



Solarvest BioEnergy Inc.

## *An Algae Omega-3 Company*



*TSXV:SVS January 2017*



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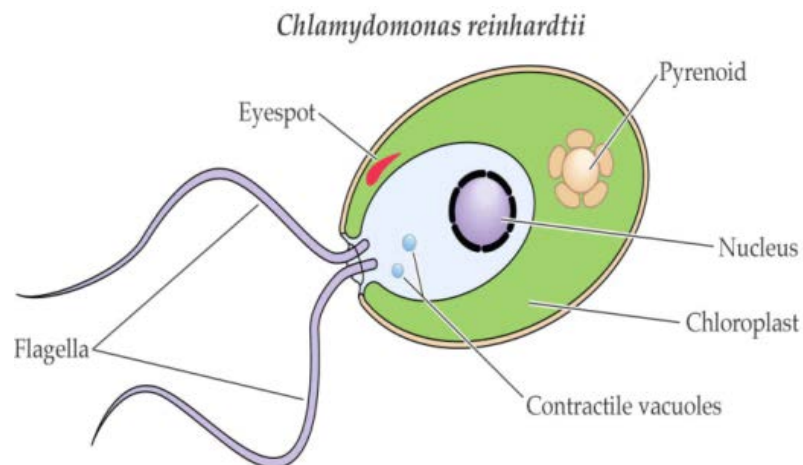
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## Algae - Nature's Workhorse

### Features and Benefits

- Multiple Product Potential
- Totally Sustainable
- Patented
- Sequesters CO<sub>2</sub>
- Numerous Applications
- Inexpensive Inputs



## Proprietary Algae Platform



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# The FDA Approved Product

A Global First!



NO fish or algae products on the \$15 billion dollar Omega-3 market are organic.



## Omega 3 - The World's Most Popular Nutraceutical

Global Omega 3 products sales estimated at \$15 billion in 2015\*

US Market alone is forecast to be \$7 billion during 2015

18% of Americans look for organic ingredients\*\*

17% of Americans take Omega 3 Supplements on a regular basis (2011 Study)

8% of US consumers seek high Omega 3 Foods – natural or enhanced

Omega 3 enhanced products such as Eggs and Milk command premium pricing in marketplace

Consumers are prepared to pay 24% premium for organic based products

*\* Packaged Facts - "Omega-3: Global Product Trends and Opportunities*

*\*\* Nutrition Business Journal – Survey 11/2014*



## Omega 3 Fatty Acid Product Benefits Heart & Brain Health + Cognitive Function

**42.7%** of Canadians are at **high risk** of heart disease due to low Omega 3 levels  
(Statistics Canada – 2016 <http://www.statcan.gc.ca/daily-quotidien/151118/dq151118d-eng.htm> )

**78%** of Canadian children studied are Omega-3 (EPA &DHA) deficient (EPA &DHA)  
(University of Guelph study published in the journal of nutrition)

Animal experiments and clinical intervention studies indicate that omega-3 fatty acids have anti-inflammatory properties  
(American Journal of Clinical Nutrition, Oct 2012)

Omega 3 can reverse the damage to brain genetics caused by fructose  
(University of California at Los Angeles , Oct 2015)

Leads to increased duration of gestation, birth weight and length of newborns  
(American Journal of Clinical Nutrition, April 2013)

May enhance immune system's ability to clear the brain of amyloid plaques, one of the hallmarks of Alzheimer's Disease  
(Journal of Alzheimer's Disease- February 5, 2013)



## Omega 3 Fatty Acid Products

### **Organic Meal – Referred to as Algae Flour**

Processed Food Supplement

Human Nutraceutical

Infant & Baby Food

Children's Supplement



### **Algae Oil**

Human Nutraceutical

### **Pharmaceutical Grade Oil**

Active Ingredient

Carrier for bioactive products

### **Beverage Supplement**

Human Nutraceutical





## Industry Leading Competitive Advantages

### **Organic**

No certified Omega 3 algae or fish oil in the marketplace

### **Vegan/ Vegetarian**

### **EPA & DHA**

The most valuable/bioavailable forms of Omega 3

### **Free from Toxins**

Mercury, PCB and Dioxins can be found in fish oils

### **No Solvent Residues**

Hexane and acetone are presently used to extract fish and krill oil

### **Sustainable**







## Solarvest Omega 3 - Go to Market Strategy

### **#1 - Bulk Product Sales to Organic Food Processors**

Algae can be incorporated into processed food @ ½ gram per serving\* to add a health benefit, provide premium positioning and or to give a competitive advantage.

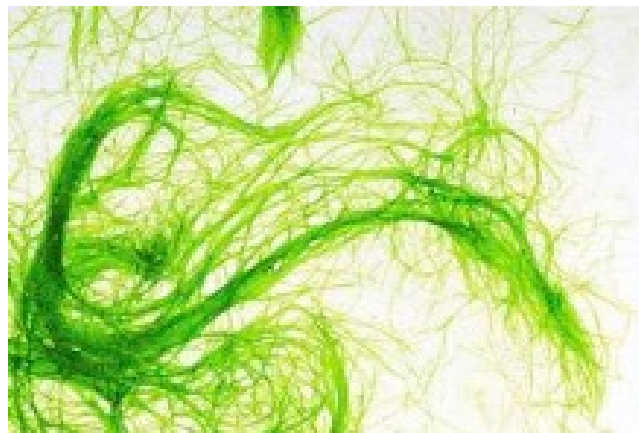
### **#2 – House Branded Products to Large retailers.**

The company has a co-packer ready for custom packaging.



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## The Company



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## Investment Highlights

- **Patented and only organic** Omega 3 (DHA/EPA high value)
- **FDA Approved** for sale
- Operating in established **growth** markets
- **Proven** management team
- **Sustainable** production capabilities
- Product research complete – **risk mitigation**
- **Proprietary** technologies primarily in health products



## IP Portfolio

- **Methods of Producing Algal Cell Cultures & Biomass, Lipid Compounds & Compositions, and Related Product**  
*Production of algae biomass without using chemicals – Organic Omega 3*
- **System, Method, and Device for The Expression or Repression of Proteins**  
Method for controlling the expression of chloroplast - induce the production of hydrogen gas and or the expression of therapeutic proteins
- **Transgenic Algae for Delivering Antigens to An Animal**  
*Animal vaccine patent- A method for feeding transgenic algae with an expressed antigen to provoke an immune response*
- **Dental Composition and Method**  
*Method for suppressing plaque formation on canine (and other animal) teeth*
- **Method of Making Microalgae-based Animal Foodstuff Supplements**
  - *Trace metal binding system that effectively delivers chromium, cobalt, copper, iron, manganese, molybdenum, selenium and zinc to animals*
- **Methods and Uses of a Modified Cecropin for Treating Endoparasitic and Bacterial Infections**  
*Antimicrobial protein (AMP) expression for the treatment of malaria*



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## Management

An impressive track record of creating shareholder value through:

The current executive team led TSX listed animal biotech industry leader Cobequid Life Sciences Inc. (KQR) until it was acquired by Novartis in 2000 at a significant premium to market.

- **Commercialization** – Over 44 successful biotech products
- **Innovation** – Many firsts including the worlds first DNA vaccine
- **Research** – Scientific leaders in microorganism research
- **Production** – Managed complex fermentation systems
- **Regulatory** - euGMP injectable vaccine facilities and licensing





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## Key Management

**Gerri Greenham, CEO and Director,** Mr. Greenham has been active in the biotech industry since 1983 when he organized the acquisition from Connaught Laboratories of their biotech division to create Cobequid Life Sciences Inc. (TSE: KQR) subsequently acquired by Novartis Animal Health Inc. ("Novartis") in 2000. Since then, he has been involved in private investments as well as sitting on boards of directors and advisory boards of various public and private companies.

### **Dr Maryam Khodadadi, Biology, Research Lead**

Dr. Khodadadi is a graduate from McGill University, in Food Science and Agricultural Chemistry. She carried out her postdoctoral research at McGill University before joining Solarvest (PEI) Inc. research and development group. Dr. Khodadadi has acquired expertise in the innovation and the synthesis of functional food ingredients and nutraceuticals, using "green" biotechnological approaches. Her research work has been based on a multidisciplinary approach combining food chemistry and enzyme technology for synthesizing and characterizing specialty lipids as well as bioactive carbohydrates from yeast cells. Her work has been aimed at the investigation of the synergistic actions of selected biocatalysts to develop novel bioprocesses for the synthesis of structurally well-defined bioactive molecules, with unique functional properties.

**Garth Greenham, COO,** Mr. Greenham has an extensive record with both privately-held and publicly-traded health care companies. He served as President of the global aquaculture division at Novartis Inc. He started his career with Johnson & Johnson (J&J) where he served 15 years mostly with McNeil Pharmaceutical in numerous management positions in Operations. He joined Cobequid Life Sciences Inc. (KQR) and served as Director of Sales, Marketing & Operations for nine years and helped grow the company to global leader in the field of aquaculture animal vaccines.

**Michael McDougall, Team Engineering Lead,** Mr. McDougall earned his Bachelor of Science from the University of Prince Edward Island as well as his Engineering Degree in Biological Engineering from Dalhousie University. Michael McDougall is a highly qualified leader for Solarvest PEI Inc.'s new ventures.

**Dr. Angela Riveroll, PhD Molecular Biology, Research Lead,** Dr. Riveroll has a PhD in Molecular Biology, considered an asset as Solarvest Inc. does extensive work with molecular organisms, especially in protein expression. She earned her Ph. D from Dalhousie University where she received training in microbiology, immunology and molecular biology. Dr. Riveroll was employed as a project manager and product development manager with Novartis Animal Health for five years where she led teams involved in the research, development and registration of biologic products for the animal health industry.



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## Capital Structure TSXV: SVS

Shares Issued (basic):	22,780,216
Options (exp. 2016):	670,000 @ \$0.25
Warrants @\$0.35:	258,940 exp. Oct. 28, 2016, 400,000 exp. May 17, 2017 300,000 exp. June 4, 2017, 1,000,000 February 2019
Market Value (recent):	\$5,336,153
Milestone Agreement:	500,000?
Insider Ownership:	9,500,000 (42%)
Capital Assets :	1,404,000
Investment to (April 2015):	\$3,992k (R&D \$ 1,560k) net of funding*
Burn Rate:	70,000

\* Solarvest PEI Inc. is the recipient of significant Federal funding – Primarily R&D from NRC, AIF and NSERC



## Facility R&D & Future Production

Located in Summerville PEI

- Eight (8) Year lease to own agreement with the Province of PEI
- Total payments of \$436,000 required over 8 year term (\$236k remaining)
- 16.1 acres of land
- 30,000 sq. ft.
- The finished footprint (front 1/2 of the building) can support a processing capacity until end of year three leaving 15,000 sq. ft. for expansion\*
- Surplus land supports future building expansion



\* Capital expenditure for equipment required.





## Investment Summary

- ✓ Near term revenue opportunity
- ✓ Unique Intellectual Property
- ✓ Large and growing markets for Omega 3 products
- ✓ Sustainability and “green-nature” appeals to a large market segment
- ✓ Management has a successful track record of converting R&D projects to market acceptance
- ✓ Pharmaceutical and Hydrogen market is vast and the company’s R&D is well on its way – potential spin out or dividend out to fund separately
- ✓ Research collaborations in place



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Thank You

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***Appendix – Future Products***

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## The Future



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## R&D & Future Projects

### Therapeutic Proteins & Clean Energy Hydrogen

The company's focus has been the investment in the development and production of organic Omega-3 but has exciting mid term and a blue sky projects. These have have been taken forward by utilizing federal government funding – NSERC and IRAP from the NRC.

#### Synergies and Comments

- The Omega-3 bulk algae production facility can also produce therapeutic proteins.
- Separate downstream processing is required for proteins extraction & omega-3 - contract processing for both is available.
- The Solarvest IP and genetic technologies support proteins and clean energy hydrogen.
- The company will seek out partnerships/JV's for funding.
- NSERC, IRAP from the NRC are grants that cover 100% for NSERC and 80% for IRAP.



## R&D & Future Projects

### Mid Term – Therapeutic Protein Expression Platform

Solarvest announced a global breakthrough in protein production technology with a successful proof of concept study. Solarvest produced bone morphogenetic protein (BMP), a high value complex compound, that is currently used in orthopedic surgery to accelerate /enhance bone growth.



Graphic Representation  
of BMP

#### Advantages and Market

- Algae can be produced inexpensively and are inherently safer than current expression systems since algae harbour no known human pathogens.
- One algae culture production system may be utilized for numerous protein targets.
- There are 400 proteins used in human medicine and it is estimated that this platform can be applied to 40% of them
- BMP alone is in excess of one billion dollars, Insulin \$42 billion and Erythropoietin (EPO) is \$9 billion once FDA approved, the company can supply active proteins to currently licensed pharmaceutical companies - J&J, Stryker and Medtronic are active in the market.



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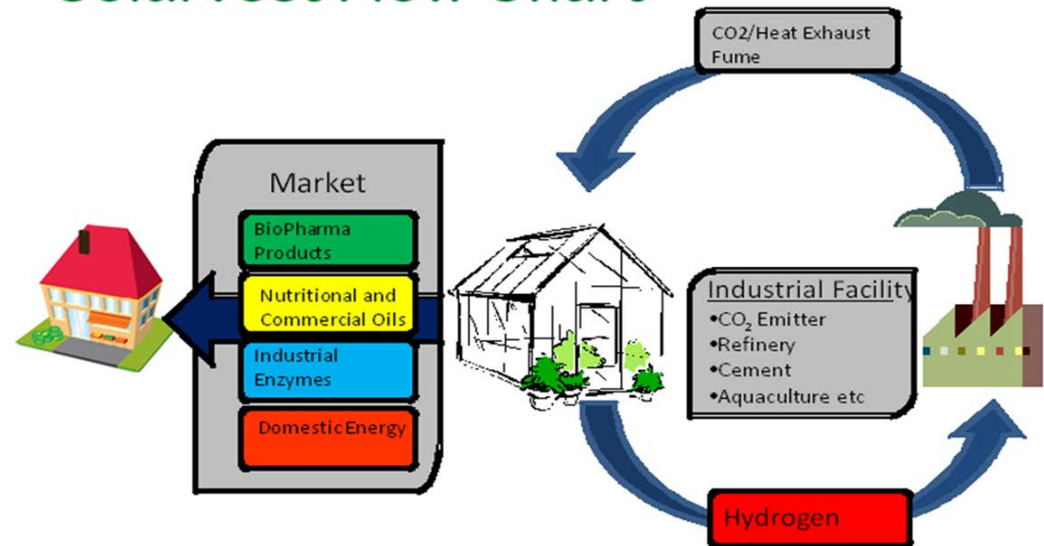
## R&D & Future Projects

### Long Term - Bio Hydrogen

Solarvest has patented a breakthrough technology for the production of hydrogen as an alternative “green” fuel source.



### Solarvest Flow Chart



Opportunities



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## R&D Staged Plan Portfolio

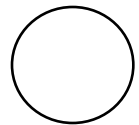
Human and Animal Nutrition



Less Expensive and Safer Pharmaceuticals



Clean, Sustainable Energy



Products



Technologies

