



DIVISION OF
CORPORATION FINANCE

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

May 24, 2011

Via Email

Mark Manganelli
Manager of Treasury and Tax
Beacon Power Corporation
65 Middlesex Road
Tyngsboro, Massachusetts 01879

**Re: Beacon Power Corporation
Registration Statement on Form S-3
Filed April 27, 2011
File No. 333-173747**

Dear Mr. Manganelli:

We have limited our review of your registration statement to those issues we have addressed in our 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. Where 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 provide us with a detailed analysis of why you meet the filing requirements set forth in Instruction I.B.1 of Form S-3.
2. It appears that you are relying on Section 305(b)(2) of the Trust Indenture Act of 1939 to designate the trustee on a delayed basis. Therefore, please include a reference to Exhibit 25, the Form T-1, in your exhibit index and note that you will file the Form T-1 separately under the electronic form type "305B2." Please note that you should not file the Form T-1 in a separate post-effective amendment to the registration statement or in a Form 8-K that is incorporated by reference into the registration statement. For guidance, please refer to Section 220.01 of our Trust Indenture Act of 1939 Compliance and Disclosure Interpretations, available on our website at www.sec.gov/divisions/corpfin/cfguidance.shtml.

Item 17. Undertakings, page II-2

3. Please provide the undertaking set forth at Item 512(j) of Regulation S-K.

Exhibit 5.1 Opinion of Edwards Angell Palmer & Dodge LLP

4. Please note that it is inappropriate for counsel to assume any material facts underlying the opinion or facts that are readily ascertainable. In this regard, please have counsel delete the assumption in the third paragraph on page four of its legal opinion that “the Company is and will remain duly organized, validly existing and in good standing under Delaware law” (emphasis added). Please also have counsel delete its assumption in the first sentence of the fourth paragraph on page four that “the company has the organizational power and authority to issue and sell the Securities.”

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.

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.

Mark Manganello
Beacon Power Corporation
May 24, 2011
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You may contact Chris Chase, Staff Attorney, at (202) 551-3485 or me at (202) 551-3720 with any questions.

Sincerely,

/s/ Christopher F. Chase for

H. Christopher Owings
Assistant Director

cc: Jill M. Hanson
Edwards Angell Palmer & Dodge LLP
Via Email