



DIVISION OF
CORPORATION FINANCE

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

May 27, 2011

Mr. Christopher A. Artzer
Vice President, General Counsel and Secretary
KiOR, Inc.
13001 Bay Park Road
Pasadena, TX 77507

**Re: KiOR, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed May 18, 2011
File No. 333-173440**

Dear Mr. Artzer:

We have reviewed your registration statement 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 this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

General

1. At the end of your response letter dated May 18, 2011, we note the representations provided by counsel on the company's behalf. Please note that before the filing goes effective, these representations must be provided and signed by the company. It is not appropriate for counsel to provide the representations on the company's behalf.
2. We note that throughout your registration statement, you have deleted discussions related to the Department of Energy loan guarantee. Please tell us why you have deleted these discussions. To the extent that this guarantee is no longer viable, please tell us what impact, if any, you expect this to have on your liquidity generally and your plans to construct standard commercial production facilities specifically.
3. We note the picture on the inside back cover page of the prospectus (immediately following page F-46 in the EDGAR-filed version of the document). The picture appears to show a KiOR logo next to the NASDAQ logo on the side of a building. Please clarify

for us the purpose of this picture and your basis for including it in the prospectus. In this regard, while we recognize that you have applied to list your common stock on The Nasdaq Global Market, at this time, we do not have information indicating that your listing has been approved.

Prospectus Summary, page 1

4. We note your response to comment nine of our letter dated May 5, 2011 as well as the added disclosure on page 1. Based on your response, it appears as if TIAX's projections are based on input data that you supplied. Please disclose this fact in your prospectus.

Management's Discussion and Analysis . . . , page 41

Critical Accounting Policies and Estimates, page 45
Stock-Based Compensation, page 46

5. We remind you to revise your registration statement to specifically address the differences between the estimated fair values you have determined and your anticipated IPO price, once determined.

Liquidity and Capital Resources, page 56

6. We note your revised disclosure in the first bulletpoint in response to comment 17 of our letter dated May 5, 2011. You state that you expect your Columbus facility to "commence" production by the second half of 2012. Please confirm for us, if true, that at the time the facility commences production it will be substantially complete.

Long-Term Debt, page 58

7. We note that you filed Exhibits 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, and 4.14 in response to comment 19 of our letter dated May 5, 2011. Please refile these exhibits so that they include all applicable schedules, exhibits, and attachments. Similarly, please ensure all filed exhibits include all applicable appendices, schedules, exhibits, and attachments.

Business, page 71

Our Distribution Plan, page 80

8. We note your response to comment 22 of our letter dated May 5, 2011. Please explain to us why you believe the company's business is not substantially dependent on the offtake agreements. In this regard, we note your risk factor disclosure on page 15 in which you state that your commercialization plan will be harmed if the counterparties to the agreements terminate the agreements.

Consolidated Financial Statements, page F-1

Consolidated Balance Sheets, page F-3

9. Given your presentation of a pro forma balance sheet at March 31, 2011, please revise your registration statement to remove the pro forma balance sheet at December 31, 2010, and the related footnote on page F-7.

Note 10 – Convertible Preferred Stock Warrants, page F-43

Convertible Preferred Stock Warrant Liability, page 43

10. We note your disclosures that the convertible preferred stock warrants will convert into warrants to purchase Class A common stock and Class B common stock, upon completion of the offering, and the warrant liability will be reclassified to additional paid-in capital. In this regard, please tell us and disclose:
 - the material provisions of the Class A and Class B warrants; and
 - your consideration of the guidance in FASB ASC 815-40-15-7 in determining that these warrants will be indexed to your common stock and accounted for as equity instruments.

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 the information the Securities Act of 1933 and all applicable Securities Act rules require. 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Dale Welcome, Staff Accountant, at (202) 551-3865 or, in his absence, John Cash, Accounting Branch Chief, at (202) 551-3768 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Dickerson, Staff Attorney, at (202) 551-3749 or, in her absence, Dietrich King, Senior Staff Attorney, at (202) 551-3338 with any other questions.

Sincerely,

Pamela Long
Assistant Director

cc: Felix P. Phillips
Baker Botts L.L.P.
via facsimile at (713) 229-7828