

EnWave Corporation (ENW)

September 08, 2018

EnWave Corporation offers industrial-scale dehydration technology for commercial applications in the food, cannabis, and pharmaceutical spaces. The Company's Radiant Energy Vacuum ("REV™") platforms are becoming the new global dehydration standard, as they are faster and cheaper than freeze drying, and have better end product quality than both air drying and spray drying.

EnWave reported revenue of almost \$6.78 million in the third quarter of fiscal year 2018, ended June 30, 2018, compared with \$4.67 million in the same period last year. This was the Company's highest quarterly revenue ever.

The strong performance is mainly due to the expanded distribution of the crunchy snack Moon Cheese with additional product rotations in a number of Costco divisions. The strongly increased number of distribution points resulted in total Moon Cheese sales of \$5.17 million in the third quarter of 2018, up 173% compared with sales in the third quarter of 2017.

Moreover, if EnWave didn't have to book a one-time impairment charge of \$865,000 due to the ending of the collaboration agreement with Sutro Biopharma, the Company would have achieved an awesome net profit of \$761,000 in the third quarter.

We reiterate our buy recommendation for EnWave Corp. with a price target of \$3.66, which is 200% above today's stock price.



- ▣ The decision by NSRDEC to purchase its own REV machine to accelerate development is a very positive indication that a large new sales agreement may be on the way. A contract to supply U.S. troops, would most likely be of a much bigger magnitude than the sales agreements currently in hand. Moreover, this could also springboard the Company forward to new sales channels, just on the basis of the positive association created by such a partnership, and the implied validation of the technology itself.
- ▣ EnWave's management remains very bullish on the entire cannabis sector and continues to work towards securing additional partnership agreements that may build further leverage both in Canada and international markets.



THE COMPANY

EnWave Corporation is a Vancouver-based applied technology Company that works in partnership with food, cannabis, and pharmaceutical companies to develop commercial applications for its proprietary Radiant Energy Vacuum (REV) dehydration technology.

The key to the technology is the vacuum environment in which the drying process takes place. Thanks to the reduced atmospheric pressure, the temperature, at which the moisture is efficiently removed, can be lowered. This reduction of heat and oxidization minimizes the damage inflicted on the REV-dried products, preserving richer flavors, brighter colors and higher nutritional content versus other drying methods.

The University of British Columbia manufactured the first prototype REV machine in 1996 for dehydrating food and nutraceuticals. Since then, EnWave has developed three commercial-scale REV platforms: **nutraREV** for the food industry to dry fruits, vegetables, meats and other products quickly and at low-cost, while maintaining high levels of nutrition, taste, texture and color; **powderREV** for the dehydration of bulk food cultures, probiotics and fine biochemicals such as enzymes; and **quantaREV** for continuous, high-volume low-temperature drying of sensitive food products in liquid or solid form.

In addition, the Company has one developmental-stage REV platform: **freezeREV** to stabilize and dehydrate biopharmaceuticals such as vaccines.

EnWave's business model is to sell REV machinery and to sign royalty-bearing commercial licenses with leading food and pharmaceutical companies for the use of its revolutionary technology. Each license agreement restricts the partner's use of the technology to specific applications and geographic areas.

So far, EnWave has signed twenty-four royalty-bearing licenses, thereby opening up nine distinct market sectors for commercialization. Some of the Company's

best-known customers include Bonduelle, Gay Lea Foods, Ultima Foods (Agropur Dairy Co-operative) and Milne Fruits and Perdue Farms.

EnWave generates revenues from the following sources:

- ▣ REV machine sales and maintenance;
- ▣ Maintenance of the machines to ensure they are running properly and to replace and repair components subject to normal wear and tear from ongoing operations;
- ▣ Royalty streams from partners, which typically vary between 3% and 5% of sales (paid out quarterly), or a fee per kilogram of net production; and
- ▣ NutraDried, a 100% owned subsidiary, which sells healthy dried cheese snacks.

The Company continued to be cash flow positive with cash flow from operations - prior to changes in non-cash working capital - of \$1.63 million for the first three quarters of 2018, compared to \$284 for the first three quarters of 2017.

Business wise, the Company again made solid progress during the past quarter. Late April, Agropur Dairy - doing business as Ultima Foods - successfully launched its iögo Protein Crunch snack products in Quebec and Alberta. These products enable a new, innovative way of enjoying yogurt on-the-go. First royalties from these products are expected shortly.



Yogurt is associated with being a creamy dairy product that you need a spoon to enjoy, but the new iögo Crunchy Yogurt Bites aim to change this with a formulation that is unlike anything ever seen before.

Early July, the Company signed a royalty-bearing commercial license with Arla Foods, the world's largest manufacturer of organic dairy products and an innovation leader. The license grants Arla the exclusive right to use

REV technology to process dairy products in Denmark, Sweden, Finland and Norway. Arla purchased a 10kW small-scale machine to initiate commercial production.

On April 30, 2018, EnWave and Tilray, a large, well-established Canadian medical cannabis licensed producer, expanded their royalty-bearing license agreement to include rights for processing legalized cannabis in the country of Portugal. In addition, Tilray submitted a third purchase order for a 60kW REV unit to be installed at its new Portugal medical cannabis production facility.

Also in the cannabis space, EnWave entered into a Technology Evaluation and License Option Agreement (TELOA) with one of Canada's largest licensed cannabis producers (LP) to enable the LP to evaluate EnWave's REV technology for rapid decontamination and dehydration of cannabis. The TELOA grants the LP the exclusive rights to license REV for processing cannabis in a non-specified country in Europe.



Tilray signed a royalty-bearing license agreement giving them the exclusive right to use and sub-license EnWave's dehydration technology for cannabis processing in Canada.

Two more TELOAs were signed during the third quarter. The first one with Fresh Business Consulting, a diversified investment and consulting firm headquartered in Spain, to develop several innovative food products using EnWave's technology in Peru. And the second one with a major Australian dairy company to evaluate the REV technology for the development of several dehydrated, premium dairy ingredients. Both companies have rented a small scale REV machine.

Currently, EnWave has 11 active TELOAs and one active R&D project with prospective licensees evaluating the use of REV for applications in the dairy, seafood, spice & herb, fruit products, vegetable products, and meat products verticals. Several of the active agreements are with major international processing companies.

The strategy under these arrangements is to co-develop product applications using the technology for specific partner opportunities and to ultimately convert them into commercial licenses. EnWave earns revenue under TELOAs from short-term REV machine rentals as well as fees for access to its R&D facilities and product development expertise. EnWave's food scientists and engineers work with the prospective license company during the TELOA phase of the sales cycle to formulate and optimize innovative products using REV, and develop a path towards commercialization.

NutraDried LLP

NutraDried LLP develops, manufactures, markets and sells 100% all-natural cheese snacks under the Moon Cheese brand.

NutraDried produces Moon Cheese in cheddar, gouda, mozzarella, pepper jack, and sriracha flavors at its manufacturing facility in Ferndale, Washington, and distributes it in over 25,000 retail locations across Canada and the United States. During the past quarter NutraDried again added several new retailers for distribution of Moon Cheese in the United States and Canada. Notable retail points of distribution include Starbucks, Target, Rite Aid, CVS, Safeway, Loblaws, and Save-On-Foods.

Starting in December 2017, Moon Cheese also became available in Cheddar and Pepper Jack flavors in approximately 70 stores at Costco's Midwest division. For the first time, NutraDried offered the 10 ounce packages – coined the club format. These retail for about \$10, while the regular 2 ounce packages sell for \$3.99. Since then several repeat orders have been received from Costco, and distribution has expanded to several other divisions of the retailer.

In fact, the continued strong demand for Moon Cheese has led to the purchase of a second 100kW REV machine. In addition, NutraDried has ordered a smaller 10kW REV unit for the purpose of developing and testing other snack food lines. The smaller unit will also enable additional production capacity and provide more flexibility for manufacturing operations in addition to the product development role it will serve.

Next to the further growing Moon Cheese sales, NutraDried will also focus on adding several commercial opportunities. In April of this year, NutraDried's Fruit Stand product was shown for the first time to potential manufacturers. Fruit Stand is a healthy snack food based on servings of peaches, strawberries, mandarin oranges, pineapple, or blueberries that have been dried using REV technology. It is currently exclusively available through Amazon.



The Fruit Stand health snacks is exclusively available at Amazon in five different flavors.

Moreover, in a few of months NutraDried will launch a couple of Moon Cheese extension products coined "Moon Cheese Mixems". For example, different types of cheese will be dried and mixed with a dehydrated tomato. In addition a Moon Cheese salad topper will be launched as an alternative to croutons. These will be distributed through the existing Moon Cheese channels.

To manage all this expected growth, Mr. Mike Pytlinski was recently hired as CEO of

NutraDried. With a successful background spanning nearly 30 years in the food manufacturing industry and financial services sector, Mr. Pytlinski has direct leadership experience building sales and brand awareness for processed food products.



The Fruit Stand health snacks is exclusively available at Amazon in five different flavors.

Most recently, Mike Pytlinski served as the Vice President of Marketing for Palermo's Pizza. Over the course of a six year campaign the pizza line more than tripled in sales under his stewardship.

TECHNOLOGY

Before EnWave launched its Radiant Energy Vacuum technology, food processing companies were limited to opt for either 'freeze drying', which provides superior product quality, but is cost prohibitive and is only used to process higher-value products; or 'spray and air-drying', which is cost effective but degrades the quality of the products (Also see table on the following page).

Thanks to EnWave's REV dryers, companies, for the first time, can combine the effectiveness of freeze drying with comparable economics of spray and air drying.

EnWave's REV technology utilizes radiant energy (microwaves) in a vacuum environment to homogeneously dehydrate a wide variety of foodstuffs and biomaterials at temperatures ranging from approximately 37.5°C to below freezing.

Four REV platforms have been developed to address specific market opportunities. Three platforms – nutraREV, powderREV and

quantaREV - are at a commercial stage, while the fourth one - freezeREV - is under

development. Each platform is described in more details below.

	EnWave's REV Technology	Freeze Drying	Air Drying
Better Product	Superior Color Superior Flavor High Nutritional Retention	High Nutritional Retention	Heat & Oxygen Damages Color, Flavor, Nutrients and Texture
Faster Process	Minutes or Hours (1,5 hours for Blueberries)	Hours or Days (24 - 36 hours for Blueberries)	Hours (6 hours for Blueberries)
Cheaper Cost	Up to 80% lower processing costs than freeze-drying (combination of lower capital, labor and energy costs)	High Capital Costs High Energy Costs	Low Capital Costs Competitive Energy Costs
Comparison between EnWave's REV technology, and freeze & air drying.			

Commercial Stage

nutraREV is designed for the dehydration of fruits, vegetables, herbs, dairy products, meats and seafood. It provides higher nutritional content, and improved appearance, flavor and texture over freeze drying, which is the industry standard for dehydrating many food applications. It is EnWave's most popular technology.

nutraREV machines are available at varying scales: 2kW for product development, 10kW for pilot-scale production and 100kW or higher for commercial production.

A 100kW unit is capable of producing as much as 150 kg (340 lbs) of dried product (below 5% residual moisture) per hour. A 100kW machine sells on average for \$1.5 million and generates between \$200,000 and \$400,000 in royalties per year at full utilization.

quantaREV is designed for high-volume, low-temperature dehydration of solids, liquids, granular or encapsulated products. It uses a continuous belt design in a controlled vacuum-microwave environment with an eventual target of dehydrating several tonnes of material per hour. This low temperature technology is designed to provide a higher-quality end product than what is currently achieved with spray drying or air drying.

powderREV is designed to dehydrate a wide variety of materials including enzymes, probiotics and food cultures, pharmaceuticals,

non-regulated biologicals and certain dry food products.

The technology is ideally suited to replace the expensive and time-consuming process of tray freeze drying, which takes place in a high heat environment and damages sensitive organisms. Laboratory tests have shown that the potential benefits of powderREV over freeze drying include less capital cost due to faster dehydration times, smaller plant footprints, and lower energy and labor costs.

Development Stage

freezeREV is designed to provide high-speed dehydration for live and active organisms in vials with the potential for significantly lowering operating costs compared with freeze drying. freezeREV is intended for products that must have a minimum moisture content in order to maximize their shelf-life. It is currently available as a multi-vial prototype for partner research and development.

The idea is to evaluate EnWave's REV technology as a viable replacement for lyophilization in the pharmaceutical industry. More specifically, the developmental work and testing has focused on the potential of dehydrating several vaccinations.

Unlike lyophilization, freezeREV employs a combination of microwave energy with a low-pressure environment to achieve rapid, highly controlled dehydration of live, or active, biological materials.

Tests conducted on a lab-scale freezeREV show that processing times are far less than with lyophilization, which dramatically reduces costs. In addition, the footprint of a freezeREV machine is sizably smaller than a lyophilizer. And finally, third party tests show no key differences between freezeREV and lyophilized products.

Expanding Patent Portfolio

EnWave holds numerous patents that protect both its REV technology and specific methods of use. The past two years, the Company received no less than 43 new patent approvals that protect its technology and processes.

Because the Company's technology continues to be developed, new innovations are made. As such, its intellectual property portfolio continually expands.

EnWave is driven to innovate and continuously commits resources to strengthen its intellectual property portfolio. Patents are truly the cornerstone for the Company's licensing-royalty business model, because each time a new patent is granted, the royalty stream timeline extends twenty years from the patent's filing date.

THE MARKET

EnWave targets both the drying equipment market and dried products market, where it partners with companies that dehydrate their products.

The total market size for freeze drying equipment is estimated at \$16 billion and is expected to reach \$35 billion by 2020. Especially the food processing and pharmaceutical industries are expected to continue to drive demand for freeze drying equipment. While food processing is the largest segment with about 35% of the market, cannabis and biotechnology are expected to be the fastest growers the following years.

The worldwide market size for dried products is estimated at an astonishing \$400 billion.

The largest segment, estimated at \$140 billion, is the food industry, which includes dried fruits, vegetables, meats, etc. The biopharmaceuticals segment comes in second with a \$67 billion market share, closely followed by probiotics, food cultures and enzymes, that generates \$61 billion annually. The dried beverage market, primarily made up of coffee and milk, is estimated at \$31 billion.

EnWave intends to develop the market for REV technology by selectively collaborating with strategic partners focused on reducing processing costs and creating new or improved product opportunities.

VERSATILE APPLICATIONS FOR REV

While EnWave's dehydration technology has plenty of applications, it's clearly excelling in a number of distinct sectors.

Rapidly Expanding Dairy Space

By far the most successful REV dried cheese snack on the market today is Moon Cheese, as it's available at every Starbucks in North America and at thousands of retail stores in Canada and the United States.

Attracted by this success, other food companies worldwide sensed an opportunity and closed commercial agreements with EnWave to produce similar snacks. Typically, EnWave receives a 5% royalty on all cheese snack sales.

The companies below have all signed a commercial agreement with EnWave to produce a REV dried cheese product. It is also stated for which country or region the companies obtained an exclusive license.

- ❑ **NutraDried LLP** for the United States;
- ❑ **Umland LLC** for high kosher products in the United States. Production and distribution of the snacks has commenced;
- ❑ **Gay Lea Foods** for Canada. It started up a 100kW nutraREV machine to expand the production of its 'Nothing But Cheese' snack product. After a somewhat slower start, sales are starting to pick up;

- ❑ **Lake Blue Spa** for Chile. Commercial production of its INTAKT cheese snacks has recently started. The dried cheese products are available in four flavors: Original Gouda, Spicy Gouda, Oregano Gouda, and Mediterranean Mix;
- ❑ **Dominant Slice** for Portugal and Spain. It recently launched a dried cheese product, coined B!t Cheese, and is now building out commercial opportunities for the product line (also see Fruit Category below);
- ❑ **Agricola Industrial La Lydia SA (Pitalia)** for Central America. It has received two 10kW nutraREV units and has ordered a 100kW REV machine (also see Fruit Category below);
- ❑ **Ereğli Agrosan** for Turkey. The license actually grants the company the exclusive right to process a variety of fruit, vegetable and cheese products. Ereğli's dried cheese product has entered the market and is being sold B2B in central Asian markets and into Europe;
- ❑ **Kesito LLC** for Greece. A 10kW commercial REV machine was installed late 2016, which allowed Kesito to complete product development and enter the European market with a high-quality, shelf-stable dried cheese snack product under the Air Cheese brand name: and
- ❑ **Ashgrove Cheese** for Tasmania. Ashgrove purchased a 10kW commercial REV unit and launched a crunchy cheese snack under the brand name 'Amaze Balls' in January 2018.



Ashgrove's cheese snacks Amazeballs are available at three major supermarket chains in Australia: IGA, Coles, and Woolworths.

Next to the above agreements for REV dried cheese snacks, EnWave also signed a commercial royalty-bearing license with the following dairy companies.

- ❑ **Ultima Foods (Agropur Dairy Cooperative)**, a major Canadian yogurt

processor which produces more than 100 million kilos (220 million lbs) of fresh dairy products each year, announced in April 2018 a processing breakthrough to create an entirely new snack food based on yogurt.

After almost three years, Agropur has arrived at a satisfactory outcome with an innovative product that is ready for launch in the competitive snack foods market. An intensive test regime evaluated options to produce a healthy snack food derived from yogurt that retains the flavor and health benefits, and yet has a crunchy texture.

This is a ground-breaking product that has never before been available and there is nothing else like it on the market today. The iögo Protein Crunchy Bites are available in stores since spring.

- ❑ **Arla Foods**, the world's largest manufacturer of organic dairy products. Pursuant to the License, Arla submitted a purchase order to obtain a small commercial-scale Radiant Energy Vacuum machine to initiate production in 2018, with plans to quickly scale if its products are commercially successful.

The License grants Arla the exclusive right to use REV technology to process dairy products in Denmark, Sweden, Finland and Norway.

EnWave Excels In Dried Fruits Market

A growing number of fruit processors have signed either an evaluation or commercial agreement with EnWave, indicating that this is another strong market segment for the Company's applications.

EnWave has a royalty-bearing commercial license with, among others, these fruit related companies:

- ❑ **Milne Fruit Products** entered the REV-dried fruits market a couple of years ago, positioning MicroDried products - all-natural fruit pieces and powders - as pure, healthy alternatives to sugar-infused offerings. Milne Fruit is one of EnWave's

largest customers. In fact, more than 50 consumer products on the market today already use its ingredients;

- ❑ **Natural Nutrition Limited d.b.a. Nanuva Ingredients**, a Chilean fruit processor, that has positioned itself as a leading provider of 100% natural (with no additives) dried fruits with colours, shapes, flavors and nutrients very similar to those of fresh fruit. These healthy ingredients are used in the snack food, functional food, nutraceutical and cosmetics industry;
- ❑ Next to dried cheese (see above), **Agricola Industrial La Lydia (Pitalia)** is also very active in the dried fruits space. In fact, La Lydia is a global leader in producing and exporting golden pineapples under the brands YAZ and SWITI. La Lydia formed a new business entity coined Pitalia specifically for the production of REV dried products. In 2018, Pitalia has started selling pineapple, apple, mango and banana snack products through its Pure Joy brand in the European and South, Central and North American markets;
- ❑ **Van Dyk Specialty Products Ltd.**, a major Canadian producer of wild blueberry products, that is best known for its highly successful blueberry juice, is focused on providing the market with high-quality REV dried blueberry products;
- ❑ **AvoLov LLC (formerly AvoChips LLC)**, a U.S. based processor that has developed an innovative new avocado snack product using REV technology. AvoChips submitted a purchase order to obtain a 10kW commercial-scale REV machine to initiate production. The license grants AvoChips the exclusive global rights to use the REV technology to process the snack product;
- ❑ **Howe Farming Group**, one of Australia's largest and most diverse farming enterprises. The license grants Howe Farming the exclusive right to use the Company's REV dehydration technology to produce dried banana products in Australia and the non-exclusive right to produce dried blueberry products in Australia; and
- ❑ **Bare Foods** is currently known for its line of dried snack chips made from slices of apples, coconuts, and bananas. This family of snack foods, marketed under the "Bare Snacks" brand name is baked and therefore represents a healthier

alternative to many other fried snack food choices. Since March 2017, extensive test work was conducted at EnWave's facilities in Vancouver. Early 2018, Bare decided to move ahead with the purchase of a 10kW REV machine.

- ❑ **Dominant Slice**, a Portuguese snack company, signed a non-exclusive commercial royalty-bearing license with EnWave, granting Dominant Slice the right to use its existing REV machinery to produce pineapple, mango, banana, coconut and papaya fruit pieces in Portugal.

Growing in Important Vegetable Sector

In January 2016, **Bonduelle**, the world's leading processed vegetable producer launched a new category of frozen vegetables called InFlavor. The new exclusive InFlavor dehydration and preparation process uses EnWave's vacuum-microwave drying technology.

The REV technology truly separates InFlavor from all other frozen vegetables as the texture and taste of the vegetables is retained.

Bonduelle first launched InFlavor to its B2B customers in North America. In addition, it also has an eye on the European market, so this could potentially be a very exciting evolution. In fact, Bonduelle contracted EnWave to double the production capacity of its existing 120kW dryer. This process is ongoing, but should be finish shortly. Consequently, Bonduelle's commercial production, as well as its royalty payments to EnWave, are expected to go up in 2018.

In 2017, **Merom Farms**, an agricultural and food production company, announced that it is going to start selling wasabi-based products in Canada and the United States.

The dried, powdered and encapsulated wasabi is specifically designed for the natural health supplement market and will soon be available under the "Your Wasabi" brand name.

Your Wasabi holds the ONLY license issued by Health Canada to produce wasabi capsules in Canada.

Meat Snack Producers - Another Major Market for EnWave

The intention of most of these meat companies is to develop crispy meat snacks. Similar snacks are already being produced, but the texture and taste of most meat chips is poor because they are either air dried or baked.

In the meat category, EnWave has signed a royalty-bearing agreement with:

- ❑ **Perdue Farms**, a leading food and agricultural products company, ordered a 10kW REV dryer to process pet food and pet treats in the United States and Canada.

Moreover, EnWave has engaged in technology evaluation relationships with several other major meat and protein processors such as:

- ❑ **Jack Link's**, the number one meat snack manufacturer worldwide;
- ❑ **A U.S. based leader in the meat and prepared food industries.** The name of the partner company wasn't disclosed, but when we do an online search for "American meat and prepared food leader" the recurring names are Smithfield Foods, JBS USA, and Tyson Foods. All multi-billion-dollar companies;
- ❑ A **major European meat processor** started conducting product development trials at EnWave's facilities in February 2017. After a thorough evaluation of the end products, signing a commercial license may be the next step; and
- ❑ A **major Australasian meat processor** that has been developing several new meat snack products since early 2017.

EnWave is in active negotiations with many more companies in this sector in various parts of the world. So we'll undoubtedly continue to see more news with developments in the meat area.

Cannabis Application

Late August 2017, EnWave filed a new patent application for the simultaneous pasteurization and drying of cannabis using REV technology. These patent-pending

methods expand the application of EnWave's REV technology to the booming medical and recreational cannabis sector.

Two months later, the Company signed a royalty bearing agreement with **Tilray**, a major Canadian cannabis player with international presence. Tilray is an Authorized Licensed Producer as defined by Health Canada's Access to Cannabis for Medical Purposes Regulations (ACMPR).

The license grants the cannabis grower the exclusive right to use the Company's proprietary Radiant Energy Vacuum (REV) dehydration technology to dry and decontaminate cannabis in Canada.

In return for the exclusivity, the producer has purchased a small-scale 10kW commercial REV unit to enable advanced product development along with a large-scale 60kW commercial REV machine that will be used to initiate commercial production. Both machines are scheduled to be installed in the course of 2018.

Furthermore, the cannabis producer is required to achieve certain minimum royalty thresholds, and to purchase additional REV machinery in order to maintain its exclusivity. It is worth noting that the producer is projected to achieve a production capacity greater than 74 metric tons in 2018. The 60kW machine however, can only process approximately 25 to 30 tons annually, which means that it will need to buy at least one additional 60kW REV machine.

Moreover, the Licensed Producer must also pay royalties based on the amount of cannabis processed with EnWave's REV equipment. Royalties in the cannabis space could be up to three times higher than what EnWave receives from companies that are active in the food sector.

In May 2018, Tilray ordered a second 60kW REV machine, which will be installed in Portugal. The unit is expected to be up and running in February 2019.

In addition, in April 2018, EnWave signed a TELOA with **a major Canadian cannabis player**. Although EnWave didn't release the

name of its new partner, it did mention that it is one of Canada's largest licensed cannabis producers (LP). When doing an online search for the biggest cannabis companies, returning names are Canopy Growth, Aurora Cannabis, Aphria Inc., and MedReleaf Corp., [all billion dollar companies!](#)

The Licensed Producer was granted six months to evaluate EnWave's Radiant Energy Vacuum (REV) technology for cannabis decontamination and dehydration. During that period, the LP will rent a pilot-scale REV dryer, which will generate revenue for EnWave. Moreover, EnWave granted the LP an exclusive option to license the REV technology for processing cannabis in an unnamed European country.

Pharmaceutical Dehydration Technology

A final pillar of EnWave's success is pharmaceutical applications.

In December 2011, EnWave signed a 10-year Research and Development agreement with **Merck**, one of the world's leading pharmaceutical, chemical and life science companies, in which Merck bears the costs associated with this process.

Test results with a scaled-up freezeREV machine have been very encouraging. EnWave is now looking to finalize the **Good Manufacturing Practice (GMP)** certification of this machine, which would trigger the next stages of Merck's project.

Although it will take some more time to develop and commercialize freezeREV, the agreement with Merck provides revenues for EnWave as the machine and technology is further developed.

Late August 2018, EnWave announced that after several quarters of testing and development work in the attempt to achieve narrow specified production criteria for **Sutro BioPharma Inc**, both parties have agreed to part ways and terminate their equipment construction contract. The formal testing and development process had been investigating the use of REV technology to achieve a dried cell-free extract.

GOOD MANUFACTURING PRACTICES (GMP)

Good Manufacturing Practices (GMP) are the practices required in order to conform to guidelines for manufacture and sale of food, drug products, and active pharmaceutical products. These guidelines provide minimum requirements that a pharmaceutical or food products manufacturer must meet to assure that the products are of high quality and don't pose any risk to the consumer or public.

Good manufacturing practices, along with good laboratory practices and good clinical practices, are overseen by regulatory agencies in the United States, Canada, Europe, China, and other countries.

While processing was successful to achieve the initial guidelines for the process, Sutro subsequently changed the criteria and opted for a much more stringent quantitative bioactivity level for its objective in the program. In response to the much larger investment commitment that would have been necessary to continue with development, both companies agreed to suspend the program.

In the future, potential clients in the pharmaceutical sector may be directed to GEA Lyophil GmbH of Germany, with which EnWave close a collaboration agreement in July 2018. (Also read Recent Events)

GROWTH DRIVERS

Drying and Decontaminating Cannabis

Medicinal cannabis is often used by chronically ill or immunocompromised patients, causing several countries with medicinal cannabis programs to employ strict standards regulating microbial contamination of herbal cannabis products in order to reduce the potential for opportunistic lung infections. Ionizing radiation is currently the only method commonly employed to meet these medicinal cannabis microbial standards.

However, EnWave's patented technology pasteurizes and uniformly dries cannabis in its

natural state, without any additives, in under one hour, dramatically shortening the time from harvest to marketable products and circumvents the need to transport medical cannabis to highly-specialized and expensive off-site decontamination facilities.

Another major advantage is that EnWave's continuous high-volume REV drying process also eliminates the need for large-scale in-house drying rooms and their associated potential for product loss due to mold growth during the traditional multi-day drying process.

Finally, a common method for the extraction of cannabinoids (essential oils) from the dried plants uses pressurized CO2 as solvent. The challenge with this process however is that moisture levels in dried leaves often vary, which results in inconsistencies in the oils that are extracted. The goal with REV is to produce a much more homogenous raw material at a specific moisture level.

Worldwide the use of cannabis for medicinal purposes is being legalized. Thanks to the expanding market, the cost savings that can be generated with the REV technology, and the high royalties, cannabis could become an extremely profitable sector for EnWave.

We understand that there are lots of conversations ongoing with other cannabis companies in Canada and abroad to sign up for a license agreement with EnWave.

EnWave Potentially Solving Major Military Issue

In June 2017, EnWave entered into a contract with the US Army Natick Soldier R&D Center (NSRDEC) to jointly develop low weight, high quality, nutritious field rations.

This opportunity for EnWave is enormous, as potentially hundreds of thousands of men and women in active duty could be served REV-dried rations.

The military is focused on reducing the footprint (weight and volume) of what fighters

have to carry in the field. It will not only increase chances of them packing more rations, it will also lessen their fatigue and improve agility and speed.

The Company's Radiant Energy Vacuum technology is uniquely suited for this purpose, because food items can be intermediately dried, and as such easily compressed. When products are dried with other drying techniques and then compressed, they typically pulverize into small pieces.

Internal focus groups of up to 200 people involved in sampling of these newly developed products have been very enthusiastic about the composition and flavor of the samples provided.



The prototype Close Combat Assault Ration on display at the Pentagon May 24, 2018 includes a tart cherry nut bar, cheddar cheese bar, mocha desert bar, vacuum-dried strawberries and trail mix of fruit and nuts, among other items that were vacuum microwave dried. (Photo Credit: U.S. Army photo by Gary Sheftick)

In fact, the NSRDEC was so satisfied with the progress being made that late July 2018 it ordered a 10kW REV machine for research and development purposes. The acquisition of the 10kW REV machine by NSRDEC aims to facilitate an accelerated path to improved Close Combat Assault Ration deployment.

After a successful presentation at the Pentagon in May 2018 and confirmed demand for REV dried rations, the NSRDEC has fast tracked the research and development necessary for implementation with close combat warfighters. An additional presentation to NASA will take place in

September 2018. This project has been under development for the past year with trials previously being completed at EnWave's pilot plant facility located in Vancouver, Canada.

EnWave and the NSRDEC are currently looking to collaborate with potential vendors to manufacture and supply REV-dried nutrient rich field rations moving forward.

RECENT EVENTS

Brent Charleton Promoted to President & CEO

Late August, Mr. Brent Charleton was promoted to President and Chief Executive Officer of EnWave. Since joining EnWave in 2010, he has been promoted on six separate occasions. During that period he has been a major contributor to the Company's commercialization success and has been leading the proactive licensing strategy and deployment of EnWave's REV technology. Mr. Charleton was also appointed to the Board of Directors of EnWave Corp. Dr. Tim Durance, the former CEO, will be leaving the Company to pursue other interests.

EnWave Collaboration with GEA May Ensure Breakthrough in Pharma Industry

In July of 2018, EnWave signed a Collaboration and License Option Agreement with GEA Lyophil GmbH of Germany. The two companies will evaluate a potential partnership to manufacture and deploy continuous cGMP REV equipment into the global pharmaceutical sector.

GEA Lyophil, which is part of the GEA Group, has designed and manufactured freeze dryers for the pharmaceutical and biotech industries for more than half a century. With over 1,000 units installed worldwide, the company has established a solid base of expertise related to the needs of the pharmaceutical and biotech industries. The organisation has manufacturing and technology centres in Belgium, Denmark, Germany, Switzerland, the UK, Singapore and the United States.



GEA Lyophil specializes in the study of advanced technologies for re preparation and processing of Active Pharmaceutical Ingredients (APIs) for the production of oral and parenteral dosage forms.

The goal is for GEA to evaluate EnWave's continuous pilot-scale REV machine for the pharmaceutical industry, which is produced for Merck and located at the Company's facility in B.C., Canada.

CGMP

CGMP refers to the Current Good Manufacturing Practice regulations enforced by the U.S. Food & Drug Administration (FDA). CGMPs provide for systems that assure proper design, monitoring, and control of manufacturing processes and facilities. Adherence to the CGMP regulations assures the identity, strength, quality, and purity of drug products by requiring that manufacturers of medications adequately control manufacturing operations. The "C" in CGMP stands for "current", which requires companies to use technologies and systems that are up-to-date in order to comply with the regulations.

The Agreement between EnWave and GEA grants the latter an exclusive option to negotiate an agreement to manufacture and sell equipment for the production of pharmaceutical and biotechnology products using EnWave's patented dehydration technology.

Such a deal could be significantly beneficial for both parties. GEA is a well-established

company that has the expertise, the personnel and the contacts in the pharmaceutical industry to boost REV sales. That would also save EnWave lots of headaches as it wouldn't have to build out massive infrastructure with lots of overhead costs, while it would still reap the rewards of owning the REV technology.

As for GEA, it could gain control over a disruptive technology in its core business. It would be a wise decision of GEA to collaborate with EnWave before its REV technology really takes off in the pharmaceutical industry. Moreover, if it works for the pharma sector, GEA could be a strong partner in the food sector as well.

After all, GEA Group is one of the largest suppliers of process technology for the food industry and a wide range of other industries. In 2017, GEA Group generated consolidated revenues of about EUR 4.6 billion. The food and beverages sector, which is a long-term growth industry, accounted for around 70 percent.

A partnership between GEA and EnWave could significantly accelerate the commercialization of EnWave's REV technology in the pharmaceutical markets. By pairing EnWave's patented vacuum drying technology with GEA's industry leading manufacturing practices and market reach, it could become a true worldwide success.

During the next few months, GEA will work with EnWave's experienced engineering and biomaterials team to conduct tests using REV pharmaceutical lyophilization equipment. GEA will evaluate the commercial viability of a partnership and the potential integration of EnWave's technology into processing solutions for pharmaceutical applications.

FINANCIALS

EnWave generates revenue from two business segments: EnWave Canada and NutraDried. EnWave Canada sells REV machinery to royalty partners, rents REV units to

prospective royalty partners, and earns royalties from customers that sell REV dried products. NutraDried, on the other hand, sells Moon Cheese into retail and wholesale distribution channels.

EnWave Canada had revenue of \$1.61 million for the three months ended June 30, 2018 compared to \$2.78 million for the three months ended June 30, 2017, a decrease of \$1.17 million. Although during the third quarter of 2018, REV machines were sold to Tilray, Pitalia, Arla Foods, and Bare Foods, EnWave didn't reach the amount of sales that it did in the third quarter of last year. The revenue decline in the third quarter was also reflected in the nine months sales numbers. Revenue for the nine months ended June 30, 2018 reached \$5.50 million, a decrease of \$2.27 million compared to revenue of \$7.77 million for the nine months ended June 30, 2017.

Amounts in \$000's	06/30/18	06/30/17
EnWave Canada Sales	1,610	2,786
NutraDried Sales	5,169	1,888
Total Sales	6,779	4,674
Cost of Goods Sold	3,848	3,052
Gross Profit	2,931	1,622
Expenses	3,036	2,151
Net Profit (Loss)	(104)	(529)
Diluted Shares Outs.	100,784	90,802
Diluted EPS	(0.00)	(0.01)
Selected income statement data for the quarters ended June 30, 2018 and June 30, 2017. Source: Company Filings		

EnWave Canada earned royalties of \$137,000 during the three months ended June 30, 2018 as compared to \$94,000 for the three months ended June 30, 2017 a growth of 45%. During the nine months ended June 30, 2018, EnWave Canada earned royalties of \$458,000 as compared to \$293,000 for the nine months ended June 30, 2017 an impressive increase of 56%.

The increase in royalties is very important. First of all, it indicates that a growing number of EnWave's clients are selling larger quantities of REV dried products. Moreover,

the rise is also important because this revenue go straight to the bottom line. Royalties are expected to continue to go up in 2018 and beyond as new license agreements are signed and additional REV machinery comes online.



The Moon Cheese club format is doing extremely well at Costco.

Revenue from NutraDried were \$5.17 million for the three months ended June 30, 2018 as compared to \$1.89 million for the three months ended June 30, 2017. For the nine months ended June 30, 2018, NutraDried generated revenue of \$9.97 million, as compared to \$4.55 million for the nine months ended June 30, 2017. The increase in revenue for the third quarter was due to NutraDried filling repeat orders for Costco rotations, as well as increased sales volumes to other retailers.

NutraDried reported net income of \$1.91 million in the third quarter of 2018 as compared to net income of \$167,000 in the third quarter of 2017, a staggering increase of more than 1,000%!

Also interesting to know is that EnWave achieved a gross profit of \$2.93 million in the

third quarter of 2018, compared with \$1.62 million in the same quarter of 2017 an increase of \$1.31 million. Gross margin as a percentage of revenue was 43% for Q3 2018 compared to 35% for Q3 2017.

Finally, as a testament of the Company's strong cost control achievements, despite its solid rise in revenue, EnWave succeeded in reducing its G&A expenses from \$548,000 in Q3 2017 to \$510,000 in Q3 2018, a reduction of over 9%.

Balance Sheet As Of June 30, 2018

A couple of items stand out on the balance sheet. First, on June 30, 2018 the cash and cash equivalents number was \$7.08 million compared to \$2.21 million on June 30, 2017 an increase of \$4.88 million. The rise is primarily due to the equity financing of almost \$9 million in November 2017. In February 2018, the Company spent \$2.28 million to acquire the 49% non-controlling interest in NutraDried. The Company had net cash outflows from operating activities of \$74,000 for the first three quarters of 2018.

Amounts in \$000's	06/30/18	06/30/17
Cash and Cash Eq.	7,086	2,206
Restricted Cash	250	250
Trade Receivable	4,122	1,674
Due From Customers	1,610	2,778
Under Contract		
Inventories	3,793	2,605
Total Current Assets	17,127	9,743
Plant and Equipment	2,769	2,967
Total Assets	20,958	13,863
Trade and Other Payables	3,252	2,297
Total Current Liabilities	3,811	2,785
Long Term Debt	379	111
Total Liabilities	4,190	2,896
Total Stockholder Equity	16,768	10,967
Selected balance sheet data on June 30, 2018 and June 30, 2017. Source: Company Filings		

In addition, Trade Receivables were \$4.12 million on June 30, 2018 compared with \$1.67 million on June 30, 2017. This was mainly due to NutraDried's significant rise in Trade Receivables from \$842,000 a year ago to \$3.24 million in 2018.

Inventory as at June 30, 2018 includes completed machines and machine components of EnWave Canada of \$2,668, which is an increase of \$235 compared to September 30, 2017. NutraDried's food products and packaging supplies inventory was \$1,125, which is an increase of \$585 compared to September 30, 2017 due to increased production.

OUTLOOK & VALUATION

In the past, food processing companies had to choose between minimizing their drying costs or producing premium dried products. With EnWave's REV technology, companies no longer have to choose, as they're able to produce high-value dried products at a much lower cost. The main goals of using REV technology are to shorten processing times, reduce operational costs and to produce higher-value products than previously achievable via alternative processing technologies with similar economics.

An increasing number of food, cannabis, and biopharmaceutical companies are realizing that REV is the way to go if they want to maintain their competitive advantage.

The sale of REV dryers is generating millions of dollars for EnWave. Moreover, with each additional REV unit becoming operational, the minimum quarterly royalties are increased proportional to the size of the machine. A 100kW machine will typically generate between \$200,000 and \$400,000 in royalties per year at full utilization. As more and more machines are taken into production, EnWave will benefit big time.

While EnWave continues to increase its worldwide presence in the food, pharmaceutical, and rapidly growing legalized cannabis sectors, NutraDried is performing exceptionally well with its crunchy cheese snacks.

In early fall, NutraDried's production capacity of Moon Cheese will more than double thanks to the installation of a second 100kW nutraREV machine and a 10kW REV machine. This is a very necessary investment, as the current machine is running at full capacity.

Thanks to NutraDried's solid performance, EnWave is now cash flow positive and would also have been net profitable if it hadn't been for the one-time impairment charge.

The decision by NSRDEC to purchase its own REV machine to accelerate development is a very positive indication that a large new sales agreement may be on the way. A contract to supply U.S. troops, would most likely be of a much bigger magnitude than the sales agreements currently in hand. Moreover, this could also springboard the Company forward to new sales channels, just on the basis of the positive association created by such a partnership, and the implied validation of the technology itself.

The exciting potential of a similar breakthrough with NASA may also be on deck. EnWave has demonstrated its competency to market the technology and leverage future opportunities from the success stories in hand. The potential addition of high profile marketing stories like combat rations for the US Army, or nutritious high-tech meals for the space program, will further boost the growth potential for the Company going forward.

Finally, EnWave's management remains very bullish on the entire cannabis sector and continues to work towards securing additional partnership agreements that may build further leverage both in Canada and international markets.

Valuation

Given the still emerging nature of EnWave's earnings, a multiple-based valuation is challenging. Instead, we apply a Discounted Cash Flow (DCF) model.

Based on our estimate of 115 million shares outstanding, the intrinsic value of EnWave's shares derived from our model is \$3.66, up from \$3.46 in our previous report.

We reiterate our buy recommendation for EnWave Corp. with a price target of \$3.66, which is 200% above today's stock price.

SHARE DATA & OWNERSHIP

As of August 27, 2018, EnWave had approximately 100.9 million common shares outstanding. In addition, the Company had approximately 8.5 million warrants outstanding with an average exercise price of \$1.37.

Finally, EnWave has about 5.7 million stock options outstanding with a weighted average exercise price of \$1.11. Each stock option entitles its holder to purchase one common share of the Company.

The principal owners of the Company's common stock are DJE Investment (3.83%), Manulife Asset Management (2.23%), and Kimelman & Baird (1.14%).

MANAGEMENT

▣ MR. JOHN P.A. BUDRESKI, MBA - EXECUTIVE CHAIRMAN

Mr. Budreski has over 30 years of extensive capital markets and executive management experience. He was formerly a Vice Chairman of Cormark Securities Inc. from 2009 to 2012 and President and CEO of Orion Securities Inc. from 2005 to 2007, prior to its successful sale to Macquarie Bank. He has filled the roles of a Managing Director of Equity Capital Markets and Head of Investment Banking for Scotia Capital Inc. from March 1998 to February 2005 after starting out as a Managing Director of US Institutional Equity Group for Scotia Capital. He also held senior roles in

investment banking and equity sales and trading for RBC Dominion Securities.

▣ MR. BRENT CHARLETON, CFA - PRESIDENT & CEO, DIRECTOR

Mr. Charleton has extensive experience working in competitive team-based environments in the public and private sectors. He has managed the business development, marketing and investor relations mandates for EnWave Corporation since 2010 and was recently promoted to President and Chief Executive Officer. Brent, an ex-professional athlete, is a graduate of the Marketing Management program at the British Columbia Institute of Technology and has earned a Bachelor of Arts degree in Criminology and Communications from Simon Fraser University. Mr. Charleton has completed the Canadian Securities Course and is a holder of the right to use the Chartered Financial Analyst® designation.

▣ MR. DANIEL HENRIQUES, CPA, CA - CFO

Mr. Henriques is a Chartered Accountant and brings extensive experience in finance effectiveness and financial reporting to his role at EnWave. Prior to joining EnWave, Mr. Henriques was a manager in the Assurance group at PricewaterhouseCoopers LLP, and supported numerous mid-market companies, including companies listed on the Toronto Stock Exchange, TSX Venture Exchange and the New York Stock Exchange, with financial reporting and compliance. While at PwC, Mr. Henriques provided clients in the manufacturing and technology sectors professional services in the areas of financial audits, financial reporting and tax.

ANNUAL INCOME STATEMENT FY 2015 – 9M 2018

All numbers in thousands

PERIOD ENDING	FY 2015*	FY 2016	FY 2017	9M 2018
Total Revenue	5,868	14,933	15,954	15,470
Cost of Revenue	4,689	10,383	11,654	9,818
	1,179	4,550	4,300	5,652
Expenses				
General & Administrative	2,089	1,989	2,072	1,709
Sales & Marketing	719	793	2,160	2,378
R&D	1,386	1,656	1,138	900
Amortization Intangible Assets	1,420	1,222	888	447
Stock-based Compensation	261	399	891	402
Total Operating Expenses	6,172	6,387	7,286	6,672
Net Loss Applicable To Common Shares	\$4,993	\$1,837	\$2,986	\$1,020

Annual Income Statement FY 2015 – 9M 2018. Source: Company Filings

* Note that in the Fiscal Year 2015 column all revenues and expenses generated by Hans Binder Maschinenbau – a former subsidiary of EnWave - have been excluded, due to its insolvency on September 29, 2015.



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