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**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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**CALPINE CORPORATION**  
*(Exact name of registrant as specified in its charter)*

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**Delaware**  
*(State or other jurisdiction of  
incorporation or organization)*

**77-0212977**  
*(I.R.S. Employer  
Identification No.)*

**50 West San Fernando Street, San Jose California 95113**  
**717 Texas Avenue, Houston Texas 77002**  
*(Address of Principal Executive Offices and zip codes)*

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**Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Fusco)**  
**Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Miller)**  
**Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Hill)**  
*(Full Title of the Plan)*

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**W. Thaddeus Miller, Esq.**  
**Executive Vice President, Chief Legal Officer and Secretary**  
**Calpine Corporation**  
**717 Texas Avenue**  
**Houston, Texas 77002**  
**(713) 830-2000**  
*(Name and address, including zip code, and telephone number, including area code, of agent for services)*

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**Copies to:**  
**Eulalia M. Mack, Esq.**  
**Thelen LLP**  
**875 Third Avenue**  
**New York, New York 10019**  
**(212) 603-2000**

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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 ☒

Non-accelerated filer ☐

(Do not check if a smaller reporting company)

Accelerated filer ☐

Smaller reporting company ☒

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered <sup>(1)</sup>	Proposed maximum offering price per share <sup>(2)</sup>	Proposed maximum aggregate offering price <sup>(2)</sup>	Amount of Registration Fee
Common Stock, \$0.001 par value per share	4,144,000 shares <sup>(3)</sup>	\$11.93	\$ 49,437,920	\$ 1,943
Common Stock, \$0.001 par value per share	428,000 shares <sup>(4)</sup>	\$11.93	\$ 5,106,040	\$ 201
Common Stock, \$0.001 par value per share	64,734 shares <sup>(5)</sup>	\$11.93	\$ 772,277	\$ 31
Total	4,636,734 shares	\$11.93	\$ 55,316,237	\$ 2,175

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended, this Registration Statement shall also cover any additional shares of Common Stock which become issuable under the above-named plan by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of outstanding shares of Common Stock.
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(h) under the Securities Act based on the average of the high and low sale prices of the Registrant’s common stock on the New York Stock Exchange as of October 2, 2008.
- (3) Represents 4,144,000 shares issuable under the Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement with Jack A. Fusco.
- (4) Represents 428,000 shares issuable under the Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement with W. Thaddeus Miller.
- (5) Represents 64,734 shares issuable under the Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement with John B. (Thad) Hill.

## PART I

### INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

#### Item 1. Plan Information.\*

#### Item 2. Registrant Information and Employee Plan Annual Information.\*

\* Information required by Part I to be contained in the Section 10(a) prospectus is omitted from this Registration Statement in accordance with Rule 428 under the Securities Act and the Note to Part I of Form S-8.

The documents containing the information specified in Part I will be delivered in accordance with Rule 428(b)(1) of the Securities Act of 1933, as amended (the "Securities Act"). Such documents are not required to be, and are not, filed with the Securities and Exchange Commission ("Commission") either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424. These documents, and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of this Form S-8, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference.

The following documents, which have been filed by Calpine Corporation (the "Company") with the Commission, are incorporated in this Registration Statement by reference to:

- (a) the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2007, filed on February 29, 2008;
- (b) the Company's Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2008, filed on May 12, 2008, and June 30, 2008, filed on August 11, 2008;
- (c) the Company's Current Reports on Form 8-K filed on February 1, 2008 (excluding Item 7.01 and related exhibits), February 6, 2008, February 22, 2008, March 18, 2008, March 25, 2008, May 8, 2008, May 28, 2008, June 5, 2008, July 3, 2008, July 14, 2008, July 22, 2008, August 12, 2008, August 14, 2008, August 29, 2008, September 4, 2008, and October 2, 2008, (excluding Item 7.01 and related exhibits); and
- (d) The description of the Company's Common Stock, par value \$0.001 per share, set forth in its Registration Statement on Form 8-A filed on January 15, 2008.

All reports and documents subsequently filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (other than portions of these documents that are either (1) described in paragraphs (d)(1), (d)(2), (d)(3) or (e)(5) of Regulation S-K promulgated by the Commission or (2) furnished under Item 2.02 or Item 7.01 of a Current Report on Form 8-K, unless otherwise indicated therein) after the date of this Registration Statement, but prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of the filing of such documents.

Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

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**Item 4. Description of Securities.**

Not Applicable.

**Item 5. Interests of Named Experts and Counsel.**

Not Applicable.

**Item 6. Indemnification of Directors and Officers.**

The Company is incorporated under the laws of the State of Delaware.

Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of its directors to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except for liability for: (i) any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the Delaware General Corporation Law or (iv) for any transaction from which a director derived an improper personal benefit. The Company's Amended and Restated Certificate of Incorporation provides that no director will be personally liable to the Company or any of its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability in the instances enumerated in clauses (i) through (iv) of the preceding sentence.

Section 145 of the Delaware General Corporation Law provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise. The indemnity may include expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with the action, suit or proceeding, provided the person acted in good faith and in a manner he reasonably believed to be in or not opposed to the corporation's best interests and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his conduct was unlawful. A similar standard of care is applicable in the case of actions by or in the right of the corporation, except that no indemnification may be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or the court in which such action was brought determines that, despite the adjudication of liability but in view of all of the circumstances of the case, the person is fairly and reasonably entitled to indemnity for expenses that the Delaware Court of Chancery or other court shall deem proper.

The Company's Amended and Restated Bylaws (the "Bylaws") provide that the Company shall indemnify any director or "executive officer" (as such term is defined in Rule 405 promulgated under the Securities Act) of the Company, and may indemnify any employee or agent of the Company who is not a director or executive officer, who was or is a party or is threatened to be made a party to, or testifies in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative in nature, by reason of the fact that such person is or was a director, officer, employee or agent of the Company, or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, limited liability company, partnership, joint venture, employee benefit plan, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the Company, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful, to the fullest extent permitted by law as the same exists or may hereafter be amended; provided, however, that, except with respect to proceedings to enforce rights to indemnification, the Company shall indemnify any such indemnitee in connection with a proceeding (or part thereof) initiated by such indemnitee only if such proceeding (or part thereof) was authorized by the board of directors of the Company. The Company may enter into agreements with any such person for the purpose of providing for such indemnification.

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To the extent that an employee or agent of the Company who is not a director or executive officer has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in the paragraph above, or in defense of any claim, issue or matter therein, the Bylaws provide that such person may be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

The Bylaws further state that expenses incurred by a director, executive officer, employee or agent in defending or testifying in a civil, criminal, administrative or investigative action, suit or proceeding shall (in the case of a director or executive officer of the Company) and may (in the case of an employee or agent of the Company who is not a director or executive officer of the Company) be paid by the Company in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director, executive officer, employee or agent to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the Company against such expenses as authorized by the Bylaws, and the Company may enter into agreements with such persons for the purpose of providing for such advances.

The right to indemnification set forth in the Bylaws shall not be deemed exclusive of any other rights to which any person may be entitled under any agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding an office, and shall continue as to a person who has ceased to be a director, executive officer, employee or agent of the Company and shall inure to the benefit of the heirs, executors and administrators of such person.

In addition, the Bylaws provide that the Company shall have power to purchase and maintain insurance on behalf of any person who is or was a director, executive officer, employee or agent of the Company, or is or was serving at the request of the Company as a director, officer, employee or agent of another corporation, partnership, joint venture, employee benefit plan trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the Company would have the power to indemnify such person against such liability under the Bylaws or otherwise.

**Item 7. Exemption from Registration Claimed.**

Not applicable.

**Item 8. Exhibits.**

See the accompanying Exhibit Index for a list of Exhibits to this Registration Statement.

**Item 9. Undertakings.**

(a) The undersigned registrant hereby undertakes:

(1) to file, during any period in which offers or sales are being made, a post-effective amendment to the Registration Statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

*provided, however*, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or

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furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the Registration Statement;

(2) that, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof and

(3) to remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Company's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Houston, State of Texas, on October 3, 2008.

### CALPINE CORPORATION

By: /s/ Jack A. Fusco  
Name: Jack A. Fusco  
Title: President and Chief Executive Officer

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Jack A. Fusco and W. Thaddeus Miller, and each or either of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this Registration Statement under the Securities Act of 1933, as amended, 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 fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities indicated on October 3, 2008.

<u>Signature</u>	<u>Title</u>
<u>/s/ Jack A. Fusco</u> Jack A. Fusco	President, Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ Zamir Rauf</u> Zamir Rauf	Interim Executive Vice President and Interim Chief Financial Officer (Principal Financial Officer)
<u>/s/ Kenneth A. Graves</u> Kenneth A. Graves	Interim Corporate Controller and Principal Accounting Officer (Principal Accounting Officer)
<u>/s/ Frank Cassidy</u> Frank Cassidy	Director
<u>/s/ Robert C. Hinckley</u> Robert C. Hinckley	Director
<u>/s/ David C. Merritt</u> David C. Merritt	Director
<u>/s/ W. Benjamin Moreland</u> W. Benjamin Moreland	Director
<u>/s/ Denise M. O'Leary</u> Denise M. O'Leary	Director
<u>/s/ William J. Patterson</u> William J. Patterson	Director
<u>/s/ J. Stuart Ryan</u> J. Stuart Ryan	Director

## EXHIBIT INDEX

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of Calpine Corporation (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on February 1, 2008).
3.2	Amended and Restated Bylaws of Calpine Corporation (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on February 1, 2008).
4.1	Specimen Common Stock Certificate representing shares of common stock, \$0.001 par value per share (incorporated by reference to Exhibit 4.3 to the Company's Registration Statement on Form S-8 (No. 333-149074) filed with the SEC on February 6, 2008).
4.2	Calpine Corporation 2008 Equity Incentive Plan (incorporated by reference to Exhibit 4.5 to the Company's Registration Statement on Form S-8 (No. 333-149074) filed with the SEC on February 6, 2008).
4.3	Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Fusco) (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on August 12, 2008).
4.4	Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Miller).*
4.5	Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreement (Hill) (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the SEC on September 4, 2008).
5.1	Opinion of Thelen LLP with respect to the legality of Common Stock being registered hereby.*
23.1	Consent of PricewaterhouseCoopers LLP.*
23.2	Consent of Thelen LLP (included in Exhibit 5.1).*
24	Power of Attorney (contained on the signature page to this Registration Statement).*

\* Filed herewith.



## CALPINE CORPORATION

## EXECUTIVE SIGN ON

## NON-QUALIFIED STOCK OPTION AGREEMENT

OPTION granted on August 11, 2008 (the “Grant Date”), by Calpine Corporation, a Delaware corporation (the “Company”), to Thaddeus Miller (the “Grantee”) pursuant to this Non-Qualified Stock Option Agreement (“Stock Option Agreement”).

1. GRANT OF OPTION. The Company hereby grants to the Grantee the irrevocable Option to purchase, on the terms and subject to the conditions set forth herein and in the Employment Agreement between the Company and the Grantee, dated August 11, 2008 (the “Employment Agreement”), and (except as otherwise provided herein) the Plan (as defined below), 1,678,000 fully paid and nonassessable shares of the Company’s Common Stock, par value \$.001 per share. The Company grants the Option to the Grantee in four (4) tranches (each a “Tranche”). The corresponding number of shares of Company Common Stock and the corresponding exercise price per share for each Tranche is set forth below.

<u>Tranche</u>	<u>Number of Shares</u>	<u>Exercise Price</u>
Tranche 1	345,000	\$16.60
Tranche 2	394,000	\$19.19
Tranche 3	443,000	\$21.59
Tranche 4	496,000	\$23.99

Options in Tranches 1, 2 and 3, and 68,000 of those Options in Tranche 4 which are scheduled to vest on the first anniversary of the Grant Date in accordance with Section 3 below are granted pursuant to the Company’s 2008 Equity Incentive Plan (the “Plan”), a copy of which is attached hereto. The remaining Options shall be granted outside of the Plan but shall be deemed and treated for all purposes hereunder as though granted under the Plan and subject to its terms and conditions to the same extent as the Options granted hereunder which are granted pursuant to the Plan. Except as otherwise set forth herein, the Option is subject, or deemed subject, as applicable, in its entirety to all the applicable provisions of the Plan as in effect on the Grant Date, which are hereby incorporated

herein by reference. The Option is not intended to qualify as an “incentive stock option” within the meaning of Section 422 of the Code. Except as otherwise provided herein, or unless the context clearly indicates otherwise, capitalized terms not otherwise defined herein shall have the same definitions as provided in the Plan or as provided in the Employment Agreement.

2. **PERIOD OF OPTION.** The period of the Option shall commence on the Grant Date and shall expire on the seventh (7th) anniversary of the Grant Date (the “Option Period”). The Option (or any lesser amount thereof) may be exercised from time to time during the Option Period as to the number of Total Shares allowable under Section 3 below and the Plan.
3. **EXERCISE OF OPTION.** Except to the extent otherwise provided in Sections 4 and 8 of the Employment Agreement, each Tranche of the Option shall vest ratably on each of the first, second, third, fourth, and fifth anniversaries of the Grant Date; provided, however, that the Grantee must be continuously employed by the Company beginning on the Grant Date through each applicable vesting date.
4. **TERMINATION OF EMPLOYMENT.** In the event that the Grantee’s employment with the Company is terminated by the Company without Cause or by the Grantee for Good Reason other than in connection with a Potential Change in Control or a Change in Control, Section 8(c)(vi) of the Employment Agreement shall govern. In the event that the Grantee’s employment with the Company is terminated for Disability or by reason of the Grantee’s death, Section 8(b)(iii) of the Employment Agreement shall govern. In the event that the Grantee’s employment with the Company is terminated by the Company for Cause, any portion of the Option that remains outstanding, whether vested or unvested, shall immediately terminate as of the date of such termination. In the event of termination of employment by the Grantee without Good Reason, any unvested portion of the Option shall immediately terminate, and any vested portion of the Option shall remain exercisable for a period of 90 days following such termination and shall terminate thereafter. All capitalized terms in this Section 4 shall have the definitions ascribed to them in the Employment Agreement.
5. **CHANGE IN CONTROL.** In the event of a Change in Control (as defined in the Employment Agreement), Section 4(a)(i) of the Employment Agreement shall govern, and accordingly, each Option shall become fully vested and shall immediately be cancelled, and, in exchange therefor, the Grantee shall be entitled to receive an amount per share equal to the excess of the per share merger consideration, over the per share exercise price of such Option. The Grantee shall in all cases be entitled to receive such amount fully in cash.
6. **SECURITIES ACT REQUIREMENTS.** In addition to the requirements set forth herein and in the Plan, (i) the Option shall not be exercisable in whole or in part, and the Company shall not be obligated to issue any shares of Common Stock subject to any such

Option, if such exercise and sale or issuance would, in the opinion of counsel for the Company, violate the Securities Act of 1933 (the “1933 Act”) or other Federal or state statutes having similar requirements, as they may be in effect at that time; and (ii) each Option shall be subject to the further requirement that, at any time that the Committee shall determine, in its discretion, that the listing, registration or qualification of the shares of Common Stock subject to such Option under any securities exchange requirements or under any applicable law, or the consent or approval of any governmental regulatory body, is necessary or desirable as a condition of, or in connection with, the issuance of shares of Common Stock, such Option may not be exercised in whole or in part unless such listing, registration, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to the Committee.

7. **METHOD OF EXERCISE OF OPTION.** Subject to the provisions of the Plan and Section 6 hereof, the exercise price of Common Stock acquired pursuant to an Option shall be paid, to the extent permitted by applicable statutes and regulations, either (i) in cash or by certified or bank check at the time the Option is exercised or (ii) upon such reasonable terms as the Committee shall approve, the exercise price may be paid, in the discretion of the Grantee: (A) by delivery to the Company of other Common Stock, duly endorsed for transfer to the Company, with a Fair Market Value on the date of delivery equal to the exercise price (or portion thereof) due for the number of shares being acquired, or by means of attestation whereby the Grantee identifies for delivery specific shares of Common Stock that have a Fair Market Value on the date of attestation equal to the exercise price (or portion thereof) and receives a number of shares of Common Stock equal to the difference between the number of shares thereby purchased and the number of identified attestation shares of Common Stock (a “Stock for Stock Exchange”); (B) a “cashless” exercise program established with a broker, if such a program is in place; (C) by reduction in the number of shares of Common Stock otherwise deliverable upon exercise of such Option with a Fair Market Value equal to the aggregate exercise price at the time of exercise, or (D) in any other form of legal consideration that may be acceptable to the Committee. The purchase price of Common Stock acquired pursuant to the Option that is paid by delivery (or attestation) to the Company of other Common Stock acquired, directly or indirectly from the Company, shall be paid only by shares of the Common Stock of the Company that have been held for more than six months (or such longer or shorter period of time required to avoid a charge to earnings for financial accounting purposes). Notwithstanding the foregoing, during any period for which the Common Stock is publicly traded (i.e., the Common Stock is listed on any established stock exchange or a national market system) an exercise by the Grantee that involves or may involve a direct or indirect extension of credit or arrangement of an extension of credit by the Company, directly or indirectly, in violation of Section 402(a) of the Sarbanes-Oxley Act (codified as Section 13(k) of the Exchange Act) shall be prohibited with respect to this award.
8. **OTHER LIMITATIONS, REQUIREMENTS, PROTECTIONS, ETC.** The Grantee shall be subject to all other terms and conditions relating to the Option as set forth in the Employment Agreement, including but not limited to, the clawback and share holding

requirements set forth in Section 4(a)(ii) therein. It is expressly acknowledged and agreed that nothing in this Stock Option Agreement or the Plan shall be inconsistent in a manner adverse to the Grantee with, or otherwise limit adversely to the Grantee, the express terms of the Employment Agreement, and, in the case of any conflict between the Employment Agreement, on the one hand, and this Stock Option Agreement or the Plan, on the other, the Employment Agreement shall control to the extent favorable to the Grantee. For purposes of the foregoing sentence, the "Employment Agreement" excludes any attachments thereto of a form of stock option agreement, whether or not identical to this Stock Option Agreement. Notwithstanding any provision hereof or of the Plan, any provision in the Plan giving the Company or any committee or other affiliate thereof the right, authority or discretion to interpret this Stock Option Agreement shall be of no force or effect in respect of this Stock Option Agreement.

9. **TRANSFERABILITY.** The Option is not transferable otherwise than by will or pursuant to the laws of descent and distribution, and is exercisable during the Grantee's lifetime only by the Grantee.
10. **BINDING AGREEMENT.** This Stock Option Agreement shall be binding upon and shall inure to the benefit of any successor or assign of the Company, and, to the extent herein provided, shall be binding upon and inure to the benefit of the Grantee's beneficiary or legal representatives, as they case may be.
11. **ENTIRE AGREEMENT.** This Stock Option Agreement, the Plan, and the Employment Agreement set forth the entire agreement of the parties with respect to the Option granted hereby and may not be changed orally but only by an instrument in writing signed by the party against whom enforcement of any change, modification or extension is sought. (Without limiting any protection the Grantee may otherwise have, the Plan shall not be amended in any way that adversely affects the Grantee or the Option without the prior written consent of the Grantee.)
12. **ELECTRONIC DELIVERY AND SIGNATURES.** The Company may, in its sole discretion, decide to deliver any documents related to the Option or to participation in the Plan or to future options that may be granted under the Plan by electronic means or to request the Grantee's consent to participate in the Plan by electronic means. The Grantee hereby consents to receive such documents by electronic delivery and, if requested, to agree to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company. If the Company establishes procedures of an electronic signature system for delivery and acceptance of Plan documents (including any Award Agreement like this Option), the Grantee hereby consents to such procedures and agrees that his or her electronic signature is the same as, and shall have the same force and effect as, his or her manual signature.

13. **WITHHOLDING OF TAX.** To the extent that the exercise of the Option or the disposition of shares of Company's Common Stock acquired by exercise of the Option results in compensation income to the Grantee for federal or state income tax purposes, the Grantee shall pay to the Company at the time of such exercise or disposition such amount of money or, if the Company so determines, shares of Common Stock, as the Company may require to meet its obligation under applicable tax laws or regulations and, if the Grantee fails to do so, the Company is authorized to withhold from any cash remuneration then or thereafter payable to the Grantee, any tax required to be withheld by reason of such resulting compensation income or the Company may otherwise refuse to issue or transfer any shares otherwise required to be issued or transferred pursuant to the terms hereof.
14. **ADJUSTMENTS/CHANGES IN CAPITALIZATION.** This award is subject to the adjustment provisions set forth in the Plan.

[SIGNATURE PAGE FOLLOWS]

Subject to Section 12 above, if the foregoing is in accordance with your understanding and approved by you, please so confirm by signing and returning the duplicate of this Stock Option Agreement enclosed for that purpose.

CALPINE CORPORATION

By:           /s/ William J. Patterson          

The foregoing is in accordance with my understanding and is hereby confirmed and agreed to as of the Grant Date.

          /s/ W. Thaddeus Miller          

Grantee



875 Third Avenue New York, NY 10022  
Phone: 212 603 2000 Fax: 212 603 2001  
www.thelen.com

October 3, 2008

Calpine Corporation  
717 Texas Avenue  
Houston Texas 77002

Ladies and Gentlemen:

We have acted as counsel to Calpine Corporation, a Delaware corporation (the "*Company*"), in connection with the preparation of a registration statement on Form S-8 (the "*Registration Statement*") relating to the registration of an aggregate of 4,636,734 shares (the "*Shares*") of the Company's Common Stock, \$0.001 par value per share (the "*Common Stock*") issuable upon the exercise of options (the "*Options*") granted pursuant to those certain Calpine Corporation Executive Sign On Non-Qualified Stock Option Agreements (the "*Option Agreements*") between the Company and Messrs. Jack A. Fusco, W. Thaddeus Miller and John B. (Thad) Hill.

This opinion is being rendered in connection with the filing by the Company of the Registration Statement with the Securities and Exchange Commission.

For purposes of this opinion, we have examined originals or copies, certified or otherwise identified to our satisfaction, of (i) the Registration Statement; (ii) the Option Agreements; (iii) the resolutions adopted by the Board of Directors of the Company (the "*Board*") relating to the Option Agreements, the Shares and the Registration Statement; and (iv) such other documents, certificates or other records as we have deemed necessary or appropriate.

Based upon and subject to the assumptions and limitations stated in this letter, it is our opinion that when (i) the Board shall have authorized the issuance of the Shares and reserved the Shares for issuance upon exercise of the Options pursuant to the Option Agreements, (ii) the Registration Statement related to the Shares becomes effective under the Securities Act of 1933, as amended, (iii) the Shares have been duly issued in accordance with the terms of the applicable Option Agreement upon receipt of the consideration to be paid therefor (assuming in each case the consideration received by the Company is at least equal to the par value of the Common Stock at such time), and (iv) the appropriate certificates representing the Shares (complying as to form with the bylaws of the Company and the Delaware General Corporation Law and bearing all necessary signatures and authentications) are duly countersigned and registered by the

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Company's transfer agent/registrar and delivered in accordance with the terms of the applicable Option Agreement, the Shares will be validly issued, fully paid and nonassessable.

This opinion is limited to the Delaware General Corporation Law, the applicable provisions of the Delaware Constitution and reported judicial opinions interpreting such laws currently in effect.

We do not express any opinion with respect to the application of the securities or "Blue Sky" laws of the various states to the issuance and sale of the Shares.

This opinion is limited to the specific issues addressed herein, and no opinion may be inferred or implied beyond that expressly stated herein. We assume no obligation to revise or supplement this opinion should the present laws of the State of Delaware be changed by legislative action, judicial decision or otherwise.

This opinion is furnished to you in connection with the filing of the Registration Statement and is not to be used, circulated, quoted or otherwise relied upon for any other purpose.

We hereby consent to the filing of this opinion with the Securities and Exchange Commission as Exhibit 5 to the Registration Statement. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Commission.

Very truly yours,

/s/ THELEN LLP



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated February 28, 2008 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in Calpine Corporation's Annual Report on Form 10-K for the year ended December 31, 2007.

/s/ PricewaterhouseCoopers LLP

Houston, Texas  
October 3, 2008