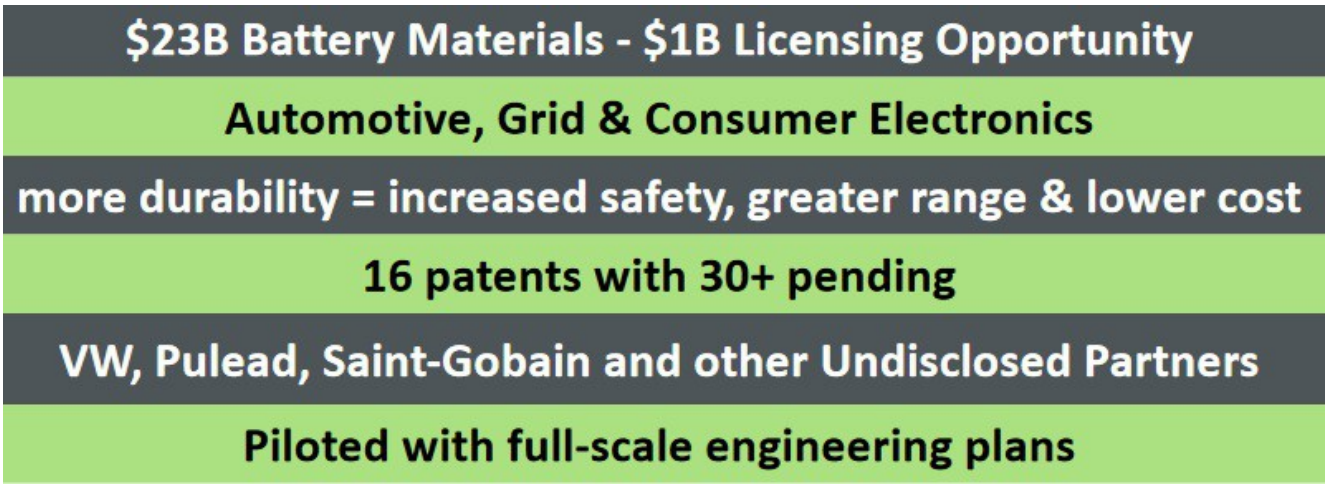
Nano One CEO Mr. Dan Blondal stated:

"We are thrilled with the capital market response to this latest placement. The proceeds from this financing will also be leveraged by an additional five million dollars in non-

dilutive and non-repayable contributions, that was awarded to Nano One by Sustainable Development Technology Canada in May of 2019. ***The sum of sixteen million dollars*** *enables us to accelerate business plans and co-development activities including those already underway with Volkswagen, Pulead, Saint-Gobain and other undisclosed global automotive interests."*

Note: Nano One also receives financial support from the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP).

Nano One – Why invest?



Nano One's development partners

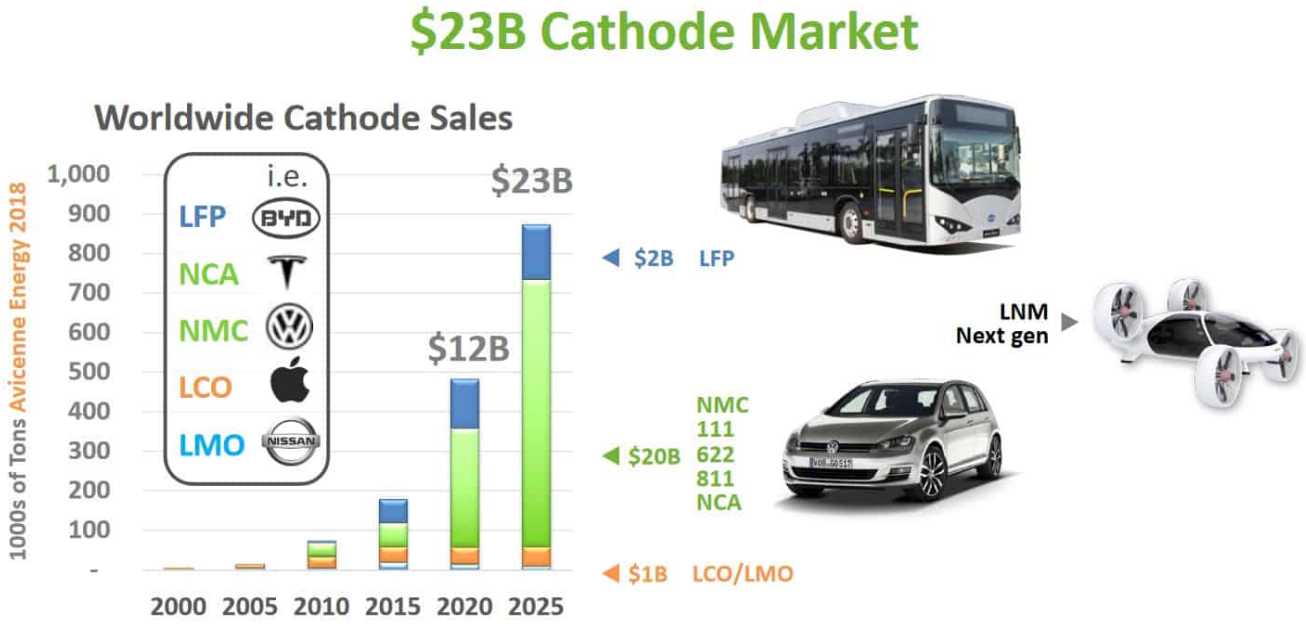
Nano One is very well partnered into key battery suppliers and some car manufacturers, including several big names – Pulead, Saint-Gobain and Volkswagen. Nano One is working with Pulead to develop better LFP batteries, with Saint-Gobain to improve thermal processing and to develop enhanced high temprature cathode processing, and with Volkswagen to develop advanced materials for next generation batteries.

Apart from the partnerships discussed above and other undisclosed opportunities, Nano One has 16 patents with 30+ patents pending.

Nano One's business model

Nano One's goal is to achieve up to $1 billion in licensing fees revenue for their patented cathode technologies, by tapping into the rapidly growing cathode market that is forecast to be worth $23 billion by 2025.

Nano One is tapping into the battery cathode market which is forecast to be worth $23 billion in revenues by 2025



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Closing remarks

Nano One is ticking all the right boxes.

- Great patented technology – Check.
- Industry leading partners (Pulead, Saint-Gobain and Volkswagen) – Check
- Funding secured ($16 million in total) – Check
- Government backing – Check

With a potential up to $1 billion licensing fees opportunity and a market cap of just C$80 million, it is not too late for investors to get on board. If Nano One succeeds it will have been a great time for investors to have bought in now after the recent dip. Execution risk remains, but the rewards look large if Nano One can pull it off.

Nano One’s Dan Blondal on improving the performance, durability, and safety of lithium-ion batteries

“We use a process that is environmentally friendly, we have no waste stream, we combine all of the coating and crystallization and all of the preparation of nickel, manganese, and cobalt all into one step. So there are fewer steps, there’s less energy consumed, less waste, and results in a longer-lasting battery material that could lead to more durable battery.” States Dan Blondal, CEO, Director & Founder of Nano One Materials Corp. (TSXV: NNO), in an interview with InvestorIntel’s Ron Wortel at PDAC 2020.

Dan went on to say that Nano One has developed intellectual property and patents to make battery materials that can improve the performance, durability, and safety of batteries. Dan also spoke on Tesla’s million-mile battery. He said that Tesla has used cathode material supplied by a Chinese manufacturer in the battery. Dan continued, “Nano One has intellectual property and patents that have nanocrystalline coated material which is very much akin to what they were using except ours is commercially viable.” Dan also provided an update on Nano One’s other battery technologies. He said that the company is working on lithium iron phosphate batteries used in electric buses, grid storage, etc. Nano One is also working on cobalt-free battery material which is aimed at next-generation solid-state batteries.

To access the complete interview, click here

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Dan Blondal on oversubscription and the increasing market support for Nano One's lithium-ion battery technology initiatives

In an InvestorIntel interview during PDAC 2020, Tracy Weslosky secures an interview update with CEO, Director & Founder Dan Blondal on Nano One Materials Corp. (TSXV: NNO), a technology company with patented technology for the low-cost production of high-performance lithium-ion battery cathode materials used in electric vehicles, energy storage, and consumer electronics.

Dan spoke on Nano One's patented technology which can improve the durability of battery cathode materials and could enable electric vehicle manufacturers to significantly increase the lifespan and driving range of their batteries. Market interest is coming back into the battery materials sector with the rise in electric vehicle demand. Dan continued, "We have done a fantastic job by bringing Volkswagen and government funding into the company, and other partners. All that happened last year when it was really hard to get…"

Dan also provided an update on Nano One's recently closed

private placement which was oversubscribed by 80%. In addition to the proceeds from the private placement, Nano One has also received $5 million in non-dilutive and non-repayable contributions from Sustainable Development Technology Canada.

To access the complete interview, click here

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Partnered directly into the lithium-ion battery supply chain and simply making batteries better.

Almost every week we hear of a new and so-called better lithium-ion battery; yet the reality is it never arrives. Typically there are still problems to be solved, and hence the battery is still only at the lab testing stage. For investors, it makes more sense right now to go with a company that is improving on the existing lithium-ion batteries and that is partnered directly into the lithium-ion battery supply chain. The top name that meets these criteria would be Canada’s Nano One Materials Corp.

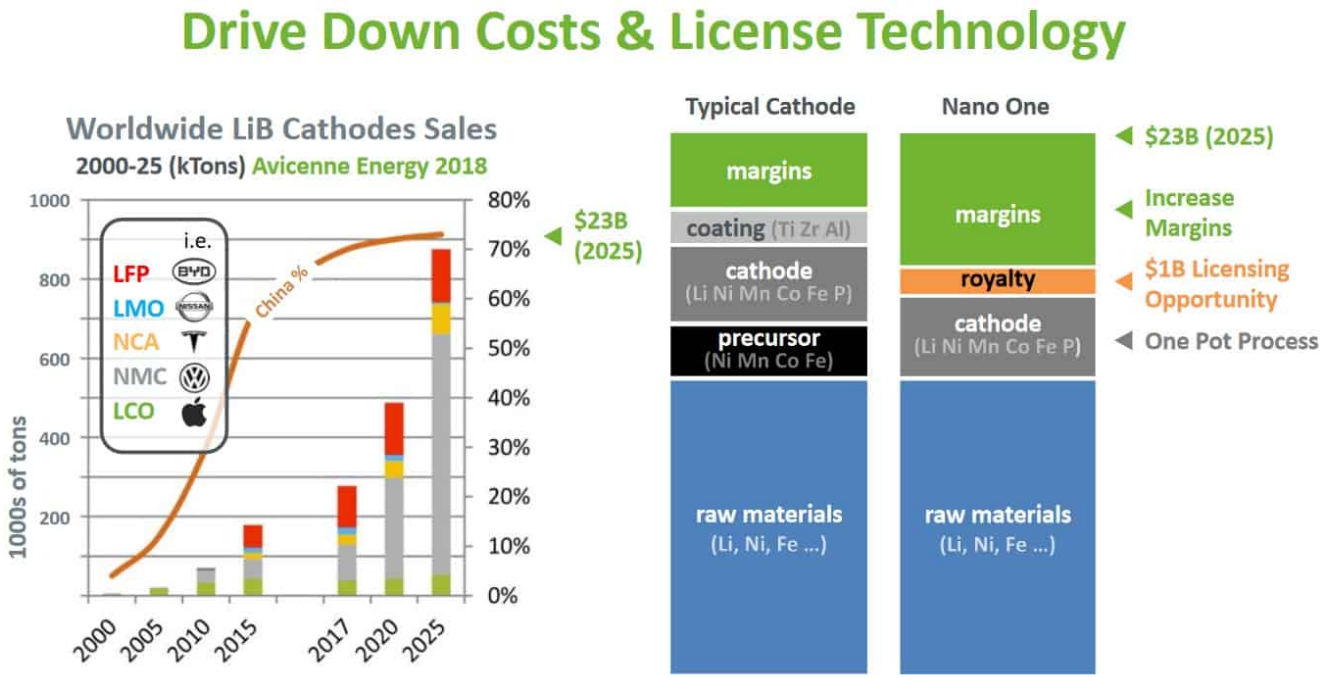
Nano One Materials Corp. (TSXV: NNO) primary focus is to improve on existing lithium-ion batteries. The key area is the battery cathode where Nano One has been having success using its scalable industrial process for producing low cost, high performance, battery materials. The processes vary and are all patented, but typically rely on Nano One’s expertise in

nanotechnology and processing technology.

Nano One is very well partnered into key battery suppliers and some car manufacturers, including several big names – Pulead, Saint-Gobain and Volkswagen. Nano One is working with Pulead to develop better LFP batteries, with Saint-Gobain to improve thermal processing and to develop enhanced high temp cathode processing, and with Volkswagen to develop advanced materials for next-generation batteries.

Nano One also has the support of the Canadian government, and in 2019 had a visit from Canadian Prime Minister Justin Trudeau to check out Nano One's pilot plant.

Battery cathode sales forecast to take off as Nano One's patented process makes cathodes cheaper



The Nano One and Pulead partnership is progressing well

In December 2019 Nano One announced that things were moving ahead very well with their Pulead partnership to commercialize lithium-ion phosphate (LFP) batteries. Pulead is one of China's leading Li-ion battery cathode producers, with a focus on LFP cathodes.

Dr. Xinhe Yang, VP of Research and Development at Pulead stated: *“We value the partnership with Nano One and are satisfied that their process can be supported with reliable and sustainable sources of raw materials. Our technical teams are making good progress on commercial viability and we remain committed to the partnership activities.”*

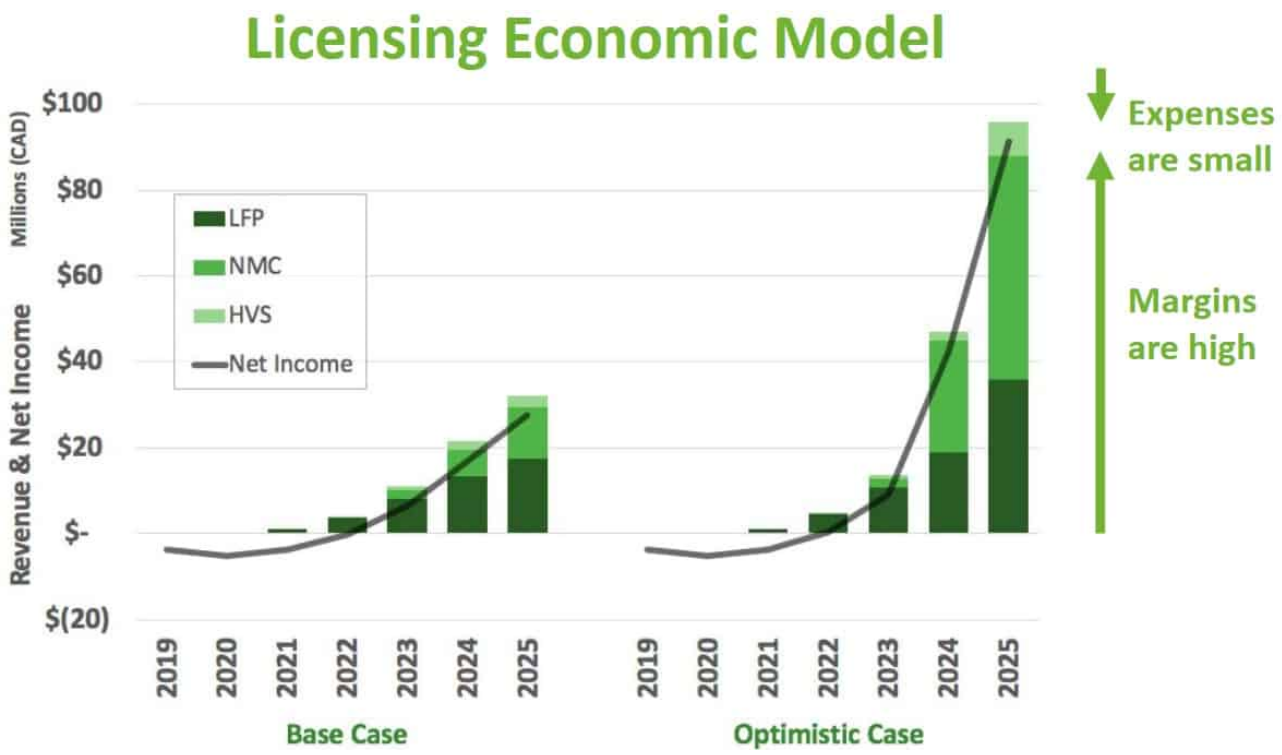
This all means Nano One is getting closer to achieving revenues as a result of licensing their IP. This woud be a very significant step forward for Nano One. The LFP market is huge in China, and is the preferred cathode for electric buses, and many types of heavy electric vehicles where battery longevity and price play key roles.

Nano One CEO Dan Blondal stated: “*This marks an important achievement in our commercialization efforts and moves us closer to the joint objective of licensing Nano One technology for the production of LFP by Pulead.”*

Nano One patents a new durable cobalt-free battery material

Nano One’s new lithium nickel manganese oxide (LNMO) cathode material patent eliminates cobalt from the battery and increases durability. This helps solve two key concerns in the industry thereby creating a strong need for Nano One’s proprietary process.

Nano One’s licensing economic model



Closing comments

The key for any company to succeed is to find a niche need then fill that need with an affordable product. That is exactly what Nano One is doing. There is a massive need right now for cheaper and better lithium-ion batteries to make electric vehicles affordable to the masses. Nano One is already meeting that need by lowering the cost of batteries by improving (shortening etc) the production process (‘one pot process’), as well as improving the cathode’s performance by using better materials and better combinations.

It seems the industry agrees as many of the big names continue to partner strategically with Nano One. It looks to be only a matter of time until Nano One’s licensing economic model begins to make money for Nano One. And when it does it should be very profitable, especially if revenues accelerate sharply as the EV boom takes off post 2022. Once revenues and profits kick in then I would expect a significant stock price re-rating.