



DIVISION OF  
CORPORATION FINANCE

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

Mail Stop 3030

May 26, 2010

VIA U.S. MAIL AND FAX (636) 474-5162

Timothy C. Oliver  
Senior Vice President and Chief Financial Officer  
MEMC Electronic Materials, Inc.  
501 Pearl Drive  
St. Peters, Missouri 63376

**Re: MEMC Electronic Materials, Inc.  
Form 10-K for the year ended December 31, 2009  
Filed March 1, 2010  
File No. 001-13828**

Dear Mr. Oliver:

We have reviewed your letter dated May 11, 2010 and have the following comments. Where indicated, we think you should revise your future documents 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.

Form 10-K for the Year Ended December 31, 2009

Solar Energy Segment (d/b/a SunEdison), page 5

Sales, Marketing and Customers, page 6

1. We note your response to prior comment 1 describing the renewable energy incentives you receive. Please address the following and provide us a copy of your proposed disclosures:
  - Revise the business section and your accounting policy note to your financial statements in future filings to clearly describe the two types of renewable energy incentives you receive, how you earn the credits and the states from which you receive them. Disclose the contractual terms regarding what happens if you are not able to produce the required solar energy per the contract terms. Clearly disclose that PBIs are not tradable and are not sold.
  - Revise the accounting policy note to your financial statements, to clearly describe your policy for recognizing the PBI cash incentives, including the point in the process at which you recognize the income. If you recognize the incentives prior to receiving the cash from the state of California, please disclose the factors that indicate that the earnings process associated with the PBIs is complete at that point.
  - Discuss for us your conclusions that the PBI cash incentives you receive should not be reflected as a reduction of related costs of generating the solar energy sold.
  - Revise the accounting policy note to your financial statements, to clearly describe your policy for recognizing the renewable energy incentives. Consistent with your response explain the literature on which you base your policy and how the revenue recognition related to the REC's met the four criteria under SAB 104.

Results of Operations, page 3

2. We note your response to our prior comment 3. Please revise your disclosure in future filings to describe the administrative prerequisites that the joint venture was required to complete under its agreement to sell the solar power plant and because of which it did not record revenue from the sale of the solar power plant until 2010. Tell investors the date on which the prerequisites were completed and sale recorded.

Critical Accounting Policies and Estimates, page 14

Goodwill and Intangible Assets, page 16

3. We note from your response to our prior comment 5, that the acquisition date fair value of the favorable intangible assets relating to PBIs was determined using a market participant approach that compared the state specific incentive rates as of the acquisition date to existing PBI rates. You also stated that the current state incentive rates for PBIs were lower than your *contractual* rates.
- Please describe to us in detail the process by which you receive PBIs under the California Solar Initiative program, including how the amounts of the cash incentive is determined, whether the cash incentives are based on the amount of energy produced and sold by a given solar power plant and if so, how they are calculated, and whether cash incentive rates are set at inception of a solar power plant being accepted into the program and remain fixed until the plant exits the program.
  - Tell us what you mean by the current state incentive rates were lower than your contractual rates. If the contractual rates to which you refer are not with the State of California, explain to us with whom you have contracts for PBIs and how PBI cash payments are determined.

Consolidated Financial Statements, page 24

Note 8: Investments, page 43

4. We note from your response to our prior comment 9 that your sales of wafers to Q-Cells SE were contemplated in the joint venture agreement, which provided that wafer volumes in amounts sufficient to build the size of the solar power plant stipulated in the joint venture agreement would be sold. As we note from your response to prior comment 8 that the revenue and cost of sales for these transactions are reflected in your gross margins, describe to us any risks you retained in these transactions, discuss the risks undertaken by Q-Cells SE relating to the inventory you sold, its responsibility for and ability to make timely payment under the contracts. For example, tell us whether payment by Q-Cells SE was dependent on the sale of the joint venture's solar power plant. Tell us when Q-Cells SE made payments for the wafers you sold in 2009.

Acknowledgements

5. You did not provide the three acknowledgements requested in our previous letter and, therefore, we issue our request for the acknowledgements, which must be signed by an officer of the registrant. Please provide, in writing, a statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter 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 responses to our comments.

You may contact Andri Boerman, Staff Accountant, at (202) 551-3645 or me at (202) 551-3671 if you have any questions regarding these comments.

Sincerely,

Martin F. James  
Senior Assistant Chief Accountant