BIO Pacific Rim Summit

Bioproducts from regulated wastes - Water, CO_2, and sunshine for commercial algae systems

Bioalgene, Seattle

Dba of Algaeverde, Inc.

Vancouver, BC, October 11, 2012

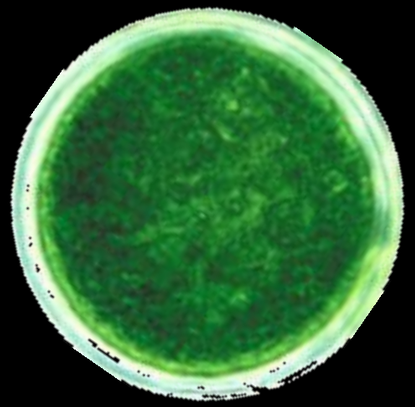
Integrating best-of-breed innovators

Portland General Electric
Washington State University
University of Washington
Institute for Systems Biology
General Atomics
The Sun Grant Consortium
ThreeMile Canyon Farms/R.D. Offutt
Energy & Environmental Research Center
National Renewable Energy Laboratory
Parametrix
Electric Power Research Institute

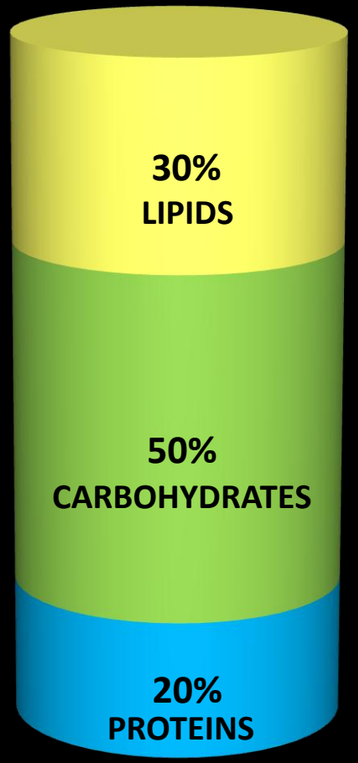
Multiple product streams

INPUTS

H_2O
CO_2
N-P-K
Sunlight
Temperature
Containment



COMPONENTS



OUTPUTS

Fuels
Nutraceuticals

Chemicals
Plastics

Animal feed
Crop fertilizer

PROCESSING

Opportunities in Regulated Wastes

- point source CO_2 capture
- municipal waste water treatment
- agricultural runoff, animal waste waters

Economic feasibility/GHG reduction policies

Industrial Chemicals Leverage Fuels

Co-product margins allow viable fuel prices

Glycols
=$1200-1500/ton

Butanediol
= $2,500-5,000/ton

Fuels
= $900/ton

Team Nitrogen, 42,000 strong

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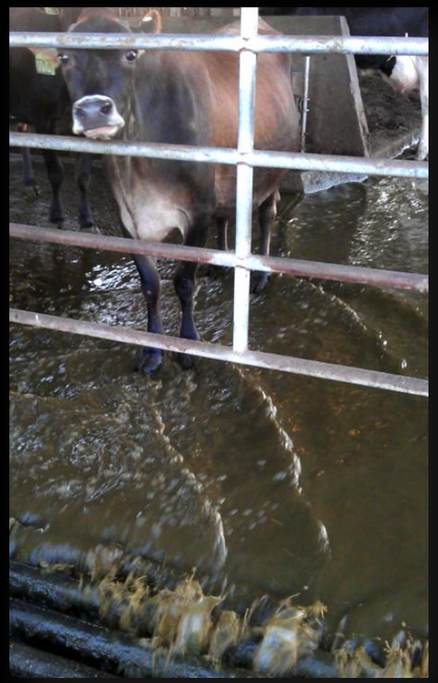


Production flows

IP innovation

University of Texas at Dallas
- Lipid yield

University of Michigan
- Single-step refining

Washington State University
- Dual process for continuous production in northern latitudes

Institute for Systems Biology
- Managing the health of algal “communities”

Applied biology approaching scale

Air carrier & military demand

The algae-farming member of
Sustainable Aviation Fuels Northwest

COMMERCIAL CARRIERS

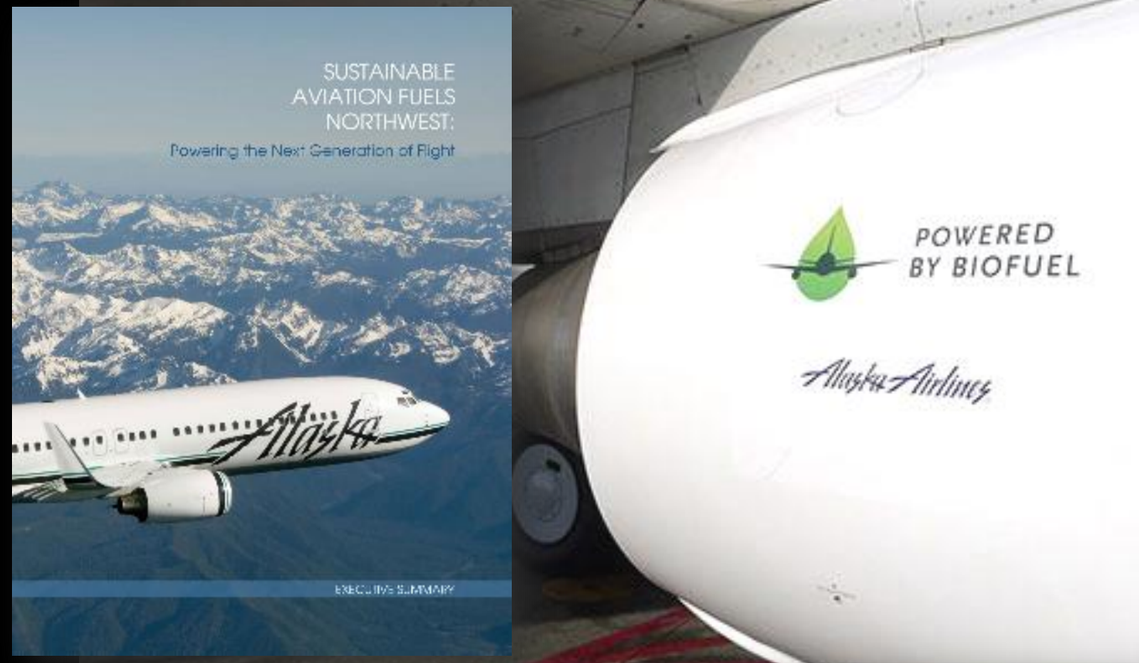
Green-fueled route in regular service requires ASTM-spec fuel

Standalone supply chain

MILITARY

We responded to the military's RFI and have been told to expect the RFP, when it is funded.

Grants will fund capacity building, create long-term fuel offtake contracts (jet, diesel, marine).



Cyanotech, Hawaii

Pacific Waste, Inc./Bioalgene reduced emissions site

Mission, B.C.

- CO_2 capture – 78 tons/day
- Zero-emissions
- Biomass conversion
- Hybrid algae system
- Carbon credits

Advisory board

Pete Lammers, Ph.D., New Mexico State, NAABB co-lead

Nitin Baliga, Ph.D., Institute for Systems Biology

Chris Porter, Ph.D., Seattle Biomedical Institute, 22 patents

Shulin Chen, Ph.D., Washington State University

Jim Elliott, former General Atomics renewables manager

John Celms, former Seattle Silicon, Hart Crowser, Virgin Charter

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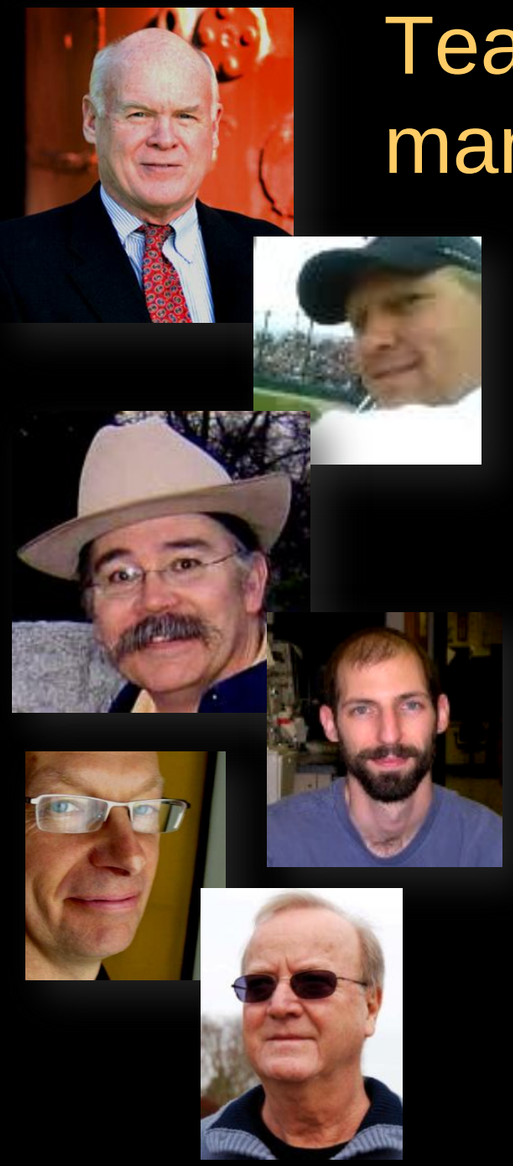

Team: Experienced scientists, engineers, managers

CEO	**Stan Barnes**, Harvard BA/MBA, serial entrepreneur, founder
COO	**Dan Hand**, ME/PE, USMA, ex-Chevron, geothermal startup
CSO	**Steve Verhey**, Ph.D. Plant Physiology, OSU; Boardman project manager, Central Washington Biodiesel, Evergreen State U.
Strategy	**Dale Gluck**, ABC, ex-Hill & Knowlton, Security Pacific Bank
Polymers	**Ben Frankamp**, Ph.D., Chem, University of Massachusetts; ex-Sandia, Bend Polymer, Portland State University
Water	**Chris Haussmann**, ChemE/PE; Water Systems Specialists, ex-GE, Electric Power Research Institute
Systems/Fab	**George Richmond**, ME/PE, WSU, Richmond Systems

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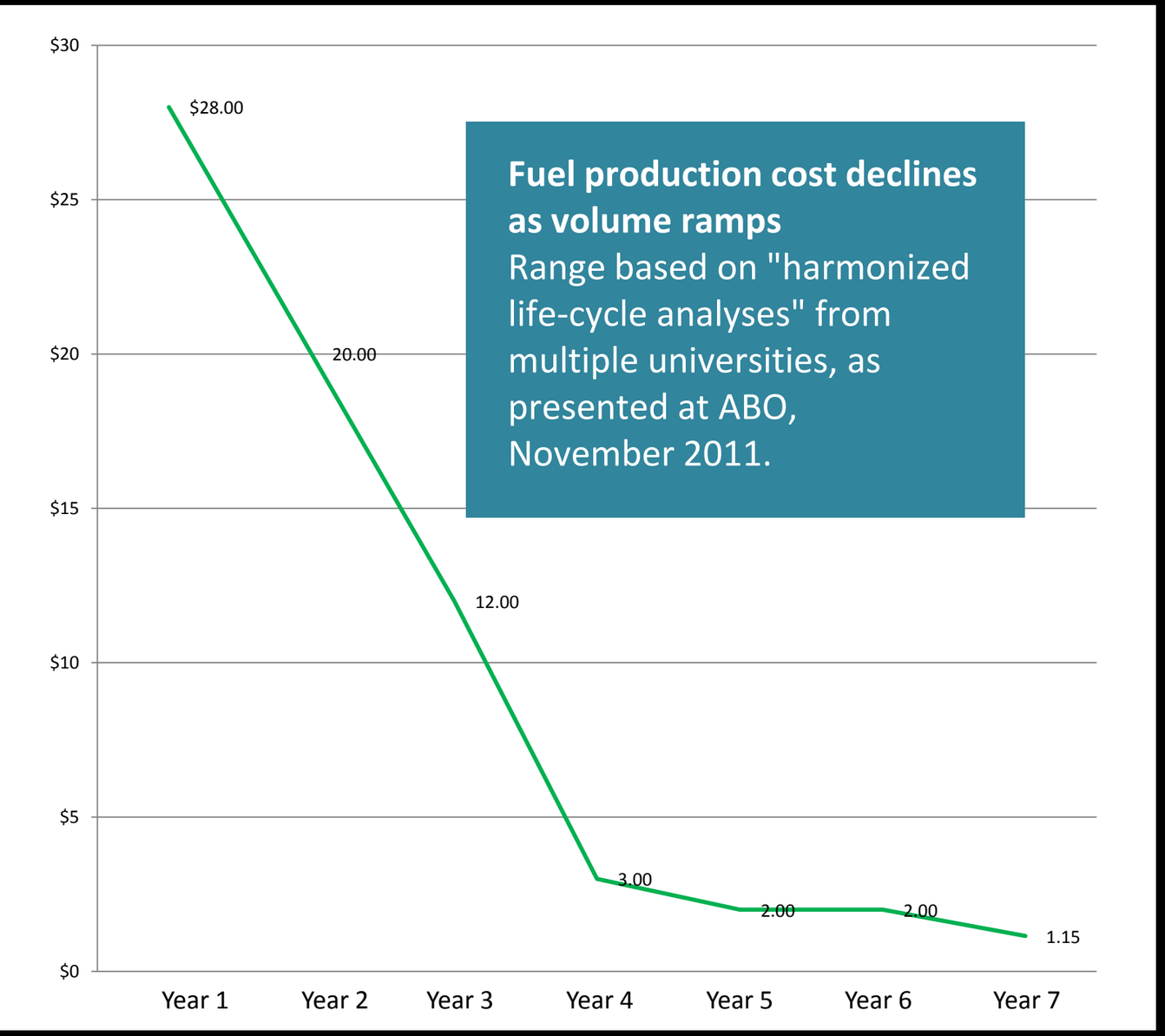
PRODUCTION AND COSTS SCHEDULE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Lipid (fuel) output target (gal/yr)	100	150,000	750,000	1,000,000	7,000,000
Acreage cultivated	6	45	225	285	2,000

Pond costs (Project finance)	$210,000	$1,575,000	$7,875,000	$9,975,000	$70,000,000
Non-pond costs	450,000	3,425,000	2,125,000	10,025,000	20,000,000
Total cost	$650,000	$5,000,000	$10,000,000	$20,000,000	$90,000,000



Costs drop, margins grow as process scales

“Harmonized” Life Cycle Analysis reflects NREL, NMSU, CSU, Cal Poly evaluations.

Fuel production costs drop from $28 to $1.15 in 7 years, based on volumes.

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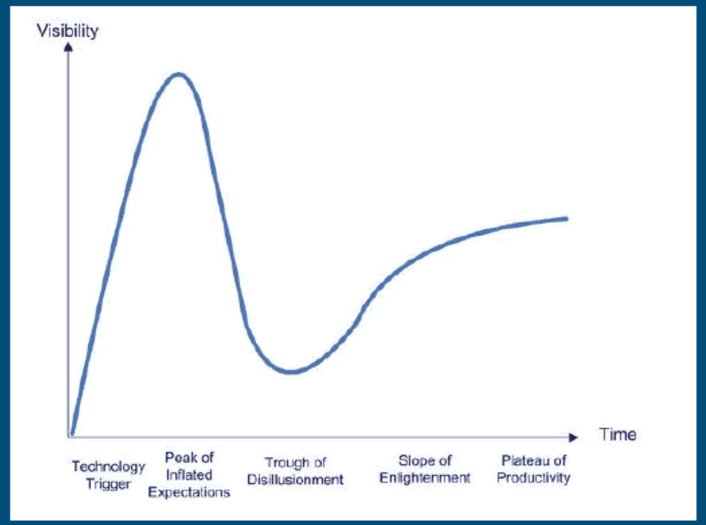
All practical.
Today.

Breaking the Hype Cycle

Hype cycle of biofuels?



AGROTECHNOLOGY & FOOD SCIENCES GROUP
WAGENINGEN UR

Join us.

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Online at Bioalgene.com

Investment offer

Create $100M revenues in 5-6 years

Current DOE, DOD, USDA grant opportunities

Convertible notes – 17.5% ownership for $5 million investment

+ Warrants @15% discount
+ First right to raise/join next $20-50M
+ Preferred rights to Boardman products
+ Additional IP, project investments

$28.57M valuation – feeds, offtakes, multiples: IP, team, co-development partners, sites

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Uses of funds, 2012-13

Sites and partners development (known)	$1,000,000
T&E to/with co-development partners: work plan, schedules, budgets	
Field Production Unit (FPU) engineering spec , materials selection	
Conferences, seminars, papers, licensing, permits	
FPU design, mfg., delivery, installs (3: Boardman, UW, EERC)	750,000
Includes harvest/extract systems	
Algae strain/product yield development, testing	750,000
Biopolymer, biofuels, feed/fertilizer	
Patent licenses and co-development	500,000
WSU, UW, U. Texas, U. Michigan, NMSU/CSU	
Development Center operations	250,000
Instrumentation package(s), LabView/ISB software	300,000
Further capital raising/contingency	500,000
Staff, G&A	1,000,000
Total	$ 5,050,000