



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

April 5, 2010

Via Mail and Facsimile 011-49-241-8909-445

Mr. Wolfgang Breme
Chief Financial Officer
Aixtron Aktiengesellschaft
Kaiserstr. 98
52134 Herzogenrath
Federal Republic of Germany

Re: Aixtron Aktiengesellschaft
Form 20-F for the Fiscal Year Ended December 31, 2009
Filed March 10, 2010
File No. 000-51196

Dear Mr. Breme:

We have reviewed your filing 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 documents. Where indicated, we think you should revise your 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 20-F for the Fiscal Year Ended December 31, 2009

Item 15. Controls and Procedures, page 63

1. We note your disclosure regarding your officers' conclusions about the effectiveness of the Company's disclosure controls and procedures. While you are not required to include the definition of disclosure controls and procedures in your conclusion, when you do, all of the language that appears following the word "effective" in your conclusion must be consistent with and not modify the language that appears in the definition of "disclosure controls and procedures" set forth in Rule 13a-15(e) of the Exchange Act. Alternatively, you may remove that definition in future filings, including any amendments.
2. You disclose on page F-6 that the audited financial statements included in your Form 20-F beginning on page F-1 are presented in accordance with IFRS. As such, management's assessment of the effectiveness of your internal control over financial reporting in accordance with U.S. GAAP does not appear appropriate or consistent with the disclosures required by Item 308 of Regulation S-K. We noted similar disclosure in your December 31, 2008 Form 20-F. Please amend your December 31, 2008 and December 31, 2009 Forms 20-F to include management's assessment of the effectiveness of the Company's internal control over financial reporting as of the end of the Company's most recent fiscal year, including a statement as to whether or not internal control over financial reporting is effective.
3. Further, while you are not required to include the definition of internal control over financial reporting in your conclusion, when you do, all of the language that appears following the word "effective" in your conclusion must be consistent with and not modify the language that appears in the definition of "internal control over financial reporting" set forth in Rule 13a-15(f) of the Exchange Act. Alternatively, you may remove that definition in future filings, including any amendment.
4. We note that you refer to your independent registered accounting firm's attestation report on the effectiveness of your internal control over financial reporting as of December 31, 2009. However, we do not see where you have included this attestation report within your filing. We note that you similarly omitted an attestation report on the effectiveness of your internal control over financial reporting as of December 31, 2008 within your 2008 Form 20-F. Please amend both your December 31, 2008 and December 31, 2009 Forms 20-F to include your independent registered accounting firm's attestation report on the effectiveness of your internal controls over financial reporting as of December 31, 2008 and December 31, 2009. Refer to Item 15(c) of Form 20-F.

Report of Independent Registered Public Accounting Firm, page 68

5. The first paragraph of the report refers to the audits of the December 31, 2009, 2008 and 2007 consolidated statements of financial position. The third opinion paragraph only opines on the December 31, 2008 and 2009 consolidated statements of financial position. On page F-3, you present consolidated statements of financial position for all three years and the balance sheet as of December 31, 2007 is not marked as unaudited. Please amend your Form 20-F to include an audit report for all audited periods. Please refer to the requirements of Item 8.A.2 and the instructions thereto.
6. Please have your auditors revise their report to include a conformed signature that is consistent with the guidance provided in Item 302 (a) of Regulation S-T.

Financial Statements, page F-1

Consolidated Income Statement, page F-1

7. Since you classified expenses by function in your consolidated income statement, please explain to us how you considered the additional disclosures required under paragraphs 104 - 105 of IAS 1.

Note 2. Significant Accounting Policies, page F-6

-(a). Companies Included in Consolidation, page F-6

8. We note here and on page F-42 that you consolidate seven significant companies, in which you have a 100% direct shareholding or control. Please tell us if you have other subsidiaries that you did not include in your consolidated financial statements and, if so, why they were not included.

-(e). Property, Plant and Equipment, page F-7

9. We note that your items of property, plant and equipment are stated at cost, plus ancillary charges. Please tell us in more detail the nature of the ancillary charges that you capitalize as part of property, plant and equipment and how these costs comply with the costs outlined in paragraphs 16-17 of IAS 16.
10. Please tell us and revise your future filings to explain if you review the residual value and the useful life of these assets at least at your fiscal year end. Refer to the guidance in paragraph 51 of IAS 16.

(n) Provisions, page F-12

11. Please tell us and disclose in future filings how you determine the amount to recognize as a provision for onerous contracts. Tell us how you considered the guidance in paragraphs 66 - 69 of IAS 37.

Note 3. Segment Reporting, page F-16

12. Please tell us about your analysis of the economic characteristics and other factors about your operating segments in determining that they may be aggregated under paragraph 12 of IFRS 8.

Note 13. Intangible Assets, page F-22

13. Please tell us and disclose in future filings the carrying amount of goodwill allocated to each cash-generating unit for which disclosure is required under paragraph 134(a) of IAS 36. Please also tell us how you considered the disclosures required under paragraph 134(d) of IAS 36 related to both your silicon semi-conductor and compound semi-conductor cash generating units.
14. Further, please tell us in more detail why the cash flow projection for the silicon semi-conductor cash generating unit covered the period through 2020. Please refer to paragraph 134(d)(iii) of IAS 36.

Exhibit 15.1

15. The consent refers to an audit report dated March 11, 2010. The audit report on page 68 is dated March 10, 2010. Please request your auditors to include a corrected consent in an amendment to your Form 20-F.

As appropriate, please amend your December 31, 2008 and December 31, 2009 Forms 20-F and respond to these comments within 10 business days or tell us when you will provide us with a response. You may wish to provide us with marked copies of the amendments to expedite our review. Please furnish a cover letter with your amendments 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 amendments 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.

Mr. Wolfgang Breme
Aixtron Aktiengesellschaft
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In connection with responding to our comments, 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.

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 Tara Harkins, Staff Accountant, at (202) 551-3639 or me at (202) 551-3604 if you have any questions. In this regard, do not hesitate to contact Kevin Vaughn, Accounting Branch Chief, at (202) 551-3643 with any questions.

Sincerely,

Kate Tillan
Assistant Chief Accountant