



DIVISION OF
CORPORATION FINANCE

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

October 27, 2011

Via E-mail

Teodor Klowan, Jr.
Chief Financial Officer
ThermoEnergy Corporation
10 New Bond Street
Worcester, MA 01606

**Re: ThermoEnergy Corporation
Amendment No. 4 to Registration Statement on Form S-1
Filed October 17, 2011
File No. 333-175227
Form 10-K/A for the Fiscal Year Ended December 31, 2010
Filed October 14, 2011
File No. 033-46104-FW**

Dear Mr. Klowan:

We have reviewed your filings and have the following comments.

Amendment No. 4 to Registration Statement on Form S-1 filed on October 17, 2011

Management's Discussion and Analysis of Financial Condition , page 21

Results of Operations, page 25

1. We note your response to comment one in our letter dated October 7, 2011; however, in the table on page 25 the amounts shown for general and administrative expenses, engineering, research and development expenses, and selling expenses differ from the amounts described in the paragraphs following the table. Please revise your disclosure accordingly and ensure that any changes are made consistently and uniformly.

Executive Officer and Director Compensation, page 35

Outstanding Equity Awards at Fiscal Year-End (2010), page 37

2. We note your response to comment four in our letter dated October 7, 2011, and your revised disclosure. It appears, however, that certain disclosures in the outstanding equity awards table conflict with disclosures in the same table in Amendment No. 4 to the Form 10-K/A for the fiscal year ended December 31, 2010. Specifically, in the columns for the number of securities underlying unexercised options, for Messrs. Cossey, Bullock, and Klowan the mix between exercisable and unexercisable options differs between the tables

(e.g., the table in the prospectus shows Mr. Bullock's mix as 3,059,775 exercisable and 5,099,626 unexercisable while the table in the 10-K shows the mix as 2,039,851 exercisable and 6,119,550 unexercisable). In addition, for Mr. Klowan, each table shows a different number for the total number of unexercised options. Please revise your disclosure accordingly.

Amendment No. 4 to Form 10-K/A for the Fiscal Year Ended December 31, 2010

Evaluation of Disclosure Controls and Procedures, page 19

3. We have considered your response to comment seven in our letter dated October 7, 2011, as well as the information in the supplemental materials you provided. We note that for your fiscal year ended December 31, 2010, you identified two material weaknesses in your internal control over financial reporting. You disclose that the first weakness concerned inadequately allocating resources to ensure that necessary internal controls were implemented, and the second material weakness concerned the insufficient segregation of duties in your significant accounting functions. We further note that there is substantial overlap between a company's disclosure controls and procedures and its process for internal control over financial reporting. Please refer to the definitions of "disclosure controls and procedures" and "internal control over financial reporting" in Rules 13a-15(e) and 13a-15(f), respectively, under the Securities Exchange Act of 1934, as amended. In view of the nature of the two material weaknesses in your internal control over financial reporting, which appear to implicate your disclosure controls and procedures, we still do not understand how your chief executive officer and your chief financial officer were able to conclude that your disclosure controls and procedures were effective. Please help us to understand how they were able to reach this conclusion. In doing so, please address the aforementioned definitions and explain to us why management apparently determined that the material weaknesses in your process for internal control over financial reporting did not implicate with your disclosure controls and procedures. If, instead, management now wishes to re-consider and revise its conclusion as to the effectiveness of your disclosure controls and procedures as of December 31, 2010, please amend your annual report on Form 10-K promptly.

You may contact Jessica Kane at (202) 551-3235 or Dieter King at (202) 551-3338 with any questions.

Sincerely,

/s/ Dieter King for

Pamela Long
Assistant Director

cc: William E. Kelly, Esq.