



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

October 6, 2009

Hoil Kim
Vice President, General Counsel and Secretary
GT Solar International, Inc.
243 Daniel Webster Highway
Merrimack, New Hampshire 03054

**Re: GT Solar International, Inc.
Registration Statement on Form S-3
Filed August 12, 2009
File No. 333-161300
Response letter submitted September 17, 2009**

Dear Mr. Kim:

We have limited our review of your filing and your letter submitted on September 17, 2009 to the issues we have addressed in our comment. Where indicated, we think you should revise your document in response to the comment. 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 our comment, 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 comment or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Selling Stockholder, page 23

1. We note your response to prior comment 2 that GT Solar Holdings, LLC “may be” an affiliate of a broker-dealer. Please clarify whether GT Solar Holdings is an affiliate of a broker-dealer. A selling stockholder who is an affiliate of a broker-dealer must be identified in the prospectus as an underwriter unless that

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selling stockholder is able to make the following representations in the prospectus:

- The selling stockholder purchased the shares being registered for resale in the ordinary course of business, and
- At the time of the purchase, the selling stockholder had no agreements or understandings, directly or indirectly, with any person to distribute the securities.

Please revise as appropriate.

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As appropriate, please amend your registration statement in response to the comment. You may wish to provide us with marked copies of any amendment to expedite our review. Please furnish a cover letter with your amendment that key your response to our comment 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 response to our comment.

Please contact Tom Jones at (202) 551-3602 or me at (202) 551-3314 if you have any questions.

Sincerely,

Daniel Morris
Special Counsel

cc (via fax): Eva H. Davis, Esq.