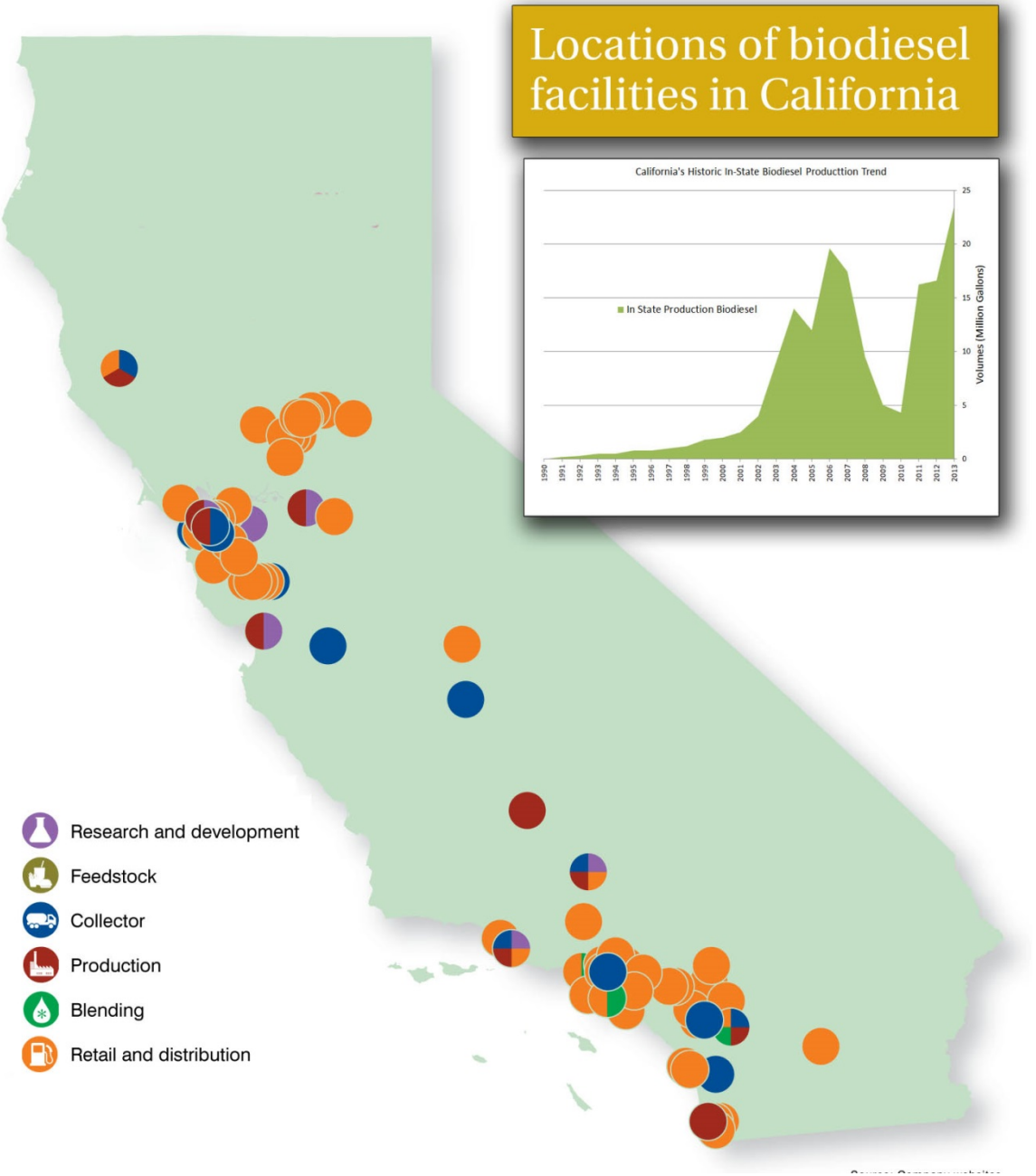
CALIFORNIA BIODIESEL ALLIANCE

IEPR Workshop
July 31, 2013
Joint Presentation by

Russell Teall, CBA President
Biodico Sustainable Biorefineries
Santa Barbara, CA
rteall@biodico.com

Joe Gershen, CBA Vice Chairman
Crimson Renewable Energy
Bakersfield, CA
jgershen@crimsonrenewable.com

1.Biodiesel Census (Teall)
2.Biodiesel Survey (Teall)
3.Biodiesel Metrics (Gershen)



Environmental Defense Fund Biodiesel Facilities Map

1. Biodiesel Census*

- In 2012 - 8 In-State Biodiesel Facilities Produced 16mgy, Capacity of <40mgy, 40% Utilization
- In 2013 – 9-10 In-State Biodiesel Facilities Produced 26mgy, Capacity of <60mgy, 43% Utilization
- Compared to 3.3bgy of CARB ULSD (CI 98.03) Biodiesel Production in 2012-2013 Equaled 0.5-0.8%
- LCFS Requires 10% CI Reduction by Obligated Parties by 2020
- LCFS Needs <540 mgy of biodiesel with <20 CI in 2020 to achieve 10% reduction of ULSD GHG, Equals 12.6% Blend, B5 = <215mgy, B20 = <855mgy
- Current US Biodiesel Production Capacity is over 2bgy
- Feedstocks
  - UCO (CI 11.76-15.84) 100-150 mgy in-state , out-of-state 1bgy
  - Animal Fat (CI 19.65-39.33) in state XXX, out-of-state 800mgy
  - Corn Oil (CI 4) in-state 5 mgy, out-of-state 500 mgy
  - New feedstocks could produce everything required in-state
- Tremendous Opportunity to Develop In-State Production with In-State Feedstocks
- World Class Biodiesel Feedstock Programs at the CA Biomass Collaborative at UC Davis, CalState Fresno & USDA ARS, Algae Programs at CalPoly SLO and UC San Diego

* Informal survey conducted by Teall & Gershen

2. CBA Biodiesel Survey

- How much biodiesel will be produced in CA from 2013 to 2020?
- Depends upon “factors” in existence at the time.
- We asked CBA members to list the factors they considered “influential” for predicting low, middle and high scenarios for production of biodiesel in CA.
- Compiled all of the factors and had CBA members review for accuracy.
- Sent survey to CBA member/producers and had them:
  - Rank factors in low, middle and high scenarios as being very influential (10), or not influential (1).
  - Project estimated in-state biodiesel production volumes based on the factors they ranked.
- The results were tabulated both for the factors and production estimates and divided into 25% cohorts for each scenario.
- An average for all scenarios was derived and ranked for each factor subject. (independently derived)

California Biodiesel Alliance Survey Results 07/15/2013

Projection Factors for Biodiesel Production in CA

This is a compilation of factors submitted by CBA members for describing the conditions for low, medium and high projections for total biodiesel production in CA, not just for their individual plants. They were asked to rate each factor from 1 (not significant) to 10 (very significant) as the degree of influence each factor has on that particular Scenario. For instance, if a factor has no influence on the Low Scenario for biodiesel production it would be rated 1. If a factor has a very significant influence on the Low Scenario it would be rated 10. All of the factors can be rated the same, or they can all be rated differently. The Color Key is used to indicate 25% cohorts within each Scenario. Russell Teall, CBA President, 805-689-9008.

Key	Low Scenario		Medium Scenario		High Scenario	
	Rating	Factor	Rating	Factor	Rating	Factor
75% - 100%	7.33	No LCFS.	7.00	RFS volume increases to 1.5 billion gallons.	9.00	Abundant plentiful feedstocks with low carbon ratings become a reality in the CA market, or algae becomes realistic.
	7.33	Feedstock prices and availability become outrageous.	6.50	Feedstock prices rise as historically indicated.	8.33	RFS volume increases to 2.5 billion gallons.
	7.00	Feedstock prices are high and the price of biodiesel is low, with small, inconsistent profit margins.	6.50	State taxes reduced for biodiesel blends.	8.17	LCFS in place as currently written, or modified and strengthened.
	7.00	RINs are low and inconsistent.	6.00	RINs are moderate and somewhat consistent.	8.00	Unforeseen events drive the price of diesel fuel through the roof.
	6.83	$1 Federal Tax Credit disappears.	5.83	LCFS modified and weakened somewhat.	7.67	Feedstocks are plentiful and reasonably priced, biodiesel prices are strong, with good, consistent profit margins.
	6.50	RFS volume remains at 1.28 billion gallons.	5.67	$1 Federal Tax Credit is on-again / off-again.	7.67	State taxes eliminated for biodiesel blends.
50% - 75%	6.50	Diesel fuel values drop precipitously.	5.50	Feedstock and biodiesel prices are moderate, with moderate profit margins.	7.50	$1 Federal Tax Credit is in place every year.
	6.50	Expensive and burdensome NOx Mitigation is required.	5.50	Moderate market signal sent by government policies.	7.50	RINs are consistent & strong.
	6.17	Feedstock supplies remain constant.	5.33	Some funding is available through grants for low ILUC feedstock expansion of up to $20,000,000 per year.	6.83	All diesel vehicles in CA must use B(X).
	6.17	Weak and inconsistent market signal sent by government policies.	5.33	Diesel values move as anticipated.	6.83	Low interest loans, loan guarantees and grants are available for for new and expanded plants for up to $100,000,000 per year.
	5.83	Funding for new & expanded plants is limited.	5.17	Some funding is available through grants new & expanded plants of up to $20,000,000 per year.	6.67	Strong and consistent market signal sent by government policies.
25% - 50%	5.67	A significant amount of biodiesel comes into CA market with lower prices and carbon intensity than CA bodiesel.	5.00	All state and local government diesel vehicles must use B(X).	6.50	Low interest loans, loan guarantees and grants are available for low ILUC feedstock for up to $100,000,000 per year.
	5.50	A significant amount of renewable diesel comes into the CA market with lower prices and carbon intensity.	4.67	Reasonable and inexpensive NOx mitigation is required.	6.50	Crude oil rises above $100 per barrel.
	5.50	Palm oil receives a fuel pathway in both RFS and LCFS.	4.50	Some renewable diesel comes into the CA market at the same price and carbon intensity as biodiesel.	5.33	Palm is shunned again after this year when the dollar credit disappears again.
	5.00	Crude oil drops below $70 per barrel.	4.50	Some biodiesel comes into the CA market at the same price and carbon intensity as CA biodiesel.	5.00	NOx is de minimis and no mitigation is required.
	4.67	The economy is stagnant.	4.17	Crude oil remains between $70 and $100 per barrel..	4.67	Some biodiesel comes into the CA market at the same price but with a higher carbon intensity than CA biodiesel.
	4.33	Natural gas continues to be available at historically low prices and heavy duty diesel truck switch to NG.	4.17	Palm continues to be imported due to the dollar credit but disappears into low value applications such as bunker fuel.	4.50	The economy expands at a consistent and moderate rate.
0% - 25%	3.50	No biodiesel blend requirement.	4.00	The economy sustains low growth.	4.17	Biodiesel trade organizations grow strong and become cohesive and influential.
	3.33	Distribution infrastructure remains the same.	3.17	Biodiesel trade organizations grow and become moderately more effective.	3.83	Some renewable diesel comes into the CA market at the same price but with a higher carbon intensity than biodiesel.
	3.33	No state biodiesel tax incentives.	2.83	Natural gas prices increase to slightly below biodiesel and the change over of heavy duty truck to NG is moderate.	3.17	Low interest loans, loan guarantees and grants are available for distribution infrastructure for up to $100,000,000 per year.
	3.17	Biodiesel trade organizations remain constant or decrease slightly.	2.17	Some funding is available through grants for distribution infrastructure of up to $20,000,000 per year.	2.67	Natural gas is the same price as biodiesel, but has a higher CI and is not widely adopted by heavy duty trucks.

Scenario Averages

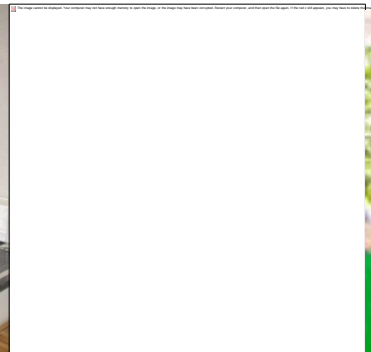
7.61	Feedstocks
7.28	RFS Volume
7.11	LCFS
6.83	RINs
6.72	Profitability
6.67	$1 Federal Tax "Credit"
6.61	Diesel Prices
6.11	Govt Market Signals
6.00	Feedstock Funding
5.94	Plant Funding
5.83	State Tax on Biodiesel Blends
5.39	NOx Mitigation

5.22	Crude Oil Price
5.11	Biodiesel Blend Mandate
5.00	Palm Oil
4.94	Biodiesel Imports
4.61	Renewable Diesel Imports
4.39	State of the Economy
3.50	Trade Organizations
3.28	Natural Gas Price
2.89	Infrastructure Funding

Projected Volume of Biodiesel Production in CA in Million of Gallons								
Instruction given to survey participants: Based upon your rating of the factors on the previous page for low, medium and high scenarios, how many millions of gallons of total CA biodiesel production (all production, not just your company) do you project for each year?								
Scenario	Year							
	2013	2014	2015	2016	2017	2018	2019	2020
Low	18.8	21.8	25.7	29.2	32.5	35.7	39.0	43.1
Medium	26.9	47.0	71.0	95.9	117.4	136.0	158.7	188.6
High	34.6	65.8	105.8	150.0	195.8	245.8	299.2	362.5

A. These are averages not ceilings.
B. Factors for greatest growth potential should be used to help make informed policy.
C. For CEC specifically:
    1. Market signals matter.
    2. Funding is needed for feedstocks and production facilities.
    3. CEC funds can be leveraged through loan enhancements and tax free bonds with little or no exposure to the CEC.





3. Biodiesel Metrics

A. The Law
B. 2011 IEPR & Benefits Report
C. Benefits
D. Cost Effectiveness
E. AB 118 Budget
F. Impact on Biodiesel Growth

HSC 44272 (c) The commission shall provide preferences to those projects that maximize the goals of the Alternative and Renewable Fuel and Vehicle Technology Program, based on the following criteria, as applicable: (a list of 11 criteria follows)

Based on the 2011 IEPR & Benefits Report, biodiesel use in California provides 34.7% of the benefits – more than all other modalities – and yet only received 4.8% of the funding. In comparison, a Cost Benefit Analysis of the numbers from that same section of the 2011 IEPR shows that other programs were 9 to 20 times more expensive in achieving the same goals

Table 2: IEPR Cost Benefit Analysis

Budget Expenditures ending 9/2011 =		$198.40	(all $ in millions)		
Fuel Type	% of Results[1]	% of funds[1]	Budget	$/% of Results	Ratio
Biodiesel	34.7%	4.8%	$9.52	$0.27	1.0
Electric Vehicles	28.0%	36.6%	$72.61	$2.59	9.4
Biogas	16.8%	20.7%	$41.07	$2.44	8.9
NG Vehicles	12.8%	18.4%	$36.51	$2.85	10.4
Fuel Cell Vehicles	4.8%	13.3%	$26.39	$5.50	20.0
Ethanol	3.0%	6.1%	$12.10	$4.03	14.7
	100%	100%	$198.40	$1.98	7.2

1. Data from Table 1

The ARFVT Program has been underfunding biodiesel for several funding cycles.

In-state biodiesel growth has been inhibited as a result.

An updated White Paper describing this problem will be submitted to the docket.