



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

January 13, 2012

Via E-mail

Richard Rutkowski
Chief Executive Officer
ClearSign Combustion Corporation
12870 Interurban Avenue South
Seattle, Washington 98168

**Re: ClearSign Combustion Corporation
Amendment No. 1 to Registration Statement on Form S-1
Filed December 28, 2011
File No. 333-177946**

Dear Mr. Rutkowski:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Cover Page

1. We note your revised disclosure in response to prior comment 2 that "although a specific price cannot be determined at this time," you have "estimated an initial price" of \$4.00 per share. From the disclosure, it remains unclear whether the offering price has been fixed. Please revise to clarify, if true, that the offering price has been fixed at \$4.00.

The Industry, page 1

2. We note your response to prior comment 9; however, it is unclear from the materials provided in response to the comment how you estimated the value of the capital assets in the United States relating to combustion of hydrocarbon and other fuels.

The Offering, page 6

3. We note your response to prior comment 15. Here and in the “Use of Proceeds” section beginning on page 65, please revise to quantify the approximate amount of proceeds intended to be used for each purpose.

System Results, page 22

4. We note your response to prior comment 16 and your revised disclosure on pages 22 - 25. Please revise to disclose how many experiments were conducted and how often the observed results occurred. Also, please demonstrate to us that your testing produced statistically significant results.

Research and Development Plan, page 25

5. We note your response to prior comment 18; however, you have not disclosed the costs associated with completing each bullet point. Please revise accordingly.

Competitive Advantage, page 38

6. We note your response to prior comment 21; however, we continue to note a number of statements in this section that definitively describe your product as producing a certain result compared to existing technology. It is unclear why you believe it is appropriate to retain such statements based on your current stage of development. As such, we reissue prior comment 21.

Underwriting Discounts and Expenses, page 62

7. Please expand your disclosure to describe in more detail the agreement to pay the underwriters a non-accountable expense allowance equal to \$160,000, including what expenses are covered in this agreement. Also, please tell us where you have filed this agreement as an exhibit.

Financial Statements, page F-1

Note 8 - Subsequent Events, page F-21

8. We note your disclosure that “all share and per price information has been retroactively adjusted to reflect the stock split” that was effective December 22, 2011. Please tell us how the financial statements in this filing have been retroactively adjusted for the stock split. Refer to the guidance in SAB Topic 4.C and FASB ASC 260-10-55-12.

Exhibit 5.1

9. Please tell us why the opinion as to the selling stockholder shares is qualified to the declaration of effectiveness of the registration statement.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Richard Rutkowski
ClearSign Combustion Corporation
January 13, 2012
Page 4

You may contact Praveen Kartholy at 202-551-3778 or Brian Cascio, Accounting Branch Chief, at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Jay Mumford at 202-551-3637 or Mary Beth Breslin, Senior Attorney, at 202-551-3625 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

cc (via e-mail): Kevin Friedmann, Esq.