



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

DIVISION OF
CORPORATION FINANCE

May 5, 2011

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

Re: KiOR, Inc.
Registration Statement on Form S-1
Filed April 11, 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. Please be advised that we may have further comments when items that are currently blank are completed.
2. We note that you have omitted a price range and related information from your prospectus. Since the price range triggers a number of disclosure matters, we will need sufficient time to process the amendment when it is included. Please understand that its effect on disclosure throughout the document may cause us to raise issues on areas not previously commented upon.
3. As indicated in the comment above, we note that you have omitted certain pricing-related information as well as other information from this filing. If you intend to rely on Rule 430A, please note that Rule 430A does not allow for the omission prior to effectiveness of amounts that may be computed based on the maximum number of shares offered and the mid-point of the offering range, or the number of shares to be offered on the cover. In

addition, please confirm that you will not circulate copies of the registration statement or the preliminary prospectus until you include an estimated price range, maximum number of shares, dollar amounts dependent upon the offering price that are based on the mid-point of the offering price range, and all other information except information you may exclude in reliance upon Rule 430A.

4. Prior to the effectiveness of your registration statement, please arrange to have FINRA call us or provide us with a letter indicating that FINRA has cleared the underwriting arrangements for the offering.
5. We encourage you to file all exhibits, including your legal opinion and form of underwriting agreement, with your next amendment. Please understand that we will need adequate time to review these materials before effectiveness.

Prospectus Cover Page

6. Please confirm that all the underwriters named on the prospectus cover page play the role of lead or managing underwriters. Otherwise, please revise the prospectus cover page to identify only the lead or managing underwriters. Please refer to Item 501(b)(8) of Regulation S-K.
7. Please define the term “E&P companies” used in the fourth bulleted paragraph on page two and elsewhere in the prospectus.

Table of Contents, page i

8. Please remove the exhibits from the table of contents, as it should be limited to the contents of the prospectus. Please refer to Item 501(a) of Regulation S-K.

Prospectus Summary, page 1

9. We note your statement in the third paragraph that “[your] gasoline and diesel blendstocks are projected to reduce direct lifecycle greenhouse gas emissions by over 80% compared to the petroleum-based fuels they displace.” Please revise this disclosure to indicate who has made this projection and supplementally explain to us the basis for the projection.

Summary Consolidated Financial Data, page 11

Selected Consolidated Financial Data, page 39

10. We refer to the line item, working capital, in the consolidated balance sheet data. Since this term is a non-GAAP measure, please revise your registration statement to show the working capital line item as part of an “other” financial data section.

Special Note Regarding Forward-Looking Statements, page 31

11. We note your statement on page 32 that you “undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus.” This statement does not appear to be consistent with your disclosure obligations. Please revise this statement to clarify that you will update this information to the extent required by law.

Market, Industry and Other Data, page 32

12. Please provide us with copies of the reports citing the market data you provide throughout your prospectus, marked with page references tracking your disclosures in the filing.
13. We note your statement that you “have not independently verified any third-party information and cannot assure [the investor] of its accuracy or completeness.” By including the statements of third parties in the prospectus, you are reasserting the statements that were initially made by the referenced third parties, and your belief as to the accuracy and reliability of those statements is implied through the prospectus disclosure of such information. As such, please revise your disclosure to remove any implication that you are not responsible for assessing the reasonableness and soundness of the market data and industry statistics presented.
14. Please disclose whether the market, industry, and other data you discuss in your registration statement represent the most recently available data and therefore, remain reliable. Please also disclose whether you funded or were otherwise affiliated with any of the sources that you cite. Further, please confirm that the sources are widely available to the public. If any sources are not publicly available, either file consents or explain to us why you are not required to do so under Rule 436 of Regulation C and Section 7 of the Securities Act.
15. You state that projections, assumptions, and limitations are subject to risks due to factors described in “Risk Factors” and elsewhere in the prospectus. Please confirm to us, if true, that you have discussed all known material risks in the “Risk Factors” section.

Use of Proceeds, page 33

16. As required by Item 504 of Regulation S-K, please state the approximate amount of proceeds intended to be used for each purpose identified here. In particular, please address how proceeds would be allocated between the two production facilities that you describe. If you wish to reserve the right to change the use of proceeds, you may do so provided that the reservation is due to specific contingencies that you discuss and that you indicate the alternatives to such use. Please see Instruction 7 to Item 504 of Regulation S-K.

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

Liquidity and Capital Resources, page 54

17. We note your statements that you anticipate construction and startup costs of your initial-scale commercial production facility in Columbus, Mississippi to approximate \$190 million. Please disclose the dollar amount of these expenses you expect to incur in the next twelve months as well as when you expect the facility to be completed. Please provide similar disclosure for the planned four standard commercial production facilities and centralized hydrotreating facility.

Mississippi Development Authority Loan, page 55

18. Please discuss, to the extent applicable, if your loan agreement with the Mississippi Development Authority contains any significant financial covenants.

Long-Term Debt, page 56

19. Please revise your disclosure to identify the lenders of the equipment and business loans you reference on pages 56 and 57. Additionally, please tell us what consideration you gave to filing these loan agreements as exhibits to your registration statement.

Business, page 69

Overview, page 69

20. Please briefly describe the general development of your business during the past five years, or such shorter period as you have been engaged in business, including the year in which the business was organized and its form of organization. Refer to Item 101(a) of Regulation S-K.

Scaling Our Technology, page 75

21. We note the disclosure relating to the work of R.W. Beck, Inc., who you engaged to conduct a technical review of your plans to be used in your application to the DOE's loan guarantee program. Please tell us more about the services you received from R. W. Beck, Inc. and how you used the results of these services, as well as what consideration you have given to identifying R.W. Beck, Inc. as an expert and obtaining its consent to be named in the registration statement.

Our Distribution Plan, page 78

22. Please discuss the material terms of your offtake agreement with Hunt Refining Company. Additionally, please tell us what consideration you gave to filing the offtake agreement as an exhibit to your registration statement.

Management, page 86

23. Please ensure that you discuss each executive officer's and each non-employee director's business experience for the past five years. In this regard, we note there appear to be gaps in the disclosures provided for Joseph S. Cappello, John Kasbaum, Ralph Alexander, and Jagdeep Singh Bachher. Refer to Item 401(e) of Regulation S-K.

Audit Committee, page 91

24. You reference Item 401(h) of Regulation S-K when it appears you mean Item 407(d)(5) of Regulation S-K. Please revise your disclosure as appropriate.

Executive Compensation, page 95

Compensation Discussion and Analysis, page 95

Elements of Compensation for our Named Executive Officers, page 96
Annual Bonuses, page 96

25. Please disclose how the board of directors determined the amount of 30,000 fully vested shares to satisfy Mr. Cannon's annual bonus.

Equity Compensation, page 97

26. We note your statement that the board of directors is authorized to set different vesting schedules and exercise prices for equity awards. Please disclose how the board determined the vesting schedules and exercise prices for the equity awards granted in 2010.

Summary Compensation Table, page 100

27. You disclose in the table that Mr. Cannon received a bonus in 2010 of \$118,800. Please tell us why Mr. Cannon's actual bonus exceeded the amount provided for in your employment arrangements with him, as summarized on page 103.
28. We note your disclosure on page 96 about settling Mr. Cannon's bonus in stock. Please revise footnote (2) to the table to clarify that although the plan award called for a cash payment the award was settled with stock in order to permit you to conserve cash. In the

footnote, please include the calculation by which you determined the number of shares to award.

Certain Relationships and Related Person Transactions, page 110

Agreements with BIOeCON, page 111

29. Please tell us what consideration you gave to filing your agreements with BIOeCON (i.e., the license, the intellectual property transfer agreement and the settlement agreement) as exhibits to the registration statement.

Policies and Procedures for Related Person Transactions, page 111

30. Please describe how the audit committee will review and approve related person transactions. For guidance, refer to Item 404(b) of Regulation S-K.

Principal Stockholders, page 112

31. In footnote eight on page 114, please clarify whether Dr. Bachher disclaims beneficial ownership of all 3,059,975 shares reported for him in the table.

Description of Capital Stock, page 115

32. Here, as well as elsewhere throughout your registration statement, we note your statement that your common stock will be redesignated as Class B common stock upon completion of this offering. Please revise your disclosure to clarify whether all of your current outstanding common stock will be redesignated as Class B common stock.

Preferred Stock, page 116

33. You state that your convertible preferred stock will be converted into common stock upon completion of this offering. Please clarify whether the preferred stock will be converted into Class A or Class B common stock.

Consolidated Financial Statements, page F-1

Consolidated Balance Sheet, page F-3

Consolidated Statements of Operations, page F-4

34. Please note on your financial statements that the amounts are in thousands.

Notes to Consolidated Financial Statements, page F-7

Note 2. Summary of Significant Accounting Policies, page F-7

Unaudited Pro Forma Balance Sheet, page F-7

35. Under the caption “Unaudited Pro Forma Balance Sheet” you indicate that convertible preferred stock will automatically be converted into warrants to purchase an equivalent number of Class A or Class B common shares. However, under “Convertible Preferred Stock Warrant Liability” you disclose that convertible preferred stock warrants will convert to the corresponding common stock. In this regard, it is not clear to us whether the convertible preferred stock warrants convert to warrants or alternatively, convert to common stock. Please advise or revise your registration statement as appropriate.

Net Loss per Share and Unaudited Pro Forma Net Loss per Share . . . , page F-12

36. Please expand your disclosure to state, if true, that based upon contractual terms, the convertible preferred stockholders share in the losses of the company with common shareholders.

Note 15. Subsequent Events, page F-27

37. Please tell us what consideration you gave to filing the Engineering, Procurement Services and Construction Agreement with a subsidiary of KBR, Inc. and KiOR Columbus, the lease agreement for a four million cubic foot hydrogen plant, and the memorandum of understanding discussed on page F-27 as exhibits to the registration statement.

Item 15. Recent sales of unregistered securities, page II-2

38. Please disclose the consideration you received for the warrant issuances. Refer to Item 701(c) of Regulation S-K.

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:

Mr. Christopher A. Artzer
KiOR, Inc.
May 5, 2011
Page 8

- 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.

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