

September 28, 2006

Mail Stop 6010

Matrix Solar Technologies, Inc.  
540-A Silver Creek NW  
Albuquerque, New Mexico 87121

**Re: Photowatt Technologies Inc.  
Registration Statement on Form F-1  
Filed September 1, 2006  
Registration No. 333-137044**

Ladies and Gentlemen:

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.

General

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. We may have further comments when you include pricing information and related disclosure.
2. If you intend to include graphics in the prospectus, please submit them and allow time for staff review and comment.

3. Please provide us with support for the market opportunity data you have included in your prospectus. Clearly mark the relevant sections that support the data you have included and the page number of your prospectus where such data has been used. Also tell us whether the sources of the cited data have consented to your use of their names and data and whether any of the reports were commissioned by you or prepared specifically for your use.

Cover Page

4. Please remove the caption "Joint Book-running Managers" from your cover page disclosure.

Table of Contents

5. We note the first sentence in the paragraph following your table of contents cautioning investors that they "should rely only on the information contained in this prospectus." Please consider whether this statement, in its current form, is consistent with your ability to use free writing prospectuses.
6. The risk factors must immediately follow your prospectus summary or a one-page prospectus cover. Although we do not object to a table of contents page, multi-page disclosure should be relocated to a more appropriate section of your document.

Prospectus Summary, page 1

7. We note that your summary contains a lengthy description of your strengths and strategy. Further, we note the identical disclosure appears later in your prospectus. In the summary, you are to carefully consider and identify those aspects of the offering that are the most significant and determine how to best highlight those points in clear, plain language. The summary should not include a lengthy description of your strengths and strategy.

Our Company, page 1

8. If you elect to highlight your revenue, please provide equally prominent disclosure of your losses.

Spherical Solar, page 3

9. Please indicate your recent asset impairment charge related to Spherical Solar and that you acquired the Spherical Solar technology. Also, indicate the year you acquired the Spherical Solar technology.

Our Relationship With ATS, page 5

10. Please provide a brief description of ATS and indicate where ATS's common stock trades.
11. In an appropriate location in your prospectus, please disclose whether you have established any procedures to minimize the potential for conflicts of interest between you and ATS. If so, describe those procedures.

Risk Factors, page 12

Because we are a Canadian corporation, page 31

12. We note your disclosure that "investors should not assume...." Please clarify why there is doubt.

Special Note, page 32

13. We note your statement in the last paragraph regarding documents you reference. Please clarify whether you are seeking to incorporate documents by reference. If you are incorporating by reference, please tell us the authority that permits the incorporation.

Use of Proceeds, page 33

14. Please provide the disclosure required by Form 20-F Item 3.C.4.

Dilution, page 36

15. Please discuss the further dilution to be experienced by your new investors to the extent your outstanding stock options are exercised. Please also explain how the "common shares," "total consideration" and "average price per share" columns in your second table would change if your outstanding options were exercised.

Related Party Transactions, page 58

16. Please identify the "business" and the "senior executive" referred to in the second paragraph.

Spherical Solar, page 44

17. Please update the status of the September 2006 assessment.

Results of Operations, page 51

18. Please separately quantify the effect of volume, price, and product mix.

Quantitative and Qualitative Disclosure About Market Risk, page 57

19. Please revise your disclosures of foreign exchange risk, derivative financial instruments and interest rate risk here to provide quantitative disclosures of your market risk in at least one of the three alternatives specified in Item 11(a) of the Form 20-F rules.

Business, page 60

20. Please disclose when you began developing and selling your products.

Elk Corporation, page 67

21. In an appropriate location in your prospectus, please include a brief discussion of the regulatory approval requirements that will be necessary for the commercialization of your Spherical Solar products.

Research and Development, page 68

22. Please indicate when Texas Instruments developed this technology and also identify the successor owner. Briefly clarify how and when you came to acquire the technology from the successor owner.

Germany, page 72

23. We note your disclosure that the subsidy programs in Germany are designed to decline over time and we note that your sales in Germany represented approximately 49% of your total revenue in fiscal 2006. Please provide a brief discussion of the subsidy programs in Germany that are material to your revenues and clarify how those subsidies will decline over time.

Competition, page 74

24. Please clarify your relative competitive position by expanding your business section to disclose how the technologies you employ differ from the amorphous silicon, ribbon, sheet and nano technologies you have referenced.

Corporate Structure, page 74

25. Please clarify where you do not own 100% of the entity disclosed.

26. Given the disclosure in Note 18 on page F-18, please tell us why Matrix Solar Technologies, Inc. does not appear in this chart.

Patents and Trademarks, page 74

27. Please clarify the portion of your business that is reliant on patents that expire in the near future.

Environmental Matters, page 77

28. Please clarify whether you are in compliance with applicable environmental laws and regulations.

Our Relationship with ATS, page 77

Ownership of assets, page 78

29. Please clarify how you will acquire rights to ATS assets that may be used in your business but not exclusively in your business.

Non-competition and non-solicitation, page 79

30. We note that the anticipated non-competition provisions appear not to be reciprocal. Please expand your risk factor disclosure to discuss any material risks arising from ATS not being subject to similar non-competition provisions. We note in this regard that ATS may be able to compete with you indirectly through its investment in Canadian Solar Inc. Please include in your risk factor disclosure any particular risks that arise from that relationship or from potential conflicts of interest related to that relationship.

Quorum, page 79

31. Please disclose the Canadian residency requirements that you mention here.

Financial Reporting, page 80

32. We note your intention to use auditors and accounting policies and practices chosen by ATS. Please provide us your analysis of how you will be exempt from the requirements of Rule 10A-3(b)(2).

Transitional Services Agreement, page 82

33. Please clarify how the fixed prices and fixed rates are to be determined. For example, are they intended to provide ATS a specific rate of profit?

ATS solar automation know-how, page 83

34. Please clarify the scope of this “know-how,” the extent to which it is used in your business, and the extent to which it permits ATS to compete with you.
35. Please clarify the effect of the excluded intellectual property mentioned in the parentheses.

Lease Agreement, page 83

36. Please briefly indicate how your creditworthiness will be determined under the Lease Agreement. Also disclose the minimum rent mentioned in the last sentence.

Management, page 85

Directors and Executive Officers, page 85

37. In some places you disclose that the individual joined ATS. In other places, you state that the individual joined you. Please clarify whether the individual is an employee of ATS or you. For employees of ATS, please clarify whether they will continue to serve in both roles after the offering, and provide related risk factors. Also, in an appropriate section of your document, please disclose when you were incorporated so investors can understand when the employees joined you relative to your date of incorporation.
38. Please clarify when the named individuals became a director.
39. Please clarify what you mean when you say that Hoya is a “public” manufacturer. Also, please provide us support for your statement of Hoya’s size.
40. Please clarify when Mr. Mandy became CEO of Zarlink. His experience from 2001 to the present is unclear.

Employment Agreements, page 89

41. Please clarify the amount of shares ATS would have to transfer in order to trigger the change-in-control provisions of these agreements.

Compensation, page 90

42. Please identify the ATS nominees.

Compensation Table, page 91

43. Please clarify what you mean by RRSP.
44. Please disclose the expiration date of the options.

Stock Option Plan, page 91

45. With a view toward disclosure, please provide us a table that shows:
- each person to receive the option grants exercisable at the IPO price as disclosed on pages 8 and 92,
  - the relationship of each individual to you;
  - the total number of shares underlying each individual's options, and
  - the duration of the option.

Short Term Incentive Plan, page 95

46. As you have done with your other plans, please include a description of the material provisions of this plan.

Related-Party Transactions, page 96

47. Please disclose the extent of each of your officers and directors' interest in ATS.
48. In an appropriate section of your document, please disclose why ATS is separating your business from its own.
49. Please describe in this section the transactions that generated the entries in the tables on page 58 and in Note 17 on page F-17. Include the date and purpose of the transaction and how the dollar amount was determined.

Common Shares, page 98

50. Please clarify whether your disclosed majority voting rules apply to director elections.

Taxation, page 105

51. Disclosure required by Form 20-F Item 10.E should not be limited to *federal income* taxes. Also, your disclosure of tax consequences should include all required material information, not just “certain” information as disclosed on page 107. Please expand your disclosure accordingly.
52. We note your references to proposals in the second paragraph. Please clarify how existing law would materially differ under the proposals.
53. It is inappropriate to disclaim responsibility for your disclosure; therefore, please remove the statement that your disclosure is not legal or tax advice.
54. Please unequivocally state what the tax consequences are, rather than what they “should” be. For example we note the last sentence of the penultimate full paragraph on page 108. If you can not provide unequivocal disclosure, please disclose the reason for and degree of the uncertainty, the possible outcomes, and the risks to investors.

Taxation of U.S. Holders, page 106

55. Please expand the second paragraph to clarify how the residency of a transparent entity is determined.

Directed Share Program, page 113

56. We note your disclosure that investors must commit on the date of the prospectus. If the date of the prospectus is the date that the registration statement becomes effective, please tell us how commitments before the effective time on that day will be consistent with Section 5 of the Securities Act.
57. Please reconcile the last sentence of this section with the disclosure in the third paragraph on page 103.

Affiliations, page 114

58. Please provide more specific disclosure about past relationships with the underwriters.

Where you can find more information, page 117

59. Please tell us the authority on which you rely for your statement that exhibits modify prospectus disclosure.

Financial Statements, page F-1

60. In the event of a delay of effectiveness, please revise to provide updated financial information, as required by Rule 3-12 of Regulation S-X.

Report of Independent Registered Public Accounting Firm, page F-2

61. Please have your auditor revise its audit report to state, if true, that it conducted its audits in accordance with the standards of the Public Company Accounting Oversight Board. Refer to PCAOB Auditing Standard 1.

Part II

Item 17. Undertakings, page II-5

62. Please note that due, in part, to the language of Securities Act Rule 430C(d), the undertakings included in Item 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

63. Please include time in your offering schedule for resolution of additional comments after you file all required exhibits.
64. Please provide a currently dated and signed consent from your independent accountants in your amendment.

\* \* \* \* \*

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 they have provided all information required 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 a 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 registration statement 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 Kevin Vaughn at (202) 551-3643 or Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 if you have questions regarding comments on the financial statements and related matters. Please contact Tim Buchmiller at (202) 551-3635 or me at (202) 551-3617 with any other questions.

Sincerely,

Russell Mancuso  
Branch Chief

cc (via fax): Christopher J. Cummings