

alphaDIRECT MANAGEMENT SERIES

MARCH 4, 2019

IN FOCUS: WESTPORT FUEL SYSTEMS AND THE REGULATORY ENVIRONMENT WITH FOCUS ON THE EUROPEAN CARBON DIOXIDE EMISSIONS STANDARDS

This report focuses on Westport Fuel Systems, Inc. (TSX/NASDAQ: WPRT) and the regulatory environment with focus on the European carbon dioxide emissions standards that were implemented in April of 2019 by the European Parliament.



Source: www.alphadirectadvisors.com

THE alphaDIRECT INSIGHT

With commercial trucks being responsible for almost 25% of the CO₂ produced by all transportation, the recently implemented emission regulations in Europe were a significant milestone for the industry and the environment. The regulations are not only the toughest in the world with respect to CO₂ but also include cash penalties for each vehicle that doesn't meet the requirements. Westport's HPDI systems operates on natural gas and reduces the CO₂ emissions from commercial vehicles by approximately 20% according to the company. This Management Series focuses on how the European regulations effects the industry, the markets and specifically Westport Fuel Systems and its commercially available HPDI systems.

WPRT Business Snapshot

Founded: 1995
Headquarters: Vancouver, Canada
Ticker: WPRT (TSX/NASDAQ)
Stock Price: \$1.87*
Market Cap: \$243.469M*
Website: www.wfsinc.com
 *As of March 2, 2020



About alphaDIRECT Advisors

alphaDIRECT Advisors is an Investor Intelligence firm that creates and implements digital content and programs to help investors better understand a company's key drivers including industry dynamics, technology, strategy, outlook and risks as well as the impact they could have on the stock price. alphaDIRECT's expertise encompasses a variety of sectors including Clean Transportation, Emerging EnergyTech, Energy Services, Smart Buildings, Solar, Water Value Chain and Industrial. alphaDIRECT was founded by Wall Street veteran and research analyst, Shawn Severson, after seeing a significant shift in the investment industry that resulted in less fundamental research conducted on small cap companies and a significant decline in information available to all investors. alphaDIRECT's mission is to bridge that information gap and engage companies and investors in a way that opens information flow and analytical insights.

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Participants

Mr. David M. Johnson Chief Executive Officer Westport Fuel Systems, Inc.

David M. Johnson was appointed Chief Executive Officer in January 2019 and is a member of the Westport Fuel Systems Board of Directors. Mr. Johnson is an industry veteran with more than 25 years of experience leading engine development for automotive and commercial vehicle industries around the world. Prior to his appointment, Mr. Johnson served ten years as President and Chief Executive Officer of Achates Power Inc. leading technical, commercial and corporate development to establish the organization as a leading developer of opposed-piston engines. Mr. Johnson's distinguished career began in 1990 with Ford Motor Company in Truck Powertrain Planning. He subsequently held a variety of roles in engineering, product planning, program management, and strategic development with increasing responsibility. Since then, Mr. Johnson has served in a variety of roles with leading automotive companies, including senior roles at Navistar and General Motors. Mr. Johnson combines deep technical expertise with a decades-long career in international markets. He earned a Master of Business Administration and a Bachelor of Science in mechanical engineering from Cornell University.

Mr. Shawn Severson Founding Partner alphaDIRECT Advisors

Mr. Severson is the Founding Partner of alphaDIRECT Advisors (ADA), a division of EnergyTech Investor, LLC (ETI). He has over 20 years of experience as a senior research analyst covering the technology and cleantech industries. Prior to founding alphaDIRECT Advisors, he led the Energy, Environmental and Industrial Technologies practice at the Blueshirt Group. Mr. Severson was frequently ranked as a top research analyst including one of the Wall Street Journal's "Best on the Street" stock pickers and multiple awards as Starmine's top three stock pickers.

ABOUT WESTPORT FUEL SYSTEMS INC.

At Westport Fuel Systems, we are driving innovation to power a cleaner tomorrow. We are inventors, engineers, manufacturers and suppliers of advanced clean fuel systems and components that can change the way the world moves. Our technology delivers performance, fuel efficiency and environmental benefits to address the challenges of global climate change and urban air quality. Headquartered in Vancouver, Canada, we serve our customers in more than 70 countries with leading global transportation brands. At Westport Fuel Systems, we think ahead.

For more information, visit www.wfsinc.com.



***“Driving Innovation To Power A
Cleaner Tomorrow”***

Shawn Severson: First, I'd like to thank you, David, for taking the time to speak with us today. The last time that we spoke with Westport Fuel Systems we discussed your long-term strategic outlook and market drivers. Today, our focus is on European carbon dioxide emissions standards and the regulatory environment. In April 2019, the European Parliament set the first-ever European CO2 emission standards for heavy-duty vehicles. What is the significance of these regulations for the freight sector?

David Johnson: Thank you, Shawn, it's a pleasure to be with you again. These regulations are a really big deal. When I joined the company a year ago, I was very excited about the potential of Westport Fuel Systems and where the company could go, but when the regulations hit in April, it was a significant milestone for the industry, the company, and the environment. These are the first CO2 regulations in Europe for commercial trucks. To put things in perspective, commercial trucks on the roads in mature economies like Europe and North America comprise around 4-5% of the vehicle parc but disproportionately contribute to more than 25% of the CO2 produced by all of transportation. So, they're an outsized lever in the battle against climate change and reducing the carbon intensity of transportation. Regulations for heavy-duty vehicles and the freight sector were needed.

The regulations are not only the toughest in the world with respect to CO2 for commercial vehicles but they also include penalties. So, the fact of the matter is, if the OEMs that are required to respond to these regulations fail to meet the requirements,

they'll end up paying penalties in cash for each vehicle that doesn't meet the requirements. It's a meaty penalty and important to recognize in the total equation of what we're trying to achieve.

Shawn Severson: How does this impact Westport Fuel Systems directly in terms of your business and growth, in particular in the European market?

David Johnson: First of all, we welcome these new regulations. As mentioned, they are important for what we're trying to achieve as a company and, as participants in the transportation marketplace, we focus on the reduction of CO2 and the carbon intensity of transportation.

We are very excited about what these regulations mean for us specifically, because of our high pressure direct injection technology (HPDI). Westport's high-pressure direct injection system is a fuel system that delivers the performance, power, and efficiency of a diesel engine, but it operates on natural gas. By using natural gas, we can reduce the CO2 emission from commercial vehicles by 20% right off the top.

Renewable natural gas, biomethane, and renewable gas are all terms used interchangeably. When using biomethane instead of fossil methane, we can completely eliminate the carbon intensity of commercial vehicle transportation. A net zero carbon footprint for commercial vehicles in Europe is possible using our technology. And our technology is available now.

Following on the European Union's actions in April 2019 and on January 16 of this year,

one of the largest oil and gas manufacturers in the world, Royal Dutch Shell, announced that they will build nearly 50 LNG refueling stations in Germany. These Shell stations will supply a blend of fossil and renewable LNG that makes their LNG supply carbon neutral. And recent analysis demonstrates that there is enough renewable gas feedstock to fuel the entire truck segment in the EU 28.

Basically, the high numbers of vehicles fueling at those stations could be carbon neutral in the very near future based on the combination of their fuel with Westport's high-pressure direct injection technology. We sell cost-competitive and commercially available products for OEMs, fleets, and customers committed to reducing CO2 emissions and being part of the climate change solution now.

These regulations are a very important driver of our business and we are pleased to have our product available in the marketplace today. I would like to remind everyone that HPDI is not some prototype or shiny trade show poster, but rather a product that you can buy and use today. It's been on the European market since late 2017 and we're really excited to support the achievement of the regulation with our technology, in combination with leading companies like Shell.

Shawn Severson: Following on your answer, can you compare and contrast some of the advantages that natural gas and Westport's solution has over other emerging transportation technologies commercially available on the market today?

David Johnson: I think that's a really good question. Many people are talking about

the potential for battery electric trucks or the potential for fuel cell trucks and those all have great potential for the future, but unfortunately, at this point in time, there isn't a single public refueling station for either heavy-duty electric trucks or heavy-duty fuel cell trucks anywhere in Europe to my knowledge. So, we can talk about the future, and it's a very exciting thing and we certainly should work on it as an industry to realize that promising future, but in the meantime, Westport Fuel Systems has products in the marketplace today. We have customer testimonials saying HPDI is a great product as it produces all of the torque and horsepower that they need for their fleet operations and it delivers a lower total cost of operation than diesel trucks. In our view, there is a big difference right now in the marketplace, because leading fleets are buying trucks with our equipment and can start reducing CO2 and operating costs right away. You don't have to wait for the other technologies that might develop in the future.

Shawn Severson: Just to clarify, an RNG solution running off of your technology platform would comply with the next generation emission standards in Europe?

David Johnson: Yes, but let me get to some of the numbers. Westport's technology today using fossil natural gas achieves a 20% reduction in CO2 versus a regular diesel engine, which is more than meeting the standard for 2025, the near-term target that was put in place in 2019.

Factor renewable natural gas into the natural gas fuel mix and you can achieve the 2030 target of a 30% reduction. Of course, if you follow what Shell is doing in Germany with stations dispensing only

carbon neutral gas, we can realize a net zero carbon intensity for our fuel systems running in trucks on European highways.

So, we have a really great story both short-term and long-term specific to emission regulations. But we also need to have important discussions about economics and total cost of operation and in my view, we aren't having those conversations.

HPDI is already economically viable and you can buy these trucks today for a "not so" significant price increment. A price increment you can pay back on the money you save because they operate on lower cost natural gas. That is so important because our customers are fleets that are in the business of moving freight to make money, and they need economical tools of commerce in order to do that. Frankly, battery electric and fuel cell trucks aren't there yet. They are not available in the marketplace for typical long haul heavy duty transport operations and the cost profile looks daunting to the industry.

Shawn Severson: There's also a tax structure, if I understand it correctly, in Europe that would be favorable. If you look at percentage of cost of a liter of gasoline or diesel, the tax base is very high relative to the total cost. And so, the natural gas solutions and RNG solutions would be advantageous?

David Johnson: That's right. I think one of the things that certainly does play into the economics is the various tax structures in all the different regions across Europe, because of course they are not all the same. For example, in Germany today, trucks that run on natural gas don't have to pay road tolls, which are different than fuel taxes. The road tolls are a significant component of any fleet's cost to operate a

truck on the highways in Germany. So, that's an additional incentive to operate trucks that run on natural gas.

Also, the taxation scenarios that are used in different jurisdictions throughout Europe calculate natural gas versus gasoline and diesel. There is a price at the pump that is advantageous, and that factors into a better total cost of operation for a truck. Frankly, this is what fleets look at and what the OEMs need to respond to since fleets need reliable trucks that can pull the load, do the job, and do it more affordably than anything else.

Shawn Severson: Thanks for the clarification, David. Have you seen any initial tangible reactions to the standards in terms of the market in Europe?

David Johnson: What we do see is increasing sales of our HPDI systems to our lead customer in Europe. We are very pleased with the leadership of our customer to bring this product to the market in the timeframe they did, in advance of the regulations. As the regulations have come into force, we've seen that the volume of our sales and their sales are increasing to respond to the market demand. On a parallel path we can see the increased availability of fuel in Europe and in fact the LNG refueling infrastructure has grown nearly 90% in just the last two years. When I checked this morning, there are now 260 LNG fueling stations in Europe. This means that LNG stations are growing rapidly to support the growing demand from the vehicle side, and they grow really hand-in-glove and side-by-side.

Shawn Severson: Thanks, David. I'd like to expand a little bit on the penalty structure in

Europe and the impact that it is having. How does that play into the impact on OEMs and their product technology strategies as part of compliance?

David Johnson: The penalty structure is an important part of the regulation and what it means is that starting in 2025, any manufacturer who hasn't improved their fleet to reduce CO2 by 15% in terms of what they sell will be subject to a penalty that is approaching approximately 33,000 euro per truck that they build and sell. Starting in 2025, the penalties associated with non-attainment, not achieving the emissions reduction requirement of 15%, are really substantial and the penalties are set to escalate from 2025 to 2030, such that the penalties get even steeper as the path goes forward.

However, the penalties are not yet factored into the day-to-day operating of the companies or the fleets today, but they will apply in 2025 and beyond. So, what we are seeing between now and then is the OEMs preparations to hopefully avoid those penalties as much as possible. And with Westport Fuel System's technology, they can.

Shawn Severson: Europe is clearly a critical market for Westport, and the European Commission's Green New Deal could have a significant impact on the transport sectors specifically. Are there any other policy or regulatory developments that you are tracking or monitoring that would be impactful to Westport?

David Johnson: Absolutely. It's important for us and for our customers that we understand what is in place today, as well as what could be in place in the future. For example, the European Union requires the

standard setters, the regulators, to look at how to calculate the emission reduction benefit of renewable natural gas in the future. By 2022, the regulation will be revisited so that there can be a mechanism put in place to take advantage of the benefit and then factor that into the math that the standard is based on.

Additionally, we recognize that they are tightening standards with respect to non-CO2 emissions from engines – NOx, for example. We are currently at Euro VI standards but Euro VII is on the horizon, and we are very much engaged in helping to shape that regulation because urban air quality is still a critical issue.

So, these are important factors. The Green New Deal could further tighten the regulation and make the penalties even tougher as we drive toward net zero carbon in transportation. We think these are all very supportive of what we're trying to achieve as a company.

Shawn Severson: Thanks, David. If I could conclude with just one more question. Clearly you've had a marquee customer in Europe leading the vanguard, I guess you could say. But what is happening around that in terms of other indications of interest? Why haven't other truck OEMs moved faster relative to your customer in Europe?

David Johnson: In our business there are leaders and there are followers. And so we have our leaders established in Europe. Additionally, we have a leader established in China. We have engines going to production now through our joint venture, Weichai Westport that will be sold in China, the largest natural gas trucking market in the world. There's greater infrastructure

already in China to support a growing number of trucks. We are very excited for the potential to help the air in that part of the world and continue to drive shareholder value.

In terms of other OEMs, let's say in Europe we expect, and currently see that they are reacting and expect to see products on the road in the future. The regulation really

comes into force with the penalties in 2025. Between now and then, you can easily understand that there is a lot of work going on behind the scenes.

Shawn Severson: Great. Thank you for your time today, David. That will conclude today's call. Thank you.

David Johnson: Thank you, Shawn.

SHAWN SEVERSON FOUNDING PARTNER

Mr. Severson founded *alphaDIRECT* Advisors, a division of EnergyTech Investor, LLC in 2016 after seeing a significant communication and information gap developing between small and micro-cap companies and the financial community. Mr. Severson has over 20 years of experience as a senior research analyst covering the technology and cleantech industries. Previously, he was Managing Director at the Blueshirt Group where he was the head of the Energy, Environmental and Industrial Technologies practice. Prior to the Blueshirt Group, Mr. Severson was at JMP Securities where he was a Senior Equity Research Analyst and Managing Director of the firm's Energy, Environmental & Industrial Technologies research team. Before joining JMP, he held senior positions at ThinkEquity, Robert W. Baird (London) and Raymond James. He began his career as an Equity Research Associate at Kemper Securities. He was frequently ranked as a top research analyst including one of the Wall Street Journal's "Best on the Street" stock pickers and multiple awards as Starmine's top three stock pickers.



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