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 - straightforward (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.
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
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
559-334-4213

www.calbioenergy.com