

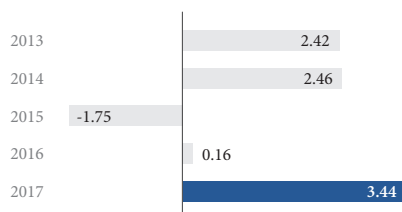
*DELIVERING ENERGY  
RESPONSIBLY*

**2017 Letter to Shareholders**

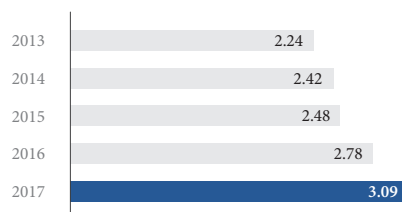


## FINANCIAL HIGHLIGHTS

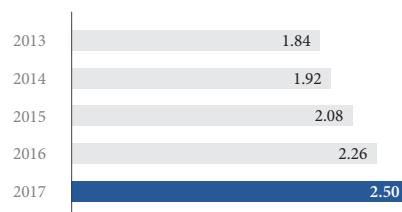
### ↑ NET INCOME/(LOSS) PER COMMON SHARE (dollars)



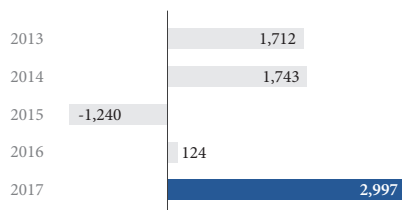
### ↑ COMPARABLE EARNINGS PER COMMON SHARE<sup>1</sup> (dollars)



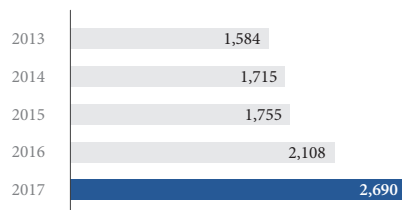
### ↑ DIVIDENDS DECLARED PER COMMON SHARE (dollars)



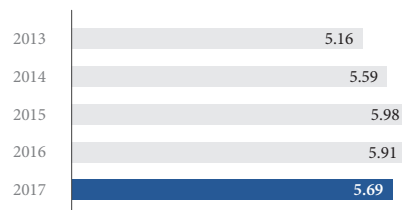
### ↑ NET INCOME/(LOSS) ATTRIBUTABLE TO COMMON SHARES (millions of dollars)



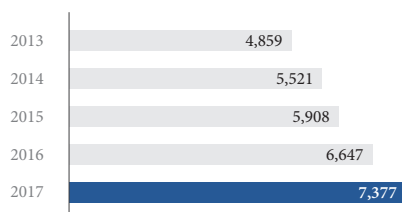
### ↑ COMPARABLE EARNINGS<sup>1</sup> (millions of dollars)



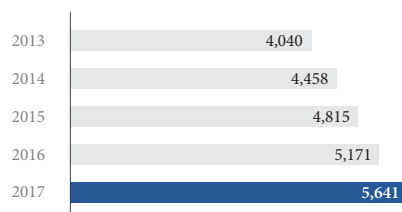
### ↓ COMPARABLE DISTRIBUTABLE CASH FLOW PER COMMON SHARE<sup>1,2</sup> (dollars)



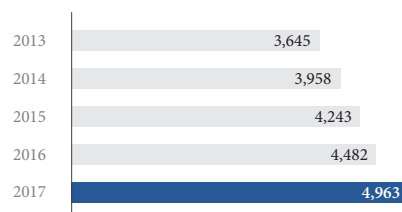
### ↑ COMPARABLE EBITDA<sup>1</sup> (millions of dollars)



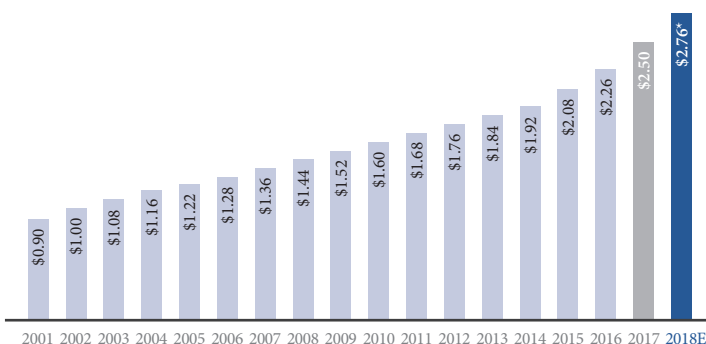
### ↑ COMPARABLE FUNDS GENERATED FROM OPERATIONS<sup>1</sup> (millions of dollars)



### ↑ COMPARABLE DISTRIBUTABLE CASH FLOW<sup>1,2</sup> (millions of dollars)

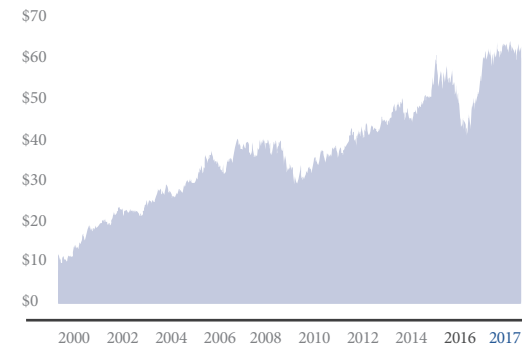


### ↑ TRACK RECORD OF DIVIDEND GROWTH



\* Annualized based on first quarter declaration

### ↑ COMMON SHARE PRICE – TORONTO STOCK EXCHANGE



↑ TransCanada's shareholders have benefited from a 14 per cent annual total return since 2000.

(1) Non-GAAP measures which do not have any standardized meanings prescribed by U.S. generally accepted accounting principles (GAAP). For more information, see non-GAAP measures in the Management Discussion and Analysis of the 2017 Annual Report.

(2) Reflecting only non-recoverable maintenance capital expenditures.

#### Forward-Looking Information and Non-GAAP Measures

These pages contain certain forward-looking information and also contain references to certain non-GAAP measures that do not have any standardized meaning as prescribed by U.S. generally accepted accounting principles (GAAP) and therefore may not be comparable to similar measures presented by other entities. For more information on forward-looking information, the assumptions made, and the risks and uncertainties which could cause actual results to differ from the anticipated results, and reconciliations of non-GAAP measures to the most closely related GAAP measures, refer to TransCanada's 2017 Annual Report filed with Canadian securities regulators and the U.S. Securities and Exchange Commission and available at TransCanada.com

## ABOUT TRANSCANADA

For over 65 years, TransCanada has proudly delivered the energy that millions of North Americans rely on to power their lives and fuel industry. Guided by our values of safety, integrity, collaboration and responsibility, our 7,500 people are deeply rooted in their communities and ensure that we develop and operate our facilities, safely, reliably and with minimal impact on the environment. We are committed to listening to our neighbours and working with all of our stakeholders to develop better project plans and create long-term opportunities and economic benefits in the communities where we operate across Canada, the United States and Mexico.

### THREE COMPLEMENTARY ENERGY INFRASTRUCTURE BUSINESSES



#### NATURAL GAS PIPELINES

Our 91,900-kilometre (57,100-mile) portfolio of natural gas pipelines transports more than 25 per cent of North America's supply of clean-burning natural gas. This pipeline network strategically connects growing supply in the most prolific and lowest cost basins on the continent to key markets across Canada, the U.S. and Mexico. We also operate the continent's largest natural gas storage business, with over 650 billion cubic feet (Bcf) of regulated and unregulated storage capacity.



#### LIQUIDS PIPELINES

Our 4,900-kilometre (3,000-mile) liquids pipeline system connects growing continental oil supplies to key markets and refineries. The Keystone Pipeline System has long-term contracts to ship 555,000 barrels of crude oil per day (bbl/d) and delivers approximately 20 per cent of western Canadian exports to key refinery markets in the U.S. Midwest and Gulf Coast, where it is converted into fuel and other useful petroleum products. Keystone has delivered more than 1.6 billion barrels since it began operation in June 2010.



#### ENERGY

TransCanada owns or has interests in 11 power generation facilities with combined capacity of 6,100 megawatts (MW) – enough to power more than 6 million homes. More than one-half of the power we provide is generated from emission-less sources including nuclear and wind and we are leaders in the development and operation of high-efficiency, natural gas-fired power facilities.

### STRONG PERFORMANCE, ATTRACTIVE OPPORTUNITIES

➔ **DELIVERING LONG-TERM SHAREHOLDER VALUE** – 14 per cent average annual total shareholder return since 2000.

➔ **VISIBLE GROWTH PORTFOLIO** – \$23 billion in commercially supported near-term growth projects underway with the majority to be completed by 2020. Advancing \$24 billion in medium-to-longer-term projects.

➔ **ATTRACTIVE, GROWING DIVIDEND** – Expect to grow our common share dividend at an average annual rate at the upper end of eight to ten per cent through 2020 with an anticipated additional eight to ten per cent growth in 2021.

➔ **STRONG FINANCIAL POSITION** – 'A' grade credit rating and predictable, low-risk businesses underpinned by long-term contracts or regulated cost-of-service models and simple corporate structure are expected to provide access to capital and produce solid results in various market conditions.

➔ **COMMITTED TO RESPONSIBLE DEVELOPMENT** – We have occupational and facility safety records that are among the best in the industry, and we are consistently recognized by numerous third-party agencies for excellence in balancing profitability and safety with social and environmental responsibility.

## DELIVERING ENERGY RESPONSIBLY

### DEAR FELLOW SHAREHOLDERS,

The last year has been an exciting and challenging one for TransCanada. From hurricanes and flooding on the U.S. Gulf Coast, to wildfires in Western Canada and a devastating earthquake in central Mexico, our 7,500 employees and contractors not only stepped up to help their neighbours, they also went the extra mile to ensure the energy that millions of people rely on continued to be delivered safely every day. And as much of North America is gripped by the coldest months of winter, we are reminded of the important role our company plays in keeping the lights on, buildings warm, and society moving forward.

Looking forward, the demand for energy of all kinds is expected to continue to grow. Through the dedication and commitment of our team we are well-positioned to be a preferred partner in the safe, reliable and affordable delivery of that energy for decades to come.

### Growing Our Business and Expanding Our Footprint

We continue to build on a robust, low-risk strategy that generates significant value and provides a strong foundation for us to build value for our shareholders, our customers, our communities and our employees. Since embarking on our current path 18 years ago, we have invested over \$75 billion in our core businesses, including the addition of 45,000 kilometres (28,000 miles) of natural gas pipelines and more than 600 Bcf of gas storage capacity to our network, the development of a premier liquids pipelines system through our investment in the Keystone Pipeline, and becoming one of Canada's largest private-sector power companies with 6,100 MW of generation. Today we have an enviable, well diversified portfolio of critical energy infrastructure assets across Canada, the United States and Mexico. We are helping to transform the North American energy landscape through an industry-leading growth plan that includes \$47 billion in commercially supported capital projects that are under construction or in development.

### Financial Strength and Flexibility

We have continued to maintain our financial strength and flexibility as exemplified by our A-grade credit rating that allows us to access capital on compelling terms at all points in the economic cycle. This has been, and will continue to be, a competitive advantage. Our predictable business model has generated superior returns for our shareholders. We have increased our common share dividend every year since 2000, which has contributed to an average annual total shareholder return of 14 per cent over that timeframe.

### Positioned for Success

Looking forward, we are well positioned to continue delivering strong and growing results. More than 95 per cent of our earnings before interest, taxes, depreciation



Russ Girling, President and Chief Executive Officer  
Siim Vanaselja, Chair of the Board

and amortization (EBITDA) are generated by regulated or long-term contracted assets. Our focus is on bringing \$23 billion in new rate regulated and long-term contracted facilities into service over the next three years. This will drive increased cash flow and earnings per share, which underpins our commitment to growing our common dividend at an average annual rate at the upper end of eight to 10 per cent through 2020 and an additional eight to 10 per cent in 2021.

### Solid Financial Results

We achieved record financial performance in 2017 as our base businesses performed well, we placed approximately \$5 billion in new facilities into service and we completed the integration of the Columbia assets. Comparable earnings per share increased by 11 per cent compared to 2016 to a record \$3.09 per share, and comparable funds generated from operations exceeded \$5.5 billion for the first time. Based on this strong performance and our continued growth, our Board of Directors approved our 18th consecutive annual increase in the common share dividend, equating to \$2.76, on an annualized basis, an increase of 10.4 per cent for 2018. We were also successful in raising more than \$6 billion in capital markets on innovative and attractive terms to help fund our growth program.

### Strong Performance by our Business Units

#### Natural Gas Pipelines

Our network of natural gas pipelines is well positioned in North America's two most prolific natural gas supply basins – the Western Canada Sedimentary Basin (WCSB) and the Appalachian Basin – providing reliable service and market access to key demand centres in Canada, the U.S. and Mexico for our diversified customer base. Our integration of the Columbia pipeline assets is fully complete and delivering results as expected. We are well on track to realize US\$250 million of annual synergies and we simplified our corporate structure by completing the acquisition of Columbia Pipeline Partners, LP. Elsewhere in our U.S. system, we continued to maximize the value of existing



assets through the completion of the sale of 49.3 per cent of our direct interest in Iroquois Pipeline and our 11.8 per cent direct interest in Portland Natural Gas Transmission System to our U.S. affiliate, TC PipeLines, LP for US\$765 million. Our U.S. natural gas pipelines business is now the largest EBITDA contributor in the company and it continues to grow. Significant projects including Leach Xpress and Rayne Xpress are now complete, while more than US\$7 billion in commercially supported near-term growth projects are underway in the U.S. and are anticipated for completion by the end of 2020.

In Canada, the Canadian Mainline continues to play a critical role in transporting growing gas supplies from the WCSB to high-demand markets in Eastern Canada and the U.S. In November 2017, we began shipping additional volumes of WCSB gas under an innovative new tolling agreement that allows customers to utilize existing pipeline capacity at reduced cost, enabling them to better compete in the North American market. The Long-Term Fixed Price service added approximately 1.4 Bcf/d of firm transportation contracts on the system, providing greater stability and helping to reduce operating costs for all Mainline shippers. The NGTL System in Western Canada continues to evolve, with robust growth in gas production in Northwest Alberta and Northeast B.C. driving steady expansion of the system that gathers the majority of the gas produced in the WCSB. Approximately \$1.7 billion of new NGTL facilities were placed into service in 2017, with \$7.2 billion in additional expansion projects underway that are supported by long-term firm receipt and delivery contracts. We continue to pursue additional opportunities to expand these systems to meet growing production.

Our natural gas pipelines business in Mexico continues to generate stable results and provide a solid platform for future growth. We now have four pipelines operating under long-term contract and three more are expected to enter service in 2018 and 2019, increasing our Mexican portfolio to approximately US\$5 billion. We are well positioned to help meet Mexico's growing need for clean burning natural gas, with an integrated delivery system that will directly connect U.S. gas supplies to growing power generation and industrial demand in central Mexico.

### **Liquids Pipelines**

Our position as a leading transporter of North America's growing crude oil supply was strengthened in 2017 as two new Alberta pipelines – Grand Rapids and Northern Courier – came into service, adding 550 kilometres (342 miles) of strategic liquids pipelines in the Athabasca region of the province. We enhanced the value of the Keystone Pipeline System by bringing our portfolio of long-term contracts to 555,000 bbl/d on the system. We were also pleased to advance the Keystone XL pipeline project in 2017 with the long-awaited receipt of a Presidential Permit in March, followed by the Nebraska Public Service Commission approving a viable route through the state in November. We have confirmed the necessary commercial support for Keystone XL to

proceed through a successful open season that secured 500,000 bbl/d of firm, 20-year commitments. We are working collaboratively with landowners to acquire necessary easements for the approved route and continue to work through the permitting process in order to begin construction in 2019. Although we were disappointed to terminate the Energy East pipeline project, we remain optimistic about the prospects for our liquids pipelines business, as North American oil production continues to grow and will lead to further opportunities to enhance and expand our system.

### **Energy**

Our Energy business continues to generate predictable and stable results underpinned primarily by long-term contracts with solid counterparties. In mid-2017, we closed the sales of our U.S. Northeast power generation assets for US\$3.1 billion, greatly reducing our exposure to the merchant power market. The proceeds from the sale were used to help permanently fund the acquisition of Columbia. In Canada, the Long-Term Energy Plan released by the Ontario government reaffirms the need for further significant investment in Bruce Power, with preparation work on the life extension program underway and the first Major Component Replacement Program expected to begin in 2020. Construction is nearing completion on the Napanee Generating Station, which is expected to commence operations in 2018 and will add 900 MW of power to the Ontario grid. We also sold our 76 MW Ontario solar portfolio for \$541 million, maximizing shareholder value by recycling capital into our growth portfolio.

Our Energy business remains a cornerstone of our growth strategy and we continue to pursue opportunities in the power generation business as North America transitions to less carbon-intense sources of power, a shift that aligns with our experience in building and operating high-efficiency gas-fired generation, renewable power and nuclear generation in Ontario.

### **Focused on Safety and Responsibility**

There is reason to be proud of our many achievements in 2017, but we know that our long-term success depends on our ability to balance profitability with safety and social and environmental responsibility. While we continue to achieve occupational and facility safety performance that is among the best in the industry, ultimately no safety-related incidents are acceptable and we did not achieve the high standard we set for ourselves. In October 2017, we experienced an unfortunate event that claimed the life of one of our U.S. employees. This is unacceptable and we are conducting a full investigation to determine the cause of this tragedy and to identify any steps we can take to prevent such incidents in the future. Ensuring that our facilities operate safely and that all of our employees and contractors return home safely every day is our top priority, and we remain committed to achieving our goal of zero incidents.

## A Leader in Sustainability

Continued success of our company will depend on our ability to operate in a responsible manner and following through on the commitments we make to our neighbours, partners and stakeholders. We continue to consider every business decision through the lens of long-term sustainability and we are proud to be recognized by respected third-party agencies for our achievements. For the 16th year in a row we were named to the Dow Jones Sustainability Index (DJSI) World Index and we earned a place on DJSI's North American Sustainability Index for the fourth year in a row. For the seventh consecutive year, we are listed among Canada's Best 50 Corporate Citizens by Corporate Knights magazine and we have been acknowledged as a leader when it comes to enhancing gender equity and diversity throughout the organization. We are also recognized by CDP (formerly the Carbon Disclosure Project) for our actions to disclose carbon emissions and mitigate the business risks of climate change.

## Visible Growth Drives Shareholder Value

Looking forward, we have an unparalleled opportunity to sustainably grow your company and continue to deliver impressive results for years to come.

We secured more than \$3 billion in new projects in 2017, bringing our near-term capital program to \$23 billion. All of these projects are on track for completion by the end of 2021 and are underpinned by long-term contracts or regulated business models. Bringing these projects to fruition on time and on budget will drive significant growth in cash flow and earnings that underpin our expected dividend growth rate through 2021.

We also continue to advance almost \$24 billion in medium-to-longer-term projects that provide significant options for growth for our shareholders. This portfolio includes the US\$8.3-billion Keystone XL and Keystone Hardisty Terminal projects, the \$4.8 billion Coastal GasLink project to supply natural gas to LNG Canada's proposed terminal facility in Kitimat, B.C., and a \$5.3 billion investment in the Bruce Power Life Extension Agreement post-2020. Again, all of these projects are underpinned by long-term contracts and we are moving very close to obtaining all the required approvals to make them a reality.

## Bright Future Ahead

Global demand for reliable and affordable energy continues to grow, and TransCanada has built an impressive portfolio of complementary energy infrastructure assets and commercially supported growth projects that are critical to supply existing and growing needs for energy. We have a demonstrated track record of investing in high-quality, low-risk opportunities that have

rewarded our shareholders, and we are confident in our ability to continue delivering strong and stable growth for many years to come.

## Strong Governance from a Diverse Board

We continue to be guided by a strong Board of Directors whose members bring a wealth of expertise from diverse backgrounds. The renewal of our board continued throughout the last year, with Barry Jackson retiring from the board chair position and the seamless transition of the chair role to Siim Vanaselja. Mr. Jackson served as chair for more than a decade and continues to serve as a member of the board. We would like to thank him for his commitment and leadership that has been instrumental in making TransCanada a strong and successful company. We would also like to extend our sincere thanks to Mr. Derek Burney and Mr. Rick Waugh who are retiring from the board this year. Mr. Burney served as a director since 2005, providing valuable leadership as chair of the governance committee from 2013 to 2017, as well as strategic insight in the areas of international and government relations, energy policy and risk management. Mr. Waugh served on the board for five years, during which his experience in corporate management, finance, accounting and governance provided important perspective for our audit, governance and human resources committees.

We were pleased to welcome two new independent directors, Thierry Vandal and Stéphan Crétier, to the board in 2017. Mr. Vandal has more than 30 years of experience in the North American power and utility industry, while Mr. Crétier brings extensive leadership, strategic and entrepreneurial experience to our board.

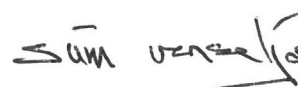
## A Company United by a Clear Purpose

In 2017 we moved together as one company and accomplished great things. By embracing organizational change and adjusting our asset base and our growth program, we have become a stronger, more competitive enterprise. As we enter 2018, we remain committed to our purpose of providing the energy society needs to prosper in a way that aligns with our core values of safety, integrity, responsibility and collaboration. Our future remains bright and we would like to thank all of our employees and shareholders for their continued commitment to our long-term success.

Sincerely,



**Russ Girling**  
President and Chief  
Executive Officer



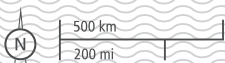
**Siim A. Vanaselja**  
Chair of the Board

# TransCanada

As at December 31, 2017

- Natural Gas Pipeline
- In Development/Construction
- Regulated Natural Gas Storage
- Liquids Pipeline
- In Development/Construction
- Liquids Tank Terminal

- Natural Gas Power Generation
- Under Construction
- Unregulated Natural Gas Storage
- Wind Power Generation
- Nuclear Power Generation



## Shareholder Information

TransCanada welcomes questions from shareholders and investors. Please contact:

**David Moneta**, Vice President, Investor Relations  
telephone: **1.403.920.7911**  
toll free: **1.800.361.6522**  
email: **investor\_relations@transcanada.com**

Visit [TransCanada.com](http://TransCanada.com) for Investor information:  
**TransCanada.com/Investors**

## Listing Information

Common Shares (TSX, NYSE): TRP

Preferred Shares (TSX):

Series 1: TRP.PR.A  
Series 2: TRP.PR.F  
Series 3: TRP.PR.B  
Series 4: TRP.PR.H  
Series 5: TRP.PR.C  
Series 6: TRP.PR.I  
Series 7: TRP.PR.D  
Series 9: TRP.PR.E  
Series 11: TRP.PR.G  
Series 13: TRP.PR.J  
Series 15: TRP.PR.K



View our website for more information:  
**TransCanada.com**

View our Annual Report:  
**AnnualReport.TransCanada.com**

Printed in Canada  
February 2018

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In Collaboration with RobecoSAM



## Transfer Agent

### Computershare Investor Services

100 University Avenue, 8th Floor  
Toronto, Ontario M5J 2Y1

telephone: **1.514.982.7959**  
toll free: **1.800.340.5024**  
fax: **1.888.453.0330**  
email: **transcanada@computershare.com**

## Corporate Social Responsibility Report

Building a successful future means doing the right thing today.  
View our CSR Report: **CSRReport.TransCanada.com**

## Corporate Head Office

### TransCanada Corporation

450 – 1 Street SW  
Calgary, Alberta, Canada  
T2P 5H1



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