

**PYROPHYTE ACQUISITION CORP. II**  
**NOMINATING AND CORPORATE GOVERNANCE COMMITTEE CHARTER**

**Effective July 16, 2025**

**I. INTRODUCTION**

The Nominating and Corporate Governance Committee (the “*Committee*”) is appointed by the Board of Directors (the “*Board*”) of Pyrophyte Acquisition Corp. II (the “*Company*”) to: (i) identify and screen individuals qualified to serve as directors and recommend to the Board candidates for nomination for election at the annual meeting of stockholders or to fill Board vacancies; (ii) develop, recommend to the Board and review the Company’s Corporate Governance Guidelines; (iii) coordinate and oversee the annual self-evaluation of the Board, its committees, individual directors and management in the governance of the Company; and (iv) review on a regular basis the overall corporate governance of the Company and recommend improvements for approval by the Board where appropriate.

**II. COMMITTEE MEMBERSHIP**

***A. Composition***

The Committee shall consist of two or more members of the Board. Except as otherwise directed by the Board, a director selected as a Committee member shall continue to be a member for as long as he or she remains a director or until his or her earlier resignation or removal from the Committee. Any member may be removed from the Committee by the Board, with or without cause, at any time.

***B. Chair***

The Chair of the Committee shall be appointed from among the Committee members by, and serve at the pleasure of, the Board, shall preside at meetings of the Committee and shall have authority to convene meetings, set agendas for meetings, and determine the Committee’s information needs, except as otherwise provided by the Board or the Committee. In the absence of the Chair at a duly convened meeting, the Committee shall select a temporary substitute from among its members to serve as chair of the meeting. The Chair of the Committee shall serve as “Administrator” of the Company’s Policy Regarding Insider Trading and Dissemination of Inside Information in the circumstances and to the extent described therein.

***C. Independence***

Each member of the Committee shall be an “independent” director in accordance with the applicable listing standards of the New York Stock Exchange (“*NYSE*”) and the Company’s Corporate Governance Guidelines, subject to any exceptions or cure periods that are applicable pursuant to the foregoing requirements and the phase-in periods permitted under the rules of the NYSE under which the Committee is required to have only one independent member at the time of listing, a majority of independent members within 90 days of listing and all independent members within one year of listing. Any action duly taken by the Committee shall be valid and effective, whether or not the members of the Committee at the time of such action are later determined not to have satisfied the requirements for membership provided herein.

**III. AUTHORITY**

In discharging its role, the Committee is empowered to inquire into any matter it considers appropriate to carry out its responsibilities, with access to all books, records, facilities and personnel of the Company, and, subject to the direction of the Board, the Committee is authorized and delegated the authority to act on behalf of the Board with respect to any matter necessary or appropriate to the accomplishment of its purposes.

The Committee shall have the sole discretion to retain or obtain advice from, oversee and terminate any director search or recruitment consultant, legal counsel or other adviser to the Committee and be directly responsible for the appointment, compensation and oversight of any work of such adviser retained by the Committee, and the Company will provide appropriate funding (as determined by the Committee) for the payment of reasonable compensation to any such adviser.

#### **IV. COMMITTEE MEETINGS**

The Committee shall meet as often as necessary to carry out its responsibilities, which, following the Company's initial business combination, shall be at least quarterly.

The Committee shall establish its own schedule of meetings. The Committee may also act by unanimous written consent of its members.

Notice of meetings shall be given to all Committee members or may be waived, in the same manner as required for meetings of the Board. Meetings of the Committee may be held by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear and speak with each other. A majority of the members of the Committee shall constitute a quorum for a meeting and the affirmative vote of a majority of members present at a meeting at which a quorum is present shall constitute the action of the Committee. The Committee shall otherwise establish its own rules of procedure.

#### **V. DELEGATION**

The Committee, by resolution approved by a majority of the Committee, may form and delegate any of its responsibilities to a subcommittee so long as such subcommittee is solely comprised of one or more members of the Committee and such delegation is not otherwise inconsistent with law and applicable rules and regulations of the U.S. Securities and Exchange Commission and the NYSE.

#### **VI. KEY RESPONSIBILITIES**

The following responsibilities are set forth as a guide for fulfilling the Committee's purposes in such manner as the Committee determines is appropriate:

- (a) recommend to the Board for approval, review the effectiveness of, recommend modifications as appropriate to, and review Company disclosures concerning: (a) the Company's policies and procedures for identifying and screening Board nominee candidates; (b) the process and criteria (including experience, qualifications, attributes, diversity or skills in light of the Company's business and structure) used to evaluate Board membership and director independence; and (c) any policies with regard to diversity on the Board;
- (b) identify and screen director candidates (including incumbent directors for potential renomination and candidates recommended by stockholders in accordance with the Company's policies as set forth in its proxy statement) consistent with criteria approved by the Board, and recommend to the Board candidates for: (a) nomination for election or re-election by the stockholders; and (b) any Board vacancies that are to be filled by the Board subject to any rights regarding the selection of directors by holders of preferred stock and any other contractual or other commitments of the Company;
- (c) oversee the Company's policies and procedures with respect to the consideration of director candidates recommended by stockholders, including the submission of any proxy access nominees by stockholders;
- (d) review Company disclosures concerning the specific experience, qualifications, attributes or skills that led to the conclusion that each director and nominee should serve as a director in light of the Company's business and structure;
- (e) review annually the relationships between directors, the Company and members of management and recommend to the Board whether each director qualifies as "independent" under the Board's definition of "independence" and the applicable rules of the NYSE and the Company's Corporate Governance Guidelines;

- (f) assess the appropriateness of a director continuing to serve on the Board upon a substantial change in the director's principal occupation or business association from the position such director held when originally invited to join the Board, and recommend to the Board any action to be taken with respect thereto;
- (g) assess annually whether the composition of the Board as a whole reflects the appropriate balance of independence, sound judgment, business specialization, technical skills, diversity and other desired qualities, and recommend any appropriate changes to the Board;
- (h) (i) review the Board's leadership structure in light of the specific characteristics or circumstances of the Company and recommend any changes to the Board for approval; (ii) discuss in coordination with the Audit Committee the effect on the Board's leadership structure of the Board's role in the risk oversight of the Company; and (iii) review and approve Company disclosures relating to Board leadership;
- (i) review periodically the committee structure of the Board and recommend to the Board the appointment of directors to Board committees and assignment of committee chairs;
- (j) review periodically the size of the Board and recommend to the Board any appropriate changes;
- (k) coordinate with management to develop an appropriate director orientation program and identify continuing education opportunities;
- (l) coordinate and oversee the annual self-evaluation of the role and performance of the Board, its committees, individual directors and management in the governance of the Company;
- (m) develop and recommend to the Board, review the effectiveness of, and recommend modifications as appropriate to, the Corporate Governance Guidelines and other governance policies of the Company;
- (n) review and address conflicts of interest of directors and executive officers, and the manner in which any such conflicts are to be monitored;
- (o) review on a periodic basis, and as necessary when specific issues arise, relations with the Company's stockholders and advise the Board on effective and appropriate stockholder communications;
- (p) review emerging corporate governance issues and practices, including proxy advisory firm policies and recommendations;
- (q) conduct an annual self-evaluation of the performance of the Committee, including its effectiveness and compliance with this charter, and recommend to the Board such amendments of this charter as the Committee deems appropriate;
- (r) report regularly to the Board on Committee findings, recommendations and any other matters the Committee deems appropriate or the Board requests, and maintain minutes or other records of Committee meetings and activities;
- (s) review all determinations and interpretations under the Company's Policy Regarding Insider Trading and Dissemination of Inside Information; and
- (t) undertake such other responsibilities as the Board may delegate or assign to the Committee from time to time.