



## **Working Group Discussion**

August 10, 2017



# Introduction

Barriers, issues and key learning

*The environment has improved substantially*

- Grant programs
- Electricity - BioMAT
- Fuels - LCFS, RINs, SB 1383, AB 2313 programs
- Increased certainty carbon markets
- Education of the stakeholders
- Partnership between agencies/regulators and industry

*In the near term, incentive programs are vitally important.  
Over time, they may become less important*



# Electricity Projects

*Many of the problems have been eliminated*

- Permitting - straight forward (Air, Water, County)
- BioMAT will be used significantly
- Interconnection: uncertainty and range of costs
  - Uncertainty - "Cost Envelope" addresses
  - Range of costs - where a project falls in the queue
- Issue NOx
- Locked in electricity production - migration to fuel
  - Offer an ability to switch and adjust the PPA



# Fuel Projects

*Earlier stage but making significant progress. Significant area of CalBio focus*

- Permitting

- RWQCB same. Air District - advancing goals. Counties - very supportive (gas gathering lines)

- Financing - Two issues: program certainty and price volatility/floor

- Program certainty - steps taken AB 398

- Floor price mechanism - very important initially. Markets step in over time. May become more important out years.



## Fuel Projects (page 2)

- **Gaining experience is key**
  - Gas upgrading facility
  - Pipeline injection - close partnership with utilities on pipeline injection
  - Experience in many states but not yet in California
- **Clear, simple programs for fleet conversion**
  - Dairy will be able to sell its LCFS credits
  - Critical program for reducing fleet NOX
    - Financial analysis, incentives, experience gained



# Technology and Farm Practices

## *Integration of digesters and farm practices*

- View of the digester landscape
  - Began 10 years ago - many technology options
  - Covered lagoons a fit for California
- Covered lagoon benefits
  - Integrate with flush practices, strong preference
  - Lower operating cost for digesters
  - Lower operating costs for the dairy, better distribution of nutrients
  - Research water and drip irrigation
- Research nutrient removal and co-digestion (but secondary importance)



# CalBio Contact Information

Neil Black (President)

[nblack@calbioenergy.com](mailto:nblack@calbioenergy.com)

559-334-4213



[www.calbioenergy.com](http://www.calbioenergy.com)