ALSTON&BIRD LLP

1115 11th Street
Sacramento, CA 95814

916-498-3305
www.alston.com

Maureen Gorsen

April 21, 2009

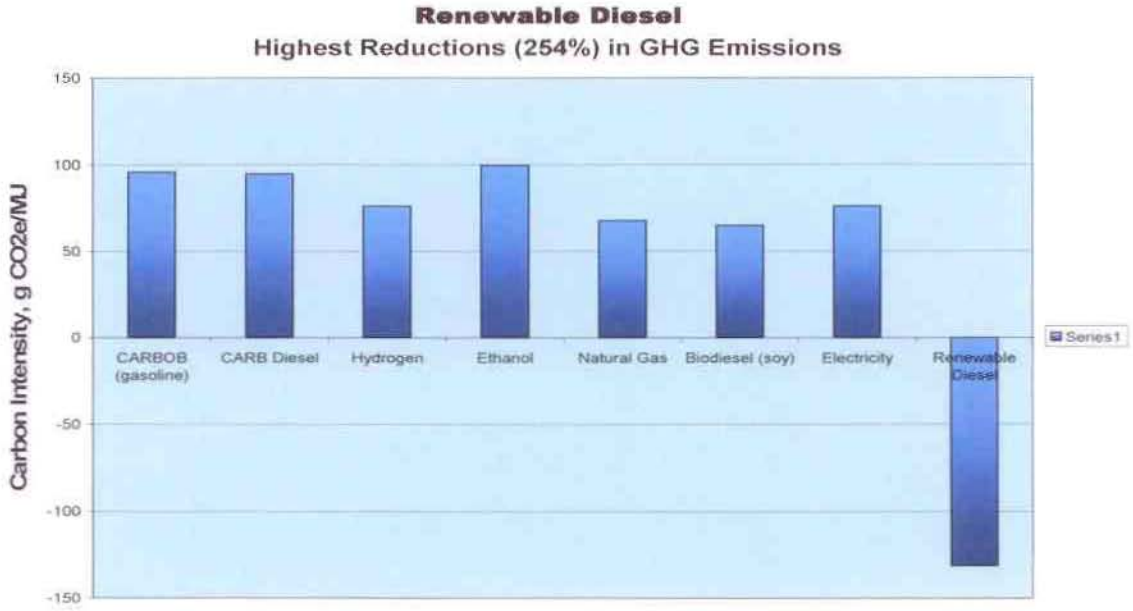
California Energy Commission
Dockets Office, MS-4
Re. Docket No. 08-ALT-1
Sacramento, CA 95814-5512

Re: Request for Increase in Allocation for Renewable Diesel in the Energy Commission's *Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program*

Dear Commissioners,

I am writing on behalf Rentech, Inc ("Rentech"), which is building a first-of-its-kind, commercial-scale renewable diesel plan in Rialto, California. Rentech requests that the allocation for renewable diesel be increased in the *Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program.*

Renewable diesel can result in carbon emission reductions as great as 254%. This reduction is greater than any other alternative or renewable fuel being funding by *Investment Plan*. Yet, it is receiving the smallest amount of funding.



Hydrogen is receiving $40 million allocation, yet it can achieve carbon emissions reductions of only 50-60%. Electric cars, ethanol, natural gas are all receiving very large allocations in this Investment Plan, yet they do not come even close to the carbon emissions reductions achievable by renewable diesel. (See chart above, and reproduced in large format in Exhibit A attached.)

Why does renewable diesel have such dramatically superior carbon emissions reductions? There are two main reasons. The first is that urban biomass is used to produce the energy, in both electricity to run the plant and in synthetic diesel fuel.

By allocating more funds to renewable diesel, the Energy Commission would make more meaningful gains in terms of carbon emission reductions. In fact, renewable diesel may be California's only means to achieving the California Air Resources Board Low Carbon Fuel Standard for 2020.

Unfortunately, only $2 of the $176 million dollars allocated under the Investment Plan is allocated to production plants utilizing waste feed stocks.

Rentech is proposing development of a $300 million project in Riverside County that will intercept green waste collected from residences and other sources that normally would be landfilled and convert them to power and fuels using established technology and processes (the "Project"). The Project will produce fuels and power with no input of energy from fossil sources. (See further Project details in Exhibit B attached.)

Using the Project as an example, renewable diesel fuel will result in a net reduction in carbon dioxide emissions of 254%. In other words, the Project alone has the equivalent benefit of 92,000 electric vehicles. Currently there are only 14,000 electric vehicles on the road in California. This disproportionate benefit is worthy of greater investment.

Furthermore, the Project could be duplicated easily. There is sufficient greenwaste in the Los Angeles basin to support five similar plants, and ultimately plants could be configured to process other waste streams including sewage sludge, segregated waste, and dead or downed trees.

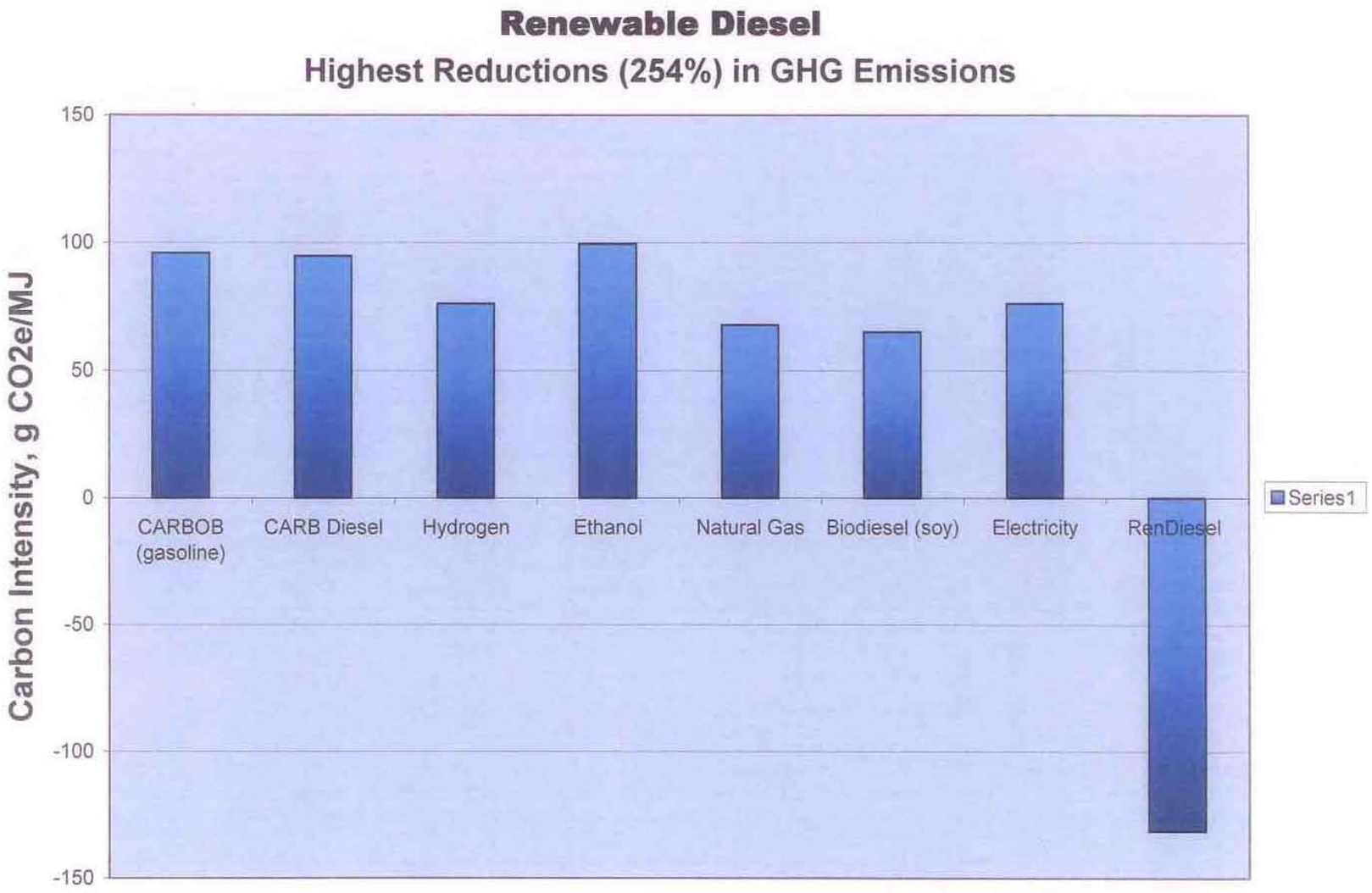
If California is to realize its GHG emission reduction goals, renewable diesel must be a more significant component in the Investment Plan. Accordingly, we urge the Commission to reconsider the allocation for renewable diesel that is currently contained in the Investment Plan, so that the Project and other renewable diesel projects are given further incentive to move forward. If you have any questions, please do not hesitate to contact me. Thank you for your consideration.

Sincerely,

Maureen Gorsen

MB:mb

Cc: Vicki Bradshaw
John Moffatt
Mike Chrisman
Commissioner Boyd
Commissioner Douglas
Linda Adams
Mary Nichols
Margo Brown
Rosalie Mule
Mark Leary
Anthony Brunello
Mike Smith
Aleecia Macias
Panama Bartholomy


Renewable Diesel
Highest Reductions (254%) in GHG Emissions
Carbon Intensity, g CO2e/MJ
150
100
50
0
-50
-100
-150
CARBOB (gasoline)
CARB Diesel
Hydrogen
Ethanol
Natural Gas
Biodiesel (soy)
Electricity
RenDiesel
Series1

"Survey of Project Concepts for the Alternative and Renewable Fuel and Vehicle Technology Program"

I. Project Summary Description

Rentech, a Fisher-Tropsch technology developer based in Los Angeles, CA, has examined the feasibility of a $300 million project in Riverside County that will use biomass from the urban community for the production of synthetic diesel and renewable power. The feasibility study, which is a pretext for project development activities, considered the technical, economic, environmental and permitting context of the facility and generally concluded that the project has significant merit; especially in light of California's drive to (1) institute a low-carbon fuel standard and (2) increase the overall production of renewable power in the state's grid. Specifically, the synthetic diesel provided by this facility include significant reductions in NOx, PM-10 and PM-2.5 emissions beyond those available with ultra low sulfur diesel ("ULSD") and biodiesel, and provides a commercially available, zero carbon transportation fuel.

As currently configured, this project would divert 1000 dry tons per day of urban woody green waste from California landfills and produce 600 barrels per day of FT liquids with co-production of 35 MW of renewable power. The plant will produce all of the thermal and electrical energy necessary for sustained operation from the biomass feedstock and is expected to conform to requirements of the California Renewable Power Portfolio.

This approach enables the commercialization of Rentech's synthetic fuels technology by leveraging premium power rates allowed by the existing renewable power program. Using a waste stream as a feedstock rather than commodities such as petroleum or corn, and the diversity provided by unrelated revenue streams of electricity and fuel, significantly improves the likelihood that project returns can withstand fluctuations in fuel prices.

The project will utilize gasification technology supplied by Silvagas Corporation of Atlanta, Georgia. This technology, developed by Battelle in Columbus, Ohio and licensed by Silvagas, represents a form of gasification that is completely compliant with California statutes regarding renewable power generation and waste diversion from landfills. The assembly consists of two vessels connected only by an inert flowing heat transfer medium; one vessel is referred to as the 'reduction reactor" while the other vessel is referred to as the "oxidation reactor". A unique feature of the gasifier is that *no air or oxygen is used to gasify the biomass*. The gasification reaction takes place in the reduction reactor and is promoted entirely by hot sand. In contact with hot sand at 1900ºF, biomass quickly devolatilizes and is gasified producing synthesis gas ("syngas") and char. Approximately 70% of the carbon content of the feed becomes syngas while the balance is transformed to char. A mechanical separation of the sand/char mixture from the 1500ºF syngas takes place and the recovered

sand/char is sent to the oxidation reactor where air is introduced to provide the energy to reheat the sand to 1900ºF, ready for re-introduction to the reduction reactor.

Syngas from the gasifier is then conditioned and compressed in a series of steps before introduction to the Fisher-Tropsch ("FT") reactor where fuels synthesis takes place. Fuels synthesis occurs in Rentech's proprietary slurry, bubble-column reactor at approximately 450 psig and 500ºF using an iron-based catalyst. Unconverted gases ("tailgas") flow from the reactor to the power block where they fuel a gas turbine in combined cycle mode. Raw liquid fuel is sent to the upgrade section, provided under license by UOP (a Honeywell company), where refining of the liquid fuel results in the production of a second gas stream ("fuelgas") which is then combined with tailgas from the FT reactor and sent to the gas turbine for combustion and power generation.

The liquid fuel stream is separated into its two components; paraffinic diesel and paraffinic naptha. Paraffinic diesel will be sold into the marketplace as a low carbon renewable diesel whose use can result in an approximate 20% reduction in NOx emissions and more than 60% reduction in particulates.

This facility represents a first-of-a-kind commercial integration of technologies that are well understood and demonstrated at commercial scale. This integration of biomass gasification and synthetic fuels production supports state and national goals for greenhouse gas reduction and the production of cleaner burning, renewable fuels.

II. Funding Request

A preliminary project development schedule and capital budget of approximately $318 million has been developed to support an on-line date of 4th Qtr 2012 for the project. Working backwards from this event and accounting for a 27-month construction and start-up schedule, Rentech has determined that its FEED ("Front-End Engineering and Design") activity should be started by the 4th Qtr of 2010. Development activities, generally identified below, will occur throughout 2009 and 2010.

The table below illustrates anticipated development activities and their budgeted costs.

	Description	Cost
1.	Scoping and Feasibility Engineering	$2.00 million
2.	Technology Development and Licensing	$1.40 million
3.	Permitting Activities and Fees	$0.85 million
4.	Legal Fees	$0.50 million
5.	Governmental and Community Affairs	$0.25 million
	Total	*$5.00 million*

Because of the capital-intensive nature of the project, significant amount of early stage development work, and large expected benefits to the State of California, Rentech requests that

the CEC consider revising its targeted investment for project development from $400k per project to $5 million per project to fund early high-risk development activities for this and similar projects.

III. Expected Results

The facility will produce near-zero carbon footprint diesel fuel for light, medium, and heavy-duty engines that will be a 'drop-in' replacement for its petroleum-derived analog. Two points support this position:

(1) The selected feedstock stream is a waste stream composed of renewable biomass derived from the urban community. As a waste stream, there are no fossil carbon emissions associated with its gathering and transportation.

By locating the project within the urban community, Rentech's feedstock procurement strategy has to date been to present a more cost-effective disposal alternative to area haulers for management of their waste streams. Because this waste is currently transported to locations with longer haul legs, it is anticipated that additional potential reductions in LCA emissions may be identified.

(2) The proposed project will supply its own thermal and power requirements. Only limited carbon emissions, derived from the use of fossil fuel for start-up and a annual rate that is less than the de minimus amount allowed for by the RPS program, will be released. This rate is 2% or less of the facility's energy demand. Thus, the fuel output is essentially carbon free.

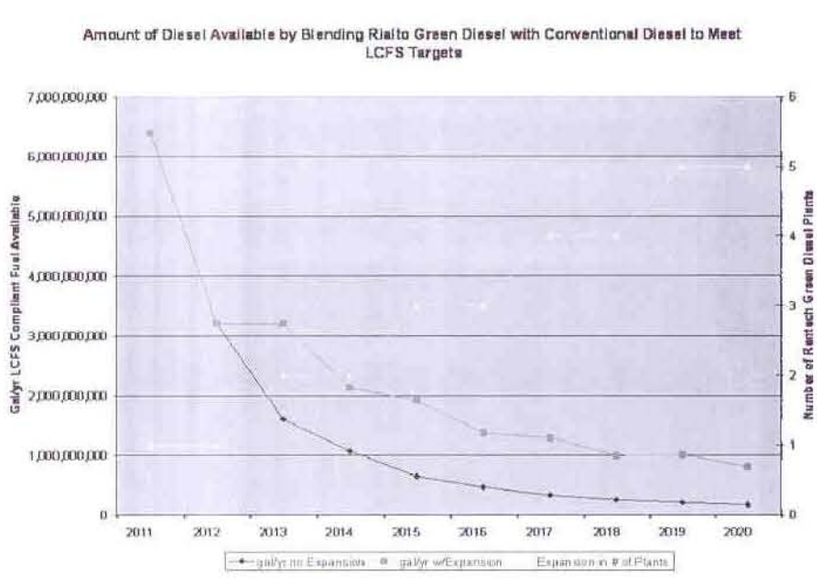
Underlying assumptions include the observation that the plant's paraffinic naptha product will be used on-site to generate incremental power for export, avoiding transportation and disposal issues. Thus, the only liquid output from the plant is diesel fuel.

(3) Summary of Benefits

- Low-carbon Diesel Fuel:
    - **254% lower carbon intensity** than ULSD, accounting for co-products of power and naptha
    - Commercial production of a zero-carbon footprint "drop-in" analogue for petro-derived diesel fuel
    - Documented reductions in NOx and PM-10 beyond ULSD
    - Lower PM-10 and PM-2.5 emissions than biodiesel
    - Improved mileage over the use of ULSD due to higher specific power density
    - Pricing disconnected from variations in commodity markets due to the use of a waste stream as feedstock rather than petroleum, corn, etc.
- Compelling Facility LCA Estimates:

- Carbon Emissions from BTL diesel fuel are essentially zero
- No fossil carbon in feed and no external energy needed to process feed
  - Proposed Net power production is 35 MW:
    - Displacement of highest carbon content electricity allowed in LCA analysis
    - EPA/DOE estimates of coal fired power plant emissions are 2249 lbs CO2/MW-h electricity production
    - **Emissions reduction of 344,772 tons/year of CO2.**
  - Using Naphtha as supplemental fuel for production:
    - Naphtha production is ~200 bbl/day
    - Equivalent to 8,400 gal/day or 350 gal/hr
    - Paraffinic naphtha contains 114,500 btu/gal
    - Reference power plant heatrate is 7,000 Btu/kWh
    - Power production from naphtha is then 16.36 kW-hr/gal
    - Total power from naphtha production rate is 5.72 MW-hr
    - **Yearly displacement of CO2 from Coal-Fired Power Plant is 56,109 tons.**

- LSCF for synthetic, bioderived diesel has significant multiplier effect across CA fuel pool:



IV. References

- Rentech Corporate Web Site: www.rentechinc.com
- Silvagas Corporate Web Site: www.silvagas.com
- "The Efficiency of Coal-Fired Power Stations", Hans-Dieter Schilling, www.sealnet.org, 2005.
- "Electricity from Coal", EPA Clean Energy, www.epa.gov/solar/energy-and-you/affect/coal.html
- "Air Emissions", EPA Clean Energy, www.epa.gov/solar/energy-and-your/air-emissions.html
- "Carbon Dioxide Emissions from the Generation of Electric Power in the United States", Wiley Barbour, et. al., DOE/EPA, July 2000, www.eia.dov.gov/cneaf/electricity/page/co2_report/co2emissions.pdf
- Krahl, J., Munack, A., Schröder, O., Herbst, L., Kaufmann, A., Bünger, J.: Fuel design as constructional element at the example of biogenic and fossil fuels. Agricultural Engineering International: The CIGR Journal of Scientific Reserarch and Development. Manuscript EE 04 008 Vol. VII, 2005; http://cigr-ejournal.tamu.edu

Additional Life Cycle Assessment References

(1) Karonis, D.; Lois, E.; Stournas, S.; Zannikos, F. *Energy Fuels* **1998**, *12*, 230-238.

(2) Steynberg, A.; Dry, M. *Fischer-Tropsch Technology*; Elsevier, 2004; Vol. 152.

(3) Johnson, J. W.; Berlowitz, P. J.; Ryan, D. F.; Wittenbrink, R. J.; Genetti, W. B.; Ansell, L. L.; Kwon, Y.; Rickeard, D. J. *SAE. 2001-01-3518* **2001**.

(4) Wayne, W. S.; Clark, N. N.; Nine, R. D.; Elefante, D. *Energy & Fuels* **2004**, *18*, 257-270.

(5) Corporan, E.; DeWitt, M. J.; Belovich, V.; Pawlik, R.; Lynch, A. C.; Gord, J. R.; Meyer, T. R. *Energy & Fuels* **2007**, *21*, 2615-2626.

(6) DeWitt, M. J.; Corporan, E.; Graham, J.; Minus, D. *Energy & Fuels* **2008**, *22*, 2411-2418.

(7) Androulakis, I. P.; Weisel, M. D.; Hsu, C. S.; Qian, K.; Green, L. A.; Farrell, J. T.; Nakakita, K. *Energy & Fuels* **2005**, *19*, 111-119.

(8) Damm, C. J.; Cheng, A. S.; Lucas, D.; Sawyer, R. F.; Dibble, R. W.; Koshland, C. P. *The Combustion Institute*.

(9) Norton, P.; Vertin, K.; Bailey, B.; Clark, N.; Lyons, D. W.; Goguen, S.; Eberhardt, J. J. *SAE 982526* **1998**, *982526*.

(10) Stodolsdy, F.; Gaines, L.; Cuenca, R.; Eberhardt, J. J. *SAE 982206* **1998**, 16.

(11) Cheng, A. S.; Dibble, R. W. *SAE* **1999**, *SAE 1999-01-3606*.

(12) Clark, N.; Gautam, M.; Lyons, D.; Atkinson, C.; Xie, W.; Norton, P.; Vertin, K.; Goguen, S.; Eberhardt, J. J. *SAE 1999-01-2251* **1999**, Pages 1-10.

(13) Atkinson, C. M.; Thompson, G. J.; Traver, M. L.; Clark, N. N. *SAE 1999-01-1472* **1999**.

(14) Clark, N. N.; Atkinson, C. M.; Thompson, G. J.; Nine, R. D. *SAE* **1999**, *Alternative Fuels for CI Engines - SAE #1999-01-1117*.

(15) Alleman, T.; McCormick, R. L. *SAE 2003-01-0763* **2003**.

(16) Bevilacqua, O., M. California Truck Testing Services/Bevilacqua Knight, Inc., 2003, p Slides 1-17.

(17) Boehman, A.; Alam, M.; Song, J.; Acharya, R.; Szybist, J.; Zello, V.; Miller, K. **2003**, Size: 9 pages; Format: Adobe PDF Document with Extractable Text.

(18) Brent, F. D.; Shah, L.; Berry, E.; Schrader, C. H.; Anderson, J.; Erwin, J.; Banks, M. G.; Ullman, T. L.; Spreen, K. B.; Mason, R. L. *EARLY ENTRANCE COPRODUCTION PLANT PHASE II Topical Report Task 2.6: FISCHER-TROPSCH DIESEL FUEL/ENGINE PERFORMANCE AND EMISSIONS*, Texaco Energy Systems Inc., 2004.

(19) Schubert, P. F.; Russell, B. J.; Freerks, R. L.; DeVore, J. A.; Fanick, E. R. *SAE 2002-01-2725* **2002**.

V. Contact:

Mike Fatigati, Director Biomass Business Development
Office: 310.571.9838
Email: *Mfatigati@rentk.com*