UNITED STATES

SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549

FORM 6-K

Report of Foreign Private Issuer Pursuant to Rule 13a-16 or 15d-16 Under the Securities Exchange Act of 1934

May 24, 2012

Commission File Number: 1-31253

PENGROWTH ENERGY CORPORATION (Exact name of registrant as specified in its charter)

2100, 222 – 3rd Avenue S.W. Calgary, Alberta T2P 0B4 Canada (Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F o Form 40-F þ

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): o

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): o

The exhibit to this report on Form 6-K shall be incorporated by reference into or as an exhibit to, as applicable, each of the registrant's Registration Statements on Form F-10 (File No. 333-171682) and Form F-3 (File Nos. 333-171672 and 333-180888, respectively) under the Securities Act of 1933, as amended.

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DOCUMENTS FILED AS PART OF THIS FORM 6-K

See the Exhibit Index to this Form 6-K

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

By:

PENGROWTH ENERGY CORPORATION

May 24, 2012

/s/ Andrew D. Grasby Name: Andrew D. Grasby Title: Senior Vice President, General Counsel & Corporate Secretary

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EXHIBIT INDEX

Exhibit No.

99.1 Report of Voting Results for the Special Meeting of Shareholders of Pengrowth Energy Corporation held on May 23, 2012.