

Boosting electric vehicles with artificial intelligence and leadership, a powerful combination for Exro Technologies

Two of the biggest trends this decade are electric vehicles (EVs) and artificial intelligence (AI). Together they make a powerful combination. Just take a look at the chart below for Exro Technologies Inc. (CSE: XR0 | OTCQB: EXROF) (“Exro”). Exro’s stock price is up over 400% in the past year, which coincides with the time that CEO Sue Ozdemir has been with the company.

Exro Technologies (CSE: XR0) stock price is up 413% over the past 1 year



Source

Exro Technologies is a software design technology and smart energy company that creates a software module called a “Coil Driver” that uses AI to make electric motors function better. In an electric car, the Coil Driver acts like gears do on a conventional car, boosting an EV motor’s range and performance by using two separate torque profiles for a motor. The first is calibrated for low speed and high torque, while the second

provides expanded operation at high speed.

Reflecting on the past year and why Exro has done so well

Over the past year Exro has made very significant steps in commercializing their technology, securing several significant partnerships along the way. Here is a brief summary of Exro's partners/agreements:

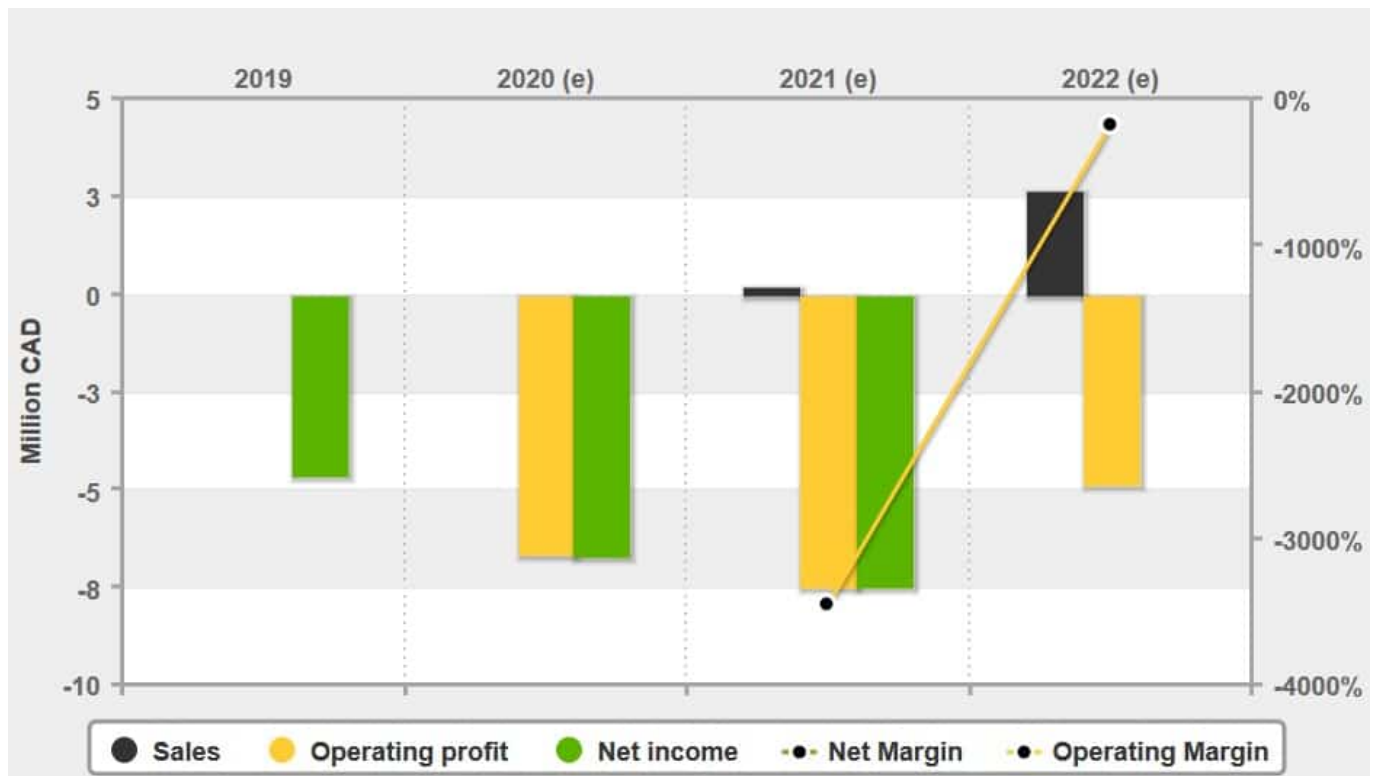
- **SEA Electric Pty Ltd.** – In July 2020, Exro announced a partnership to enhance electric powertrain technology for heavy-duty trucks and delivery vehicles.
- **Zero Motorcycles (“Zero”)** – In June 2020, Exro announced a collaboration agreement with Zero to evaluate Exro's patented Coil Drive technology using Zero's SR/S powertrain platform. Zero is a big name in electric motorbikes.
- **Clean Seed Capital Group Ltd.** – On April 28, 2020, Exro announced it has signed a collaboration and supply agreement with Clean Seed Capital Group Ltd. (TSX-V: CSX) to integrate Exro's technology into Clean Seed's high-tech agricultural seeder and planter platforms, advancing the electrification of the world's heavy-farm equipment.
- **Motorino Electric** – In December 2019, Exro partnered with Motorino Electric. Exro's engineered technology provided a torque and acceleration increase of 25% for the Motorino e-bike.
- **Templar Marine** – Exro has a pilot project running with Templar Marine's water taxis. The marine sector is a multi-billion dollar industry that can stand to benefit enormously from Exro's technology as they increasingly switch across to electric motors for a cleaner environment.
- **Aurora Powertrains** – Exro has partnered with Aurora to improve the Aurora's all-electric snowmobile.
- **Potencia Industrial** – Exro has contracts with Potencia Industrial, which is one of Mexico's leading motor

manufacturers. Potencia designs and manufactures special application, high efficiency, electrical motors and generators. One of their projects involves converting internal combustion engines in Mexico City's taxis to electric motors, as part of a city-wide initiative to green the city's 250,000 taxi fleet. Exro works to integrate its hardware and software technology into Potencia's motor drives. The Exro customized driver will be used as the inverter for Potencia's Pronto Power Flexible Powertrain.

"It's hard to believe that it has been a year since I joined Exro," said Exro CEO Sue Ozdemir. "The past 12 months has been so rewarding as we innovate and transform our business. We are positioning ourselves to become leaders as we use the power of our technology to transform the way the world looks at energy consumption. I believe we now have the ideal platform to be successful." As for future plans, Ozdemir said: "Our team is continuing to focus our attention on co-development with our partnerships. We have a strong pipeline and are optimistic in our ability to meet our commitment to eight deals by the end of 2020. Further, we are gaining global presence as our partners deliver applications in North America, Australia, and Europe."

As most experienced investors know it is one thing to have a good idea or product, but it is another thing to successfully market, commercialize, and make profits. Exro is already doing the first two, and revenue is forecast to soon follow in 2021, growing in 2022.

Exro Technologies financials and forecast financials



Source

Catalysts

In a September corporate update Exro set out the following near term events for the company:

“November 2020 – Delivery to Potencia (electric car application). This is an especially pivotal project for Exro as it will become the platform design, reducing design time for future partnerships. It also serves as our first in-car application, demonstrating our ability to transform the automotive power electronics industry.

December 2020 – the IBMS (Intelligent Battery Management System) proof of concept. With the research phase now behind us, this technology development will allow us to provide test bench data to support our simulations and confirm that we are able to provide a solution for first life batteries to be used in second life applications, such as stationary storage for example.

Q4 2020 – We expect the 8th deal will be yet another representation of the versatility and scope of our innovation. We put a lot of effort into how each partnership contributes towards our future growth plan. Finding partners that deliver a new segment, new geography or new application is part of securing our footprint in many market segments. This will position us for a robust and sustainable future.

Early 2021 (Q1) – Delivery to Zero Motorcycle (“Zero”) (electric motorcycle application).”

Closing remarks

There is no doubt that Exro Technologies has had a busy year. Their technology is clearly being very well received by the market and the steps to commercialize the technology are now being put in place. When we consider the massive size of the electric motor market, in particular the new and surging demand for EVs, it is not surprising when Exro CEO Sue Ozdemir says “we have a lot of room for growth”. I think that is a huge understatement.

For their investors it has been a great year. Given that Exro trades on a market cap of just C\$114m, if they succeed in the next step of rapidly raising revenues, this could be just the beginning. I will be very interested to see how Exro Technologies goes over the year ahead.

Surge in electric vehicle

sales, has investors eyeing Exro Technologies

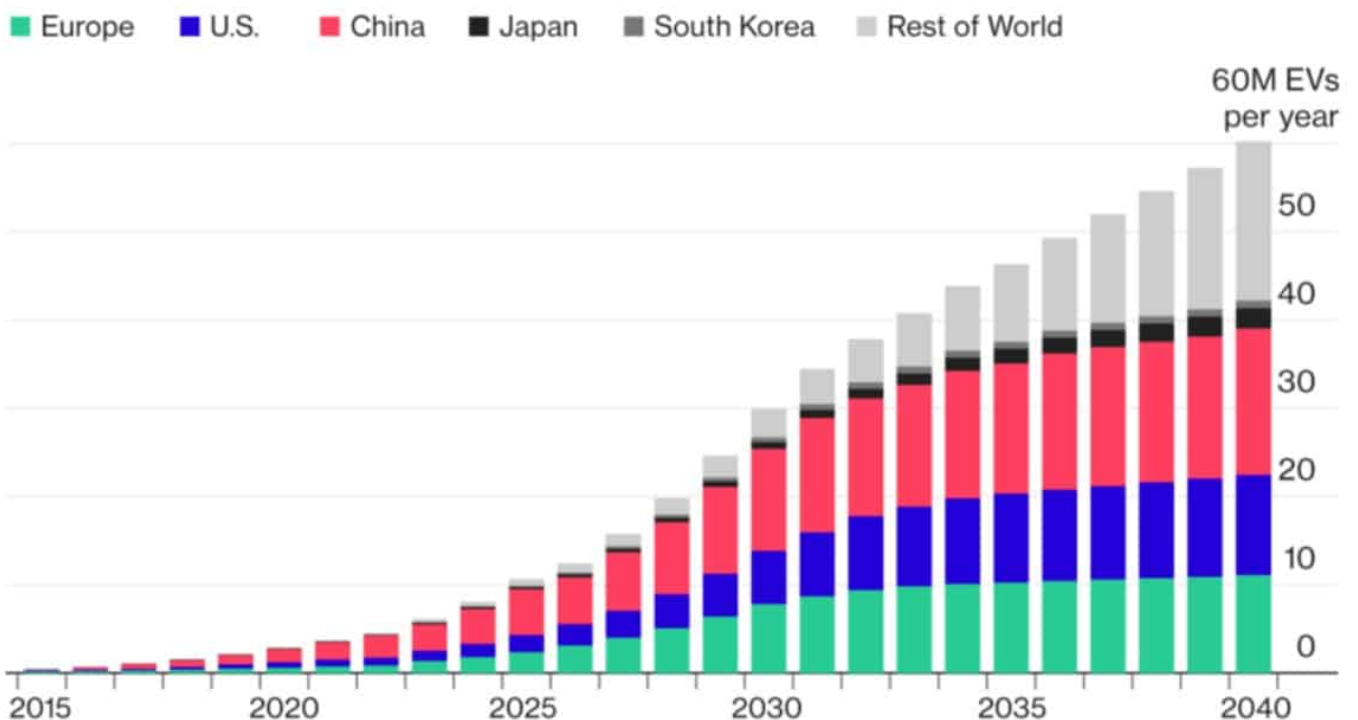
With the electric vehicle (EV) boom picking up pace recently investors are looking at EV related stocks that can benefit from the forecast surge in electric vehicle sales. Below I discuss a unique EV technology company that may well be at the center of the boom.

BloombergNEF 2020 forecast for annual electric vehicle sales give investors an idea of the tsunami that is on the way. BNEF forecasts annual electric car sales to rise from 2.2 million in 2019 (2.5% market share) to ~9 million by 2025 (10% share), 24 million by 2030 (28% share), and to a massive 54 million by 2040 (58% share). Added to this will be hundreds of millions of combined sales when including e-bikes, e-buses, e-semis, e-boats, e-trains, and some e-planes. The opportunity is enormous as shown in the chart below.

Global electric-car revolution set to take off – BNEF forecast

Global Electric-Car Revolution Set to Take Off

China set to lead EV market



Source

Exro Technologies Inc. (CSE: XR0 | OTCQB: EXROF) is a software design technology and smart energy company that creates an electric program module that uses Artificial Intelligence to make electric motors function better. The module integrates into the power electronics adjusting the output of the electric motor when needed, just like gears in a conventional car.

Exro's patented technology allows for multiple power settings in a single motor. This helps maximize the motors performance in terms of output and efficiency, thereby boosting a motors output and thereby performance and range. The technology enables 2 separate torque profiles within a single motor, hence the comparison with 'gears' on a conventional car. All this is done using a software module.

Exro's coil driver technology – 'Software with hardware solutions'

EXRO COIL DRIVER TECHNOLOGY

“SOFTWARE WITH HARDWARE SOLUTIONS”



Technology



CoilDriver

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Following a string of new partnerships across a range of different types of EVs over the past 2 years, Exro has recently succeeded again with a partnership to enhance electric powertrain technology for **heavy-duty trucks and delivery vehicles**. The partnership is with Australia's SEA Electric Pty Ltd. SEA Electric is recognized as a global leader in the electrification of commercial vehicles.

The news release states: “SEA Electric products are now deployed in 5 countries, with collectively more than 1.6 million kms (1 million miles) of independently OEM tested and in-service operation, making it widely recognised as the market leader in the electrification of commercial vehicles.”

Prior to this latest success, Exro has also achieved the following partnerships:

- **Electric motorcycles and bikes** – In June 2020 Exro announced a collaboration agreement (the “Agreement”) with Zero Motorcycles (“Zero”) to evaluate Exro's patented coil drive technology using Zero's SR/S powertrain platform. Zero are a big name in electric

motorbikes. Last year in December, Exro partnered with Motorino Electric. Exro's engineered technology provided a torque and acceleration **increase of 25%** for the Motorino e-bike.

- **Electric boats** – Exro has a pilot project running with Templar Marine's water taxis. The marine sector is a multi-billion dollar industry that can stand to benefit enormously from Exro's technology as they increasingly switch across to electric motors for a cleaner environment.
- **Electric snow mobiles** – Exro has partnered with Aurora Powertrains to improve the Aurora's e-sled all-electric snowmobile.
- **Electric motors/generators** – Exro has contracts with Potencia Industrial who design and manufacture special application, high efficiency, electrical motors and generators. One of their projects involves converting internal combustion engines in Mexico City's taxis to electric motors, as part of a city initiative to green the city's 250,000 taxi fleet. Exro jointly works to integrate its hardware and software technology into Potencia's motor drives.
- **Electric farm equipment** – On April 28, 2020, Exro announced it has signed a collaboration and supply agreement with Clean Seed Capital Group Ltd. (TSXV: CSX) to integrate Exro's technology into Clean Seed's high-tech agricultural seeder and planter platforms, advancing the electrification of the world's heavy-farm equipment.

Exro Technologies growing list of partners

EXRO'S PARTNERS

"My commitment is to close 8 strategic partnerships by the end of 2020." - Sue Ozdemir, CEO of Exro Technologies



Source: Exro Technologies Company presentation

Exro states: "Exro is set to close on 8 strategic partnerships and licencing agreements in 2020 that will position it for high volume manufacturing in the future. Currently, Exro has capacity for a low volume of manufacturing projects....The Company's commercialization and licensing strategy is centered around its Partner Development Phase, which incorporates partnerships with leading innovative motor companies in the industry."

Exro recently raised C\$8 million of new capital at C\$0.70 per share (plus a warrant exercisable at C\$0.90). The capital will be used for further research and development of the Company's coil switching technology for commercialization in the mobility segment including micro, light and commercial electric vehicle programs; marketing; capital investments and general working capital requirements.

Closing remarks

Exro Technologies has a tremendous opportunity ahead boosted by the impending EV boom led by Tesla. BNEF forecasts annual passenger electric sales to increase to 24 million by 2030,

which would be a ~11 fold increase on 2019 sales. What's even better for Exro is that they focus on improving the electric motor output and performance, so their technology is applicable across the entire range of EVs that will be coming.

Exro already has numerous agreements and contracts in place in electric motorcycles & bikes, electric boats, electric snow mobiles, electric motors/generators (being used for electric cars including e-taxis), electric farm equipment, and now electric heavy-duty trucks and delivery vehicles. As these partnerships mature, investors can reasonably expect Exro's revenues to rapidly increase. Their soon to open Calgary Innovation Centre should also boost future partnerships and sales.

Exro is now fully funded following an C\$8 million raise, so things can really speed up from here towards mass commercialization and revenues across all of the above sectors. Exro is still trading cheaply given their massive potential with a market cap of just C\$74 million. Stay tuned to Exro Technologies Inc.

Exro stock climbs 50% in the past 4 months as they commercialize their EV related technology

Exro Technologies Inc. (CSE: XR0 | OTCQB: EXROF) has developed a new EV technology that uses Artificial Intelligence (AI) to adjust and manage the electrical output of generators/electric motors/batteries, somewhat like how a gearbox works in a car.

Electric vehicles don't have a gearbox and they struggle to adjust to large changes in torque. This means to get optimal performance the better electric cars use two electric motors – one for slow speeds and one for fast speeds. But now this is no longer needed as Exro can adjust the electrical output to the motor using AI and essentially act as a regular car gearbox.

Exro Technologies stock climbs 50% in the past 4 months

Since I wrote about Exro Technologies last November 2019 ([click here](#)), their stock is up 50%. In that time Exro has announced two significant deals, and an e-bike delivery.

1. A partnership with The Templar Marine Group Ltd

Templar is a Canadian company focused on the mass production of commuter electric boats, from water taxis to rental fleets. Templar's zero-emission boats are tapping into the world's quickly emerging eBoat sector, which was assessed by Research and Markets to be worth US\$ 7.75 billion of revenues in 2017 and projected to reach US\$ 14.3 billion in 2023.

Templar will integrate Exro's system into Templar Marine's water taxis as a pilot project. The Company expects to see a significant increase in motor performance for both the boat's top speed, as well as improving range through increased system efficiency. Exro's validated technology has already proven it can increase motor speed by more than 30%, which Templar Marine believes will be a major breakthrough in the e-Boat sector.

Two of The Templar Marine Group's fully electric boats



Exro CEO, Sue Ozdemir, stated: “We believe Exro’s technology will dramatically enhance the performance of electric motors in boats and other watercraft. The e-Boat sector is clearly growing as people look for solutions that are sustainable and also meet regulatory requirements preventing the pollution of our lakes, rivers and oceans.”

Templar Marine Group CEO, Mark Fry, stated: “We are excited about the opportunity to work with this cutting-edge technology and believe the advancements Exro can add to electric boats can make a real difference. More speed and greater range are the primary limitations we face, and we have no doubt Exro’s technological advancements will be fully embraced by the market.”

2. Exro delivered the first Exro-powered eBike to Motorino Electric, dramatically improving performance

By expanding the operating parameters of the motor, Exro’s engineered technology provided a torque and acceleration increase of greater than 25% for the Motorino eBike.

In 2017 the global eBike market was worth US\$16.34 billion, and is forecast to grow to US\$23.83 billion by 2025. Deloitte forecasts 130 million eBikes are expected to be sold globally between 2020 and 2023. Many think eBike sales will be the next big thing as they have already proved in China where there are already over 200 million eBikes. One report forecasts we will have 2 billion eBikes globally in 2050.

eScooters, eBikes, and eMotor bikes are all becoming very popular



3. Exro strategic agreement with electric snowmobile maker Aurora Powertrains Oy

The partnership will see Exro's technology being added to the Aurora electric powertrain in Aurora's eSled all-electric snowmobile.

Exro's Chief Technology Officer, Ari Berger, stated: "Our partnership with Aurora further proves Exro can be applied and scaled to a wide variety of sectors."

Aurora's eSled all-electric snowmobile to use Exro's technology



Source

Closing remarks

Exro has had an amazing past 4 months of achievements commercializing its breakthrough technology into three electric vehicle areas: eBoats, eBikes, and eSnowmobiles. It would seem highly likely that eCars, eBuses, and eTrucks will soon follow.

In fact, Exro announced yesterday that Exro has been invited to present their technology to the world's automotive industry leaders at the Car Training Institute (CTI), the world's leading summit on advances in automotive transmission, hybrid and electric drive technologies, on May 11 to 14, 2020.

It looks like Exro Technologies has some huge opportunities ahead in 2020 to commercialize its unique technology into the electric auto industry.