



DIVISION OF  
CORPORATION FINANCE

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

February 18, 2011

Magnus Ryde  
Chief Executive Officer  
DayStar Technologies, Inc.  
1010 South Milpitas Boulevard  
Milpitas, California 95035

**Re: DayStar Technologies, Inc.  
Registration Statement on Form S-3  
Filed February 3, 2011  
File No. 333-172051**

Dear Mr. Ryde:

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.

Prospectus Summary, page 1

1. Please reconcile your disclosure in both the last paragraph on page 1 that "Socius will be entitled to exercise an additional investment right" and the first paragraph on page 6 that Socius "elects" to purchase pursuant to the investment right and warrant, with the terms of the Securities Purchase Agreement suggesting that Socius is contractually obligated to make such purchases. We note in this regard Section 2.3(c)(i)-(ii) of Exhibit 10.1.

Selling Stockholder, page 3

2. Please provide us with a complete chronological and quantified summary of the transactions between and among you and Socius CG II, Ltd. This summary should describe debt and equity securities issued to Socius by you, any claims against you

purchased by Socius, settlements related to the claims, issuances of your securities to Socius in satisfaction of the claims, and dispositions of these securities by Socius. Please also confirm that you are not issuing securities pursuant to the Securities Purchase Agreement to repay any outstanding indebtedness or claims.

Plan of Distribution, page 4

3. Please revise the second paragraph on page 5 to clarify that the selling stockholder is an underwriter.

Exhibit 5.1

4. Counsel may not attempt to limit reliance. Please file a revised opinion that does not include the limitation in the seventh paragraph.
5. We note the date limitation in the eighth paragraph. Please provide an opinion that is dated as of the date that your registration statement becomes effective.

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

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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 Aslynn Hogue at (202) 551-3841 or me at (202) 551-3800 with any questions.

Sincerely,

Amanda Ravitz  
Assistant Director

CC (by facsimile): Stephen T. Adams, Esq. — Greenberg Traurig, LLP