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

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

NET POWER INC.

98-1580612
(I.R.S. Employer
Identification No.)
27701
(Zip Code)
ET Power Inc. 2023 Omnibus Incentive Plan (Full title of the plan)
Andrew Davisson Deputy General Counsel 404 Hunt Street, Suite 410 Durham, North Carolina 27701 (Name and address of agent for service)
(919) 287-4750
ne number, including area code, of agent for service)
ns, including communications sent to agent for service, should be sent to:
Matthew R. Pacey, P.C. Lanchi D. Huynh Kirkland & Ellis LLP 609 Main Street Houston, Texas 77002 (713) 836-3600
I filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth ted filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act
Accelerated filer □ Smaller reporting company ⊠ Emerging growth company ⊠
istrant has elected not to use the extended transition period for complying with any new or revised financial e Securities Act. \Box
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PART I INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

NET Power Inc. (the "Registrant") will send or give all participants in the NET Power Inc. 2023 Omnibus Incentive Plan document(s) containing the information required by Part I of Form S-8, as specified in Rule 428(b)(1) under the Securities Act of 1933, as amended (the "Securities Act"). Such documents are not required to be, and are not, filed with the Commission (the "Commission"), either as part of this Registration Statement on Form S-8 (this "Registration Statement") or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. These documents, and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II hereof, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

Item 3. Incorporation of Documents by Reference.

Except to the extent that information is deemed furnished and not filed pursuant to securities laws and regulations, the Registrant hereby incorporates by reference into this Registration Statement the following documents:

- (a) the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the Commission on March 2, 2023;
- (b) the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2023, filed with the Commission on May 12, 2023, and Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2023, filed with the Commission on August 14, 2023;
- (c) the Registrant's Current Reports on Form 8-K filed with the Commission on April 24, 2023, May 24, 2023, May 30, 2023, June 7, 2023, June 14, 2023 and June 30, 2023; and
- (d) the description of the Registrant's Class A common stock, par value \$0.0001 per share, contained in Amendment No. 5 to the Registration Statement on Form S-4 (File No. 333-268975), filed by the Registrant with the Commission on May 8, 2023.

Except to the extent that information is deemed furnished and not filed pursuant to securities laws and regulations, all documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), subsequent to the date hereof and prior to the filing of a post-effective amendment that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold shall also be deemed to be incorporated by reference herein and to be a part hereof from the dates of 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.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

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Item 6. Indemnification of Directors and Officers.

Subsection (a) of Section 145 of the Delaware General Corporation Law (the "DGCL") empowers a corporation to indemnify any person who was or is a party or who 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, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the 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 corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

Subsection (b) of Section 145 of the DGCL empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit 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 corporation, except that no indemnification shall 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 Court of Chancery of the State of Delaware (the "Court of Chancery") or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 of the DGCL further provides that to the extent a director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and the indemnification provided for by Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of such person's heirs, executors and administrators. Section 145 also empowers the corporation to purchase and maintain insurance on behalf of any person who 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, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

Section 102(b)(7) of the DGCL provides that a corporation's certificate of incorporation may contain a provision eliminating or limiting the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provision shall not eliminate or limit the liability of a director (i) for 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 DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

Additionally, the Registrant's Certificate of Incorporation limits the liability of the Registrant's directors to the fullest extent permitted by the DGCL, and the Registrant's Bylaws provide that the Registrant will indemnify them to the fullest extent permitted by such law. The Registrant has entered into and expects to continue to enter into agreements to indemnify its directors, executive officers and other employees as determined by the Registrant's board of directors. Under the terms of such indemnification agreements, the Registrant is required to indemnify each of its directors and officers, to the fullest extent permitted by the laws of the state of Delaware, if the basis of the indemnitee's involvement was by reason of the fact that the indemnitee is or was the Registrant's director or officer or was serving at the Registrant's request in an official capacity for another entity. The Registrant must indemnify its officers and directors under the circumstances and to the extent provided for therein, from and against all losses, claims, damages, liabilities, joint or several, expenses (including legal fees and expenses), judgments, fines, penalties, interest, settlements or other amounts arising from any and all threatened, pending or completed claim, demand, action, suit or proceeding, whether civil, criminal, administrative or investigative, and whether formal or informal, and including appeals, in which he or she may be involved, or is threatened to be involved, as a party or otherwise, to the fullest extent permitted under the DGCL and the Registrant's Bylaws. The indemnification agreements also require the Registrant, if so requested, to advance all reasonable fees, expenses, charges and other costs that such

director or officer incurred, provided that such person will return any such advance if it is ultimately determined that such person is not entitled to indemnification by the Registrant. Any claims for indemnification by the Registrant's directors and officers may reduce the Registrant's available funds to satisfy successful third-party claims against the Registrant and may reduce the amount of money available to the Registrant.

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Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The following is a list of exhibits filed as part of this Registration Statement, which are incorporated herein:

Exhibit							
Number	Description						
4.1	Certificate of Incorporation of NET Power Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed by the Registrant with the						
	Commission on June 14, 2023).						
4.2	Bylaws of NET Power Inc. (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K filed by the Registrant with the Commission on June						
	14, 2023).						
4.3	NET Power Inc. 2023 Omnibus Incentive Plan (incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed with the SEC on						
	June 14, 2023).						
5.1*	Opinion of Kirkland & Ellis LLP,						
23.1*	Consent of Grant Thornton LLP (with respect to NET Power, LLC consolidated financial statements).						
23.2*	Consent of WithumSmith+Brown, PC (with respect to NET Power Inc. (formerly known as Rice Acquisition Corp. II) consolidated financial statements).						
23.3*	Consent of Kirkland & Ellis LLP (included in Exhibit 5.1).						
24.1*	Power of Attorney (included as part of the signature page of this Registration Statement).						
107*	Filing Fee Table.						

Filed herewith.

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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 this 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 this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in 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 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in this 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 this Registration Statement;

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) 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 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 this 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.
- (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 Registrant'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 this Registration Statement 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.
- (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.

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 Durham, State of North Carolina on August 22, 2023.

NET POWER INC.

By: /s/ Daniel J. Rice

Name: Daniel J. Rice

Title: Chief Executive Officer and Director

Each person whose signature appears below constitutes and appoints each of Daniel J. Rice, IV, Akash Patel, James Mahon or Andrew Davisson, acting alone or together with another attorney-in-fact, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person and in his or her name, place and stead, in any and all capacities, to sign any or all further amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, 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 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, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date		
/s/ Daniel J. Rice, IV Daniel J. Rice, IV	Chief Executive Officer and Director (Principal Executive Officer)	August 22, 2023		
/s/ Akash Patel Akash Patel	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	August 22, 2023		
/s/ Ralph Alexander Ralph Alexander	Director	August 22, 2023		
/s/ Peter J. (Jeff) Bennett Peter J. (Jeff) Bennett	Director	August 22, 2023		
/s/ J. Kyle Derham J. Kyle Derham	Director	August 22, 2023		
/s/ Frederick A. Forthuber Frederick A. Forthuber	Director	August 22, 2023		
/s/ Joseph T. Kelliher Joseph T. Kelliher	Director	August 22, 2023		
/s/ Carol Peterson Carol Peterson	Director	August 22, 2023		
/s/ Brad Pollack Brad Pollack	Director	August 22, 2023		
/s/ Eunkyung Sung Eunkyung Sung	Director	August 22, 2023		
/s/ Alejandra Veltmann Alejandra Veltmann	Director	August 22, 2023		

KIRKLAND & ELLIS LLP

AND AFFILIATED PARTNERSHIPS

609 Main Street Houston, TX 77002 United States Facsimile: +1 713 836 3601

+1 713 836 3600

www.kirkland.com

August 22, 2023

NET Power Inc. 404 Hunt Street, Suite 410 Durham, North Carolina 27701

Ladies and Gentlemen:

We have acted as counsel for NET Power Inc., a Delaware corporation (the "Company"), in connection with the Company's registration under the Securities Act of 1933, as amended (the "Act"), of the offer and sale of an aggregate of up to 24,942,230 shares of the Company's Class A Common Stock, par value \$0.0001 per share (the "Shares"), pursuant to the Company's registration statement on Form S-8 (the "Registration Statement") to be filed with the Securities and Exchange Commission on or about the date hereof, which Shares may be issued from time to time in accordance with the terms of the NET Power Inc. 2023 Omnibus Incentive Plan (as amended from time to time, the "Plan").

In reaching the opinion set forth herein, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents and records of the Company and such statutes, regulations and other instruments as we deemed necessary or advisable for purposes of this opinion, including (i) the corporate and organizational documents of the Company, (ii) minutes and records of the corporate proceedings of the Company with respect to the Registration Statement, (iii) the Plan, and (iv) the Registration Statement and the exhibits thereto.

We have assumed the authenticity of all documents submitted to us as originals, the conformity to the originals of all documents submitted to us as copies and the authenticity of the originals of all documents submitted to us as copies. We have also assumed the legal capacity of all natural persons, the genuineness of the signatures of persons signing all documents in connection with which this opinion is rendered, the authority of such persons signing on behalf of the parties thereto other than the Company and the due authorization, execution and delivery of all documents by the parties thereto other than the Company. We have not independently established or verified any facts relevant to the opinions expressed herein, but have relied upon statements and representations of the officers and other representatives of the Company.

We have further assumed that at all future times relevant to this opinion the number of shares of Class A Common Stock that the Company is authorized to issue pursuant to its charter will exceed the number of shares of Class A Common Stock outstanding and the number of shares of Class A Common Stock that the Company is obligated to issue (or had otherwise reserved for issuance) for any purposes by at least the number of Shares.

Austin Bay Area Beijing Boston Brussels Chicago Dallas Hong Kong London Los Angeles Munich New York Paris Salt Lake City Shanghai Washington, D.C.

KIRKLAND & ELLIS LLP

AND AFFILIATED PARTNERSHIPS

NET Power Inc. August 22, 2023 Page 2

Based upon and subject to the foregoing qualifications, assumptions and limitations and the further limitations set forth below, we are of the opinion that the Shares have been duly authorized and, when issued, delivered and paid for in accordance with the terms of the Plan, will be validly issued, fully paid and non-assessable.

This opinion is limited in all respects to the General Corporation Law of the State of Delaware. We express no opinion as to any other law or any matter other than as expressly set forth above, and no opinion as to any other law or matter may be inferred or implied herefrom. The opinions expressed herein are rendered as of the date hereof, and we expressly disclaim any obligation to update this letter or advise you of any change in any matter after the date hereof.

This opinion may be filed as an exhibit to the Registration Statement. In giving this consent, we do not thereby admit that we come within the category of persons whose consent is required under Section 7 of the Act.

This opinion is furnished to you in connection with the filing of the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and is not to be used, circulated, quoted or otherwise relied upon for any other purpose.

Very truly yours,

/s/ KIRKLAND & ELLIS LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 6, 2023, with respect to the consolidated financial statements of NET Power, LLC as of and for the years ended December 31, 2022 and 2021, which is incorporated by reference in this Registration Statement. We consent to the incorporation by reference of the aforementioned report in this Registration Statement.

/s/ GRANT THORNTON LLP

Raleigh, North Carolina August 22, 2023

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 March 1, 2023 (which includes an explanatory paragraph relating to Rice Acquisition Corp. II's ability to continue as a going concern) relating to the consolidated financial statements of Rice Acquisition Corp. II, which appears in the entity's Annual Report on Form 10-K for the fiscal year ended December 31, 2022.

/s/ WithumSmith+Brown, PC

New York, New York August 22, 2023

Calculation of Filing Fee Table

Form S-8 (Form Type)

NET Power Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate		nount of stration Fee
Equity	Class A Common Stock, par value \$0.0001 per share	Other ⁽²⁾				\$110.20 per		
			24,942,230	\$ 14.80(2)	\$369,145,004.00	\$1,000,000	\$	40,679.78
	Total Offering Amounts				\$369,145,004.00		\$	40,679.78
	Total Fee Offsets							_
	Net Fee Due						\$	40,679.78

⁽¹⁾ Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), the amount registered includes any additional shares of Class A common stock, par value \$0.0001 per share, of NET Power Inc. ("Class A Common Stock") that become issuable with respect to the shares being registered hereunder by reason of any stock dividend, stock split, recapitalization or any other similar transaction.

⁽²⁾ Calculated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(c) and (h) under the Securities Act; this price is equal to the average of the high and low prices of the Class A Common Stock as reported on the New York Stock Exchange on August 15, 2023.