

September 18, 2007

Mail Stop 6010

Neal R. Verfueth
President and Chief Executive Officer
Orion Energy Systems, Inc.
1204 Pilgrim Road
Plymouth, WI 53073

**Re: Orion Energy Systems, Inc.
Registration Statement on Form S-1
Filed August 20, 2007
File No. 333-145569**

Dear Mr. Verfueth:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Prospectus

1. Please confirm that any preliminary prospectus you circulate will include all non-Rule 430A information. This includes the price range and related information based on a bona fide estimate of the public offering price within that range, and other information that was left blank throughout the document. Please note that we may have additional comments after you file this information.
2. Please provide us copies of all graphics that you intend to use in your document.

Industry and Market Data Forecasts, page ii

3. Please tell us whether all industry data you cite in your document is publicly available. Also tell us whether:
 - you commissioned the industry reports;
 - the industry reports were prepared for use in your registration statement;
 - you are affiliated with the sources of the industry reports; and
 - the sources of the reports consented to your use of their data in this registration statement.

Our Business, page 1

4. Please tell us the criteria that you used to determine that customers you highlight in the summary are objectively representative of your customer base. Also tell us whether you identified all customers that satisfy those criteria.
5. With a view toward disclosure, please tell us the portion of your installations that are leased as mentioned on page 55.

Risk Factors, page 4

6. Please note that your risk factors should immediately follow your one-page prospectus cover or the summary. Although we do not object to the location of the information on your table of contents page, please relocate the information on page ii to a more appropriate section of your document.

Summary Historical Consolidated and Pro Forma Financial Data and Other Information, page 7

7. Please remove your presentation of the non-GAAP measure 'Temporary equity and shareholders' equity.' Otherwise, ensure that your non-GAAP financial information complies with Item 10(e) of Regulation S-K. Please similarly remove or revise this presentation in your capitalization table on page 29 and your selected historical consolidated financial data on page 32.

Other Information, page 8

8. Please show us your detailed calculations supporting your disclosure that your systems are responsible for 2,914,625 customer kilowatt hours saved.

Some of the intellectual property we use in our business is owned by our chief executive officer, page 15

9. Please quantify the portion of your business that you derive from intellectual property owned by your chief executive officer.

Our retrofitting process, page 17

10. With a view toward clarifying or additional risk factors as appropriate, please tell us whether your products contain hazardous materials.

Use of Proceeds, page 27

11. Please indicate the approximate amount you intend to spend to fund increased sales and marketing expenses. Please refer to Item 504 of Regulation S-K.
12. If you do not have a specific plan for a significant portion of the proceeds, please state and discuss the principal reasons for the offering.

Capitalization, page 28

13. “Cash and cash equivalents” is not a component of capitalization as applicable to this disclosure. Please revise to remove that caption from the presentation of capitalization.

Revenue and Expense Components, page 34

14. We note the level of revenue is dependent upon several factors, including the Company’s ability to realize revenue from its services and shared savings sales program. Please expand your discussion in MD&A under Results of Operations to qualitatively and quantitatively describe the services and shared savings sales programs and if significant, their impact on total revenues.

Income Taxes, page 37

15. We note your disclosure in the last paragraph that you “may” have had an ownership change affecting your use of loss carry forwards. Please clarify the reason for the uncertainty.

Revenue, page 39

16. Please explain the basis for your statement that backlog comparisons may not be meaningful. Also, if customers can cancel orders, please say so in your discussion of backlog.

Gross Margin, page 40

17. With a view toward expanded disclosure regarding the trends affecting your margins or other results:
- please tell us how completion of your existing backlog will affect margins;
 - if sales through contractors and value-added resellers affect your margins, please discuss these effects given your disclosure on page 35 regarding your planned emphasis on such sales, and quantify the extent to which such sales contributed to your historic results; and
 - if your enhanced emphasis on your shared savings type sales and energy management services as disclosed on page 70 will affect historic results, please provide appropriate discussion analysis in your MD&A.

Research and Development, page 40

18. Please describe your “regulatory and legislative” initiatives.

Working Capital, page 49

19. To better explain cash flows from operations, please revise to discuss significant changes to the components of working capital – i.e., individually significant changes in line items. For example, we note that accrued expenses increased \$1.1 million or 27% over the quarter ending June 30, 2007. Please address the impact on your working capital. When you cite changes in components of working capital, explain the reasons for the changes.
20. Please revise your reference in the second paragraph to “near term” to clarify that you have discussed your liquidity on both a short-term and long-term (greater than one year) basis.

Indebtedness, page 50

21. Please discuss the operational developments that caused the defaults like those mentioned in the Third Amendment filed with exhibit 4.5. Also describe how you addressed the defaults.

Capital Spending, page 51

22. Please disclose the capital spending limitations contained in your credit and security agreement with Wells Fargo and discuss how, if at all, this agreement has influenced your capital spending budget since its inception in December 2005. Please indicate whether you will seek to renegotiate terms relating to capital spending limitations following this offering.

Internal Control Over Financial Reporting, page 52

23. We note your disclosure that you issued a full recourse promissory note to a director in fiscal year 2006 and that you subsequently determined the note was issued at a below market rate. Please identify the director who received the note.

Stock-based Compensation, page 56

24. We refer to your discussion regarding the Company's valuation of option grants, particularly Wipfli's independent valuation. Please revise your discussion to quantitatively and qualitatively describe the significant parameters and factors used by Wipfli both in their November 30, 2006 valuation and their April 30, 2007 analysis that changed and led to the increased valuation from \$2.20 per share at November 30, 2006 to \$4.15 per share at April 30, 2007. We note the probability factors mentioned in the April 30, 2007 valuation. Also, distinguish those existing factors that were used solely in one valuation and not the other, indicating the reason the factor was not considered in both valuations if not readily apparent.
25. In this regard, indicate when discussions were initiated with your underwriter(s). We will delay our final assessment of your response pending inclusion of the estimated IPO price in the filing.

Business, page 63

26. Please describe the general development of your business over the past five years. Please refer to Item 101(a) of Regulation S-K. For example, it appears that you should describe your "Illuminator" system, which you identify on page 8, and the reasons for and changes in the successor system.

27. We note your reference to December 1, 2001. Please clarify whether this is the date on which you began to sell products. If not, please clarify why you chose that date for the disclosed calculations.

Products and Services, page 69

28. Please provide the three-year revenue history by product or service class as required by Regulation S-K Item 101(c)(1)(i).
29. We note that in footnote 7 on page 8 you indicate that you have replaced fixtures with products other than HIF lighting systems and that these products have provided wattage reductions comparable to your HIF systems. Please describe these other products that have provided wattage reductions comparable to your HIF systems.

The Compact Modular, page 69

30. We note your disclosure that your product can increase light quantity by approximately 50%. With a view toward clarified disclosure, please:
- provide us a copy of the studies that support this disclosure, and
 - tell us the range of percentage improvement shown by tests.

Services, page 70

31. Please clarify whether “[y]our national network of qualified installers” consists of your employees. Also, in an appropriate section of your document, please explain clearly the extent to which your products can be installed by customers and the portion that requires professional installation.

Customers, page 70

32. Please identify the customer that accounted for 20% of your revenue as mentioned on page 13.

Competition, page 71

33. We note your reference to lower-cost alternatives on page 12. To clarify your competitive position, please explain any cost advantages of alternative systems.

Intellectual Property, page 71

34. Please indicate the duration of all patents and trademarks you hold as required by Regulation S-K Item 101(c)(1)(iv).

35. We note your disclosure regarding your patents covering portions of the core HIF technology. With a view toward clarified disclosure, please tell us who has patented the rights to the balance of the HIF technology and how you have access to those rights.

Board Committees, page 75

36. Please reconcile your statement on page 76 regarding the independence of the audit committee members with your disclosure on page 100 regarding consulting fees.

Setting Executive Compensation, page 77

37. Please expand upon your statement that your compensation committee “generally” was directly involved in setting compensation for your chief executive officer and in determining and approving equity awards for all of your NEOs. To the extent that your compensation committee was indirectly or uninvolved in establishing certain compensation levels, please disclose. To the extent that other parties had the right to veto compensation decisions, please discuss that right and the extent to which it was exercised; for example, we note section 2.8 of exhibit 4.1.
38. Please discuss Mr. Verfuert’s current and past role in establishing compensation for his wife, Ms. Verfuert.
39. We note your disclosure regarding actions to be made before the closing of the offering, including IPO bonuses, new employment agreements, a management cash bonus program and the fiscal 2008 short-term incentive program. Please tell us when the action will be taken relative to the effective date of the registration statement.
40. Please identify the component companies in your “informal market surveys.” Likewise, please identify the companies mentioned in the last sentence of the first full paragraph on page 78 and the competitors mentioned on page 80.

Base Salary, page 79

41. Please revise to identify the “increasing responsibilities” that were the basis for the salary increases. See Regulation S-K Item 402(b)(2)(vii).

Short-Term Cash Bonus Incentive Compensation..., page 80

42. Please provide specific information regarding (1) the qualitative and quantitative bases for the discretionary cash bonuses paid in fiscal 2007 and (2) how those achievements resulted in the specific dollar amount of bonus paid. If the decisions were based on the subjective evaluation of your CEO, please say so directly.

Long-Term Equity Incentive Compensation, page 82

43. Although we note your disclosure regarding general policies relating to your long-term equity incentive compensation, please include a more focused discussion that provides substantive analysis and insight into how the compensation committee determined the actual award amounts. For example, please discuss and analyze how the compensation committee determined the actual number of shares underlying the stock options awarded to each named executive officer and set forth the rationale for the variances of these awards among the named executive officers.
44. We note your reference to executives redeeming shares. Please clarify how an executive can redeem shares in your company. Do you mean that you elected to redeem the shares? Did the executive have a put option?

Perquisites and Other Personal Benefits, page 84

45. Please discuss how the 1% fee was set. For example, did you determine that the guarantee permitted you to obtain an interest rate reduction of more than 1%?

Severance and Change of Control Arrangements, page 85

46. Please expand your disclosure regarding the protections afforded to your NEOs under your new employment agreements by explaining how you determined severance pay amounts and durations of employment agreements. Please make your disclosures specific to each NEO.
47. In your discussion of the definition of "change of control," please indicate the basis for selecting particular events as triggering payments. Refer to Item 402(b)(2)(xi) of Regulation S-K.

Director Compensation, page 99

48. Please clarify which four years are represented by the option grants mentioned in the first paragraph.
49. Please describe the consulting services mentioned on page 100, including how those services went beyond the services expected from a director for which you had paid a director fee. Also disclose the terms of the arrangement under which the services were provided.

Principal and Selling Shareholders, page 102

50. Please identify the individuals who beneficially own the shares held in the name of GE Capital Equity Investments, Inc.
51. With a view toward disclosure, please tell us about the transactions in which the selling stockholders acquired the offered shares, including the date and the consideration paid.
52. Please tell us whether any of the selling stockholders are broker-dealers or affiliates of broker-dealers. A selling shareholder who is a broker-dealer must be identified in the prospectus as an underwriter. In addition, a selling stockholder who is an affiliate of a broker-dealer must be identified in the prospectus as an underwriter unless that selling stockholder is able to make the following representations in the prospectus: the selling shareholder purchased the shares being registered for resale in the ordinary course of business, and at the time of the purchase, the selling shareholder had no agreements or understandings, directly or indirectly, with any person to distribute the securities. Please revise as appropriate.

Related-Party Transactions, page 106

53. We note your statement that you believe that all disclosed related-party transactions complied with the terms of your new policies and procedures regarding related-person transactions. Please state whether your audit and finance committee reviewed, approved or ratified all of the related-party transactions you disclose in this section of the prospectus.
54. Please disclose the standards to be applied pursuant to your policies and procedures for review, approval or ratification of related-party transactions. See Regulation S-K Item 404(b)(1)(ii).

55. Please describe the transactions in which related parties received preferred stock.

Description of Capital Stock, page 110

56. Your disclosure may not be qualified by reference to statutes. Please revise the last sentence of the first paragraph accordingly, and provide any additional disclosure necessary.

Material United States Federal Income Tax Considerations, page 120

57. It is inappropriate to disclaim responsibility for your disclosure. Please revise your statement that the disclosure is “for information only” and “not tax advice” to remove any implication of disclaimer.

Consolidated Financial Statements, page F-1

58. Please update the financial statements when required by Rule 3-12 of Regulation S-X and include an updated accountant’s consent in the amended filings.
59. We refer to your discussion under Internal Control Over Financial Reporting, page 52, wherein you indicate in connection with the filing of the registration statement, you identified certain errors in your prior year consolidated financial statements that resulted in the restatement of your previously issued fiscal 2006 and 2007 consolidated financial statements. Please explain how you comply with the disclosure requirements of SFAS 154, or otherwise revise the financial statements accordingly.
60. To this regard, please request your auditors tell us their consideration of AICPA Auditing Standards Section 561.06.a and why they did not include an explanatory paragraph in their audit report regarding the restatements.
61. To this regard, tell us why the changes should be not discussed in MD&A, or otherwise revise your MD&A.

Consolidated Statements of Operations, page F-4

62. Disclosure in MD&A and elsewhere (for instance, page 70) indicates that you provide both products and services. Please separately present service revenues and costs pursuant to Rules 5-03 (b)(1) and (2) to Regulation S-X, or tell us why disaggregating is not required.

Accrued Expenses, page F-10

63. Please tell us the nature and amounts in accrued expenses. Any item in excess of 5% of total current liabilities should be separately stated in the balance sheet or in a note thereto. Refer to Rule 5.02 (20) of Regulation S-X. We note a significant increase in accrued expenses at June 30, 2007.

Revenue Recognition, page F-11

64. We note the disclosure under *Services* on page 70 with respect to your agreements whereby customers finance the purchase of the system “by paying [you] a specified amount over time based on a predetermined measure of the reduction in their electricity consumption resulting from the use of [your] products.” Please tell us and disclose how you account for the revenues and associated costs under these arrangements.
65. Further, please also describe all of your major revenue-generating products, services, and arrangements clearly. For major contracts or groups of similar contracts, disclose essential terms, including payment terms and unusual provisions or conditions.

Net Income (loss) per Common Share, page F-14

66. Please tell us and disclose your accounting policy for computing basic EPS under EITF 03-6 using the two-class method. Based upon your disclosures on pages F-19 – F-20 it appears that you have preferred shares that are participating securities. If true, under EITF 03-6 you should revise your basic EPS to include the effect of those securities using the two-class method.
67. Please tell us whether, in computing diluted EPS under the if-converted method, you adjusted the numerator for any changes in income or loss that would result from the assumed conversion of the potential common shares, consistent with paragraph 11 of SFAS 128. If any adjustments are required, please include a statement setting forth in reasonable detail the computation of the numerator used to calculate diluted EPS, consistent with Exhibit 11 of Item 601 of Regulation S-K.

Segment Information, page F-15

68. Please revise to disclose the revenues from external customers for each group of similar products and services. Otherwise, tell us how you considered paragraph 37 of SFAS131.

Adoption of FIN 48, page F-15

69. We note the Company expects the amount of unrecognized tax benefits may change in the next twelve months; however, quantification of such change cannot be estimated. Please revise to indicate the nature of the uncertainty and the nature of the each event that could occur in the next 12 months that would cause the change for each significant tax position. We note that \$1.2 million of the \$1.6 million gross unrecognized tax benefits relates to net operating loss carry-forwards deductions created by the exercise of non-qualified stock options.

Note F. Temporary Equity and Shareholders' Equity, page F-19

70. Please disclose your accounting policy with respect to the accretion for the Series C preferred stock.

Other Expenses, page II-1

71. Please separately itemize the premium for the insurance mentioned in the last paragraph of your disclosure in Item 14. See the instruction to Regulation S-K Item 511.

Undertakings, page II-4

72. Please note that due, in part, to the language of Securities Act Rule 430C(d), the undertakings included in Items 512(a)(5)(ii) and 512(a)(6) of Regulation S-K should be included in filings for initial public offerings. Please revise your filing to include those undertakings.

Exhibits

73. Please file complete exhibits with all attachments. For example, we note the exhibits missing from exhibit 2.2. In this regard, it is unclear why this agreement was filed per Regulation S-K Item 601(b)(2) and, if properly filed per that Item, how you complied with the last sentence of that Item.

* * * * *

As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Dennis Hult at (202) 551-3618 or Kaitlin Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the

Neal Verfuert
Orion Energy Systems, Inc.
September 18, 2007
Page 14

financial statements and related matters. Please contact Joseph McCann at (202) 551-6262 or me at (202) 551-3617 with any other questions.

Sincerely,

Russell Mancuso
Branch Chief

cc (via fax): Steven R. Barth, Esq.—Foley & Lardner LLP
Carl R. Kugler, Esq.—Foley & Lardner LLP