



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 4631

October 28, 2016

Via E-mail

Mr. John F. Fairbanks
Chief Financial Officer
Aspen Aerogels, Inc.
30 Forbes Road, Building B
Northborough, Massachusetts 01532

**Re: Aspen Aerogels, Inc.
Form 10-K for Fiscal Year Ended December 31, 2015
Filed March 4, 2016
File No. 1-36481**

Dear Mr. Fairbanks:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response. After reviewing your response to these comments, we may have additional comments.

Risk Factors

“If we fail to meet required investment and job requirement goals.....”, Page 21

1. We note from your disclosure that you will be required to repay the Georgia governmental authorities the values of the incentives received to site and operate your second plant in Statesboro, Georgia, if you do not achieve specific investment and job creation goals there by 2021 and maintain such levels for a period of seven years. We further note from your disclosure that such repayment would adversely impact your financial condition and results of operations. Please tell us and disclose in future filings an estimated amount (or range) of the potential repayment, or explain to us why such an estimate cannot be made.

“We rely on sales to a limited number of direct customers.....”, Page 26

2. You disclose that a major Asian energy company and a North American distributor represented 14% and 12% of your total revenue in 2015. In future filings please provide the names of customers that account for equal to or greater than 10% of consolidated revenues and the loss of which would have a material impact on your business, and describe your relationship with those customers. See Item 101(c)(vii) of Regulation S-K.

Liquidity and Capital Resources, Page 67

3. We note that the projected cost for your second production plant is between \$110 million and \$120 million. We also note that your revolving credit facility with Silicon Valley Bank is scheduled to expire on November 29, 2016 and contains restrictions on your ability to incur additional indebtedness. We further note that the non-interest bearing prepayment of \$22 million you expect to receive from BASF under a supply agreement is subject to certain conditions including you securing a debt commitment from a third party lender for at least \$30 million. Please tell us whether there have been any material changes to your borrowings subsequent to the filing of your most recent Form 8-K and any specific plans management may have to obtain additional financings to fund the construction of your second plant.

Notes to Financial Statements

Note 2 – Summary of Basis of Presentation and Significant Accounting Policies, Page 84

4. You disclose that your product revenue is generally recognized upon transfer of title and risk of loss. Please expand your disclosure to describe the instances in which product revenue is not recognized upon transfer of title and risk of loss.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

You may contact SiSi Cheng, Staff Accountant, at (202) 551-5004 or Kevin Stertzell at (202) 551-3723 if you have questions regarding comments on the financial statements and related matters. Please contact Chris Ronne at (202) 551-6156 or Craig Slivka at (202) 551-3729 with any other questions.

Sincerely,

/s/ John Cash

John Cash
Accounting Branch Chief
Office of Manufacturing and
Construction