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Zacks Small-Cap Research

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FRX Innovations, Inc. (OTCPK:FRXIF)

FRXIF: Announcing a deal that illustrates the increasing demand for its product.

FRXIF is growing its market penetration in the sustainable fire-retardant business and is getting a tailwind from increasing government regulation. We continue to value FRXIF at $1.20 per share based on a discounted cash flow model with a 15% discount rate.

Current Price (10/24/22)	$0.21
Valuation	**$1.20**

OUTLOOK

FRX Innovations is a company on the cutting edge of a growing demand for a fire retardant without the potential negative health impacts many of the current retardants have. The company's Nofia product is endorsed by numerous "green" organizations and customer testimonials are glowing.

We believe the safe fire-retardant market is getting ready to explode and the FRX will be a major beneficiary of that projected increase in demand. The latest deal announcement illustrates the potential for growth to expand over the coming months and years.

SUMMARY DATA

52-Week High	**$0.50**
52-Week Low	**$0.21**
One-Year Return (%)	**N/A**
Beta	**N/A**
Average Daily Volume (sh)	**1,650**
Shares Outstanding (mil)	**80**
Market Capitalization ($mil)	**$17**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**N/A**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2022 Estimate	**-1.8**
P/E using 2023 Estimate	**-3.6**
Zacks Rank	**N/A**

Risk Level	**Medium**
Type of Stock	**Small-Growth**
Industry	**Industrials**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2021	N/A	N/A	N/A	N/A	N/A
2022	1.1 A	1.3 A	1.8 E	2.3 E	6.5 E
2023	2.3 E	2.4 E	2.5 E	2.7 E	9.8 E
2024	3.0 E	3.4 E	4.0 E	4.3 E	14.7 E

Earnings per share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2021	N/A	N/A	N/A	N/A	N/A
2022	-0.17 A	-0.04 A	0.04 E	0.05 E	-0.12 E
2023	-0.03 E	-0.03 E	0.00 E	0.00 E	-0.06 E
2024	-0.05 E	-0.01 E	0.02 E	0.03 E	-0.01 E

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Update

FRX Innovations announced a new supply agreement that we believe bolsters the case for FRX growing revenues rapidly as the world demands more eco-friendly flame-retardant solutions. The details of the latest in a growing line of purchase agreements are as follows:

- FRX entered into a non-binding Memorandum of Understanding to provide Polymer Compounders Limited (PCL) with a substantial amount of FRX's proprietary flame-retardant Nofia (details below) over the next three years.
    - Approximate values of the deal are as follows:
        - Q4 2022--$170,000
        - 2023--$1,700,000
        - 2024--$8,500,000
    - Additionally, company management expects gross profit margins of the agreement to come in at around 45%--in line with our expectations.
    - The FRX CEO, Marc Lebel, noted that the PCL product, Notoxicom "is especially well suited to capitalize (on the use of Nofia) as it not only offers outstanding flame-retardant properties down to 0.8mm in part thickness, but also delivers up to 30 degrees C improvement in heat distortion compared to other bromine-free solutions. This combination allows the device designer to dramatically reduce the amount of plastic used in a given device which is both a cost savings and great for the planet. Moreover, Notoxicom® is exceptionally well suited for applications where it is in contact with water, like in marine battery cases, because FRX's Polymeric solution, will not migrate out of polymer alloy over time."

As mentioned, we believe this agreement is a continuation of the trend we have been seeing in the market and with FRX Innovations. Governments and businesses around the world are becoming more conscious of the potential environmental and health hazards associated with traditional fire-retardant materials. As a result, an alternative is needed that both meets the requirements for fire retardant, while also being environmentally friendly and safe for the end user. FRX provides that solution and businesses are increasingly seeking out their Nofia product for an answer to the fire-retardant problem.

We continue to believe the market is not fully appreciating the need for a product like this and the explosion in demand that seems to be coming, which the above agreement helps to illustrate. As a result, we continue to believe that FRXI is undervalued and investors with a longer time horizon should take a look at FRX Innovations.

The Problem

FRX Innovations is a global manufacturing company, producing a family of environmentally sustainable flame-retardant products that serve several large markets spanning electronics, automotive, electric vehicles (EV) and medical devices. For a little history on the company, FRX Polymers was founded in 2007 and trademarked Nofia, its flagship product, in 2013. FRX Innovations was then formed as the holding company for FRX Polymers in 2021 and went public on the TSX-V exchange in 2022 under the FRXI.V ticker and currently trades OTC under the ticker FRXIF:OTCPK and on the Frankfurt Exchange under the symbol W2A. FRX Polymers is the world's only producer of halogen free, polymeric flame retardants that do not migrate out of plastics. Commercialized under the brand name Nofia flame retardants, the company notes that the polymers can be used as a flame-retardant additive for plastics in multiple applications including automotive interiors, electronic devices, and transparent fire-retardant sheets. Before we get into the details of that, it's important to understand why being halogen free is important, and, increasingly, required.

First, flame retardancy is a legal requirement for many plastics used in electrical equipment, consumer electronics, building and construction, textile and transportation applications. Flame retardants inhibit ignition, slow the spread of fire or protect critical infrastructure during a fire and reduce smoke or toxic fume production. Up until now, many products used, and continue to use, halogenated flame retardants to meet flammability standards in commercial and consumer products. People can be exposed to these flame retardants in their homes, workplaces, and cars as well as on planes, trains and in public spaces. Unfortunately, studies have shown toxic side effects such as persistence of the chemical in humans, air, water and soil. These chemicals can be absorbed into the human body through diet and household dust and can build up over time in people and animals which could result in adverse health effects by interfering with hormones, reproductive systems, thyroid and metabolic function, neurological development in infants and children, and the immune system. These chemicals can be found in everyday products such as:

- **Electronics and Electrical Devices** - computers, laptops, phones, televisions, household appliances, and wires and cables
- **Consumer Products** - wigs and hair extensions, children's clothes, baby accessories and strollers, and many other products
- **Furnishings** - foam, upholstery, synthetic leather, mattresses, carpets, curtains, and fabric blinds
- **Building and Construction Materials** - electrical wires and cables, and insulation materials, such as polystyrene and polyurethane insulation foams
- **Transportation Products** - seats, seat covers and fillings, bumpers, overhead compartments, and other parts of automobiles, airplanes, and trains.

Studies cited by the company note that over 60% of fire-retardant plastic formulations are based on halogen-containing additives. The EPA has noted undesirable side effects of these materials, such as persistence in the environment and bio-accumulation in animal and human tissues. Additionally, when fires or incinerations occur, a substance with halogen may contribute to the formation of highly toxic substances. As a result, global government and regulatory agencies have pushed for the elimination of halogen-containing fire retardants.

For example, in Europe the Eco-Design regulation banned the whole class of halogenated flame retardants from enclosures and stands of TVs and monitors. According to company management, this was the first action of its type to affect a whole class of a chemical family. In 2022, that decision was confirmed in a European court. Similarly, the state of New York signed into law what appears to be very similar legislation at the end of 2021, which we believe will have an impact that reaches far beyond the state of New York.

Also, according to company management, later in 2022, the European Union will deliberate on the confirmation of a Category 1B Carcinogen label on the largest brominated flame retardant TBBPA. A confirmation would result in TBBPA becoming a “Substance of Very High Concern” which would mean that many uses would effectively be phased out, a process that original equipment manufacturers are already initiating. Canada will confirm or modify, in the same time-frame, restrictions on the largest non-reactive brominated flame retardant “Deca Ethane”, and the US National Toxicology Program from the National Health Institute will issue its report on the carcinogenic potential of the largest chlorinated flame retardant.

Additionally, The Washington State Department of Ecology recently released its final report as part of the 2019 Safer Products for Washington law. This report put into place what the non-profit Toxic-Free Future calls “the most significant restriction of toxic chemicals in products ever by a state.” The report starts the process of making the rules, which will be adopted by June 2023 and go into effect as soon as one year following, that will restrict organohalogen flame retardants in foam mats and casings for electronics such as televisions. The state notes it will also pursue restrictions on organohalogen flame retardants and certain organophosphate flame retardants in recreational foam products such as covered floor mats, foam pits, covered flooring, and outdoor recreational products.

We don’t believe it’s going too far out on a limb to suggest that these governmental steps are merely the tip of the iceberg. As consumers become more aware of the potential dangers existing flame retardants contain, and news of the new restrictions circulates and gets more coverage, more restrictions seem quite likely to be coming and the company that can meet the new requirements of still being a flame retardant and being safe for people to be around in the long term stands to benefit greatly.

The Solution

FRX has been developing such a solution for over a decade and is now positioned, in our view, to benefit from this growing wave. As an example, FRX notes that it was the first company to supply non-halogenated, non-migrating, fire retardant materials of low concern to human health and the environment commercially under the brand name Nofia. Nofia is based on chemistry that allows the polymerization of a phosphonate monomer into unique oligomeric and polymeric brominated fire retardants, which have “clear advantages” such as:

- Halogen free
- Does not migrate from the host plastic
- Does not bioaccumulate
- Supplied as pellets (no liquid handling or dust formation)
- Improves properties other than flame retardancy.

As mentioned, Nofia is a registered trademark of FRX. Nofia products are manufactured at its manufacturing facility on the Port of Antwerp in Belgium, one of the world's largest chemical producing clusters. The FRX production plant in Antwerp was constructed in 2013 with completion in 2014. It is highly efficient and requires only two technical operators per shift. It operates to the highest quality standards and is ISO 9001 certified. Nofia Polyphosphonates are produced using sustainable green chemistry principles such as a solvent-free production process, no waste byproducts, and near 100% atom efficiency. FRX's portfolio includes an extensive patent estate with 64 patent applications globally as of March 31, 2022. Per company management, Nofia flame retardants are independently assessed by the following organizations to have the best sustainability

ratings of any similar product: GreenScreen, Benchmark 3, ChemFORWARD SAFER Class B, TCO listing, ChemSec Marketplace Alternative as an Oeko-Tex for textile applications—an impressive list that helps confirm that Nofia is safe for humans to be around.

The nature of the fire-retardant industry means that oftentimes users of a retardant are not anxious to share the details of that use, thus making it difficult to get comments on the product from companies that are willing to go on the record. However, the company that just announce a deal with FRX, Polymer Compounders Limited (PCL), the largest independent engineering thermoplastic compounder in the UK, is an exception, and the below selection from a letter of support from the company is a good sample of what companies are saying about Nofia:

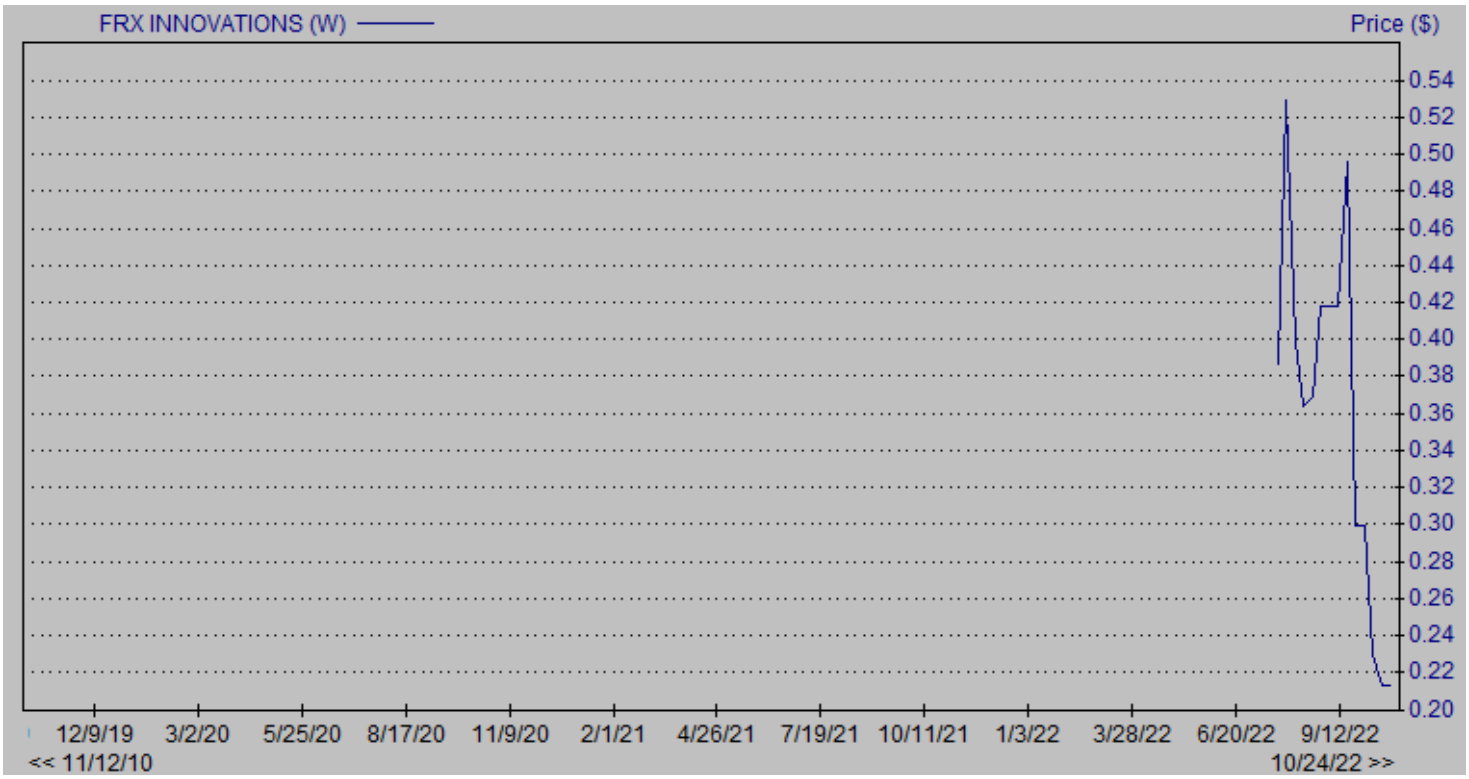
“Nofia is clearly recognized in the market as being one of the most sustainable flame-retardant additives available. FRX’s products have achieved benchmark 3 in the important Green Screen rating system, which is the top rating for non-biodegradable products. This is the main reason why we were attracted to FRX at the start of our development but later we also realized that Nofia offered important secondary properties that have become as important to PCL as is its primary property of sustainable flame retardancy and permanence. We have found that we can match all the key performance criteria, such as heat performance, impact strength and exceptional flame retardancy of competitive formulations in our Nofia based formulations. We can even offer superior performance in terms of lower density and better processability. Simply put we believe that Polymer Compounders has developed the best FR Polycarbonate/ABS alloy in the world and due to these important secondary properties coupled with the sustainability of FRX’s technology, we believe that FRX will become a long-term supplier to our company.”

PCL goes on to say that one of the uses for Nofia is for a customer who indicated they would like to convert their entire line of halogen containing products to Nofia-based products, seeing no other suitable alternatives on the market. PCL notes that “This one customer alone has the potential create exponential growth for both Polymer Compounders and FRX.” A ringing endorsement by an important market participant and one that we agree with.

PROJECTED INCOME STATEMENT & BALANCE SHEET

FRX Innovations Income Statement and Balance Sheet							
		1Q2022A	2Q2022A	2022E	2023E	2024E	2025E
Revenue		1,100,132	1,305,790	6,528,950	9,793,425	14,690,138	22,035,206
Cost of Goods Sold		1,596,927	1,799,344	7,834,740	7,834,740	9,548,589	13,221,124
	Gross Margin	(496,795)	(493,554)	(1,305,790)	1,958,685	5,141,548	8,814,083
Operating Expenses							
	Administative	1,121,345	1,055,333	3,165,999	3,324,299	3,490,514	3,665,040
	Sales and Mktg	156,495	132,914	398,742	418,679	439,613	461,594
	Research	143,745	161,274	483,822	508,013	533,414	560,084
Total Operating Expenses		1,421,585	1,349,521	4,048,563	4,250,991	4,463,541	4,686,718
Operating Gain/(Loss)		(1,918,380)	(1,843,075)	(5,354,353)	(2,292,306)	678,007	4,127,365
Other Income/(Expenses)							
	Interest Expense	(658,971)	(301,942)	(1,207,768)	(1,147,380)	(1,090,011)	(1,035,510)
	Other Income/(Expense)	(2,067,164)	(42,939)	(128,817)	(115,935)	(104,342)	(93,908)
Total Other Income/(Expense)		(2,726,135)	(344,881)	(1,336,585)	(1,263,315)	(1,194,352)	(1,129,418)
Total Gain/(Loss)		(4,644,515)	(2,187,956)	(6,690,938)	(3,555,621)	(516,345)	2,997,947
Total Gain/(Loss) per share		$ (0.17)	$ (0.04)	$ (0.12)	$ (0.06)	$ (0.01)	$ 0.05
Wtd avg num. of shares outstanding		27,878,063	53,654,032	54,727,113	57,463,468	60,336,642	63,353,474
Assets							
Current Assets							
	Cash and equivalents	353,474	1,795,770	1,093,474	1,148,148	1,205,555	1,265,833
	Net receivables	1,591,855	1,588,138	1,672,443	1,756,065	1,843,868	1,936,062
	Net inventories	2,507,524	2,389,303	2,634,467	2,766,190	2,904,500	3,049,725
	Other current assets	4,606,685	447,367	4,839,898	5,081,893	5,335,988	5,602,787
Total Current Assets		9,059,538	6,220,578	10,240,282	10,752,296	11,289,911	11,854,406
Non-Current Assets							
	Plant and Equipment	18,579,938	17,301,626	18,579,938	18,208,339	17,844,172	17,487,289
	Right-of-use assets	490,717	458,558	490,717	500,531	510,542	520,753
	Intangible assets	385,728	384,624	385,728	393,443	401,311	409,338
	Patents	403,876	391,376	403,876	411,954	420,193	428,596
	Other non-current assets	1,564,928	-	1,564,928	1,596,227	1,628,151	1,660,714
Total Non-Current Assets		21,425,187	18,536,184	21,425,187	21,110,493	20,804,370	20,506,690
Total Assets		30,484,725	24,756,762	31,665,469	31,862,789	32,094,280	32,361,096
Current Liabilities							
	Accounts Payable	3,789,560	3,040,062	3,981,407	4,061,034	4,142,256	4,225,102
	Accrued Expenses	1,066,689	903,203	1,120,690	1,143,104	1,165,966	1,189,285
	Other current liabilities	6,480,818	1,567,890	6,808,909	6,945,087	7,083,989	7,225,669
Total Current Liabilities		11,337,067	5,511,155	11,911,006	12,149,225	12,392,211	12,640,056
Long-term Liabilities							
	Note and conv. note	21,079,054	10,939,995	11,079,054	11,633,007	12,214,657	12,825,390
	Common stock warrants	5,385,571	2,063,459	2,385,571	2,266,292	2,152,978	2,045,329
	Conv. Debenture	4,519,697	-	5,259,697	5,522,682	5,798,816	6,088,757
	Lease liability	460,163	441,320	437,155	459,013	481,963	506,062
Total Long-Term Liab.		31,444,485	13,444,774	19,161,477	19,880,994	20,648,414	21,465,537
Total Liabilities		42,781,552	18,955,929	31,072,483	32,030,219	33,040,625	34,105,593
Stockholders Equity/(Deficit)							
	Common stock	27,878	48,363	27,878	28,157	28,438	28,723
	Additional Paid-in Capital	25,180,302	47,153,058	43,249,302	43,681,795	44,118,613	44,559,799
	Accumulated Deficit	(36,494,696)	(41,033,924)	(41,789,883)	(42,956,241)	(44,144,622)	(45,355,781)
	Other	(1,010,311)	(366,664)	(894,311)	(921,140)	(948,775)	(977,238)
Total Stockholders Equity/(Deficit)		(12,296,827)	5,800,833	592,986	(167,430)	(946,345)	(1,744,497)
Total Liabilities and Shareholder Equity		30,484,725	24,756,762	31,665,469	31,862,789	32,094,280	32,361,096

HISTORICAL STOCK PRICE



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