



DIVISION OF
CORPORATION FINANCE

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

August 17, 2012

Via E-mail

Chris Anthony
President
Flux Power Holdings, Inc.
2240 Auto Park Way
Escondido, CA 92029

**Re: Flux Power Holdings, Inc.
Amendment No. 1 to Form 8-K
Filed August 6, 2012
File No. 000-25909**

Dear Mr. Anthony:

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 this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. 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 filing and the information you provide in response to these comments, we may have additional comments.

Marketing and Sales, page 16

1. We note your response to prior comment 5. With a view toward disclosure of any material disproportionate reliance on the identified customers, please tell us the percentage of your revenues attributable to each individual customer for each period provided.

Production Process, page 16

2. We note your response to prior comment 4 and your revised disclosure on page 15 indicating that 84% of your revenues for the nine months ended March 31, 2012 derived from battery sales. Please revise your disclosure describing your production process to discuss the production of your batteries, including, as applicable, whether you rely on one or more manufacturers, such as LHV Power, for production. Please also explain in greater detail the "flexibility in cell sourcing," which you reference on page 19.

3. We note your revisions in response to prior comment 6 with respect to the term sheet agreement with LHV Power. Reconcile your disclosure that the agreement remains in effect with the provision under the caption "Term & Effective Date" in exhibit 10.7, which indicates that the term of the agreement could have been extended only for a single one-year period following the initial expiration date of April 1, 2010. Also, please revise to clarify what you mean by the statement that "the products defined in the term sheet were assigned to Current Ways" and what this means for the parties' obligations under the agreement. Finally, please revise the appropriate sections of your document to include the information regarding the amounts paid under the agreement that had been included in your initial 8-K filing but was deleted from page 51 in the amendment.

Strategic Relationship with LHV Power, page 18

4. We note your response to prior comment 6 regarding disclosure of the portion of your sales attributable to products manufactured by LHV Power; however, it does not appear that you have included this disclosure in your amended filing. Please advise or revise.

Suppliers, page 18

5. We refer to your response to prior comment 7. Although your response indicates that the supply agreement with Global Fluid Power Solutions is non-exclusive and lacks minimum purchase requirements, you have not described the terms that are included in the agreement or explained how the agreement governs the commercial relationship. Given your disclosure that the supplier accounted for 53% and 79% of your supply purchases during the nine months ended March 31, 2012 and March 31, 2011, respectively, it therefore remains unclear how you concluded that the agreement is not a material agreement. Accordingly, please expand your disclosure of the material terms of the agreement and file it as an exhibit or provide us with additional analysis to support a conclusion that the agreement is not material.

Business Experience, page 44

6. We note your revisions in response to prior comment 12. Please expand your disclosure to describe the nature of the businesses named in this section, such as Epic Boats, LLC, Esenjay Petroleum Corporation, Current Ways, Inc., and LHV Power Corporation, so investors have adequate information to evaluate the prior business experience of your directors and executive officers.

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 Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are

Chris Anthony
Flux Power Holdings, Inc.
August 17, 2012
Page 3

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.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

You may contact Kevin Kuhar at (202) 551-3662 or Gary Todd at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Joseph McCann at (202) 551-6262 or Mary Beth Breslin, Senior Attorney, at (202) 551-3625 with any other questions.

Sincerely,

/s/ Mary Beth Breslin for

Russell Mancuso
Branch Chief

cc (via e-mail): John P. Yung, Esq. – Locke Lord LLP