SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

FORM 6-K

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

For the month of April 2016

Commission File Number: 1-31690

TRANSCANADA CORPORATION

(Translation of Registrant's Name into English)

450 — 1st Street S.W., Calgary, Alberta, T2P 5H1, Canada (Address of Principal Executive Offices)

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

Form 20-F 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)(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

Exhibit 99.1 to this report, furnished on Form 6-K, is furnished, not filed, and will not be incorporated by reference into any registration statement filed by the registrant under the Securities Act of 1933, as amended.

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.

TRANSCANADA CORPORATION

Date: April 1, 2016

By: /s/ Christine R. Johnston

Name:Christine R. JohnstonTitle:Vice-President, Law and Corporate
Secretary

2

EXHIBIT INDEX

99.1 A copy of the registrant's News Release dated April 1, 2016 relating to the closing of the offering of subscription receipts

Form 40-F x



NewsRelease

TransCanada Corporation Announces Closing of \$4.4 Billion Subscription Receipts Offering

CALGARY, Alberta — April 1, 2016 — News Release — TransCanada Corporation (TSX, NYSE: TRP) (TransCanada or the Corporation) today announced that it has completed its previously announced bought deal offering (the Offering) of subscription receipts (the Subscription Receipts).

On March 17, 2016, the Corporation entered into an agreement with a syndicate of underwriters (the Underwriters), led by RBC Capital Markets and TD Securities Inc., under which they agreed to purchase from TransCanada and sell to the public 92,000,000 Subscription Receipts at a price of \$45.75 per Subscription Receipt. Effective at the closing, the Underwriters exercised in full their over-allotment option to acquire an additional 4,600,000 Subscription Receipts, such that a total of 96,600,000 Subscription Receipts were issued for total gross proceeds of \$4,419,450,000.

Proceeds from the Offering will be used to finance a portion of the purchase price of the previously announced acquisition (the Acquisition) of Columbia Pipeline Group, Inc. (NYSE: CPGX) (Columbia) by subsidiaries of the Corporation's wholly-owned subsidiary, TransCanada PipeLines Limited (TCPL). Columbia is a Houston, Texas-based company that operates an approximately 24,000-kilometre (15,000-mile) network of interstate natural gas pipelines extending from New York to the Gulf of Mexico, with a significant presence in the Appalachia production basin.

Each Subscription Receipt will entitle the holder thereof to receive automatically upon closing of the Acquisition, without any further action on the part of the holder thereof and without payment of additional consideration, one common share (Common Share) of the Corporation.

In addition, while the Subscription Receipts remain outstanding, holders will be entitled to receive cash payments (Dividend Equivalent Payments) per Subscription Receipt that are equal to, and will be paid on the same date as, dividends declared by TransCanada on each Common Share. Such Dividend Equivalent Payments will have the same record date as the related Common Share dividend and will be paid to holders of Subscription Receipts concurrently with the payment date of each such dividend, provided that holders of Subscription Receipts of record at the close of business on April 15, 2016 will be entitled to receive a Dividend Equivalent Payment in respect of the C\$0.565 per Common Share dividend payable by TransCanada on April 29, 2016 to holders of Common Shares of record at the close of business on March 31, 2016, notwithstanding that the Subscription Receipt holders were not holders of record on the record date for such Common Share dividend. Dividend Equivalent Payments will be paid first out of any interest on the Escrowed Funds (defined below) and then out of the Escrowed Funds.

The gross proceeds from the sale of the Subscription Receipts (the Escrowed Funds) will initially be held in escrow by Computershare Trust Company of Canada, as escrow agent (the Escrow Agent), and invested in interest-bearing deposits with banks and other financial institutions with issuer credit ratings from Standard & Poors of at least A and Moody's of at least A2, provided that Dividend Equivalent Payments may be made from the Escrowed Funds and the interest credited or received thereon from time to time, as described above.

The Subscription Receipts will commence trading on the Toronto Stock Exchange on April 1, 2016, under the symbol "TRP.R".

The offering of Subscription Receipts was completed by way of a prospectus that was filed with provincial and territorial securities regulatory authorities in Canada and pursuant to a registration

1

statement filed with the Securities & Exchange Commission in the United States under the multijurisdictional disclosure system.

Forward Looking Information

This release contains certain information that is forward-looking and is subject to important risks and uncertainties (such statements are usually accompanied by words such as "anticipate", "expect", "believe", "may", "will", "should", "estimate", "intend" or other similar word). Forward-looking statements in this release are intended to provide TransCanada security holders and potential investors with information regarding TransCanada and its subsidiaries, including management's expectations with respect to the Offering and the Acquisition. In particular, forward-looking statements in this publication include, but are not limited to, those related to the Offering and Acquisition including the use of the Escrowed Funds together with other financing sources to pay the purchase price for the Acquisition the payment of Dividend Equivalent Payments, the return of funds if the Acquisition does not close and the distribution of Common Shares upon the closing of the Acquisition. All forward-looking statements reflect TransCanada's beliefs and assumptions based on information available at the time the statements were made and as such are not guarantees of future performance. Key assumptions on which forward-looking statements contained in this publication are based include, but are not limited to, assumptions about acquisitions and divestitures, regulatory decisions and outcomes, access to capital markets; and the timing and completion of the Acquisition including receipt of regulatory and Columbia shareholder approvals. The forward-looking events and circumstances discussed in this release may not occur and could differ materially as a result of known and unknown risk factors and uncertainties affecting TransCanada and its subsidiaries, including risks regarding the pipeline and energy sectors, regulatory decisions and outcomes, economic conditions in North America as well as globally and many other factors beyond the control of TransCanada. Readers are cautioned not to place undue reliance on this forward-looking information, which is given as of the date it is expressed in this release, and not to use future-oriented information or financial outlooks for anything other than their intended purpose. TransCanada undertakes no obligation to update or revise any forward-looking information except as required by law. For additional information on the assumptions made, and the risks and uncertainties which could cause actual results to differ from the anticipated results, refer to the 2015 Annual Report and the registration statement and preliminary short form prospectus described above, each of which are filed under TransCanada's profile on SEDAR at www.sedar.com and with the SEC at www.sec.gov.

ABOUT TRANSCANADA

With more than 65 years' experience, TransCanada is a leader in the responsible development and reliable operation of North American energy infrastructure including natural gas and liquids pipelines, power generation and gas storage facilities. TransCanada operates a network of natural gas pipelines that extends

more than 67,000 kilometres (42,000 miles), tapping into virtually all major gas supply basins in North America. TransCanada is one of the continent's largest providers of gas storage and related services with 368 billion cubic feet of storage capacity. A growing independent power producer, TransCanada owns or has interests in over 11,400 megawatts of power generation in Canada and the United States. TransCanada is developing one of North America's largest liquids delivery systems. TransCanada's Common Shares trade on the Toronto and New York stock exchanges under the symbol TRP.

ABOUT COLUMBIA

Columbia operates approximately 24,000 km (15,000 miles) of strategically located interstate pipeline, gathering and processing assets extending from New York to the Gulf of Mexico, including an extensive footprint in the Marcellus and Utica Shale production areas. Columbia also operates one of the nation's largest underground natural gas storage systems. Columbia is listed on the NYSE under the ticker symbol CPGX.

Media Enquiries: Mark Cooper / Terry Cunha 403.920.7859 or 800.608.7859

TransCanada Investor & Analyst Enquiries: David Moneta / Stuart Kampel 403.920.7911 or 800.361.6522

2