



Podcast Transcript



What You Don't Know: Business Plan for the Planet Lion Electric

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Angie Hall

Welcome to the What You Don't Know series, where we focus on a different Canadian business in each episode to find out how they are growing and thriving in this unique environment. Join us as we uncover insights and lessons and examine how HSBC is partnering with these businesses to help them achieve their ambitions. I'm your host Angie Hall, and I'm the head of sustainable finance for the commercial bank at HSBC bank Canada. Today I'm joined by Mark Bedard, the CEO and founder of Lion electric. Line Electric is an innovative manufacturer of zero emission vehicles. Lion designs and manufactures all electric heavy duty trucks from class five to class eight urban trucks, school buses, Mini and Mini buses for special needs or urban transit. And they also design manufacture and assemble the components of their vehicles including the chassis, battery packs, cabin and powertrain. Lion is a leading OEM in heavy duty transportation electrification in North America. In this episode, we will dive into lions core belief that transitioning to all electric vehicles will lead to major improvements in our society, environment and overall quality of life. Thank you for joining us today, Marc.

Marc

Thank you so much, Angie, thanks for having me.

Angie Hall

So with all of the great news coming from Lion, recently, it's easy to get the impression that this has all been an overnight success. But I know that you and the team have been working hard for over a decade. So to get us started. Can you tell us a bit about the company's history and how you arrived at your current state?

Marc

Yeah, absolutely Angie. Well, first of all, it's a pleasure to be with you this morning. Some people are saying that lion is an overnight success. Well, we're not an overnight success. We've been working at this for the last 13 years now. And sometimes I mean, it seems like some business cases look like and

overthought. And it's not the client. I mean, we've been doing this for so long, we looked at CNG, LNG, propane, fuel cells, all of those technologies, and we've made the decision in 2010, that everything we will be doing will be electric. And when we're saying electric, it's everything purpose built to be electric means that no, we don't believe in retrofits, and we don't do hybrids. Neither. So we've made that decision a long time ago. And we're glad that we've made the decision. And that's probably the main reason Angie, why, you know, we are where we are today.

Angie Hall

That's really interesting in that I'm sure a lot of our listeners are aware that transportation is one of the largest sources of air pollution in Canada, representing approximately a quarter of our total greenhouse gas emissions, which is also in line with what we're seeing from the US. And some good news is that we're seeing the increase in electric vehicle adoption. However, some of the highest polluting vehicles are those used for commercial purposes. So I'm curious about your perspective on the current situation, kind of that that decision you took back in 2010? And what you're hearing from customers about what they expect to see coming in the next five to 10 years in terms of their own needs?

Marc

Yeah, that's a great question. And the good news is that this change is actually happening right now as we speak. And we can see that in the dialogue we're having with customers, those dialogues are really accelerating right now. And not only with customers, we see governments around the world making commitments to carbon neutrality with very aggressive goals. In just the next few decades, you've heard, you know, a lot of things in the United States with mainly governor in some states as well, same thing in Canada. You heard Mr. Trudeau just a few months ago, and making major commitments, but also at the province level. So there's a lot of money right now being invested into this goal. And we feel this is the way to go. You said it at the beginning. We're building electric trucks and buses, and those trucks and buses, they can go up to 400 kilometres on a single charge. And in our opinion, right now, anyone looking at freight routes of less than 400 kilometres should be going electric, there is no rational right now, for most of those operators to not go electric. So we're proud that this is what the customers are thinking, but also the are being supported by governments also. And this is a very good news.

Angie Hall

Something we hear a lot about, is that upfront sticker price on electric vehicles, and I'm curious to hear your views on total cost of ownership and in some of the innovations that make Lions vehicles, not only green, but also commercially viable.

Marc

Yeah, well, the total cost of ownership is something very key. Angie, you're absolutely right. I mean, the sticker price is higher with electric buses and trucks. But you can not only look at the upfront costs, you need to take a look at everything and that will include the cost of energy, and that will also include the maintenance. The good news is that in most of the cases, right now, the total cost of ownership is very, very favourable, on average, you're saving 80% on the energy cost depending on what provinces or what states you are in and about 60% on all the maintenance costs. So the total cost of ownership is a great news. And yeah, you were asking about the innovations. I mean, there's so many innovations that we went through over the last 13 years. One of them is the materials we are using. And this is how we

started in 2008, we're using a lot of composite materials, and it makes the buses and the trucks lighter, it makes them rust proof as well. And there was like over 100 innovations, when we started the business in 2008, it took us about three years to put to market those 100 innovations. And after that, when we made the decision that we will go electric, big decisions we made, as I was saying earlier, is that everything we're doing is purpose built to be electric. And it's 100%. Electric, no hybrids, only one or 2% electric vehicles. But also we don't make compromise on anything like we don't do retrofits, neither. And we have also developed a lot of the technologies like the battery management system, the BMS, and also the battery thermal management system, the BTMs. And this is what we are using in our batteries right now. And that's one of the reason I mean, with all the data we've been able to collect throughout those years. That's one of the reason why our technology is a state of the art technology as we speak, there is no way that you can catch up on those technologies. I mean, if you just start, you know, working on them, it's going to take many, many years. The good thing at Lion is that we've been doing this on electric buses and trucks for over 10 years already.

Angie Hall

The decision to go fully electric in 2010 feels like an incredibly bold choice that was made by the team. So I'm wondering if you can take us back to the management table and the conversations that were going on there. And I'm curious to hear a bit about what kind of sustainability impact you think you'll be able to have as a result of that decision? And what the flavour of those conversations were?

Marc

Oh, my God. I mean, maybe people were thinking in 2010, when we've made the decision. I mean, the people were thinking that we were just crazy. Most of the people had no idea what Tesla was, I was mentioning Tesla to some people in 2010. And you probably remember the stage where Tesla was in 2010, which is very different from, you know, obviously where they are today. Yeah, so we were looking at everything, obviously, we were looking at diesel, CNG, LNG, propane, hydrogen, obviously electric as well. And we determined as early as 2010, that in our opinion, electric will be the winner. And we were thinking is there going to be only one winner, if we're looking at the long term, we think it's going to be electric, when we're looking at short term, we knew that it will take you know, many, many years before electric will be determined as the winner. But now we clearly see that the market is going electric and one of the driver for Lion back then we started with the school buses. And for me and Jimmy, there was no way that we should put our kids in diesel buses. And I know that you know, we manufacture diesel buses at the beginning to start with because you know, we had to pay the bills. And also there was a lot of other innovations that we were going through. And when you're serious about you know, doing something right in electric, it's going to take you many, many years, like 5, 6, 7 years to do a purpose built bus and truck. But I wanted to get rid of those diesel buses, and I wanted to make sure that our kids will stop breathing those diesel fumes, and not only the diesel fumes, but also propane fumes, which are you know, almost the same. So basically, we wanted to reinvent the world of medium and heavy duty transportation. And that shift was natural for us. And when we made the decision in 2010, you're absolutely right. I mean, it's it sounds like it was very aggressive. But now we're so glad that we did it in 2010. Because there's so many things we've done since like, I've been over 13 million kilometres on the road. And we've learned so much that we're proud we did that back then.

Angie Hall

I think it's a sentiment that all of us can relate to the idea of school buses not producing emissions around around children across the world, really. And I know we've got a local group of school kids here in BC that are advocating for their own municipality to be adopting electrical in the school buses. And so that momentum is just really incredible. And looking at the order book. It's clearly very healthy in the school bus division and growing demand for the truck products. So I'm curious, are you thinking about further product offerings are really concentrating on what you've already brought to the market.

Marc

School bus for us is the driver for the next few years. But also we've decided to do some electric trucks. When you look underneath a school bus or an electric school bus, you have a chassis that we call a class seven. So going from this electric school bus into a purpose built electric truck took us about five, six years, because we've never taken any shortcuts, but it's kind of a natural segue for us to do that. And you mentioned I mean, the amount of GHG that are you know, coming from heavy duty transportation and you're out totally right. I mean, it's a great thing that we're doing what we're doing for the kids. But also, we need to do our shirts for the society. And we decided to invest a lot of time, and resources and money into electric trucks as well. And this is what we're doing now. So class five plus six plus seven plus eight electric trucks. And when you're looking at the total addressable market, of those electric trucks with a range of 400 kilometres on a single charge, well, the town the total addressable market is huge. So we were thinking that, you know, most of the clients will go with electric trucks within the next few years. I mean, it's a huge, huge step forward for the society. So same kind of thinking that we're having for the school buses, we're doing this for the trucks. And when you're thinking of the trucks that we're putting to market, the reefer trucks is one of the truck that we are putting to market but there is also the bucket truck, and the bucket truck, we're selling them to utilities. So what's more natural than for a manufacturer of electricity to use electric trucks. And while those trucks are not only good energy for the environment, I mean, they are also silent, silent trucks, you probably remember the last time that you know a bucket truck was doing some work close to your home, and that you are hearing this diesel idle for hours an hour. So to us, again, it doesn't make any sense. And the same thing for the refuse trucks. So the refuse trucks are totally silent, as well. So all of those trucks that we are seeing on a daily basis will become electric. And at Lion, we already offer many of those trucks, including the refuse truck, and including the bucket truck as well.

Angie Hall

That's an interesting point. I think when we talk about air pollution, everybody always thinks about greenhouse gas emissions, which is obviously a critical piece of what your products help to address. But that issue of noise pollution, as well. And when we think about our urban centres, the impact not only on individual's quality of life, but also our natural environment, there are huge benefits to be gained from removing that noise pollution. So it's a great point to call out. It's obvious as all of these products that are coming to market that there's a need for increased production. And I know the company has announced a new facility in Joliet, Illinois, which sounds like it's coming along quite nicely. And I'm curious how this fits with your plans for market expansion.

Marc

Yeah, again, this is a very big decision that we took many, many years ago, and we are manufacturing on the Canadian side right now. And our thinking is very simple. Basically, you manufacture the buses and trucks and the country, or you will be selling them. And so far, we've been manufacturing in Canada, for the old Canadian and the US market as well. And well, understanding that also some subsidies, you know, when some public money is being invested right now, in Canada, at the province level, at the federal level, but also in the United States, at the federal level, at the state level, at the country level at the city level. Many times, there is no doubt in our mind that we need to manufacture on the US side as well. And we're proud that we will start doing that in the second half of next year. You mentioned that we selected Illinois, as being the state where we will be building this factory. In fact, this factory is at 25% done right now, and we're talking about via the shell building. So it's exciting. I mean, we will take the ownership of this building. Within the next few months, we've already started to hire, we have some people that are working at the Montreal factory that will be going to work in the United States for a couple of years. Also, this will be a very big factory, the manufacturing capacity will be 20,000 units per year. And we will be manufacturing all the lion models that we are selling in the United States. So that will include the lion 567, and eight trucks, as well as all the buses and school buses that we are selling. It's a very big factory. It's a 900,000 square foot factory. In fact, it's going to be the largest fully dedicated factory to Evie for the medium and heavy duty transportation. So this is exciting. And again, Angie, this is showing how serious we are about, you know, getting into this market, and making sure that all the customers that want to use electric trucks and buses will be able to get them in a timely manner. So the total manufacturing capacity of Lion will be 20,000 in the United States, and 2500 in Canada for a total of very close to 23,000 units. So this is very exciting.

Angie Hall

I have to agree incredibly exciting development and on the theme of bold management decisions. I'm also wondering about the decision taken to really own your whole supply chain and the recent announcement around building a battery manufacturing plant and Innovation Centre here in Canada. When I think about all the supply chain challenges we've seen as a result of the pandemic. I'm wondering how important will this facility be for Lions supply chain and to secure the future strategy?

Marc

You're absolutely right. It's going to be a huge advantage for us. Not to mention the vertical integration, we are doing this as a main piece of that. And adding the ownership of our own battery manufacturing brings all kinds of benefits. Obviously, we're more vertically integrated, we're less exposed to all the fluctuations in the global battery market. And that includes the potential battery shortage that is happening as we speak. And this is also important to consider that the EV market will be accelerating and we want to make sure that we will have enough batteries to make sure that we will get enough batteries for all the vehicles we will be manufacturing, this factory that we will be building very close to the one we have in Montreal right now. In Mirabelle, the manufacturing capacity is five gigawatt hours. So five gigawatt hours to give you an idea, it's enough to electrify up to 14,000, of the Lion electric vehicles. So it's a huge investment we are making, but we are controlling the supply chain. One thing to keep in mind also, when g is that, you know, we have been manufacturing our own batteries for many, many years, we started manufacturing them when we started, you know, selling our electric buses in 2016. But basically, we're going to the next level, and to the next level means a huge manufacturing

capacity. But also, we are controlling the design of the batteries. And when we understand you know that we're always looking for the perfect weight and balance on all of our vehicles, this is the way to do that. And also we're making sure that we will be able to maximise the number of kilowatt hour that we're putting on our vehicles. And this is what the operators are looking for. So for all those reasons, we've decided to invest, you know, in our own batteries.

Angie Hall

You've really seen those 13 years of R&D paying off. And it's really incredible to see the accomplishments all really coming together at once. Pivoting a little bit here, I'm wondering where you see the role of the financial industry in supporting companies like lion to drive our economy to net zero?

Marc

Well, everything is changing right now. And Angie, the finance word needs to change as well. And we mentioned this at the beginning, when we were saying you know that the upfront cost is higher with electric? Yeah, you're absolutely right. So the banking needs needs to be different, as well. And since the upfront cost is higher, obviously, the loans that will be provided by the banks, they need to adjust to that as well understanding that there will be an increased upfront cost at the beginning, but there will be major savings throughout the years and savings in terms of energy, and savings in terms of maintenance as well. And this is why you know, the total cost of ownership is very good. So for all those reasons that banks need to adapt the financing products to the reality of the products, meaning more upfront cost at the beginning, and most of the time, a longer term as well. So we will see that the average term in the business usually is about five years. And now we are seeing some terms of seven to eight years. And this is what the operators are looking for. So a longer term to make sure that they will be able to recover the higher upfront cost. This is what they're looking for. And maybe I can also mention that the charging infrastructure needs to be financed. We are seeing some banks right now coming up with the financing of the vehicle, but also the charging infrastructure. So that people think that there could be like one charging infrastructure for one vehicle, and that will be part of the financing product that the banks are bringing to market. So some financial institutions right now are doing that. But very, very few. And I think you know, the banks, they need to adapt to it the same way that it's very easy for a fleet operator right now to get, you know, some financing for their diesel vehicles. Well, we need to do the same for the electric vehicles going forward.

Angie Hall

So I know you have quite an innovative arrangement with our equipment finance team. And I'm wondering how did line become involved with HSBC? And going forward? How do you see HSBC supporting you along your growth journey?

Marc

Yeah, well, clearly, HSBC is a leader, and we're doing partnership with leaders. We also when I was talking about, you know, the changes that need to happen to the finance products, I mean, we see that with HSBC and the goal of HSBC, I think, are exactly the same than the goals, we have a client, we are trying to make a smooth transition to electric, for our customers. And for Lion, I mean, that includes the operation of the vehicle that includes also the charging infrastructure that we can take care of, for the

customers with our group lion energy, but that also includes the financing of the products. So we have very attractive financing options, and we have very good options with HSBC .

Angie Hall

That's great. And I think a lot of our customers and listeners will be interested to hear that from you. And I know over the last few years, the public commitment to sustainability and the focus on the role of corporates has increased so dramatically, which I think we've touched on a bit today and I'm curious, what would you say to a company that's at the stage today that you were at back in 2010. And considering a bold new direction focused on sustainability.

Marc

There is so many things Angie I will tell them I think, you know, the one thing that comes to mind right away is the focus, I think we're looking for focus, you cannot be focused if you are offering all types of technologies. And some people are saying, you know, that some companies are kind of asked pregnant, because they're offering a little bit of everything, and then you can not be good at everything. And that's one of the reason why at Lion, we decided to focus on electric. So I think focus is really the way to go. Timing. Also, I mean, you know, that people are looking at putting electric trucks on buses on a very timely basis. So they're looking at this right now. So I think that will be a matter of timing, it's a matter of focus as well. And also, you can not do everything, when I'm talking about being focused. It's not only in terms of technology, it's also in terms of the kinds of products that you're bringing to market almost everyday we're getting calls Engie out people asking us to do cars, snowmobiles, electric boats, and all of that, and some other companies, I mean, are doing this already, which is great. And now, I mean, we've decided to focus on medium duty, and heavy duty electric trucks and buses. And this is what we're doing. And this is what we will keep doing. So focus should be the driver for all of those companies.

Angie Hall

I think that's a great message to leave everyone with today. And thank you, Marc, for taking the time to be with us.

Marc

Thank you so much, Angie, thanks for having me.

Angie Hall

Innovation is at the heart of tackling some of our most pressing global problems. And Lion Electric is a fantastic example of how new ideas and bold action can help create more sustainable businesses. Lions efforts to drive the transition to all electric vehicles will clearly contribute to the improvement of not only our environment, but our society and overall quality of life. It is a great plan for transportation, and it is a business plan for the planet. This has been a special broadcast of what you don't know, a podcast series where we sit down with exciting and dynamic Canadian businesses to understand their unique journey and how HSBC is helping them along the way to find out more about anything you heard today, visit business.hsbc.ca.

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