

Global Clean Energy Holdings, Inc.  
Form S-8  
April 12, 2010

As filed with the Securities and Exchange Commission on April 9, 2010      Registration No. 333-\_\_\_\_\_

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

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FORM S-8  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933

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GLOBAL CLEAN ENERGY HOLDINGS, INC.  
(Exact name of registrant as specified in its charter)

Utah  
(State or other jurisdiction of  
incorporation or organization)

87-0407858  
(I.R.S. Employer  
Identification No.)

6033 W. Century Blvd, Suite 895,  
Los Angeles, California 90045  
(Address of principal executive offices)

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2002 Stock Incentive Plan  
(Full title of the plan)

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Richard Palmer  
Chief Executive Officer  
Global Clean Energy Holdings, Inc.  
6033 W. Century Blvd, Suite 895,  
Los Angeles, California 90045  
(Name and address of agent for service)  
(310) 641-4234  
(Telephone number, including area code, of agent for service)

Copy to:  
Istvan Benko  
TroyGould PC  
1801 Century Park East, Suite 1600  
Los Angeles, California 90067  
(310) 789-1226

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer     Accelerated filer                       Non-accelerated filer                       Smaller reporting company  
(Do not check if a smaller reporting company)

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## CALCULATION OF REGISTRATION FEE

| Title of securities to be registered    | Amount to be registered (1) | Proposed maximum offering price per share | Proposed maximum aggregate offering price | Amount of registration fee (4) |
|---|-----------------------------|---|---|--------------------------------|
| Common Stock, no par value per share(2) | 12,350,000 shares           | (2) \$ 0.03(2)                            | \$ 370,500(2)                             | \$ 26.42                       |
| Common Stock, no par value per share(2) | 350,000 shares              | (2) \$ 0.07(2)                            | \$ 24,500(2)                              | \$ 1.75                        |
| Common Stock, no par value per share(2) | 500,000 shares              | (2) \$ 0.25(2)                            | \$ 125,000(2)                             | \$ 8.91                        |
| Common Stock, no par value per share(3) | 4,800,000 shares            | (3) \$ 0.01(3)                            | \$ 48,000(3)                              | \$ 3.42                        |
| <b>TOTAL</b>                            | <b>18,000,000 shares</b>    | <b>—</b>                                  | <b>\$ 568,000</b>                         | <b>\$ 40.50</b>                |

- (1) Pursuant to Rule 416(a) of the Securities Act of 1933, this registration statement covers, in addition to the shares of common stock specified above, an indeterminate number of additional shares of common stock that may become issuable under the 2002 Stock Incentive Plan as a result of the anti-dilution adjustment provisions contained therein.
- (2) The registration fee for shares of common stock issuable upon exercise of outstanding options under the 2002 Stock Incentive Plan was calculated pursuant to Rule 457(h) of the Securities Act of 1933 using the prices at which such outstanding options may be exercised.
- (3) Represents shares reserved for issuance pursuant to future awards under the 2002 Stock Incentive Plan. The proposed maximum offering price per share and maximum aggregate offering price for these shares were estimated pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933 on the basis of the \$0.01 average of the high and low trading prices of the registrant's common stock as reported on the OTC Bulletin Board on April 8, 2010.
- (4) Amount of registration fee was calculated pursuant to Section 6(b) of the Securities Act of 1933, which provides that the fee shall be \$71.30 per \$1,000,000 of the proposed maximum aggregate offering price of the securities proposed to be offered.

EXPLANATORY NOTE

A Registration Statement on Form S-8, File No. 333-92446, filed on July 16, 2002, registered 2,000,000 shares of common stock, no par value per share, of Global Clean Energy Holdings, Inc. (f/k/a Medical Discoveries, Inc., the “Company”), all of which were issuable upon the exercise of options issued under the Company’s 2002 Stock Incentive Plan (the “Plan”). A registration fee of \$10.76 was paid in connection with the foregoing Form S-8 filing.

Subsequently, the Company amended the Plan to increase the number of shares issuable upon the exercise of options and other awards granted thereunder to 20,000,000 shares. The Company is filing this registration statement to register such additional shares of common stock issuable under the Plan.

INCORPORATION BY REFERENCE OF PRIOR REGISTRATION STATEMENT

The contents of the Company’s Registration Statement on Form S-8, File No. 333-92446, filed on July 16, 2002, are incorporated into this Registration Statement by this reference, pursuant to General Instruction E to Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference

The following documents previously filed by Global Clean Energy Holdings Inc. (“we,” “us,” “our,” or the “Company”) with the Securities and Exchange Commission (the “SEC”) under the Securities Exchange Act of 1934 are incorporated by reference in this registration statement:

- Our Annual Report on Form 10-K for the fiscal year ended December 31, 2009 (“Form 10-K”) filed on April 1, 2010 (as amended by Amendment No. 1 to the Form 10-K filed on April 1, 2010);
  - Our Current Report on Form 8-K filed on March 22, 2010;
  - Our Current Report on Form 8-K filed on April 7, 2010; and
- The description of our common stock as described in our Registration Statement on Form 10 filed on June 28, 1984, and any amendment or report filed for the purpose of updating any such description.

In addition, each document that the Company files with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 after the date of this registration statement and prior to the filing of a post-effective amendment to this registration statement which indicates that all shares of common stock registered hereunder have been sold or that deregisters all such shares of common stock then remaining unsold, shall be deemed to be incorporated by reference into this registration statement and to be part thereof from the date of the filing of such document.

Item 8. Exhibits

The following exhibits are filed with this registration statement or are incorporated by reference as a part of this registration statement:

| Exhibit No. | Exhibit Description   |
|-------------|---|
| 4.1         | 2002 Stock Incentive Plan of Global Energy Clean Holdings, Inc. (previously filed by the Company as Exhibit 4.3 to Registration Statement on Form S-8 (Registration No. 333-92446) on July 16, 2002, and incorporated herein by reference). |
| 5.1         | Opinion of TroyGould PC (included with this registration statement).  |
| 23.1        | Consent of Hansen, Barnett & Maxwell. P.C. (included with this registration statement).   |
| 23.2        | Consent of TroyGould PC (included in the opinion filed as Exhibit 5.1).   |
| 24.1        | Power of Attorney (included on the signature page of this registration statement).  |

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Los Angeles, State of California on April 8, 2010.

GLOBAL CLEAN ENERGY HOLDINGS, INC.

Date: April 8, 2010

By: /s/ BRUCE NELSON  
Bruce Nelson  
Chief Financial Officer

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Richard Palmer as his true and lawful attorney-in-fact and agent, with full power of substitution, for him in any and all capacities, to sign this registration statement on Form S-8 and any amendments hereto (including post-effective amendments), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as he might do or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may do or cause to be done by virtue of this power of attorney.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

| Signature                              | Title  | Date           |
|--|--|----------------|
| /s/ RICHARD PALMER<br>Richard Palmer   | Chief Executive Officer, President<br>and Director | April 9, 2010  |
| /s/ DAVID R. WALKER<br>David R. Walker | Chairman – Board of Directors                      | April 9, 2010  |
| /s/ MARK BERNSTEIN<br>Mark Bernstein   | Director   | April 9, 2010  |
| Martin Wenzel                          | Director   | April __, 2010 |

EXHIBIT INDEX

The following exhibits included herewith or incorporated herein by reference are made part of this Registration Statement:

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