



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

April 27, 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 filings and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your document. 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 you sell renewable energy incentives, including renewable energy credits (“RECs”). We also note you sell RECs to utility companies as well as to non-utility customers including hedge funds and other investors.
 - Tell us what renewable energy incentives and RECs represent, how you obtain these credits and from whom.
 - Describe to us the process by which you are able to transfer these credits to another party and how that transfer would be considered a sale under US GAAP.
 - Identify the point in the process when you recognize revenue from the sale of the incentives to utilities and non-utilities. To the extent that the process is different for utilities and for non-utilities, please address each separately.
 - Explain to us how your revenue recognition policy related to the sale of renewable energy incentives and RECs meet the four criteria described in SAB 104 or cite the other applicable US GAAP guidance on which you rely.

Risks Related to an Investment in Our Common Stock, page 17

The accounting treatment for many aspects of our SunEdison business..., page 19

2. Describe to us the intra-company contracts held by the SunEdison business. Tell us the counterparty to these contracts and explain how you account for them. Please cite the applicable U.S. GAAP on which you base your accounting.

Results of Operations, page 3

3. We note the disclosure on page 8 that the joint venture did not record revenue from the sale of the solar power plant in 2009 because “certain administrative prerequisites” will not be completed until early 2010. Please describe these administrative prerequisites to us and explain when they will be completed

Financial Condition, page 8

4. You disclosed “overall days sales outstanding” and “inventory turn” ratios that appear to be non-GAAP measures since they are calculated based on annualized fourth quarter

sales and annualized fourth quarter cost of goods sold instead of your annual sales and annual cost of goods sold for each fiscal year. Please revise future filings to provide the disclosures required by Item 10(e) of Regulation S-K, including the following.

- Provide the most directly comparable measures calculated based on GAAP measures such as the annual sales and annual cost of goods sold.
- Provide reconciliations between the non-GAAP financial measures you disclose and the most directly comparable financial measure calculated and presented based on US GAAP.
- Disclose why the management believes that these non-GAAP financial measures that are calculated based on annualized fourth quarter amounts provide useful information to investors regarding your company's financial conditions and the results of operations.

Please provide us with your proposed revised disclosure.

Goodwill and Intangible Assets, pages 16 and 17

5. Describe to us the favorable energy credits you record as intangible assets. Tell us how you earn these credits and from whom.
6. We note you recorded "Power plant development arrangements" as intangible assets not subject to amortization. In addition, you disclose that these assets were recorded in conjunction with the acquisition of SunEdison and relates to anticipated future economic benefits associated with your customer backlog relationships. Tell us what these assets represent, including for example, whether they are customer lists acquired, unfilled customer orders, etc. Explain to us how you concluded that they meet the definition of intangible assets, i.e., - either the separability criterion or the contractual-legal criterion described in paragraph 10 of FASB ASC 805-20-25.
7. You disclosed also that these intangible assets will be allocated to fixed assets as the construction of the related solar energy systems stemming from the existing backlog is completed. Please explain to us in greater detail how these intangible assets are related to specific solar projects and how they will give rise to fixed assets. Explain how you will account for the allocation of these intangible assets to fixed assets in future periods. Cite the applicable guidance in U.S. GAAP on which you base your accounting.

Notes to Consolidated Financial Statements

Note 8: Investments, page 43

8. We note that you formed a joint venture *with* Q-Cells SE (“Q-Cells”) and you accounted for the joint venture under the equity method. Please address the following:
- Provide us with the amounts of the revenue and the costs of sales associated with sales to Q-Cells in each quarter in the reported periods and explain to us your reasons for concluding that the disclosures called for by Rule 4-08(k) of Regulation S-X were not required.
 - Provide us with the summarized financial information required Rule 4-08(g) of Regulation S-X for your joint venture with Q-Cells, and explain why you did not provide the information in the filing.
9. We note that you disclose that you make sales of wafers to Q-Cells but indicate that you defer your pro rata share of the net profit from sales to the joint venture. Please clarify for us whether you sell to the joint venture or to Q-Cells. If sales are made to Q-Cells, please explain why deferral of the profits would be appropriate. Cite the applicable U.S. GAAP that supports your accounting.
10. We note that as a result of executing the contract to sell the first solar power plant project the joint venture recognized an impairment charge on the plant assets. Explain to us in greater detail how that event resulted in an impairment of the plant assets of the joint venture. Also, explain to us how the JV determined the amount of the impairment loss and your share of that loss.

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 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 Exchange Act of 1934 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.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that:

Timothy C. Oliver
MEMC Electronic Materials, Inc.
April 27, 2010
Page 5

- 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.

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 our review of your filing or in response to our comments on your filing.

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