

Corporate Profile April 2017



Forward Looking Information and Non-GAAP Measures

This presentation includes certain forward looking information, including future oriented financial information or financial outlook, which is intended to help current and potential investors understand management's assessment of our future plans and financial outlook, and our future prospects overall. Statements that are forward-looking are based on certain assumptions and on what we know and expect today and generally include words like anticipate, expect, believe, may, will, should, estimate or other similar words.

Forward-looking statements do not guarantee future performance. Actual events and results could be significantly different because of assumptions, risks or uncertainties related to our business or events that happen after the date of this presentation. Our forward-looking information in this presentation includes statements related to: future dividend growth, the completion of the transactions contemplated by our agreements to sell our U.S. Northeast power assets, the future growth of our Mexico natural gas pipeline business and our successful integration of Columbia.

Our forward looking information is based on certain key assumptions and is subject to risks and uncertainties, including but not limited to: our ability to successfully implement our strategic initiatives and whether they will yield the expected benefits including the expected benefits of the acquisition of Columbia and the expected growth of our Mexico natural gas pipeline business, timing and completion of our planned asset sales, the operating performance of our pipeline and energy assets, economic and competitive conditions in North America and globally, the availability and price of energy commodities and changes in market commodity prices, the amount of capacity sold and rates achieved in our pipeline businesses, the amount of capacity payments and revenues we receive from our energy business, regulatory decisions and outcomes, outcomes of legal proceedings, including arbitration and insurance claims, performance of our counterparties, changes in the political environment, changes in environmental and other laws and regulations, construction and completion of capital projects, labour, equipment and material costs, access to capital markets, interest, inflation and foreign exchange rates, weather, cyber security and technological developments. You can read more about these risks and others in our Fourth Quarter 2016 Financial Highlights release and 2016 Annual Report filed with Canadian securities regulators and the SEC and available at www.transcanada.com.

As actual results could vary significantly from the forward-looking information, you should not put undue reliance on forward-looking information and should not use future-oriented information or financial outlooks for anything other than their intended purpose. We do not update our forward-looking statements due to new information or future events, unless we are required to by law.

This presentation contains reference to certain financial measures (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. These non-GAAP measures may include Comparable Earnings, Comparable Earnings per Share, Comparable Earnings Before Interest, Taxes, Depreciation and Amortization (Comparable EBITDA), Funds Generated from Operations, Comparable Funds Generated from Operations, Comparable Distributable Cash Flow (DCF) and Comparable DCF per share. Reconciliations to the most closely related GAAP measures are included in this presentation and in our Fourth Quarter 2016 Financial Highlights release filed with Canadian securities regulators and the SEC and available at www.transcanada.com.

Key Themes





 Over 95% of Comparable EBITDA derived from regulated assets or long-term contracts following monetization of U.S. Northeast Power business



- Five operating businesses, in three core geographies
- Canadian, U.S. and Mexico natural gas pipelines, liquids pipelines and energy

Visible Growth Through 2020

- \$23 billion of near-term growth projects advancing
- Additional organic growth expected from existing base businesses
- Over \$45 billion of commercially secured medium- to longer-term projects

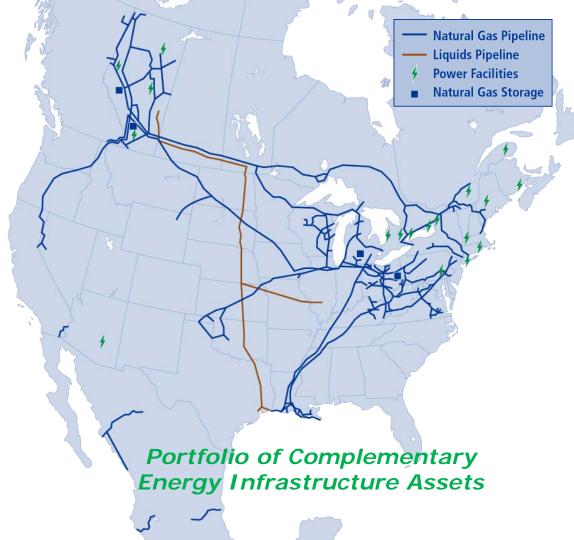
Dividend Poised to Grow Through 2020

Expected annual dividend growth at upper end of 8 to 10% range

Financial Discipline

- Value 'A' grade credit rating
- Corporate structure is simple and understandable





TransCanada Today

- One of North America's Largest Natural Gas Pipeline Networks
 - 91,500 km (56,900 mi) of pipeline
 - 653 bcf of storage capacity
 - 23 bcf/d; ~25% of continental demand
- Premier Liquids Pipeline System
 - 4,300 km (2,700 mi) of pipeline
 - 545,000 bbl/d; ~20% of Western Canadian exports
- One of the Largest Private Sector Power Generators in Canada
 - 17 power plants, 10,700 MW*
 - Primarily long-term contracted assets following sale of U.S. Northeast Power
- Enterprise value of ~\$100 billion as of December 31, 2016

^{*} Includes U.S. Northeast Power assets held for sale

\$23 Billion Commercially Secured Near-Term Capital Program

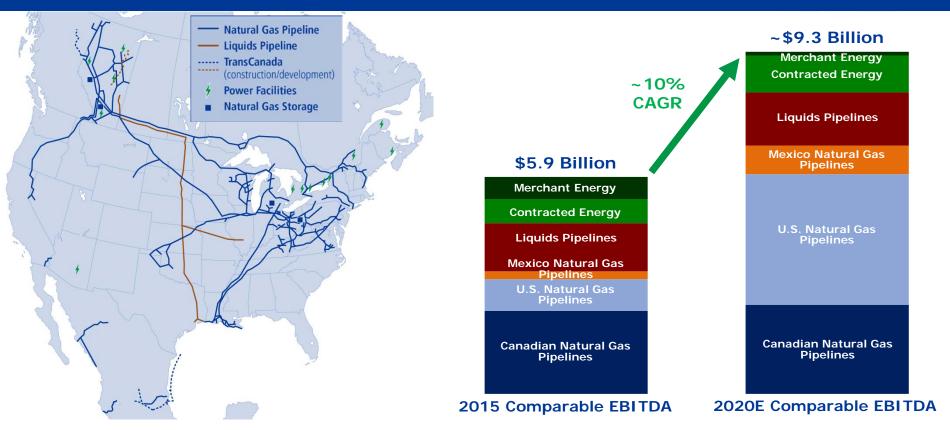


Project	Estimated Capital Cost*	Invested to Date	Expected In-Service Date*
Columbia	US7.1	US1.2	2017-2020
NGTL System	5.4	8.0	2017-2020
Canadian Mainline	0.3	0.1	2017-2018
Tula	US0.6	US0.3	2018
Villa de Reyes	US0.6	US0.2	2018
Sur de Texas	US1.3	US0.1	2018
Grand Rapids	0.9	8.0	2017
Northern Courier	1.0	0.9	2017
White Spruce	0.2	-	2018
Napanee	1.1	0.7	2018
Bruce Power Life Extension	1.1	0.1	Up to 2020+
Foreign Exchange Impact (1.34 exchange rate)	3.3	0.6	-
Total Canadian Equivalent	22.9	5.8	

^{*} TransCanada share in billions of dollars. Certain projects are subject to various conditions including corporate and regulatory approvals.

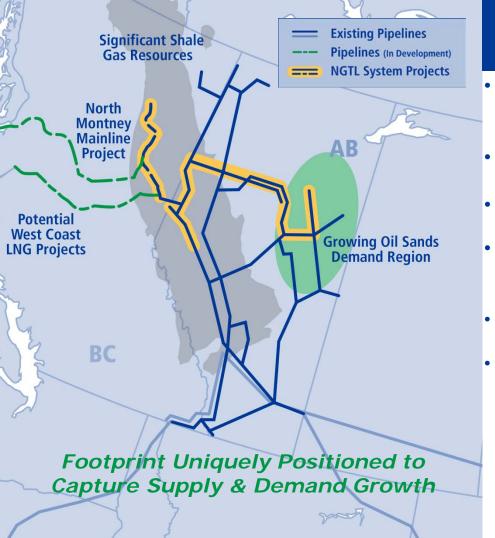
Underpinned by Long-Term Contracts or Cost-of-Service Regulation

Columbia Acquisition & Near-term Capital Program Drive Significant Growth



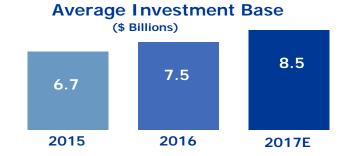
Over 95% of Comparable EBITDA to come from regulated or long-term contracted assets

*Comparable EBITDA is a non-GAAP measure. See the non-GAAP measures slide at the front of this presentation for more information.



NGTL System's Unparalleled Position

- Primary transporter of WCSB supply
 - Field receipts averaged ~ 11.3 bcf/d in 2016
 - Intra-Alberta peak day deliveries in excess of 6.5 bcf/d
- Key connections to Alberta and export markets
 - System provides optionality and liquidity
- Regulated system with 2017 allowed ROE of 10.1% on 40% deemed equity, plus incentives
- \$5.4 billion near-term capital program
 - Expected in-service through 2020
 - \$1.6 billion of new facilities entering service in 2017
- Additional investment expected to connect growing supply to local and downstream markets
- Well positioned for West Coast LNG exports

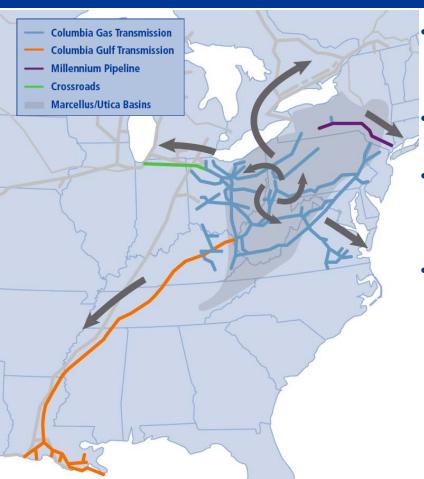


Canadian Mainline - Connecting North American Gas Supply to Market



- LDC Settlement created long-term stability and reduced risk
 - Agreement runs through 2020; Eastern System supported by cost-of-service regulation through 2030
 - Base ROE of 10.1% on 40% deemed equity; contribution and incentives could result in ROE of 8.7% to 11.5%
- Strong ongoing operating and financial performance
- Expect to invest ~ \$300 million in 2017 to increase capacity from Dawn to eastern markets
- Successfully completed Long-Term, Fixed-Price Open Season in March 2017
 - Resulted in binding contracts to transport 1.5 PJ/d from Empress to Dawn for ten years at a toll of \$0.77/GJ
 - Early termination rights can be exercised after five years upon payment of an increased toll for final two years of the contract

Columbia – Premium Natural Gas Pipeline Network



- Strong incumbency position in U.S. Northeast
 - Well positioned to connect Marcellus and Utica supply to domestic and LNG export markets
- Realizing US\$250 million of annualized benefits with full impact expected in 2018
- Advancing US\$7.1 billion near-term capital program
 - Projects underpinned by long-term contracts
 - US\$2.3 billion expected to be in-service in 2017
- Appalachian production expected to grow from ~20 bcf/d in 2015 to over 30 bcf/d by 2020
 - Additional investment opportunities expected to connect growing supply to market

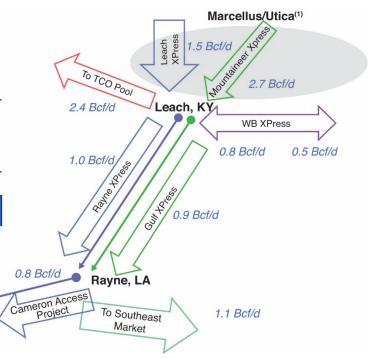
Premium Natural Gas Pipeline Network Complements Our Existing Assets

Columbia Pipeline Capital Program

Asset	Project	Estimated Capital Cost (US\$)	FERC Status	Expected In-Service
	Modernization I	0.2	Approved	2017
	Modernization II	1.1	Approved	2018 - 2020
Gas	Leach XPress	1.4	Approved	2017
	WB XPress	8.0	Filed	2018
	Mountaineer XPress	2.0	Filed*	2018
	Rayne XPress	0.4	Approved	2017
Gulf	Cameron Access	0.3	Approved	2018
	Gulf XPress	0.6	Filed*	2018
Midstream	Gibraltar	0.3	N/A	2017
Total		US7.1		

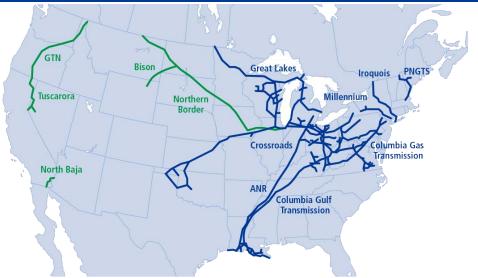
^{*} Received Draft Environmental Impact Statement on February 27, 2017

Project Gas Flow Direction and Capacity from the Marcellus/Utica



Cameron LNG

Diversified Portfolio of U.S. Natural Gas Pipelines



Asset	TransCanada Effective Ownership (%)*	TC PipeLines, LP Ownership (%)
ANR	100	0
Columbia (post closing of CPPL acquisition)	100	0
Great Lakes	66	46
Iroquois	50	0
Bison, GTN, North Baja & Tuscarora	27	100
PNGTS	25	49.9
Northern Border	13	50

Ownership in Great Lakes, Bison, GTN, North Baja, Tuscarora, PNGTS and Northern Border includes ownership through TransCanada's 27% ownership in TC PipeLines, LP

Well-positioned with access to multiple supply basins and large market areas

- ANR to benefit from rate case settlement which includes US\$837 million of maintenance capital for reliability and modernization projects that is reflected in rates
- GTN opportunities from NGTL expansion
- Great Lakes could benefit from Mainline contract changes
- Iroquois and PNGTS well positioned for expansions
- Pursuing longer term revenue enhancements across our extensive network that includes Columbia, ANR, Eastern Canadian Mainline and other interconnected pipelines

TC PipeLines, LP

- Core element of TransCanada's strategy
- Track record of disciplined growth
- TransCanada operates assets, owns general partner and holds a 27% interest
- Currently at 'high split' of 25% GP/LP IDR
- Received offer from TransCanada to purchase a 49.3% interest in Iroquois and a 11.8% interest in PNGTS

Premium Natural Gas Pipeline Network

Mexico – Solid Position and Growing



- Four revenue-generating pipelines
 - Tamazunchale
- Guadalajara

Mazatlán

- Topolobampo
- Three new projects expected to enter service in 2018 will increase portfolio to ~ US\$5 billion
 - Tula US\$0.6 billion
 - Villa de Reyes US\$0.6 billion
 - Sur de Texas US\$1.3 billion*
- All underpinned by long-term contracts with the Comisión Federal de Electricidad
- Once completed, portfolio expected to generate annual EBITDA of ~ US\$575 million
- Well positioned to connect U.S. natural gas supply to growing power generation and industrial markets in central Mexico

Developing an Integrated Natural Gas Delivery System

* TransCanada's 60% share

Keystone – A Premier Liquids Pipelines Business



- 545,000 bbl/d of long-term, long-haul contracts with fixed monthly payments
- Transports ~20% of western Canadian crude oil exports
- Provides market access to ~6 million bbl/d of refining capacity
- Safely moved over 1.4 billion barrels since operations commenced
- New market connections could provide opportunities for growth

Critical Infrastructure with Strong Operational Track Record

Building a Regional Liquids Pipeline System



- Construction of \$1 billion Northern Courier advancing
 - 25-year contract with Fort Hills Partnership
 - Expected to be in-service in 2017
- Construction of \$900 million* Grand Rapids project progressing
 - 50/50 joint venture and 25-year contract with Brion Energy
 - Expected to be in-service in 2017
- \$200 million White Spruce pipeline will transport crude oil to the Grand Rapids system and is expected to be in-service in 2018
- Additional market connections could provide opportunities for growth

*TransCanada's share

Well Established Energy Platform



Plant	Capacity (MW)*	Counterparty	Contract Expiry
Coolidge	575	Salt River Project	2031
Bécancour	550	Hydro-Québec	2026
Cartier Wind	365	Hydro-Québec	2026-2032
Grandview	90	Irving Oil	2024
Halton Hills	683	IESO	2030
Portlands	275	IESO	2029
Ontario Solar	76	IESO	2032-2034
Bruce Power Units 1-8	3,104	IESO	Up to 2064
Napanee (under construction)	900	IESO	20 Years from In-Service

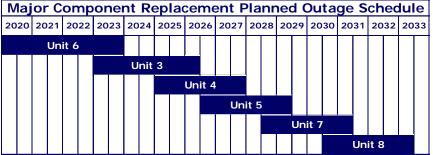
- U.S. Northeast Power asset sales expected to close in first half 2017
- Balance of portfolio underpinned primarily by long-term contracts with solid counterparties
 - 6,200 MW of power generation
 - 118 bcf of natural gas storage capacity
 - Minimal merchant power exposure
 - Generated EBITDA of \$765 million in 2016
- Construction progressing on \$1.1 billion
 Napanee project; expected in-service in 2018
 - 900 MW plant; long-term contract with Ontario Independent Electricity System Operator (IESO)
- Work continues on Bruce Power refurbishment
- Continue to pursue growth opportunities in our core geographies:
 - Natural gas-fired generation
 - Renewables including wind, solar and hydro

^{*} Our proportionate share of power generation capacity

Bruce Power – Cost Effective, Emission Free Power

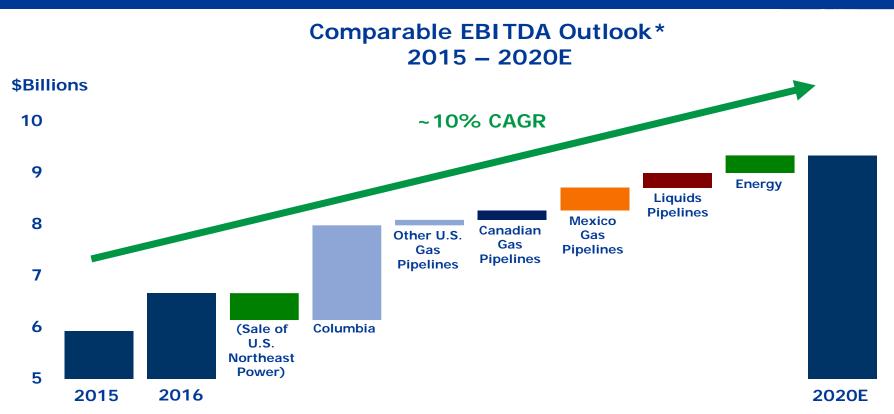


- 48.5% ownership interest
- Power sales contracted through 2064 with the Ontario IESO
 - Integral to Ontario's long-term energy plan
- \$6.5 billion* investment through 2033 to refurbish and extend life of 6 reactors
- Average plant availability expected to be ~90% in 2017, up from 83% in 2016
- Spent fuel and decommissioning liabilities are the responsibility of Ontario Power Generation



*TransCanada's share in 2014 dollars

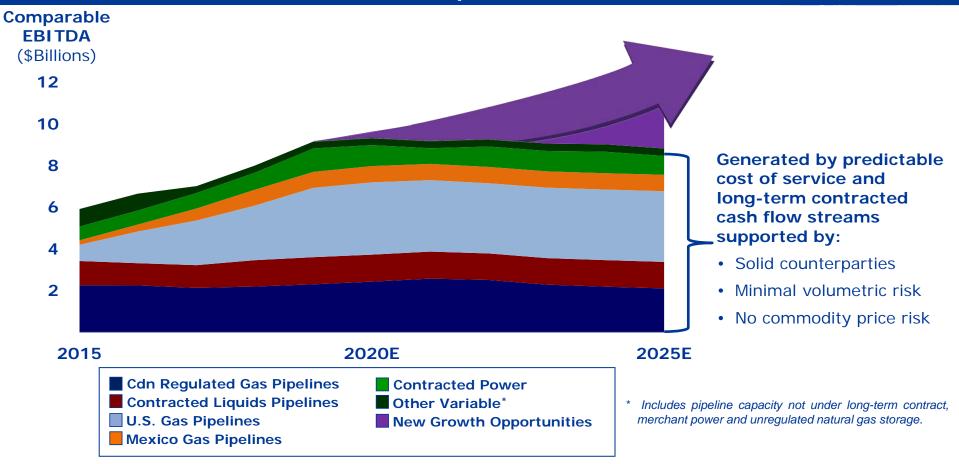
\$23 Billion of Near-Term Projects Drive Significant Growth



Could be Augmented by Additional Growth Opportunities, Revenue Enhancements and Operating Efficiencies

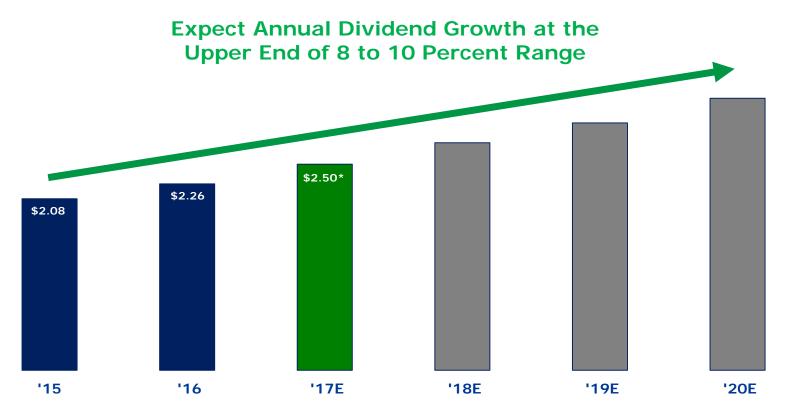
^{*} Includes existing assets, non-controlling interests in U.S. Natural Gas Pipelines and \$23 billion of near-term projects subject to various conditions including corporate and regulatory approvals. Comparable EBITDA is a non-GAAP measure. See the non-GAAP measures slide at the front of this presentation for more information.

Stability and Longevity of Core Asset Base + \$23 Billion of Visible Growth with Upside



Comparable EBITDA is a non-GAAP measure. See the non-GAAP measures slide at the front of this presentation for more information.

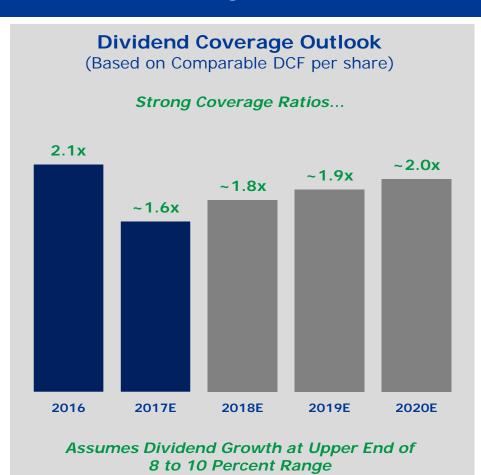
Dividend Growth Outlook Through 2020

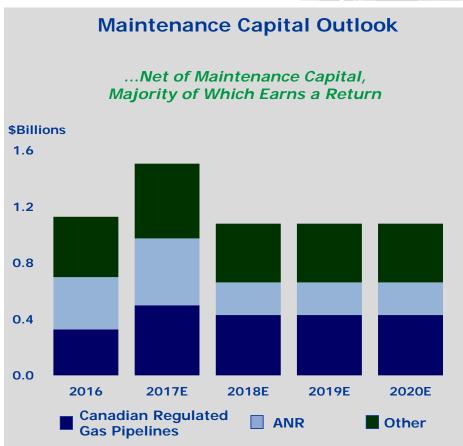


Supported by Expected Growth in Earnings and Cash Flow and Strong Coverage Ratios

^{*} Annual rate based on first quarter dividend of \$0.625 per share

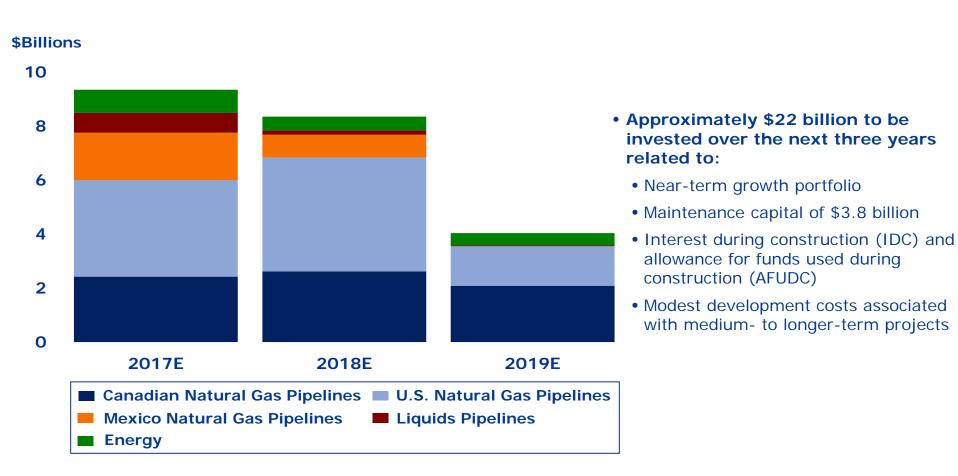
Dividend Coverage Ratios and Maintenance Capital Outlook Through 2020





*Comparable DCF is a non-GAAP measure. See the non-GAAP measures slide at the front of this presentation for more information.

2017-2019 Capital Expenditure Outlook



Funding Program for Near-Term Growth Portfolio

\$Billions

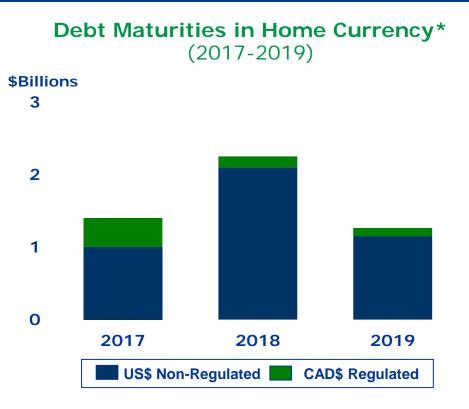
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Portfolio Management

2017 – 2019 Outlook

2017-2019 Debt Maturity Profile



- ~\$9 billion committed and undrawn credit lines
- Well supported commercial paper programs
 - Canada \$2.0 billion
 - U.S. US\$2.5 billion
- Access to global capital markets

Normal Level of Scheduled Debt Maturities Through 2019 Diverse Set of Financing Levers Available

^{*} Excludes US\$3.7 billion Columbia bridge term loan facilities to be repaid with proceeds from monetization of U.S. Northeast power business

\$45 Billion+ of Commercially Secured Long-Term Projects*



* TransCanada share in billions of dollars; Bruce Power in 2014 dollars. Certain projects are subject to various conditions including corporate and regulatory approvals.

- Bruce Power Life Extension Agreement
 - First of six MCR outages occurs in 2020
 - Expected investment of \$5.3 billion post 2020
 - Extends operating life of facility to 2064
- Four transformational projects
 - Prince Rupert Gas Transmission (\$5 billion)
 - Coastal GasLink (\$4.8 billion)
 - Energy East (\$15.7 billion) and related Eastern Mainline Project (\$2.0 billion)
 - Keystone XL (US\$8 billion)
- Establish us as leaders in the transportation of crude oil and natural gas for LNG export
 - 2 million bbl/d of liquids pipeline capacity
- 4+ bcf/d of natural gas pipeline export capacity



Track Record of Delivering Long-Term Shareholder Value

14% average annual return since 2000

Visible Growth Portfolio

\$23 billion to 2020
Additional opportunity set includes over \$45 billion of medium to longer-term projects

Attractive, Growing Dividend

4% yield 8-10% expected CAGR through 2020

Strong Financial Position

'A' grade credit rating Numerous levers available to fund future growth

Attractive Valuation Relative to North American Peers



Corporate Profile April 2017





Medium to Longer-Term Projects



Keystone XL – Maintaining a Valuable Option



- Remain committed to advancing Keystone XL
- Received Presidential Permit from U.S. Department of State on March 24, 2017
- Filed an application with the Nebraska Public Service Commission seeking approval for a route through that state on February 16, 2017

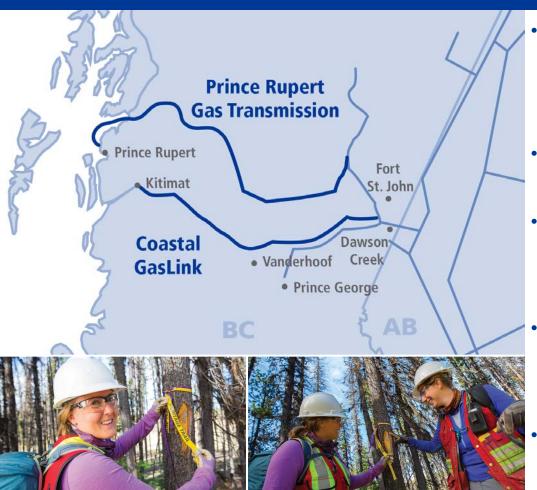
Remains a Competitive Transportation Solution to U.S. Gulf Coast

Energy East – Critical to Reach Eastern Refineries and Tidewater

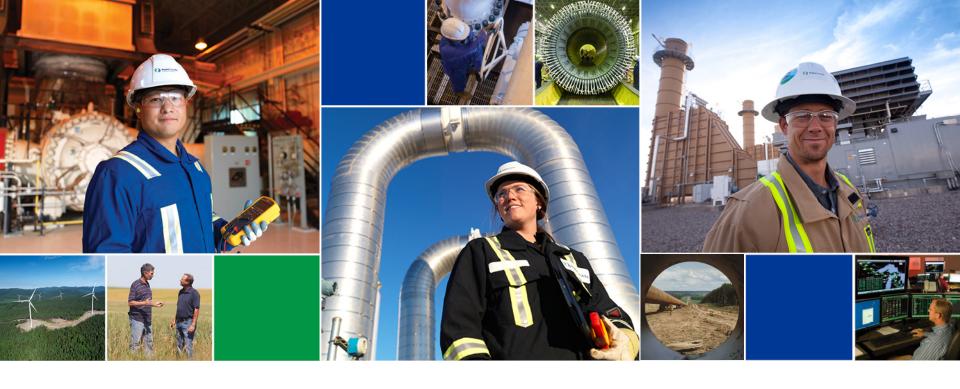


- \$15.7 billion investment
- 1.1 million bbl/d of capacity underpinned by long-term, take-or-pay contracts
- Would serve Montréal, Québec City and Saint John refineries
- Also provides tidewater access
- Project is subject to regulatory approvals
 - National Energy Board (NEB) has appointed three new members to the panel that will restart the review of the project
 - The panelists will determine how to move forward with the review process

Positioned to Benefit from West Coast LNG



- Two large-scale projects underpinned by long-term contracts
 - \$5 billion Prince Rupert Gas Transmission (PRGT) project
 - \$4.8 billion Coastal GasLink (CGL) project
- PRGT and CGL have received their pipeline and facilities permits from the B.C. Oil and Gas Commission
- The Pacific NorthWest LNG project received Federal Government approval to proceed; the LNG project, and by extension PRGT, are now subject to a Final Investment Decision by PNW
- Also working with LNG Canada to determine the appropriate pace of work activities following their decision to delay the Final Investment Decision. LNG Canada has also received regulatory approval.
- No development cost risk and minimal capital cost risk on either project



Finance



Financial Strategy





- Invest in low-risk assets that generate predictable and sustainable growth in earnings, cash flow and dividends
- Finance long-term assets with long-term capital
- Maintain financial strength and flexibility
- Value 'A' grade credit rating
- Effectively manage foreign exchange, interest rate and counterparty exposures
- Disciplined cost and capital management
- Simplicity and understandability of corporate structure

Built For All Phases of the Economic Cycle

Commercial and Financial Variability







Volumetric

- Spot movements on southern portion of Keystone System
- Availability at Bruce Power

Commodity

- Alberta cogens and non-regulated natural gas storage
- Substantially reduced exposure upon sale of U.S. Northeast power portfolio and Alberta PPA terminations

Counterparty

- Strong counterparty support on contracted assets
- Cost-of-service or regulated businesses with strong underlying fundamentals

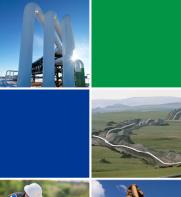
Interest Rates

- Largely fixed-rate debt financed (~90%) with long duration
- 17-year average term at 5.3% coupon rate

Foreign Exchange

- U.S. dollar asset and income position increasing
- U.S. dollar debt and interest a significant natural hedge
- Residual exposure actively managed one year forward

2016 - A Transformational Year



Acquired Columbia Pipeline Group for US\$13 Billion

• Created one of North America's largest natural gas transmission businesses

Agreed to Acquire Columbia Pipeline Partners LP Common Units

- US\$915 million acquisition closed in February 2017
- Results in 100% ownership of Columbia's core assets and simplifies structure

Added \$13 Billion of New Projects to Near-Term Growth Portfolio

Includes Columbia and NGTL System expansions and two new pipelines in Mexico

Agreed to Sell U.S. Northeast Power Business

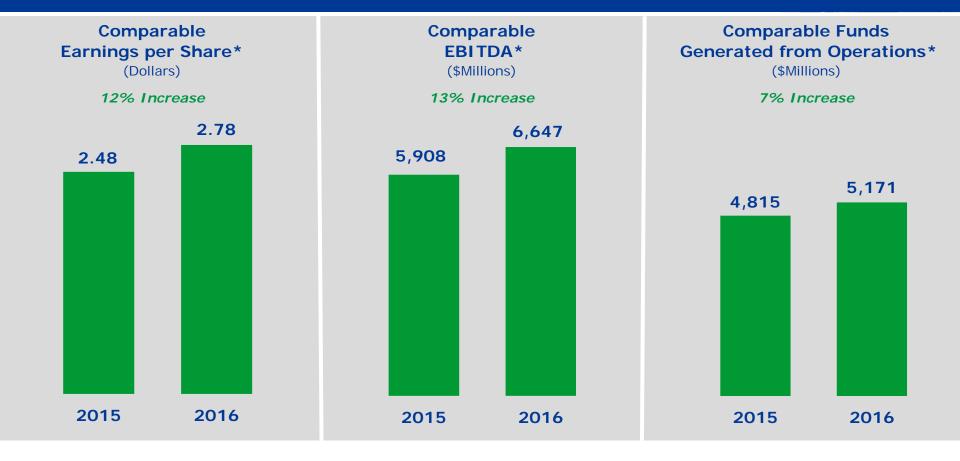
- Expect to realize ~US\$3.7 billion from monetization
- Asset sales expected to close in first half of 2017
- Proceeds will be used to retire balance of acquisition bridge facility

Maintained Our Financial Strength and Flexibility

- Issued \$11 billion of subordinated capital including common and preferred shares
- Maintained 'A' grade credit rating

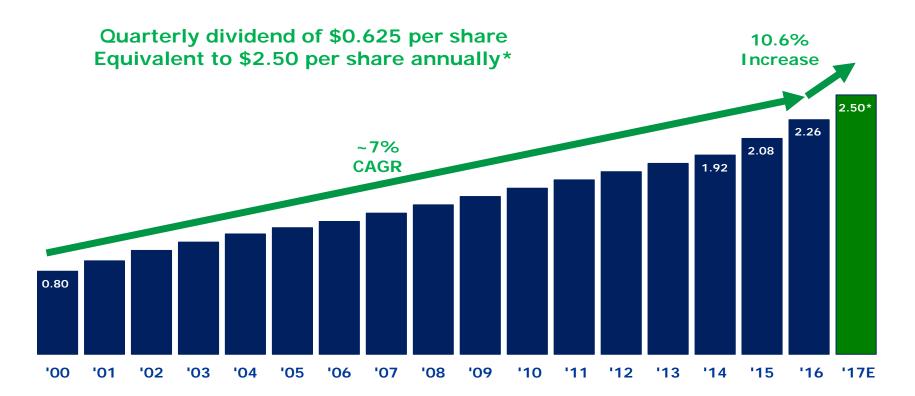
Actions Expected to be Accretive to Earnings and Cash Flow Per Share

Financial Highlights – Twelve Months Ended December 31 (Non-GAAP)



^{*}Comparable Earnings per Share, Comparable EBITDA and Comparable Funds Generated from Operations are non-GAAP measures. See the non-GAAP measures slide at the front of this presentation for more information.

Common Share Dividend Increased 10.6 Percent in February



Seventeenth Consecutive Annual Dividend Increase

^{*} Annual rate based on first quarter dividend of \$0.625 per share

Appendix – Reconciliation of Non-GAAP Measures

(unaudited) (millions of dollars, except per share amounts)

	Three months ended December 31		Twelve months ended December 31	
	2016	2015	2016	2015
Net (Loss)/Income Attributable to Common Shares	(358)	(2,458)	124	(1,240)
Specific items (net of tax):				
Loss on U.S. Northeast Power assets held for sale	870	-	873	_
Ravenswood goodwill impairment	_	_	656	_
Alberta PPA terminations and settlement	68	-	244	_
Acquisition related costs - Columbia	67	-	273	_
Keystone XL impairment charge	-	2,891	-	2,891
Other specific items ⁽¹⁾	(21)	20	(62)	104
Comparable Earnings ⁽²⁾	626	453	2,108	1,755
Net (Loss)/Income Per Common Share	(\$0.43)	(\$3.47)	\$0.16	(\$1.75)
Specific items (net of tax):				
Loss on U.S. Northeast Power assets held for sale	1.05	_	1.15	_
Ravenswood goodwill impairment	_	_	0.86	_
Alberta PPA terminations and settlement	0.08	_	0.32	_
Acquisition related costs - Columbia	0.08	_	0.37	_
Keystone XL impairment charge	_	4.08	-	4.08
Other specific items ⁽¹⁾	(0.03)	0.03	(80.0)	0.15
Comparable Earnings Per Common Share (2)	\$0.75	\$0.64	\$2.78	\$2.48
Average Common Shares Outstanding (millions)	832	708	759	709

⁽¹⁾ For additional details on these specific items, see the February 16, 2017 Fourth Quarter News Release

⁽²⁾ Non-GAAP measure. For additional information on these items see the February 16, 2017 Fourth Quarter News Release

(unaudited) (millions of dollars)	
	Three months

(1) Comparable EBITDA and Comparable EBIT are non-GAAP measures. See the non-GAAP measures slide at the front of this presentation for more information.

Twelve months

ended December 31

2015

5,908

4,143

(99)

(59)

(36)

(37)

101

(125)

(3,686)

(1,765)

2016

6,647

4,708

(844)

(332)

(179)

(52)

(22)

(4)

123

2,313

(1,939)

(1,085)

ended December 31

2015

1,527

(452)

1.075

(79)

(59)

(36)

(10)

(125)

(3,686)

(2,920)

2016

1,890

(514)

1,376

(839)

(92)

(47)

(15)

(8)

101

476

(unaudited) (millions of dollars)	ueu

H	Appendix -	- Reconciliation of	Non-GAAP	Measures	continue
((unaudited) (r	millions of dollars)			

Comparable EBITDA⁽¹⁾

Comparable EBIT⁽¹⁾

Specific items:

Depreciation and amortization

Keystone XL asset costs

TC Offshore loss on sale

Restructuring costs

Ravenswood goodwill impairment

Acquisition related costs - Columbia

Turbine equipment impairment charge

Bruce Power merger - debt retirement charge

Keystone XL impairment charge

Risk management activities

Segmented Earnings/(Losses)

Loss on U.S. Northeast power assets held for sale

Alberta PPA terminations and settlement

Appendix – Reconciliation of Non-GAAP Measures continued (unaudited) (millions of dollars, except per share amounts)

	Three months ended December 31		Twelve months ended December 31	
	2016	2015	2016	2015
Net Cash Provided by Operations	1,575	1,196	5,069	4,384
(Decrease)/increase in operating working capital	(220)	(32)	(248)	346
Funds Generated From Operations (1)	1,355	1,164	4,821	4,730
Specific items:				
Acquisition related costs - Columbia	45	-	283	-
Keystone XL asset costs	15	-	52	-
Restructuring costs	-	65	-	85
Loss on U.S. Northeast power assets held for sale	10	_	15	_
Comparable Funds Generated From Operations (1)	1,425	1,229	5,171	4,815
Dividends on preferred shares	(26)	(23)	(100)	(92)
Distributions paid to non-controlling interests	(78)	(56)	(279)	(224)
Maintenance capital expenditures including equity investments	(357)	(353)	(1,127)	(937)
Comparable Distributable Cash Flow ⁽¹⁾	964	797	3,665	3,562
Per Common Share (1)	\$ 1.16	\$ 1.13	\$ 4.83	\$ 5.02

⁽¹⁾ Funds Generated from Operations, Comparable Funds Generated from Operations, Comparable Distributable Cash Flow and Comparable Distributable Cash Flow per Common Share are non-GAAP measures. See the non-GAAP measures slide at the front of this presentation for more information.



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