

Moving From Lab to Scale Up

ALGAE SYMPOSIUM

May 17, 2010 (Monday)

7:00 – 8:00 *Breakfast and Registration*

8:00 – 8:10 **Welcome and Introduction**
Timothy E. Kelley, *President & CEO, IVEDC*

Session I: Market Development

8:10 – 9:10 **Penetrating the Food and Animal Feed Markets and Meeting Required Regulations**

What are the realistic opportunities for algae products in the food and animal feed markets and what is really required to successfully seize these opportunities? The answers to these questions highlight the fact that serving these markets is no slam dunk, but requires a high degree of business development skills and a high-quality business plan that recognizes and tackles the many challenges that must be addressed.

What is the real market potential?

What are the keys to cracking the market?

What distribution channels need to be established?

What is a realistic timeline for developing and delivering products to the market?

What are the key pitfalls that should be recognized in advance and avoided?

Presenter on Market Issues:

Ron Henson, *Principal*, RON HENSON CONSULTING, INC

Presenter on Regulatory Issues:

George Burdock, *President & Founder*, BURDOCK GROUP CONSULTANTS

9:10 – 10:00 **Penetrating the Biochemical Markets and Meeting Required Regulations**

The biochemical markets have their own unique opportunities, challenges, and requirements. Like the food market, penetrating these markets and complying with all of the relevant regulations requires careful planning and adept execution.

What is the real market potential?

What are the keys to cracking the market?

What distribution channels need to be established?

What are the regulations that must be met, what does it take to comply with them and what should be anticipated about the approval process?

What is a realistic timeline for developing and delivering products to the market?

What are the key pitfalls that should be recognized in advance and avoided?

Co-Presenters:

Bill Barclay, *Chief Intellectual Property Officer*, MARTEK BIOSCIENCES, BOULDER, CO

John Benemann, *Consultant*, BENEMANN ASSOCIATES

10:00 – 10:30 *Networking Break*

Session II: Growing and Harvesting Algae in Real World Conditions

10:30 – 11:15 Real World Experiences in Growing Algae

What has been the experience of those who have been growing algae for years and what can be learned from this experience? This presentation will review the history of companies who have pioneered algae cultivation and will report:

How did it work out?

How far did they get?

How successful have they been?

Why have they had the degree of success that they have had?

What lessons can be learned from it?

Robert Henrikson, *President*, RONORE ENTERPRISES INC

11:15 – 12:30 Meeting the Challenges of Growing Algae at Scale, Part I

Growing algae at scale economically is the key challenge facing the industry. So, developing well-considered strategies for moving from the lab into a real climatic and production environment is vital. This series of presentations will address the elements that must be addressed in developing such a strategy.

Fuel vs. co-product

Location

Growing algae

Water

Nutrients

Harvesting and dewatering

Contamination

Energy usage

Presenters:

Bill Barclay, *Chief Intellectual Property Officer*, MARTEK BIOSCIENCES, BOULDER, CO

John Benemann, *Consultant*, BENEMANN ASSOCIATES

Al Darzins, *Applied Science Principal Group Manager*, NREL

Mario Larach, *Chairman & CEO*, KAI BIOENERGY

12:30 – 2:00 *Group Luncheon*

2:00 – 3:00 Meeting the Challenges of Growing Algae at Scale, Part II Round Table Discussion Follow Up

Moderator:

Al Darzins, *Applied Science Principal Group Manager*, NREL

Presenters:

Bill Barclay, *Chief Intellectual Property Officer*, MARTEK BIOSCIENCES, BOULDER, CO

John Benemann, *Consultant*, BENEMANN ASSOCIATES

Mario Larach, *Chairman & CEO*, KAI BIOENERGY

3:00 – 3:30 *Networking Break*

Session III: Project Development

3:30 – 5:15 Taking Care of Business: Getting the Project Development Process Right

As if learning to grow algae at scale is not enough of a challenge, successfully marshalling a project through the project development process adds a whole set of additional challenges that require careful planning and skillful handling. This session will address the myriad of requirements that must be addressed:

Site acquisition

Permitting

What are the applicable agencies?

What needs to be done?

How long does it take?

What are the keys to success?

Environmental approvals

What are the applicable agencies?

What needs to be done?

How long does it take?

What are the keys to success?

Water usage approvals

Building community support

Moderator:

Rick Halperin, *Project Manager, Regional Algae Initiative*, ADVISORY ONE, LLC

Panelists:

Grady D. Dutton, *Consultant*, DUTTON CONSULTING

David Hazlebeck, *Senior Representative*, GENERAL ATOMICS

Dan Gautschi, *Chief Executive Officer*, SUNECO ENERGY

Ira Levine, Ph.D., *Associate Professor*, UNIVERSITY OF SOUTHERN MAINE

David Quinby, *Principal*, STOEL RIVES LLP

Kathy Robinson, *Executive Director, Renewable Energy and Sustainability*, AEROJET

5:15 *Symposium Adjourns*