

## EnWave Corporation (ENW)

September 02, 2017

EnWave Corporation offers industrial-scale dehydration technology for commercial applications in the food 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.

The Company's royalties are moving in the right direction. Based on the first nine months of FY 2017, EnWave will have close to \$700 thousand in royalties this year. Next FY that number could easily reach \$1.5 million. A number that goes straight to the bottom line!

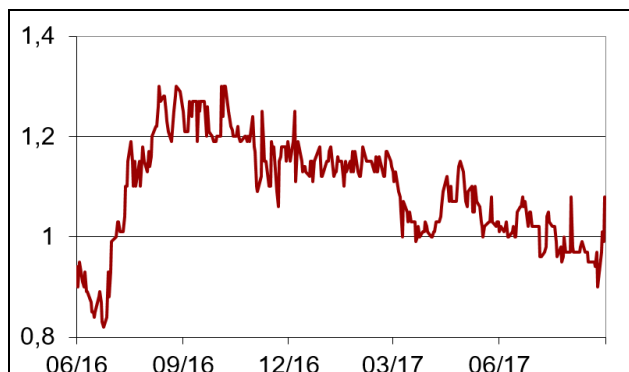
EnWave's newly developed method to rapidly dry and decontaminate cannabis could become a game changer in the worldwide medical cannabis industry. The automated REV drying processes for cannabis are highly efficient and scalable, reducing personnel requirements and increasing overall operational efficiency. Moreover, applying pasteurization to meet medical cannabis' microbial standards, is ideal to replace the costly and time-consuming ionizing radiation method, which is the only method commonly employed.

We reiterate our buy recommendation for EnWave Corp. with a price target of \$3.44, which is 204% above today's stock price.



During the past quarter, the Company made significant progress with the construction and testing of the first commercial powderREV machine for Sutro Biopharma, a U.S. based pharmaceutical partner. More news is expected shortly. EnWave also commenced the design phase for the first scaled-up GMP freezeREV for Merck. If the powderREV and freezeREV platforms prove to yield superior performance to incumbent dehydration technologies, it would be a major breakthrough for EnWave.

As for NutraDried, the transition from Spire to Slant for marketing is now complete. This should be positive for both sales and margins. Recently, distribution was added in 2,000 Rite Aid pharmacy stores, 1,600 CVS stores, and 440 Targets in the United States.



Market Data	
Price	C\$1.13
Sector	Diversified Machinery
52-Week Price Range	C\$0.82 - C\$1.30
Shares Issued (m)	90.80
Market Cap (m)	\$102.6
Listings	ENW (TSXV) & E4U (Fra.)
Website	<a href="http://www.enwave.net">http://www.enwave.net</a>

## THE COMPANY

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

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.

EnWave generates revenues from the following three sources:

- ❑ REV machine sales and maintenance;
- ❑ Royalty streams from partners ranging between 2% and 7% on commercial products produced with a REV machine and 10% for tolling activities;
- ❑ NutraDried, a 51% owned joint venture, which sells healthy dried cheese snacks.

The Company reported revenue of \$4.67 million for its third quarter of fiscal year 2017, ended June 30, 2017, compared with \$5.22 million in the comparable period last year, a decrease of 11%.

Despite the decline in sales, EnWave's third quarter was a positive one for the following reasons:

- ❑ NutraDried sales (Moon Cheese) were \$1.887 million, up 9% versus Q3 2016;
- ❑ Equipment rental fees were \$334 thousand, up 79% versus Q3 2016; and
- ❑ Royalties were \$94 thousand, up 25% versus Q3 2016 (see below).

Only sales of REV dryers were down in the third quarter. \$2.359 million versus \$3.230 million in Q3 2016. This will always be a lumpy part of total revenues as the timing of orders and delivery of machinery is hard to control. Remember that EnWave recognizes revenue based on the percentage of completion method; when the machines are under construction and upon delivery.

In addition, there is \$2.778 million "due from customers" on the balance sheet. This is work performed on equipment construction contracts where revenue has been recognized; however, the amounts are still to be invoiced to the customer.

As for the Company's royalties, they are most certainly moving in the right direction. It is worth noting that most of the current royalties are coming from two streams so far, NutraDried and Milne Fruit, despite the REV capacity deployed.



**MicroDried ingredients are especially useful for adding fruit to breakfast products.**

In the past nine months NutraDried contributed \$217 thousand in royalties. Note that NutraDried sales, and as such royalties, are picking up speed as Slant has taken over the distribution from Spire. Also important is

that the NutraDried royalty is NOT included in the regular royalties that are announced because they are considered an intercompany transaction, and as such eliminated upon consolidation from revenue.

Excluding NutraDried, \$293 thousand in royalties has been received in the first nine months of 2017. The most significant products that have been on the market for a considerable time are Milne's.

The other royalty partners have either small 10kW machines, which are generating smaller royalties, or they have not yet started generating meaningful sales. Bonduelle and Ereğli Agrosan, for example, are in the process of starting commercial production on their full-scale dryer. We expect royalties to kick in shortly from these two. Also, Milne's second 120kW quantaREV dryer was commissioned early August, which will be an additional source of royalties. Finally, Gay Lea and Van Dyk will start contributing to royalties later this year.

Based on the first nine months of FY 2017, EnWave will have close to \$700 thousand in royalties this year. Next FY that number could easily reach \$1.5 million. A number that goes straight to the bottom line!

The Company currently employs 35 people in Canada who operate a pilot plant and an engineering facility in Vancouver.

## Clients

EnWave's international customer list truly validates its technology and potential. The Company's market strategy targets large, Tier 1 companies in the food and pharma sector, as well as Tier 2 players in niche markets and regions.

In most cases, EnWave initially signs research collaboration agreements with potential partners, offering them certain product and geographic exclusivity. After completing a satisfactory due diligence on the technology and market opportunity, these companies have the option to sign commercial agreements and place machine orders.

So far, EnWave has signed twenty-two royalty-bearing licenses, thereby opening up eight distinct market sectors for commercialization.

In addition, EnWave has signed Technology Evaluation and License Option Agreements with a growing number of companies that are testing the technology.

## NutraDried LLP

NutraDried LLP develops, manufactures, markets and sells 100% all-natural cheese snacks under the Moon Cheese brand. EnWave USA Corporation, a 100% daughter of EnWave Corp, holds a 51% stake in NutraDried, while ND Creations, a private company majority owned by a former director of EnWave, controls 49%. EnWave benefits from selling REV machines to the joint venture, while it also receives a revenue-based royalty of 5%.

After the launch of Moon Cheese, its distribution expanded very rapidly. The cheese snack is now available in over 20,000 grocery stores across North America. Recently, distribution was added in 2,000 Rite Aid pharmacy stores, 1,600 CVS stores, and 440 Targets in the United States.

The subsidiary's strongest accomplishment so far however, is that Moon Cheese snacks are available at the almost 9,000 corporate stores in the US and Canada.



**Distribution of Moon Cheese was recently expanded into 2,000 Rite Aid pharmacy stores, 1,600 CVS stores, and 440 Targets in the United States.**

Moon Cheese is currently available in four flavors: Gouda, American Cheddar, Pepper

Jack, and Mozzarella. Other flavors are being tested and may be launched in the future.

## 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 below).

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.

The key to the technology is the vacuum environment in which the energy is applied, because it reduces the atmospheric pressure, therefore lowering the temperature at which the moisture can efficiently be removed. This reduction of heat and oxidization minimizes the damage inflicted on the REV-dried products, preserving richer flavors, brighter colors and higher nutritional content.

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
<b>Better Product</b>	Superior Color Superior Flavor High Nutritional Retention	High Nutritional Retention	Heat & Oxygen Damages Color, Flavor, Nutrients and Texture
<b>Faster Process</b>	Minutes or Hours (1,5 hours for Blueberries)	Hours or Days (24 - 36 hours for Blueberries)	Hours (6 hours for Blueberries)
<b>Cheaper Cost</b>	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
<b>Comparison between EnWave's REV technology, and freeze &amp; air drying.</b>			

### 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.

In December 2011, EnWave signed a Research and Development agreement with **Merck**, one of the world's leading pharmaceutical, chemical and life science companies. Under the terms of the 10-year agreement, both parties established a work plan for the production of a specifically designed non-GMP freezeREV dryer. Merck should bear all the costs associated with this process.

The idea was 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.

**Test results with freezeREV have been very encouraging, prompting the manufacture of a scaled-up REV machine for continued development and product testing. 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.**

## Expanding Patent Portfolio

EnWave holds numerous patents that protect both its REV technology and specific methods of use. Because the Company's technology continues to be developed, new innovations are made. As such, its intellectual property portfolio continually expands (also read Recent Events).

The past two years, the Company received no less than 43 new patent approvals that protect its technology and processes.

**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

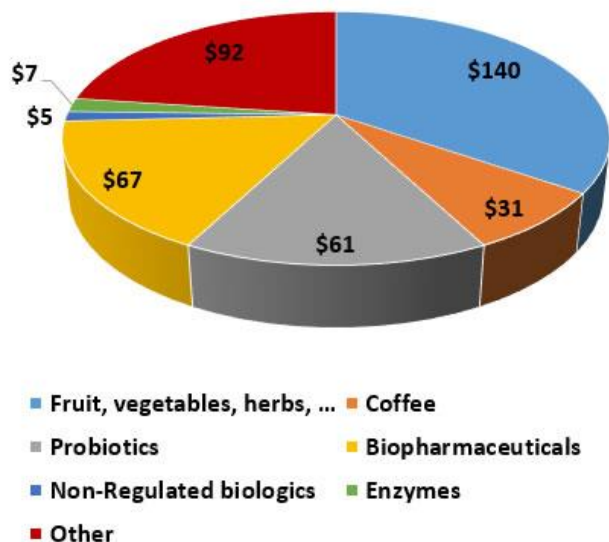
EnWave targets both the drying equipment market and dried products market, where it partners with companies that dehydrate their products.

Radiant Energy Vacuum technology allows EnWave's commercial partners to capitalize on the following important global food processing market trends:

▣ **Snackification** – Snacks now account for one of every five 'eating occasions', driving the demand for shelf-stable, healthy grab-and-go food choices. REV technology allows for the development of many new innovative snacking options;

- ❑ **Naturally functional** – Global consumer trends are placing increased importance on the inherent nutritional properties and the subsequent health claims of the foods they are consuming. REV allows food processing companies to retain high nutritional value;
- ❑ **Protein** – Powered by the 'naturally functional' trend, consumers are looking for protein rich snack options in new forms. REV is being used by several partners to produce protein rich products in the dairy, meat and pulse crop industries; and
- ❑ **Dairy 2.0** – Companies are looking to make the most of dairy's natural advantages and deliver new innovative products that coincide with the three other market trends listed above.

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, biotechnology is expected to be the fastest grower the following years.



The global dried products market (figures in billion USD).

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.

## GROWTH DRIVERS

While EnWave's dehydration technology has plenty of applications, it's clearly excelling in a number of sectors such as fruits, vegetables, meats and dairy products.

### 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;
- ❑ **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;
- ❑ **Agricola Industrial La Lydia SA** for Central America. It has received two 10kW nutraREV units and has ordered a 100kW REV machine (also see below);
- ❑ **Ereğli Agrosan** for Turkey. The license actually grants the company the exclusive right to process a variety of fruit, vegetable and cheese products. One 2kW and two 10kW REV machines are up and running at Ereğli Agrosan’s facility. In addition, the company began using a 100kW machine this summer. 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 recently submitted a purchase order for a 10kW commercial REV machine to initiate production.



**Kesito launched a dried cheese snack under the Air Cheese brand.**

Next to the above agreements for REV dried cheese snacks, EnWave also signed its first commercial royalty-bearing license for yogurt products.

- ❑ **Ultima Foods**, a major Canadian yogurt processor which produces more than 100 million kilos (220 million lbs) of fresh dairy products each year has agreed to

purchase a 10kW commercial REV machine to enable a focused market trial in early 2018. Subject to maintaining the exclusivity of the license, Ultima is also required to order a larger, continuous REV machine before the end of 2018. Moreover, Ultima will also have to pay EnWave a royalty on the wholesale price of all REV-dried products sold.

Moreover, EnWave has signed a TELOA with a number of other dairy companies. For example, in December 2016, EnWave signed a Technology Evaluation and License Option Agreement with **a major European dairy processor**. The dairy company leased a 10kW REV machine, which was installed at its facilities early 2017. Apparently significant product development has already taken place and progress continues to be made.



**Ultima Foods will soon start a market trial with a yogurt product produced on a 10kW commercial REV machine from EnWave.**

## 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 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. Up until a few weeks ago, Milne produced all these products on a large scale commercial

dryer. Then, early August 2017 a new 120kW quantaREV dryer was commissioned, which significantly expanded the company's processing capacity. Last week, Milne Fruit Products paid a USD\$100,000 non-refundable deposit towards the purchase of an additional third large REV machine;

- ❑ **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, flavours and nutrients very similar to those of fresh fruit. These healthy ingredients are used in the snack food, functional food, nutraceutical and cosmetics industry. Because of strong worldwide demand, the fruit processor ordered a third 10kW dryer from EnWave in January 2017. The initial two REV machines are running at full capacity, producing about 25 pounds of finished product per hour;
- ❑ Next to dried cheese (see above), **Agricola Industrial La Lydia** 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. La Lydia/Pitalia has now purchased two 10kW REV machines and ordered one 100kW continuous REV production line. The new unit is scheduled to be installed early 2018 and will significantly expand the company's processing capacity. Consequently, it will allow Pitalia to start selling pineapple, apple, mango and banana snack products through its Pure Joy brand in the European and South, Central and North American markets; and
- ❑ **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. Consequently, the company has purchased a large-scale 60kW nutraREV dryer from EnWave, which is scheduled for installation in the second half of 2017. As Van Dyk has a high level of experience in the food

industry, with plenty of distribution relationships throughout North America, Europe and Asia, we wouldn't be surprised if the initial distribution for their dried blueberries has already been established.



The Pure Joy bites will soon be available in stores in North America and Europe.

In addition, EnWave has previously signed TELOAs with the following fruit companies:

- ❑ **Ocean Spray Cranberries Inc.** is an agricultural cooperative owned by more than 700 cranberry growers in North America. The company is very actively testing the market for dried cranberries. A commercial license may be signed shortly
- ❑ **Sun-Maid Growers of California** is a cooperative, owned by family farmers who grow raisin grapes all located within 100 miles of each other in the Great Central Valley of California. The cooperative is doing specific product development work at the moment;
- ❑ **California Grape Co** is a California based grape producer that has the right to evaluate EnWave's REV technology to develop dehydrated crispy grape snacks. Intensified test work is ongoing. In fact, a commercial decision could be made in the near future; and
- ❑ A **major American pulse crop processor** recently entered into a TELOA after it thoroughly conducted product-focused application trials at EnWave's pilot



plant facilities in 2016. The company has rented a 10kW REV dryer for further product development work at its own facilities. It has a maximum of six months to enter into a commercial agreement.

## 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.

InFlavor vegetables are initially prepared the same way as all other Bonduelle processed vegetables: they are optimally washed, cut, and blanched. Then comes the key part of the InFlavor process, partial vacuum microwave drying. The vegetables are heated and partially dried at a low temperature for several minutes by EnWave's 120kW commercial quantaREV machine. This eliminates some of the water that vegetables contain and limits water release during preparation.

It truly separates InFlavor from all other frozen vegetables. Because the more water vegetables contain, the more ice crystals are formed during the freezing process, which damages their cellular structure. This phenomenon affects the texture and taste of vegetables, and is also responsible for the water that is released during the preparation.

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, late 2016, Bonduelle contracted EnWave to double the production capacity of its existing 120kW dryer. The upgrade had to be scheduled to coincide with the sporadic availability of the machine because Bonduelle has been running it very much.

Bonduelle pays a production-based royalty between 3% and 5% on a quarterly basis and a monthly lease for the use of the EnWave machinery.

Earlier this year **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.

EnWave will receive a 5% royalty on the wholesale price of all wasabi products sold by Merom. Knowing that wasabi is a high-value product that can cost more than \$25 per ounce, it's clear this could become another lucrative royalty stream for EnWave.

## Meat Snack Producers - Another Pillar of EnWave's Success

In addition to dairy, fruits and vegetables, meat is another pillar of EnWave's success.

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 royalty-bearing agreements with the following two companies:

- ❑ **Hormel Foods Corporation**, is a \$15 billion dollar company known for its numerous meat and food products. In addition to a 100kW dryer, Hormel purchased a 2kW REV machine for product development and a 10kW REV machine for market studies. This indicates that Hormel is eager to develop and test new products with EnWave's technology.
- ❑ **Perdue Farms**, a leading food and agricultural products company, ordered a 10kW REV dryer in July 2016 to process pet food and pet treats in the United States and Canada. The initial TELOA with Perdue was signed in April 2015, after

which R&D work commenced on a smaller scale REV unit. Because Perdue ordered a larger 10kW REV dryer, we're convinced that market tests went very well. In fact, we wouldn't be surprised if they already had some distribution lined up.

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, extended its Technology Evaluation and License Option Agreement, as it continues to see tremendous promise in the REV technology;
- ❑ **A U.S. based leader in the meat and prepared food industries.** The name of the new partner company wasn't disclosed, but when we Google "American meat and prepared food leader" the recurring names are Smithfield Foods, JBS USA, and Tyson Foods. All multi-billion dollar companies. The multinational will rent a 10kW REV machine during a period of six months to evaluate the REV technology as a viable option to process several of its current and potential commercial offerings; and
- ❑ Another **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.

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.

## Pharmaceutical Dehydration Technology

A fifth pillar of EnWave's success is pharmaceutical applications. The commercialization of both powderREV and freezeREV technology platforms continues to progress, with EnWave advancing the design and manufacture of scaled-up versions of each platform for its two pharmaceutical partners Merck and Sutro Biopharma.

The powderREV and freezeREV machines have been designed to be constructed in accordance with Good Manufacturing Practices (GMP) standards, and GMP certification will be pursued. Installation and start-up of these machines is planned for 2017.

If the installation of the powderREV and freezeREV platforms in the pharmaceutical sector yields superior performance to incumbent dehydration technologies, it will solidify EnWave's value proposition with potential new partners in the pharmaceutical industry.

As for **Merck**, EnWave is in the process of completing machinery design. The goal is to deliver the machine in 2018.

### 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.

The powderREV machine for **Sutro Biopharma**, a pharmaceutical company based in San Francisco, is scheduled to be finished first.

If this REV machine is successful with the production of Sutro's products, the company will immediately go into commercial production, as their ingredient does not require FDA approval. In that scenario, Sutro Biopharma would pay EnWave a royalty based on the production of its pharmaceutical ingredient.

**Commenting on this upcoming event in an interview with Smallcaps Investment Research, Brent Charleton said, "I think that the Sutro Biopharma relationship could be the "dark horse" in our investment case. If successful, their throughput capacity will press the need for additional machinery. I think that this is an area that could surprise a lot of people."**

### Opening the Seafood Category

EnWave recently opened another category as it signed a TELOA with **Born Wild LLC**, a seafood processor located in the United States. Born Wild serves the global seafood market with processing capabilities and sourcing from Alaska, through Canada, Washington, Oregon, and northern California. It is led by several individuals with vast seafood processing experience.

Born Wild will collaborate with EnWave's product development team at the Company's pilot plant facility to develop several unique seafood snack products for human consumption. Noteworthy is that EnWave's food science group has already conducted quite a lot of product development work in the dried seafood snack space.

Born Wild has a term of seven months to exercise its option to license the use of REV dehydration technology.

## RECENT EVENTS

### New Patent Application Filed to Rapidly Dry and Decontaminate Cannabis

Earlier this week, 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.

To date, a total of 29 U.S. states, the District of Columbia, Guam and Puerto Rico allow the use of cannabis for medical purposes. Nearly twenty other countries have legalized

cannabis possession and consumption to some degree (primarily for medical purposes), including Canada, Switzerland, Croatia, Czech Republic, Colombia, Jamaica, Italy, Spain and Uruguay, to name a few. Also Germany and Australia have recently passed legislation authorizing the use of cannabis for medical use.



**Recent tests have shown that EnWave's REV machines are effective for drying cannabis, a potentially new lucrative market.**

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.

EnWave however has developed a method that allows it to simultaneously dry and pasteurize cannabis, which circumvents the need to transport medicinal cannabis to highly-specialized and expensive off-site gamma irradiation facilities.

#### PASTEURIZATION

Pasteurization is the process of heat processing a liquid or a food to kill pathogenic bacteria to make the food or beverage safe for consumption. The use of pasteurization to kill pathogenic bacteria has helped reduce the transmission of diseases, such as typhoid fever, tuberculosis, scarlet fever, polio, and dysentery.

EnWave's new methods dramatically shorten the time from harvest to marketable products

to under one hour. In addition, 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.

**Recent tests have already proven that the Company's REV machines are effective for cannabis drying, which will allow for near-term commercialization without significant time and capital investment in research and development.**

### EnWave Signs R&D Agreement with Nestlé – the Largest Food Company in the World

EnWave's REV technology has once again attracted the attention of a world class company, Nestlé.

In July, 2017 the two companies signed a TELOA that gives Nestlé the opportunity to evaluate EnWave's REV technology for the dehydration of a number of specific products.

EnWave and Nestlé have been in touch for about a year discussing applications in this particular product category. During that time, EnWave produced multiple samples for analysis, which were reviewed very favorably by Nestlé. This positive outcome resulted in a formal TELOA to further refine the unique product area.



**Nestlé sells everything from baby food and bottled water to cereal and healthcare nutrition products. Its biggest brands include Nescafé, Kitkat, Nespresso, Maggi, Toll House and Milo.**

Further testing is scheduled to take place at EnWave's facility in the next twelve months.

Nestlé has the option to exclusively license the REV technology for specific product types given that the testing period avails favourably.

Headquartered in Switzerland, Nestlé SA is the largest food company in the world, measured by revenues. It even ranked No. 33 on the 2016 edition of the Forbes Global 2000 list of largest public companies.

Nestlé's products include baby food, medical food, bottled water, breakfast cereals, coffee and tea, confectionery, dairy products, ice cream, frozen food, pet foods, and snacks. Twenty-nine of its brands have annual sales of over CHF1 billion (about US\$1.04 billion), including Nespresso, Nescafé, Kit Kat, Smarties, Nesquik, Stouffer's, Vittel, and Maggi. Nestlé has 447 factories, operates in 194 countries, and employs around 339,000 people worldwide.

### EnWave Potentially Solving Major Military Issue

A few weeks ago, EnWave entered into a contract with the US Army Natick Soldier R&D Center to jointly develop low weight, high quality, nutritious field rations for the U.S.

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

Warfighters consume the rations when they are deployed or in training. These are called Meals Ready-to-Eat (MREs). Deployed service members have been relying on them for more than 30 years. Since research and development of the MRE began in 1959, the meals have improved significantly, mainly due to feedback on satisfaction from warfighters, but also because of technological innovation, and improved understanding of performance oriented nutrition and operational mission performance demands.

The MRE is intended as a single meal and is issued in a durable tan plastic bag. Inside, each MRE provides an entrée, an assortment of sides and bakery items, beverage base powder, and an accessory pack that includes

gum, tissue, a moist towelette, and seasoning.



**Warfighters these days have to carry up to 100 pounds of gear, leaving very limited space for storing food.**

Although the MRE has continuously improved in both form and function over the years, it has one major drawback, the fact that warfighters already have to carry up to 100 pounds of gear. This means that they have very limited space for storing food.

If fighters go into the field for three days, they have to carry nine bulky MREs with them. What often happens, is that they will 'field-strip' their operational rations by removing unwanted components to save weight, thereby sacrificing crucial nutrition.

Consequently, 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.

This is exactly where EnWave comes into the picture and why the US Army Natick Soldier R&D Center signed a contract with the Company. The goal of the cooperation is to produce lightweight, shelf stable, nutritious, compressed food bars.

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.

Initially, the intention is to develop high-protein bars with REV that will supplement the MRE. In a later stage, these bars may replace the entire MRE. This would be ideal for modern fighters. Once on the battlefield, they don't have the luxury anymore to sit down and eat. They usually eat while on the move. In that case, bars are ideal as they can simply be unwrapped and eaten. A quick meal that contains all the necessary energy and nutrients.

In a test program that recently commenced, EnWave will produce REV dried ingredients in four different product categories: meat, dairy, vegetable and whole egg-based in its facility in Vancouver, Canada.

These food items will be shipped to the CFD, which will compress them into bars to conduct an accelerated shelf-life test and evaluation. This will also involve a microbial test and nutritional analysis.

Subsequently, the products will be tested by two panels. First, a technical test panel of about 20 people will evaluate the products based on their appearance, flavor, odor, and texture. This is called the sensory evaluation. Next, a 200-person consumer panel will have the opportunity to taste and evaluate the new products. All of this should be completed within six months.

When prototype products pass all these criteria, the CFD then presents its recommendations to the Joint Services Operational Ration Forum, for their decision on whether to give the approval for the new items.

Finally, the product specification will be made public, which will initiate a competitive process to manufacture the products on a large scale. Since EnWave owns the REV technology, interested producers will have to come to an agreement with EnWave.

**Although this entire process will take some time, the opportunity is immense.**

## FINANCIALS

EnWave earns revenue from two business segments: EnWave Canada and NutraDried. EnWave Canada generates revenue from the sale of REV machinery to royalty partners, rental revenue from short term rentals of REV machinery to prospective royalty partners, and royalties earned from royalty partners. NutraDried generates revenue from the sale of Moon Cheese to retail and wholesale distribution channels.

Amounts in \$000's	06/30/17	06/30/16
EnWave Canada Sales	2,786	3,492
NutraDried Sales	1,888	1,732
<b>Total Sales</b>	<b>4,674</b>	<b>5,224</b>
Cost of Goods Sold	3,052	3,609
<b>Gross Profit</b>	<b>1,622</b>	<b>1,615</b>
Expenses	2,151	1,502
<b>Net Profit (Loss)</b>	<b>(529)</b>	<b>113</b>
Diluted Shares Outs.	90,802	90,773
Diluted EPS	(0.01)	0.00
<b>Selected income statement data for the second quarters ended June 30, 2017 and June 30, 2016. Source: Company Filings</b>		

EnWave Canada had revenue of \$2.79 million for the three months ended June 30, 2017 compared to \$3.49 million for the three months ended June 30, 2016, a decrease of \$0.70 million. As noted above, the decrease in revenue is due to lower machine purchase orders.

As for the nine months ended June 30, 2017 EnWave Canada had revenue of \$7.78 million, compared to \$7.56 million for the nine months ended June 30, 2016, an increase of \$0.22 million. The increase in revenues for the nine months ended June 30, 2017 relative to June 30, 2016 was driven by an increase in equipment rental fees earned from companies evaluating the use of REV technology under TELOAs.

It is worth noting that EnWave Canada earned royalties of \$293 thousand during the nine months ended June 30, 2017 compared to \$186 thousand for the nine months ended June 30, 2016. EnWave Canada earned

royalties of \$94 thousand during three months ended June 30, 2017 compared to \$75 thousand for the three months ended June 30, 2016.

The increase in royalty revenues is due to EnWave's royalty partners' advancing the commercialization of REV products in the marketplace, as well as the payment of minimum royalties under the terms of the license agreements. These royalties are expected to increase dramatically over the coming years as additional REV machinery orders, for example from Ereğli Agrosan, Bonduelle, Pitalia, and many others are taken into operation.

Revenue from NutraDried was \$1.89 million for the three months ended June 30, 2017 compared to \$1.73 million for the three months ended June 30, 2016. Revenue from NutraDried was \$4.55 million for the nine months ended June 30, 2017 compared to \$4.86 million for the nine months ended June 30, 2016.

Results from NutraDried for the third quarter, and especially the nine months; were negatively impacted by slow transition of the customer accounts from Spire Brands to NutraDried. Remember that in December of last year, Spire Brands, the former master distributor of Moon Cheese, was replaced by Slant Design. Spire was reluctant to turn over all the necessary information, which disrupted the consistency of Moon Cheese orders. This situation was rectified in the third quarter.

Meanwhile, Slant has expanded the distribution of the dried cheese snack into 2,000 Rite Aid pharmacy stores, 1,600 CVS stores, and 440 Targets in the United States. All in all, Moon Cheese is now available in over 20,000 stores in the U.S. and Canada.

### Balance Sheet As Of June 30, 2017

On June 30, 2017, the Company had working capital of \$6.96 million, compared to \$7.93 million on June 30, 2016. Also on June 30, 2017 the cash and cash equivalents balance was \$2.21 million compared to \$5.73 million on June 30, 2016, a decrease of \$3.52 million.

However, Trade receivables, Due from customers on contract, and inventory increased by \$1.19 million, \$.69 million, and \$.86 million respectively compared to the previous year. These increases were all related to EnWave’s higher machine production number

Amounts in \$000's	06/30/17	06/30/16
Cash and Cash Eq.	2,206	5,733
Restricted Cash	250	-
Trade Receivable	1,674	428
Due From Customers Under Contract	2,778	2,084
Inventories	2,605	1,746
<b>Total Current Assets</b>	<b>9,743</b>	<b>10,527</b>
Plant and Equipment	2,967	3,863
<b>Total Assets</b>	<b>13,863</b>	<b>16,475</b>
Trade and Other Payables	2,297	1,561
<b>Total Current Liabilities</b>	<b>2,785</b>	<b>2,594</b>
Long Term Debt	111	367
<b>Total Liabilities</b>	<b>2,896</b>	<b>2,961</b>
Total Stockholder Equity	10,967	13,514
<b>Selected balance sheet data on June 30, 2017 and June 30, 2016. Source: Company Filings</b>		

## 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.

As EnWave’s unique dehydration technology is becoming widely known, companies recognize its potential. The food industry is extremely competitive and producers are constantly looking to make the difference. For the first time in many years an innovative dehydration technology has entered the market, which is faster and cheaper than freeze drying, and has better end product quality than air drying or spray drying.

An increasing number of food and biopharmaceutical companies are realizing that REV is the way to go if they want to maintain their competitive advantage. EnWave’s business model allows for territorial exclusivity, therefore it is simply a matter of signing an agreement first before a competitor snatches away the rights for a certain country or product.

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.

Moreover, EnWave has numerous prospective royalty partners evaluating its REV technology under Technology Evaluation and License Option Agreements (TELOAs). 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 at least \$10,000 per month under TELOAs from short-term REV machine rentals as well as from fees for access to EnWave’s R&D facilities and product development expertise. Since April 1st, 2017 EnWave signed no less than six new TELOAs with food and other processing companies that will evaluate the use of REV technology to develop new product applications.

In addition, the Company made significant progress with the construction and testing of the first commercial powderREV machine for Sutro Biopharma, a U.S. based pharmaceutical partner. More news is expected shortly. EnWave also commenced the assembly and construction phase for the first scaled-up GMP freezeREV for Merck. If the powderREV and freezeREV platforms prove to yield superior performance to incumbent dehydration technologies, it would be a major breakthrough for EnWave.

As for NutraDried, the transition from Spire to Slant is now complete. This should be positive for both sales and margins.

Finally, EnWave's method to rapidly dry and decontaminate cannabis could become a game changer in the worldwide growing medical cannabis industry. The automated REV drying processes for cannabis are highly efficient and scalable, reducing personnel requirements and increasing overall operational efficiency.

## Valuation

EnWave's technology works and is validated by many commercial agreements. The dehydration market is large and spread over many different sectors.

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 101 million shares outstanding, the intrinsic value of EnWave's shares derived from our model is \$3.49, about equal compared to our previous report.

**We reiterate our buy recommendation for EnWave Corp. with a price target of \$3.44, which is 204% above today's stock price.**

## SHARE DATA & OWNERSHIP

As of June 30, 2017, EnWave had approximately 90.8 million common shares outstanding. In addition, the Company had 3.125 million warrants outstanding with an exercise price of \$1.20 and 225,000 agent's warrants with an exercise price of \$0.80. Each warrant entitles the holder to purchase one common share of the Company until October 22, 2020 and October 22, 2017 respectively.

Finally, EnWave has close to 6.9 million stock options outstanding with a weighted average exercise price of \$1.15. 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 (5.42%), Manulife Asset Management (2.75%), Kimelman & Baird (1.45%), and Petercam S.A. (0.55%).

## MANAGEMENT

### ▣ MR. JOHN P.A. BUDRESKI - 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.

### ▣ DR. TIM DURANCE - PRESIDENT & CEO, DIRECTOR

One of the founders of EnWave, Dr. Durance has 35+ years' experience in the processed food industry and is the co-inventor of the Company's REV technology. Dr. Durance received his Ph.D. and M.Sc. in Food Science from UBC, as well as a B.Sc. in Microbiology from the University of Guelph and a B.A. in Anthropology from the University of Waterloo. He's the author of more than 75 peer-reviewed scientific publications, 16 patents, and numerous book chapters, scientific presentations, and invited lectures on technology and food processing. As EnWave's President & Co, his responsibilities include research and development related to all of the REV technologies, as well as ongoing intellectual property development.

### ▣ MR. DANIEL HENRIQUES - 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 2014 – 9M 2017

All numbers in thousands

PERIOD ENDING	FY 2014*	FY 2015*	FY 2016	9M 2017
<b>Total Revenue</b>	<b>1,198</b>	<b>5,868</b>	<b>14,933</b>	<b>12,324</b>
Cost of Revenue	462	4,689	10,383	8,890
	<b>736</b>	<b>1,179</b>	<b>4,550</b>	<b>3,434</b>
<b>Expenses</b>				
General & Administrative	1,445	2,089	1,989	1,606
Sales & Marketing	616	719	793	1,406
R&D	1,591	1,386	1,656	939
Amortization Intangible Assets	1,419	1,420	1,222	680
Stock-based Compensation	608	261	399	661
Total Operating Expenses	5,770	6,172	6,387	5,360
<b>Net Loss Applicable To Common Shares</b>	<b>\$5,034</b>	<b>\$4,993</b>	<b>\$1,837</b>	<b>\$1,926</b>

### Annual Income Statement FY 2014 – 9M 2017. Source: Company Filings

\* Note that in the Fiscal Year 2014 and 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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