Achieve Regulatory Compliance

Consume Air Emissions & Waterborne Pollutants

Recipient of 2010 MOST INNOVATIVE TECHNOLOGY Award

PORT TECH LOS ANGELES

www.advancedalgae.com

APAR Reactors

(automated photosynthetic algae reactors)

ADVANCEDALGAE®
REMEDIATION TECHNOLOGIES

APAR Technology

(automated photosynthetic algae reactor)

- APAR Technology is a modular growing platform that is energy efficient, gravity driven and provides algae with a prolific growth environment.
- Specific algae strains are grown to consume air emissions and waterborne pollutants. Small to medium size stationary source emitters can grow towards achieving regulatory compliance & generate a positive ROI.
- APAR's utilize available space and solar radiation more efficiently than pond based growing systems with a footprint ideally suited for industrial and municipal applications.

The Value

- APAR design significantly enhances absorption of pollutants and areal productivity of algal bio mass.
- APAR's small land footprint and zero evaporation render pond based growing systems as obsolete and wasteful.
- APAR's allow stationary source emitters to capture wasted resources and turn liabilities into profit centers.

The Market

Advanced Algae's APAR Technology is ideally suited for small to midsize stationary source greenhouse gas emitters that generate CO_2 and NOx emissions. The target markets listed below represent over 36% of the total GHG emissions in the U.S :

- Dairy Farms
- Food Industry
- Waste to Energy Facilities
- Waste Water / Sewage Treatment Plants
- Industrial Gas Plants
- Cement Kilns
- Power Generation

Value Proposition

- APAR's turn a current cost into a long term benefit by allowing the generator to create ongoing revenue streams and generate positive return on investment.
- APAR's allow the generator to produce valuable on-site energy and high protein cattle feed supplements, while growing towards compliance to mandated CARB standards.

The Immediate Market

- There are over 1800 Dairy Farms in the state of California. A significant amount of those Dairies are eager to generate on site power once a viable emission reduction technology is recognized.
- Feed stock and AG shipping facilities have the need to install APAR's to consume resident power plant emissions for regulatory compliance.
- Advanced Algae dairy products:
  - Bio Gas/Electricity generated from algae slurry bio digestate
  - High protein animal feedstock supplement (56% protein)
  - AG bio diesel

APAR Products:

Energy

Randall C Krinker, Senior Scientist, Advanced Algae, Inc.
Guascor Methane Engine, Modesto, CA_Fiscalini Farm

APAR Products:

High Protein Feed Supplements

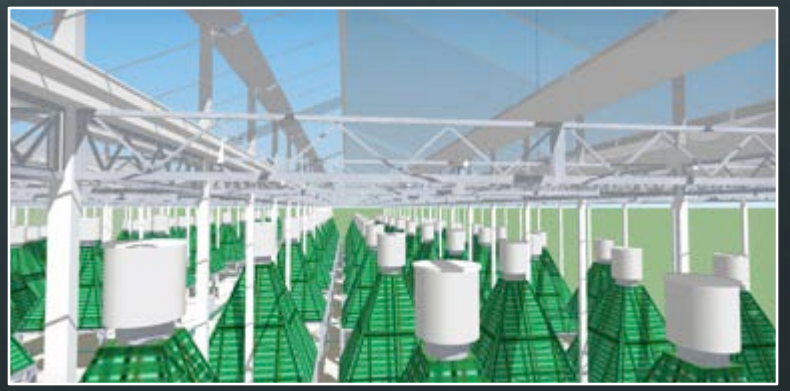
Fiscalini Emissions Project

Fiscalini Dairy in Modesto, CA

Phase 1.) Testing will consist of six APAR Cells (30 APAR reactors) testing two robust strains of algae for CO2 & NOx emission consumption and the creation of high oil and high protein AG algae products.

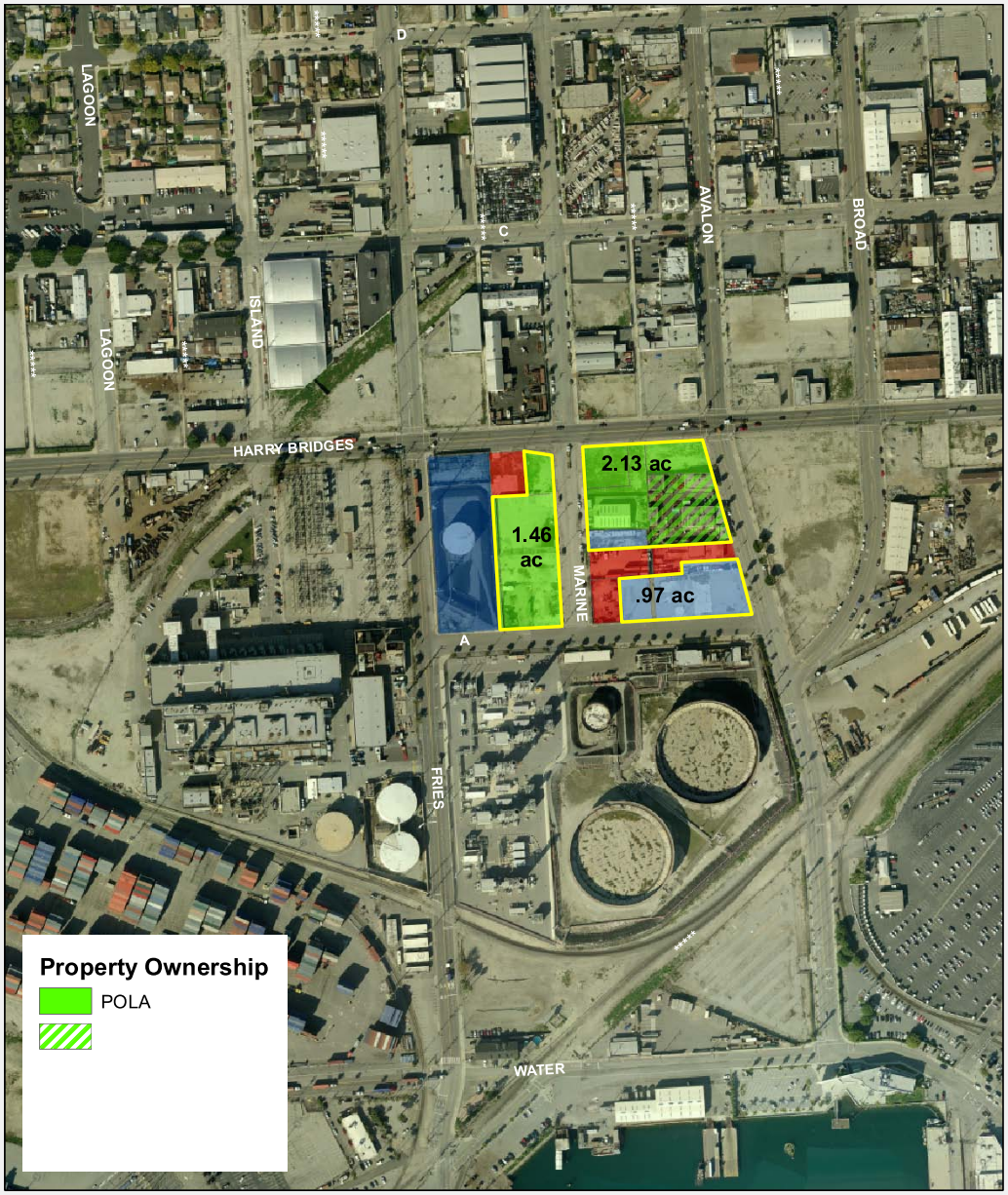
Phase 2.) Scaling up of an in-line pollutant concentrator (being engineered at AAI) for optimum APAR consumption efficiency.

Phase 3.) The APAR facility will then be expanded to consume 99% Fiscalini Farm power generation NOx emissions, while continuing to produce valuable energy and feed products, adding additional profit centers to the facility.



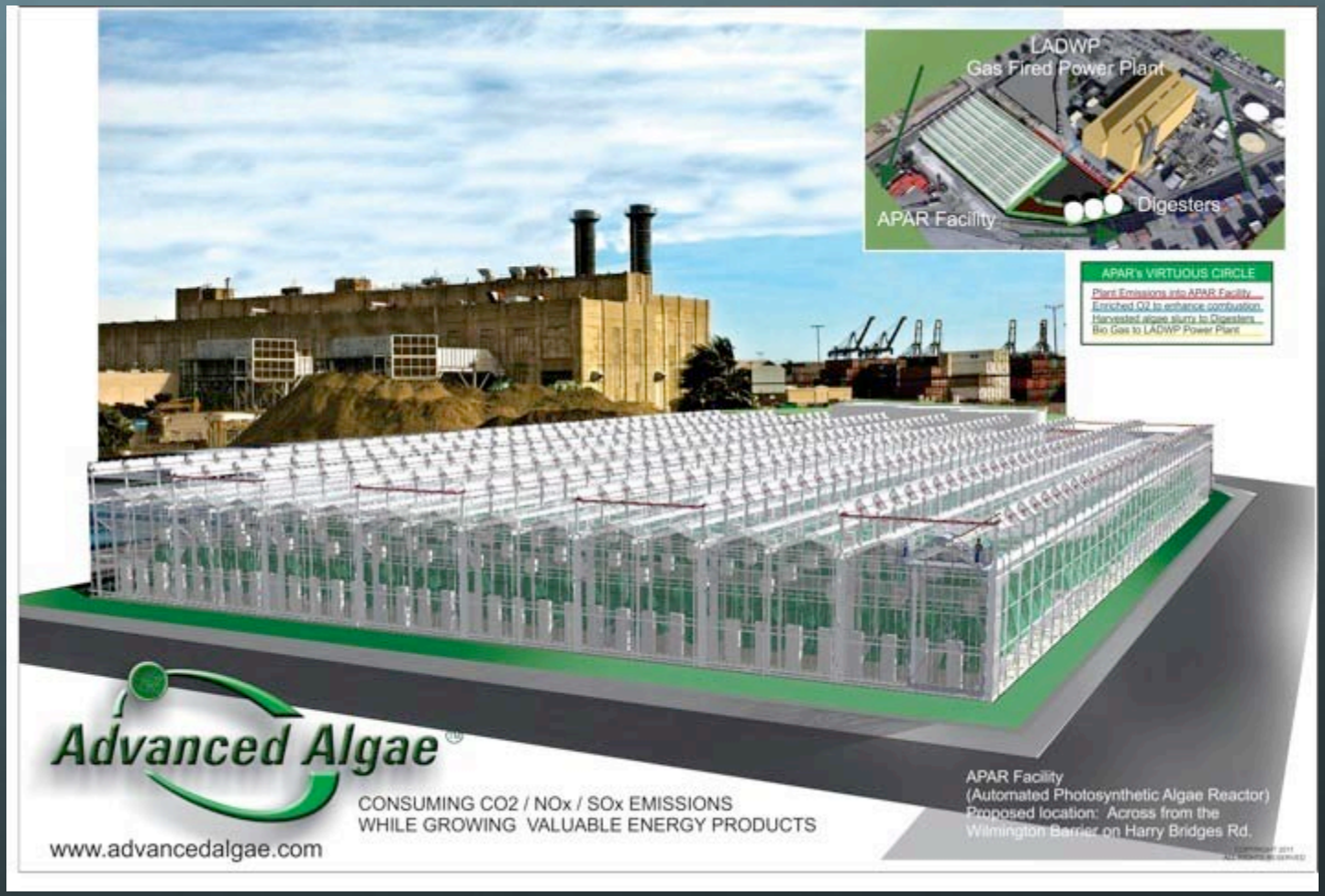

Emission Stream Consumption / Conversion
CO2 / NOx / NO2 to:
Enriched O2
100 APAR's / 20 APAR Cells
Oil Pressing / Refining
Methane stream: from Digesters (right) to Engine (left)
Nutrient laden lagoon water source
Waste Heat: from Methane Engine source (left) to Digesters (right)
Greenhouse Heating, diverted from waste heat stream to Digesters
Algae de-watering, diverted from waste heat stream to Digesters
APAR Algae Slurry
Emission Stream: CO2 / NOx / NO2
Enriched O2 for enhanced combustion
APAR PRODUCTS:
High Protein cattle feed
Fertilizer
AG Bio Fuel
Digester Bio Mass Slurry
Enriched O2 stream for enhanced combustion
Advanced Algae
APAR Facility
at:
Fiscalini Farm / Dairy / Cheese

- The Port of Los Angeles and Port Tech Los Angeles awarded Advanced Algae the "Most Innovative Technology" award at its inaugural Technology EXPO.
- The City of Los Angeles, the Port of Los Angeles, the Cities and Chambers of Wilmington and San Pedro support placement of a local APAR facility within the Port of L A.
- This Port of Los Angeles APAR facility can consume air emissions from the adjacent LADWP Power Plant and can consume industrial waste and process water from POLA businesses.



POLA Installation

Rendering



Centralized APAR Facility